Title 296 WAC

LABOR AND INDUSTRIES

Chapters

296-04 Internal rules--State apprenticeship and training council.
296-06 Public records.
296-15 Workmen's compensation self-insurance rules and regulations.
296-17 Manual of rules, classifications, rates, and rating system for Washington workmen's compensation insurance.
296-18 Rehabilitation review.
296-20 Medical aid rules.
296-21 Medical fees.
296-22 Surgical fees.
296-23 Radiology, radiation therapy, nuclear medicine, pathology, hospital, chiropractic, physical therapy and drugless therapeutics.
296-24 General safety and health standards.
296-27 Record keeping and reporting.
296-32 Safety standards for telecommunications.
296-37 Standards for commercial diving operations.
296-45 Safety standards--Electrical workers.
296-46 Safety standards--Installing electric wires and equipment--Administrative rules.
296-48 Mobile homes, commercial coaches and recreational vehicles.
296-48A Standards for recreational vehicles.
296-48B Standards for commercial coaches.
296-52 Safety standards for the possession and handling of explosives.
296-54 Safety standards--Logging operations.
296-62 Occupational health standards--Safety standards for carcinogens.
296-78 Safety standards for sawmills and woodworking operations.
296-79 Safety standards for pulp, paper, and paperboard mills and converters.
296-81 Safety rules governing existing elevators, dumbwaiters, escalators and other lifting devices--Moving walks.
296-86 Regulations and fees for freight and passenger elevators, manlifts, dumbwaiters, escalators, moving walks, automobile parking elevators, and personnel elevators.
296-104 Board of boiler rules--Substantive.
296-116 Pilotage rules.
296-127 Prevailing wage.
296-150A Rules and regulations for factory-built housing and commercial structures and governor's advisory board administrative rules.
296-150B Standards for mobile homes, commercial coaches, and recreational vehicles.
296-155 Safety standards for construction work.
296-200 Contractor certificate of registration renewals--Security--Insurance.
296-306 Safety standards for agricultural code.
296-350 Reassumption of jurisdiction pursuant to RCW 49.17.140.
296-360 Discrimination, pursuant to RCW 49.17.160.
296-401 Certification of competency for journeyman electricians.

Chapter 296-04 WAC

INTERNAL RULES--STATE APPRENTICESHIP AND TRAINING COUNCIL

AFFIRMATIVE ACTION PLAN OF THE WASHINGTON STATE APPRENTICESHIP COUNCIL TO PROMOTE EQUAL EMPLOYMENT OPPORTUNITY IN APPRENTICESHIP AND TRAINING

WAC

INTERNAL RULES

296-04-015 Definitions.
296-04-500 Registration fees for apprenticeship and training agreements and standards.
296-04-501 Registration fees for apprenticeship and training agreements.
296-04-502 Registration fees for apprenticeship and training standards.
296-04-503 Registration fees for apprenticeship and training standards—Limitation on fees.
296-04-504 Registration fees—Application to existing apprenticeship and training agreements and standards.
296-04-505 Registration fees for apprenticeship and training agreements and standards—Effect of failure to make timely payment.
296-04-506 Registration fees for apprenticeship and training agreements and standards—Mailing address.

WAC 296-04-015 Definitions. Whenever in these rules and regulations, the following words shall have these meanings:

(1) "Council" shall mean the Washington state apprenticeship and training council established pursuant to RCW 49.04.010.

(2) The words "apprenticeship committee" shall mean a state or local joint apprenticeship committee established pursuant to RCW 49.04.040 and/or a committee administering a plant program.

(3) The words "regular meeting" shall mean a public meeting of the council as described in WAC 296-04-040(1).

(4) The term "special meeting" shall mean a public meeting of the council as described in WAC 296-04-040(2).

(5) The word "supervisor" shall mean the supervisor of apprenticeship and training appointed pursuant to RCW 49.04.030.

(6) The term "agreement" shall mean an apprenticeship agreement and/or training agreement.

(7) The term "plant program" is defined in WAC 296-04-050.

(8) The term "individual agreement" shall mean a written agreement between an apprentice and/or trainee and either his employer or an apprenticeship committee acting as agent for the employer.

(9) The term "committee program" shall mean an apprenticeship agreement described in WAC 296-04-270(1)(a).

(10) The term "on-the-job training program" shall mean a program described in WAC 296-04-280.

(11) The term "trainee" shall mean a person registered with the supervisor pursuant to WAC 296-04-270 or 296-04-280.

(12) The term "apprentice" shall mean a person registered with the supervisor pursuant to an apprenticeship training program pursuant to WAC 296-04-270 for purposes of chapter 49.04 RCW and these rules.

(13) The term "standards" shall mean a written agreement setting forth a plan containing all terms and conditions for the qualifications, recruitment, selection, employment, and training of apprentices, as further defined in RCW 49.04.050.

(14) The term "registration" shall mean the maintenance of records of apprenticeship and training agreements and of apprenticeship and training standards.

(15) The term "sponsor" shall mean any plant, firm, facility, association, committee, or organization operating an apprenticeship and training program and in whose name the program is registered or is to be registered.

(16) The term "department" shall mean the department of labor and industries. [Statutory Authority: 1982 1st ex.s. c 39 §§ 1, 3. 82-22-042 (Order 82-30), § 296-04-015, filed 10/29/82; Statutory Authority: RCW 49-.04.010. 80-03-004 (Order 80-2), § 296-04-015, filed 2/8/80; Order 76-4, § 296-04-015, filed 2/20/76; Order 71-13, § 296-04-015, filed 10/28/71; Order 71-3, § 296-04-015, filed 3/25/71; § I, filed 10/11/65; § I, filed 2/12/65.]

WAC 296-04-500 Registration fees for apprenticeship and training agreements and standards. The department shall charge $50.00 annually for the registration of all agreements and $200.00 annually for the registration of all standards. [Statutory Authority: 1982 1st ex.s. c 39 §§ 1, 3. 82-22-042 (Order 82-30), § 296-04-500, filed 10/29/82.]

WAC 296-04-501 Registration fees for apprenticeship and training agreements. The registration fees for apprenticeship and training agreements shall be paid annually. The department shall use the anniversary date of each agreement for the purpose of determining annual payment dates. The department shall give notice that the annual registration fee for an agreement is due. The registration fee for such agreements shall be paid within 30 days after notice that the registration fee is due. [Statutory Authority: 1982 1st ex.s. c 39 §§ 1, 3. 82-22-042 (Order 82-30), § 296-04-501, filed 10/29/82.]

WAC 296-04-502 Registration fees for apprenticeship and training standards. The registration fee for standards shall be paid annually. The department shall use the original date of approval for each set of standards for the purpose of determining annual payment dates. The department shall give notice that the annual registration fee for a set of standards is due. The registration fee for such standards shall be paid within 30 days after notice that the registration fee is due. The sponsor shall pay the fee for registration of standards. [Statutory Authority: 1982 1st ex.s. c 39 §§ 1, 3. 82-22-042 (Order 82-30), § 296-04-502, filed 10/29/82.]

WAC 296-04-503 Registration fees for apprenticeship and training standards--Limitation on fees. The registration fee for a sponsor with less than five apprentices in its program shall be no more than the total amount charged to its apprentices for registration of their apprenticeship or training agreements. [Statutory Authority: 1982 1st ex.s. c 39 §§ 1, 3. 82-22-042 (Order 82-30), § 296-04-503, filed 10/29/82.]

WAC 296-04-504 Registration fees--Application to existing apprenticeship and training agreements and standards. The responsibility to pay annual registration fees shall include agreements and standards that are registered on or prior to the date these rules take effect. [Statutory Authority: 1982 1st ex.s. c 39 §§ 1, 3. 82-22-042 (Order 82-30), § 296-04-504, filed 10/29/82.]

WAC 296-04-505 Registration fees for apprenticeship and training agreements and standards--Effect of failure to make timely payment. The supervisor may remove from registration or refuse to register any agreement for which timely payment of registration fees has not been received. The supervisor shall notify the program sponsor and each affected apprentice when he removes an agreement from registration or refuses to register it.

If the fee for a set of standards is not paid, the council shall disapprove the sponsor and the council shall act as the joint committee. The council shall administer the apprenticeship program for the benefit of apprentices enrolled in the program at the time the sponsor was abolished, but shall not accept any new apprentices as participants in that apprenticeship program.

If the apprentice or the sponsor timely pays the registration fee for either an agreement or standards, but the registration of the agreement or standards is erroneously canceled, the department shall reinstate the registration as though it had never been canceled after the apprentice or sponsor shows proof of payment to the supervisor. [Statutory Authority: 1982 1st ex.s. c 39 §§ 1, 3. 82-22-042 (Order 82-30), § 296-04-505, filed 10/29/82.]

WAC 296-04-506 Registration fees for apprenticeship and training agreements and standards--Mailing address. The registration fees for apprenticeship and training agreements and standards shall be made payable to the department and shall be sent to:

Supervisor of Apprenticeship
Department of Labor and Industries
Apprenticeship Division
Forum Building
605 11th Ave. SE
Olympia, WA 98504

[Statutory Authority: 1982 1st ex.s. c 39 §§ 1, 3. 82-22-042 (Order 82-30), § 296-04-506, filed 10/29/82.]

Chapter 296-06 WAC
PUBLIC RECORDS

WAC
296-06-120 Copying and fees.

WAC 296-06-120 Copying and fees. Where copies of public records are requested, the department may charge a fee of ten cents for each letter-size or legal-size copy for reimbursement of its actual costs incident to such copying. For each paper copy of a microfilmed record, the department may charge 20 cents per copy. These copying fees do not apply to the contractor registration section of the department. The fees that section charges for copies are set out in WAC 296-200-900. Whenever copies of public records are mailed to the person making the request, the department may require reimbursement for postage costs. All copies made at the request of persons desiring copies on copy equipment of the department will be made by department staff at times when the making of such copies will not unreasonably disrupt the operations of the department. If the records to be copied contain information that would violate any right of personal privacy, the department staff member shall prevent such information from appearing on any copy. Where the use of such equipment does not harm the public records or impede the normal work of the department, those requesting copies of public records may use their own copying equipment and paper without charge[,][.] but in such event the department staff will supervise the copying at all times. [Statutory Authority: RCW 18.27.040, 42.17.290 and 42.17.300. 82-18-026 (Order 82-26), § 296-06-120, filed 8/25/82; Order 76-27, § 296-06-120, filed 9/28/76; Order 73-12, § 296-06-120, filed 7/31/73.]

Reviser's note: RCW 34.04.058 requires the use of underlining and deletion marks to indicate amendments to existing rules, and deems ineffectual changes not filed by the agency in this manner. The bracketed material in the above section does not appear to conform to the statutory requirement.

Chapter 296-15 WAC
WORKMEN'S COMPENSATION SELF-INSURANCE RULES AND REGULATIONS

WAC
296-15-025 Joint venture.
296-15-026 Group self-insurance application.
296-15-02601 Group self-insurers admission of new members, termination of individual members.
296-15-02602 Group self-insurance reports.
296-15-02603 Group self-insurance trustee responsibilities.
296-15-02604 Group self-insurance funds—Surplus distribution—Deficit.
296-15-02605 Reserves.
296-15-040 Repealed.
296-15-044 Payment of deficit.
296-15-070 Accident reports and claims procedures.
296-15-215 Cash or bond alternative for death or permanent total disability.

DISPOSITION OF SECTIONS FORMERLY CODIFIED IN THIS CHAPTER

296-15-040 Payment of deficit. [Order 77-19, § 296-15-040, filed 9/26/77; Order 73-24, § 296-15-040, filed 11/23/73; Order 71-15, § 296-15-040, filed 12/1/71.] Repealed by 81-10-052 (Order 81-8), filed 5/1/81, effective 6/1/81. Statutory Authority: RCW 51.04.020(1) and 51.14.020(4).

WAC 296-15-025 Joint venture. (1) An application for certification to self-insure will be made on a form prescribed by the supervisor of industrial insurance which will set forth the necessary information regarding the qualifications of the joint venture to self-insure.

(2) The application form, (SIF 1-A), will be supplied by the department upon written request. It will be completed by the applicant and submitted to the department with all supporting documents attached.

(3) Applications will be acted upon within fourteen calendar days of receipt, provided, that if deemed necessary for obtaining additional information, the director may extend the time for acting on the application. Processing the application will include an evaluation of the financial condition of all parties with interest greater than twenty percent in the assets and profits of the joint venture and an evaluation of the written safety program to be in effect at all job sites of the joint venture.

(4) Certification will be effective on the first day of a calendar month following receipt of surety and all required documentation. The director will consider the qualifications of the applicant and will advise the applicant of the action taken.

(5) Applicant joint ventures must include a sponsoring party. The word "sponsor" defines an employer presently self-insured in the state of Washington, with a majority interest in the assets and profits of the joint venture. The sponsor shall be responsible for the management of all industrial insurance claims, and shall accept full responsibility for all compensation due claimants. In the event of insolvency, bankruptcy, or dissolution of a party to the joint venture or the joint venture itself, the sponsoring party shall be held primarily responsible for all workmen's compensation benefits due, with all parties to the joint venture being held jointly and severally responsible for payment of all compensations and assessments which may become due until all obligations are released by the department. At the discretion of the director and by written request from the sponsoring party, the department may release a minority party from its obligations one year after fulfillment of the construction contract and a final settlement of the joint venture account has been made.

(6) The agreement under which the joint venture will perform shall be attached to the application form. The joint venture agreement shall contain a description of the obligations and responsibilities of each party for the industrial insurance program of the joint venture. The sponsor shall accept full responsibility for the management and payment for all incurred claims during the life of and after dissolution of the joint venture.

(7) Surety will be required in an amount deemed by the department to insure sufficient financial ability to make certain the prompt payment of all compensation under this title and all assessments which may become due, but not less than the employer's normal expected annual claim liabilities. The surety bond escrow account will name the joint venture and all the parties thereof as principal. WAC 296-15-030 shall govern the posting of surety by the joint venture.

(8) The joint venture shall be subject to all regulations, reports, and assessments set forth in Title 51 RCW and accompanying WAC rules. [Statutory Authority: RCW 51.04.020. 82-07-019 (Order 82-8), § 296-15-025, filed 3/10/82.]

WAC 296-15-026 Group self-insurance application. The boards of directors of any educational service district may enter into agreement with any local school district and/or other educational service districts and/or any school district may enter into agreement with other school districts and/or educational service districts to form a self-insurance group for the purpose of qualifying as a self-insurer under chapter 51.14 RCW.

(1) Application for group workers compensation coverage shall be made to the department on a form prescribed by the department and shall contain answers to all questions. Answers shall be given under oath.

(2) Group self-insurers; additional requirements. The application, as submitted by the initial board of trustees of the self-insurers' trust fund shall have the following attached:

(a) A copy of the bylaws of the proposed group self-insurers' trust fund.

(b) Individual applications of each employer applying for coverage in the trust fund.

(c) A current financial statement of each member of the group and a financial statement collectively reflecting the financial condition of prospective members of the trust fund in compliance with WAC 296-15-02602(2).

(d) A listing of the estimated standard premium to be developed for each member individually and in a total as a group.

(e) The group shall engage a department approved administrator or enter into a contract with an approved service company. A copy of the signed agreement with the service company shall be submitted with the application.

(f) Designation of the initial board of trustees and administrator.

(g) An indemnity agreement jointly and severally binding the trust fund and each member thereof to comply with the provisions of the industrial insurance act. The indemnity agreement shall be in a form that has been approved by the department.

(h) A detailed budget of all projected administrative expenses for the fund year. [Statutory Authority: RCW 51.14.150 and 51.14.160. 83-01-076 (Order 82-43), § 296-15-026, filed 12/17/82.]

WAC 296-15-02601 Group self-insurers admission of new members, termination of individual members. (1) After the inception date of the trust fund, prospective new members of the trust fund shall submit an application for membership to the board of trustees, or its administrator, on a form provided by the department. The trustees or administrator may approve the application for membership pursuant to the bylaws of the group self-insurers' trust fund. The application for membership shall then be filed with the department. Membership shall take effect the first day of the calendar quarter beginning after approval by the department.

(2) Individual members may elect to terminate their participation in a group self-insurer's program or be subject to cancellation by the group trust fund pursuant to the bylaws of the group. Such termination or cancellation shall be effective at the end of the calendar quarter for which it was reported to the department.

(3) Each member, upon initial admission to the group, shall pay to the trust not less than twenty-five percent of its share of the current annual standard premium in accordance with WAC 296-15-02605(1). In addition to all other statutory and regulatory requirements of Title 51 RCW and WAC sections pertaining to self-insurance, group self-insurance must also meet and follow the requirements of this rule. [Statutory Authority: RCW 51.14.150 and 51.14.160. 83-01-076 (Order 82-43), § 296-15-02601, filed 12/17/82.]

WAC 296-15-02602 Group self-insurance reports. Reports as to financial standing, payroll records, coverage, accident experience, compensation payments, and such other reports as are required to be filed with the department shall be made at the following times and in the following manner:

(1) Summary loss data shall be maintained by the trust fund and shall be available to the department when requested.

(2) Each trust fund shall, not later than July of each year, comply with WAC 296-15-080 with respect to the financial condition of the trust.

(3) Quarterly reports shall be filed with the department within sixty days from the end of a calendar quarter. A listing of any and all delinquent accounts as defined by the bylaws shall be attached as a part of this report.

(4) A certified copy of the minutes of all trustees meetings shall be retained by the trust fund administrator. The minutes shall be made available to the department upon request. [Statutory Authority: RCW 51.14.150 and 51.14.160. 83-01-076 (Order 82-43), § 296-15-02602, filed 12/17/82.]

WAC 296-15-02603 Group self-insurance trustee responsibilities. (1) To ensure the financial stability of the operations of each group self-insurers' trust fund, the board of trustees shall be responsible for all operations of the trust fund. Trustees shall be a group of members elected by members of a self-insurers' trust fund for stated terms of office to direct the administration of a self-insurers' trust fund. The duties of the trustees include the responsibility of approving applications for new members of the fund. The trustees shall be

chosen from members of the self–insurers' group, but a trustee shall not be an owner or any employee of a company under contractual obligation to the fund or officer or employee of a service organization independent of the employer as defined in WAC 296–15–110. The board of trustees of each trust fund shall take all necessary precautions to safeguard the assets of the trust fund, including but not limited to all of the following:

(a) Designate a fiscal agent or administrator, or both, to administer the financial affairs of the trust fund in accordance with WAC 296–15–02605, RCW 28A.21-.200, 28A.21.160, 28A.48.100, 28A.58,430, 28A.58.440 and 36.29.020 pertaining to investments of funds as well as chapters 28A.21, 28A.65 and 43.09 RCW pertaining to budget and accounting procedures as applicable. The fiscal agent or administrator shall furnish a fidelity bond with the trust fund in an amount sufficient to protect the trust fund against the misappropriation or misuse of any moneys or securities. Evidence of such bond shall be filed with the department. The bond is one of the conditions required for approval of the establishment and continued operation of a group self–insurers' trust fund. Such fiscal agent or administrator shall not be an owner, officer, or employee of a service organization independent of the employer as defined in WAC 296–15–110.

(b) Manage deposits to and disbursements from the trust fund in accordance with WAC 296–15–02605, RCW 28A.21.200, 28A.21.160, 28A.48,100, 28A.58-.430, 28A.58.440 and 36.29.020 pertaining to investments of funds as well as chapters 28A.21, 28A.65 and 43.09 RCW pertaining to budget and accounting procedures as applicable.

(c) Audit the accounts and records of the trust fund annually or at any time required by the department. Copies of audits shall be filed with the department within six months after the close of the trust fund year.

(d) The trustees shall not extend credit to individual members for payment of premium.

(e) The board of trustees or its fiscal agent or administrator shall not utilize any moneys collected as premiums for any purpose unrelated to workers' compensation. Further it shall not borrow any moneys from the fund or in the name of the fund without advising the department of the nature and purpose of the loan and obtaining prior department approval.

(2) The board of trustees may delegate authority for specific functions to the administrator of the group self–insurers' trust fund. The functions that may be delegated include but are not limited to such matters as contracting with a service organization agent, determining the premium charged to, and refunds payable to, members subject to the restrictions of the department for investing surplus moneys set forth in subsection (1)(e) of this section, and approving applications for membership. All delegated authority shall be specifically defined in the written minutes of the trustees' meetings.

(3) Prior to certification date excess worker's compensation coverage shall be purchased providing adequate protection against catastrophic or unexpected loss. Adequate coverage shall be maintained throughout the period of group self–insurance. [Statutory Authority: RCW 51.14.150 and 51.14.160. 83–01–076 (Order 82–43), § 296–15–02603, filed 12/17/82.]

WAC 296–15–02604 Group self–insurance funds––Surplus distribution––Deficit. (1) Any surplus moneys for a fund year in excess of the amount necessary to fulfill all obligations under the act, including maintenance of reserves specified in WAC 296–15–02605 may be declared refundable by the trustees, and the amount of the declaration shall become a liability of the fund at the time of the declaration.

(2) In the event of a deficit in any fund year, the deficit shall be made up from any of the following:

(a) Unencumbered surplus from a fund year other than the current fund year, after approval by the department.

(b) By assessment of the membership of the deficit fund year if ordered by the department.

(c) By such alternative method as the department may approve. [Statutory Authority: RCW 51.14.150 and 51.14.160. 83–01–076 (Order 82–43), § 296–15–02604, filed 12/17/82.]

WAC 296–15–02605 Reserves. (1) The group shall maintain adequate reserves to cover claim liabilities and the overhead expense of paying claims liabilities. It shall also maintain a reserve to pay the department administrative assessment which would apply to outstanding claim costs if the group were to be discontinued. Additionally, the group shall maintain a contingency reserve equal to fifteen percent of the claim liabilities, or twenty–five percent of annual premium volume, whichever is greater, as a safeguard against adverse development of costs. Reserves may be discounted for anticipated investment income. Notwithstanding the reserves otherwise calculated under this section, the maximum reserve for any particular coverage period for which the group has purchased an aggregate excess reinsurance policy from a reinsurer shall be the difference between the group's retention under the policy and the amount which it has already paid for claim costs for the particular coverage period plus expense items not recoverable from the reinsurer: *Provided,* That the reinsurer is authorized by the insurance commissioner to transact such business in the state of Washington. Any coverage period, or periods, for which the difference between aggregate excess retention and amounts already paid for claim costs is carried as a reserve shall not be subject to the additional requirement of maintaining a contingency reserve.

(2) Reserve requirements for group self–insurance may not be satisfied in whole or in part by posting of a surety bond or bonds. Minimum required reserves for claim liabilities are described below. The group may set aside higher reserves if it perceives a greater liability than calculated under the following methods:

(a) **Reserve Method I**

This method shall apply until the group has passed the runoff test described under Method II or until five

years after the group has submitted its first annual report covering at least one full year of operation, whichever comes first. Under Method I, the groups' reserves other than the contingency reserves, shall be based on the accident and medical aid fund premiums which it would have paid had it been insured with the state fund. Such premiums shall be determined each year by multiplying the hours of employment in each risk classification by the base rates for each risk classification, and by the group's composite experience modification. The group's composite experience modification shall be based on combined state fund experience of its members and shall be calculated using the formulas and procedures specified in WAC 296-17-850 through 296-17-870. If the group becomes ineligible for an experience modification under WAC 296-17-850(1) by virtue of having insufficient state fund experience, it shall retain its last previous experience modification for the balance of time during which Reserve Method I is in use. Chapter 296-17 WAC shall govern the computation of hours and the assignment of risk classification.

This group shall deposit such premiums in a reserve account. Payments or withdrawals therefrom may be made only for the following conditions:

(i) Payment of administrative expenses of operating the group self-insurance program including claims handling expenses, legal costs and department administrative assessments.

(ii) Payment of claim costs other than supplemental pension fund claim payments. Supplemental pension fund benefits may be paid from the reserve account, provided that reimbursement for such payments is claimed under provisions of WAC 296-15-210, and provided that such reimbursement is deposited in the reserve account when received. Any interest earned by the reserve account must remain in the account during the period in which this method is in effect.

(iii) The group may pay its reinsurance premium from the reserve account, provided the reinsurer is authorized by the insurance commissioner to transact reinsurance in the state of Washington and provided the group retains amounts recovered from the reinsurer in the reserve account. Within eighteen months after the end of the coverage period, the group shall return the reinsurance premium, less any recoveries already received, into the reserve account. Thereafter it may include amounts which it reasonably expects to recover from the reinsurer, based on case estimates, as an asset. Such assets may be used for satisfying reserve requirements, provided the group retains amounts recovered from the reinsurer in the reserve account.

(b) **Reserve Method II**

The group shall report its claim payments and its estimated claim liabilities annually. For the purpose of applying Methods II and III, the group's estimate of its claim liabilities shall be based on its own reckoning regardless of the amount of reserves actually required by department regulations. The department will perform a runoff test of the adequacy of the group's estimate of liabilities by tracking the subsequent costs of claims (subsequent payments plus the group's updated estimates of remaining liabilities). If the subsequent costs over a three year development period following the effective date of an annual report covering at least one full year of operation do not exceed original liability estimates by more than fifteen percent, then the group's estimation of claim liabilities will be considered adequate and required reserves will thenceforth be based on the group's own estimates until such time in the future as the runoff test may demonstrate an inadequacy in reserving methodology.

(c) **Reserve Method III**

This method shall apply if the group fails the runoff test described in Method II, provided at least five years has elapsed since the group filed its first annual report covering at least one full year of operation. Under Method III the department shall determine the extent to which past liability estimates of the group have been inadequate as determined by the runoff test. The department shall apply a correction factor to the group's current estimates of its liabilities to compensate for anticipated repetition of inadequate estimates.

Methods II and III presume a consistency in reserving methodology by the group. If the department determines that the group has changed its reserving methodology in such a way as to invalidate Method II or III, then it shall make such adjustment to the procedure as may be appropriate under the circumstances. The group may devise its own method for calculating individual member's premiums under Reserve Methods I, II and III, provided the total premiums are sufficient to set up the required reserves. [Statutory Authority: RCW 51.14.150 and 51.14.160. 83-01-076 (Order 82-43), § 296-15-02605, filed 12/17/82.]

WAC 296-15-040 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-15-044 Payment of deficit. In determining a self-insurer's proper share of any deficit which must be paid to the department, pursuant to section 27(4), chapter 289, Laws of 1971 ex. sess., RCW 51.14.020(4), the following procedures shall apply:

(1) This rule is enacted to replace WAC 296-15-040, as amended, Order 77-19, filed 9/26/77, which has been declared void by order of Thurston County superior court dated May 12, 1980.

The intent of this rule is to assess each self-insuring employer according to the deficit rule formula in effect as of the date of certification as a self-insurer. This intent is accomplished by applying subsection (2) of this section to employers certified after December 31, 1972, and prior to January 1, 1974; and by applying subsection (3) of this section to employers certified on or after January 1, 1974.

This rule shall not apply to any employer which was certified as a self-insurer prior to the effective date of this rule and which agrees to pay to the department of labor and industries prior to June 1, 1981, a sum agreed to by the employer and the department as said employer's proper share of the deficit as it existed on the date the employer was certified. This agreed sum which,

when paid, will be full and final payment by the employer of its share of the deficit, must be pursuant to and evidenced by a written document, called an "AGREEMENT AND SATISFACTION," executed by the department after April 1, 1981.

(2) The following rules apply to those firms certified after December 31, 1972, and prior to January 1, 1974:

(a) The total state fund deficit, if any, as of the date of certification of an employer's right to self–insure shall be determined by the department based on the actuarial solvency of the state fund as a whole in accordance with recognized workers' compensation insurance principles. The percentage which such total deficit bears to actual total paid claim costs and pension reserve transfers of the state fund over the five fiscal years preceding date of certification exclusive of administrative costs and second injury and catastrophe class costs, shall then be determined.

(b) The deficit attributable to each employer shall be determined by applying the same percentage as determined under subdivision (a) to the actual total paid claim costs and pension reserve transfers of the employer over the preceding five fiscal years.

(3) The following rules apply to those firms certified on or after January 1, 1974:

(a) The total state fund deficit, if any, as of December 31, 1971, shall be determined by the department based on the actuarial solvency of the state fund as a whole in accordance with recognized workers' compensation insurance principles. The percentage which such total deficit bears to actual total paid claim costs and pension reserve transfers of the state fund over the preceding five calendar years ending December 31, 1971, exclusive of administrative costs and second injury and catastrophe costs, shall then be determined.

(b) The deficit attributable to each employer shall be determined by applying the same percentage as determined under subdivision (a) to the actual total paid claim costs and pension reserve transfers of each employer over the preceding five calendar years ending December 31, 1971.

(c) A self–insured employer's share of the deficit as computed under provisions of subdivision (b) will be modified by any change in the fund deficit between January 1, 1972, and the date of certification of the self–insured employer, which modification shall be calculated in the following manner:

A self–insured employer's total premium (industrial insurance and medical aid premium) paid within the period specified above will be compared to the total fund premium paid by all employers during such specified period. The percentage resulting from such comparison shall be applied to the change in the state fund deficit during the specified period which will result in either a debit or credit to the computation made pursuant to subdivision (b): *Provided*, That any credit applied under this subdivision may not exceed the deficit amount computed pursuant to subdivision (b). [Statutory Authority: RCW 51.04.020(1) and 51.14.020(4). 81–10–052 (Order 81–8), § 296–15–044, filed 5/1/81, effective 6/1/81.]

WAC 296–15–070 Accident reports and claims procedures. (1) Reporting of accidents and applications for compensation based thereon shall be on a form prescribed by the department, entitled the self–insurer's accident report (SIF #2), which will be supplied to all self–insurers, and by self–insurers to their employees. Forwarding a completed copy of this form to the department for compensable claims immediately and medical only claims monthly after closing by the self–insured employer shall satisfy the initial accident reporting responsibility and statistical reporting responsibility under the law.

(2) A self–insurer, on denying any claim, shall provide to the claimant, the department, and the attending physician, within 30 days after such self–insurer has notice of the claim, a notice of denial of claim, substantially identical to the example SIF #4, incorporated herein by reference. With every such claim denial a self–insurer shall send to the department all information on which the denial was based.

(3) A self–insurer shall file a supplemental or final report on injury or occupational disease claims resulting in time loss payments, on a form substantially identical to the example SIF #5, incorporated herein by reference, at the following times:

(a) Within five working days following the date the first time loss compensation is paid.

(b) Within five working days following the date the time loss compensation is terminated or the rate thereof changed.

(c) On the date a determination is requested.

All medical reports and other pertinent information in the self–insurer's possession must be submitted with the request for all determinations.

(4) A self–insurer, upon notice of a claim shall issue a claim number from numbers to be assigned to all self–insurers by the department.

(a) When a worker requests an accident report the self–insurer shall provide the accident report (SIF #2) to the worker, which shall state their right and responsibilities, in nontechnical language in a timely manner.

(b) A self–insurer, upon closure of a medical only claim, shall issue an order on a form prescribed by the department entitled self–insurer's claim closure order and notice (LI–207–20), which will be supplied to all self–insurers, and by the self–insurers to their employees, in compliance with reporting responsibilities under the law, a copy of which shall be sent to the attending physician.

(c) The self–insurer shall submit monthly statistical information on medical only claims closed during the month by copy of the accident report (SIF #2), with a memo attached indicating that the claims are closed.

(d) When a written protest is received by the department, the department shall require a self–insurer to submit within ten working days from the date of receipt of certified mailing from the department, all information in the self–insurer's possession dealing with the claim in question. [Statutory Authority: RCW 51.04.020 and Title 51 RCW. 82–12–035 (Order 82–23), § 296–15–070, filed 5/27/82, effective 7/1/82; 81–24–040 (Order 81–

29), § 296-15-070, filed 11/30/81; Order 77-19, § 296-15-070, filed 9/26/77; Order 72-15, § 296-15-070, filed 8/4/72; Order 71-15, § 296-15-070, filed 12/1/71.]

WAC 296-15-215 Cash or bond alternative for death or permanent total disability. Upon establishment of a death or permanent total disability obligation, the self-insured employer may elect to pursue the bond alternative outlined in RCW 51.44.070(2). In all such cases, cash or bond, the department shall commence to pay benefits immediately upon issuance of an order establishing such obligation. In the event there is a retroactive payment of benefits in the establishment of such obligation, and the self-insured employer elects to pursue RCW 51.44.070(2), this payment shall be made at the time the employer submits the required cash deposit. All further obligations paid by the department from the pension reserve fund shall be reimbursed to the department by the self-insured through the quarterly report system in accordance with RCW 51.44.070(2).

Upon election of RCW 51.44.070(2) the self-insured employer shall submit a bond in the amount deemed by the insurance commissioner to be reasonably sufficient to insure payment of the pension benefits provided by law. Such bond and required cash deposit shall be filed with the self-insurance section no later than sixty days after establishment of the death or permanent total disability obligation.

The bond alternative as prescribed by RCW 51.44.070(2) shall be allowed only once on any given claim elected at the time of the establishment of such obligation. In the event the amount of the bond is subsequently deemed insufficient and the self-insurer is unable to secure the required bond obligation the employer may deposit cash into the reserve fund, pursuant to RCW 51.44.070(1), to replace the bond obligation. [Statutory Authority: RCW 51.04.020 and Title 51 RCW. 81-23-047 (Order 81-27), § 296-15-215, filed 11/18/81.]

Chapter 296-17 WAC
MANUAL OF RULES, CLASSIFICATIONS, RATES, AND RATING SYSTEM FOR WASHINGTON WORKMEN'S COMPENSATION INSURANCE

WAC

296-17-350 Minimum premiums—Assumed workman hours.
296-17-351 Periodic review of cash deposit.
296-17-450 Special agricultural class interpretations.
296-17-502 Classification 1-2.
296-17-505 Classification 1-5.
296-17-506 Classification 1-6.
296-17-50602 Classification 1-8.
296-17-507 Classification 1-9.
296-17-50904 Classification 2-6.
296-17-511 Classification 3-2.
296-17-512 Classification 3-6.
296-17-514 Classification 4-1.
296-17-518 Classification 5-3.
296-17-519 Classification 5-4.
296-17-520 Classification 5-5.
296-17-52001 Classification 5-6.
296-17-52002 Classification 5-7.
296-17-521 Classification 5-8.
296-17-52101 Classification 5-9.
296-17-522 Classification 6-1.
296-17-524 Classification 6-3.
296-17-527 Classification 6-7.
296-17-534 Classification 10-2.
296-17-53502 Classification 10-5.
296-17-53504 Classification 10-7.
296-17-536 Classification 11-1.
296-17-538 Classification 11-3.
296-17-53801 Classification 11-4.
296-17-53803 Classification 11-6.
296-17-53805 Classification 11-8.
296-17-540 Classification 13-3.
296-17-54101 Classification 13-5.
296-17-542 Classification 14-1.
296-17-543 Repealed.
296-17-544 Classification 14-4.
296-17-563 Classification 21-2.
296-17-56401 Classification 21-5.
296-17-568 Classification 29-3.
296-17-57002 Classification 29-8.
296-17-571 Classification 31-1.
296-17-574 Classification 31-4.
296-17-576 Classification 33-1.
296-17-579 Classification 34-1.
296-17-580 Classification 34-2.
296-17-582 Classification 34-4.
296-17-58201 Classification 34-5.
296-17-583 Classification 34-6.
296-17-586 Classification 35-1.
296-17-587 Classification 35-3.
296-17-593 Repealed.
296-17-594 Classification 36-2.
296-17-595 Classification 36-3.
296-17-596 Classification 36-4.
296-17-599 Classification 37-1.
296-17-601 Repealed.
296-17-604 Classification 37-8.
296-17-605 Classification 38-1.
296-17-606 Classification 38-2.
296-17-607 Repealed.
296-17-608 Repealed.
296-17-609 Repealed.
296-17-610 Repealed.
296-17-613 Repealed.
296-17-615 Classification 39-2.
296-17-617 Repealed.
296-17-618 Classification 39-5.
296-17-61804 Classification 39-9.
296-17-620 Classification 41-1.
296-17-621 Repealed.
296-17-623 Repealed.
296-17-624 Repealed.
296-17-625 Repealed.
296-17-627 Classification 41-8.
296-17-635 Classification 44-1.
296-17-63501 Classification 44-2.
296-17-639 Repealed.
296-17-640 Classification 45-4.
296-17-644 Classification 48-3.
296-17-64901 Classification 48-9.
296-17-650 Classification 49-1.
296-17-652 Classification 49-3.
296-17-654 Classification 49-5.
296-17-66002 Classification 50-4.
296-17-664 Repealed.
296-17-665 Repealed.
296-17-666 Classification 51-6.
296-17-667 Repealed.
296-17-668 Classification 51-8.
296-17-670 Classification 52-1.
296-17-671 Repealed.
296-17-672 Repealed.
296-17-674 Repealed.

296-17-675 Classification 52-6.
296-17-676 Classification 52-7.
296-17-67601 Classification 52-8.
296-17-67602 Classification 52-9.
296-17-677 Classification 53-1.
296-17-684 Classification 61-7.
296-17-685 Classification 61-8.
296-17-686 Classification 61-9.
296-17-689 Classification 62-3.
296-17-690 Classification 62-4.
296-17-694 Classification 62-8.
296-17-695 Classification 62-9.
296-17-696 Classification 63-1.
296-17-700 Classification 63-5.
296-17-703 Classification 63-8.
296-17-704 Classification 63-9.
296-17-706 Classification 64-2.
296-17-707 Classification 64-3.
296-17-708 Classification 64-4.
296-17-717 Classification 65-4.
296-17-719 Classification 65-6.
296-17-720 Repealed.
296-17-721 Classification 65-8.
296-17-724 Classification 66-2.
296-17-731 Classification 66-9.
296-17-736 Classification 67-5.
296-17-758 Classification 71-5.
296-17-759 Classification 71-6.
296-17-760 Classification 71-7.
296-17-761 Classification 71-8.
296-17-762 Classification 71-9.
296-17-765 Classification 72-3.
296-17-766 Classification 72-4.
296-17-772 Classification 73-1.
296-17-773 Classification 73-2.
296-17-777 Classification 73-7.
296-17-850 Experience rating plan—Eligibility and experience period.
296-17-855 Experience modification.
296-17-870 Evaluation of actual losses.
296-17-875 Table I.
296-17-880 Table II.
296-17-885 Table III.
296-17-890 Table IV.
296-17-895 Industrial insurance accident fund base rates and medical aid rates by class of industry.
296-17-904 Definitions.
296-17-905 Dividends.
296-17-907 Dividend declarations and distributions.
296-17-910 Qualifications for employer groups for workers' compensation insurance.
296-17-911 Group dividends.
296-17-912 Retrospective rating plan.
296-17-913 Qualifications for employer participation in a retrospective rating plan.
296-17-914 Retrospective rating formula.
296-17-915 Evaluation of incurred losses dividend and retrospective rating plans.
296-17-916 Retrospective premium adjustments—Due and payable.
296-17-917 Qualifications for employer group participation in retrospective rating plan.
296-17-919 Table I.
296-17-91901 Table II.
296-17-91902 Table III.
296-17-920 Assessment for supplemental pension fund.

DISPOSITION OF SECTIONS FORMERLY CODIFIED IN THIS CHAPTER

296-17-543 Classification 14-3. [Order 73-22, § 296-17-543, filed 11/9/73, effective 1/1/74.] Repealed by 82-24-047 (Order 82-38), filed 11/29/82, effective 1/1/83. Statutory Authority: RCW 51.16.035.

296-17-593 Classification 36-1. [Order 73-22, § 296-17-593, filed 11/9/73, effective 1/1/74.] Repealed by 82-24-047 (Order 82-38), filed 11/29/82, effective 1/1/83. Statutory Authority: RCW 51.16.035.

296-17-601 Classification 37-3. [Order 73-22, § 296-17-601, filed 11/9/73, effective 1/1/74.] Repealed by 82-24-047 (Order 82-38), filed 11/29/82, effective 1/1/83. Statutory Authority: RCW 51.16.035.

296-17-607 Classification 38-3. [Order 73-22, § 296-17-607, filed 11/9/73, effective 1/1/74.] Repealed by 82-24-047 (Order 82-38), filed 11/29/82, effective 1/1/83. Statutory Authority: RCW 51.16.035.

296-17-608 Classification 38-4. [Order 73-22, § 296-17-608, filed 11/9/73, effective 1/1/74.] Repealed by 82-24-047 (Order 82-38), filed 11/29/82, effective 1/1/83. Statutory Authority: RCW 51.16.035.

296-17-609 Classification 38-5. [Order 73-22, § 296-17-609, filed 11/9/73, effective 1/1/74.] Repealed by 82-24-047 (Order 82-38), filed 11/29/82, effective 1/1/83. Statutory Authority: RCW 51.16.035.

296-17-610 Classification 38-6. [Order 73-22, § 296-17-610, filed 11/9/73, effective 1/1/74.] Repealed by 82-24-047 (Order 82-38), filed 11/29/82, effective 1/1/83. Statutory Authority: RCW 51.16.035.

296-17-613 Classification 38-9. [Order 73-22, § 296-17-613, filed 11/9/73, effective 1/1/74.] Repealed by 82-24-047 (Order 82-38), filed 11/29/82, effective 1/1/83. Statutory Authority: RCW 51.16.035.

296-17-617 Classification 39-4. [Order 73-22, § 296-17-617, filed 11/9/73, effective 1/1/74.] Repealed by 82-24-047 (Order 82-38), filed 11/29/82, effective 1/1/83. Statutory Authority: RCW 51.16.035.

296-17-621 Classification 41-2. [Order 73-22, § 296-17-621, filed 11/9/73, effective 1/1/74.] Repealed by 82-24-047 (Order 82-38), filed 11/29/82, effective 1/1/83. Statutory Authority: RCW 51.16.035.

296-17-623 Classification 41-4. [Order 73-22, § 296-17-623, filed 11/9/73, effective 1/1/74.] Repealed by 82-24-047 (Order 82-38), filed 11/29/82, effective 1/1/83. Statutory Authority: RCW 51.16.035.

296-17-624 Classification 41-5. [Order 73-22, § 296-17-624, filed 11/9/73, effective 1/1/74.] Repealed by 82-24-047 (Order 82-38), filed 11/29/82, effective 1/1/83. Statutory Authority: RCW 51.16.035.

296-17-625 Classification 41-6. [Order 73-22, § 296-17-625, filed 11/9/73, effective 1/1/74.] Repealed by 82-24-047 (Order 82-38), filed 11/29/82, effective 1/1/83. Statutory Authority: RCW 51.16.035.

296-17-639 Classification 45-3. [Order 75-38, § 296-17-639, filed 11/24/75, effective 1/1/76; Order 73-22, § 296-17-639, filed 11/9/73, effective 1/1/74.] Repealed by 82-24-047 (Order 82-38), filed 11/29/82, effective 1/1/83. Statutory Authority: RCW 51.16.035.

296-17-664 Classification 51-4. [Order 73-22, § 296-17-664, filed 11/9/73, effective 1/1/74.] Repealed by 82-24-047 (Order 82-38), filed 11/29/82, effective 1/1/83. Statutory Authority: RCW 51.16.035.

296-17-665 Classification 51-5. [Order 73-22, § 296-17-665, filed 11/9/73, effective 1/1/74.] Repealed by 82-24-047 (Order 82-38), filed 11/29/82, effective 1/1/83. Statutory Authority: RCW 51.16.035.

296-17-667 Classification 51-7. [Order 75-38, § 296-17-667, filed 11/24/75, effective 1/1/76; Order 73-22, § 296-17-667, filed 11/9/73, effective 1/1/74.] Repealed by 82-24-047 (Order 82-38), filed 11/29/82, effective 1/1/83. Statutory Authority: RCW 51.16.035.

296-17-671 Classification 52-2. [Order 73-22, § 296-17-671, filed 11/9/73, effective 1/1/74.] Repealed by 82-24-047 (Order 82-38), filed 11/29/82, effective 1/1/83. Statutory Authority: RCW 51.16.035.

296-17-672 Classification 52-3. [Order 73-22, § 296-17-672, filed 11/9/73, effective 1/1/74.] Repealed by 82-24-047 (Order 82-38), filed 11/29/82, effective 1/1/83. Statutory Authority: RCW 51.16.035.

296-17-674 Classification 52-5. [Order 73-22, § 296-17-674, filed 11/9/73, effective 1/1/74.] Repealed by 82-24-

047 (Order 82-38), filed 11/29/82, effective 1/1/83. Statutory Authority: RCW 51.16.035.

296-17-720 Classification 65-7. [Order 73-22, § 296-17-720, filed 11/9/73, effective 1/1/74.] Repealed by 81-24-042 (Order 81-30), filed 11/30/81, effective 1/1/82. Statutory Authority: RCW 51.16.035.

WAC 296-17-350 Minimum premiums--Assumed workman hours. A minimum premium is the lowest amount of premium to be paid by an employer and is also the basis for determining premium computation for workmen for whom an assumed number of workmen hours must be, and hereby, is established:

(1) **Minimum premium.** Except as otherwise provided in this chapter, every employer shall be liable for a premium not less than ten dollars for any calendar quarter regardless of number of workman hours reported.

(2) **Minimum premium for elective adoption.** Any employer having in his employ any person exempt from mandatory coverage under the provisions of RCW 51-.12.020 and whose application for coverage under the elective adoption provisions of RCW 51.12.110 is accepted by the director, shall have a minimum premium rate for such employer's applicable class based upon not less than 40 workman hours for each month, until such time as elective adoption coverage is cancelled: *Provided*, That the minimum premium rate as specified above shall not apply to agricultural workers obtaining coverage under this rule and the elective adoption provisions of RCW 51.12.110.

(3) **Apartment house, apartment hotel, motor court and similar operations.** Resident managers, caretakers or other similar occupations who are employed for irregular periods and whose compensation is for a stipulated sum in money or a substitute for money shall be reported for the purpose of calculation of premiums, each four dollars of compensation in money or a substitute for money shall represent one workman hour: *Provided*, That the employer shall not be required to report in excess of 40 hours per week for each person so employed.

(4) **Commission salesman.** Commission salesmen are to be reported for premium purposes at a minimum of assumed workman hours of not less than eight workman hours a day for part-time employment, or not less than 40 workman hours per week for full-time employment: *Provided*, That the assumed eight workman hours daily for part-time employment will apply only if the employer's books and records are maintained so as to show separately such person's actual record of employment.

(5) **Salaried personnel.** Salaried personnel for the purposes of this chapter means persons whose compensation is not governed by the number of hours devoted to employment for his employer. Employers having salaried personnel in their employ shall for the purpose of premium calculation report assumed workman hours based upon 40 workman hours for each week in which any duties of salaried personnel are performed: *Provided*, That salaried personnel, as defined by the foregoing, who are not regularly and continuously employed by the employer may for the purpose of premium calculation compute premiums in accordance with the piece worker rule, subsection (6) of this section: *Provided further*, The 40 hours per week may be substituted on behalf of all salaried employees by assuming 160 hours per month for each month in which employees are on salary: *Provided further*, That the department may, at its discretion, authorize some other method in assuming workers hours for premium calculating purposes in the case of contract teachers employed by schools.

(6) **Piece workers.** Employees whose compensation is based upon the accomplishment of a number of individual tasks whether computed on the number of pounds, items, pieces, or otherwise, the employer shall for the purpose of premium calculation assume each two dollars of earnings of each employee as representing one workman hour: *Provided*, That if the average rate of compensation for the applicable classification is at least $3.00 but less than $3.50 per workman hour the assumed amount shall be $3.00 of earnings as representing one workman hour, and on a progressive basis, if the average compensation is at least $3.50 but less than $4.00 the assumed amount shall be $3.50 of earnings as representing one workman hour, etc. The records of the department as compiled for the preceding fiscal year ending June 30, shall be the basis for determining the average rate of compensation for each classification: *Provided further*, That if the employer maintains books and records to show separately the hours employed for each workman in his employ engaged in piece work then such actual workman hours shall be reported for the purpose of premium calculation.

(7) **Noncontact sports teams.** All employers having personnel in their employ as defined under WAC 296-17-745 shall for the purpose of premium calculations, report assumed workman hours based upon 40 workman hours for each week in which any duties are performed.

(8) All employers having personnel in their employ as defined under WAC 296-17-739 shall, for the purpose of premium calculations, report assumed workman hours based upon two hours for each mount in each horse race; professional drivers shall report workman hours based upon two hours for each heat or race of any racing event: *Provided*, That any day such personnel do not ride or drive in a race, the premium calculation shall be made by assuming six worker hours for any day in which duties are performed. [Statutory Authority: RCW 51-.16.035. 81-24-042 (Order 81-30), § 296-17-350, filed 11/30/81, effective 1/1/82. Statutory Authority: RCW 51.04.020(1) and 51.16.035. 78-12-043 (Order 78-23), § 296-17-350, filed 11/27/78, effective 1/1/79; Order 77-27, § 296-17-350, filed 11/30/77, effective 1/1/78; Order 77-10, § 296-17-350, filed 5/31/77; Order 76-18, § 296-17-350, filed 5/28/76, effective 7/1/76; Order 75-28, § 296-17-350, filed 8/29/75, effective 10/1/75; Order 74-40, § 296-17-350, filed 11/27/74, effective 1/1/75; Order 73-22, § 296-17-350, filed 11/9/73, effective 1/1/74.]

WAC 296-17-351 Periodic review of cash deposit. The supervisor of industrial insurance through the audit and collection section of the division of industrial insurance will periodically review the cash deposit or bond of

all employers and all new employers or employers resuming operations pursuant to RCW 51.16.110.

The department will cancel the cash deposit or bond having been made by an employer who has been conducting a business or trade and who has been reporting premium payments to the department for at least 12 consecutive calendar quarters: *Provided, however,* The cancellation of the deposit or bond shall be contingent upon:

(1) The initial deposit or bond is deemed by the department as having adequately represented the premiums covering the first three full calendar months of operations.

(2) The employer's quarterly reports and premium payments covering any such 12 consecutive quarterly reporting periods have been made in accordance with the provisions as set forth in Title 51 RCW and in accordance with WAC 296-17-310: *Provided further,* In the event cancellation of the deposit or bond has been made on behalf of any employer and such employer subsequently fails to submit reports and payments, as required, such employer shall, upon request be required to reinstate the deposit or bond. [Statutory Authority: RCW 51.04.020 and Title 51 RCW. 82-10-034 (Order 82-16), § 296-17-351, filed 4/30/82. Statutory Authority: RCW 51.16.035. 80-17-016 (Order 80-23), § 296-17-351, filed 11/13/80, effective 1/1/81. Statutory Authority: RCW 51.04.020(1) and 51.16.035. 78-12-043 (Order 78-23), § 296-17-351, filed 11/27/78, effective 1/1/79; Order 76-36, § 296-17-351, filed 11/30/76; Order 74-29, § 296-17-351, filed 5/29/74, effective 7/1/74.]

WAC 296-17-450 Special agricultural class interpretations. Farming in classifications 48-2 through 48-6, 48-8, 48-9, 73-1, 73-2, and 73-7 will include farm labor by contractors and farm machinery operations by contractors.

Any employee not regularly and continuously employed by an employer in agricultural labor whose cash remuneration paid by or due from any one employer in that calendar year for agricultural labor is less than one hundred fifty dollars is not within the mandatory coverage of Title 51 RCW. The department will consider an agricultural employee as being "regularly and continuously employed" as those terms are used in RCW 51-.12.020, subsection (6) in the case of any employee who as of January 1 of any calendar year is carried on the payroll of the employer and who is employed by the employer in agricultural labor and was carried on the employer's payroll as of December 31 of the preceding calendar year and has exceeded one hundred fifty dollars, of earnings during such preceding calendar year. Coverage for all exempt agricultural employees is available upon request as provided under RCW 51.12.110.

To qualify for a separate rating of ground hand-picking or any other separation of agricultural classes, separate and distinct payroll records of such operations will be required.

If a single establishment or work comprises more than one of classifications 48-2 through 48-6, 48-8, 48-9, 73-1, 73-2, and 73-7 the premiums shall be computed according to the payroll for operations of each classification. The department in its discretion may assess a single rate of premium for an agricultural establishment when a substantial portion of the operation falls within one classification, and in such cases, the entire operation will be required to be reported in such largest classification: *Provided,* That under no circumstances will the hand-picking classification (48-6) apply for the purpose of single rating of an entire establishment. [Statutory Authority: RCW 51.16.035. 82-24-047 (Order 82-38), § 296-17-450, filed 11/29/82, effective 1/1/83. Statutory Authority: RCW 51.04.020(1) and 51.16.035. 78-12-043 (Order 78-23), § 296-17-450, filed 11/27/78, effective 1/1/79; Order 74-40, § 296-17-450, filed 11/27/74, effective 1/1/75; Order 74-29, § 296-17-450, filed 5/29/74, effective 7/1/74; Order 73-22, § 296-17-450, filed 11/9/73, effective 1/1/74.]

WAC 296-17-502 Classification 1-2.

Concrete and asphalt construction, N.O.C. - including concrete sawing, drilling and pumping
Concrete culverts or other types with span of 12 feet or less
See class 52-6 (WAC 296-17-675) for permanent yard operations.
[Statutory Authority: RCW 51.16.035. 82-24-047 (Order 82-38), § 296-17-502, filed 11/29/82, effective 1/1/83; Order 76-36, § 296-17-502, filed 11/30/76; Order 73-22, § 296-17-502, filed 11/9/73, effective 1/1/74.]

WAC 296-17-505 Classification 1-5.

Fence, all types, erection and repair - including wire mesh installation for slope protection
See class 52-6 (WAC 296-17-675) for permanent yard operations.
[Statutory Authority: RCW 51.16.035. 82-24-047 (Order 82-38), § 296-17-505, filed 11/29/82, effective 1/1/83; Order 73-22, § 296-17-505, filed 11/9/73, effective 1/1/74.]

WAC 296-17-506 Classification 1-6.

Tree topping and pruning, N.O.C., includes spraying or fumigating in connection with tree topping, repairing or trimming
See class 52-6 (WAC 296-17-675) for permanent yard operations.
[Statutory Authority: RCW 51.16.035. 82-24-047 (Order 82-38), § 296-17-506, filed 11/29/82, effective 1/1/83; Order 73-22, § 296-17-506, filed 11/9/73, effective 1/1/74.]

WAC 296-17-50602 Classification 1-8.

Ditches and canals, N.O.C.
Sewer construction
Cross country pipelines
See class 52-6 (WAC 296-17-675) for permanent yard operations.

[Statutory Authority: RCW 51.16.035. 82-24-047 (Order 82-38), § 296-17-50602, filed 11/29/82, effective 1/1/83; 80-17-016 (Order 80-23), § 296-17-50602, filed 11/13/80, effective 1/1/81. Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-17-50602, filed 11/30/79, effective 1/1/80.]

WAC 296-17-507 Classification 1-9.

Reinforcing steel installation - placing for concrete construction
Reinforcing steel installation in connection with the construction of tunnels, cofferdams, caissons, dams, bridges, and steel erection shall be assigned to the classification describing the construction with which such reinforcing steel installation is connected
See class 52-6 (WAC 296-17-675) for permanent yard operations.
[Statutory Authority: RCW 51.16.035. 82-24-047 (Order 82-38), § 296-17-507, filed 11/29/82, effective 1/1/83; Order 73-22, § 296-17-507, filed 11/9/73, effective 1/1/74.]

WAC 296-17-50904 Classification 2-6.

Sewage disposal plants construction
See class 52-6 (WAC 296-17-675) for permanent yard operation.
[Statutory Authority: RCW 51.16.035. 82-24-047 (Order 82-38), § 296-17-50904, filed 11/29/82, effective 1/1/83.]

WAC 296-17-511 Classification 3-2.

Brick and slate work, N.O.C.
Masonry, N.O.C., including chimney and fireplace construction
See class 52-6 (WAC 296-17-675) for permanent yard operations.
[Statutory Authority: RCW 51.16.035. 82-24-047 (Order 82-38), § 296-17-511, filed 11/29/82, effective 1/1/83; Order 75-38, § 296-17-511, filed 11/24/75, effective 1/1/76; Order 74-40, § 296-17-511, filed 11/27/74, effective 1/1/75; Order 73-22, § 296-17-511, filed 11/9/73, effective 1/1/74.]

WAC 296-17-512 Classification 3-6.

Plumbing, N.O.C., sewer pipe cleaning
Boilers, N.O.C., installation, service and repair
Sprinkler installation - automatic
Steam pipe, boiler, etc., covering insulation
Boiler scaling and tank erection within buildings will be rated with boilers, N.O.C. installation
Roto rooter service companies will be rated under sewer pipe cleaning
Pump installation or repair (residential)
This class includes shop operations
See class 52-6 (WAC 296-17-675) for permanent yard operations.
[Statutory Authority: RCW 51.16.035. 82-24-047 (Order 82-38), § 296-17-512, filed 11/29/82, effective 1/1/83. Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-17-512, filed 11/30/79, effective 1/1/80; Order 74-40, § 296-17-512, filed 11/27/74, effective 1/1/75; Order 73-22, § 296-17-512, filed 11/9/73, effective 1/1/74.]

WAC 296-17-514 Classification 4-1.

Cleaning, washing, sand blasting buildings, including shop operations. Excludes portable washing and cleaning operations enumerated under class 66-2 (WAC 296-17-724).
[Statutory Authority: RCW 51.16.035. 82-24-047 (Order 82-38), § 296-17-514, filed 11/29/82, effective 1/1/83; 81-24-042 (Order 81-30), § 296-17-514, filed 11/30/81, effective 1/1/82; Order 73-22, § 296-17-514, filed 11/9/73, effective 1/1/74.]

WAC 296-17-518 Classification 5-3.

Chimney cleaning - residential
Chimney cleaning - not residential.
[Statutory Authority: RCW 51.16.035. 82-24-047 (Order 82-38), § 296-17-518, filed 11/29/82, effective 1/1/83; Order 73-22, § 296-17-518, filed 11/9/73, effective 1/1/74.]

WAC 296-17-519 Classification 5-4.

Wallboard taping and texturing
Painting bridges, including incidental preparation work
Painting, decorating or paperhanging, N.O.C., including incidental preparation, including shop
Waterproofing, N.O.C. Excludes roofing or subaqueous work
Painting, coating or cleaning oil or gas storage tanks and beer vats
Painting towers, smokestacks and steel or iron structures
See class 52-6 (WAC 296-17-675) for permanent yard operations.
[Statutory Authority: RCW 51.16.035. 82-24-047 (Order 82-38), § 296-17-519, filed 11/29/82, effective 1/1/83; Order 76-36, § 296-17-519, filed 11/30/76; Order 73-22, § 296-17-519, filed 11/9/73, effective 1/1/74.]

WAC 296-17-520 Classification 5-5.

Construction, erection, alteration or repair of private residences
Construction, erection, alteration or repair of buildings, N.O.C.
Gutters - installation, service or repair - on structures
Glass installation away from shop
Wallboard installation, plastering, stuccoing and lathing
Insulation or soundproofing materials installation, N.O.C.
Fixtures - cabinets, counters, drainboards, mantels, etc. installation
Weather strip installation
Door, door frame, sash, overhead door, siding installation and carpentry, N.O.C.
Elevator door bucks - installation
Fire escapes and awnings - installation, erection, repair and removal outside buildings

Decorative metal shutters – installation, erection and removal – no buntings
Scaffolds, hod hoists, concrete and cement distributing towers, sidewalk bridges and construction elevators, installation or removal
Debris cleaning and removal and building clean–up after construction
All building industry operations, which include all field activities in connection with excavating and backfilling, erection, alteration, repair, or demolishing of any building or buildings, or part thereof or appurtenance thereto. This class will apply to all work performed by the prime building contractor. Work performed by contractors other than the prime contractor is subject to this class, with the exception of the excavating contractors, electrical contractors, plumbing contractors, heating contractors, painting contractors, steel erection contractors, masonry contractors, and concrete contractors. This class excludes a person employing help by day labor to perform work on his own home. See class 48–7 (WAC 296–17–648)
See class 52–6 (WAC 296–17–675) for permanent yard operations.
[Statutory Authority: RCW 51.16.035. 82–24–047 (Order 82–38), § 296–17–520, filed 11/29/82, effective 1/1/83; Order 76–36, § 296–17–520, filed 11/30/76; Order 75–38, § 296–17–520, filed 11/24/75, effective 1/1/76; Order 74–40, § 296–17–520, filed 11/27/74, effective 1/1/75; Order 73–22, § 296–17–520, filed 11/9/73, effective 1/1/74.]

WAC 296–17–52001 Classification 5–6.

Building raising or moving and underpinning
Wrecking or demolition of buildings
See class 52–6 (WAC 296–17–675) for permanent yard operations.
[Statutory Authority: RCW 51.16.035. 82–24–047 (Order 82–38), § 296–17–52001, filed 11/29/82, effective 1/1/83.]

WAC 296–17–52002 Classification 5–7.

Roofwork, all types, construction and repair
See class 52–6 (WAC 296–17–675) for permanent yard operations.
[Statutory Authority: RCW 51.16.035. 82–24–047 (Order 82–38), § 296–17–52002, filed 11/29/82, effective 1/1/83.]

WAC 296–17–521 Classification 5–8.

Erection, maintenance and repair radio, television, water towers and towers, N.O.C.
Smokestacks, structural iron or steel framework, erection, maintenance and repair
Windmills, all types, erection, maintenance and repair, silo erection
Crane or derrick installation
Oil still or refinery construction
Blast furnace and metal burners construction
Exterior tanks – all types – erection
Elevated railway, tram, lift, etc., construction, maintenance and repair
This class includes erection of skeletons for pillars, posts and like columns
This class includes all excavations, foundation work, and includes dismantling, and repairing of above types of structures
See class 52–6 (WAC 296–17–675) for permanent yard operations.
[Statutory Authority: RCW 51.16.035. 82–24–047 (Order 82–38), § 296–17–521, filed 11/29/82, effective 1/1/83; Order 76–36, § 296–17–521, filed 11/30/76; Order 75–38, § 296–17–521, filed 11/24/75, effective 1/1/76; Order 74–40, § 296–17–521, filed 11/27/74, effective 1/1/75; Order 73–22, § 296–17–521, filed 11/9/73, effective 1/1/74.]

WAC 296–17–52101 Classification 5–9.

Overhead transmission lines, including poles or towers, erection, maintenance, repair by contractor
See class 52–6 (WAC 296–17–675) for permanent yard operations.
[Statutory Authority: RCW 51.16.035. 82–24–047 (Order 82–38), § 296–17–52101, filed 11/29/82, effective 1/1/83.]

WAC 296–17–522 Classification 6–1.

Electrical wiring in buildings, and electrical wiring, N.O.C.
Intercom or audio call box, installation, service or repair
Meat slicer or grinder – service and repair
Electrical alarm systems, business machine systems – installation in buildings
Electrical machinery and auxiliary apparatus installation and repair – including incidental wiring
Erection of temporary floodlights – search light operation mounted on and generated by truck
Permanent flood lighting stadiums and parks
Television cable installation in buildings by contractor
See class 52–6 (WAC 296–17–675) for permanent yard operations.
[Statutory Authority: RCW 51.16.035. 82–24–047 (Order 82–38), § 296–17–522, filed 11/29/82, effective 1/1/83; Order 75–38, § 296–17–522, filed 11/24/75, effective 1/1/76; Order 74–40, § 296–17–522, filed 11/27/74, effective 1/1/75; Order 73–22, § 296–17–522, filed 11/9/73, effective 1/1/74.]

WAC 296–17–524 Classification 6–3.

Machinery installation, dismantle and repair and millwright work, N.O.C.
Pump installation or repair, N.O.C.
Engines and gas machines installation and belts, erection of shafting
Dynamos, installation, service and repair including electrical generators and turbines.
[Statutory Authority: RCW 51.16.035. 82–24–047 (Order 82–38), § 296–17–524, filed 11/29/82, effective 1/1/83; Order 75–38, § 296–17–524, filed 11/24/75,

effective 1/1/76; Order 73-22, § 296-17-524, filed 11/9/73, effective 1/1/74.]

WAC 296-17-527 Classification 6-7.

Household appliances electrical installation, service and repair
Television antenna installation and repair
Safes and vaults, installation and removal
Venetian blinds and shades, installation
Advertising display service for stores
Drapes or curtain installation
This class will include installation, service and repair of radio and television receiving sets and two-way radio and radio-television repair.
[Statutory Authority: RCW 51.16.035. 82-24-047 (Order 82-38), § 296-17-527, filed 11/29/82, effective 1/1/83; Order 73-22, § 296-17-527, filed 11/9/73, effective 1/1/74.]

WAC 296-17-534 Classification 10-2.

Sawmills, operation and maintenance
Planing and moulding mills, operation and maintenance
Operations conducted in the woods subject to logging, N.O.C.
See class 50-1 (WAC 296-17-659).
[Statutory Authority: RCW 51.16.035. 82-24-047 (Order 82-38), § 296-17-534, filed 11/29/82, effective 1/1/83; 81-24-042 (Order 81-30), § 296-17-534, filed 11/30/81, effective 1/1/82; 80-17-016 (Order 80-23), § 296-17-534, filed 11/13/80, effective 1/1/81; Order 77-27, § 296-17-534, filed 11/30/77, effective 1/1/78; Order 76-36, § 296-17-534, filed 11/30/76; Order 73-22, § 296-17-534, filed 11/9/73, effective 1/1/74.]

WAC 296-17-53502 Classification 10-5.

Shingle mills, operations and maintenance
Shake mills, operations and maintenance
Operations conducted in the woods
Subject to logging, N.O.C.
See class 50-1 (WAC 296-17-659).
[Statutory Authority: RCW 51.16.035. 81-24-042 (Order 81-30), § 296-17-53502, filed 11/30/81, effective 1/1/82.]

WAC 296-17-53504 Classification 10-7.

Lumber inspectors
Foresters, forest rangers, timber cruisers and surveyors
Log scaling and grading bureaus
Shingle and shake inspection and grading bureaus
Inspection and grading bureaus, N.O.C.
Geophysical exploration, N.O.C., no core drilling
Testing and inspecting of pipe lines - radiographers
Prospectors
X-raying by contractor at industrial plants or construction sites
Rainmaking - not by aircraft.
[Statutory Authority: RCW 51.16.035. 82-24-047 (Order 82-38), § 296-17-53504, filed 11/29/82, effective 1/1/83.]

WAC 296-17-536 Classification 11-1.

Automobile delivery drive away, automobile repossessing
Drivers of sound trucks, street vending vehicles
Delivery by wholesale, combined wholesale and retail stores and distributors, N.O.C.
Delivery companies, deliver parcels and packages, no bulk merchandise
Septic tank and cesspool cleaning, excludes installation or repair
Street sweeping, parking lot sweeping, portable chemical toilets servicing
Anhydrous ammonia delivery
News agents or distributors of magazines, periodicals and telephone books, no retail dealer
Distribution of sample merchandise by vehicle
Armoured car service
This class to include all maintenance and repair of firm's equipment by firm's employees.
[Statutory Authority: RCW 51.16.035. 81-24-042 (Order 81-30), § 296-17-536, filed 11/30/81, effective 1/1/82; Order 77-27, § 296-17-536, filed 11/30/77, effective 1/1/78; Order 75-38, § 296-17-536, filed 11/24/75, effective 1/1/76; Order 74-40, § 296-17-536, filed 11/27/74, effective 1/1/75; Order 73-22, § 296-17-536, filed 11/9/73, effective 1/1/74.]

WAC 296-17-538 Classification 11-3.

Coal merchants, solid fuel yards, excludes operations subject to class 10-4 (WAC 296-17-53501), class 17-2 (WAC 296-17-549), class 17-3 (WAC 296-17-550), class 50-1 (WAC 296-17-659)
Lumber yards, building material dealers, excluding yard operations subject to class 10-2 (WAC 296-17-534)
Monument dealers, N.O.C.
[Statutory Authority: RCW 51.16.035. 82-24-047 (Order 82-38), § 296-17-538, filed 11/29/82, effective 1/1/83; Order 73-22, § 296-17-538, filed 11/9/73, effective 1/1/74.]

WAC 296-17-53801 Classification 11-4.

Automobile or truck wrecking.
[Statutory Authority: RCW 51.16.035. 82-24-047 (Order 82-38), § 296-17-53801, filed 11/29/82, effective 1/1/83.]

WAC 296-17-53803 Classification 11-6.

Tool rental stores.
[Statutory Authority: RCW 51.16.035. 82-24-047 (Order 82-38), § 296-17-53803, filed 11/29/82, effective 1/1/83.]

WAC 296-17-53805 Classification 11-8.

Glass merchants - includes auto glass installation if done by glass merchants, N.O.C.
[Statutory Authority: RCW 51.16.035. 82-24-047 (Order 82-38), § 296-17-53805, filed 11/29/82, effective 1/1/83.]

WAC 296-17-540 Classification 13-3.

Telephone companies, all other employees, operation and maintenance, extension of lines
Telegraph companies, all other employees, operation and maintenance, extension of lines
This class includes new construction and extension of lines by firms subject to this class.
[Statutory Authority: RCW 51.16.035. 82-24-047 (Order 82-38), § 296-17-540, filed 11/29/82, effective 1/1/83; Order 73-22, § 296-17-540, filed 11/9/73, effective 1/1/74.]

WAC 296-17-54101 Classification 13-5.

Television cable companies, operation and maintenance, extension of lines.
[Statutory Authority: RCW 51.16.035. 82-24-047 (Order 82-38), § 296-17-54101, filed 11/29/82, effective 1/1/83.]

WAC 296-17-542 Classification 14-1.

Ambulance services
Taxicab companies
Chauffeurs, N.O.C. – commercial
Escort service
This class includes maintenance and repair of firm's equipment by firm's employees.
[Statutory Authority: RCW 51.16.035. 82-24-047 (Order 82-38), § 296-17-542, filed 11/29/82, effective 1/1/83; Order 73-22, § 296-17-542, filed 11/9/73, effective 1/1/74.]

WAC 296-17-543 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-17-544 Classification 14-4.

Bus or limousine companies, transit systems, contract bus driving
Vessels, ferries, tugs and steamboats operation, N.O.C. including dock employees, not maritime
This class includes maintenance and repair of firm's equipment by firm's employees.
[Statutory Authority: RCW 51.16.035. 82-24-047 (Order 82-38), § 296-17-544, filed 11/29/82, effective 1/1/83; Order 73-22, § 296-17-544, filed 11/9/73, effective 1/1/74.]

WAC 296-17-563 Classification 21-2.

Warehouses – general merchandise. Wholesale dealers to be separately rated. Drivers will be separately rated under class 11-2 (WAC 296-17-537) truckmen, N.O.C.
Collection and receiving stations, and dealers of rags, bottles, paper and metal containers, N.O.C., no junk dealers. Drivers will be separately rated under class 11-2 (WAC 296-17-537) truckmen, N.O.C.
Grocery, fruit or produce distributors, wholesale or combined wholesale and retail. Drivers will be separately rated under class 11-1 (WAC 296-17-536) delivery by combined wholesale and retail stores
Anhydrous ammonia, fertilizer and agricultural chemical dealers. Drivers will be separately rated under class 11-1 (WAC 296-17-536) anhydrous ammonia delivery
Wool or cotton merchants. Drivers will be separately rated under class 11-2 (WAC 296-17-537) truckmen, N.O.C.
All operations, including handling or packaging materials at warehouse.
[Statutory Authority: RCW 51.16.035. 81-24-042 (Order 81-30), § 296-17-563, filed 11/30/81, effective 1/1/82; 80-17-016 (Order 80-23), § 296-17-563, filed 11/13/80, effective 1/1/81; Order 77-27, § 296-17-563, filed 11/30/77, effective 1/1/78; Order 75-38, § 296-17-563, filed 11/24/75, effective 1/1/76; Order 74-40, § 296-17-563, filed 11/27/74, effective 1/1/75; Order 73-22, § 296-17-563, filed 11/9/73, effective 1/1/74.]

WAC 296-17-56401 Classification 21-5.

Beer, ale, wine or soft drink distributors, wholesale or combined wholesale and retail. All operations.
[Statutory Authority: RCW 51.16.035. 81-24-042 (Order 81-30), § 296-17-56401, filed 11/30/81, effective 1/1/82.]

WAC 296-17-568 Classification 29-3.

Excelsior, kindling wood, hog fuel, particle board, lumber re-manufacturing
Fishing pole manufacturing, wood, rattan or willow ware manufacturing
Coffin or casket manufacturing or assembly – wood
Pencil or furniture stock manufacturing
Furniture manufacturing, wood – including assembly
Sash, door or assembled millwork manufacturing
Assembly of other wood products from manufactured parts, N.O.C.
Box or shook, pallet, lath manufacturing, wood
Cabinet shop, barrel stock manufacturing and assembly
Wood products manufacturing and assembly, N.O.C.
Veneer products manufacturing
Pipe or tube manufacturing, wood only
Door, door frames or sash manufacturing – wood covered with metal
Fibre ware manufacturing, N.O.C.
Counter tops manufacturing other than metal
Wooden gun stock manufacturing, woodenware manufacturing, N.O.C.
Sawmill operations to be separately rated under class 10-2 (WAC 296-17-534). Veneer manufacture to be separately rated under class 29-4 (WAC 296-17-569)
Physically separated upholstery departments of firms engaged in furniture, coffin or casket manufacturing, assembly, or finishing, may be separately rated under class 38-8 (WAC 296-17-612), and in accordance with WAC 296-17-410.
[Statutory Authority: RCW 51.16.035. 82-24-047 (Order 82-38), § 296-17-568, filed 11/29/82, effective 1/1/83; 81-24-042 (Order 81-30), § 296-17-568, filed

11/30/81, effective 1/1/82; Order 76-36, § 296-17-568, filed 11/30/76; Order 75-38, § 296-17-568, filed 11/24/75, effective 1/1/76; Order 75-28, § 296-17-568, filed 8/29/75, effective 10/1/75; Order 73-22, § 296-17-568, filed 11/9/73, effective 1/1/74.]

WAC 296-17-57002 Classification 29-8.

Housing, residential, factory-built, shop only
Mobile homes, campers and travel trailers manufacturing - shop only.
[Statutory Authority: RCW 51.16.035. 82-24-047 (Order 82-38), § 296-17-57002, filed 11/29/82, effective 1/1/83.]

WAC 296-17-571 Classification 31-1.

Ready mix concrete dealers - all operations
This class to include any miscellaneous operations made up of tools, equipment and building materials sales which is less than twenty-five percent of the dollar volume of ready mix concrete sales.
[Statutory Authority: RCW 51.16.035. 82-24-047 (Order 82-38), § 296-17-571, filed 11/29/82, effective 1/1/83; Order 75-38, § 296-17-571, filed 11/24/75, effective 1/1/76; Order 73-22, § 296-17-571, filed 11/9/73, effective 1/1/74.]

WAC 296-17-574 Classification 31-4.

Plaster mills and whiting manufacturing, quarrying to be separately rated.
Talc mills and emery works
Asbestos products manufacturing, including spinning or weaving, mica goods manufacturing
Soapstone or soapstone products manufacturing, marble cutting and polishing, slate milling
Stone cutting or polishing, N.O.C., away from quarry
Plasterboard or plaster block manufacturing
Asphalt works, grinding, pulverizing or mixing asphalt
Coating of building materials, N.O.C. - shop operations
Monument dealers who do stonecutting, engraving or sandblasting.
[Statutory Authority: RCW 51.16.035. 82-24-047 (Order 82-38), § 296-17-574, filed 11/29/82, effective 1/1/83; Order 76-36, § 296-17-574, filed 11/30/76; Order 73-22, § 296-17-574, filed 11/9/73, effective 1/1/74.]

WAC 296-17-576 Classification 33-1.

Fish canneries, fish freezing and processing, fish curing
Fish trap operation, oystermen, oyster raising, fish rearing
Oyster, crab, clam, canning or cold packing
Sea foods products, N.O.C., canning or manufacturing
Fish oil manufacturing
Marine life, nonedible, processing
This class excludes diving operations
See class 2-2 (WAC 296-17-509) for divers.
[Statutory Authority: RCW 51.16.035. 81-24-042 (Order 81-30), § 296-17-576, filed 11/30/81, effective 1/1/82. Statutory Authority: RCW 51.04.020(1) and 51.16.035. 78-12-043 (Order 78-23), § 296-17-576, filed 11/27/78, effective 1/1/79; Order 75-38, § 296-17-576, filed 11/24/75, effective 1/1/76; Order 73-22, § 296-17-576, filed 11/9/73, effective 1/1/74.]

WAC 296-17-579 Classification 34-1.

Automobile, truck, mobile home, camper and trailer sales and/or rental agency, including repair shops
Boat dealers, including repair shops
Marinas and boat house operations, including repair shops
Automobile, truck, body and fender repair shops, automobile, truck, paint and upholstery repair
Automobile, truck, repair shops or garages.
[Statutory Authority: RCW 51.16.035. 82-24-047 (Order 82-38), § 296-17-579, filed 11/29/82, effective 1/1/83; Order 75-38, § 296-17-579, filed 11/24/75, effective 1/1/76; Order 73-22, § 296-17-579, filed 11/9/73, effective 1/1/74.]

WAC 296-17-580 Classification 34-2.

Air compressor manufacturing, elevator manufacturing, gear grinding or manufacturing
Printing or bookbinding machinery manufacturing
Pump manufacturing, safe manufacturing, scale manufacturing or repair shop, auto jack manufacturing
Shoe machinery manufacturing, sprinkler head manufacturing, textile machinery manufacturing
Confectioners machinery manufacturing, precision machined parts, N.O.C., manufacturing
Machine shops, N.O.C., including mobile shops, tool sharpening
Power saw, lawn and garden equipment and small motor repair, N.O.C.
Furnace, heater or radiator manufacturing
Saw manufacturing
Heat treating metal
Nut, bolt, screw, nail, tack, rivet, eyelet, spike and needle manufacturing, N.O.C.
Abrasive wheel manufacturing
Welding or cutting, N.O.C.
Lead burning, metal spraying - copper
Automobile, truck, tractor radiator manufacturing and repair shops
Coppersmithing, shop
Office machinery manufacturing, N.O.C., cash register and sewing machine manufacturing
Small arms, speedometer and carburetor manufacturing
Sewing machine, commercial - repair and rebuild
Tool manufacturing, not hot forming or stamping, die manufacturing - ferrous
Auto body manufacturing - truck, trailer, bus body manufacturing, travel trailer body repair
Tool manufacturing, machine finishing
Auto or truck parts, machining or rebuild not in vehicle
Auto or truck engine manufacturing, aircraft engine manufacturing or rebuild, N.O.C.
Bed spring or wire mattress manufacturing
Valve manufacturing
Battery manufacturing

Auto or motorcycle manufacturing or assembly.
[Statutory Authority: RCW 51.16.035. 82-24-047 (Order 82-38), § 296-17-580, filed 11/29/82, effective 1/1/83; 81-24-042 (Order 81-30), § 296-17-580, filed 11/30/81, effective 1/1/82. Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-17-580, filed 11/30/79, effective 1/1/80; Order 76-36, § 296-17-580, filed 11/30/76; Order 75-38, § 296-17-580, filed 11/24/75, effective 1/1/76; Order 73-22, § 296-17-580, filed 11/9/73, effective 1/1/74.]

WAC 296-17-582 Classification 34-4.

Cans manufacturing
Galvanized iron works, manufacturing – not structural
Hardware manufacturing, N.O.C.
Metal stamping, including plating and polishing
Sign manufacturing other than wood – no installation
Metal goods manufacturing, N.O.C., from material lighter than 9 gauge
Aluminum ware manufacturing – from sheet aluminum
Coffin-casket manufacturing or assemble, other than wood
Awning manufacturing – metal – no installation
Furniture, bedstead, shower-door, showcases – not wood – manufacturing
Stove manufacturing, water heater assembly
Electric or gas lighting fixtures, lampshades or lantern manufacturing – metal
Brass or copper goods manufacturing
Window, sash or door manufacturing – aluminum
Auto parts manufacturing, miscellaneous stamped parts
Ski manufacturing and toboggan manufacturing other than wood.
[Statutory Authority: RCW 51.16.035. 81-24-042 (Order 81-30), § 296-17-582, filed 11/30/81, effective 1/1/82; 80-17-016 (Order 80-23), § 296-17-582, filed 11/13/80, effective 1/1/81; Order 75-38, § 296-17-582, filed 11/24/75, effective 1/1/76; Order 73-22, § 296-17-582, filed 11/9/73, effective 1/1/74.]

WAC 296-17-58201 Classification 34-5.

Aircraft parts manufacturing, N.O.C.
For the purpose of this rule; aircraft parts means the component parts making the aircraft operative and becoming part of the aircraft when being manufactured by the aircraft manufacturing company.
[Statutory Authority: RCW 51.16.035. 81-24-042 (Order 81-30), § 296-17-58201, filed 11/30/81, effective 1/1/82. Statutory Authority: RCW 51.04.020(1) and 51.16.035. 78-12-043 (Order 78-23), § 296-17-58201, filed 11/27/78, effective 1/1/79.]

WAC 296-17-583 Classification 34-6.

Auto or truck service stations, N.O.C.
Auto or truck car washes. Excludes portable washes. See class 66-2 (WAC 296-17-724)
Auto truck storage garages – no repair.
[Statutory Authority: RCW 51.16.035. 82-24-047 (Order 82-38), § 296-17-583, filed 11/29/82, effective 1/1/83; 81-24-042 (Order 81-30), § 296-17-583, filed 11/30/81, effective 1/1/82. Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-17-583, filed 11/30/79, effective 1/1/80; Order 73-22, § 296-17-583, filed 11/9/73, effective 1/1/74.]

WAC 296-17-586 Classification 35-1.

Brick or clay products manufacturing, N.O.C.
Refractory products, fireproofing tile, flue lining and roofing tile manufacturing
Sewer tile, drainage tile and tile, N.O.C., manufacturing
Fireclay products manufacturing, foundry crucible
Briquettes manufacturing, peat fuel manufacturing
This class does not apply to the production of raw materials for use in the manufacture of the above articles.
[Statutory Authority: RCW 51.16.035. 82-24-047 (Order 82-38), § 296-17-586, filed 11/29/82, effective 1/1/83; Order 73-22, § 296-17-586, filed 11/9/73, effective 1/1/74.]

WAC 296-17-587 Classification 35-3.

Potteries, glazed or porcelain, earthenware manufacturing
Chinaware, tableware, decorative or architectural terra cotta manufacturing
Decorative tile, clay tobacco pipes, manufacturing
Glassware manufacturing, N.O.C.
Glass manufacturing, N.O.C.
Plastic feather or flower manufacturing
Agate or enamel ware manufacturing
Plaster statuary or ornament manufacturing – relief map manufacturing
Phonograph record manufacturing
Mirror, glass sign manufacturing, etching or frosting glass
This class does not apply to the production of raw materials for use in the manufacturing of the above articles.
[Statutory Authority: RCW 51.16.035. 82-24-047 (Order 82-38), § 296-17-587, filed 11/29/82, effective 1/1/83; Order 73-22, § 296-17-587, filed 11/9/73, effective 1/1/74.]

WAC 296-17-593 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-17-594 Classification 36-2.

Electronic products manufacturing; resistors, capacitors and relays manufacturing
Telephone, telegraph or radio apparatus manufacturing, N.O.C.
Dental laboratories
Jewelry manufacturing or engraving
Electronic parts assembly
Electrical cordset radio and ignition assembly
Watch manufacturing
Motion picture projectors and camera repair
Fishing tackle manufacturing, N.O.C., including assembly
Instrument manufacturing, scientific or professional

Sound recording equipment, thermometer and steam gauge manufacturing
Incandescent lamp manufacturing, electric tube or transistor manufacturing
Tag, button, zipper or fastener manufacturing, bottle cap manufacturing
Silverware manufacturing, watch case manufacturing
Magnetic tape manufacturing
This class does not apply to the production of raw material for use in the manufacturing of the above articles
All operations.
[Statutory Authority: RCW 51.16.035. 82-24-047 (Order 82-38), § 296-17-594, filed 11/29/82, effective 1/1/83; 81-24-042 (Order 81-30), § 296-17-594, filed 11/30/81, effective 1/1/82; 80-17-016 (Order 80-23), § 296-17-594, filed 11/13/80, effective 1/1/81. Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-17-594, filed 11/30/79, effective 1/1/80; Order 75-38, § 296-17-594, filed 11/24/75, effective 1/1/76; Order 73-22, § 296-17-594, filed 11/9/73, effective 1/1/74.]

WAC 296-17-595 Classification 36-3.

Metal plating or polishing, rustproofing – acid bath, N.O.C.
Electroplating and de-tinning, N.O.C.
[Statutory Authority: RCW 51.16.035. 81-24-042 (Order 81-30), § 296-17-595, filed 11/30/81, effective 1/1/82; Order 73-22, § 296-17-595, filed 11/9/73, effective 1/1/74.]

WAC 296-17-596 Classification 36-4.

Galvanizing or tinning – not electrolytic, N.O.C.
Re-tinning, rustproofing – galvanizing or hot bath, N.O.C.
[Statutory Authority: RCW 51.16.035. 81-24-042 (Order 81-30), § 296-17-596, filed 11/30/81, effective 1/1/82; Order 73-22, § 296-17-596, filed 11/9/73, effective 1/1/74.]

WAC 296-17-599 Classification 37-1.

Ammonia, nitrogen and ammonium nitrate manufacturing
Nitrate recovery from x-ray and photo films
Manufacturing dye and chemicals for tinting candles
Chemical manufacturing, N.O.C., by nitration, alkylation, oxidation, etc. process. This classification includes the manufacturing of chemicals involving, but not limited to, the following chemical processes: nitration, alkylation, distillation, reduction, oxidation, sulphonation, compression of gasses, halogenation and amidation
Chemical mixing, blending and repackaging only – no manufacturing of ingredients
Cosmetics manufacturing, no manufacturing of ingredients
Drug, medicine or pharmaceutical preparation manufacturing, no manufacturing of ingredients
Oxygen or hydrogen manufacturing, acetylene gas or carbonic acid gas manufacturing
Alcohol manufacturing, distilling, N.O.C.
Polish, dressing, ink or mucilage manufacturing
Extract manufacturing, including distillation of essential oils
Perfumery manufacturing, including distillation of essential oils
Flavoring manufacturing, including distillation of essential oils
Mint distilling
Salt, borax or potash producing or refining
Serum, anti-toxin or virus manufacturing
Paint, varnish or lacquer manufacturing
Putty manufacturing, synthetic resin manufacturing
Acid manufacturing
Candle, crayon and paste manufacturing
Isinglass manufacturing.
[Statutory Authority: RCW 51.16.035. 82-24-047 (Order 82-38), § 296-17-599, filed 11/29/82, effective 1/1/83. Statutory Authority: RCW 51.04.020(1) and 51.16.035. 78-12-043 (Order 78-23), § 296-17-599, filed 11/27/78, effective 1/1/79; Order 74-40, § 296-17-599, filed 11/27/74, effective 1/1/75; Order 73-22, § 296-17-599, filed 11/9/73, effective 1/1/74.]

WAC 296-17-601 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-17-604 Classification 37-8.

Linoleum, oil cloth or imitation leather manufacturing
Broom and brush manufacturing, or assembly
Cordage, rope or twine manufacturing
Match manufacturing
Cotton cord or cotton twine manufacturing
Textile manufacturing, N.O.C.
Taxidermists
Parachutes, suspenders, fur goods and bandages manufacturing
Life preservers and canvas goods manufacturing, N.O.C.
Braid, net, plush and velvet, thread, webbing and yarn manufacturing
Spinning or weaving – natural or synthetic fibres, N.O.C.
Pillow, quilt or cushion manufacturing
Mattress or box springs manufacturing – no manufacturing wire springs or excelsior
Abrasive cloth preparation
Bag or sack manufacturing or renovating – cotton, burlap or gunny
Carpet or rug manufacturing
Fire hose manufacturing from linen thread
Cotton batting, wadding or waste manufacturing
Felting manufacturing, shoddy manufacturing
Wool combing or scouring
Fishing rod wrappings, manufacturing
Awning, tent, sail or sleeping bag manufacturing.
[Statutory Authority: RCW 51.16.035. 82-24-047 (Order 82-38), § 296-17-604, filed 11/29/82, effective 1/1/83; Order 73-22, § 296-17-604, filed 11/9/73, effective 1/1/74.]

WAC 296-17-605 Classification 38-1.

Glove manufacturing, leather, belting manufacturing, leather
Leather goods manufacturing, N.O.C.
Boot or shoe manufacturing or repair, N.O.C.
Leather embossing
Shoe stock manufacturing, gasket manufacturing – not metal or asbestos.
[Statutory Authority: RCW 51.16.035. 82-24-047 (Order 82-38), § 296-17-605, filed 11/29/82, effective 1/1/83; Order 75-38, § 296-17-605, filed 11/24/75, effective 1/1/76; Order 73-22, § 296-17-605, filed 11/9/73, effective 1/1/74.]

WAC 296-17-606 Classification 38-2.

Lace, embroidery, cloth hats, umbrella and draperies manufacturing
Clothing manufacturing, N.O.C.
Gloves manufacturing, N.O.C.
Millinery manufacturing, artificial feather or flower manufacturing, N.O.C.
Wig making
Hosiery manufacturing
Fabric coating, impregnating or waterproofing, N.O.C., textiles bleaching, dyeing or finishing, new goods, not garments
Cloth printing
Dressmaking or tailoring.
[Statutory Authority: RCW 51.16.035. 82-24-047 (Order 82-38), § 296-17-606, filed 11/29/82, effective 1/1/83; Order 75-38, § 296-17-606, filed 11/24/75, effective 1/1/76; Order 73-22, § 296-17-606, filed 11/9/73, effective 1/1/74.]

WAC 296-17-607 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-17-608 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-17-609 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-17-610 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-17-613 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-17-615 Classification 39-2.

Fruit and vegetable cannery and freezer operations
Fruit and vegetable evaporating, preserving or dehydrating
Fruit syrup manufacturing, fruit juice manufacturing, jam or jelly manufacturing, cider manufacturing
Pea vining
Corn products, chocolate and cocoa manufacturing
Baking powder, dextrine, glucose, starch and yeast manufacturing
Nut shelling, egg breaking, coconut shredding and peanut handling
Food sundries manufacturing and food processing, N.O.C.
Pickle manufacturing, sauerkraut manufacturing
Pet food manufacturing
Butter substitutes manufacturing
Breakfast food manufacturing
Poultry canning and canneries, N.O.C.
Vegetable oil manufacturing.
[Statutory Authority: RCW 51.16.035. 82-24-047 (Order 82-38), § 296-17-615, filed 11/29/82, effective 1/1/83; Order 75-38, § 296-17-615, filed 11/24/75, effective 1/1/76; Order 74-40, § 296-17-615, filed 11/27/74, effective 1/1/75; Order 73-22, § 296-17-615, filed 11/9/73, effective 1/1/74.]

WAC 296-17-617 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-17-618 Classification 39-5.

Restaurants and taverns
Food, drink, candy, etc. concessionaires at parks, tracks and exhibitions including vending concessionaires dispensing food, drink, candy, etc. at ball parks, race tracks, theatres and exhibitions. This classification is not applicable to street vendors who shall be rated under class 11-1 (WAC 296-17-536)
Commissaries and restaurants with construction, erection, logging or mine operations
Eating establishments, N.O.C., including public lunch counters in stores, and doughnut shops.
[Statutory Authority: RCW 51.16.035. 82-24-047 (Order 82-38), § 296-17-618, filed 11/29/82, effective 1/1/83; Order 75-38, § 296-17-618, filed 11/24/75, effective 1/1/76; Order 74-40, § 296-17-618, filed 11/27/74, effective 1/1/75; Order 73-22, § 296-17-618, filed 11/9/73, effective 1/1/74.]

WAC 296-17-61804 Classification 39-9.

Caterers.
[Statutory Authority: RCW 51.16.035. 82-24-047 (Order 82-38), § 296-17-61804, filed 11/29/82, effective 1/1/83.]

WAC 296-17-620 Classification 41-1.

Printing, lithography, engraving, map printing, N.O.C.
Rubber stamp manufacturing and assembling
Bookbinding
Photoengraving
Linotype or hand composition
Electrotyping.
[Statutory Authority: RCW 51.16.035. 82-24-047 (Order 82-38), § 296-17-620, filed 11/29/82, effective 1/1/83; 81-24-042 (Order 81-30), § 296-17-620, filed 11/30/81, effective 1/1/82. Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-17-620, filed 11/30/79, effective 1/1/80; Order 75-38, § 296-17-620, filed 11/24/75, effective 1/1/76; Order 73-22, § 296-17-620, filed 11/9/73, effective 1/1/74.]

WAC 296-17-621 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-17-623 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-17-624 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-17-625 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-17-627 Classification 41-8.

Letter service shops and mailing or addressing companies, includes clerical office employees and salesmen.
[Statutory Authority: RCW 51.16.035. 81-24-042 (Order 81-30), § 296-17-627, filed 11/30/81, effective 1/1/82; Order 73-22, § 296-17-627, filed 11/9/73, effective 1/1/74.]

WAC 296-17-635 Classification 44-1.

Cold storage plants, lockers operation.
[Statutory Authority: RCW 51.16.035. 82-24-047 (Order 82-38), § 296-17-635, filed 11/29/82, effective 1/1/83; Order 73-22, § 296-17-635, filed 11/9/73, effective 1/1/74.]

WAC 296-17-63501 Classification 44-2.

Ice manufacturing, artificial
Ice harvesting
Ice dealers.
[Statutory Authority: RCW 51.16.035. 82-24-047 (Order 82-38), § 296-17-63501, filed 11/29/82, effective 1/1/83.]

WAC 296-17-639 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-17-640 Classification 45-4.

Theatres, all operations, including clerical office and salesmen, excluding players, entertainers, musicians
This class includes managers, stage hands, box office employees, ushers, motion picture operators and snack bar employees.
[Statutory Authority: RCW 51.16.035. 82-24-047 (Order 82-38), § 296-17-640, filed 11/29/82, effective 1/1/83; Order 73-22, § 296-17-640, filed 11/9/73, effective 1/1/74.]

WAC 296-17-644 Classification 48-3.

Farms, N.O.C.
Orchards and hop farms - applies to all tree crops, deciduous and fruits, nuts, and shall include all acreage devoted to the raising of such crops
This class includes all operations incidental to the enterprises described above.
[Statutory Authority: RCW 51.16.035. 82-24-047 (Order 82-38), § 296-17-644, filed 11/29/82, effective 1/1/83; 81-24-042 (Order 81-30), § 296-17-644, filed 11/30/81, effective 1/1/82; Order 75-38, § 296-17-644, filed 11/24/75, effective 1/1/76; Order 74-40, § 296-17-644, filed 11/27/74, effective 1/1/75; Order 73-22, § 296-17-644, filed 11/9/73, effective 1/1/74.]

WAC 296-17-64901 Classification 48-9.

Greenhouses, N.O.C.
Flowers - field growing (excludes bulb raising)
Mushroom raising
Sprouts growing for food, all operations.
[Statutory Authority: RCW 51.16.035. 82-24-047 (Order 82-38), § 296-17-64901, filed 11/29/82, effective 1/1/83. Statutory Authority: RCW 51.04.020(1) and 51.16.035. 78-12-043 (Order 78-23), § 296-17-64901, filed 11/27/78, effective 1/1/79.]

WAC 296-17-650 Classification 49-1.

Consulting engineering and architectural firms
Oil or gas geologists or scouts
Lease buyers performing work similar to oil geologists
Geologists, N.O.C.
[Statutory Authority: RCW 51.16.035. 82-24-047 (Order 82-38), § 296-17-650, filed 11/29/82, effective 1/1/83; Order 75-38, § 296-17-650, filed 11/24/75, effective 1/1/76; Order 74-40, § 296-17-650, filed 11/27/74, effective 1/1/75; Order 73-22, § 296-17-650, filed 11/9/73, effective 1/1/74.]

WAC 296-17-652 Classification 49-3.

Marine appraising
Boiler inspecting, N.O.C.
Elevator inspecting, no service
Inspection for insurance or valuation.
[Statutory Authority: RCW 51.16.035. 81-24-042 (Order 81-30), § 296-17-652, filed 11/30/81, effective 1/1/82; 80-17-016 (Order 80-23), § 296-17-652, filed 11/13/80, effective 1/1/81; Order 73-22, § 296-17-652, filed 11/9/73, effective 1/1/74.]

WAC 296-17-654 Classification 49-5.

Hotels, all operations - excluding restaurant and bar employees
Motels, all operations - excluding restaurant and bar employees
Apartment houses, all operations
Building management - all operations
Hotel and motel desk clerks with no other duties will be assigned class 49-4 (WAC 296-17-653).
[Statutory Authority: RCW 51.16.035. 81-24-042 (Order 81-30), § 296-17-654, filed 11/30/81, effective 1/1/82; Order 76-36, § 296-17-654, filed 11/30/76; Order 73-22, § 296-17-654, filed 11/9/73, effective 1/1/74.]

WAC 296-17-66002 Classification 50-4.

Tree planting and pre-commercial tree thinning—forestry type operations
Excludes any operations subject to class 50-1 (WAC 296-17-659).

[Statutory Authority: RCW 51.16.035. 81-24-042 (Order 81-30), § 296-17-66002, filed 11/30/81, effective 1/1/82.]

WAC 296-17-664 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-17-665 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-17-666 Classification 51-6.

Blacksmithing, spring manufacturing, not wire spring, auto bumper manufacturing
Tool forging, hot forming or stamping
Forging works, drop or machine
Chain manufacturing, forged.
[Statutory Authority: RCW 51.16.035. 82-24-047 (Order 82-38), § 296-17-666, filed 11/29/82, effective 1/1/83; Order 73-22, § 296-17-666, filed 11/9/73, effective 1/1/74.]

WAC 296-17-667 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-17-668 Classification 51-8.

Cable or wire rope drawing and manufacturing
Cable or wire rope manufacturing, no drawing
Cable or wire insulation or covering.
[Statutory Authority: RCW 51.16.035. 82-24-047 (Order 82-38), § 296-17-668, filed 11/29/82, effective 1/1/83; Order 73-22, § 296-17-668, filed 11/9/73, effective 1/1/74.]

WAC 296-17-670 Classification 52-1.

Electric power or transmission equipment
Electrical toasters, frying pans, and wire harnesses manufacturing
Vacuum cleaners and electrical appliances manufacturing, N.O.C.
Electric motors, generators, convertors, solenoids and servomotors manufacturing and repair.
[Statutory Authority: RCW 51.16.035. 82-24-047 (Order 82-38), § 296-17-670, filed 11/29/82, effective 1/1/83; Order 73-22, § 296-17-670, filed 11/9/73, effective 1/1/74.]

WAC 296-17-671 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-17-672 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-17-674 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-17-675 Classification 52-6.

Permanent yard or shop for maintenance or storage of firm's equipment or material
This class to be assigned only to operations incidental to classes 1-1 (WAC 296-17-501), 1-2 (WAC 296-17-502), 1-3 (WAC 296-17-503), 1-4 (WAC 296-17-504), 1-5 (WAC 296-17-505), 1-6 (WAC 296-17-506), 1-7 (WAC 296-17-50601), 1-8 (WAC 296-17-50602), 1-9 (WAC 296-17-507), 2-1 (WAC 296-17-508), 2-2 (WAC 296-17-509), 2-6 (WAC 296-17-50904), 3-2 (WAC 296-17-511), 3-6 (WAC 296-17-512), 5-4 (WAC 296-17-519), 5-5 (WAC 296-17-520), 5-6 (WAC 296-17-52001), 5-7 (WAC 296-17-52002), 5-8 (WAC 296-17-521), 5-9 (WAC 296-17-52101), 6-1 (WAC 296-17-522), 50-1 (WAC 296-17-659), 50-3 (WAC 296-17-66001) and 69-2 (WAC 296-17-747) and is applicable only to a permanent yard or shop maintained by the employer for the storage of material, or the storage and maintenance of equipment. This class is applicable only to those employees regularly assigned to the shop or yard, and whose duties are solely incidental to the storage, repair or maintenance of the employer's equipment or material. No employee having any other duties during his shift or work day will be rated in this class.
[Statutory Authority: RCW 51.16.035. 82-24-047 (Order 82-38), § 296-17-675, filed 11/29/82, effective 1/1/83; 80-17-016 (Order 80-23), § 296-17-675, filed 11/13/80, effective 1/1/81. Statutory Authority: RCW 51.04.020(1) and 51.16.035. 78-12-043 (Order 78-23), § 296-17-675, filed 11/27/78, effective 1/1/79; Order 76-36, § 296-17-675, filed 11/30/76; Order 73-22, § 296-17-675, filed 11/9/73, effective 1/1/74.]

WAC 296-17-676 Classification 52-7.

Bowling alleys
Skating rinks—ice or roller
All operations including food and beverage operations.
[Statutory Authority: RCW 51.16.035. 81-24-042 (Order 81-30), § 296-17-676, filed 11/30/81, effective 1/1/82; Order 73-22, § 296-17-676, filed 11/9/73, effective 1/1/74.]

WAC 296-17-67601 Classification 52-8.

Iron or steel works, shop, fabricate or assemble structural iron or steel
Brass, bronze, iron-ornamental - shop fabricating, assembly and manufacturing
Iron works - shop - fabricate, assemble or manufacture nonstructural iron or steel
Iron works - shop - manufacturing railings, staircases, fire escapes, etc.
[Statutory Authority: RCW 51.16.035. 82-24-047 (Order 82-38), § 296-17-67601, filed 11/29/82, effective 1/1/83.]

WAC 296-17-67602 Classification 52-9.

Boilermaking, tank building (shop)
Metal goods manufacturing, N.O.C., from material 9 gauge or heavier.
[Statutory Authority: RCW 51.16.035. 82-24-047 (Order 82-38), § 296-17-67602, filed 11/29/82, effective 1/1/83.]

WAC 296-17-677 Classification 53-1.

Accounting or bookkeeping firms
Law firms
Credit bureaus
Employment agencies
Court reporting firms
Management analyst firms
Travel agencies
All operations including clerical office and salesmen.
[Statutory Authority: RCW 51.16.035. 82-24-047 (Order 82-38), § 296-17-677, filed 11/29/82, effective 1/1/83. Statutory Authority: RCW 51.04.020(1) and 51.16.035. 78-12-043 (Order 78-23), § 296-17-677, filed 11/27/78, effective 1/1/79; Order 75-38, § 296-17-677, filed 11/24/75, effective 1/1/76; Order 73-22, § 296-17-677, filed 11/9/73, effective 1/1/74.]

WAC 296-17-684 Classification 61-7.

Veterinary hospitals or clinics
Humane societies
Dog pounds
Animal shelters
Dog grooming parlors
All operations including clerical office and salesmen.
[Statutory Authority: RCW 51.16.035. 81-24-042 (Order 81-30), § 296-17-684, filed 11/30/81, effective 1/1/82; Order 73-22, § 296-17-684, filed 11/9/73, effective 1/1/74.]

WAC 296-17-685 Classification 61-8.

Convalescent or nursing homes
Rest homes
Homes for the aged
All operations
This class includes convalescent or nursing homes, rest homes or homes for the aged required to provide nursing care for the residents.
[Statutory Authority: RCW 51.16.035. 82-24-047 (Order 82-38), § 296-17-685, filed 11/29/82, effective 1/1/83; 81-24-042 (Order 81-30), § 296-17-685, filed 11/30/81, effective 1/1/82; Order 75-38, § 296-17-685, filed 11/24/75, effective 1/1/76; Order 73-22, § 296-17-685, filed 11/9/73, effective 1/1/74.]

WAC 296-17-686 Classification 61-9.

Physicians and surgeons, N.O.C.
Dentists, N.O.C.
Chiropractors, N.O.C.
Osteopaths, N.O.C.
Naturopaths, N.O.C.
Podiatrists, N.O.C.
Medical clinics, N.O.C.
Dental clinics, N.O.C.
Physical therapists, N.O.C.
Optometrists, N.O.C.
All operations including clerical office and salesmen.
[Statutory Authority: RCW 51.16.035. 81-24-042 (Order 81-30), § 296-17-686, filed 11/30/81, effective 1/1/82; Order 73-22, § 296-17-686, filed 11/9/73, effective 1/1/74.]

WAC 296-17-689 Classification 62-3.

YMCA/YWCA institutions
Boys or girls clubs
Excludes camp operations
All operations including clerical office and salesmen.
[Statutory Authority: RCW 51.16.035. 81-24-042 (Order 81-30), § 296-17-689, filed 11/30/81, effective 1/1/82; Order 75-38, § 296-17-689, filed 11/24/75, effective 1/1/76; Order 73-22, § 296-17-689, filed 11/9/73, effective 1/1/74.]

WAC 296-17-690 Classification 62-4.

Baths, N.O.C.
Health clubs
Exercise or health institutes
Gymnasiums
All operations including clerical office and salesmen.
[Statutory Authority: RCW 51.16.035. 81-24-042 (Order 81-30), § 296-17-690, filed 11/30/81, effective 1/1/82; Order 73-22, § 296-17-690, filed 11/9/73, effective 1/1/74.]

WAC 296-17-694 Classification 62-8.

Amusement parks
Ranges – archery, ball, dart, golf
Caves or caverns operation for exhibition purposes – including rides, ticket sellers, gate attendants
Concessions – boats in parks
Fairs
Shows – animal
Shows – flower, art
Miniature golf courses
Kiddie rides – permanent locations
Race tracks
Shooting galleries, air rifle – no firearms
Care, custody and maintenance
All operations including food and beverage operations.
[Statutory Authority: RCW 51.16.035. 81-24-042 (Order 81-30), § 296-17-694, filed 11/30/81, effective 1/1/82; Order 76-36, § 296-17-694, filed 11/30/76; Order 73-22, § 296-17-694, filed 11/9/73, effective 1/1/74.]

WAC 296-17-695 Classification 62-9.

Boy/Girl Scout Council Camp employees
Trailer/Mobile home parks or camps
Resorts or camp grounds
Dude ranches – not cattle ranches
Bath houses – beach
Church camps
Swimming pools – public
YMCA/YWCA camp employees
Camp operations, recreational or educational, N.O.C.
All operations including clerical office and salesmen.
[Statutory Authority: RCW 51.16.035. 81-24-042 (Order 81-30), § 296-17-695, filed 11/30/81, effective 1/1/82; Order 76-36, § 296-17-695, filed 11/30/76;

Order 73-22, § 296-17-695, filed 11/9/73, effective 1/1/74.]

WAC 296-17-696 Classification 63-1.

Automobile salesmen
Truck salesmen
Camper salesmen
Trailer or mobile home salesmen
Motorcycle salesmen
Pleasurecraft salesmen – no aircraft
Instructors – driving school.
[Statutory Authority: RCW 51.16.035. 82-24-047 (Order 82-38), § 296-17-696, filed 11/29/82, effective 1/1/83; Order 73-22, § 296-17-696, filed 11/9/73, effective 1/1/74.]

WAC 296-17-700 Classification 63-5.

Clothing stores – retail
Dry goods stores – retail
Shoe stores – retail
Concessions for hat and coat checking
All operations including clerical office and salesmen.
[Statutory Authority: RCW 51.16.035. 81-24-042 (Order 81-30), § 296-17-700, filed 11/30/81, effective 1/1/82; Order 73-22, § 296-17-700, filed 11/9/73, effective 1/1/74.]

WAC 296-17-703 Classification 63-8.

Jewelry stores – wholesale/retail, watch repair
Hearing-aid stores – wholesale/retail
Optical stores, no lens grinding – wholesale/retail
All operations including clerical office and salesmen.
[Statutory Authority: RCW 51.16.035. 81-24-042 (Order 81-30), § 296-17-703, filed 11/30/81, effective 1/1/82; Order 73-22, § 296-17-703, filed 11/9/73, effective 1/1/74.]

WAC 296-17-704 Classification 63-9.

Hardware stores – wholesale/retail
Gunsmithing
Bicycle stores – wholesale or retail
Electrical hardware dealers – wholesale/retail
Garden supply stores – wholesale or retail
Locksmiths
Auto accessory or replacement parts stores, wholesale or retail – excludes repair
All operations including clerical office and salesmen.
[Statutory Authority: RCW 51.16.035. 82-24-047 (Order 82-38), § 296-17-704, filed 11/29/82, effective 1/1/83; Order 76-36, § 296-17-704, filed 11/30/76; Order 75-38, § 296-17-704, filed 11/24/75, effective 1/1/76; Order 73-22, § 296-17-704, filed 11/9/73, effective 1/1/74.]

WAC 296-17-706 Classification 64-2.

Grocery and meat stores, combined – retail including clerical office and salesmen
Lunch counters and restaurant operations to be separately rated.
[Statutory Authority: RCW 51.16.035. 81-24-042 (Order 81-30), § 296-17-706, filed 11/30/81, effective 1/1/82; Order 73-22, § 296-17-706, filed 11/9/73, effective 1/1/74.]

WAC 296-17-707 Classification 64-3.

Grocery stores – retail, no fresh meat cutting
Coffee, tea or spice stores – retail
Dairy products stores – retail
Delicatessens – retail, no fresh meat
Fruit or vegetable stores – retail
All operations including clerical office and salesmen
Lunch counters and restaurant operations to be separately rated.
[Statutory Authority: RCW 51.16.035. 81-24-042 (Order 81-30), § 296-17-707, filed 11/30/81, effective 1/1/82; Order 73-22, § 296-17-707, filed 11/9/73, effective 1/1/74.]

WAC 296-17-708 Classification 64-4.

Florists stores – retail
Christmas tree sales – from lot
All operations including clerical office and salesmen.
[Statutory Authority: RCW 51.16.035. 81-24-042 (Order 81-30), § 296-17-708, filed 11/30/81, effective 1/1/82; Order 73-22, § 296-17-708, filed 11/9/73, effective 1/1/74.]

WAC 296-17-717 Classification 65-4.

Stores – welfare – all operations including clerical office and salesmen
This classification includes collecting, conditioning and resale of used donated articles of the household type (Goodwill – Salvation Army type stores).
[Statutory Authority: RCW 51.16.035. 81-24-042 (Order 81-30), § 296-17-717, filed 11/30/81, effective 1/1/82; Order 73-22, § 296-17-717, filed 11/9/73, effective 1/1/74.]

WAC 296-17-719 Classification 65-6.

Photograph studios
Film print shops – including developing and printing
Film exchanges
Microfilming
Includes clerical office salesmen
Outside photographers to be separately rated
Drivers to be rated under class 11-1 (WAC 296-17-536), delivery by combined wholesale and retail stores.
[Statutory Authority: RCW 51.16.035. 81-24-042 (Order 81-30), § 296-17-719, filed 11/30/81, effective 1/1/82; Order 73-22, § 296-17-719, filed 11/9/73, effective 1/1/74.]

WAC 296-17-720 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-17-721 Classification 65-8.

Domestic servants employed in private residences of homeowners.

[Statutory Authority: RCW 51.16.035. 81-24-042 (Order 81-30), § 296-17-721, filed 11/30/81, effective 1/1/82; Order 73-22, § 296-17-721, filed 11/9/73, effective 1/1/74.]

WAC 296-17-724 Classification 66-2.

Janitorial service – does not include contract window cleaning

Janitors, N.O.C.

Termite control. This classification applies to operations involved in the control and extermination of termites and other wood-destroying pests or organisms by fumigation or spraying of poisonous insecticides. Does not include structural repair

Pest control. This classification applies to operations involved in the control and extermination of pests by the use of pesticides, rodenticides and fumigants

Kitchen exhaust, smoke hood cleaning

Portable cleaning and washing, N.O.C. – includes auto and truck washing, recreational vehicles and mobile homes. This class will also include washing of single story buildings, but only if the washing is not incidental to painting.

[Statutory Authority: RCW 51.16.035. 82-24-047 (Order 82-38), § 296-17-724, filed 11/29/82, effective 1/1/83; Order 73-22, § 296-17-724, filed 11/9/73, effective 1/1/74.]

WAC 296-17-731 Classification 66-9.

Stables, stablemen and exercise boys

Riding academies or clubs

Jockeys, horseshoeing and horse training, N.O.C.

[Statutory Authority: RCW 51.16.035. 81-24-042 (Order 81-30), § 296-17-731, filed 11/30/81, effective 1/1/82; 80-17-016 (Order 80-23), § 296-17-731, filed 11/13/80, effective 1/1/81; Order 73-22, § 296-17-731, filed 11/9/73, effective 1/1/74.]

WAC 296-17-736 Classification 67-5.

Ski tows, ski patrols and ski instructors – includes operations incidental to the operation of the skiing facility such as parking lots but excludes food service operations, hotel or motel operations, ski rental or ski sales shops

Excursions – outdoor recreational N.O.C., includes river rides, pack trains, hiking and mountaineering, and including camping operations incidental thereto

Athletic officials for amateur sports, N.O.C., such as umpires, and referees

All operations.

[Statutory Authority: RCW 51.16.035. 82-24-047 (Order 82-38), § 296-17-736, filed 11/29/82, effective 1/1/83; 81-24-042 (Order 81-30), § 296-17-736, filed 11/30/81, effective 1/1/82; 80-17-016 (Order 80-23), § 296-17-736, filed 11/13/80, effective 1/1/81; Order 77-27, § 296-17-736, filed 11/30/77, effective 1/1/78; Order 74-40, § 296-17-736, filed 11/27/74, effective 1/1/75; Order 73-22, § 296-17-736, filed 11/9/73, effective 1/1/74.]

WAC 296-17-758 Classification 71-5.

Temporary help companies

This class applies to employees of temporary help companies, N.O.C., that are referred on a temporary basis to its customers. This class applies if the customer's business is by nature enumerated in this manual as being subject to any of the following classes: 10-7 (WAC 296-17-53504), 11-6 (WAC 296-17-53803), 13-3 (WAC 296-17-540), 22-1 (WAC 296-17-565), 22-2 (WAC 296-17-566), 34-3 (WAC 296-17-581), 34-5 (WAC 296-17-58201), 34-6 (WAC 296-17-583), 34-8 (WAC 296-17-585), 36-2 (WAC 296-17-594), 37-1 (WAC 296-17-599), 37-7 (WAC 296-17-603), 37-8 (WAC 296-17-604), 38-1 (WAC 296-17-605), 38-2 (WAC 296-17-606), 38-8 (WAC 296-17-612), 39-5 (WAC 296-17-618), 39-9 (WAC 296-17-61804), 41-1 (WAC 296-17-620), 41-3 (WAC 296-17-622), 41-7 (WAC 296-17-626), 41-8 (WAC 296-17-627), 41-9 (WAC 296-17-628), 45-1 (WAC 296-17-637), 45-2 (WAC 296-17-638), 45-3 (WAC 296-17-639), 45-4 (WAC 296-17-640), 49-5 (WAC 296-17-654), 52-7 (WAC 296-17-676), 61-5 (WAC 296-17-682), 61-7 (WAC 296-17-684), 62-1 (WAC 296-17-687), 62-3 (WAC 296-17-689), 62-4 (WAC 296-17-690), 62-5 (WAC 296-17-691), 62-6 (WAC 296-17-692), 62-9 (WAC 296-17-695), 63-1 (WAC 296-17-696), 63-2 (WAC 296-17-697), 63-4 (WAC 296-17-699), 63-5 (WAC 296-17-700), 63-6 (WAC 296-17-701), 63-8 (WAC 296-17-703), 63-9 (WAC 296-17-704), 64-2 (WAC 296-17-706), 64-3 (WAC 296-17-707), 64-4 (WAC 296-17-708), 64-5 (WAC 296-17-709), 64-6 (WAC 296-17-710), 64-7 (WAC 296-17-711), 65-3 (WAC 296-17-716), 65-4 (WAC 296-17-717), 65-5 (WAC 296-17-718), 65-8 (WAC 296-17-721), 65-9 (WAC 296-17-722), 66-1 (WAC 296-17-723), 66-3 (WAC 296-17-725), 66-4 (WAC 296-17-726), 66-5 (WAC 296-17-727), 66-7 (WAC 296-17-729), 67-4 (WAC 296-17-735), 67-9 (WAC 296-17-740), 69-9 (WAC 296-17-75301).

[Statutory Authority: RCW 51.16.035. 82-24-047 (Order 82-38), § 296-17-758, filed 11/29/82, effective 1/1/83; 81-24-042 (Order 81-30), § 296-17-758, filed 11/30/81, effective 1/1/82; 80-17-016 (Order 80-23), § 296-17-758, filed 11/13/80, effective 1/1/81. Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-17-758, filed 11/30/79, effective 1/1/80.]

WAC 296-17-759 Classification 71-6.

Temporary help companies

This class applies to employees of temporary help companies, N.O.C., that are referred on a temporary basis to its customers. This class applies if the customer's business is by nature enumerated in this manual as being subject to any of the following classes: 3-1 (WAC 296-17-510), 8-3 (WAC 296-17-529), 11-3

(WAC 296-17-538), 11-4 (WAC 296-17-53801), 13-1 (WAC 296-17-539), 14-4 (WAC 296-17-544), 15-1 (WAC 296-17-545), 15-7 (WAC 296-17-546), 20-2 (WAC 296-17-555), 20-3 (WAC 296-17-556), 20-4 (WAC 296-17-557), 20-5 (WAC 296-17-558), 20-7 (WAC 296-17-560), 20-8 (WAC 296-17-561), 21-1 (WAC 296-17-562), 21-2 (WAC 296-17-563), 21-4 (WAC 296-17-564), 33-9 (WAC 296-17-578), 34-1 (WAC 296-17-579), 34-7 (WAC 296-17-584), 35-1 (WAC 296-17-586), 35-3 (WAC 296-17-587), 35-8 (WAC 296-17-592), 37-2 (WAC 296-17-600), 39-1 (WAC 296-17-614), 39-6 (WAC 296-17-61801), 44-1 (WAC 296-17-635), 44-4 (WAC 296-17-636), 48-2 (WAC 296-17-643), 48-3 (WAC 296-17-644), 48-4 (WAC 296-17-645), 48-5 (WAC 296-17-646), 48-6 (WAC 296-17-647), 48-8 (WAC 296-17-649), 48-9 (WAC 296-17-64901), 53-7 (WAC 296-17-67901), 61-4 (WAC 296-17-681), 61-8 (WAC 296-17-685), 62-2 (WAC 296-17-688), 62-8 (WAC 296-17-694), 64-8 (WAC 296-17-712), 64-9 (WAC 296-17-713), 66-2 (WAC 296-17-724), 66-8 (WAC 296-17-730), 67-6 (WAC 296-17-737), 68-1 (WAC 296-17-741), 68-2 (WAC 296-17-742), 68-4 (WAC 296-17-744), 69-8 (WAC 296-17-753), 72-1 (WAC 296-17-763), 73-1 (WAC 296-17-772), 73-2 (WAC 296-17-773), 73-7 (WAC 296-17-777).

[Statutory Authority: RCW 51.16.035. 82-24-047 (Order 82-38), § 296-17-759, filed 11/29/82, effective 1/1/83; 80-17-016 (Order 80-23), § 296-17-759, filed 11/13/80, effective 1/1/81. Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-17-759, filed 11/30/79, effective 1/1/80.]

WAC 296-17-760 Classification 71-7.

Temporary help companies

This class applies to employees of temporary help companies, N.O.C., that are referred on a temporary basis to its customers. This class applies if the customer's business is by nature enumerated in this manual as being subject to any of the following classes: 3-6 (WAC 296-17-512), 3-7 (WAC 296-17-513), 5-3 (WAC 296-17-518), 6-1 (WAC 296-17-522), 6-2 (WAC 296-17-523), 6-3 (WAC 296-17-524), 6-6 (WAC 296-17-526), 6-7 (WAC 296-17-527), 11-8 (WAC 296-17-53805), 14-1 (WAC 296-17-542), 18-1 (WAC 296-17-552), 24-1 (WAC 296-17-567), 29-3 (WAC 296-17-568), 29-4 (WAC 296-17-569), 29-6 (WAC 296-17-570), 29-8 (WAC 296-17-57002), 31-1 (WAC 296-17-571), 31-2 (WAC 296-17-572), 31-3 (WAC 296-17-573), 31-4 (WAC 296-17-574), 31-5 (WAC 296-17-575), 33-1 (WAC 296-17-576), 33-2 (WAC 296-17-57601), 33-3 (WAC 296-17-57602), 34-2 (WAC 296-17-580), 34-4 (WAC 296-17-582), 36-3 (WAC 296-17-595), 36-4 (WAC 296-17-596), 36-5 (WAC 296-17-597), 36-6 (WAC 296-17-598), 39-2 (WAC 296-17-615), 39-3 (WAC 296-17-616), 40-2 (WAC 296-17-619), 42-1 (WAC 296-17-629), 43-1 (WAC 296-17-630), 43-2 (WAC 296-17-631), 43-3 (WAC 296-17-632), 43-4 (WAC 296-17-633), 44-2 (WAC 296-17-63501), 46-1 (WAC 296-17-641), 51-1 (WAC 296-17-661), 51-2 (WAC 296-17-662), 51-3 (WAC 296-17-663), 51-5 (WAC 296-17-665), 51-6 (WAC 296-17-666), 51-7 (WAC 296-17-667), 51-8 (WAC 296-17-668), 51-9 (WAC 296-17-669), 52-1 (WAC 296-17-670), 52-2 (WAC 296-17-671), 52-3 (WAC 296-17-672), 52-4 (WAC 296-17-673), 52-8 (WAC 296-17-67601), 52-9 (WAC 296-17-67602), 67-5 (WAC 296-17-736).

[Statutory Authority: RCW 51.16.035. 82-24-047 (Order 82-38), § 296-17-760, filed 11/29/82, effective 1/1/83; 80-17-016 (Order 80-23), § 296-17-760, filed 11/13/80, effective 1/1/81. Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-17-760, filed 11/30/79, effective 1/1/80.]

WAC 296-17-761 Classification 71-8.

Temporary help companies

This class applies to employees of temporary help companies, N.O.C., that are referred on a temporary basis to its customers. This class applies if the customer's business is by nature enumerated in this manual as being subject to any of the following classes: 1-1 (WAC 296-17-501), 1-2 (WAC 296-17-502), 1-3 (WAC 296-17-503), 1-4 (WAC 296-17-504), 1-5 (WAC 296-17-505), 1-6 (WAC 296-17-506), 1-7 (WAC 296-17-50601), 1-8 (WAC 296-17-50602), 1-9 (WAC 296-17-507), 2-6 (WAC 296-17-675), 3-2 (WAC 296-17-511), 4-1 (WAC 296-17-514), 4-2 (WAC 296-17-515), 4-3 (WAC 296-17-516), 5-2 (WAC 296-17-517), 5-4 (WAC 296-17-519), 5-5 (WAC 296-17-520), 5-8 (WAC 296-17-521), 5-9 (WAC 296-17-52101), 6-4 (WAC 296-17-525), 7-1 (WAC 296-17-528), 8-4 (WAC 296-17-530), 9-1 (WAC 296-17-532), 10-2 (WAC 296-17-534), 10-3 (WAC 296-17-535), 10-4 (WAC 296-17-53501), 11-1 (WAC 296-17-536), 11-2 (WAC 296-17-537), 17-3 (WAC 296-17-550), 17-4 (WAC 296-17-551), 21-5 (WAC 296-17-56401), 35-6 (WAC 296-17-590), 43-5 (WAC 296-17-634), 52-6 (WAC 296-17-675), 62-7 (WAC 296-17-693), 66-9 (WAC 296-17-731), 69-2 (WAC 296-17-747), 69-4 (WAC 296-17-749), 69-5 (WAC 296-17-750), 69-7 (WAC 296-17-752), 71-3 (WAC 296-17-756).

[Statutory Authority: RCW 51.16.035. 82-24-047 (Order 82-38), § 296-17-761, filed 11/29/82, effective 1/1/83; 81-24-042 (Order 81-30), § 296-17-761, filed 11/30/81, effective 1/1/82; 80-17-016 (Order 80-23), § 296-17-761, filed 11/13/80, effective 1/1/81. Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-17-761, filed 11/30/79, effective 1/1/80.]

WAC 296-17-762 Classification 71-9.

Temporary help companies

This class applies to employees of temporary help companies, N.O.C., that are referred on a temporary basis to its customers. This class applies if the customer's business is by nature enumerated in this manual as being subject to any of the following classes: 2-1 (WAC 296-17-508), 2-2 (WAC 296-17-509), 5-6

(WAC 296-17-52001), 5-7 (WAC 296-17-52002), 10-5 (WAC 296-17-53502), 17-1 (WAC 296-17-548), 17-2 (WAC 296-17-549), 50-1 (WAC 296-17-659), 50-2 (WAC 296-17-660), 50-3 (WAC 296-17-66001), 50-4 (WAC 296-17-66002), 68-3 (WAC 296-17-743), 69-3 (WAC 296-17-748).

[Statutory Authority: RCW 51.16.035. 82-24-047 (Order 82-38), § 296-17-762, filed 11/29/82, effective 1/1/83; 81-24-042 (Order 81-30), § 296-17-762, filed 11/30/81, effective 1/1/82. Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-17-762, filed 11/30/79, effective 1/1/80.]

WAC 296-17-765 Classification 72-3.

Juvenile community service workers

This class to include all community service workers performing work for counties under the provisions of chapter 13.40 RCW.

[Statutory Authority: RCW 51.16.035. 81-24-042 (Order 81-30), § 296-17-765, filed 11/30/81, effective 1/1/82.]

WAC 296-17-766 Classification 72-4.

Preferred workers

This class to include all preferred workers in accordance with the provisions of RCW 51.16.120(3) and WAC 296-16-010.

[Statutory Authority: RCW 51.16.035. 81-24-042 (Order 81-30), § 296-17-766, filed 11/30/81, effective 1/1/82.]

WAC 296-17-772 Classification 73-1.

Dairy farms

This class includes all farm operation related to the dairy.

[Statutory Authority: RCW 51.16.035. 82-24-047 (Order 82-38), § 296-17-772, filed 11/29/82, effective 1/1/83.]

WAC 296-17-773 Classification 73-2.

Livestock farms

Sheep and goat raising - applies to all acreage devoted to raising of these animals

This class includes all operations incidental to the enterprises described above.

[Statutory Authority: RCW 51.16.035. 82-24-047 (Order 82-38), § 296-17-773, filed 11/29/82, effective 1/1/83.]

WAC 296-17-777 Classification 73-7.

Christmas tree planting, pruning and harvesting.

[Statutory Authority: RCW 51.16.035. 82-24-047 (Order 82-38), § 296-17-777, filed 11/29/82, effective 1/1/83.]

WAC 296-17-850 Experience rating plan--Eligibility and experience period. (1) **Eligibility.** Each employer who has reported experience during more than one fiscal year of the "experience period" shall have his base rates multiplied by an "experience modification" calculated in accordance with the rules of this manual. The development of the "experience modification" as set forth in WAC 296-17-855 shall include losses and exposure reported in all risk classes: *Provided*, That the "experience modification" determined in accordance with WAC 296-17-855 shall not apply to industrial insurance rates in the following classes: 5-5 (WAC 296-17-520), 5-6 (WAC 296-17-52001), 5-7 (WAC 296-17-52002), and 48-7 (WAC 296-17-648). Employer premiums in the foregoing classes shall be computed at base industrial insurance rates as set forth in WAC 296-17-895.

(2) **Experience period.** The "experience period" shall be the oldest three of the four fiscal years preceding the effective date of premium rates as set forth in WAC 296-17-895. [Statutory Authority: RCW 51.16.035. 82-24-047 (Order 82-38), § 296-17-850, filed 11/29/82, effective 1/1/83. Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-17-850, filed 11/30/79, effective 1/1/80; Order 76-18, § 296-17-850, filed 5/28/76, effective 7/1/76; Order 74-40, § 296-17-850, filed 11/27/74, effective 1/1/75; Order 73-22, § 296-17-850, filed 11/9/73, effective 1/1/74.]

WAC 296-17-855 Experience modification. The basis of the experience modification shall be a comparison of the actual losses charged to an employer during the experience period with the losses which would be expected for an average employer reporting the same exposures in each classification. The comparison shall contain actuarial refinements designed to mitigate the effects of losses which may be considered catastrophic or of doubtful statistical significance, due consideration being given to the volume of the employer's experience. Except for those employers who qualify for an adjusted experience modification as specified in WAC 296-17-860 or 296-17-865, the experience modification shall be calculated from the formula:

$$\text{MODIFICATION} = \frac{Ap + WAe + (1-W)\,Ee + B}{E + B}$$

The components Ap, WAe, and (1-W) Ee are values which shall be charged against an employer's experience record. The component, E, shall be the expected value of these charges for an average employer reporting the same exposures in each classification. The meaning and function of each symbol in the formula is specified below.

"Ap" signifies "primary actual losses." For each claim the primary actual loss is defined as that portion of the claim which is considered completely rateable for all employers and which is to enter the experience modification calculation at its full value. For each claim in excess of $3,043, the primary actual loss shall be determined from the formula:

$$\text{Primary loss} = \frac{7{,}608}{\text{Total loss} + 4{,}565} \times \text{total loss}$$

Primary actual losses for selected claim values are shown in Table I. For each claim less than $3,043 the full value of the claim shall be considered a primary loss.

"Ae" signifies "excess actual losses." For each claim the excess actual loss is defined as that portion of the claim which is not considered completely rateable for all employers. The excess actual loss for each claim shall be determined by subtracting the primary loss from the total loss.

"W" signifies "W value." For each employer, the W value determines the portion of the actual excess losses which shall be included in the calculation of his experience modification, due consideration being given to the volume of his experience. This amount is represented by the symbol "WAe" in the experience modification formula. W values are set forth in Table II.

"E" signifies "expected losses." An employer's expected losses shall be determined by multiplying his reported exposure in each classification during the experience period by the classification expected loss rate. Expected loss rates are set forth in Table III.

"Ee" signifies "expected excess losses." Expected losses in each classification shall be multiplied by the classification "D–Ratio" to obtain "expected primary losses." Expected excess losses shall then be calculated by subtracting expected primary losses from expected total losses. Each employer shall have a statistical charge included in the calculation of his experience modification, said charge to be actuarially equivalent to the amount forgiven an average employer because of the exclusion of a portion of his excess actual losses. This charge is represented by "(1–W) Ee" in the experience modification formula. D–Ratios are set forth in Table III.

"B" signifies "B value" or "ballast." In order to limit the effect of a single severe accident on the modification of a small employer, a stabilizing element (B value) shall be added to both actual and expected losses. B values are set forth in Table II. [Statutory Authority: RCW 51.16.035. 82–24–047 (Order 82–38), § 296–17–855, filed 11/29/82, effective 1/1/83; 81–24–042 (Order 81–30), § 296–17–855, filed 11/30/81, effective 1/1/82; 80–17–016 (Order 80–23), § 296–17–855, filed 11/13/80, effective 1/1/81. Statutory Authority: RCW 51.04.030 and 51.16.035. 79–12–086 (Order 79–18), § 296–17–855, filed 11/30/79, effective 1/1/80; Order 77–27, § 296–17–855, filed 11/30/77, effective 1/1/78; Order 74–40, § 296–17–855, filed 11/27/74, effective 1/1/75; Order 73–22, § 296–17–855, filed 11/9/73, effective 1/1/74.]

WAC 296–17–870 Evaluation of actual losses. Except as provided in the following subsections of this paragraph, actual losses shall include all payments as of the "valuation date" for each claim arising from an accident occurring during the experience period. Losses for claims open as of the valuation date may also include a reserve for future payments. Actual losses on claims for accidents occurring outside of the experience period shall not be included.

(1) **Valuation date.** The valuation date shall be on and include December 31, one year and one day immediately preceding the effective date of premium rates as set forth in WAC 296–17–895.

(2) **Retroactive adjustments – Revision of losses between valuation dates.** No claim value shall be revised between valuation dates and no retroactive adjustment of an experience modification shall be made because of disputation concerning the judgment of the claims examiner or because of subsequent developments except as specifically provided in the following cases:

(a) In cases where loss values are included or excluded through mistake other than error of judgment.

(b) In cases where a third party recovery is made.

(c) In cases where the claim qualifies as a second injury claim under the provisions of RCW 51.16.120.

(d) In cases where a claim is officially closed and is determined to be noncompensable.

In the above specified cases retroactive adjustment of the experience modification shall be made for each rating in which the claim was included.

(3) **Average death value.** Each fatality occurring to a worker included within the mandatory or elective coverage of Title 51 RCW shall be assigned the "average death value," said value to be the average incurred cost for all such fatalities occurring during the experience period. The average death value is set forth in Table II.

(4) **Third party recovery.** In the event of a third party recovery on a claim, the employer shall be charged for a portion of the actual loss amount, gross of such recovery, established on the claim for each year in which the claim's injury date falls within the experience period (see WAC 296–17–850). This portion shall be calculated at the time the recovery is made, and shall be determined by taking the ratio of the total cost of the claim, including attorneys' fees, after recovery, to the total cost of the claim before recovery. If the claim is open at the time the recovery is made, then costs before and after recovery may include an allowance for future claim payments. Both the primary and excess components of the actual loss amount shall be reduced in the same proportion.

(5) **Second injury claims.** The primary and excess values of any claim which becomes eligible for second injury relief under the provisions of RCW 51.16.120, as now or hereafter amended, shall be reduced by the percentage of relief granted.

(6) **Occupational disease claims.** When a claim results from an employee's exposure to an occupational disease hazard, the "date of injury," for the purposes of experience rating, shall be the date on which the disability was diagnosed, giving rise to the filing of a claim for benefits. The cost of any occupational disease claim, paid from the accident fund and arising from exposure to the disease hazard under two or more employers, shall be prorated to each period of employment involving exposure to the hazard. Each insured employer who had employed the claimant during the experience period, and for at least ten percent of the claimant's exposure to the hazard, shall be charged for his share of the claim based upon the prorated costs.

(7) **Maximum claim value.** No claim shall enter an employer's experience record at a value greater than the "maximum claim value." The maximum claim value is set forth in Table II. [Statutory Authority: RCW 51.16-.035. 81-24-042 (Order 81-30), § 296-17-870, filed 11/30/81, effective 1/1/82. Statutory Authority: RCW 51.04.020(1) and 51.16.035. 78-12-043 (Order 78-23), § 296-17-870, filed 11/27/78, effective 1/1/79; Order 75-38, § 296-17-870, filed 11/24/75, effective 1/1/76; Order 74-40, § 296-17-870, filed 11/27/74, effective 1/1/75; Order 73-22, § 296-17-870, filed 11/9/73, effective 1/1/74.]

WAC 296-17-875 Table I.

Primary Losses for Selected Claim Values

Claim Value	Primary Loss
3,043	3,043
3,889	3,500
5,061	4,000
6,610	4,500
8,752	5,000
11,911	5,500
17,034	6,000
63,668*	7,099
76,080**	7,177

* Average death value
** Maximum claim value

[Statutory Authority: RCW 51.16.035. 82-24-047 (Order 82-38), § 296-17-875, filed 11/29/82, effective 1/1/83; 81-24-042 (Order 81-30), § 296-17-875, filed 11/30/81, effective 1/1/82; 80-17-016 (Order 80-23), § 296-17-875, filed 11/13/80, effective 1/1/81. Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-17-875, filed 11/30/79, effective 1/1/80. Statutory Authority: RCW 51.04.020(1) and 51.16.035. 78-12-043 (Order 78-23), § 296-17-875, filed 11/27/78, effective 1/1/79; Order 77-27, § 296-17-875, filed 11/30/77, effective 1/1/78; Order 76-36, § 296-17-875, filed 11/30/76; Order 75-38, § 296-17-875, filed 11/24/75, effective 1/1/76; Order 74-40, § 296-17-875, filed 11/27/74, effective 1/1/75; Order 73-22, § 296-17-875, filed 11/9/73, effective 1/1/74.]

WAC 296-17-880 Table II.

"B" and "W" Values

Maximum Claim Value = $76,080
Average Death Value = $63,668

Expected Losses	B	W
1,648 & Under	14,354	0
1,649 – 3,320	14,210	.01
3,321 – 5,019	14,067	.02
5,020 – 6,742	13,923	.03
6,743 – 8,492	13,780	.04
8,493 – 10,269	13,636	.05
10,270 – 12,074	13,493	.06
12,075 – 13,907	13,349	.07
13,908 – 15,769	13,206	.08
15,770 – 17,661	13,062	.09
17,662 – 19,584	12,919	.10
19,585 – 21,538	12,775	.11
21,539 – 23,525	12,632	.12
23,526 – 25,546	12,488	.13
25,547 – 27,599	12,344	.14
27,600 – 29,689	12,201	.15
29,690 – 31,813	12,057	.16
31,814 – 33,976	11,914	.17
33,977 – 36,175	11,770	.18
36,176 – 38,415	11,627	.19
38,416 – 40,694	11,483	.20
40,695 – 43,016	11,340	.21
43,017 – 45,379	11,196	.22
45,380 – 47,787	11,053	.23
47,788 – 50,240	10,909	.24
50,241 – 52,740	10,766	.25
52,741 – 55,288	10,622	.26
55,289 – 57,885	10,478	.27
57,886 – 60,534	10,335	.28
60,535 – 63,235	10,191	.29
63,236 – 65,991	10,048	.30
65,992 – 68,802	9,904	.31
68,803 – 71,673	9,761	.32
71,674 – 74,602	9,617	.33
74,603 – 77,594	9,474	.34
77,595 – 80,649	9,330	.35
80,650 – 83,772	9,187	.36
83,773 – 86,962	9,043	.37
86,963 – 90,223	8,899	.38
90,224 – 93,558	8,756	.39
93,559 – 96,968	8,612	.40
96,969 – 100,458	8,469	.41
100,459 – 104,028	8,325	.42
104,029 – 107,684	8,182	.43
107,685 – 111,427	8,038	.44
111,428 – 115,262	7,895	.45
115,263 – 119,190	7,751	.46
119,191 – 123,218	7,608	.47
123,219 – 127,347	7,464	.48
127,348 – 131,584	7,321	.49
131,585 – 135,931	7,177	.50
135,932 – 140,392	7,033	.51
140,393 – 144,974	6,890	.52
144,975 – 149,680	6,746	.53
149,681 – 154,517	6,603	.54
154,518 – 159,490	6,459	.55
159,491 – 164,605	6,316	.56
164,606 – 169,868	6,172	.57
169,869 – 175,287	6,029	.58
175,288 – 180,868	5,885	.59
180,869 – 186,619	5,742	.60
186,620 – 192,547	5,598	.61
192,548 – 198,663	5,455	.62
198,664 – 204,975	5,311	.63
204,976 – 211,491	5,167	.64

Expected Losses			B	W
211,492	–	218,225	5,024	.65
218,226	–	225,184	4,880	.66
225,185	–	232,384	4,737	.67
232,385	–	239,835	4,593	.68
239,836	–	247,553	4,450	.69
247,554	–	255,550	4,306	.70
255,551	–	263,844	4,163	.71
263,845	–	272,451	4,019	.72
272,452	–	281,391	3,876	.73
281,392	–	290,681	3,732	.74
290,682	–	300,346	3,589	.75
300,347	–	310,408	3,445	.76
310,409	–	320,891	3,301	.77
320,892	–	331,824	3,158	.78
331,825	–	343,236	3,014	.79
343,237	–	355,161	2,871	.80
355,162	–	367,633	2,727	.81
367,634	–	380,693	2,584	.82
380,694	–	394,382	2,440	.83
394,383	–	408,749	2,297	.84
408,750	–	423,845	2,153	.85
423,846	–	439,729	2,010	.86
439,730	–	456,464	1,866	.87
456,465	–	474,119	1,722	.88
474,120	–	492,776	1,579	.89
492,777	–	512,521	1,435	.90
512,522	–	533,455	1,292	.91
533,456	–	555,688	1,148	.92
555,689	–	579,346	1,005	.93
579,347	–	604,571	861	.94
604,572	–	631,527	718	.95
631,528	–	660,398	574	.96
660,399	–	691,397	431	.97
691,398	–	724,768	287	.98
724,769	–	760,799	144	.99
760,800	&	over	0	1.00

[Statutory Authority: RCW 51.16.035. 82-24-047 (Order 82-38), § 296-17-880, filed 11/29/82, effective 1/1/83; 81-24-042 (Order 81-30), § 296-17-880, filed 11/30/81, effective 1/1/82; 80-17-016 (Order 80-23), § 296-17-880, filed 11/13/80, effective 1/1/81. Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-17-880, filed 11/30/79, effective 1/1/80. Statutory Authority: RCW 51.04.020(1) and 51.16.035. 78-12-043 (Order 78-23), § 296-17-880, filed 11/27/78, effective 1/1/79; Order 77-27, § 296-17-880, filed 11/30/77, effective 1/1/78; Order 76-36, § 296-17-880, filed 11/30/76; Order 75-38, § 296-17-880, filed 11/24/75, effective 1/1/76; Order 74-40, § 296-17-880, filed 11/27/74, effective 1/1/75; Order 73-22, § 296-17-880, filed 11/9/73, effective 1/1/74.]

WAC 296-17-885 Table III.

Expected Loss Rates and D-Ratios
Expected Loss Rates in Dollars Per Workman Hour
For Indicated Fiscal Year

Class	1979	1980	1981	D-Ratio
1-1	.2347	.2845	.2891	.344
1-2	.1512	.1842	.1867	.418
1-3	.2239	.2723	.2762	.390
1-4	.1771	.2150	.2183	.364
1-5	.1934	.2352	.2387	.391
1-6	.4308	.5199	.5294	.290
1-7	.1690	.2051	.2082	.362
1-8	.2116	.2568	.2607	.366
1-9	.2973	.3610	.3665	.372
2-1	.4830	.5851	.5947	.339
2-2	.5282	.6374	.6490	.291
2-6	.2223	.2679	.2729	.273
3-1	.1000	.1220	.1235	.429
3-2	.3381	.4100	.4165	.356
3-6	.1140	.1387	.1407	.397
3-7	.1140	.1387	.1406	.396
4-1	.3881	.4685	.4770	.292
4-2	.3881	.4685	.4770	.292
4-3	.3077	.3723	.3787	.321
5-2	.1788	.2176	.2207	.403
5-3	.1194	.1456	.1476	.437
5-4	.2730	.3308	.3362	.344
5-5	.2513	.3055	.3100	.389
5-6	.3138	.3815	.3871	.390
5-7	.3214	.3903	.3962	.375
5-8	.3497	.4242	.4309	.356
5-9	.3120	.3772	.3837	.315
6-1	.0876	.1068	.1082	.418
6-2	.0954	.1157	.1176	.350
6-3	.1829	.2217	.2252	.345
6-4	.2334	.2839	.2879	.399
6-6	.0471	.0573	.0582	.401
6-7	.0615	.0747	.0759	.369
7-1	.2471	.2995	.3043	.343
8-3	.0824	.1003	.1018	.400
8-4	.1380	.1674	.1700	.364
9-1	.4755	.5762	.5856	.346
9-2	.1199	.1463	.1482	.442
10-2	.2185	.2665	.2700	.432
10-3	.1336	.1630	.1651	.441
10-4	.1336	.1630	.1651	.441
10-5	.5110	.6192	.6293	.344
10-7	.0186	.0228	.0230	.507
11-1	.1124	.1366	.1387	.382
11-2	.2177	.2645	.2684	.380
11-3	.0843	.1025	.1040	.402
11-4	.0937	.1142	.1158	.423
11-6	.0205	.0251	.0254	.508
11-8	.1083	.1317	.1336	.386
13-1	.0796	.0968	.0981	.400
13-3	.0452	.0552	.0558	.425
13-4	.0025	.0029	.0030	.421
13-5	.0491	.0600	.0608	.432
14-1	.1687	.2050	.2080	.384

Class	1979	1980	1981	D-Ratio	Class	1979	1980	1981	D-Ratio
14-3	.1009	.1229	.1246	.409	37-7	.0668	.0815	.0826	.446
14-4	.1009	.1229	.1246	.409	37-8	.0407	.0498	.0503	.477
15-1	.0741	.0900	.0914	.383	38-1	.0559	.0678	.0690	.352
15-7	.0605	.0736	.0747	.406	38-2	.0339	.0414	.0419	.449
17-1	.4286	.5176	.5269	.296	38-3	.0339	.0414	.0419	.449
17-2	.4286	.5176	.5269	.296	38-4	.0339	.0414	.0419	.449
17-3	.1364	.1654	.1680	.346	38-5	.0339	.0414	.0419	.449
17-4	.1204	.1466	.1485	.405	38-6	.0339	.0414	.0419	.449
18-1	.1398	.1710	.1730	.473	38-8	.0368	.0449	.0455	.477
20-2	.1166	.1421	.1440	.426	38-9	.0443	.0542	.0548	.477
20-3	.0823	.1004	.1018	.440	39-1	.0790	.0959	.0973	.374
20-4	.1254	.1525	.1548	.398	39-2	.1349	.1647	.1667	.436
20-5	.0713	.0869	.0881	.415	39-3	.1767	.2150	.2181	.402
20-7	.0960	.1161	.1181	.319	39-4	.1349	.1647	.1667	.436
20-8	.0599	.0728	.0738	.396	39-5	.0265	.0325	.0329	.492
21-1	.0935	.1141	.1155	.445	39-6	.0925	.1130	.1144	.462
21-2	.0823	.1004	.1018	.440	39-9	.0337	.0412	.0417	.467
21-4	.0393	.0482	.0487	.507	40-2	.1262	.1527	.1552	.324
21-5	.1593	.1938	.1966	.396	41-1	.0257	.0316	.0319	.503
22-1	.0502	.0613	.0621	.434	41-2	.0206	.0251	.0255	.454
22-2	.0682	.0832	.0843	.444	41-3	.0484	.0592	.0599	.465
24-1	.1335	.1629	.1650	.439	41-4	.0257	.0316	.0319	.503
29-3	.1341	.1637	.1658	.438	41-5	.0257	.0316	.0319	.503
29-4	.1736	.2111	.2141	.395	41-6	.0206	.0251	.0255	.454
29-6	.0909	.1112	.1125	.478	41-7	.0138	.0169	.0171	.431
29-8	.1460	.1785	.1807	.465	41-8	.0257	.0316	.0319	.503
31-1	.1511	.1826	.1859	.308	41-9	.0257	.0316	.0319	.503
31-2	.1159	.1405	.1428	.353	42-1	.1175	.1426	.1447	.365
31-3	.1159	.1405	.1428	.353	43-1	.1609	.1961	.1987	.413
31-4	.1241	.1504	.1529	.348	43-2	.1501	.1830	.1855	.420
31-5	.1816	.2211	.2242	.405	43-3	.1638	.1997	.2024	.427
33-1	.1569	.1912	.1938	.418	43-4	.1446	.1761	.1785	.410
33-2	.1013	.1241	.1254	.507	43-5	.2536	.3093	.3133	.438
33-3	.0633	.0772	.0782	.436	44-1	.0904	.1100	.1116	.396
33-9	.0811	.0988	.1001	.434	44-2	.1096	.1332	.1352	.390
34-1	.0824	.1002	.1017	.384	44-4	.0823	.1004	.1018	.440
34-2	.0998	.1217	.1233	.426	45-1	.0262	.0317	.0323	.327
34-3	.0252	.0307	.0311	.400	45-2	.0112	.0135	.0138	.351
34-4	.0984	.1202	.1217	.458	45-3	.0131	.0159	.0161	.422
34-5	.0419	.0511	.0518	.444	45-4	.0131	.0159	.0161	.422
34-6	.0396	.0483	.0490	.409	46-1	.1023	.1234	.1256	.283
34-7	.0597	.0726	.0737	.399	48-2	.0458	.0557	.0565	.386
34-8	.0238	.0289	.0293	.375	48-3	.0751	.0917	.0928	.452
34-9	.0365	.0446	.0451	.439	48-4	.1036	.1263	.1280	.424
35-1	.0902	.1104	.1118	.474	48-5	.0534	.0652	.0659	.458
35-3	.0609	.0745	.0755	.480	48-6	.0135	.0166	.0168	.477
35-5	.0902	.1104	.1118	.474	48-7	.2513	.3055	.3100	.389
35-6	.1545	.1868	.1900	.317	48-8	.0671	.0818	.0829	.428
35-8	.0749	.0915	.0925	.454	48-9	.0422	.0514	.0521	.426
36-1	.0206	.0251	.0255	.454	49-1	.0134	.0164	.0166	.407
36-2	.0206	.0251	.0255	.454	49-2	.0399	.0485	.0492	.383
36-3	.1038	.1265	.1283	.418	49-3	.0134	.0164	.0166	.407
36-4	.1769	.2146	.2181	.360	49-4	.0033	.0040	.0041	.417
36-5	.0631	.0768	.0779	.400	49-5	.0675	.0821	.0833	.391
36-6	.1199	.1463	.1482	.442	49-6	.0120	.0145	.0147	.433
37-1	.0512	.0622	.0631	.384	49-7	.0218	.0265	.0269	.394
37-2	.1040	.1266	.1284	.403	49-8	.0218	.0265	.0269	.394
37-3	.0512	.0622	.0631	.384	49-9	.0218	.0265	.0269	.394
37-6	.0559	.0678	.0690	.352	50-1	.6789	.8222	.8796	.341

Class	1979	1980	1981	D-Ratio
50-2	.0786	.0960	.0973	.446
50-3	.3211	.3896	.3957	.366
50-4	.1346	.1661	.1673	.584
51-1	.1691	.2057	.2086	.403
51-2	.2601	.3194	.3225	.525
51-3	.2332	.2837	.2877	.402
51-4	.1145	.1393	.1413	.404
51-5	.1145	.1393	.1413	.404
51-6	.1145	.1393	.1413	.404
51-7	.0806	.0981	.0995	.413
51-8	.1423	.1728	.1754	.369
51-9	.1104	.1345	.1364	.421
52-1	.0806	.0981	.0995	.413
52-2	.0998	.1217	.1233	.426
52-3	.0998	.1217	.1233	.426
52-4	.2923	.3566	.3612	.438
52-5	.1423	.1728	.1754	.369
52-6	.0894	.1088	.1103	.409
52-7	.0296	.0360	.0365	.385
52-8	.1409	.1712	.1737	.380
52-9	.1088	.1329	.1345	.444
53-1	.0033	.0040	.0041	.417
53-5	.0057	.0069	.0070	.409
53-6	.0064	.0078	.0079	.359
53-7	.0399	.0485	.0492	.383
61-3	.0065	.0079	.0080	.454
61-4	.0696	.0850	.0861	.460
61-5	.0451	.0550	.0557	.413
61-6	.0451	.0550	.0557	.413
61-7	.0369	.0447	.0454	.340
61-8	.0917	.1122	.1134	.469
61-9	.0085	.0103	.0105	.384
62-1	.0343	.0418	.0424	.421
62-2	.1337	.1620	.1647	.335
62-3	.0258	.0315	.0319	.426
62-4	.0308	.0377	.0381	.488
62-5	.0308	.0377	.0381	.488
62-6	.0308	.0377	.0381	.488
62-7	.1581	.1929	.1954	.442
62-8	.0540	.0655	.0665	.361
62-9	.0414	.0505	.0512	.442
63-1	.0291	.0353	.0359	.342
63-2	.0358	.0436	.0442	.390
63-3	.0096	.0117	.0119	.404
63-4	.0255	.0310	.0315	.351
63-5	.0106	.0130	.0131	.424
63-6	.0375	.0459	.0464	.486
63-7	.0155	.0190	.0192	.461
63-8	.0087	.0106	.0108	.344
63-9	.0187	.0229	.0232	.422
64-1	.0155	.0190	.0192	.461
64-2	.0445	.0541	.0549	.399
64-3	.0319	.0389	.0394	.439
64-4	.0103	.0126	.0128	.391
64-5	.0930	.1132	.1148	.412
64-6	.0155	.0190	.0192	.461
64-7	.0352	.0429	.0435	.417
64-8	.0673	.0816	.0829	.361
64-9	.0940	.1143	.1160	.405
65-1	.0086	.0106	.0107	.456
65-2	.0030	.0037	.0038	.425
65-3	.0242	.0291	.0297	.257
65-4	.0319	.0392	.0395	.514
65-5	.0339	.0413	.0418	.452
65-6	.0086	.0105	.0107	.409
65-7	.0581	.0710	.0719	.453
65-8	.0581	.0710	.0719	.453
65-9	.0342	.0420	.0425	.502
66-1	.0464	.0567	.0574	.451
66-2	.0836	.1022	.1033	.456
66-3	.0492	.0602	.0608	.467
66-4	.0146	.0178	.0181	.393
66-5	.0422	.0516	.0522	.474
66-7	.0296	.0360	.0365	.385
66-8	.0622	.0757	.0767	.390
66-9	.3059	.3765	.3797	.550
67-1	.0134	.0164	.0166	.407
67-4	.0350	.0427	.0433	.396
67-5	.0954	.1166	.1180	.460
67-6	.0537	.0654	.0663	.398
67-7	3.91*	4.81*	4.85*	.544
67-8	2.4621	3.0064	3.0441	.448
67-9	.0254	.0311	.0315	.472
68-1	.1223	.1494	.1511	.452
68-2	.0976	.1193	.1208	.466
68-3	.6943	.8320	.8500	.193
68-4	.0469	.0569	.0578	.371
68-9	.3431	.4217	.4256	.537
69-2	.1925	.2320	.2364	.265
69-3	.9285	1.1208	1.1411	.292
69-4	.0823	.0995	.1013	.310
69-5	.0823	.0995	.1013	.310
69-7	.2405	.2928	.2970	.408
69-8	.0899	.1098	.1112	.463
69-9	.0190	.0233	.0236	.440
71-1	.0096	.0117	.0119	.404
71-2	2.42*	2.96*	2.99*	.467
71-3	.0399	.0485	.0492	.383
71-4	.0070	.0085	.0085	.416
71-5	.0520	.0645	.0651	.481
71-6	.0893	.1089	.1103	.435
71-7	.1300	.1583	.1604	.415
71-8	.3027	.3680	.3734	.389
71-9	.8316	1.0122	1.0264	.407
72-1	.0399	.0485	.0492	.383
72-2	.0112	.0135	.0137	.335
73-1	.0751	.0917	.0928	.452
73-2	.0751	.0917	.0928	.452
73-7	.0751	.0917	.0928	.452

*Daily expected loss rate

[Statutory Authority: RCW 51.16.035. 82-24-047 (Order 82-38), § 296-17-885, filed 11/29/82, effective 1/1/83; 81-24-042 (Order 81-30), § 296-17-885, filed 11/30/81, effective 1/1/82; 80-17-016 (Order 80-23), § 296-17-885, filed 11/13/80, effective 1/1/81. Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-

086 (Order 79-18), § 296-17-885, filed 11/30/79, effective 1/1/80. Statutory Authority: RCW 51.04.020(1) and 51.16.035. 78-12-043 (Order 78-23), § 296-17-885, filed 11/27/78, effective 1/1/79, effective 1/1/80. Order 77-27, § 296-17-885, filed 11/30/77, effective 1/1/78; Emergency Order 77-25, § 296-17-885, filed 12/1/77; Order 77-10, § 296-17-885, filed 5/31/77; Order 76-36, § 296-17-885, filed 11/30/76; Order 76-18, § 296-17-885, filed 5/28/76, effective 7/1/76; Order 75-38, § 296-17-885, filed 11/24/75, effective 1/1/76; Order 74-40, § 296-17-885, filed 11/27/74, effective 1/1/75; Order 73-22, § 296-17-885, filed 11/9/73, effective 1/1/74.]

WAC 296-17-890 Table IV.

Maximum experience modifications for firms with no compensable accidents:

Expected Loss Range	Maximum Experience Modification
1-721	.90
722-771	.89
772-824	.88
825-883	.87
884-948	.86
949-1,017	.85
1,018-1,092	.84
1,093-1,174	.83
1,175-1,264	.82
1,265-1,362	.81
1,363-1,468	.80
1,469-1,584	.79
1,585-1,711	.78
1,712-1,849	.77
1,850-2,001	.76
2,002-2,168	.75
2,169-2,352	.74
2,353-2,554	.73
2,555-2,777	.72
2,778-3,022	.71
3,023 and over	.70

[Statutory Authority: RCW 51.16.035. 82-24-047 (Order 82-38), § 296-17-890, filed 11/29/82, effective 1/1/83; 81-24-042 (Order 81-30), § 296-17-890, filed 11/30/81, effective 1/1/82; 80-17-016 (Order 80-23), § 296-17-890, filed 11/13/80, effective 1/1/81. Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-17-890, filed 11/30/79, effective 1/1/80.]

WAC 296-17-895 Industrial insurance accident fund base rates and medical aid rates by class of industry. Industrial insurance accident fund base rates and medical aid rates by class of industry shall be as set forth below.

Class	Rates Effective January 1, 1983 Accident Fund Base Rate	Medical Aid Fund Rate
1-1	.5072	.2971
1-2	.3293	.2482
1-3	.4862	.3438
1-4	.3835	.2265
1-5	.4201	.3220
1-6	.9252	.4784
1-7	.3658	.2432
1-8	.4581	.2604
1-9	.6442	.4714
2-1	1.0428	.5990
2-2	1.1342	.6412
2-6	.4672	.2850
3-1	.2181	.2169
3-2	.7312	.2899
3-6	.2478	.2006
3-7	.2477	.2112
4-1	.8337	.5804
4-2	.8337	.5804
4-3	.6632	.4135
5-2	.3888	.2668
5-3	.2555	.2410
5-4	.5897	.3451
5-5	.5237	.3610
5-6	.6413	.4318
5-7	.6558	.4170
5-8	.7565	.5643
5-9	.6718	.5010
6-1	.1909	.1565
6-2	.2062	.1626
6-3	.3880	.2177
6-4	.5071	.4182
6-6	.1024	.1093
6-7	.1332	.0924
7-1	.5235	.4200
8-3	.1792	.1342
8-4	.2986	.3663
9-1	1.0272	.3067
10-2	.4765	.2864
10-3	.2915	.1752
10-4	.2915	.1752
10-5	1.0826	.6104
10-7	.0401	.0383
11-1	.2438	.1912
11-2	.4720	.3183
11-3	.1832	.1397
11-4	.2017	.1685
11-6	.0442	.0559
11-8	.2350	.2127
13-1	.1728	.1343
13-3	.0985	.1016
13-4	.0053	.0091
13-5	.1052	.1034
14-1	.3659	.3135

Class	Rates Effective January 1, 1983 Accident Fund Base Rate	Medical Aid Fund Rate
14–4	.2196	.1151
15–1	.1607	.1254
15–7	.1315	.1135
17–1	.9210	.4400
17–2	.9210	.4400
17–3	.2948	.1698
17–4	.2567	.2032
18–1	.3064	.2947
20–2	.2521	.1814
20–3	.1797	.1407
20–4	.2721	.2976
20–5	.1553	.1584
20–7	.2027	.1542
20–8	.1300	.1019
21–1	.2041	.1635
21–2	.1797	.1407
21–4	.0864	.1068
21–5	.3461	.2712
22–1	.1097	.0830
22–2	.1489	.1064
24–1	.2913	.2442
29–3	.2928	.2650
29–4	.3770	.2657
29–6	.1991	.1839
29–8	.3196	.2891
31–1	.3252	.2039
31–2	.2507	.1612
31–3	.2507	.1612
31–4	.2682	.1682
31–5	.3950	.2859
33–1	.3417	.2406
33–2	.2225	.2167
33–3	.1381	.1488
33–9	.1734	.1724
34–1	.1789	.1494
34–2	.2176	.2109
34–3	.0540	.0310
34–4	.2152	.1908
34–5	.0898	.0684
34–6	.0862	.0973
34–7	.1298	.1358
34–8	.0515	.0523
34–9	.0797	.0921
35–1	.1940	.2053
35–3	.1336	.1448
35–6	.3328	.1850
35–8	.1636	.1645
36–2	.0451	.0408
36–3	.2261	.2108
36–4	.3829	.2715
36–5	.1371	.1279
36–6	.2617	.2255
37–1	.1111	.0905
37–2	.2261	.1587
37–7	.1459	.1333
37–8	.0889	.0805
38–1	.1210	.0964
38–2	.0740	.0707
38–8	.0805	.0794
39–1	.1711	.1211
39–2	.2944	.1855
39–3	.3841	.3746
39–5	.0583	.0756
39–6	.2024	.1642
39–9	.0723	.0833
40–2	.2720	.2079
41–1	.0566	.0614
41–3	.1039	.1066
41–7	.0301	.0381
41–8	.0566	.0614
41–9	.0566	.0614
42–1	.2543	.1686
43–1	.3503	.2637
43–2	.3270	.2837
43–3	.3570	.3088
43–4	.3147	.2329
43–5	.5532	.3345
44–1	.1963	.1560
44–2	.2333	.1759
44–4	.1797	.1407
45–1	.0566	.0515
45–2	.0242	.0177
45–4	.0283	.0396
46–1	.2195	.3103
48–2	.0995	.0777
48–3	.1640	.1744
48–4	.2259	.1776
48–5	.1168	.1122
48–6	.0299	.0323
48–7	.5237	.3610
48–8	.1464	.1571
48–9	.0919	.0757
49–1	.0291	.0302
49–2	.0866	.0644
49–3	.0291	.0302
49–4	.0072	.0076
49–5	.1466	.1226
49–6	.0260	.0242
49–7	.0473	.0376
49–8	.0473	.0742
49–9	.0473	.0742
50–1	1.6386	1.0022
50–2	.1717	.1784
50–3	.6951	.4252
50–4	.2927	.2725
51–1	.3674	.2788

Class	Rates Effective January 1, 1983 Accident Fund Base Rate	Medical Aid Fund Rate
51-2	.5728	.5256
51-3	.5067	.3801
51-6	.2489	.2548
51-8	.3023	.2759
51-9	.2361	.2117
52-1	.1755	.1462
52-4	.6253	.2354
52-6	.1944	.1519
52-7	.0643	.0709
52-8	.2997	.2786
52-9	.2376	.2304
53-1	.0072	.0076
53-5	.0123	.0129
53-6	.0139	.0116
53-7	.0866	.0644
61-3	.0141	.0188
61-4	.1521	.1228
61-5	.0983	.0980
61-7	.0797	.0681
61-8	.2112	.1554
61-9	.0184	.0155
62-1	.0748	.0714
62-2	.2831	.1868
62-3	.0562	.0520
62-4	.0675	.0792
62-5	.0675	.0792
62-6	.0675	.0792
62-7	.3451	.5190
62-8	.1169	.0975
62-9	.0905	.1254
63-1	.0630	.0405
63-2	.0777	.0558
63-3	.0209	.0174
63-4	.0553	.0437
63-5	.0231	.0303
63-6	.0822	.0924
63-8	.0190	.0133
63-9	.0408	.0527
64-2	.0967	.0744
64-3	.0695	.0736
64-4	.0224	.0245
64-5	.2024	.1857
64-6	.0341	.0386
64-7	.0768	.0756
64-8	.1456	.1536
64-9	.2003	.2216
65-1	.0190	.0173
65-2	.0066	.0067
65-3	.0517	.0260
65-4	.0703	.0984
65-5	.0739	.0808
65-6	.0188	.0189
65-8	.1271	.1125
65-9	.0754	.0784
66-1	.1015	.1071
66-2	.1827	.1228
66-3	.1076	.0875
66-4	.0317	.0277
66-5	.0924	.0853
66-7	.0643	.0709
66-8	.1350	.0858
66-9	.6627	.7290
67-4	.0762	.0868
67-5	.2085	.2545
67-6	.1168	.1087
67-7	8.46*	16.73*
67-8	4.4921	2.6357
67-9	.0557	.0656
68-1	.2672	.1656
68-2	.2136	.1847
68-3	1.4755	.8182
68-4	.1015	.0946
68-9	.7566	1.3595
69-1	–	.0363
69-2	.4123	.2323
69-3	1.9944	1.6055
69-4	.1771	.1367
69-5	.1771	.1367
69-6	–	.1367
69-7	.5232	.3305
69-8	.1966	.1300
69-9	.0416	.0364
71-1	.0209	.0174
71-2	5.30*	17.31*
71-3	.0866	.0644
71-4	.0148	.0130
71-5	.1155	.1004
71-6	.1910	.1660
71-7	.2780	.2417
71-8	.6444	.4949
71-9	1.7734	1.3436
72-1	.0866	.0644
72-2	.0241	.0192
72-3	–	.0363
72-4	–	–
73-1	.1640	.1744
73-2	.1640	.1744
73-7	.1640	.1744

*Daily rate. The daily rate shall be paid in full on any person for any calendar day in which any duties are performed that are incidental to the profession of the worker.

[Statutory Authority: RCW 51.16.035. 82-24-047 (Order 82-38), § 296-17-895, filed 11/29/82, effective 1/1/83; 81-24-042 (Order 81-30), § 296-17-895, filed

11/30/81, effective 1/1/82; 81-04-024 (Order 81-02), § 296-17-895, filed 1/30/81; 80-17-016 (Order 80-23), § 296-17-895, filed 11/13/80, effective 1/1/81. Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-17-895, filed 11/30/79, effective 1/1/80. Statutory Authority: RCW 51.04.020(1) and 51.16.035. 78-12-043 (Order 78-23), § 296-17-895, filed 11/27/78, effective 1/1/79; Order 77-27, § 296-17-895, filed 11/30/77, effective 1/1/78; Emergency Order 77-25, § 296-17-895, filed 12/1/77; Order 77-10, § 296-17-895, filed 5/31/77; Order 76-36, § 296-17-895, filed 11/30/76; Order 76-18, § 296-17-895, filed 5/28/76, effective 7/1/76; Order 75-38, § 296-17-895, filed 11/24/75, effective 1/1/76; Order 75-28, § 296-17-895, filed 8/29/75, effective 10/1/75; Order 74-40, § 296-17-895, filed 11/27/74, effective 1/1/75; Order 73-22, § 296-17-895, filed 11/9/73, effective 1/1/74.]

WAC 296-17-904 Definitions. The definitions in this section shall apply throughout WAC 296-17-905 through 296-17-91902.

(1) "Coverage period" means the period beginning July 1 and ending June 30.

(2) "Group" means those members of an association who have elected to have a group dividend and/or retrospective premium calculated based on the combined premium and incurred loss data of the participants, and have satisfactorily complied with eligibility requirements for doing so.

(3) "Premium" means only that portion of the money collected from an employer for worker's compensation (not to include any money paid in penalties or security deposits), which is deposited in the accident fund.

(4) "Standard premium" for a particular coverage period means premium collected or due for insurance coverage provided during the period, prior to any adjustments under a dividend or retrospective rating plan.

(5) "Incurred losses" for a coverage period means the estimated ultimate cost to the accident fund of claims arising from incidents occurring during the coverage period, subject to the special evaluation methods prescribed in WAC 296-17-915.

(6) "Loss development factor" means an actuarially determined factor which is multiplied times individual case basis estimates of claim costs to produce incurred losses for a firm or group of firms during a coverage period. Loss development factors allow for reopenings, aggravations, and any other individually unpredictable contingencies which may affect claim costs based on past experience of the accident fund as a whole.

(7) "Loss ratio" means incurred losses divided by standard premium.

(8) "Dividend" is a partial refund of standard premium based on a firm's standard premium and loss ratio for the coverage period.

(9) "Retrospective premium" is a premium determined after a coverage period has ended, based on a firm's standard premium, incurred losses, and other preselected parameters for the coverage period.

(10) "Retrospective premium adjustment" is an additional assessment or refund of premium owing to an employer's retrospective premium as of a given evaluation date being more or less than the premium previously paid for the coverage period. [Statutory Authority: RCW 51.16.035. 81-04-024 (Order 81-02), § 296-17-904, filed 1/30/81.]

WAC 296-17-905 Dividends. Periodically, the department shall determine the total liability existing against the accident fund. If, after such determination, the department finds the accident fund, aside from the reserves deemed actuarially necessary according to recognized insurance principles, contains a surplus, the director, in his discretion may declare a dividend to be paid to, or credited to the accounts of, employers who were insured with the department during all or part of the period for which the dividend is declared, according to a uniform formula to be promulgated by the department. Any dividends so declared shall give due consideration to the solvency of the accident fund, not be unfairly discriminatory, and not be promised in advance of such declaration. An employer in default when the dividend is declared shall not be eligible to receive payment as provided by this section but credit will be made towards reducing the employer's obligation to the department. [Statutory Authority: RCW 51.16.035. 81-04-024 (Order 81-02), § 296-17-905, filed 1/30/81; Order 73-22, § 296-17-905, filed 11/9/73, effective 1/1/74.]

WAC 296-17-907 Dividend declarations and distributions. Dividends, if any, will be declared approximately fifteen months after the conclusion of the coverage period with credit or payment made within sixty days of the calculation. No dividend checks will be written for less than ten dollars.

Adjustments to the dividend calculation due to clerical errors will be made if reported to the department within ninety days of the payments. No subsequent adjustments will be made. [Statutory Authority: RCW 51-.16.035. 81-04-024 (Order 81-02), § 296-17-907, filed 1/30/81.]

WAC 296-17-910 Qualifications for employer groups for workers' compensation insurance. The department may insure the workers' compensation obligations of employers as a group, provided the following conditions are met:

(1) All the employers in the group are members of an organization that has been in existence for at least two years.

(2) The organization was formed for a purpose other than that of obtaining workers' compensation coverage.

(3) The business of the employers in the organization is substantially similar, taking into consideration the nature of the work being performed by workers of such employers such that the group comprises substantially homogeneous risks.

(4) The employers in the group constitute at least fifty percent of the total eligible employers in such organization. No groups with less than one hundred participating members will be formed unless the aggregate premium of those members is expected to exceed $250,000 during the coverage period.

(5) The formation and operation of the group program in the organization will substantially improve accident prevention and claims handling for the employers in the group.

Each employer seeking to enroll in a group for workers' compensation insurance must meet the conditions under WAC 296-17-913(2).

The above conditions do not pertain to groupings or combination of persons or risks by way of common ownership or common use and control for experience rating purposes. Combinations for experience rating are governed by WAC 296-17-873.

Final determination of group eligibility under this section rests with the department subject to review under chapter 51.52 RCW.

In providing employer group plans under this rule, the department may consider an employer group as a single employing entity for purposes of dividends or retrospective rating. No employer will be a member of more than one group for the purposes of insuring their workers' compensation obligations. [Statutory Authority: RCW 51.16.035. 82-05-019 (Order 82-5), § 296-17-910, filed 2/10/82; 81-04-024 (Order 81-02), § 296-17-910, filed 1/30/81; Order 73-22, § 296-17-910, filed 11/9/73, effective 1/1/74.]

WAC 296-17-911 Group dividends. Group dividends will be calculated provided:

(1) Employers qualify as a group as defined by WAC 296-17-910.

(2) Group submits a satisfactorily completed:

(a) Application for group dividend plan no later than April 30 for the coverage period beginning the following July 1;

(b) Employer's authorization for release of insurance data and group membership enrollment application for each employer account to be enrolled no later than July 1;

(c) Group dividend agreement no later than July 1.

(3) A dividend is declared under provisions of WAC 296-17-905.

Employers associated with the group at any time during the term of the group dividend agreement will remain parties to the group dividend agreement for the balance of its term.

Members of the organization or association which do not elect to participate in the group dividend at the inception of the agreement shall not become participating members in the group during the term of the agreement.

Each employer included as a group member in the group dividend agreement will maintain an individual account with the department and will continue to pay quarterly premiums based on assigned risk classification(s) and individual experience rating.

Any premiums, penalties or assessments owing the department by any member of the group will be withheld from the group's dividend.

Dividends will be calculated in accordance with WAC 296-17-905 and are subject to WAC 296-17-907 and 296-17-915.

The payment of the group dividend will be made by the department to the association and shall be distributed to the individual group members by the association according to the system for allocation described in the group dividend agreement and agreed upon by the members in their membership enrollment application. Dividend allocation systems must be applied in a consistent manner and shall not unfairly discriminate against any group member. Any portion of the dividend to be retained by the association as expenses, etc. must be clearly defined in the agreement. [Statutory Authority: RCW 51.16.035. 82-05-019 (Order 82-5), § 296-17-911, filed 2/10/82; 81-04-024 (Order 81-02), § 296-17-911, filed 1/30/81.]

WAC 296-17-912 Retrospective rating plan. The department shall offer a retrospective rating plan to qualified employers. This plan shall be available on a voluntary basis for the period of one coverage period and may be renewed at the end of that year. The retrospective rating plan shall be consistent with recognized insurance principles and shall be administered according to rules, scales, tables, formulas, schedules and factors promulgated by the department. [Statutory Authority: RCW 51.16.035. 81-04-024 (Order 81-02), § 296-17-912, filed 1/30/81.]

WAC 296-17-913 Qualifications for employer participation in a retrospective rating plan. The department may enroll interested employers in a retrospective rating plan as a means of insuring their workers' compensation obligations provided the following conditions are met:

(1) The employer submits a satisfactorily completed retrospective rating plan agreement for each employer account to be enrolled.

(2) The employer maintains an industrial insurance account in good standing with the department.

(3) The employer may be required to post a surety bond or other security deposit separate from the cash deposit required for establishing an industrial insurance account with the department. Such surety bond or security deposit would be sufficient to cover the difference between the employer's estimated standard premium and the maximum premium due under the retrospective rating plan. Past reporting data and current rate levels will be used to determine the estimated standard premium and maximum percentage retrospective premium due under the plan.

Final determination as to the employer's eligibility under this section and financial ability to assume the responsibilities under the retrospective rating plan rests with the department subject to review under chapter 51.52 RCW. [Statutory Authority: RCW 51.16.035. 82-05-019 (Order 82-5), § 296-17-913, filed 2/10/82; 81-04-024 (Order 81-02), § 296-17-913, filed 1/30/81.]

WAC 296-17-914 Retrospective rating formula. Employers who elect to have their premium adjusted under a retrospective rating plan must submit an application on a form provided by the department no later than April 30 for the coverage period beginning the following July 1. The employer must preselect a "maximum premium ratio" from Plan A or Plan B.

The employer's retrospective premium shall be calculated from the formula:

Retrospective Premium = Basic Premium + (loss conversion factor x incurred losses)

In the above formula, the basic premium is the product of the basic premium ratio times the employer's standard premium. The basic premium ratio is taken from Plan A (WAC 296-17-91901) or Plan B (WAC 296-17-91902) based on the employer's standard premium and preselected maximum premium ratio. The maximum retrospective premium is the product of the maximum premium ratio times the employer's standard premium. In the event that the retrospective premium formula produces a value greater than the maximum premium, the retrospective premium shall be reduced to the maximum premium.

Under Plan A, a firm may elect to forego the protection of a maximum premium ratio if its financial condition is sufficiently strong and stable so that it could qualify as a self-insurer under the department's guidelines for certification of self-insurers. The basic premium ratio effective for the coverage period beginning July 1, 1982, and ending June 30, 1983, will be .041 if the firm selects and qualifies for an unlimited maximum premium. [Statutory Authority: RCW 51.16.035. 82-05-019 (Order 82-5), § 296-17-914, filed 2/10/82; 81-04-024 (Order 81-02), § 296-17-914, filed 1/30/81.]

WAC 296-17-915 Evaluation of incurred losses dividend and retrospective rating plans. The initial evaluation date for each claim arising from incidents occurring during the coverage period shall be on and include December 31, six months immediately following the end of the coverage period. Each subsequent annual incurred loss evaluation under the retrospective rating plan shall have a valuation date of December 31, twelve months following the preceding evaluation date.

The estimated cost of each claim shall include all payments made as of the valuation date and may also include a reserve for future payments consistent with evaluation methods applicable to experience rating as set forth in WAC 296-17-870, subsections (1) through (6). The incurred losses for each employer shall be determined by multiplying the individual claim cost estimates by loss development factors, and adding the resulting developed losses for all the employer's claims. The following special procedures will be used for making individual claim cost estimates:

Fatal claims

Each fatal claim shall be assigned the "average death value," said value to be the average incurred cost for all fatal claims occurring during the coverage period.

Permanent total claims

Pension costs for permanent total injuries will be based on the annuity value at the time that the pension is awarded. Pension costs will not be reevaluated based on events after the pension has been awarded.

Occupational disease claims

The cost of any occupational disease claim paid from the accident fund and arising from exposure to the disease hazard under two or more employers, shall be prorated to each period of employment. Each employer's share of the claim cost shall be assigned to the coverage period during which the employer last employed the claimant under conditions of injurious exposure, provided the employer's share is at least ten percent of the total claim cost. [Statutory Authority: RCW 51.16.035. 82-05-019 (Order 82-5), § 296-17-915, filed 2/10/82; 81-04-024 (Order 81-02), § 296-17-915, filed 1/30/81.]

WAC 296-17-916 Retrospective premium adjustments--Due and payable. The initial retrospective premium adjustment will be calculated approximately fifteen months from the close of the coverage period and annually thereafter for a period of four years. Provided a request is made within ninety days following promulgation of the fifth and final required retrospective premium adjustment by either the employer or department up to two subsequent annual retrospective premium adjustments on the coverage period will be made.

Retrospective premium adjustments become due or payable within sixty days of notification of amount. Reevaluation of incurred losses or premium audits will not delay retrospective premium adjustment payments. [Statutory Authority: RCW 51.16.035. 81-04-024 (Order 81-02), § 296-17-916, filed 1/30/81.]

WAC 296-17-917 Qualifications for employer group participation in retrospective rating plan. The department may enroll interested groups in the retrospective rating plan provided:

(1) Employers qualify as a group as defined by WAC 296-17-910.

(2) Employers maintain industrial insurance accounts in good standing with the department.

(3) Group submits a satisfactorily completed:

(a) Application for group retrospective rating plan no later than April 30 for the coverage period beginning the following July 1;

(b) Employer's authorization for release of insurance data and group membership enrollment application for each employer account to be enrolled by July 1;

(c) Group retrospective rating plan agreement by July 1.

(4) The group may be required to post a surety bond or other security deposit separate from the individual employer's cash deposits required for establishing industrial insurance accounts with the department. The amount of such surety bond or other security deposit, if required, may be fixed by the department in any amount equal to or less than the difference between the group's

estimated standard premium and the maximum premium due under the retrospective rating plan. Past reporting data and current rate levels will be used to determine the estimated standard premium and maximum percentage retrospective premium due under the plan.

Each employer included as a group member in the group retrospective rating plan agreement will maintain an individual account with the department and will continue to pay quarterly premiums based on assigned risk classification(s) and individual experience rating.

Employers associated with the group at any time during the term of the group retrospective rating plan agreement will remain parties to the agreement for the balance of its term.

Members of the organization or association which do not elect to participate in the group retrospective rating plan at the inception of the agreement shall not become participating members in the group during the term of the agreement.

The payment of the group retrospective premium adjustment will be made to or collected from the association. The distribution to the individual group members or collection from the individual group members will be done by the association according to the system for allocation described in the group retrospective rating plan agreement and agreed upon by the members in their membership enrollment application. Group retrospective rating plan allocation systems must be applied in a consistent manner and shall not unfairly discriminate against any group member. Any portion of the retrospective premium adjustment to be retained by the association as expenses, etc. or any surcharge to the group member for expenses, etc. by the association over and above the portion of the retrospective premium adjustment to be collected from the group member must be clearly defined in the agreement.

Any premium, penalties or assessments owing the department by any employer in the group will be included in the group's retrospective premium adjustment.

Group retrospective premium adjustment will be calculated according to WAC 296-17-914 and is subject to WAC 296-17-915 and 296-17-916. [Statutory Authority: RCW 51.16.035. 82-05-019 (Order 82-5), § 296-17-917, filed 2/10/82; 81-04-024 (Order 81-02), § 296-17-917, filed 1/30/81.]

WAC 296-17-919 Table I.

RETROSPECTIVE RATING PLANS A and B
STANDARD PREMIUM SIZE RANGES
Effective for the coverage period July 1, 1982, through June 30, 1983

Size Group Number	Standard Premium Range	
84	$ 2,470 – $	2,759
83	2,760 –	3,099
82	3,100 –	3,469
81	3,470 –	3,889
80	3,890 –	4,359
79	4,360 –	4,879
78	4,880 –	5,469
77	5,470 –	6,139
76	6,140 –	6,869
75	6,870 –	7,679
74	7,680 –	8,209
73	8,210 –	8,769
72	8,770 –	9,369
71	9,370 –	9,999
70	10,000 –	10,699
69	10,700 –	11,399
68	11,400 –	12,199
67	12,200 –	13,099
66	13,100 –	13,999
65	14,000 –	14,899
64	14,900 –	15,899
63	15,900 –	16,999
62	17,000 –	18,199
61	18,200 –	19,399
60	19,400 –	20,799
59	20,800 –	22,199
58	22,200 –	23,699
57	23,700 –	25,299
56	25,300 –	27,099
55	27,100 –	28,899
54	28,900 –	30,899
53	30,900 –	32,999
52	33,000 –	35,299
51	35,300 –	37,699
50	37,700 –	40,199
49	40,200 –	42,999
48	43,000 –	45,899
47	45,900 –	49,099
46	49,100 –	52,499
45	52,500 –	55,999
44	56,000 –	59,899
43	59,900 –	63,999
42	64,000 –	68,299
41	68,300 –	72,999
40	73,000 –	77,999
39	78,000 –	83,399
38	83,400 –	89,099
37	89,100 –	96,199
36	96,200 –	106,999
35	107,000 –	117,999
34	118,000 –	130,999
33	131,000 –	144,999
32	145,000 –	160,999
31	161,000 –	178,999
30	179,000 –	197,999
29	198,000 –	219,999
28	220,000 –	243,999
27	244,000 –	269,999
26	270,000 –	299,999
25	300,000 –	331,999
24	332,000 –	367,999

Size Group Number	Standard Premium Range	
23	368,000 –	407,999
22	408,000 –	452,999
21	453,000 –	501,999
20	502,000 –	556,999
19	557,000 –	617,999
18	618,000 –	683,999
17	684,000 –	758,999
16	759,000 –	841,999
15	842,000 –	932,999
14	933,000 –	1,155,999
13	1,156,000 –	1,377,999
12	1,378,000 –	1,839,999
11	1,840,000 –	2,325,999
10	2,326,000 –	2,841,999
9	2,842,000 –	3,552,999
8	3,553,000 –	4,567,999
7	4,568,000 –	6,064,999
6	6,065,000 –	8,474,999
5	8,475,000 –	12,659,999
4	12,660,000 –	20,919,999
3	20,920,000 –	41,109,999
2	41,110,000 –	113,899,999
1	113,900,000 & Over	

[Statutory Authority: RCW 51.16.035. 82-05-019 (Order 82-5), § 296-17-919, filed 2/10/82; 81-24-042 (Order 81-30), § 296-17-919, filed 11/30/81, effective 1/1/82; 81-04-024 (Order 81-02), § 296-17-919, filed 1/30/81.]

WAC 296-17-91901 Table II.

RETROSPECTIVE RATING PLAN A
BASIC PREMIUM RATIOS
LOSS CONVERSION FACTOR = .705
Effective for the coverage period beginning July 1, 1982, through June 30, 1983

Maximum Premium Ratio:	1.05	1.10	1.15	1.20	1.25	1.30	1.35	1.40	1.45	1.50	1.60	1.70	1.80	2.00
Size Group														
84	.954	.944	.935	.923	.915	.908	.902	.895	.890	.884	.871	.859	.848	.824
83	.952	.940	.930	.920	.911	.903	.896	.890	.883	.876	.862	.848	.837	.812
82	.951	.938	.927	.916	.905	.897	.891	.883	.875	.868	.853	.839	.825	.801
81	.947	.935	.922	.912	.901	.894	.884	.875	.868	.859	.844	.828	.814	.790
80	.946	.933	.919	.906	.895	.887	.878	.870	.861	.850	.834	.818	.803	.777
79	.944	.929	.917	.902	.892	.881	.871	.862	.853	.844	.825	.808	.793	.766
78	.943	.926	.911	.899	.886	.876	.865	.854	.845	.835	.814	.797	.781	.754
77	.942	.924	.908	.894	.882	.870	.859	.847	.836	.825	.804	.786	.770	.742
76	.938	.918	.903	.887	.875	.865	.851	.840	.827	.817	.794	.776	.757	.731
75	.936	.917	.899	.883	.870	.858	.844	.832	.819	.807	.784	.763	.747	.718
74	.935	.914	.894	.877	.865	.850	.838	.824	.809	.798	.774	.753	.735	.707
73	.933	.909	.891	.873	.858	.843	.830	.815	.801	.788	.763	.741	.724	.695
72	.927	.906	.887	.868	.853	.838	.823	.806	.791	.778	.753	.730	.712	.684
71	.926	.900	.881	.864	.847	.830	.814	.797	.781	.768	.740	.719	.699	.671
70	.924	.897	.877	.856	.840	.823	.805	.788	.772	.757	.729	.706	.687	.660
69	.922	.892	.871	.852	.835	.817	.797	.778	.762	.746	.718	.694	.676	.648
68	.917	.889	.868	.846	.827	.809	.787	.769	.752	.734	.707	.683	.664	.637
67	.915	.886	.862	.839	.820	.801	.781	.759	.741	.724	.695	.671	.651	.625
66	.913	.880	.858	.835	.812	.792	.772	.750	.731	.713	.683	.658	.640	.613
65	.907	.877	.852	.828	.807	.783	.763	.740	.720	.703	.670	.646	.628	.601
64	.905	.871	.845	.824	.799	.775	.754	.730	.709	.691	.659	.635	.616	.590
63	.897	.862	.835	.809	.787	.762	.737	.717	.695	.677	.647	.623	.603	.575
62	.895	.858	.825	.798	.772	.747	.725	.702	.683	.664	.634	.610	.591	.562
61	.888	.849	.815	.787	.760	.734	.709	.689	.670	.653	.622	.598	.579	.548
60	.885	.841	.805	.777	.749	.723	.698	.678	.656	.638	.611	.586	.566	.534
59	.877	.831	.795	.761	.733	.708	.685	.662	.644	.627	.596	.574	.553	.520
58	.870	.823	.785	.751	.723	.696	.671	.651	.633	.615	.585	.560	.540	.503
57	.867	.813	.775	.740	.711	.684	.660	.639	.618	.601	.572	.547	.525	.488
56	.859	.804	.765	.730	.701	.674	.649	.626	.607	.590	.561	.533	.512	.474
55	.856	.801	.755	.720	.686	.660	.637	.614	.595	.578	.546	.521	.497	.457
54	.848	.791	.746	.709	.676	.648	.623	.603	.584	.567	.534	.508	.484	.443
53	.840	.781	.735	.694	.664	.637	.612	.591	.569	.552	.520	.493	.469	.427
52	.837	.772	.726	.684	.654	.626	.600	.577	.558	.540	.507	.480	.455	.411
51	.828	.762	.710	.673	.639	.612	.586	.565	.545	.527	.495	.465	.440	.397
50	.820	.753	.701	.662	.628	.600	.574	.553	.531	.513	.479	.451	.427	.381
49	.810	.743	.690	.652	.616	.589	.563	.539	.519	.500	.467	.436	.411	.367

Maximum Premium Ratio:	1.05	1.10	1.15	1.20	1.25	1.30	1.35	1.40	1.45	1.50	1.60	1.70	1.80	2.00
Size Group														
48	.801	.733	.680	.637	.606	.574	.551	.526	.507	.486	.451	.423	.398	.352
47	.792	.724	.669	.626	.591	.563	.536	.515	.492	.473	.439	.408	.382	.338
46	.789	.714	.660	.615	.580	.551	.524	.499	.479	.460	.424	.395	.369	.323
45	.780	.699	.649	.604	.568	.536	.509	.487	.464	.445	.410	.380	.354	.310
44	.771	.688	.634	.589	.557	.523	.497	.472	.451	.432	.395	.366	.340	.295
43	.761	.679	.623	.578	.542	.512	.485	.459	.436	.417	.381	.351	.325	.283
42	.753	.668	.612	.567	.530	.497	.469	.444	.424	.404	.366	.337	.311	.268
41	.743	.659	.601	.555	.514	.484	.456	.431	.407	.388	.354	.322	.297	.256
40	.733	.648	.585	.540	.502	.468	.441	.419	.395	.376	.340	.310	.285	.243
39	.724	.637	.574	.527	.490	.455	.428	.403	.379	.359	.325	.297	.272	.230
38	.713	.621	.563	.511	.474	.440	.412	.390	.366	.347	.312	.283	.258	.218
37	.704	.610	.545	.498	.461	.427	.399	.374	.354	.332	.298	.270	.246	.208
36	.686	.592	.534	.482	.444	.410	.383	.361	.337	.319	.286	.259	.235	.197
35	.676	.581	.517	.470	.427	.398	.370	.345	.325	.304	.273	.245	.224	.188
34	.665	.564	.499	.452	.414	.380	.354	.333	.310	.291	.260	.234	.214	.178
33	.647	.551	.486	.435	.398	.368	.341	.316	.297	.280	.248	.223	.201	.170
32	.629	.533	.469	.422	.384	.352	.325	.304	.282	.264	.236	.212	.191	.160
31	.617	.516	.450	.404	.368	.338	.312	.288	.269	.252	.222	.200	.181	.151
30	.599	.503	.438	.387	.351	.322	.296	.275	.254	.240	.211	.188	.170	.143
29	.580	.485	.421	.374	.337	.306	.283	.260	.241	.225	.199	.177	.160	.134
28	.562	.467	.403	.357	.321	.292	.266	.247	.229	.214	.188	.167	.150	.126
27	.550	.449	.390	.339	.308	.276	.254	.232	.215	.201	.174	.156	.141	.119
26	.533	.437	.373	.327	.290	.263	.238	.218	.202	.187	.163	.146	.131	.110
25	.521	.420	.355	.309	.273	.245	.221	.203	.187	.174	.151	.135	.122	.102
24	.512	.408	.342	.291	.260	.229	.208	.190	.174	.160	.141	.124	.112	.095
23	.502	.391	.325	.278	.242	.216	.193	.174	.162	.148	.129	.115	.103	.087
22	.493	.380	.307	.261	.225	.198	.179	.162	.147	.136	.117	.105	.094	.080
21	.484	.362	.294	.242	.212	.185	.164	.149	.136	.125	.108	.097	.087	.075
20	.465	.342	.275	.224	.194	.170	.151	.137	.125	.117	.101	.090	.082	.072
19	.446	.322	.256	.211	.177	.157	.140	.126	.116	.107	.094	.085	.077	.068
18	.426	.302	.237	.193	.165	.143	.128	.116	.106	.099	.087	.079	.073	.065
17	.398	.283	.217	.175	.149	.130	.116	.105	.097	.090	.079	.073	.068	.061
16	.370	.257	.199	.162	.136	.119	.104	.096	.088	.081	.074	.068	.063	.057
15	.349	.236	.180	.145	.121	.104	.094	.085	.078	.074	.067	.062	.058	.054
14	.320	.216	.162	.128	.108	.093	.084	.076	.070	.067	.060	.056	.054	.051
13	.290	.191	.144	.116	.097	.082	.073	.067	.062	.059	.054	.052	.050	.048
12	.255	.170	.125	.099	.082	.072	.063	.057	.053	.051	.048	.046	.046	.044
11	.234	.151	.112	.087	.071	.061	.053	.049	.046	.044	.042	.041	.041	.041
10	.205	.132	.097	.076	.062	.054	.049	.046	.044	.043	.041	.041	.041	.041
9	.177	.114	.084	.067	.055	.051	.046	.044	.042	.042	.041	.041	.041	.041
8	.149	.099	.074	.058	.051	.046	.044	.042	.042	.041	.041	.041	.041	.041
7	.129	.083	.063	.052	.046	.044	.042	.041	.041	.041	.041	.041	.041	.041
6	.108	.071	.054	.047	.044	.042	.041	.041	.041	.041	.041	.041	.041	.041
5	.089	.057	.048	.043	.042	.041	.041	.041	.041	.041	.041	.041	.041	.041
4	.071	.051	.044	.042	.041	.041	.041	.041	.041	.041	.041	.041	.041	.041
3	.054	.044	.041	.041	.041	.041	.041	.041	.041	.041	.041	.041	.041	.041
2	.045	.041	.041	.041	.041	.041	.041	.041	.041	.041	.041	.041	.041	.041
1	.041	.041	.041	.041	.041	.041	.041	.041	.041	.041	.041	.041	.041	.041

[Statutory Authority: RCW 51.16.035. 82-05-019 (Order 82-5), § 296-17-91901, filed 2/10/82; 81-04-024 (Order 81-02), § 296-17-91901, filed 1/30/81.]

WAC 296-17-91902 Table III.

RETROSPECTIVE RATING PLAN B
BASIC PREMIUM RATIOS
AND LOSS CONVERSION FACTORS
Effective for the coverage period beginning July 1, 1982, through June 30, 1983

Maximum Premium Ratio:		1.05	1.10	1.15	1.20	1.25	1.30	1.35	1.40	1.45	1.50	1.60	1.70	1.80	2.00
Size Group															
84	Basic Premium Ratio	.998	.997	.995	.993	.991	.990	.988	.986	.984	.983	.979	.976	.972	.965
	Loss Conversion Factor	.002	.003	.005	.007	.009	.010	.012	.014	.016	.017	.021	.024	.028	.035
83	Basic Premium Ratio	.998	.996	.994	.993	.991	.989	.987	.985	.983	.981	.978	.974	.970	.963
	Loss Conversion Factor	.002	.004	.006	.007	.009	.011	.013	.015	.017	.019	.022	.026	.030	.037
82	Basic Premium Ratio	.998	.996	.994	.992	.990	.988	.986	.984	.982	.980	.976	.972	.968	.960
	Loss Conversion Factor	.002	.004	.006	.008	.010	.012	.014	.016	.018	.020	.024	.028	.032	.040
81	Basic Premium Ratio	.998	.996	.994	.991	.989	.987	.985	.983	.981	.979	.974	.970	.966	.957
	Loss Conversion Factor	.002	.004	.006	.009	.011	.013	.015	.017	.019	.021	.026	.030	.034	.043
80	Basic Premium Ratio	.998	.995	.993	.991	.988	.986	.984	.982	.979	.977	.972	.968	.963	.954
	Loss Conversion Factor	.002	.005	.007	.009	.012	.014	.016	.018	.021	.023	.028	.032	.037	.046
79	Basic Premium Ratio	.998	.995	.993	.990	.988	.985	.983	.980	.978	.975	.970	.965	.960	.950
	Loss Conversion Factor	.002	.005	.007	.010	.012	.015	.017	.020	.022	.025	.030	.035	.040	.050
78	Basic Premium Ratio	.997	.995	.992	.989	.987	.984	.981	.979	.976	.973	.968	.963	.957	.947
	Loss Conversion Factor	.003	.005	.008	.011	.013	.016	.019	.021	.024	.027	.032	.037	.043	.053
77	Basic Premium Ratio	.997	.994	.991	.989	.986	.983	.980	.977	.974	.971	.966	.960	.954	.943
	Loss Conversion Factor	.003	.006	.009	.011	.014	.017	.020	.023	.026	.029	.034	.040	.046	.057
76	Basic Premium Ratio	.997	.994	.991	.988	.985	.982	.978	.975	.972	.969	.963	.957	.951	.938
	Loss Conversion Factor	.003	.006	.009	.012	.015	.018	.022	.025	.028	.031	.037	.043	.049	.062
75	Basic Premium Ratio	.997	.993	.990	.987	.983	.980	.977	.973	.970	.967	.960	.954	.947	.934
	Loss Conversion Factor	.003	.007	.010	.013	.017	.020	.023	.027	.030	.033	.040	.046	.053	.066
74	Basic Premium Ratio	.996	.993	.989	.986	.982	.979	.975	.971	.968	.964	.957	.950	.943	.929
	Loss Conversion Factor	.004	.007	.011	.014	.018	.021	.025	.029	.032	.036	.043	.050	.057	.071
73	Basic Premium Ratio	.996	.992	.988	.985	.981	.977	.973	.969	.965	.962	.954	.946	.938	.923
	Loss Conversion Factor	.004	.008	.012	.015	.019	.023	.027	.031	.035	.038	.046	.054	.062	.077
72	Basic Premium Ratio	.996	.992	.988	.983	.979	.975	.971	.967	.963	.959	.950	.942	.934	.917
	Loss Conversion Factor	.004	.008	.012	.017	.021	.025	.029	.033	.037	.041	.050	.058	.066	.083
71	Basic Premium Ratio	.996	.991	.987	.982	.978	.973	.969	.964	.960	.955	.946	.938	.929	.911
	Loss Conversion Factor	.004	.009	.013	.018	.022	.027	.031	.036	.040	.045	.054	.062	.071	.089
70	Basic Premium Ratio	.995	.990	.986	.981	.976	.971	.966	.961	.957	.952	.942	.933	.923	.904
	Loss Conversion Factor	.005	.010	.014	.019	.024	.029	.034	.039	.043	.048	.058	.067	.077	.096
69	Basic Premium Ratio	.995	.990	.984	.979	.974	.969	.964	.959	.953	.948	.938	.927	.917	.896
	Loss Conversion Factor	.005	.010	.016	.021	.026	.031	.036	.041	.047	.052	.062	.073	.083	.104
68	Basic Premium Ratio	.994	.989	.983	.978	.972	.966	.961	.955	.950	.944	.933	.922	.910	.888
	Loss Conversion Factor	.006	.011	.017	.022	.028	.034	.039	.045	.050	.056	.067	.078	.090	.112
67	Basic Premium Ratio	.994	.988	.982	.976	.970	.964	.958	.952	.946	.940	.927	.915	.903	.879
	Loss Conversion Factor	.006	.012	.018	.024	.030	.036	.042	.048	.054	.060	.073	.085	.097	.121
66	Basic Premium Ratio	.993	.987	.980	.974	.967	.961	.954	.948	.941	.935	.922	.909	.895	.869
	Loss Conversion Factor	.007	.013	.020	.026	.033	.039	.046	.052	.059	.065	.078	.091	.105	.131
65	Basic Premium Ratio	.993	.986	.979	.972	.965	.958	.951	.944	.936	.929	.915	.901	.887	.859
	Loss Conversion Factor	.007	.014	.021	.028	.035	.042	.049	.056	.064	.071	.085	.099	.113	.141
64	Basic Premium Ratio	.992	.985	.977	.969	.962	.954	.946	.939	.931	.924	.908	.893	.878	.847
	Loss Conversion Factor	.008	.015	.023	.031	.038	.046	.054	.061	.069	.076	.092	.107	.122	.153
63	Basic Premium Ratio	.992	.983	.975	.967	.959	.950	.942	.934	.925	.917	.901	.884	.867	.834
	Loss Conversion Factor	.008	.017	.025	.033	.041	.050	.058	.066	.075	.083	.099	.116	.133	.166
62	Basic Premium Ratio	.991	.982	.973	.964	.955	.946	.937	.928	.919	.910	.892	.874	.856	.821
	Loss Conversion Factor	.009	.018	.027	.036	.045	.054	.063	.072	.081	.090	.108	.126	.144	.179
61	Basic Premium Ratio	.990	.981	.971	.961	.951	.942	.932	.922	.912	.903	.883	.864	.844	.805
	Loss Conversion Factor	.010	.019	.029	.039	.049	.058	.068	.078	.088	.097	.117	.136	.156	.195
60	Basic Premium Ratio	.989	.979	.968	.958	.947	.937	.926	.915	.905	.894	.873	.852	.831	.788
	Loss Conversion Factor	.011	.021	.032	.042	.053	.063	.074	.085	.095	.106	.127	.148	.169	.212

Maximum Premium Ratio:		1.05	1.10	1.15	1.20	1.25	1.30	1.35	1.40	1.45	1.50	1.60	1.70	1.80	2.00
Size Group															
59	Basic Premium Ratio	.988	.977	.965	.954	.942	.931	.919	.908	.896	.885	.862	.839	.816	.770
	Loss Conversion Factor	.012	.023	.035	.046	.058	.069	.081	.092	.104	.115	.138	.161	.184	.230
58	Basic Premium Ratio	.987	.975	.962	.950	.937	.925	.912	.900	.887	.875	.850	.825	.800	.750
	Loss Conversion Factor	.013	.025	.038	.050	.063	.075	.088	.100	.113	.125	.150	.175	.200	.250
57	Basic Premium Ratio	.986	.973	.959	.945	.932	.918	.904	.891	.877	.863	.836	.808	.781	.726
	Loss Conversion Factor	.014	.027	.041	.055	.068	.082	.096	.109	.123	.137	.164	.192	.219	.274
56	Basic Premium Ratio	.985	.970	.955	.940	.925	.910	.895	.880	.865	.850	.820	.790	.760	.701
	Loss Conversion Factor	.015	.030	.045	.060	.075	.090	.105	.120	.135	.150	.180	.210	.240	.299
55	Basic Premium Ratio	.983	.967	.950	.933	.917	.900	.883	.867	.850	.833	.800	.767	.733	.667
	Loss Conversion Factor	.017	.033	.050	.067	.083	.100	.117	.133	.150	.167	.200	.233	.267	.333
54	Basic Premium Ratio	.982	.964	.947	.929	.911	.893	.875	.858	.840	.822	.786	.751	.715	.644
	Loss Conversion Factor	.018	.036	.053	.071	.089	.107	.125	.142	.160	.178	.214	.249	.285	.356
53	Basic Premium Ratio	.981	.962	.943	.924	.905	.886	.867	.848	.829	.810	.772	.734	.696	.620
	Loss Conversion Factor	.019	.038	.057	.076	.095	.114	.133	.152	.171	.190	.228	.266	.304	.380
52	Basic Premium Ratio	.980	.960	.939	.919	.899	.879	.858	.838	.818	.798	.757	.717	.676	.595
	Loss Conversion Factor	.020	.040	.061	.081	.101	.121	.142	.162	.182	.202	.243	.283	.324	.405
51	Basic Premium Ratio	.978	.957	.935	.913	.892	.870	.848	.827	.805	.783	.740	.696	.653	.566
	Loss Conversion Factor	.022	.043	.065	.087	.108	.130	.152	.173	.195	.217	.260	.304	.347	.434
50	Basic Premium Ratio	.977	.954	.930	.907	.884	.861	.838	.815	.791	.768	.722	.675	.629	.536
	Loss Conversion Factor	.023	.046	.070	.093	.116	.139	.162	.185	.209	.232	.278	.325	.371	.464
49	Basic Premium Ratio	.975	.951	.926	.901	.876	.852	.827	.802	.777	.753	.703	.654	.604	.505
	Loss Conversion Factor	.025	.049	.074	.099	.124	.148	.173	.198	.223	.247	.297	.346	.396	.495
48	Basic Premium Ratio	.973	.947	.920	.894	.867	.841	.814	.788	.761	.735	.682	.629	.575	.469
	Loss Conversion Factor	.027	.053	.080	.106	.133	.159	.186	.212	.239	.265	.318	.371	.425	.531
47	Basic Premium Ratio	.972	.943	.915	.886	.858	.830	.801	.773	.745	.716	.659	.603	.546	.432
	Loss Conversion Factor	.028	.057	.085	.114	.142	.170	.199	.227	.255	.284	.341	.397	.454	.568
46	Basic Premium Ratio	.970	.939	.909	.878	.848	.817	.787	.756	.726	.695	.634	.573	.512	.390
	Loss Conversion Factor	.030	.061	.091	.122	.152	.183	.213	.244	.274	.305	.366	.427	.488	.610
45	Basic Premium Ratio	.967	.935	.902	.869	.837	.804	.771	.739	.706	.673	.608	.543	.477	.347
	Loss Conversion Factor	.033	.065	.098	.131	.163	.196	.229	.261	.294	.327	.392	.457	.523	.653
44	Basic Premium Ratio	.965	.930	.894	.859	.824	.789	.754	.719	.683	.648	.578	.508	.437	.297
	Loss Conversion Factor	.035	.070	.106	.141	.176	.211	.246	.281	.317	.352	.422	.492	.563	.703
43	Basic Premium Ratio	.962	.925	.887	.849	.812	.774	.736	.698	.661	.623	.548	.472	.397	.246
	Loss Conversion Factor	.038	.075	.113	.151	.188	.226	.264	.302	.339	.377	.452	.528	.603	.754
42	Basic Premium Ratio	.959	.919	.878	.838	.797	.756	.716	.675	.635	.594	.513	.431	.350	.188
	Loss Conversion Factor	.041	.081	.122	.162	.203	.244	.284	.325	.365	.406	.487	.569	.650	.812
41	Basic Premium Ratio	.957	.913	.870	.826	.783	.739	.696	.652	.609	.565	.478	.391	.304	.130
	Loss Conversion Factor	.043	.087	.130	.174	.217	.261	.304	.348	.391	.435	.522	.609	.696	.870
40	Basic Premium Ratio	.953	.906	.860	.813	.766	.719	.672	.625	.579	.532	.438	.345	.251	.064
	Loss Conversion Factor	.047	.094	.140	.187	.234	.281	.328	.375	.421	.468	.562	.655	.749	.936
39	Basic Premium Ratio	.950	.900	.850	.800	.750	.700	.650	.600	.550	.500	.400	.300	.200	.000
	Loss Conversion Factor	.050	.100	.150	.200	.250	.300	.350	.400	.450	.500	.600	.700	.800	1.000
38	Basis Premium Ratio	.946	.893	.839	.785	.732	.678	.624	.571	.517	.464	.356	.249	.142	.000
	Loss Conversion Factor	.054	.107	.161	.215	.268	.322	.376	.429	.483	.536	.644	.751	.858	.976
37	Basic Premium Ratio	.942	.884	.826	.769	.711	.653	.595	.537	.479	.421	.306	.190	.074	.000
	Loss Conversion Factor	.058	.116	.174	.231	.289	.347	.405	.463	.521	.579	.694	.810	.926	.953
36	Basic Premium Ratio	.938	.876	.815	.753	.691	.629	.568	.506	.444	.382	.259	.135	.012	.000
	Loss Conversion Factor	.062	.124	.185	.247	.309	.371	.432	.494	.556	.618	.741	.865	.988	.933
35	Basic Premium Ratio	.934	.868	.801	.735	.669	.603	.536	.470	.404	.338	.205	.073	.000	.000
	Loss Conversion Factor	.066	.132	.199	.265	.331	.397	.464	.530	.596	.662	.795	.927	.978	.915
34	Basic Premium Ratio	.929	.857	.786	.715	.643	.572	.500	.429	.358	.286	.144	.001	.000	.000
	Loss Conversion Factor	.071	.143	.214	.285	.357	.428	.500	.571	.642	.714	.856	.999	.957	.898
33	Basic Premium Ratio	.923	.845	.768	.691	.613	.536	.458	.381	.304	.226	.072	.000	.000	.000
	Loss Conversion Factor	.077	.155	.232	.309	.387	.464	.542	.619	.696	.774	.928	.974	.937	.884

Maximum Premium Ratio:		1.05	1.10	1.15	1.20	1.25	1.30	1.35	1.40	1.45	1.50	1.60	1.70	1.80	2.00
Size Group															
32	Basic Premium Ratio	.916	.831	.747	.662	.578	.493	.409	.324	.240	.155	.000	.000	.000	.000
	Loss Conversion Factor	.084	.169	.253	.338	.422	.507	.591	.676	.760	.845	.996	.951	.917	.870
31	Basic Premium Ratio	.909	.819	.728	.637	.546	.456	.365	.274	.183	.093	.000	.000	.000	.000
	Loss Conversion Factor	.091	.181	.272	.363	.454	.544	.635	.726	.817	.907	.973	.931	.900	.856
30	Basic Premium Ratio	.899	.799	.698	.597	.497	.396	.295	.195	.094	.000	.000	.000	.000	.000
	Loss Conversion Factor	.101	.201	.302	.403	.503	.604	.705	.805	.906	1.000	.950	.913	.883	.844
29	Basic Premium Ratio	.890	.781	.671	.561	.451	.342	.232	.122	.013	.000	.000	.000	.000	.000
	Loss Conversion Factor	.110	.219	.329	.439	.549	.658	.768	.878	.987	.975	.927	.894	.869	.833
28	Basic Premium Ratio	.880	.759	.639	.518	.398	.277	.157	.036	.000	.000	.000	.000	.000	.000
	Loss Conversion Factor	.120	.241	.361	.482	.602	.723	.843	.964	.978	.950	.907	.876	.854	.822
27	Basic Premium Ratio	.866	.733	.599	.465	.332	.198	.065	.000	.000	.000	.000	.000	.000	.000
	Loss Conversion Factor	.134	.267	.401	.535	.668	.802	.935	.985	.953	.927	.889	.861	.841	.813
26	Basic Premium Ratio	.856	.712	.568	.424	.279	.135	.000	.000	.000	.000	.000	.000	.000	.000
	Loss Conversion Factor	.144	.288	.432	.576	.721	.865	.995	.959	.929	.906	.871	.847	.828	.803
25	Basic Premium Ratio	.837	.673	.510	.347	.183	.020	.000	.000	.000	.000	.000	.000	.000	.000
	Loss Conversion Factor	.163	.327	.490	.653	.817	.980	.966	.933	.907	.887	.855	.832	.816	.794
24	Basic Premium Ratio	.821	.641	.462	.283	.104	.000	.000	.000	.000	.000	.000	.000	.000	.000
	Loss Conversion Factor	.179	.359	.538	.717	.896	.980	.942	.911	.888	.868	.839	.820	.805	.785
23	Basic Premium Ratio	.801	.603	.404	.205	.007	.000	.000	.000	.000	.000	.000	.000	.000	.000
	Loss Conversion Factor	.199	.397	.596	.795	.993	.954	.916	.889	.867	.851	.825	.808	.795	.778
22	Basic Premium Ratio	.777	.555	.332	.109	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	Loss Conversion Factor	.223	.445	.668	.891	.974	.926	.895	.869	.849	.834	.812	.796	.785	.771
21	Basic Premium Ratio	.763	.526	.289	.052	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	Loss Conversion Factor	.237	.474	.711	.948	.947	.903	.874	.852	.834	.821	.801	.787	.778	.766
20	Basic Premium Ratio	.728	.456	.183	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	Loss Conversion Factor	.272	.544	.817	.977	.919	.882	.855	.835	.821	.809	.793	.782	.773	.762
19	Basic Premium Ratio	.706	.412	.118	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	Loss Conversion Factor	.294	.588	.882	.946	.895	.861	.838	.821	.809	.799	.785	.774	.768	.759
18	Basic Premium Ratio	.650	.300	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	Loss Conversion Factor	.350	.700	.995	.916	.872	.843	.824	.808	.798	.790	.777	.769	.763	.755
17	Basic Premium Ratio	.613	.226	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	Loss Conversion Factor	.387	.774	.956	.889	.852	.826	.808	.797	.788	.780	.770	.764	.759	.752
16	Basic Premium Ratio	.568	.135	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	Loss Conversion Factor	.432	.865	.923	.868	.834	.811	.797	.786	.778	.772	.764	.759	.755	.750
15	Basic Premium Ratio	.510	.020	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	Loss Conversion Factor	.490	.980	.892	.846	.816	.798	.785	.776	.770	.764	.758	.753	.750	.746
14	Basic Premium Ratio	.332	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	Loss Conversion Factor	.668	.950	.868	.826	.802	.785	.775	.766	.761	.757	.752	.749	.747	.744
13	Basic Premium Ratio	.183	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	Loss Conversion Factor	.817	.909	.845	.810	.787	.774	.765	.759	.754	.750	.746	.744	.742	.741
12	Basic Premium Ratio	.058	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	Loss Conversion Factor	.942	.877	.822	.793	.775	.763	.755	.750	.747	.744	.742	.741	.739	.738
11	Basic Premium Ratio	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	Loss Conversion Factor	.963	.852	.805	.779	.763	.754	.746	.743	.739	.738	.736	.735	.735	.735
10	Basic Premium Ratio	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	Loss Conversion Factor	.919	.828	.789	.768	.756	.747	.743	.739	.738	.736	.736	.735	.735	.735
9	Basic Premium Ratio	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	Loss Conversion Factor	.878	.807	.776	.759	.749	.743	.739	.738	.736	.736	.735	.735	.735	.735
8	Basic Premium Ratio	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	Loss Conversion Factor	.847	.789	.765	.751	.744	.740	.738	.736	.736	.735	.735	.735	.735	.735
7	Basic Premium Ratio	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	Loss Conversion Factor	.819	.774	.755	.745	.740	.738	.736	.736	.735	.735	.735	.735	.735	.735
6	Basic Premium Ratio	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	Loss Conversion Factor	.796	.761	.747	.740	.737	.736	.735	.735	.735	.735	.735	.735	.735	.735

Maximum Premium Ratio:		1.05	1.10	1.15	1.20	1.25	1.30	1.35	1.40	1.45	1.50	1.60	1.70	1.80	2.00
Size Group															
5	Basic Premium Ratio	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	Loss Conversion Factor	.776	.750	.741	.737	.736	.735	.735	.735	.735	.735	.735	.735	.735	.735
4	Basic Premium Ratio	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	Loss Conversion Factor	.761	.743	.738	.736	.735	.735	.735	.735	.735	.735	.735	.735	.735	.735
3	Basic Premium Ratio	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	Loss Conversion Factor	.747	.738	.736	.735	.735	.735	.735	.735	.735	.735	.735	.735	.735	.735
2	Basic Premium Ratio	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	Loss Conversion Factor	.739	.735	.735	.735	.735	.735	.735	.735	.735	.735	.735	.735	.735	.735
1	Basic Premium Ratio	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	Loss Conversion Factor	.735	.735	.735	.735	.735	.735	.735	.735	.735	.735	.735	.735	.735	.735

[Statutory Authority: RCW 51.16.035. 82-05-019 (Order 82-5), § 296-17-91902, filed 2/10/82; 81-04-024 (Order 81-02), § 296-17-91902, filed 1/30/81.]

WAC 296-17-920 Assessment for supplemental pension fund. The amount of 20.9 mills ($.0209) shall be retained by each employer from the earnings of each of his workmen for each hour or fraction thereof the workman is employed. Provided that in classifications 67-7 and 71-2, the employer shall retain sixteen cents per man-day from each of his workmen. The amount of money so retained from the employee shall be matched in an equal amount by each employer, except as otherwise provided in these rules, all such moneys shall be remitted to the department on or before the last day of January, April, July and October of each year for the preceding calendar quarter, provided self-insured employers shall remit to the department as provided under WAC 296-15-060. All such moneys shall be deposited in the supplemental pension fund. [Statutory Authority: RCW 51.16.035. 82-24-047 (Order 82-38), § 296-17-920, filed 11/29/82, effective 1/1/83; 81-24-042 (Order 81-30), § 296-17-920, filed 11/30/81, effective 1/1/82; 80-17-016 (Order 80-23), § 296-17-920, filed 11/13/80, effective 1/1/81. Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-17-920, filed 11/30/79, effective 1/1/80. Statutory Authority: RCW 51.04.020(1) and 51.16.035. 78-12-043 (Order 78-23), § 296-17-920, filed 11/27/78, effective 1/1/79; Order 77-27, § 296-17-920, filed 11/30/77, effective 1/1/78; Order 77-10, § 296-17-920, filed 5/31/77; Order 76-36, § 296-17-920, filed 11/30/76; Order 75-38, § 296-17-920, filed 11/24/75, effective 1/1/76; Order 75-28, § 296-17-920, filed 8/29/75, effective 10/1/75; Order 74-40, § 296-17-920, filed 11/27/74, effective 1/1/75; Order 74-6, § 296-17-920, filed 1/23/74.]

Chapter 296-18 WAC
REHABILITATION REVIEW

WAC

296-18-010 General information.
296-18-020 Vocational rehabilitation advisory committee.
296-18-040 Definitions.
296-18-070 Application of certain timetables.
296-18-080 Referral and initial contact.
296-18-090 Initial evaluations.
296-18-100 Rehabilitation plans.
296-18-110 Modification to the rehabilitation plan.
296-18-120 Plan completion.
296-18-130 Application of certain timetables (self-insured claims).
296-18-140 Return to work summary report (self-insured claims).
296-18-160 Progress reports (self-insured claims).
296-18-170 Return to work (self-insured claims).
296-18-180 Vocational rehabilitation plan.
296-18-190 Responsibility of the injured worker.
296-18-200 Failure to meet responsibilities.
296-18-210 Resolution of vocational rehabilitation disputes.
296-18-300 Registration of vocational rehabilitation counselors.
296-18-310 Qualifications for registration of vocational rehabilitation counselors.
296-18-320 Qualifications for the registration of vocational rehabilitation firms.
296-18-330 Availability of the register.
296-18-340 Immediate deregistration.
296-18-350 Performance evaluations and deregistration.
296-18-360 Petition for reconsideration of the intent to remove.
296-18-370 Period of deregistration.
296-18-400 Job modification assistance.

WAC 296-18-010 General information. The purpose of rehabilitation in workers compensation is to return the injured worker to suitable gainful employment as soon as possible. This chapter is adopted under sections 1 through 11 and 13, chapter 63, Laws of 1982 (chapter 51.41 RCW; RCW 51.32.095 and 51.32.250), which provides for the timely provision of vocational rehabilitation services to injured workers and for registration and deregistration of vocational rehabilitation counselors, whether publicly or privately employed, and vocational rehabilitation firms. [Statutory Authority: RCW 51.41.030. 82-24-055 (Order 82-40), § 296-18-010, filed 11/30/82.]

WAC 296-18-020 Vocational rehabilitation advisory committee. A vocational rehabilitation advisory committee is created to advise the department. The committee will provide advice with respect to policies that affect the quality of vocational rehabilitation. It shall also advise the department in:

(1) The resolution of controversies, disputes, and problems between the department and providers of vocational rehabilitation services;

(2) The registration and deregistration of vocational rehabilitation counselors and firms; and

(3) The education of members of the vocational rehabilitation, medical, and legal communities, with regard to the roles of the department or self-insurer, counselor, employer, and worker in providing for the vocational needs of the worker.

The committee will be composed of fifteen persons, plus the supervisor of industrial insurance, who will act as chair. The director shall appoint committee members representing: Workers including employees of state fund employers, employees of self-insurers, injured workers, organized labor, state fund employers, self-insurers, legal profession, medical profession, and vocational rehabilitation counselors.

Members may be reimbursed for travel and per diem in conformance with RCW 43.03.050 and 43.03.060. [Statutory Authority: RCW 51.41.030. 82-24-055 (Order 82-40), § 296-18-020, filed 11/30/82.]

WAC 296-18-040 Definitions. (1) "Firm" means any entity registered by the office of rehabilitation review, whether sole proprietorship, partnership, or corporation.

(2) A "qualified injured worker" means an employee who because of the effects of work-related injury or disease, whether or not combined with the effects of a prior industrial injury or disability:

(a) Is permanently precluded or likely to be precluded from engaging in the usual occupation or position in which the worker was engaged at the time of injury; and

(b) Can reasonably be expected to benefit from rehabilitation services which would significantly reduce or eliminate the decrease in the worker's employability.

(3) "Vocational rehabilitation services" means services that are required to determine an employee's eligibility as a qualified injured worker, and services that are designed to return an individual to suitable gainful employment. The services may include, but not be limited to, medical evaluation and physical rehabilitation provided by qualified health care providers; and vocational evaluation, counseling, job analysis, job modification, on-the-job training or short-term training programs with job placement services provided pursuant to this chapter.

(4) "Suitable gainful employment" means employment pursuant to the priorities established in WAC 296-18-180 which offers an opportunity to restore the injured worker as soon as possible to employment. Consideration shall be given to the worker's residual skills, aptitudes and interests, physical and mental capabilities, and earnings at the time of injury.

(5) "Vocational rehabilitation plan" means a written document completed by a registered vocational rehabilitation counselor (in cooperation with the qualified injured worker and employer) that either:

(a) Describe in detail those vocational rehabilitation services recommended to return the injured worker to suitable gainful employment; or

(b) Describe in detail why vocational rehabilitation services are not necessary to return the injured worker to suitable gainful employment.

(6) "Return to work summary report" means a document required by WAC 296-18-140 prescribed by the department, and completed by a self-insurer, that describes those vocational rehabilitation services necessary to return the claimant to employment consistent with priority (a), (b), or (c) of WAC 296-18-180. [Statutory Authority: RCW 51.41.030. 82-24-055 (Order 82-40), § 296-18-040, filed 11/30/82.]

WAC 296-18-070 Application of certain timetables. The timetables in WAC 296-18-080 through 296-18-120 pertain to (1) the department and (2) self-insurers who must submit rehabilitation plans because the self-insurer has determined that the injured worker will not return to employment consistent with priority (a), (b), or (c) of WAC 296-18-180. [Statutory Authority: RCW 51.41.030. 82-24-055 (Order 82-40), § 296-18-070, filed 11/30/82.]

WAC 296-18-080 Referral and initial contact. (1) The injured worker shall be contacted by a registered vocational rehabilitation counselor with regard to the need for vocational rehabilitation:

(a) Within thirty days after the department or self-insurer receives medical information that an injured worker cannot return to work; or

(b) Within one hundred twenty days after the most recent initiation of a claim for temporary total disability, whichever occurs first, (a) or (b).

(2) If initial contact between a registered vocational rehabilitation counselor and an injured worker has not occurred by the time set out in either subsection (1) (a) or (b) of this section, the injured worker may petition the office of rehabilitation review requesting that a registered vocational rehabilitation counselor be referred to him or her. Upon receipt of such a request, the office of rehabilitation review shall direct the department or self-insurer to immediately select and refer a registered vocational rehabilitation counselor to the injured worker.

(3) The department or self-insurers shall select and refer the registered vocational rehabilitation counselor to the injured worker in such a manner as to ensure that initial contact is made within the time set out in subsection (1) of this section.

(4) If the registered vocational rehabilitation counselor determines that an initial evaluation report cannot be completed within sixty days after initial contact, the counselor shall submit to the department or self-insurer, injured worker, and attending physician an initial contact report within thirty days from the date of initial contact.

(5) The initial contact report shall:

(a) Include a statement of why the initial evaluation report cannot be completed within sixty days of the date of initial contact;

(b) Indicate the date when the injured worker will be medically capable to begin evaluation as to the need for vocational rehabilitation; and

(c) Indicate the date when the initial evaluation report will be completed. [Statutory Authority: RCW 51.41-.030. 82-24-055 (Order 82-40), § 296-18-080, filed 11/30/82.]

WAC 296-18-090 Initial evaluations. (1) The initial evaluation report is a written comprehensive assessment of the injured worker for the purpose of determining the injured worker's vocational rehabilitation service needs.

(2) The counselor shall contact the injured worker's employer at the time of injury in order to determine the possibility of return to work by the employee with that employer.

(3) The initial evaluation report shall be written in conformance with published department reporting standards.

(4) The registered vocational rehabilitation counselor shall complete the initial evaluation report and submit it to the department or self-insurer, injured worker, and attending physician within sixty days after initial contact.

(5) The department or self-insurer shall accept or reject the initial evaluation report within fifteen days after receiving it. During this period, the department or self-insurer shall make every effort to resolve any disputes or disagreements with the registered vocational rehabilitation counselor, employer, and/or injured worker prior to the initiation of the dispute process as established in WAC 296-18-210.

(6) The registered vocational rehabilitation counselor or firm:

(a) Shall proceed with plan development upon notification of acceptance from the department or self-insurer; or

(b) May proceed with plan development (subject to department or self-insurer rejection) if notification of rejection or modification by the department or self-insurer is not made within fifteen days from initial evaluation report submission determined from the date of postmark. [Statutory Authority: RCW 51.41.030. 82-24-055 (Order 82-40), § 296-18-090, filed 11/30/82.]

WAC 296-18-100 Rehabilitation plans. (1) Within fifteen days after receiving an initial evaluation report which determines that no vocational rehabilitation services are needed, the department or self-insurer must submit the report to the office of rehabilitation review.

(2) Within sixty days following the completion of the initial evaluation report in which rehabilitation services are recommended, the registered vocational rehabilitation counselor shall develop a specific rehabilitation plan and submit it concurrently to the office of rehabilitation review, the department or self-insurer, the injured worker, and the attending physician. All related medical and vocational reports shall also be submitted to the department or self-insurer at this time.

(3) The department or self-insurer may submit a written explanation of agreement or disagreement regarding the rehabilitation plan. This explanation shall be submitted to the office of rehabilitation review:

(a) Within fifteen days after receiving a vocational rehabilitation plan described in subsection (1) of this section; or

(b) Within seven days after receiving a vocational rehabilitation plan described in subsection (2) of this section.

(4) Within fifteen days after receiving a plan from the department or self-insurer, the office of rehabilitation review shall render its approval or disapproval. Copies of the decision by the office of rehabilitation review will be sent to the department or self-insurer, the attending physician, the registered vocational rehabilitation counselor, and the injured worker.

(5) The registered vocational rehabilitation counselor or firm:

(a) Shall proceed with the plan upon notification of approval from the office of rehabilitation review; or

(b) May proceed with the plan (subject to plan disapproval by the office of rehabilitation review) if notification of rejection or modification by the office of rehabilitation review is not made within fifteen days from plan submission determined from the date of postmark. [Statutory Authority: RCW 51.41.030. 82-24-055 (Order 82-40), § 296-18-100, filed 11/30/82.]

WAC 296-18-110 Modification to the rehabilitation plan. (1) A proposal to alter a rehabilitation plan in a manner which involves a change of the vocational goal shall be submitted concurrently by the registered vocational rehabilitation counselor to the office of rehabilitation review, the department or self-insurer, the injured worker, and the attending physician.

(2) The department or self-insurer may submit to the office of rehabilitation review a written explanation of agreement or disagreement regarding the proposed modification. This explanation shall be submitted within seven days after receiving the proposed modification to the rehabilitation plan.

(3) The office of rehabilitation review shall approve or disapprove the proposed modification of the rehabilitation plan within fifteen days after receiving it. Written notification of this decision shall be sent to all parties involved.

(4) The registered vocational rehabilitation counselor or firm:

(a) Shall proceed with the plan modification upon notification of approval from the office of rehabilitation review; or

(b) May proceed with the plan modification (subject to disapproval of the plan modification by the office of rehabilitation review) if notification of rejection or modification by the office of rehabilitation review is not made within fifteen days from plan modification submission determined from the date of postmark. [Statutory Authority: RCW 51.41.030. 82-24-055 (Order 82-40), § 296-18-110, filed 11/30/82.]

WAC 296–18–120 Plan completion. The registered vocational rehabilitation counselor shall report concurrently to the department or self–insurer, the office of rehabilitation review, the injured worker, and the attending physician when a rehabilitation plan has been successfully completed or otherwise terminated. The results of the plan and an explanation of these results shall be included. [Statutory Authority: RCW 51.41.030. 82–24–055 (Order 82–40), § 296–18–120, filed 11/30/82.]

WAC 296–18–130 Application of certain timetables (self–insured claims). Pursuant to section 5, chapter 63, Laws of 1982 (RCW 51.41.040), the timetables in WAC 296–18–140 through 296–18–160 pertain to a self–insured employer who attempts to return an injured worker to employment consistent with priority (a), (b), or (c) of WAC 296–18–180. [Statutory Authority: RCW 51.41.030. 82–24–055 (Order 82–40), § 296–18–130, filed 11/30/82.]

WAC 296–18–140 Return to work summary report (self–insured claims). (1) If, after review of the medical reports, the self–insurer determines that the injured worker may return to employment consistent with priority (a), (b), or (c) of WAC 296–18–180, the self–insurer is not required to refer a registered vocational rehabilitation counselor to the injured worker. The self–insurer shall submit a return to work summary report to the office of rehabilitation review. Copies shall also be submitted to the injured worker and the attending physician. This return to work summary report shall be submitted:

(a) Within thirty days after the self–insurer receives medical information that the injured worker is able to return to work without vocational rehabilitation assistance; or

(b) No later than one hundred twenty days after the most recent initiation of a claim for temporary total disability; whichever occurs first.

(2) If a copy of the return to work summary report has not been received by the injured worker by the time set out in subsection (1) of this section, the injured worker may petition the office of rehabilitation review requesting that a registered vocational rehabilitation counselor be referred to him or her. Upon receipt of such a request, the office of rehabilitation review shall order the self–insurer to immediately select and refer a registered vocational rehabilitation counselor to the injured worker.

(3) The return to work summary report shall include the expected date of reemployment. [Statutory Authority: RCW 51.41.030. 82–24–055 (Order 82–40), § 296–18–140, filed 11/30/82.]

WAC 296–18–160 Progress reports (self–insured claims). If the injured worker has not returned to work within thirty days following submittal of the return to work summary report to the office of rehabilitation review, the self–insurer shall submit a progress report to the office of rehabilitation review, the injured worker, and the attending physician. This report shall describe the steps which have been taken to return the injured worker to work, and the course of action which will be followed in order to complete the rehabilitation plan.

(1) An additional progress report shall be submitted by the self–insurer to the office of rehabilitation review at the end of a subsequent thirty–day period.

(2) If the injured worker has not returned to work, or been evaluated by a registered vocational rehabilitation counselor pursuant to WAC 296–18–090 within one hundred eighty days following the most recent initiation of a claim for temporary total disability, the office of rehabilitation review may order the self–insurer to select in a timely manner and refer a registered vocational counselor to the injured worker to determine the appropriateness of rehabilitation services. Procedures required by WAC 296–18–090 through 296–18–120 shall then be followed. [Statutory Authority: RCW 51.41.030. 82–24–055 (Order 82–40), § 296–18–160, filed 11/30/82.]

WAC 296–18–170 Return to work (self–insured claims). The self–insurer shall report to the office of rehabilitation review, and the attending physician when an injured worker has returned to work. [Statutory Authority: RCW 51.41.030. 82–24–055 (Order 82–40), § 296–18–170, filed 11/30/82.]

WAC 296–18–180 Vocational rehabilitation plan. (1) The rehabilitation plan shall include the expected employment outcome of the rehabilitation process. The following priority of suitable gainful employment is preferred in the development of an appropriate vocational rehabilitation plan:

(a) Return to the previous job with the same employer;

(b) Modification of the previous job with the same employer including transitional return to work;

(c) A new job with the same employer in keeping with any limitations or restrictions;

(d) Return to previous job with a new employer;

(e) Modification of the previous job with a new employer;

(f) A new job with a new employer or self–employment based upon transferable skills;

(g) A new job with a new employer or self–employment involving on–the–job training;

(h) Short–term retraining and job placement.

(2) The documentation developed by the registered vocational rehabilitation counselor must support any expected outcome other than "(a) Return to the previous job with the same employer." The rehabilitation plan, as a minimum must comply with reporting standards published by the department, and must include information as to (a) the extent of the disability as described by both the worker and attending physician; (b) demands of the occupation; (c) education and job experience; (d) the specific actions to be taken with timetables; and (e) the responsibilities of the injured worker, employer, counselor, department, or self–insurer, and other involved parties. For self–insurers, a summary of the evidence is

all that is required in those instances where the conclusion of the plan results in (a), (b), or (c) of subsection (1) of this section.

(3) Before submission of the plan, the registered vocational rehabilitation counselor shall consult with the injured worker's former employer. [Statutory Authority: RCW 51.41.030. 82-24-055 (Order 82-40), § 296-18-180, filed 11/30/82.]

WAC 296-18-190 Responsibility of the injured worker. The responsibility of the injured worker to the vocational rehabilitation effort is to return to suitable gainful employment in the shortest period of time. The injured worker is expected to:

(1) Act in good faith;

(2) Make a full commitment to the return-to-work effort;

(3) Make him or herself available and respond to all reasonable requests from those professionals involved in the rehabilitation process;

(4) Keep the appropriate parties informed of any changes in work status, job offers received, new medical information, changes in address, or any other situations that may affect vocational rehabilitation. [Statutory Authority: RCW 51.41.030. 82-24-055 (Order 82-40), § 296-18-190, filed 11/30/82.]

WAC 296-18-200 Failure to meet responsibilities. The individual injured worker is expected to carry out his or her responsibilities as provided in WAC 296-18-190. Failure, without showing good cause, to carry out the responsibilities shall result in a reduction of benefits. As provided in section 8, chapter 63, Laws of 1982 (RCW 51.41.050), benefits will be reduced by one-half on order of the supervisor. For each successive week, benefits may be reduced by an additional one-half. Upon application by the injured worker, benefits may be restored on order of the supervisor. [Statutory Authority: RCW 51.41.030. 82-24-055 (Order 82-40), § 296-18-200, filed 11/30/82.]

WAC 296-18-210 Resolution of vocational rehabilitation disputes. (1) The injured worker, employer, department, or self-insurer, and the registered vocational rehabilitation counselor shall work in good faith to resolve all differences involving (a) the eligibility of the worker for vocational rehabilitation and (b) development and contents of the vocational rehabilitation plan. Disputes may be protested to the office of rehabilitation review for resolution.

(2) If the injured worker, department, or self-insurer disagrees with the recommendations of the initial contact report, the initial evaluation report, the vocational rehabilitation plan and its amendments, or the return to work summary report they may file a protest with the office of rehabilitation review which shall include a copy of the disputed document. A copy of the protest and disputed document shall also be sent to the other party. A disputer has fifteen days from the date of receiving the document to file a protest. The office of rehabilitation review has fifteen days to render a decision. The office of rehabilitation review shall establish procedures for dispute resolution. Any decision at this point by the office of rehabilitation review is a preliminary matter and not subject to appeal to the board of industrial insurance appeals.

(3) If a party is dissatisfied with the decision of the office of rehabilitation review, it may petition the supervisor of industrial insurance as provided by section 6, chapter 63, Laws of 1982 (RCW 51.41.060). The supervisor, or the supervisor's designee, shall render a final decision within thirty days of receipt of the petition for review. [Statutory Authority: RCW 51.41.030. 82-24-055 (Order 82-40), § 296-18-210, filed 11/30/82.]

WAC 296-18-300 Registration of vocational rehabilitation counselors. Pursuant to chapter 63, Laws of 1982 (RCW 51.41.030 and 51.32.095), a register of vocational rehabilitation counselors is established. Persons, who meet the minimum qualifications, as provided by WAC 296-18-310, may register as a qualified vocational rehabilitation counselor. Registration is to be made on a form prescribed by the office of rehabilitation review. [Statutory Authority: RCW 51.41.030. 82-24-055 (Order 82-40), § 296-18-300, filed 11/30/82.]

WAC 296-18-310 Qualifications for registration of vocational rehabilitation counselors. (1) A private vocational rehabilitation counselor may be registered to provide rehabilitation services only when he or she meets the following qualifications:

(a) A doctorate or masters degree in counseling, or a closely related field; and a minimum of one year of experience in vocational counseling job placement, vocational assessment, or a closely related field;

(b) A bachelors degree in counseling, or a closely related field and a minimum of two years of experience in job placement, vocational assessment, or a closely related field.

(2) An individual who meets the minimum educational requirements but does not meet the minimum experience requirements may register as a consultant intern. When the intern is registered, the intern's employer shall provide the office of rehabilitation review with the name of the registered vocational rehabilitation counselor under whose direct supervision the intern will work. The supervisor shall be considered to be directly responsible for the rehabilitation work of the intern. In order for all parties to be aware of the intern's status, he or she shall be designated as an "intern."

(3) The qualifications for vocational rehabilitation counselors employed by or seeking employment with the department will be in accordance with the merit system rules with approval by the state personnel board as governed by the department of personnel.

(4) For the purpose of registration, the office of rehabilitation review will establish, in policies and procedures, minimum qualifications for specialty services within the field of vocational rehabilitation counseling. Such minimum qualifications will be no greater than

those provided in subsection (1), (2) or (3) of this section. [Statutory Authority: RCW 51.41.030. 82-24-055 (Order 82-40), § 296-18-310, filed 11/30/82.]

WAC 296-18-320 Qualifications for the registration of vocational rehabilitation firms. Pursuant to chapter 63, Laws of 1982 (RCW 51.41.030 and 51.32.095), a register of vocational rehabilitation firms is created. Firms may be registered as a vocational rehabilitation firm provided:

(1) A minimum of one qualified registered vocational counselor is employed by the firm;

(2) All employees providing direct rehabilitation service to an injured worker meet the qualifications for registration as stated in WAC 296-18-310;

(3) The firm complies with all state, local, and federal laws; and

(4) The firm complies with Washington state worker's compensation statutes.

An entity wishing to be placed on the register must submit to the office of rehabilitation review that information deemed necessary and appropriate, and provide resumes, with supporting documentation of employed vocational rehabilitation counselors and any person under their direct supervision. Any changes in the information relative to the above provisions is to be submitted to the office of rehabilitation review in a timely manner not to exceed thirty days. [Statutory Authority: RCW 51.41.030. 82-24-055 (Order 82-40), § 296-18-320, filed 11/30/82.]

WAC 296-18-330 Availability of the register. In conjunction with the fee schedule the department will update and publish the register of vocational rehabilitation counselors and vocational rehabilitation firms twice each year. Copies of the register shall be available upon request for the costs of reproduction and mailing. [Statutory Authority: RCW 51.41.030. 82-24-055 (Order 82-40), § 296-18-330, filed 11/30/82.]

WAC 296-18-340 Immediate deregistration. The office of rehabilitation review may immediately remove a vocational rehabilitation counselor or firm from the register for any combination of, but not limited to, the following:

(1) Knowingly providing false or misleading information during the registration process;

(2) Failure, neglect, or refusal to comply with the statutes;

(3) Failure, neglect, or refusal to comply with department rules, policies, and orders;

(4) Failure, neglect, or refusal to submit complete, adequate, and detailed reports as required in this chapter;

(5) Failure, neglect, or refusal to respond to requests for additional reports;

(6) Intentional submission of false or misleading reports;

(7) Collusion with any other person, including workers, to submit false or misleading information;

(8) Submission of inaccurate or misleading bills;

(9) Intentional submission of false or erroneous recommendations;

(10) Charging or attempting to charge eligible injured worker for services authorized by the department or self-insurer;

(11) Persistent use of controversial, experimental, contraindicative, or unsatisfactory regimens not previously authorized by the department;

(12) Conviction in any court for any offense involving moral turpitude, in which case the record of such conviction constitutes conclusive evidence;

(13) Acts of gross misconduct in the service of vocational rehabilitation;

(14) Acts that involve conflicts of interest; or

(15) Declaration of mental incompetence by a court of competent jurisdiction.

The department will issue an order pursuant to RCW 51.52.050 notifying the vocational rehabilitation counselor or firm of deregistration, the reasons for it, including the finding that the public health, safety, or welfare imperatively requires emergency action, and the length of time before the vocational rehabilitation counselor or firm may re-register. [Statutory Authority: RCW 51-.41.030. 82-24-055 (Order 82-40), § 296-18-340, filed 11/30/82.]

WAC 296-18-350 Performance evaluations and deregistration. Upon petition, or upon its own initiative, the department may periodically, or for cause, perform an on-site evaluation of each vocational rehabilitation firm. The purpose of the evaluation is to determine the adequacy of the facilities, and the appropriateness and effectiveness of services, the accuracy of records, and accuracy of billing for services.

(1) If the conditions are such that the services and performance of a registered vocational rehabilitation counselor or firm are found to be unsatisfactory, the vocational rehabilitation counselor or firm will be informally notified. The vocational rehabilitation counselor or firm will be provided up to thirty days to correct the deficiencies. In the event the deficiencies are not corrected in the time provided, the vocational rehabilitation counselor or firm will be given a formal notice of intent to remove the vocational rehabilitation counselor or firm from the register. The notice will be in the form of a departmental order, and contain the reasons for removal, and the length of time before the vocational rehabilitation counselor or firm may reregister.

(2) In the case of a registered vocational rehabilitation counselor employed by the department, the office of rehabilitation review shall report the findings resulting from a performance evaluation of the work of a department registered vocational rehabilitation counselor to the director for appropriate action as provided by merit system rules, agency policies and procedures and collective bargaining agreements. [Statutory Authority: RCW 51-.41.030. 82-24-055 (Order 82-40), § 296-18-350, filed 11/30/82.]

WAC 296-18-360 Petition for reconsideration of the intent to remove. Pursuant to WAC 296-18-350 a

vocational rehabilitation counselor or firm has been notified by the office of rehabilitation review of the intent to remove the vocational rehabilitation counselor or firm from the register, the vocational rehabilitation counselor or firm may petition the supervisor of industrial insurance for reconsideration. The petition must be made within sixty days of receiving the notice of intent. If no petition is made the notice of intent to deregister is final.

In the event a vocational rehabilitation counselor or firm petitions the supervisor of industrial insurance for a reconsideration of the intent by the office of rehabilitation review to deregister the vocational rehabilitation counselor or firm, the supervisor shall schedule an informal hearing within thirty days after the petition. The supervisor shall issue a final order fifteen days after the hearing.

Pursuant to RCW 51.52.050, the vocational rehabilitation counselor or firm may appeal the supervisor's decision to the board of industrial insurance appeals. [Statutory Authority: RCW 51.41.030. 82-24-055 (Order 82-40), § 296-18-360, filed 11/30/82.]

WAC 296-18-370 Period of deregistration. Vocational rehabilitation counselors or firms deregistered pursuant to this chapter may be deregistered for a period not to exceed two years. A vocational rehabilitation counselor or firm may petition for reregistration after the period of deregistration expires. [Statutory Authority: RCW 51.41.030. 82-24-055 (Order 82-40), § 296-18-370, filed 11/30/82.]

WAC 296-18-400 Job modification assistance. (1) As provided for in section 13, chapter 63, Laws of 1982 (RCW 51.32.250), the supervisor in his or her discretion may pay job modification costs in an amount not to exceed five thousand dollars per worker per job modification. This payment is intended to be a cooperative participation with the employer and funds shall be taken from the appropriate account within the second injury fund.

(2) An employer requesting job modification assistance must submit to the department a job modification assistance application.

(3) The job modification assistance application shall include, but not be limited to:

(a) A document supporting the need for job modification assistance; and

(b) An itemized account of each expense to be incurred in the job modification. Job modification assistance applications shall be submitted on a form prescribed by the department.

(4) The supervisor shall accept, reject, or modify the job modification application within thirty days of receipt. Notification of the supervisor's acceptance, rejection, or modification shall be in writing. [Statutory Authority: RCW 51.41.030. 82-24-055 (Order 82-40), § 296-18-400, filed 11/30/82.]

Chapter 296-20 WAC
MEDICAL AID RULES

WAC

296-20-010 General information.
296-20-01002 Definitions.
296-20-01501 Physician's assistant rules.
296-20-030 Treatment not requiring authorization for accepted conditions.
296-20-03001 Treatment requiring authorization.
296-20-03002 Treatment not authorized.
296-20-03003 Drugs and medication.
296-20-035 Treatment in cases that remain open beyond sixty days.
296-20-06101 Reporting requirements.
296-20-097 Reopenings.
296-20-1102 Special equipment rental and purchase prosthetic and orthotics equipment.
296-20-1103 Travel expense.
296-20-121 X-rays.
296-20-12502 Physician assistant modifiers.
296-20-132 Determination of conversion factor adjustments.
296-20-135 Conversion factor table—Medicine, chiropractic, physical therapy, drugless therapeutics and nurse practitioner sections.
296-20-140 Conversion factor table—Anesthesia.
296-20-145 Conversion factor table—Surgery.
296-20-150 Conversion factor table—Radiology.
296-20-155 Conversion factor table—Pathology.
296-20-370 Respiratory impairments.
296-20-380 Categories of permanent respiratory impairments.

WAC 296-20-010 General information. (1) The following rules and fees are promulgated pursuant to RCW 51.04.020. This fee schedule is intended to cover all services for accepted industrial insurance claims. All fees listed are the maximum fees allowable. If a fee for any particular service is lower to the general public than listed in the fee schedule, the practitioner shall bill the department or self-insurer at the lower rate.

(2) The rules contained in the introductory section pertain to *all* practitioners regardless of specialty area or limitation of practice. Additional rules pertaining to specialty areas will be found in the appropriate section.

(3) The maximum allowable fee for a procedure is determined by multiplying the unit value of a procedure by the appropriate conversion factor, per the conversion factor tables listed in WAC 296-20-135 to 296-20-155.

(4) Initial and follow-up visit charges by practitioners include routine examinations, physical modalities, injections, minor procedures, etc., not otherwise provided for in this schedule.

(5) When a claim has been accepted by the department or self-insurer, no provider may bill the worker for the difference between the allowable fee and his usual and customary charge. Nor can the worker be charged a fee, either for interest or completion of forms, related to services rendered for the industrial injury or condition.

(6) Correspondence: All correspondence and billings pertaining to state fund and department of energy claims should be sent directly to Department of Labor and Industries, General Administration Building, Olympia, Washington 98504. State fund claims have six digit numbers preceded by an alpha letter other than "S" or "V."

Department of energy claims have seven digit numbers with no alpha prefix.

All correspondence and billings pertaining to *crime victims* claims should be sent to Crime Victims Division, Department of Labor and Industries, General Administration Building, Olympia, Washington 98504.

Crime victim claims have six digit numbers preceded by a "V."

All correspondence and billings pertaining to self–insured claims should be sent directly to the employer or his service representative as the case may be. A listing of self–insured employers and service representatives can be found in Appendix B.

Self–insured claims are six digit numbers preceded by an "S."

Communications to the department or self–insurer must show the patient's full name and claim number if known. If the claim number is unknown, the patient's name, social security number, the date and the nature of the injury, and the employer's name must be indicated. A communication should refer to one claim only. Correspondence regarding specific claim matters should be sent directly to the department in Olympia or self–insurer in order to avoid rehandling by the service location.

(7) APPENDIX C is a listing of the department's various local service locations. These facilities should be utilized by providers to obtain information, supplies, or assistance in dealing with matters pertaining to industrial injuries. [Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81–24–041 (Order 81–28), § 296–20–010, filed 11/30/81, effective 1/1/82; 81–01–100 (Order 80–29), § 296–20–010, filed 12/23/80, effective 3/1/81; Order 76–34, § 296–20–010, filed 11/24/76, effective 1/1/77; Order 75–39, § 296–20–010, filed 11/28/75, effective 1/1/76; Order 74–7, § 296–20–010, filed 1/30/74; Order 70–12, § 296–20–010, filed 12/1/70, effective 1/1/71; Order 68–7, § 296–20–010, filed 11/27/68, effective 1/1/69.]

WAC 296-20-01002 Definitions. TERMINATION OF TREATMENT: When treatment is no longer required and/or the industrial condition is stabilized, a report indicating the date of stabilization should be submitted to the department or self–insurer. This is necessary to initiate closure of the industrial claim. The patient may require continued treatment for conditions not related to the industrial condition; however, financial responsibility for such care must be the patient's.

UNUSUAL OR UNLISTED PROCEDURE: Value of unlisted services or procedures should be substantiated "By Report" (BR).

"BY REPORT": BR (by report) in the value column indicates that the value of this service is to be determined by report (BR) because the service is too unusual, variable or new to be assigned a unit value. The report should provide an adequate definition or description of the services or procedure (e.g., operative or narrative report), using any of the following as indicated:

(1) Diagnosis;

(2) Size, location and number of lesion(s) or procedure(s) where appropriate;

(3) Major surgical procedure and supplementary procedure(s);

(4) Whenever possible, list the nearest similar procedure by number according to this schedule;

(5) Estimated follow–up;

(6) Operative time.

The department or self–insurer may adjust BR procedures when such action is indicated.

"INDEPENDENT OR SEPARATE PROCEDURE:" Certain of the listed procedures are commonly carried out as an integral part of a total service, and as such do not warrant a separate charge. When such a procedure is carried out as a separate entity, not immediately related to other services, the indicated value for "independent procedure" is applicable.

SV. ITEMS: Sv (Service) procedures are not essentially a single procedure, rather they are comprised of several other procedures. These "Sv" procedures although identified by a specific code number, can be *described* only in terms of the several services included. Therefore, unit values are not indicated for Sv procedures and total value is derived from the values of the individual services performed. These Sv procedures require "BR" (see above) information to substantiate billing.

MODIFIED WORK STATUS: The injured worker is not able to return to his previous work, but is physically capable of carrying out work of a lighter nature. Injured workers should be urged to return to modified work as soon as reasonable as such work is frequently beneficial for body conditioning and regaining self confidence.

Under RCW 51.32.090, when the employer has modified work available for the worker, the employer must furnish the doctor and the worker with a statement describing the available work in terms that will enable the doctor to relate the physical activities of the job to the worker's physical limitations and capabilities. The doctor shall then determine whether the worker is physically able to perform the work described. The employer may not increase the physical requirements of the job without requesting the opinion of the doctor as to the worker's ability to perform such additional work. If after a trial period of re–employment the worker is unable to continue with such work, his time loss compensation will be resumed upon certification by the attending doctor.

If the employer has no modified work available, the department should be notified immediately, so vocational assessment can be conducted to determine whether the worker will require assistance in returning to work.

REGULAR WORK STATUS: The injured worker is physically capable of returning to his/her regular work. It is the duty of the attending doctor to notify the worker and the department or self–insurer, as the case may be, of the specific date of release to return to regular work. Compensation will be terminated on the release date. Further treatment can be allowed as requested by the attending doctor if the condition is not

stationary and such treatment is needed and otherwise in order.

TOTAL TEMPORARY DISABILITY: Full-time loss compensation will be paid when the worker is unable to return to any type of reasonably continuous gainful employment as a direct result of an accepted industrial injury or exposure.

TEMPORARY PARTIAL DISABILITY: Partial-time loss compensation may be paid when the worker can return to work on a limited basis or return to lesser paying job is necessitated by the accepted injury or condition. The worker must have a reduction in wages of at least five percent before consideration of partial time loss can be made. No partial-time loss compensation can be paid after the worker's condition is stationary.

ALL TIME LOSS COMPENSATION MUST BE CERTIFIED BY THE ATTENDING DOCTOR BASED ON OBJECTIVE FINDINGS.

PERMANENT PARTIAL DISABILITY: Any anatomic or functional abnormality or loss after maximum rehabilitation has been achieved, which is determined to be stable or nonprogressive at the time the evaluation is made. When the attending doctor has reason to believe a permanent impairment exists, the department or self-insurer should be notified. Appendix D contains a schedule of the permanent disability maximum awards. UNDER WASHINGTON LAW DISABILITY AWARDS ARE BASED SOLELY ON PHYSICAL OR MENTAL IMPAIRMENT DUE TO THE ACCEPTED INJURY OR CONDITIONS WITHOUT CONSIDERATION OF ECONOMIC FACTORS.

TOTAL PERMANENT DISABILITY: Loss of both legs or arms, or one leg and one arm, total loss of eyesight, paralysis or other condition permanently incapacitating the worker from performing any work at any gainful employment. When the attending doctor feels a worker may be totally and permanently disabled, he should communicate this information immediately to the department or self-insurer. A vocational evaluation and an independent rating of disability may be arranged by the department prior to a determination as to total permanent disability. Coverage for treatment does not usually continue after the date an injured worker is placed on pension.

FATAL: When the attending doctor has reason to believe a worker has died as a result of an industrial injury or exposure, the doctor should notify the nearest department service location (see Appendix C) or the self-insurer immediately. Often an autopsy is required by the department or self-insurer. If so, it will be authorized by the service location manager or the self-insurer. Benefits payable include burial stipend and monthly payments to the surviving spouse and/or dependents.

DOCTOR: For these rules, means a person licensed to practice one or more of the following professions: Medicine and surgery; osteopathic; chiropractic; drugless therapeutics; podiatry; dentistry; optometry.

Only those persons so licensed may sign report of accident forms and time loss cards except as provided in WAC 296-20-100.

PRACTITIONER: For these rules, means any person defined as a "doctor" under these rules, or licensed to practice one or more of the following professions: Audiology; physical therapy; pharmacy; prosthetics; orthotics; psychology; nursing; physician or osteopathic assistant; or other healing art licensed under the method or means permitted by such license.

PHYSICIAN: For these rules, means any person licensed to perform one or more of the following professions: Medicine and surgery; or osteopathic. [Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-24-041 (Order 81-28), § 296-20-01002, filed 11/30/81, effective 1/1/82; 81-01-100 (Order 80-29), § 296-20-01002, filed 12/23/80, effective 3/1/81.]

WAC 296-20-01501 Physician's assistant rules. (1) Physicians' assistants may perform only those medical services in industrial injury cases, for which the physician's assistant is trained and licensed, under the control and supervision of a licensed physician. Such control and supervision shall not be construed to require the personal presence of the supervising physician.

(2) Physicians' assistants may perform those medical services which are within the scope of their physician's assistant license for industrial injury cases within the limitations of subsection (3) of this section.

(3) Advance approval must be obtained from the department to treat industrial injury cases. To be eligible to treat industrial injuries, the physician's assistant must:

(a) Provide the department with a copy of his license.

(b) Provide the name and address and specialty of the supervising physician.

(c) Provide the department with the evidence of a reliable and rapid system of communication with the supervising physician.

(4) Physicians' assistants may prepare report of accident, time loss cards, and progress reports for the supervising physician's signature. Physicians' assistants cannot submit such information under his/her signature. [Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-24-041 (Order 81-28), § 296-20-01501, filed 11/30/81, effective 1/1/82; 81-01-100 (Order 80-29), § 296-20-01501, filed 12/23/80, effective 3/1/81. Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-20-01501, filed 11/30/79, effective 1/1/80.]

WAC 296-20-030 Treatment not requiring authorization for accepted conditions. (1) A maximum of twenty office calls for the treatment of the industrial condition, during the first sixty days, following injury. Subsequent office calls must be authorized. Reports of treatment rendered must be filed at sixty day intervals to include number of office visits to date. See WAC 296-20-03001 for report requirements and further information.

(2) Initial diagnostic x-rays necessary for evaluation and treatment of the industrial injury or condition. See WAC 296-20-121 for further information.

(3) The first twelve physical therapy treatments as provided by WAC 296-23-710 and 296-21-095, upon written prescription by the attending doctor or under his direct supervision. Additional physical therapy treatment must be authorized and the request substantiated by evidence of improvement. In no case will the department or self-insurer pay for inpatient hospitalization of a claimant to receive physical therapy treatment only. USE OF DIAPULSE, THERMATIC (standard model only), SPECTROWAVE AND SUPERPULSE MACHINES AND IONTOPHORESIS IS NOT AUTHORIZED FOR WORKERS ENTITLED TO BENEFITS UNDER THE INDUSTRIAL INSURANCE ACT.

(4) Routine laboratory studies reasonably necessary for diagnosis and/or treatment of the industrial condition. Other special laboratory studies require authorization.

(5) Routine standard treatment measures rendered on an emergency basis or in connection with minor injuries not otherwise requiring authorization.

(6) Consultation with specialist when indicated. See WAC 296-20-051 for consultation guidelines.

(7) Nonscheduled drugs and medications during the acute phase of treatment for the industrial injury or condition.

(8) Scheduled drugs and other medications known to be addictive, habit forming or dependency inducing may be prescribed in quantities sufficient for treatment for a maximum of fifteen days. If drug therapy extends beyond thirty days, see WAC 296-20-03003 regarding management.

(9) Injectable scheduled and other drugs known to be addictive, habit forming, or dependency inducing may be provided only on an in-patient basis. Hospital admission for drug provision only will not be allowed.

(10) Diagnostic or therapeutic nerve blocks. See WAC 296-20-03001 for restrictions.

(11) Intra-articular injections. See WAC 296-20-03001 for restrictions.

(12) Myelogram if prior to emergency surgery. [Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-24-041 (Order 81-28), § 296-20-030, filed 11/30/81, effective 1/1/82; 81-01-100 (Order 80-29), § 296-20-030, filed 12/23/80, effective 3/1/81; Order 76-34, § 296-20-030, filed 11/24/76, effective 1/1/77; Order 75-39, § 296-20-030, filed 11/28/75, effective 1/1/76; Order 74-7, § 296-20-030, filed 1/30/74; Order 71-6, § 296-20-030, filed 6/1/71; Order 70-12, § 296-20-030, filed 12/1/70, effective 1/1/71; Order 68-7, § 296-20-030, filed 11/27/68, effective 1/1/69.]

WAC 296-20-03001 Treatment requiring authorization. Certain treatment procedures require authorization by the department or self-insurer. Requests for authorization must include a statement of: The condition(s) diagnosed; their relationship, if any, to the industrial injury/exposure; an outline of the proposed treatment program, its length and components, and expected prognosis; and an estimate of when treatment would be concluded and condition stable.

(1) Office calls in excess of the first twenty visits or sixty days whichever occurs first.

(2) All nonemergent major surgery must be authorized prior to surgery date. Some surgical procedures require concurring opinions prior to authorization. (See WAC 296-20-045 for details).

(3) X-ray and radium therapy.

(4) Diagnostic studies other than routine x-ray and laboratory.

(5) Myelogram and discogram in nonemergent cases.

(6) Physical therapy treatment beyond initial twelve treatments as outlined in WAC 296-21-095 and 296-23-710.

(7) Diagnostic or therapeutic injection. Epidural or caudal injection of substances other than anesthetic or contrast solution will be authorized under the following conditions only:

(a) When the worker has experienced acute low back pain or acute exacerbation of chronic low back pain of no more than six months duration.

(b) The worker will receive no more than three injections in an initial thirty-day treatment period, followed by a thirty-day evaluation period. If significant pain relief is demonstrated one additional series of three injections will be authorized. No more than six injections will be authorized per acute episode.

(8) Home nursing or convalescent center care must be authorized per provision outlined in WAC 296-20-091.

(9) Provision of prosthetics, orthotics, surgical appliances, special equipment for home or transportation vehicle; custom made shoes; TNS units; masking devices; hearing aids; etc., must be authorized in advance as per WAC 296-20-1101 and 296-20-1102.

(10) Biofeedback program; pain clinic; weight loss program; psychotherapy; rehabilitation programs; and other programs designed to treat special problems must be authorized in advance. See WAC 296-21-0501 and 296-20-0502 for details.

(11) Prescription or injection of vitamins for specific therapeutic treatment of the industrial condition(s) when the attending doctor can demonstrate that published clinical studies indicate vitamin therapy is the treatment of choice for the condition. Authorization for this treatment will require presentation of facts to and review by department medical consultant.

(12) Injections of anesthetic and/or antiinflammatory agents into the vertebral facet joints will be authorized to qualified specialists in orthopedics, neurology, and anesthesia, or other physicians who can demonstrate expertise in the procedure, under the following conditions:

(a) Rationale for procedure, treatment plan, and request for authorization must be presented in writing to the supervisor of medical services.

(b) Procedure must be performed in an accredited hospital under radiographic control.

(c) Not more than four facet injection procedures will be authorized in any one patient.

(13) The long term prescription of medication under the specific conditions and circumstances in (a) and (b) are considered corrective therapy rather than palliative treatment and approval in advance must be obtained.

(a) Nonsteroidal antiinflammatory agents for the treatment of degenerative joint conditions aggravated by occupational injury.

(b) Anticonvulsive agents for the treatment of seizure disorders caused by trauma.

(14) Intra-muscular and trigger point injections of steroids and other nonscheduled medications are limited to three injections per patient. The attending doctor must submit justification for an additional three injections if indicated with a maximum of six injections to be authorized for any one patient. [Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-24-041 (Order 81-28), § 296-20-03001, filed 11/30/81, effective 1/1/82; 81-01-100 (Order 80-29), § 296-20-03001, filed 12/23/80, effective 3/1/81. Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-20-03001, filed 11/30/79, effective 1/1/80; Order 76-34, § 296-20-03001, filed 11/24/76, effective 1/1/77.]

WAC 296-20-03002 Treatment not authorized. The department or self-insurer will not allow nor pay for following treatment:

(1) USE OF DIAPULSE, THERMATIC (standard model only), SPECTROWAVE AND SUPERPULSE MACHINES ON WORKERS ENTITLED TO BENEFITS UNDER THE INDUSTRIAL INSURANCE ACT.

(2) Iontophoresis; prolotherapy; chymopapain injections; acupuncture; injections of fibrosing or sclerosing agents; and injections of substances other than anesthetic or contrast into the subarachnoid space (intrathecal injections).

(3) Prescription and/or injection of vitamins to improve or maintain general health.

(4) Continued treatment beyond stabilization of the industrial condition(s), i.e., maintenance care, except where necessary to monitor prescription of medication necessary to maintain stabilization i.e., anti-convulsive, anti-spasmodic, etc.

(5) After consultation and advice to the department or self-insurer, any treatment measure deemed to be dangerous or inappropriate for the injured worker in question.

(6) Treatment measures of an unusual, controversial, obsolete, or experimental nature (see WAC 296-20-045). Under certain conditions, treatment in this category may be approved by the department or self-insurer. Approval must be obtained prior to treatment. Requests must contain a description of the treatment, reason for the request with benefits and results expected. [Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-24-041 (Order 81-28), § 296-20-03002, filed 11/30/81, effective 1/1/82; 81-01-100 (Order 80-29), § 296-20-03002, filed 12/23/80, effective 3/1/81; Order 76-34, § 296-20-03002, filed 11/24/76, effective 1/1/77.]

WAC 296-20-03003 Drugs and medication. (1) The industrial insurance program is experiencing a significant increase in incidence of drug dependency and return-to-work apathy from use of addicting and habituating drugs. In response to this, the Washington state medical association's industrial insurance committee issued "Guidelines to Assist Attending Physicians in the Care of Industrially Injured Workers Receiving Addictive, Habituating or Dependency Inducing Drugs." This rule is based on those guidelines.

(2) Agents responsible for inducing dependency and return-to-work apathy when used over a short period of time, i.e. sixty to ninety days are: Antianxiety drugs, sedatives, antidepressants, antipsychotics and oral or injectable natural or synthetic narcotics and other habituating or addictive drugs.

(3) Both antianxiety drugs and sedatives aggravate the depression which often occurs naturally in the injured worker. This makes return of self-esteem and return to work difficult. Their widespread use as "muscle relaxants" is being increasingly questioned. If these drugs are used after industrial injury, it should be on a short-term basis under careful observation. These include but are not limited to:

Antianxiety drugs: Including, but not limited to, Valium, Librium, Tranxene, Serax, Meprobamate.

Sedatives: Including, but not limited to, short-acting barbiturates, Dalmane, Doriden, Quaalude, etc.

(4) The adverse effects reported for antidepressants and antipsychotics should be considered before prescribing. The manufacturer's precautions should be carefully observed. Psychiatric consultation is recommended if used longer than sixty days. These are:

(a) **Antidepressants** —

(i) Tricyclics – Elavil, Tofranil, Sinequan, Vivactil, Norpramin, Pertofrane, etc.

(ii) Amphetamines are Schedule II substances under the jurisdiction of the federal controlled substances act and will not be allowed or paid by the department of labor and industries.

(b) **Antipsychotics** —

(i) Phenothiazines, including but not limited to, Thorazine, Stelazine, Compazine, and Mellaril.

(ii) Butyrophenones, including but not limited to, Haldol and Innovar.

(5) Injectable natural or synthetic narcotics and other medications known to be addictive, habit forming, or dependency inducing should be used as indicated on hospitalized patients only. No prescriptions for injectable forms of these drugs (nor syringes) should be written on department of labor and industries prescription forms. See WAC 296-20-030 (9).

(6) Oral natural or synthetic narcotics. Talwin and other habituating or addictive drugs should be used as indicated for acute pain, but not longer than sixty days. Their use for the relief of pain behavior and "suffering" is being increasingly questioned.

(7) The department realizes that management of chronic pain cases is most difficult subjecting the physician to extreme pressures. With this in mind, the following guidelines are suggested with the intent that they

will help the doctor cope with the pressures and assist in the management of these difficult cases:

(a) Keep a drug summary on all claimants.

(b) Determine if pain complaints are consistent with the amount of injury.

(c) Write specific instructions for the use of sedatives and analgesics.

(d) Treat the natural depression in injured workers properly, avoiding tranquilizers, and sedatives which increase depression.

(e) Evaluate recovery time frequently, and allow patient to regain self–esteem by returning to work.

(f) If a patient is requiring these drugs in amounts sufficient to cause concern about habituation or addiction or for longer than sixty days, the attending physician should:

(i) Revise the treatment plan and withdraw the drugs.

(ii) If unable to treat addiction or habituation himself, refer the patient to a physician or an institution experienced in drug withdrawal.

(iii) If (i) and (ii) are not acceptable or appropriate, obtain unbiased concurring opinion, and justify an alternate course in writing to the department of labor and industries or self–insurer and the Federal Drug Enforcement Administration.

(8) The department or self–insurer will inform the attending physician when it is concerned about the amount of these drugs the patient is receiving and will provide information regarding physicians and institutions experienced in drug withdrawal.

(9) As per RCW 51.36.010, when a worker is placed on pension the department cannot pay for Schedule I, II, III or IV substances.

(10) Physician failure to reduce or terminate prescription of controlled substances, habit forming or addicting medications, or dependency inducing medications, after department or self–insurer request to do so for an injured worker may result in a transfer of the worker to another physician of the worker's choice. Refusal of the worker to select another doctor can result in department or self–insurer selection of new attending doctor. (See WAC 296–20–065 regarding transfer.)

(11) Should the attending doctor or the injured worker refuse to comply with the department or self–insurer request to discontinue certain medications, the department or self–insurer, after providing adequate prior notice to the worker, doctor, and pharmacy/s involved, may discontinue payment for the medication. [Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81–24–041 (Order 81–28), § 296–20–03003, filed 11/30/81, effective 1/1/82; 81–01–100 (Order 80–29), § 296–20–03003, filed 12/23/80, effective 3/1/81; Order 77–27, § 296–20–03003, filed 11/30/77, effective 1/1/78; Order 76–34, § 296–20–03003, filed 11/24/76, effective 1/1/77.]

WAC 296–20–035 Treatment in cases that remain open beyond sixty days. Conditions requiring treatment beyond sixty days are indicative of a major industrial condition or complication by other conditions. Except in cases of severe and extensive injuries, i.e., quadriplegia, paraplegia, multiple fractures, etc., when the injured worker requires treatment beyond sixty days following injury, a complete examination is necessary to determine and/or establish need for continued treatment and/or payment of time loss compensation. This may be accomplished either by the attending doctor or a consultation exam. In either case, a detailed exam report must be provided to the department or self–insurer. The following information is required. Additional information may be included or requested.

(1) Attending doctor report.

(a) The condition(s) diagnosed including the objective and subjective findings.

(b) Their relationship, if any, to the industrial injury or exposure.

(c) Outline of proposed treatment program, its length, components, and expected prognosis including an estimate of when treatment should be concluded and condition(s) stable. An estimated return to work date should be included. The probability, if any, of permanent partial disability resulting from industrial conditions should be noted.

(d) If the worker has not returned to work, the attending doctor should indicate whether he feels vocational assessment will be necessary to evaluate the worker's ability to return to work and why.

(e) If the claimant has not returned to work, a physical capacities evaluation should be included with the report.

(2) Consultation exam.

(a) A DETAILED HISTORY TO ESTABLISH:

(i) The type and severity of the industrial injury or occupational disease.

(ii) The patient's previous physical and mental health.

(iii) Any social and emotional factors which may effect recovery.

(b) A COMPARISON HISTORY between history provided by attending doctor and injured worker, must be provided with exam.

(c) A DETAILED PHYSICAL EXAMINATION concerning all systems affected by the industrial accident.

(d) A GENERAL PHYSICAL EXAMINATION sufficient to demonstrate any preexisting impairments of function or concurrent condition.

(e) A COMPLETE DIAGNOSIS OF ALL PATHOLOGICAL CONDITIONS FOUND TO BE LISTED AS:

(i) Due solely to injury.

(ii) Preexisting condition aggravated by the injury and the extent of aggravation.

(iii) Other medical conditions neither related to nor aggravated by the injury but which may retard recovery.

(iv) Coexisting disease (arthritis, congenital deformities, heart disease, etc.).

(f) CONCLUSIONS MUST INCLUDE:

(i) Type treatment recommended for each pathological condition and the probable duration of treatment.

(ii) Expected degree of recovery from the industrial condition.

(iii) Probability, if any, of permanent disability resulting from the industrial condition.

(iv) Probability of returning to work.

(g) REPORTS OF NECESSARY, REASONABLE X-RAY AND LABORATORY STUDIES TO establish or confirm the diagnosis when indicated. [Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-24-041 (Order 81-28), § 296-20-035, filed 11/30/81, effective 1/1/82; 81-01-100 (Order 80-29), § 296-20-035, filed 12/23/80, effective 3/1/81; Order 71-6, § 296-20-035, filed 6/1/71; Order 70-12, § 296-20-035, filed 12/1/70, effective 1/1/71; Order 68-7, § 296-20-035, filed 11/27/68, effective 1/1/69.]

WAC 296-20-06101 Reporting requirements. The department or self-insurer does require several kinds of reports at various stages of the claim in order to authorize treatment, time loss compensation, and treatment bills.

INITIAL REPORT OF ACCIDENT: The first report required is the report of accident. The report of accident qualifies as the office note or report of the initial visit for brief or limited office calls. In addition to the office call charge, the doctor may bill code 90001 for the filing of the accident report. If the initial visit is a transfer case, a report is required. Billing for an extended or comprehensive initial visit may require submission of additional reports.

OFFICE NOTES: Copies of office or progress notes are required when billing for all follow-up visits.

SIXTY-DAY NARRATIVE REPORTS: When conservative treatment is to continue beyond sixty days, submission of a narrative report is required to substantiate the need for continued care. A narrative report must contain basic information contained in WAC 296-20-035. For this narrative report, the department or self-insurer will pay 16.0 units for a routine report in addition to a routine office call if the call is needed to provide the information. If the doctor supplies additional comprehensive information in the report, payment of a charge submitted in excess of 16.0 units will be considered. In most cases, payment for a narrative report in addition to an extended or comprehensive office visit will not be considered as the fee for those services includes a comprehensive report. A narrative report should be billed under code 99080 and described as a "sixty-day report."

CONSULTATION REPORTS: Following one-hundred twenty days of conservative care (nonsurgical cases), a consultation with the doctor of the attending doctor's choice is required to substantiate further treatment authorization. No prior authorization is required for such consultations. The department or self-insurer should be notified via a consultation referral form (LI-210-299). The consultant is responsible for submitting a copy of his report as outlined in WAC 296-20-035 and 296-20-051 with his bill to the department or self-insurer.

FOLLOW-UP REPORTS: Following the one-hundred twenty day consultation, narrative reports are required at sixty-day intervals as outlined in WAC 296-20-035. The department or self-insurer will request additional consultations and/or special exams as warranted by the individual case.

HOSPITAL REPORTS: When injured workers are hospitalized it is the responsibility of the doctor to submit his reports to the hospital for submission with the hospital billing. The doctor may bill for hospital visits without attaching copies of the reports. However, billing for operative procedures requires a copy of the operative report.

REOPENING APPLICATION: The department or self-insurer will pay the doctor for an office visit and diagnostic studies if necessary to complete a reopening application on claims closed over sixty days. (See WAC 296-20-097). In addition, code 90097 "completion of reopening application" can be billed. [Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-24-041 (Order 81-28), § 296-20-06101, filed 11/30/81, effective 1/1/82; 81-01-100 (Order 80-29), § 296-20-06101, filed 12/23/80, effective 3/1/81; Order 74-39, § 296-20-06101, filed 11/22/74, effective 1/1/75.]

WAC 296-20-097 Reopenings. When a claim has been closed by department or self-insurer by written order and notice for sixty days, submission of a formal "Application to Reopen Claim for Aggravation of Condition" form (LI 210-79) is necessary. Exam and diagnostic studies associated with the reopening application will be paid by the department or self-insurer regardless of department or self-insurer action on the application. NO OTHER BENEFITS WILL BE PAID UNTIL ADJUDICATION DECISION IS RENDERED. Reopening applications should be submitted immediately. When reopening is granted, the department or self-insurer can pay time loss and treatment benefits only for a period not to exceed sixty days *prior* to date the application is received by department or self-insurer. Necessary treatment should not be deferred pending a department or self-insurer adjudication decision. However, should reopening be denied treatment costs become the financial responsibility of the worker. [Statutory Authority: RCW 51.04.020(4), 51-.04.030, and 51.16.120(3). 81-24-041 (Order 81-28), § 296-20-097, filed 11/30/81, effective 1/1/82; 81-01-100 (Order 80-29), § 296-20-097, filed 12/23/80, effective 3/1/81; Order 71-6, § 296-20-097, filed 6/1/71; Order 70-12, § 296-20-095 (codified as WAC 296-20-097), filed 12/1/70, effective 1/1/71. Formerly WAC 296-20-090.]

WAC 296-20-1102 Special equipment rental and purchase prosthetic and orthotics equipment. The department or self-insurer will authorize and pay rental fee for equipment or devices if the need for the equipment will be for a short period of treatment during the acute phase of condition. If the equipment will be needed on long term basis, the department or self-insurer will consider purchase of the equipment or device.

The prescribing doctor must obtain prior authorization from the department or self-insurer, for rental or purchase of special equipment or devices.

The department or self–insurer will authorize and pay for prosthetics and orthotics as needed by claimant and substantiated by attending doctor. If such items are furnished by the attending doctor, the department or self–insurer will reimburse the doctor his cost for the item. In addition, a handling fee, not to exceed five percent of the wholesale cost of the item, will be paid.

The department or self–insurer will repair or replace originally provided damaged, broken, or worn–out prosthetics, orthotics, or special equipment devices upon documentation and substantiation from the attending doctor.

Provision of such equipment requires prior authorization.

Equipment not requiring prior authorization includes crutches, cervical collars, lumbar and rib belts, and other commonly used orthotics of minimal cost.

Personal appliances such as vibrators, heating pads, exercise equipment, jacuzzies, etc. will not be authorized or paid. [Statutory Authority: RCW 51.04.020(4), 51-.04.030, and 51.16.120(3). 81–24–041 (Order 81–28), § 296–20–1102, filed 11/30/81, effective 1/1/82; 81–01–100 (Order 80–29), § 296–20–1102, filed 12/23/80, effective 3/1/81.]

WAC 296–20–1103 Travel expense. The department or self–insurer will reimburse travel expense incurred by injured worker's for the following reasons: (1) Special exam at department's or self–insurer's request; (2) vocational evaluation at department's or self–insurer's request; (3) treatment at Department Rehabilitation Center; (4) fitting of prosthetic device; and (5) upon *prior authorization* for treatment when injured worker must travel more than ten miles one–way from his home to the nearest point of adequate treatment. Travel expense *is not* payable when adequate treatment is available within ten miles of injured worker's home, yet the injured worker prefers to report to an attending doctor outside his home area.

Travel expense will be reimbursed at the current department established rate.

No travel expense for treatment services will be paid to those injured worker's residing outside the state of Washington. Persons traveling from Washington to another state for diagnostic or treatment services that are not available in Washington will be reimbursed travel expense when approved in advance.

When travel involves need for food and lodging these items will be reimbursed at the currently established rates.

Parking, vehicle storage, ferry and bridge tolls will be reimbursed if receipt is provided. No receipt will be required for parking expenses under two dollars.

Request for reimbursement of travel expenses must be received by the department or self–insurer within ninety days of the date expense was incurred. [Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81–24–041 (Order 81–28), § 296–20–1103, filed 11/30/81, effective 1/1/82; 81–01–100 (Order 80–29), § 296–20–1103, filed 12/23/80, effective 3/1/81.]

WAC 296–20–121 X–rays. Recognizing the greatest need for access to x–rays lies with the attending doctor, the department or self–insurer does not require submission of the actual films except upon specific request when needed for purposes of permanent disability rating, other administrative or legal decisions, or in litigation cases. The department or self–insurer requires the attending doctor retain x–rays for a period of not less than ten years. In transfer cases, the x–rays in the possession of the current attending doctor must be made available to the new attending doctor.

When requesting consultation, the attending doctor should make any x–rays in his possession available to the consultant.

When the doctor's office is closed because of death, retirement or leaving the state, arrangements must be made with the department or self–insurer regarding custody of x–rays to insure availability on request. When submitting billing for x–ray service, a copy of the x–ray findings must be attached. No payment will be made for excessive or unnecessary x–rays. No payment will be made on closed or rejected claims, except under conditions outlined in WAC 296–20–124. [Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81–24–041 (Order 81–28), § 296–20–121, filed 11/30/81, effective 1/1/82; 81–01–100 (Order 80–29), § 296–20–121, filed 12/23/80, effective 3/1/81; Order 77–27, § 296–20–121, filed 11/30/77, effective 1/1/78; Emergency Order 77–26, § 296–20–121, filed 12/1/77; Emergency Order 77–16, § 296–20–121, filed 9/6/77; Order 74–39, § 296–20–121, filed 11/22/74, effective 1/1/75; Order 74–7, § 296–20–121, filed 1/30/74.]

WAC 296–20–12502 Physician assistant modifiers. As the scope of physician assistant treatment covers a broad area of treatment procedures, the following modifier codes are to be used after the applicable procedure code.

–01 Physician assistant performing procedure without presence of supervising physician. Bill 80% of procedure value.

–04 Physician assistant performing procedure in presence of supervising physician. Bill 80% of procedure value.

–99 Multiple modifiers: Under certain circumstances, multiple modifiers may be applicable. One or more such modifiers may be taken from another section, as applicable. For example, a physician assistant might be serving as a surgical assistant (modifier –80), assisting in performing a multiple or bilateral procedure (modifier –50). In such cases, he would add this modifier (–99) to the procedure code and briefly indicate the circumstances. [Statutory Authority: RCW 51.04.020(4), 51-.04.030, and 51.16.120(3). 81–24–041 (Order 81–28), § 296–20–12502, filed 11/30/81, effective 1/1/82; 81–01–100 (Order 80–29), § 296–20–12502, filed 12/23/80, effective 3/1/81. Statutory Authority: RCW 51.04.030 and 51.16.035. 79–12–086 (Order 79–18), § 296–20–12502, filed 11/30/79, effective 1/1/80.]

WAC 296-20-132 Determination of conversion factor adjustments. Effective January 1, 1984, and thereafter:

Adjustments to the conversion factors for the specialty areas of medicine, surgery, anesthesiology, radiology, and pathology may occur on January 1st of each year following prior public hearings.

Such adjustments will be based on the estimated increase/decrease in the state's average wage for the current year. The following calendar year's estimate will be adjusted to reflect the actual increase/decrease in the state's average wage for the preceding year as computed by the department of employment security and determined by RCW 50.04.355 as now or hereafter amended.

The total percentage change for any one calendar year for all five conversion factors may not exceed the total of the estimated increase/decrease in the current year, plus or minus the actual adjustment for the preceding calendar year. However, apportionment of the adjustments may be made between the various speciality areas to provide parity between the components of the fee schedule. [Statutory Authority: RCW 51.04.020(4) and 51-.04.030. 82-24-050 (Order 82-39), § 296-20-132, filed 11/29/82, effective 1/1/84.]

WAC 296-20-135 Conversion factor table--Medicine, chiropractic, physical therapy, drugless therapeutics and nurse practitioner sections. This table is a conversion of fee schedule unit values to fees in dollar amounts at $1.13 per unit. This conversion factor is to be applied to the medicine section of the fee schedule, the chiropractic, physical therapy, drugless therapeutic and nurse practitioner sections.

Unit Value	@$1.13	Unit Value	@$1.13	Unit Value	@$1.13
.1	.12	5.0	5.65	9.9	11.19
.2	.23	5.1	5.77	10.0	11.30
.3	.34	5.2	5.88	10.5	11.87
.4	.46	5.3	5.99	11.0	12.43
.5	.57	5.4	6.11	11.5	13.00
.6	.68	5.5	6.22	12.0	13.56
.7	.80	5.6	6.33	12.5	14.13
.8	.91	5.7	6.45	13.0	14.69
.9	1.02	5.8	6.56	13.5	15.26
1.0	1.13	5.9	6.67	14.0	15.82
1.1	1.25	6.0	6.78	14.5	16.39
1.2	1.36	6.1	6.90	15.0	16.95
1.3	1.47	6.2	7.01	16.0	18.08
1.4	1.59	6.3	7.12	17.0	19.21
1.5	1.70	6.4	7.24	18.0	20.34
1.6	1.81	6.5	7.35	19.0	21.47
1.7	1.93	6.6	7.46	20.0	22.60
1.8	2.04	6.7	7.58	21.0	23.73
1.9	2.15	6.8	7.69	22.0	24.86
2.0	2.26	6.9	7.80	23.0	25.99
2.1	2.38	7.0	7.91	24.0	27.12
2.2	2.49	7.1	8.03	25.0	28.25
2.3	2.60	7.2	8.14	30.0	33.90
2.4	2.72	7.3	8.25	35.0	39.55
2.5	2.83	7.4	8.37	40.0	45.20
2.6	2.94	7.5	8.48	45.0	50.85
2.7	3.06	7.6	8.59	50.0	56.50
2.8	3.17	7.7	8.71	55.0	62.15
2.9	3.28	7.8	8.82	60.0	67.80
3.0	3.39	7.9	8.93	65.0	73.45
3.1	3.51	8.0	9.04	70.0	79.10
3.2	3.62	8.1	9.16	75.0	84.75
3.3	3.73	8.2	9.27	80.0	90.40
3.4	3.85	8.3	9.38	85.0	96.05
3.5	3.96	8.4	9.50	90.0	101.70
3.6	4.07	8.5	9.61	95.0	107.35
3.7	4.19	8.6	9.72	100.0	113.00
3.8	4.30	8.7	9.84	105.0	118.65
3.9	4.41	8.8	9.95	110.0	124.30
4.0	4.52	8.9	10.06	115.0	129.95
4.1	4.64	9.0	10.17	120.0	135.60
4.2	4.75	9.1	10.29	125.0	141.25
4.3	4.86	9.2	10.40	130.0	146.90
4.4	4.98	9.3	10.51	140.0	158.20
4.5	5.09	9.4	10.63	150.0	169.50
4.6	5.20	9.5	10.74	160.0	180.80
4.7	5.32	9.6	10.85	170.0	192.10
4.8	5.43	9.7	10.97	180.0	203.40
4.9	5.54	9.8	11.08	190.0	214.70
				200.0	226.00

[Statutory Authority: RCW 51.04.020(4) and 51.04-.030. 82-24-050 (Order 82-39), § 296-20-135, filed 11/29/82, effective 7/1/83. Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-24-041 (Order 81-28), § 296-20-135, filed 11/30/81, effective 1/1/82; 80-18-033 (Order 80-24), § 296-20-135, filed 12/1/80, effective 1/1/81. Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-20-135, filed 11/30/79, effective 1/1/80; Order 77-27, § 296-20-135, filed 11/30/77, effective 1/1/78; Order 76-34, § 296-20-135, filed 11/24/76, effective 1/1/77; Order 75-39, § 296-20-135, filed 11/28/75, effective 1/1/76; Order 74-7, § 296-20-135, filed 1/30/74; Order 71-6, § 296-20-135, filed 6/1/71; Order 68-7, § 296-20-135, filed 11/27/68, effective 1/1/69.]

WAC 296-20-140 Conversion factor table--Anesthesia. This table is a conversion of fee schedule unit values to fees in dollar amounts at $16.82 per unit. This conversion factor is to be applied to the anesthesia section of the fee schedule.

Unit Value	@$16.82	Unit Value	@$16.82	Unit Value	@$16.82
.1	1.69	5.0	84.10	9.9	166.52
.2	3.37	5.1	85.79	10.0	168.20
.3	5.05	5.2	87.47	10.5	176.61
.4	6.73	5.3	89.15	11.0	185.02
.5	8.41	5.4	90.83	11.5	193.43
.6	10.10	5.5	92.51	12.0	201.84
.7	11.78	5.6	94.20	12.5	210.25
.8	13.46	5.7	95.88	13.0	218.66
.9	15.14	5.8	97.56	13.5	227.07
1.0	16.82	5.9	99.24	14.0	235.48
1.1	18.51	6.0	100.92	14.5	243.89
1.2	20.19	6.1	102.61	15.0	252.30
1.3	21.87	6.2	104.29	16.0	269.12
1.4	23.55	6.3	105.97	17.0	285.94
1.5	25.23	6.4	107.65	18.0	302.76
1.6	26.92	6.5	109.33	19.0	319.58
1.7	28.60	6.6	111.02	20.0	336.40
1.8	30.28	6.7	112.70	21.0	353.22
1.9	31.96	6.8	114.38	22.0	370.04
2.0	33.64	6.9	116.06	23.0	386.86
2.1	35.33	7.0	117.74	24.0	403.68

Unit Value	@$16.82	Unit Value	@$16.82	Unit Value	@$16.82
2.2	37.01	7.1	119.43	25.0	420.50
2.3	38.69	7.2	121.11	30.0	504.60
2.4	40.37	7.3	122.79	35.0	588.70
2.5	42.05	7.4	124.47	40.0	672.80
2.6	43.74	7.5	126.15	45.0	756.90
2.7	45.42	7.6	127.84	50.0	841.00
2.8	47.10	7.7	129.52	55.0	925.10
2.9	48.78	7.8	131.20	60.0	1,009.20
3.0	50.46	7.9	132.88	65.0	1,093.30
3.1	52.15	8.0	134.56	70.0	1,177.40
3.2	53.83	8.1	136.25	75.0	1,261.50
3.3	55.51	8.2	137.93	80.0	1,345.60
3.4	57.19	8.3	139.61	85.0	1,429.70
3.5	58.87	8.4	141.29	90.0	1,513.80
3.6	60.56	8.5	142.97	95.0	1,597.90
3.7	62.24	8.6	144.66	100.0	1,682.00
3.8	63.92	8.7	146.34	105.0	1,766.10
3.9	65.60	8.8	148.02	110.0	1,850.20
4.0	67.28	8.9	149.70	115.0	1,934.30
4.1	68.97	9.0	151.38	120.0	2,018.40
4.2	70.65	9.1	153.07	125.0	2,102.50
4.3	72.33	9.2	154.75	130.0	2,186.60
4.4	74.01	9.3	156.43	140.0	2,354.80
4.5	75.69	9.4	158.11	150.0	2,523.00
4.6	77.38	9.5	159.79	160.0	2,691.20
4.7	79.06	9.6	161.48	170.0	2,859.40
4.8	80.74	9.7	163.16	180.0	3,027.60
4.9	82.42	9.8	164.84	190.0	3,195.80
				200.0	3,364.00

[Statutory Authority: RCW 51.04.020(4) and 51.04-.030. 82-24-050 (Order 82-39), § 296-20-140, filed 11/29/82, effective 7/1/83. Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-24-041 (Order 81-28), § 296-20-140, filed 11/30/81, effective 1/1/82; 80-18-033 (Order 80-24), § 296-20-140, filed 12/1/80, effective 1/1/81. Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-20-140, filed 11/30/79, effective 1/1/80; Order 77-27, § 296-20-140, filed 11/30/77, effective 1/1/78; Order 76-34, § 296-20-140, filed 11/24/76, effective 1/1/77; Order 75-39, § 296-20-140, filed 11/28/75, effective 1/1/76; Order 74-39, § 296-20-140, filed 11/22/74, effective 4/1/75; Order 74-7, § 296-20-140, filed 1/30/74.]

WAC 296-20-145 Conversion factor table--Surgery. This table is a conversion of fee schedule unit values to fees in dollar amounts at $59.49 per unit. This conversion factor applies only to the surgery section of the fee schedule.

Unit Value	@$59.49	Unit Value	@$59.49	Unit Value	@$59.49
.1	5.95	5.0	297.45	9.9	588.96
.2	11.90	5.1	303.40	10.0	594.90
.3	17.85	5.2	309.35	10.5	624.65
.4	23.80	5.3	315.30	11.0	654.39
.5	29.75	5.4	321.25	11.5	684.14
.6	35.70	5.5	327.20	12.0	713.88
.7	41.65	5.6	333.15	12.5	743.63
.8	47.60	5.7	339.70	13.0	773.37
.9	53.55	5.8	345.05	13.5	803.12
1.0	59.49	5.9	351.00	14.0	832.86
1.1	65.44	6.0	356.94	14.5	862.61
1.2	71.39	6.1	362.89	15.0	892.35
1.3	77.34	6.2	368.84	16.0	951.84
1.4	83.29	6.3	374.79	17.0	1,011.33
1.5	89.24	6.4	380.74	18.0	1,070.82
1.6	95.19	6.5	386.69	19.0	1,130.31
1.7	101.14	6.6	392.64	20.0	1,189.80
1.8	107.09	6.7	398.59	21.0	1,249.29
1.9	113.04	6.8	404.54	22.0	1,308.78
2.0	118.98	6.9	410.49	23.0	1,368.27
2.1	124.93	7.0	416.40	24.0	1,427.76
2.2	130.88	7.1	422.38	25.0	1,487.25
2.3	136.83	7.2	428.33	30.0	1,784.70
2.4	142.78	7.3	434.28	35.0	2,082.15
2.5	148.73	7.4	440.23	40.0	2,379.60
2.6	154.68	7.5	446.18	45.0	2,677.05
2.7	160.63	7.6	452.13	50.0	2,974.50
2.8	166.58	7.7	458.08	55.0	3,271.95
2.9	172.53	7.8	464.03	60.0	3,569.40
3.0	178.47	7.9	469.98	65.0	3,866.85
3.1	184.42	8.0	475.92	70.0	4,164.30
3.2	190.37	8.1	481.87	75.0	4,461.75
3.3	196.32	8.2	487.82	80.0	4,759.20
3.4	202.27	8.3	493.77	85.0	5,056.65
3.5	208.22	8.4	499.72	90.0	5,354.10
3.6	214.17	8.5	505.67	95.0	5,651.55
3.7	220.12	8.6	511.62	100.0	5,949.00
3.8	226.07	8.7	517.57	105.0	6,246.45
3.9	232.02	8.8	523.52	110.0	6,543.90
4.0	237.96	8.9	529.47	115.0	6,841.35
4.1	243.91	9.0	535.41	120.0	7,138.38
4.2	249.86	9.1	541.36	125.0	7,436.25
4.3	255.81	9.2	547.31	130.0	7,733.70
4.4	261.76	9.3	553.26	140.0	8,328.60
4.5	267.71	9.4	559.21	150.0	8,923.50
4.6	273.66	9.5	565.16	160.0	9,518.40
4.7	279.61	9.6	571.11	170.0	10,113.30
4.8	285.56	9.7	577.06	180.0	10,708.20
4.9	291.51	9.8	583.01	190.0	11,303.10
				200.0	11,898.00

[Statutory Authority: RCW 51.04.020(4) and 51.04-.030. 82-24-050 (Order 82-39), § 296-20-145, filed 11/29/82, effective 7/1/83. Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-24-041 (Order 81-28), § 296-20-145, filed 11/30/81, effective 1/1/82; 80-18-033 (Order 80-24), § 296-20-145, filed 12/1/80, effective 1/1/81. Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-20-145, filed 11/30/79, effective 1/1/80; Order 77-27, § 296-20-145, filed 11/30/77, effective 1/1/78; Order 76-34, § 296-20-145, filed 11/24/76, effective 1/1/77; Order 75-39, § 296-20-145, filed 11/28/75, effective 1/1/76; Order 74-7, § 296-20-145, filed 1/30/74.]

WAC 296-20-150 Conversion factor table--Radiology. This table is a conversion of the fee schedule unit values to fees in dollar amounts at $5.19 per unit. This conversion factor is to be applied only to the radiology section of the fee schedule.

Unit Value	@$5.19	Unit Value	@$5.19	Unit Value	@$5.19
.1	.52	5.0	25.95	9.9	51.38
.2	1.04	5.1	26.47	10.0	51.90
.3	1.56	5.2	26.99	10.5	54.50
.4	2.08	5.3	27.51	11.0	57.09

Unit Value	@$5.19	Unit Value	@$5.19	Unit Value	@$5.19
.5	2.60	5.4	28.03	11.5	59.69
.6	3.12	5.5	28.56	12.0	62.28
.7	3.63	5.6	29.06	12.5	64.88
.8	4.16	5.7	29.58	13.0	67.47
.9	4.67	5.8	30.10	13.5	70.07
1.0	5.19	5.9	30.63	14.0	72.66
1.1	5.71	6.0	31.14	14.5	75.26
1.2	6.23	6.1	31.66	15.0	77.85
1.3	6.75	6.2	32.18	16.0	83.04
1.4	7.27	6.3	32.70	17.0	88.23
1.5	7.79	6.4	33.22	18.0	93.42
1.6	8.30	6.5	33.74	19.0	98.61
1.7	8.82	6.6	34.26	20.0	103.80
1.8	9.34	6.7	34.78	21.0	108.99
1.9	9.86	6.8	35.29	22.0	114.18
2.0	10.38	6.9	35.81	23.0	119.37
2.1	10.90	7.0	36.33	24.0	124.56
2.2	11.42	7.1	36.85	25.0	129.75
2.3	11.94	7.2	37.37	30.0	155.70
2.4	12.46	7.3	37.89	35.0	181.65
2.5	12.98	7.4	38.41	40.0	207.60
2.6	13.50	7.5	38.93	45.0	233.55
2.7	14.01	7.6	39.44	50.0	259.50
2.8	14.53	7.7	39.96	55.0	285.45
2.9	15.05	7.8	40.48	60.0	311.40
3.0	15.57	7.9	41.00	65.0	337.35
3.1	16.09	8.0	41.52	70.0	363.30
3.2	16.61	8.1	42.04	75.0	389.25
3.3	17.13	8.2	42.56	80.0	415.20
3.4	17.65	8.3	43.08	85.0	441.15
3.5	18.17	8.4	43.60	90.0	467.10
3.6	18.68	8.5	44.12	95.0	493.05
3.7	19.20	8.6	44.63	100.0	519.00
3.8	19.72	8.7	45.15	105.0	544.95
3.9	20.24	8.8	45.67	110.0	570.90
4.0	20.76	8.9	46.19	115.0	596.85
4.1	21.28	9.0	46.71	120.0	622.80
4.2	21.80	9.1	47.23	125.0	648.75
4.3	22.32	9.2	47.75	130.0	674.70
4.4	22.84	9.3	48.28	140.0	726.60
4.5	23.36	9.4	48.79	150.0	778.50
4.6	23.87	9.5	49.31	160.0	830.40
4.7	24.39	9.6	49.85	170.0	882.30
4.8	24.91	9.7	50.34	180.0	934.20
4.9	25.43	9.8	50.86	190.0	986.10
				200.0	1,038.00

[Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-24-041 (Order 81-28), § 296-20-150, filed 11/30/81, effective 1/1/82; 80-18-033 (Order 80-24), § 296-20-150, filed 12/1/80, effective 1/1/81. Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-20-150, filed 11/30/79, effective 1/1/80; Order 77-27, § 296-20-150, filed 11/30/77, effective 1/1/78; Order 76-34, § 296-20-150, filed 11/24/76, effective 1/1/77; Order 75-39, § 296-20-150, filed 11/28/75, effective 1/1/76; Order 74-7, § 296-20-150, filed 1/30/74.]

WAC 296-20-155 Conversion factor table--Pathology. This table is a conversion of the fee schedule unit values to fees in dollar amounts at $.49 per unit. This conversion factor is to be applied only to the pathology section of the fee section schedule.

Unit Value	@$.49	Unit Value	@$.49	Unit Value	@$.49
.1	.05	5.0	2.45	9.9	4.85
.2	.10	5.1	2.50	10.0	4.90
.3	.15	5.2	2.55	10.5	5.15
.4	.20	5.3	2.60	11.0	5.39
.5	.25	5.4	2.65	11.5	5.64
.6	.29	5.5	2.70	12.0	5.88
.7	.34	5.6	2.75	12.5	6.13
.8	.39	5.7	2.80	13.0	6.37
.9	.44	5.8	2.85	13.5	6.62
1.0	.49	5.9	2.90	14.0	6.86
1.1	.54	6.0	2.94	14.5	7.11
1.2	.59	6.1	2.99	15.0	7.35
1.3	.64	6.2	3.04	16.0	7.84
1.4	.67	6.3	3.09	17.0	8.33
1.5	.74	6.4	3.14	18.0	8.82
1.6	.78	6.5	3.19	19.0	9.31
1.7	.83	6.6	3.23	20.0	9.80
1.8	.88	6.7	3.28	21.0	10.29
1.9	.93	6.8	3.33	22.0	10.78
2.0	.98	6.9	3.38	23.0	11.27
2.1	1.03	7.0	3.43	24.0	11.76
2.2	1.08	7.1	3.48	25.0	12.25
2.3	1.13	7.2	3.53	30.0	14.70
2.4	1.18	7.3	3.58	35.0	17.15
2.5	1.23	7.4	3.63	40.0	19.60
2.6	1.27	7.5	3.68	45.0	22.05
2.7	1.32	7.6	3.73	50.0	24.50
2.8	1.37	7.7	3.77	55.0	26.95
2.9	1.42	7.8	3.82	60.0	29.40
3.0	1.47	7.9	3.87	65.0	31.85
3.1	1.52	8.0	3.92	70.0	34.30
3.2	1.57	8.1	3.97	75.0	36.75
3.3	1.62	8.2	4.02	80.0	39.20
3.4	1.67	8.3	4.07	85.0	41.65
3.5	1.71	8.4	4.12	90.0	44.10
3.6	1.76	8.5	4.17	95.0	46.55
3.7	1.81	8.6	4.21	100.0	49.00
3.8	1.86	8.7	4.26	105.0	51.45
3.9	1.91	8.8	4.31	110.0	53.90
4.0	1.96	8.9	4.36	115.0	56.35
4.1	2.01	9.0	4.41	120.0	58.80
4.2	2.06	9.1	4.46	125.0	61.25
4.3	2.11	9.2	4.51	130.0	63.70
4.4	2.17	9.3	4.56	140.0	68.60
4.5	2.21	9.4	4.61	150.0	73.50
4.6	2.25	9.5	4.66	160.0	78.40
4.7	2.30	9.6	4.70	170.0	83.30
4.8	2.35	9.7	4.75	180.0	88.20
4.9	2.40	9.8	4.80	190.0	93.10
				200.0	98.00

[Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-24-041 (Order 81-28), § 296-20-155, filed 11/30/81, effective 1/1/82; 80-18-033 (Order 80-24), § 296-20-155, filed 12/1/80, effective 1/1/81. Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-20-155, filed 11/30/79, effective 1/1/80; Order 77-27, § 296-20-155, filed 11/30/77, effective 1/1/78; Order 76-34, § 296-20-155, filed 11/24/76, effective 1/1/77; Order 74-7, § 296-20-155, filed 1/30/74.]

WAC 296-20-370 Respiratory impairments. (1) Rules for evaluation of permanent respiratory impairments:

(a) All reports of physical examination of persons for respiratory impairment shall include: date of examination, name, sex, address, birthdate, marital status, and

occupation of the person being examined; height, weight, temperature, pulse rate, blood pressure and respiratory rate and physical findings on inspection, palpation, percussion, and auscultation, vital capacity tests including one–second forced expiratory volume, forced vital capacity and maximum voluntary ventilation; all symptoms such as wheeze, cough, orthopnea, chest pain, paroxysmal nocturnal dyspnea, expectoration, hemoptysis, as to date of onset, course with descriptions, variation, whether influenced by bodily activity, emotional stress, posture, allergens, immediate environmental factors, medications, frequency and duration, and how they are affected by respiratory infections; the history of the particular exposure, a history of any previous chest x–rays, any allergies, cardiac symptoms or diagnosis, chest surgery or deformities, trauma, or other conditions such as pneumothorax, pulmonary infarct or chemical bronchitis; all pertinent personal history of habits such as smoking, weight gain or loss, fatigability, appetite; use of medications such as steroids, digitalis, antibiotics, bronchodilators, expectorants, etc., and occupational history.

(b) Categories 2 through 6 in WAC 296–20–380 include the presence of complaints of whatever degree.

(c) Dyspnea is the major complaint of respiratory impairment, and can usually be explained by the presence of abnormal lung ventilation, perfusion, or diffusion, measured either at rest or exercise. Since mechanisms of respiratory tract damage may differ widely, individual lung function tests may not wholly correspond to the following categories of impairment, but the examining physician should be able to categorize the vast majority of persons, using a "best fit" method for the following respiratory impairment Categories I–VI.

(d) Persisting variable respiratory impairment. Variable respiratory impairment due to allergic or irritative disorders of the respiratory tract, such as bronchial asthma or reactive airway disease, caused or substantially aggravated by factors in the work place, shall be evaluated by detailed narrative report, including rationale for the work relationship, relative importance of nonwork related co–factors, such as pre–existing asthma, tobacco usage, or other personal habits, the need for regular medication to substantially improve or control the respiratory condition, and the prognosis. If tests of ventilatory function, done when the person is in clinical remission, are nearly normal (1 second forced expiratory volume 80 percent or greater of predicted), an appropriate provocative bronchial challenge test should be done to demonstrate the presence of unusual respiratory sensitivity. When the respiratory condition (asthma or reactive airway disease) is thought to be permanent, but the degree of respiratory impairment varies, then the examining physician shall give an estimate of percentage of total bodily impairment, as per Rule 15 or WAC 296–20–220. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 82–24–050 (Order 82–39), § 296–20–370, filed 11/29/82, effective 1/1/83; Order 74–32, § 296–20–370, filed 6/21/74, effective 10/1/74.]

WAC 296–20–380 Categories of permanent respiratory impairments. (1) Tests of ventilatory functions are not less than 85 percent of predicted normal for the person's age, sex and height. Arterial oxygen saturation at rest and after exercise is 93 percent or greater. Subjective complaints may be present or absent.

(2) Tests of ventilatory function range from 70 to 85 percent of predicted normal for the person's age, sex and height. Arterial oxygen saturation at rest and after exercise is 93 percent or greater. Dyspnea consistent with ventilatory function and arterial oxygen saturation.

(3) Tests of ventilatory function range from 60 to 70 percent of predicted normal for the person's age, sex and height and/or arterial oxygen saturation at rest is normal but after exercise is 88 to 93 percent. Dyspnea consistent with ventilatory function and arterial oxygen saturation.

(4) Tests of ventilatory function range from 50 to 60 percent of predicted normal for the person's age, sex and height. Arterial oxygen saturation at rest and after exercise is 88 to 93 percent. The single breath diffusing capacity (if performed) is greater than 50 percent predicted. Dyspnea consistent with ventilatory function and arterial oxygen saturation.

(5) Tests of ventilatory function range from 40 to 50 percent of predicted normal for the person's age, sex and height. Arterial oxygen saturation at rest and after exercise is less than 88 percent. The single breath diffusing capacity is greater than 40 percent predicted. Dyspnea consistent with ventilatory function and arterial oxygen saturation.

(6) Tests of ventilatory function are below 40 percent of predicted normal for the patient's age, sex and height. Arterial oxygen saturation at either rest or exercise is 83 percent or less. The single breath diffusing capacity is 40 percent or less of predicted. Grade III or IV dyspnea is present, measured on a scale of 0 to 4. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 82–24–050 (Order 82–39), § 296–20–380, filed 11/29/82, effective 1/1/83; Order 74–32, § 296–20–380, filed 6/21/74, effective 10/1/74.]

Chapter 296–21 WAC
MEDICAL FEES

WAC

296–21–010 General information and instructions.
296–21–011 Footnotes.
296–21–013 Special services and billing procedures.
296–21–015 Office visits.
296–21–025 Hospital visits.
296–21–027 Emergency room service.
296–21–030 Consultations.
296–21–047 Therapeutic injections.
296–21–050 Psychiatric services.
296–21–0501 Biofeedback rules.
296–21–057 Monitoring services.
296–21–064 Ear.
296–21–075 Allergy and clinical immunology.
296–21–080 Neurology and neuromuscular.
296–21–095 Physical medicine.
296–21–125 Anesthesia.
296–21–128 Special services and billing procedures—Anesthesia.

WAC 296-21-010 General information and instructions. Rules and billing procedures pertaining to all practitioners rendering services to injured workers are presented in the GENERAL INFORMATION section beginning with WAC 296-20-010. Some commonalities are repeated here for the convenience of those doctors referring to the Medicine Section. Definitions and items unique to medicine are also included.

(1) The following procedures are the most frequently recurring and widely variable items of medical care. The time requirements range from the briefest contact to the comprehensive examination of a complex medical problem. The following graduated listing of services is an attempt to reflect the relative values of the time and skills required at the various service levels. The listed values apply only when these services are performed by or under the responsible supervision of a physician. Separate rules and fee structure exist for services provided by other health care practitioners including nurse practitioners and physician's assistants.

(2) SUPPLEMENTAL SKILLS: When warranted, values for the services of two or more physicians will be allowed. Billings for such services must be supported "By Report." See WAC 296-20-01002 for By Report content information.

(3) CAST ROOM CHARGES: See Code 99070 for information. [Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-24-041 (Order 81-28), § 296-21-010, filed 11/30/81, effective 1/1/82; 81-01-100 (Order 80-29), § 296-21-010, filed 12/23/80, effective 3/1/81; Order 74-7, § 296-21-010, filed 1/30/74; Order 70-12, § 296-21-010, filed 12/1/70, effective 1/1/71; Order 68-7, § 296-21-010, filed 11/27/68, effective 1/1/69.]

WAC 296-21-011 Footnotes.

+ BR: By Report; see WAC 296-20-01002 for detailed information.

@ Listed units represent basic anesthesia value only; add value for time. See WAC 296-21-130 for calculating total anesthesia values.

MEDICINE MODIFIERS

Listed values for most procedures may be modified under certain circumstances. When applicable, the modifying circumstance should be identified by the addition of the appropriate "modifier code number" (including the hyphen) after the usual procedure number. The value should be listed as a single modified total for the procedure. When multiple modifiers are applicable to a single procedure, see modifier code -99.

		Unit Value
-18	EMERGENCY ROOM SERVICES: When the physician is in the hospital, but is involved in patient care elsewhere and is called to the emergency room to provide emergency services, identify by adding this modifier (-18) to the usual emergency room procedure number and add.	8.0
-20	EMERGENCY ROOM SERVICES: When the physician is called to the emergency room from outside the hospital to provide services, identify by adding this modifier (-20) to the usual emergency room service procedure number and add	16.0
-22	UNUSUAL SERVICES: When the services provided are greater than those usually required for the listed procedure, identify by adding this modifier (-22) to the usual procedure number. List modified value. May require report	BR+
-26	PROFESSIONAL COMPONENT: The listed values of certain procedures (laboratory, x-ray, specific diagnostic services, etc.) are a combination of a physician component and a technical component. When the physician component is billed separately, identify by adding this modifier (-26) to the usual procedure number.	
-52	REDUCED VALUES: Under certain circumstances, the listed value for a procedure is reduced or eliminated because of ground rules, common practice, or at the physician's election (e.g., the management of a patient in diabetic coma involving detention with patient in critical condition, with spinal tap, gastric lavage, multiple arterial punctures, cutdown, etc.). Under these or similar circumstances, the services provided can be identified by their usual procedure numbers and the use of a reduced value indicated by adding this modifier (-52) to the procedure number. (Use of this modifier provides a means of reporting services at a reduced charge without disturbing usual relative values.)	

		Unit Value
-90	REFERENCE (OUTSIDE) LABORATORY: When laboratory procedures are performed by other than the billing physician, the procedure(s) shall be identified by adding this modifier (-90) to the usual single or panel procedure number and shall be billed as charged to the physician.	
-99	MULTIPLE MODIFIERS: Under certain circumstances multiple modifiers may be applicable. Under such circumstances, identify by adding this modifier (-99) to the usual procedure number and briefly indicate the circumstances. Value in accordance with appropriate modifiers	BR+

[Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-24-041 (Order 81-28), § 296-21-011, filed 11/30/81, effective 1/1/82; 81-01-100 (Order 80-29), § 296-21-011, filed 12/23/80, effective 3/1/81; Order 74-7, § 296-21-011, filed 1/30/74.]

WAC 296-21-013 Special services and billing procedures. The following services are generally part of the basic services listed in the Maximum Fee Schedule but do involve additional expenses to the physician for materials, for his time or that of his employees. These services are generally provided as an adjunct to common medical services and should be used only when circumstances clearly warrant an additional charge over and above the usual charges for the basic services.

		Unit Value
99000	Collection and handling of specimen for transfer from the physician's office to a laboratory	6.0
99001	Collection, handling, and/or conveyance of specimen for transfer from the patient's home to a laboratory (distance may be indicated)	8.0
99002	Collection, handling, conveyance, and/or any other service in connection with the implementation of an order involving devices (e.g., designing, fitting, packaging, handling, delivery or mailing) when devices such as orthotics, protectives, prosthetics are fabricated by an outside laboratory or shop but which items have been designed, and are to be fitted and adjusted by the attending physician	12.0
99012	Telephone calls, phone consultations or repeated or lengthy phone calls may need to be separately identified per 15 minutes	10.0
99024	Post-operative follow-up	BR
	(See WAC 296-22-010)	
99025	Initial (new patient) visit when asterisk (*) surgical procedure constitutes major service at that visit	20.0
99030	Mileage, one way, each mile beyond 7 mile radius of point of origin (office or home), per mile	2.0
99040	Completion of certificate of disability card	2.0
99050	Services requested after office hours in addition to basic service	10.0
99052	Services requested between 10:00 p.m. and 8:00 a.m. in addition to basic services provided the office is closed during this period of time	12.0
99054	Services requested on Sundays and holidays in addition to basic services	12.0
99056	Services provided at request of patient in a location other than physician's office which are normally provided in the office	BR
99058	Office services provided on an emergency basis	BR
	(For hospital-based emergency care facility services, see 90500 et seq.)	
99062	Emergency care facility services: When the nonhospital-based physician is in the hospital but is involved in patient care elsewhere and is called to the emergency facility to provide emergency services	8.0
99064	Emergency care facility services: When the nonhospital-based physician is called to the emergency facility from outside the hospital to provide emergency services; not during regular office hours	25.0
99065	during regular office hours	16.0
99070	Supplies and materials provided by the physician over and above those usually included with the office visit or other services rendered (list drugs, trays, supplies or materials cast room and/or casting supplies provided). Bill at cost	BR+
	(For spectacles, see 92390-92395)	
99080	Special reports as insurance forms, sixty-day report, or the review of	

		Unit Value
	medical data to clarify a patient's status—more than the information conveyed in the usual medical communications or standard reporting form at Department Request (see WAC 296-20-06101 for reporting requirements)	BR
99082	Unusual travel (e.g., transportation and escort of patient) per mile	2.0
99085	Physician called on to convey instructions by telephone to hospital emergency room or nurse practitioner clinic—to be paid only to initial attending physician upon completion of Report of Accident form	12.0
99150	Detention, prolonged, with patient requiring attention beyond usual service (e.g., critically ill patient, 30 minutes or less)	25.0
99151	one hour	50.0

CRITICAL CARE

Critical care includes the care of critically ill patients in a variety of medical emergencies that requires the constant attention of the physician (cardiac arrest, shock, bleeding, respiratory failure, postoperative complications, critically ill neonate). Critical care is usually, but not always, given in a critical care area, such as the coronary care unit, intensive care unit, respiratory care unit, or the emergency care facility. The descriptors for critical care are intended to include cardiopulmonary resuscitation and a variety of services attendant to this procedure as well as other acute emergency situations. Separate procedure codes for services performed during this period, such as placement of catheters, cardiac output measurement, management of dialysis, control of gastrointestinal hemorrhage, electrical conversion of arrhythmia, etc., are excluded when this descriptor is used on a per hour basis. (The physician may list his services separately if he desires.)

99160	Critical care, initial, including the diagnostic and therapeutic services and direction of care of the critically ill or multiple injured or comatose patient, requiring the prolonged presence of the physician; each hour	100.0
99162	additional 30 minutes	50.0
99165	Monitoring respiration	20.0
99166	Monitoring temperature	20.0

OTHER SERVICES

99170	Gastric intubation, and aspiration or lavage for treatment (e.g., for ingested poisons)	SV
99175	Ipecac or similar administration for individual emesis and continued observation until stomach adequately emptied of poison	SV

(For diagnostic intubation, see 82926–82932, 89130–89141)

(For gastric lavage for diagnostic purposes, see 91055)

99180	Hyperbaric oxygen pressurization; initial	BR
99182	Subsequent	BR
99185	Hypothermia; regional	BR
99186	total body	BR
99190	Assembly and operation of pump with oxygenator or heat exchanger (with or without ECG and/or pressure monitoring); each hour	BR
99191	3/4 hour	BR
99192	1/2 hour	BR
99195	Phlebotomy, therapeutic (separate procedure)	BR
99199	Unlisted special service or report	BR

(For monitoring cardiac output, see 78470, 93561, 93962)

(For monitoring intra-aortic balloon counterpulsation, see 33972)

(For subsequent visits, see appropriate hospital visits, 90200–90280)

(For physicians assigned to critical care units or other long-term attendance, use Special Reports)

DEFINITIONS

Definitions and Items of Commonality.
Terms and phrases common to the practice of medicine are defined as follows and apply to procedures 90000 through 90696.

(1) NEW PATIENT: A patient new to the physician.
(2) ESTABLISHED PATIENT: A patient known to the physician and/or whose records are usually available.
(3) INITIAL VISIT: Initial care, including physical examination and initiation of diagnostic and treatment program, for a condition regardless of whether the patient is known to the physician.
(4) FOLLOW-UP VISIT: Subsequent care for a patient and condition known to the physician.
(5) CONSULTATION: A consultation includes services rendered by a physician whose opinion or advice is requested for the further evaluation and/or treatment of the patient. When the consulting physician assumes responsibility for the continuing care of the patient, any subsequent service rendered by him will cease to be a

consultation. Four levels of consultation are recognized: Limited, extensive, comprehensive and consultation of complexity.

For example:

(a) In a LIMITED consultation the physician confines his service to the examination or evaluation of a single organ system for a limited condition. For example, the dermatologist's opinion about a skin lesion, the neurologist's opinion about a disc problem and the orthopedist's opinion about a knee or low back problem.

(b) An EXTENSIVE consultation involves a prolonged evaluation including more than a single organ system or region. For example: The examination of the cardiac patient who needs clearance before undergoing a surgical operation, consultations involving cardio–pulmonary problems and neurologic and orthopedic examinations of patient whose complaints seem disproportionate to his objective findings requiring detailed psychosocial evaluation.

(c) A COMPREHENSIVE consultation indicates the performance of detailed history (including the current problem, any previous illnesses, family disease tendencies and a review of all organ systems) and a thorough physical examination on a patient with a complex illness to establish the diagnosis and/or recommended therapy. For example; The young person with fever, arthritis and anemia and examination of patient for diagnosis and in depth evaluation of all organ systems for pre–existing and/or unrelated nonindustrial conditions.

(d) The consultation of UNUSUAL COMPLEXITY: This is an uncommonly performed service with an in-depth medical opinion in a case involving all components of a detailed history with exhaustive examination of all organ systems and regions. For example: The patient with an undiagnosed fever of several years duration, with multiple hospitalizations, requiring a review of previous records, laboratory studies and radiographs as well as a comprehensive examination. Another example is the psychotic patient with minor cardiac findings who is being considered for cardio–pulmonary bypass because of complaints of angina. Another example is the paraplegic patient with iatrogenic drug addiction or dependency (condition resulting from treatment).

(6) REFERRAL: (Transfer) A referral is the transfer of the total or specific care of a patient from one physician to another and does not constitute a consultation. Initial evaluation and subsequent services are designated as listed below in levels of service.

(7) INDEPENDENT PROCEDURE: Certain listed procedures are commonly undertaken as an integral part of a total service. When such a procedure is undertaken as a separate entity, the designation "Independent Procedure" is appropriate. For example: A patient being seen in consultation by an ophthalmologist and it is necessary for him to perform a gonioscopy or a ophthalmoscopy with intravenous fluorescein as diagnostic procedures in connection with the consultation, then they would be considered as independent procedures. Another example would be cardiac monitoring with electronic equipment in intrathoracic or other critical surgery.

(8) LEVELS OF SERVICE: Examinations, evaluations, treatment, counseling, conferences with or concerning patients, and services which necessitate wide variations in skill, effort and time required for the diagnosis and treatment of illness and the promotion of optimal health. Six levels are recognized:

MINIMAL: A level of service including injections, dressings, minimal care, etc., not necessarily requiring the presence of the physician.

For Example:

(a) Routine immunization for tetanus administered by a nurse.

(b) Blood pressure determination by a nurse for medication control.

(c) Removal of sutures from laceration.

BRIEF: A level of service requiring a brief period of time, with minimal effort by the physician.

For Example:

(a) Certification of time loss in a stable or chronic case.

(b) Re–examination of contusion or abrasion.

(c) Examination of conjunctiva by the physician in a patient with subconjunctival hemorrhage, irrigation, medication and removal of foreign body with instrument.

LIMITED: A level of service requiring limited effort or judgment, such as abbreviated or interval history, limited examination or discussion of findings and/or treatment.

For Example:

(a) Review and examination of uncomplicated sprains and strains with initiation, continuation and/or change of treatment.

(b) Examination of an extremity fracture not requiring reduction.

(c) Post–operative care in instances where the unit value is for surgical procedure only.

INTERMEDIATE: A level of service such as a complete history and physical examination of one or more organ systems, or an in depth counseling or discussion of the findings, but not requiring a comprehensive examination of the patient as a whole.

For Example:

(a) Review of interval history; examination of neck veins, lungs, heart, abdomen and extremities, discussion of findings and prescription of treatment in decompensated arteriosclerotic heart disease.

(b) Review of interval history, examination of musculoskeletal system, discussion of findings, and adjustment of therapeutic program in low back and/or arthritic disorders.

(c) Review of recent illness: Examination of pharynx, neck, axilla, groin, and abdomen; interpretation of laboratory tests and prescription of treatment in infectious mononucleosis.

(d) Evaluation of a chest, post trauma, with impaired respiration with development of shock.

EXTENDED: A level of service requiring an unusual amount of time, effort or judgment but not complete examination of the patient as a whole.

For Example:

(a) Detailed review of results of diagnostic evaluation including discussion of physical findings, laboratory studies, x-ray examinations, diagnostic conclusions and recommendations for treatment.

(b) Prolonged evaluation required for psychologically unstable or dependent patient.

COMPREHENSIVE: A level of service providing an in depth evaluation of the patient.

For Example:

(a) Evaluation of the patient including complete history, physical examination and initiation of diagnostic and/or treatment program.

(b) Re-examination or re-evaluation of patient with continuing or new illness, including complete history, physical examination and initiation of diagnostic and/or treatment program.

(c) Evaluation of a head injury immediately post trauma with a known previous history of convulsive disorders and a post trauma history of transitory loss of consciousness, dizziness, visual problems, etc.

(d) Evaluation of a cardiac problem with respiratory distress resulting from inhalation of toxic and/or irritant chemicals.

[Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-24-041 (Order 81-28), § 296-21-013, filed 11/30/81, effective 1/1/82; 81-01-100 (Order 80-29), § 296-21-013, filed 12/23/80, effective 3/1/81; Order 74-39, § 296-21-013, filed 11/22/74, effective 1/1/75; Order 74-7, § 296-21-013, filed 1/30/74.]

Reviser's note -- Erratum: Through a clerical error in the publication process of the 1980 edition of the Washington Administrative Code, certain numerals were omitted from the tables in WAC 296-21-013. The section as published in the Washington State Register, WSR 81-01-100, accurately reflects Order 80-29 of the Department of Labor and Industries, and should be used to determine effective text of the rule before January 1, 1982, when the amendment contained in Register 81-24-041 (Order 81-28) took effect. The error has been corrected in the section as displayed above.

WAC 296-21-015 Office visits.

		Unit Value
Initial Visit		
90000	BRIEF evaluation, history, examination and/or treatment and submission of a report	20.0
90001	Completion of Report of Accident	12.0
90010	Initial LIMITED history and physical examination, including initiation of diagnostic and treatment program and submission of a report. (Routine visit involving a single region or organ system)	30.0
90015	Initial INTERMEDIATE history and physical examination, including initiation of diagnostic and treatment program and submission of a report. (Serious or complicated case involving one or more regions or organ systems. Complexity or complication must be indicated in report)	50.0
90017	Extended-Initial office visit including history and physical exam, and initiation of treatment program with submission of a report in addition to the Report of Accident	60.0
90020	Initial COMPREHENSIVE history and physical examination, including initiation of diagnostic and treatment program with submission of a report in addition to the Report of Accident. (A complex case requiring an unusual amount of time, skill or judgment and an evaluation of the patient as a whole and accompanied with a detailed report)	70.0
Follow-up Visits		
90030	MINIMAL service (e.g., Injection, immunization, minimal dressing) (Independent procedure)	8.0
90040	BRIEF examination, evaluation and/or treatment with office notes	12.0
90050	LIMITED examination, evaluation and/or treatment with office notes.	16.0
90060	INTERMEDIATE examination, evaluation and/or treatment. (Serious or complicated case involving one or more regions and/or organ systems, and accompanied with a detailed report)	20.0
90070	EXTENDED re-examination or re-evaluation requiring an unusual amount of time, skill or judgment, but not necessitating a complete examination or re-examination of the patient as a whole accompanied by a detailed report	30.0
90080	COMPREHENSIVE re-examination or re-evaluation requiring complete re-evaluation of the patient as a whole accompanied by a detailed report	50.0
90097	Completion of a reopening application. An initial office visit fee will be paid for this reopening examination when justified by a report. Diagnostic studies and x-ray studies associated with the reopening examination will be allowed in addition to this fee	12.0

		Unit Value

(For special narrative reports, at department or self–insurer request, see code 99080.)

[Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81–24–041 (Order 81–28), § 296–21–015, filed 11/30/81, effective 1/1/82; 81–01–100 (Order 80–29), § 296–21–015, filed 12/23/80, effective 3/1/81; Order 76–34, § 296–21–015, filed 11/24/76, effective 1/1/77; Order 74–39, § 296–21–015, filed 11/22/74, effective 4/1/75; Order 74–7, § 296–21–015, filed 1/30/74; Order 71–6, § 296–21–015, filed 6/1/71; Order 68–7, § 296–21–015, filed 11/27/68, effective 1/1/69.]

WAC 296–21–025 Hospital visits.

		Unit Value
New or Established Patients		
90200	Initial hospital care, BRIEF or LIMITED history and physical examination, including initiation of diagnostic and treatment program, preparation of hospital records. (Routine visit involving a single region or organ system)	30.0
90215	Initial hospital care, INTERMEDIATE history and physical examination, including initiation of diagnostic and treatment program and preparation of hospital records. (Serious or complicated case involving one or more regions and/or organ systems and indicated in a report)	50.0
90220	Initial hospital care, COMPREHENSIVE history and physical examination, including initiation of diagnostic and treatment program and preparation of hospital records. (A complex case requiring an unusual amount of time, skill or judgment and evaluation of the patient as a whole accompanied by a detailed report in addition to the Report of Accident)	70.0
Follow–up Visits		
90240	BRIEF examination, evaluation and/or treatment, same illness. (Followup hospital care)	12.0
90250	LIMITED examination, evaluation and/or treatment. Report required. (Routine followup hospital care)	20.0
90260	INTERMEDIATE examination, evaluation and/or treatment. Report required. (Serious or complicated case involving one or more regions or organ systems)	30.0
90270	EXTENDED re–examination or re–evaluation, requiring an unusual amount of time, skill or judgment, but not necessitating a complete examination or re–evaluation of the patient as a whole accompanied by a report	40.0
90280	Comprehensive examination, evaluation or treatment. Report Required.	50.0
90292	Hospital discharge day management accompanied by a report	30.0

[Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81–24–041 (Order 81–28), § 296–21–025, filed 11/30/81, effective 1/1/82; 81–01–100 (Order 80–29), § 296–21–025, filed 12/23/80, effective 3/1/81; Order 76–34, § 296–21–025, filed 11/24/76, effective 1/1/77; Order 74–39, § 296–21–025, filed 11/22/74, effective 4/1/75; Order 74–7, § 296–21–025, filed 1/30/74; Order 70–12, § 296–21–025, filed 12/1/70, effective 1/1/71; Order 68–7, § 296–21–025, filed 11/27/68, effective 1/1/69.]

WAC 296–21–027 Emergency room service. The following values apply for services performed in the Emergency Room when the physician is assigned to Emergency Room duty or is present in the Emergency Room because of other activity there, or if the physician elects to use the Emergency Room as a substitute for his office.

When the physician is in the hospital but is involved in patient care elsewhere and is called to the Emergency Room to provide emergency service, use modifier code –18, under WAC 296–21–011.

When the physician is called to the Emergency Room from outside the hospital to provide services, use modifier code –20, WAC 296–21–011.

		Unit Value
Initial Visit		
90500	MINIMAL service (i.e. injection, etc.)	10.0
90505	BRIEF evaluation, history, examination and/or treatment. (Not payable when other fees are payable except as indicated by modifiers)	20.0
90510	Initial LIMITED history and physical examination, including initiation of diagnostic and treatment program. (Routine case involving a single region and/or organ system)	

		Unit Value
	(Not payable when other fees are payable except as indicated by modifiers)	30.0
90515	Initial INTERMEDIATE history and physical examination, including initiation of diagnostic and treatment program and submission of a detailed report. (Serious or complicated case involving one or more regions and/or organ systems) (Not payable when other fees are payable except as indicated by modifiers).	50.0
90517	Initial EXTENDED history and physical examination, including initiation of diagnostic and treatment program and submission of a detailed report in addition to the Report of Accident. (Examination or evaluation requiring an unusual amount of time, skill or judgment.) (Not payable when other fees are payable except as indicated by modifiers.)	70.0
Follow-up Visit		
90530	MINIMAL service (e.g., injection, minimal dressing, suture removal, minor laceration) (Not payable when other fees are applicable except as indicated by modifiers)	8.0
90540	BRIEF examination, evaluation and/or treatment. (Not payable when other fees are applicable except as indicated by modifiers)	12.0
90550	LIMITED examination, evaluation and/or treatment. (Routine follow up care) (Not payable when other fees are applicable except as indicated by modifiers)	16.0
90560	INTERMEDIATE examination, evaluation and/or treatment accompanied by a detailed report. (Case involving one or more regions and/or organ systems) (Not payable when other fees are payable except as indicated by modifiers)	20.0
90570	EXTENDED re-examination or re-evaluation and/or treatment requiring an unusual amount of time, skill or judgment but not necessitating evaluation of the man as a whole accompanied by a detailed report. (Not payable when other fees are applicable except as indicated by modifiers)	30.0

[Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-24-041 (Order 81-28), § 296-21-027, filed 11/30/81, effective 1/1/82; 81-01-100 (Order 80-29), § 296-21-027, filed 12/23/80, effective 3/1/81; Order 76-34, § 296-21-027, filed 11/24/76, effective 1/1/77; Order 74-39, § 296-21-027, filed 11/22/74, effective 4/1/75; Order 74-7, § 296-21-027, filed 1/30/74.]

WAC 296-21-030 Consultations. A CONSULTATION is considered here to include those services rendered by a physician whose OPINION OR ADVICE is requested by another physician or agency in the evaluation and/or treatment of a patient's illness. When the consultant physician thereupon assumes the CONTINUING CARE of the patient, any subsequent service(s) rendered by him will no longer be considered as a consultation.

A REFERRAL is considered here to be the transfer of the total or specific care of a patient from one physician to another. THIS IS NOT A CONSULTATION. Values for the initial visit and the subsequent services for referrals are listed under the appropriate headings in other portions of this schedule.

The values do not necessarily include consultations involving litigation.

		Unit Value
90600	Consultation requiring LIMITED examination and/or evaluation of a given system or region but not requiring a comprehensive history and examination. Report required.	30.0
90605	Intermediate consultation - Consultation requiring intermediate history and physical exam of one or more regions and/or organ system, but not requiring comprehensive history and examination. Requires Report.	40.0
90610	Consultation requiring more EXTENSIVE examination and/or evaluation of one or more regions or organ systems but not requiring comprehensive history and examination. Report required.	50.0
90620	Consultation requiring COMPREHENSIVE history, examination and/or evaluation of one or more regions and/or organ systems with report.	70.0
90630	Consultation of unusual complexity (in excess of scope of services identified by 90600, 90610 and 90620.) Necessitating exceptionally detailed history and examination with extensive review of prior medical records, completion and assessment of data and the preparation of a special report.	BR+

[Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-24-041 (Order 81-28), § 296-21-030, filed 11/30/81, effective 1/1/82; 81-01-100 (Order 80-29), § 296-21-030, filed 12/23/80, effective 3/1/81; Order 74-7, § 296-21-030, filed 1/30/74; Order 70-12, § 296-21-030, filed 12/1/70, effective 1/1/71; Order 68-7, § 296-21-030, filed 11/27/68, effective 1/1/69.]

WAC 296-21-047 Therapeutic injections.

(For cost of drugs supplied by physician, see 99070)

(For injections performed as an independent procedure, see 90030)

(For allergy testing, see WAC 296-21-075)

(For skin testing, see 86450-86585)

		Unit Value
90782	Therapeutic injection of medication (specify); subcutaneous or intramuscular	6.0
90784	intravenous	8.0
90788	Intramuscular injection of antibiotic (specify)	6.0
90790	Chemotherapy for malignant disease; parenteral	SV
90791	infusion (continuous or intermittent)	BR
90792	perfusion	BR
90793	intracavitary	BR

(For intra-arterial chemotherapy requiring arterial catheterization, see 36100-36299, 36640-36660)

(For monitoring of an intra-arterial chemotherapy, drip or forced infusion, see 36620-36625)

(For radioactive isotope therapy, see 79000-79999)

90796	Injection of an intrathecal chemotherapeutic agent administered by the physician	6.0
90798	Intravenous therapy for severe or intractable allergic disease in physician's office or institution with theophyllines, corticosteroids, antihistamines	11.0
90799	Unlisted therapeutic injection	BR

(For allergy immunizations, see 9500 et seq.)

[Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-24-041 (Order 81-28), § 296-21-047, filed 11/30/81, effective 1/1/82; 81-01-100 (Order 80-29), § 296-21-047, filed 12/23/80, effective 3/1/81; Order 74-7, § 296-21-047, filed 1/30/74.]

WAC 296-21-050 Psychiatric services.

NOTES

Hospital care by the attending physician in treating a psychiatric inpatient may be initial or subsequent in nature (see 90200-90280) and may include exchanges with nursing and ancillary personnel. Hospital care services involve a variety of responsibilities unique to the medical management of inpatients, such as physician hospital orders, interpretation of laboratory or other medical diagnostic studies and observations, review of activity therapy reports, supervision of nursing and ancillary personnel, and the programming of all hospital resources for diagnosis and treatment. Some patients receive hospital care services only and others receive hospital care services and other procedures. If other procedures such as electroconvulsive therapy or medical psychotherapy are rendered in addition to hospital care services, these should be listed separately (i.e., hospital care service plus electroconvulsive therapy or plus medical psychotherapy if rendered).

Psychiatric care may be reported without time dimensions according to the procedure or service as are other medical or surgical procedures. In reporting medical psychotherapy procedures, time is only one aspect and may be expressed as is customary in the local area. For example, the usual appointment length of an individual medical psychotherapy procedure may be signified by the procedure code alone. The modifier '-52' may be used to signify a service that is reduced or less extensive than the usual procedure. The modifier '-22' may be used to indicate a more extensive service. Thus medical psychotherapy procedures may be reported by the procedure code alone or by the procedure code with a modifier. If appropriate and customary in the local area, codes 90841, 90843 or 90844 may be used.

Other medical services, such as 90050—Limited office medical service or other patient encounters, may be described as listed in the section on Medicine if appropriate).

CONSULTATION

Consultation for psychiatric evaluation of a patient. Includes examination of patient and exchange of information with primary physician and other informants such as nurses or family members, and preparation of report. Apply to consultations as listed in the section on Medicine. (90600-90630) (See also definition of consultation)

GENERAL CLINICAL PSYCHIATRIC DIAGNOSTIC OR EVALUATIVE INTERVIEW PROCEDURES

		Unit Value	Basic Anes@
90801	Psychiatric diagnostic interview examination including history, mental status, or disposition (may include communication with family or other sources, ordering and medical interpretation of laboratory or		

		Unit Value	Basic Anes@
	other medical diagnostic studies; in certain circumstances other informants will be seen in lieu of the patient). Report required	70.0	
	SPECIAL CLINICAL PSYCHIATRIC DIAGNOSTIC OR EVALUATIVE PROCEDURE		
90825	Psychiatric evaluation of hospital records, other psychiatric reports, psychometric and/or projective tests, and other accumulated data for medical diagnostic purposes (without other informants or patient interview)	30.0	
90831	Telephone consultation with or about patient for psychiatric therapeutic or diagnostic purposes	20.0	
90835	Narcosynthesis for psychiatric diagnostic and therapeutic purposes, e.g., sodium amobarbital (Amytal) interview	50.0	
90840	Psychologic testing, psychometric and/or projective tests, with written report, given by or under supervision of physician, per hour	45.0	
	PSYCHIATRIC THERAPEUTIC PROCEDURES MEDICAL PSYCHOTHERAPY		
90841	Individual medical psychotherapy with continuing medical diagnostic evaluation, and drug management when indicated, including psychoanalysis, insight oriented, behavior modifying or supportive psychotherapy; each 15 minutes with report	20.0	
90843	approximately 20 TO 30 minutes with report	45.0	
90844	approximately 45 OR 50 minutes with report	70.0	
90847	Family medical psychotherapy (conjoint psychotherapy) with continuing medical diagnostic evaluation, and drug management when indicated, of two family members. Report required	50.0	
90848	of three or more members of one family. Report required	60.0	
90849	Multiple–family group medical psychotherapy with continuing medical diagnostic evaluation, and drug management when indicated. Report required.	50.0	
90850	Inpatient care including psychotherapy and supervision of milieu team (e.g., occupational therapy, psychiatric nursing, etc.) or conference with family, 50 minutes, with report	70.0	
90851	25 minutes, with report	45.0	
90852	15 minutes, with report	20.0	
90853	Group medical psychotherapy (other than of a multiple–family group) with continuing medical diagnostic evaluation, and drug management when indicated. Report required.	50.0	
	PSYCHIATRIC SOMATOTHERAPY		
90862	Chemotherapy management, including prescription, use, and review of medication with no more than minimal medical psychotherapy, per hour	60.0	
90870	Electroconvulsive therapy	50.0	
90872	Subconvulsive electric shock treatment	40.0	
	OTHER PSYCHIATRIC THERAPY		
90880	Medical hypnotherapy	35.0	
90882	Environmental intervention for medical management purposes on a psychiatric patient's behalf with agencies, employers, or institutions	30.0	
90887	Interpretation or explanation of results of psychiatric, other medical examinations and procedures, or other accumulated data to family or other responsible persons, or advising them how to assist patient	30.0	
90889	Preparation of report of patient's psychiatric status, history, treatment, or progress (other than for legal or consultative purposes) for other physicians, agencies, or insurance carriers	50.0	
	(For psychiatric consultation see 90600–90630)		
90898	If a claimant fails to appear for the initial psychiatric treatment interview and the psychiatrist, through investigation, including contact with the patient, files a useful report including recommendations, he is entitled to a full hour's fee	70.0	

		Unit Value	Basic Anes@
OTHER PROCEDURES			
90899	Unlisted psychiatric service or procedure	BR	

[Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-24-041 (Order 81-28), § 296-21-050, filed 11/30/81, effective 1/1/82; 81-01-100 (Order 80-29), § 296-21-050, filed 12/23/80, effective 3/1/81; Order 74-7, § 296-21-050, filed 1/30/74; Order 68-7, § 296-21-050, filed 11/27/68, effective 1/1/69.]

WAC 296-21-0501 Biofeedback rules. Procedures listed under WAC 296-20-0502 are for use by M.D.'s, D.O.'s, certified registered nurses and certified psychologists. RPT's and LPT's must use rules and procedures listed under WAC 296-23-710 through 296-23-725.

Administration of Biofeedback treatment is limited to those practitioners who are certified by the Biofeedback Certification Institute of America or who meet the minimum education, experience, and training qualifications to be so certified. Those practitioners wishing to administer Biofeedback treatment to injured workers, must submit a copy of their Biofeedback certification or supply evidence of their qualifications to the department of self-insurer as the case may be.

(1) The department will authorize Biofeedback treatment for the following conditions when accepted under the Industrial Insurance claim:

(a) Idiopathic Raynaud's disease

(b) Temporomandibular Joint Dysfunction

(c) Myofascial Pain Dysfunction Syndrome (MPD)

(d) Tension headaches

(e) Migraine headaches

(f) Tinnitus

(g) Torticollis

(h) Neuromuscular re-education as result of neurological damage in CVA or spinal cord injury

(i) Inflammatory and/or musculoskeletal disorders causally related to the accepted condition.

(2) Twelve Biofeedback treatments in a ninety day period will be authorized for the above conditions when the following is presented:

(a) An evaluation report documenting:

(i) The basis for the claimant's condition;

(ii) the condition's relationship to the industrial injury;

(iii) an evaluation of the claimant's current functional measurable modalities (i.e., range of motion, up time, walking tolerance, medication intake, etc.);

(iv) an outline of the proposed treatment program;

(v) an outline of the expected restoration goals.

(b) No further Biofeedback treatments will be authorized or paid for without substantiation of evidence of improvement in measurable, functional modalities (i.e., range of motion, up time, walking tolerance, medication intake, etc.). Only one additional treatment block of twelve treatments per ninety days will be authorized. Requests for Biofeedback treatment beyond twenty-four treatments or one hundred eighty days will be granted only after file review by and on the advice of the department's medical consultant.

(c) In addition to treatment, pre-treatment and periodic evaluation will be authorized. Follow-up evaluation can be authorized at one, three, six, and twelve months post-treatment.

(d) At the department's option, a concurring opinion may be required regarding relationship of the condition to the industrial injury and/or need for Biofeedback treatment. [Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-24-041 (Order 81-28), § 296-21-0501, filed 11/30/81, effective 1/1/82; 81-01-100 (Order 80-29), § 296-21-0501, filed 12/23/80, effective 3/1/81.]

WAC 296-21-057 Monitoring services. The following values are for physician's services only and do not include charges for use of equipment or supplies.

		Unit Value
Dialysis		
	HEMODIALYSIS	
	(For cannula declotting, see 36860, 36861)	
90941	Hemodialysis, acute renal failure or intoxication, per dialysis	BR+
90942	patient 21-40 kg	BR
90943	patient 11-20 kg	BR
90944	patient under 10 kg	BR
90951	Hemodialysis, for chronic irreversible renal insufficiency, initial stabilizing therapy via shunt or fistula, up to 4-6 weeks; patient over 40 kg	BR
90952	patient 21-40 kg	BR
90953	patient 11-20 kg	BR
90954	patient under 10 kg	BR
90955	Hemodialysis, for chronic irreversible renal insufficiency, maintenance for stabilized condition, more than 4-6 weeks, hospital, patient over 40 kg	BR
90956	patient 21-40 kg	BR
90957	patient 11-20 kg	BR
90958	patient under 10 kg	BR
	PERITONEAL DIALYSIS	
	(For insertion of cannula or catheter, see 49420, 49421)	
90966	Peritoneal dialysis for acute renal failure and/or intoxication, excluding catheter/cannula insertion; patient more than 40 kg	BR

		Unit Value
90967	patient 21–40 kg	BR
90968	patient 11–20 kg	BR
90969	patient under 10 kg	BR
90976	Peritoneal dialysis for chronic renal failure; patient more than 40 kg	BR
90977	patient 21–40 kg	BR
90978	patient 11–20 kg	BR
90979	patient under 10 kg	BR

MISCELLANEOUS DIALYSIS PROCEDURES

90990	Hemodialysis training and/or counseling	BR
90991	Home hemodialysis care, outpatient, for those services either provided by the physician primarily responsible for total hemolysis care or under his direct supervision, and excludes care for complicating illnesses unrelated to hemodialysis	BR
90997	Hemoperfusion (e.g., with activated charcoal or resin)	BR
90999	Unlisted dialysis procedure	BR

(For cannula insertion by other than treating physician, see 49420)

GASTROENTEROLOGY

(For duodenal intubation and aspiration, see 89100–89105)

(For gastrointestinal radiologic procedures, see 74210–74340)

91000	Esophageal intubation and collection of washings for cytology, including preparation of specimens (separate procedure)	36.0
91010	Esophageal motility study;	106.0
91011	with mecholyl or similar stimulant	130.0
91012	with acid perfusion studies	72.0
91030	Esophagus, acid perfusion (Bernstein) test for esophagitis	36.0
91032	Esophagus, acid reflux test, with intraluminal pH electrode for detection of gastroesophageal reflux	72.0
91033	prolonged recording	BR
91052	Gastric analysis test with injection of stimulant of gastric secretion (e.g., histamine, insulin, pentagastrin)	BR

(For gastric biopsy by capsule, per oral, via tube, one or more specimens, see 43600)

(For gastric laboratory procedures, see also 89130–89141)

91055	Gastric intubation, washings, and preparing slides for cytology (separate procedure)	36.0

(For gastric lavage, therapeutic, see 99170)

91060	Gastric saline load test	30.0

(For biopsy by capsule, small intestine, per oral, via tube (one or more specimens), see 44100)

91090	Fluorescein–string test for upper gastrointestinal bleeding	30.0
91100	Intestinal bleeding tube, passage, positioning and monitoring	BR

(For injection procedure for percutaneous transhepatic cholangiography, see 47500)

(For cholangiography, see 74320, 74321)

(For abdominal paracentesis, see 49080, 49081; with instillation of medication, see 90793)

(For peritoneoscopy, see 49300; with biopsy see 49301)

(For peritoneoscopy and guided transhepatic cholangiography, see 49302; with biopsy, see 49303)

(For injection procedure for splenoportography, see 38200)

91299	Unlisted diagnostic gastroenterology procedure	BR

[Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81–24–041 (Order 81–28), § 296–21–057, filed 11/30/81, effective 1/1/82; 81–01–100 (Order 80–29), § 296–21–057, filed 12/23/80, effective 3/1/81; Order 74–7, § 296–21–057, filed 1/30/74.]

WAC 296-21-064 Ear.

SPECIAL OTORHINOLARYNGOLOGIC SERVICES

NOTES

Diagnostic or treatment procedures usually included in a comprehensive otorhinolaryngologic evaluation or office visit, are reported as an integrated medical service, using appropriate descriptors from the 90000 series. Itemization of component procedures, e.g., otoscopy, rhinoscopy, tuning fork test, does not apply.

Special otorhinolaryngologic services are those diagnostic and treatment services not usually included in a comprehensive otorhinolaryngologic evaluation or office visit. These services are reported separately, using descriptors from the 92500 series.

All services include medical diagnostic evaluation. Technical procedures (which may or may not be performed by the physician personally) are often part of the service, but should not be mistaken to constitute the service itself.

		Unit Value	Basic Anes@
92502	Otolaryngologic examination under general anesthesia	20.0	3.0
92504	Binocular microscopy (separate diagnostic procedure)	13.0	
92506	Medical evaluation speech, language and/or hearing problems	50.0	
92507	Speech, language or hearing therapy, with continuing medical supervision; individual	20.0	
92508	group	15.0	
92511	Nasopharyngoscopy with endoscope (separate procedure)	35.0	
92512	Nasal function studies, e.g., rhinomanometry	20.0	
92516	Facial nerve function studies	20.0	
92520	Laryngeal function studies	20.0	

VESTIBULAR FUNCTION TESTS, WITH OBSERVATION AND EVALUATION BY PHYSICIAN, WITHOUT ELECTRICAL RECORDING

92531	Spontaneous nystagmus, including gaze	SV	
92532	Positional nystagmus	SV	
92533	Caloric vestibular test, each irrigation (binaural, bithermal stimulation constitutes four tests)	SV	
92534	Optokinetic nystagmus	SV	

VESTIBULAR FUNCTION TESTS, WITH RECORDING, e.g., ENG, PENG, AND MEDICAL DIAGNOSTIC EVALUATION

92541	Spontaneous nystagmus test, including gaze and fixation nystagmus, with recording	SV	
92542	Positional nystagmus test, minimum of 4 positions, with recording	SV	
92543	Caloric vestibular test, each irrigation (binaural, bithermal stimulation constitutes four tests), with recording	SV	
92544	Optokinetic nystagmus test, bidirectional, foveal or peripheral stimulation, with recording	SV	
92545	Oscillating tracking test, with recording	SV	
92546	Torsion swing test, with recording	SV	
92547	Use of vertical electrodes in any or all of above tests counts as one additional test	SV	

		Unit Value	Basic Anes@

(For unlisted vestibular tests, see 92599)

AUDIOLOGIC FUNCTION TESTS WITH MEDICAL DIAGNOSTIC EVALUATION

(For evaluation of speech, language and/or hearing problems through observation and assessment of performance, see 92506)

The audiometric tests listed below imply the use of calibrated electronic equipment. Other hearing tests (such as whispered voice, tuning fork) are considered part of the general otorhinolaryngologic services and are not reported separately. All descriptors refer to testing of both ears. Use the modifier "Reduced Service," if a test is applied to one ear instead of to two ears. All descriptors (except 92559), apply to testing of individuals; for testing of groups, use 92559 and specify test(s) used.

BASIC AUDIOMETRY

92551	Screening test, pure tone, air only	10.0	
92552	Pure tone audiometry (threshold); air only	15.0	
92553	air and bone	20.0	
92555	Speech audiometry; threshold only	30.0	
92556	threshold and discrimination	20.0	
92557	Basic comprehensive audiometry (92553 and 92556 combined), (pure tone, air and bone, and speech, threshold and discrimination)	40.0	
92559	Audiometric testing of groups	50.0	

PURE TONE AUDIOMETRY, EXTENDED

92560	Bekesy audiometry; screening	20.0	
92561	diagnostic	30.0	
92562	Loudness balance test, alternate binaural or monaural	20.0	
92563	Tone decay test	20.0	
92564	Short increment sensitivity index (SISI)	20.0	
92565	Stenger test, pure tone	20.0	
92566	Impedance testing	20.0	
92567	Tympanometry	20.0	
92568	Acoustic reflex testing	20.0	
92569	Acoustic reflex decay testing	20.0	

SPEECH AUDIOMETRY, EXTENDED

92571	Filtered speech test	30.0	
92572	Staggered spondaic word test	30.0	
92573	Lombard test	30.0	
92574	Swinging story test	30.0	
92575	Sensorineural acuity level test	30.0	
92576	Synthetic sentence identification test	30.0	
92577	Stenger test, speech	30.0	

		Unit Value	Basic Anes@
92578	Delayed auditory feedback test	30.0	

SPECIAL AUDIOMETRIC FUNCTION TESTS

92580	Electrodermal audiometry	35.0	
92581	Evoked response (EEG) audiometry	100.0	
92582	Conditioning play audiometry	35.0	
92583	Select picture audiometry	35.0	
92584	Electrocochleography	35.0	
92585	Brainstem evoked response recording	BR	
92589	Central auditory function test(s) (specify)	BR	
92590	Hearing aid examination and selection; monaural	BR	
92591	binaural	BR	
92592	Hearing aid check; monaural	BR	
92593	binaural	BR	
92594	Electroacoustic evaluation for hearing aid; monaural	BR	
92595	binaural	BR	
92596	Ear protector attenuation measurements	BR	

OTHER PROCEDURES

92599	Unlisted otorhinolaryngological service or procedure	BR	

[Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-24-041 (Order 81-28), § 296-21-064, filed 11/30/81, effective 1/1/82; 81-01-100 (Order 80-29), § 296-21-064, filed 12/23/80, effective 3/1/81; Order 74-7, § 296-21-064, filed 1/30/74.]

WAC 296-21-075 Allergy and clinical immunology.

NOTES

ALLERGY SENSITIVITY TESTS: Allergy testing and treatment require prior authorization. The performance and evaluation of selective cutaneous and mucous membrane tests in correlation with the history, physical examination, and other observations of the patient. The number of tests performed should be judicious and dependent upon the history, physical findings, and clinical judgment. All patients should not necessarily receive the same tests nor the same number of sensitivity tests.

IMMUNOTHERAPY (DESENSITIZATION, HYPOSENSITIZATION): The parenteral administration of allergenic extracts as antigens at periodic intervals, usually on an increasing dosage scale to a dosage which is maintained as maintenance therapy. Indications for immunotherapy are determined by appropriate diagnostic procedures coordinated with clinical judgment and knowledge of the natural history of allergic diseases.

OTHER THERAPY: For medical conferences on the use of mechanical and electronic devices (precipitators, air conditioners, air filters, humidifiers, dehumidifiers), climatotherapy, physical therapy, occupational and recreational therapy, see 95105.

(For definitions of LEVELS OF SERVICE, see the Introduction)

(For medical service procedures, see 90000–90699)

(For skin testing of bacterial, viral, fungal extracts, etc., see 86450–86585)

SPECIAL DIAGNOSTIC PROCEDURES (ALLERGY TESTING)

		Unit Value
95000	Percutaneous tests (scratch, puncture, prick) with allergenic extracts; up to 30 tests	10.0
95001	31–60 tests each test	1.0
95002	61–90 tests each test	1.5
95003	more than 90 tests each test	2.0
95005	Percutaneous tests (scratch, puncture, prick) with antibiotics, biologicals, stinging insects; 1–5 tests	10.0
95006	6–10 tests each test	1.0
95007	11–15 tests each test	1.5
95011	more than 15 tests each test	2.0
95014	Intracutaneous (intradermal) tests, with antibiotics, biologicals, stinging insects, immediate reaction 15–20 minutes; 1–5 tests	15.0
95016	6–10 tests each test	2.0
95017	11–15 tests each test	2.5
95018	more than 15 tests each test	3.0
95020	Intracutaneous (interdermal) tests with allergenic extracts, immediate reaction—15 to 20 minutes; up to 10 tests	15.0
95022	21–30 tests each test	2.0
95023	more than 30 tests each test	2.5
95027	Skin end point titration	BR
95030	Intracutaneous (intradermal) tests with allergenic extracts, delayed reaction—24 to 72 hours, including reading; 2 tests	20.0
95031	3–4 tests each test	2.0
95032	5–6 tests each test	2.5
95033	7–8 tests each test	3.0
95034	more than 8 tests each test	3.5
95040	Patch test, one to ten tests	10.0
95041	11–20 tests each test	2.0
95042	21–30 tests each test	2.5
95043	more than 30 tests each test	3.0
95050	Photo–patch test, one to ten tests	10.0
95051	more than 10 tests each test	4.0
95056	Photo test	10.0
95060	Mucous membrane test ophthalmic	10.0
95065	Direct nasal mucous membrane test	10.0

		Unit Value
95070	Inhalation bronchial challenge testing (not including necessary pulmonary function tests); with histamine, methacholine, or similar compounds	BR
95071	with antigens, specify	BR

(For pulmonary function tests, see 94060, 94070)

95077	Food allergenic extract immunotherapy	BR
95078	Provocative testing	BR
95080	Passive transfer test one to ten tests	100.0
95081	11–20 tests each test	2.0
95082	more than 20 tests each test	3.0

(For allergy laboratory tests, see 86000–86699)

(For intravenous therapy for severe or intractable allergic disease, see 90799)

(For preparation of antigens, materials supplied by physician, etc., see 99070)

95105	Medical conference services (e.g., use of mechanical and electronic devices, climatotherapy, breathing exercises and/or postural drainage)	50.0

(For summary conference or for therapeutic conference by physician following completion of diagnostic workup, including discussion, avoidance, elimination, symptomatic treatment, and immunotherapy, see 90040–90070)

(For prolonged conference, see 99155–99156)

95120	Immunotherapy, in prescribing physician's office or institution, allergenic extract; single antigen	20.0
95125	multiple antigens	30.0
95130	stinging insect antigens	30.0
95135	Professional services performed in the supervision and provision of antigens for immunotherapy in other than the providing physician's office or institution; single antigen, single dose vial	20.0
95140	multiple antigens, single dose vials	30.0
95145	stinging insect antigens, single dose vials	30.0
95150	Professional services performed in the supervision and provision of antigens for immunotherapy in other than the providing physician's office or institution; single antigen, multiple dose vials	25.0
95155	multiple antigens, multiple dose vials	35.0
95160	stinging insect antigens, multiple dose vials	35.0
95180	Rapid desensitization procedure, each hour (e.g., insulin, penicillin, horse serum)	BR
95199	Unlisted allergy/clinical immunologic service or procedure	BR

(For skin testing of bacterial, viral, fungal extracts, see 95030–95034, 86450–86585)

(For special reports on allergy patients, see 99080)

(For testing procedures such as radioallergosorbent testing (RAST), rat mast cell technique (RMCT), mast cell degranulation test (MDT), lymphocytic transformation test (LTT), leukocyte histamine release (LHR), migration inhibitory factor test (MIF), transfer factor test (TFT), nitroblue tetrazolium dye test (NTD), see Immunology section in Pathology or use 95199)

[Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81–24–041 (Order 81–28), § 296–21–075, filed 11/30/81, effective 1/1/82; 81–01–100 (Order 80–29), § 296–21–075, filed 12/23/80, effective 3/1/81; Order 74–7, § 296–21–075, filed 1/30/74; Order 68–7, § 296–21–075, filed 11/27/68, effective 1/1/69.]

Reviser's note -- Erratum: Through a clerical error in the publication process of the 1980 edition of the Washington Administrative Code, certain numerals were omitted from the tables in WAC 296–21–075. The section as published in the Washington State Register, WSR 81–01–100, accurately reflects Order 80–29 of the Department of Labor and Industries, and should be used to determine the effective text of the rule before January 1, 1982, when the amendment contained in Register 81–24–041 (Order 81–28) took effect. The error has been corrected in the section as displayed above.

WAC 296-21-080 Neurology and neuromuscular.

NOTES

Neurologic services are typically consultative, and any of the five levels of consultation (90600–90630) may be appropriate;

In addition, services and skills outlined under Medicine Levels of Service appropriate to neurologic illnesses should be coded similarly (90000 series).

		Unit Value
95819	Electroencephalogram (EEG) including recording awake, drowsy and asleep, with hyperventilation and/or photic stimulation; standard or portable, same facility	70.0
95821	portable, to an alternate facility	80.0
95822	sleep	70.0
95823	physical or pharmacological activation	70.0
95824		

		Unit Value
	cerebral death evaluation recording	70.0
95826	intracerebral (depth) EEG	70.0
95827	all night sleep recording	100.0
95828	Polysomnography (recording, analysis and interpretation of the multiple simultaneous physiological measurements of sleep)	100.0
95829	Electrocorticogram at surgery (separate procedure)	BR
95831	Muscle testing, manual, (separate procedure); per extremity (excluding hand) or trunk, with report	16.0
95832	hand (with or without comparison with normal side)	10.0
95833	total evaluation of body, excluding hands	50.0
95834	total evaluation of body including hands	64.0
95842	muscle testing electrodiagnosis (e.g., reaction of degeneration, chronaxy, galvanic tetanus ratio), one or more extremity, one or more method	24.0
95845	Strength duration curve, each nerve	10.0
95851	Range of motion measurements and report, each extremity (independent procedure), excluding hand.	16.0
95852	hand, with or without comparison with normal size	10.0
95857	Tensilon test for myasthenia gravis;	10.0
95858	with electromyographic recording	20.0
95860	Electromyography, one extremity and related paraspinal area	80.0
95861	two extremities and related paraspinal areas	120.0
95863	three extremities and related paraspinal areas	160.0
95864	four extremities and related paraspinal areas	200.0
95867	Electromyography, cranial nerve supplied muscles; unilateral	100.0
95868	bilateral	150.0
95869	Electromyography, limited study of specific muscles (e.g. external anal sphincter, thoracic spinal muscles)	80.0
	(For eye muscles, see 92265)	
95875	Ischemic forearm exercise test	20.0
95880	Assessment of higher cerebral function with medical interpretation; aphasia testing	50.0
95881	developmental testing	30.0
95882	cognitive testing and others	30.0
95900	Nerve conduction velocity and/or latency study, motor each nerve	32.0
95904	sensory, each nerve	24.0
95925	Somatosensory testing (e.g., cerebral evoked potentials), one or more nerves	BR
95933	Orbicularis oculi (blink) reflex, by electrodiagnostic testing	BR
95935	"H" reflex, by electrodiagnostic testing	BR
95937	Neuromuscular junction testing (repetitive stimulation, paired stimuli), each nerve, any one method	BR
95999	Unlisted neurological or neuromuscular diagnostic procedure	BR

[Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-24-041 (Order 81-28), § 296-21-080, filed 11/30/81, effective 1/1/82; 81-01-100 (Order 80-29), § 296-21-080, filed 12/23/80, effective 3/1/81; Order 74-7, § 296-21-080, filed 1/30/74; Order 68-7, § 296-21-080, filed 11/27/68, effective 1/1/69.]

WAC 296-21-095 Physical medicine. The department or self-insurer will authorize and pay for the following physical medicine services only when the services are under the direct, continuous supervision of a physician who is "Board Qualified" in the field of physical medicine and rehabilitation, (except for (1) and (2) below). The services must be carried out by the physician or Registered Physical Therapist or a Physical Therapist Assistant serving under the direction of a Registered Physical Therapist, by whom he is employed.

The department or self-insurer will allow other licensed physicians to provide physical medicine modalities in the following situations:

(1) The primary attending physician may administer Physical Therapist modalities as listed under 97000 and/or procedures as listed under 97100 in his office. No more than six such visits will be authorized and paid to the attending physician. If the injured worker requires treatment beyond six visits, he must be referred to a Registered Physical Therapist or a Physiatrist for such treatment. The attending physician can bill an office visit in addition to the physical therapy visit for the same day if indicated. Procedure 97070 should be used to bill the Physical Therapy portion of the visit.

(2) In remote areas, where no Registered Physical Therapist or Physical Therapist Assistant is available, treatment by the attending physician with modalities listed under 97100 may be billed under 97070.

(For fabrication of splints, bracing and other supportive devices, see 99070)

(For muscle testing, range of joint motion, electromyography, etc., see 95831 et seq.)

		Unit Value
Modalities		
97000	Office visit with one of the following modalities to one area	12.0
	(a) Hot or cold packs (b) Traction, mechanical (c) Electrical stimulation (unattended) (d) Vasopneumatic devices (e) Paraffin bath (f) Microwave (g) Whirlpool (h) Diathermy (i) Infrared (j) Ultraviolet	
97050	Office visit with two or more modalities to same area	13.0
97070	In remote isolated areas, where there is no Registered Physical Therapist or Physical Therapist Assistant serving under the direction of a Registered Physical Therapist within reasonable distance or when the first six visits are in the physician's office, treatment by any of the listed modalities or procedures given in a physician's office, hospital, nurse practitioner clinic, by other than a Registered Physical Therapist, will be allowed	5.0
Procedures		
	(Physician or therapist is required to be in constant attendance)	
97100	Office visit with one of the following procedures to one area, initial 30 minutes	16.0
	(a) Therapeutic exercises (b) Neuromuscular re–education (c) Functional activities (d) Gait training (e) Electrical stimulation (manual) (f) Traction, manual (g) Massage (h) Contrast baths (i) Ultrasound	
97101	each additional 15 minutes	5.0
97200	Office visit including combination of any modality(s) and procedure(s), initial 30 minutes	16.0
97201	each additional 15 minutes	5.0
97220	Hubbard tank, initial 30 minutes	24.0
97221	each additional 15 minutes (maximum allowance, one hour)	5.0
97240	Pool therapy or Hubbard tank with therapeutic exercises, initial 30 minutes	30.0
97241	each additional 15 minutes (maximum allowance, one hour	6.0
97260	Manipulation (cervical, thoracic, lumbosacral, sacroiliac, hand, wrist, etc.), one area (independent procedure) performed by an osteopathic physician	16.0
97261	each additional area	8.0
	(Codes 97260 and 97261 may be used in conjunction with code 90030. All other office visit codes include treatment of the day.)	
	(For manipulation under general anesthesia, see appropriate anatomic section in Musculoskeletal System)	
97500	Orthotics training (dynamic bracing, splinting, etc.) upper extremities, initial 30 minutes	24.0
97501	each additional 15 minutes	12.0
97520	Prosthetic training, initial 30 minutes	24.0
97521	each additional 15 minutes	12.0
97540	Activities of daily living (ADL) and diversional activities, initial 30 minutes	24.0
97541	each additional 15 minutes	12.0
Tests and Measurements		
	(For muscle testing, manual or electrical, joint range of motion, electromyography or nerve velocity determination, see 95830–95930)	
97700	Office visit including one of the following tests or measurements, with report, initial 30 minutes (a) Orthotic "check–out" (b) Prosthetic "check–out" (c) Activities of daily living "check–out"	24.0
97701	each additional 15 minutes	12.0
97720	Extremity testing for strength, dexterity or stamina, initial 30 minutes	24.0
97721	each additional 15 minutes	12.0
97740	Kinetic activities to increase coordination, strength and/or range of motion, one area (i.e., any two extremities or trunk), initial 30 minutes	24.0
97741	each additional 15 minutes	12.0

		Unit Value
Other Procedures		
97799	Unlisted physical medicine service or procedure	BR

[Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-24-041 (Order 81-28), § 296-21-095, filed 11/30/81, effective 1/1/82; 81-01-100 (Order 80-29), § 296-21-095, filed 12/23/80, effective 3/1/81; Order 76-34, § 396-21-095, filed 11/24/76, effective 1/1/77; Order 74-39, § 296-21-095, filed 11/22/74, effective 1/1/75; Order 74-7, § 296-21-095, filed 1/30/74; Order 70-12, § 296-21-095, filed 12/1/70, effective 1/1/71; Order 68-7, § 296-21-095, filed 11/27/68, effective 1/1/69.]

WAC 296-21-125 Anesthesia. (1) Values for anesthesia services are listed for each procedure in the surgical section and for certain procedures in other sections. These values are to be used only when the anesthesia is personally administered by a licensed physician and surgeon who remains in constant contact attendance during the procedure for the sole purpose of rendering such anesthesia service. These values include usual pre- and post-operative visits, the administration of the anesthetic and the administration of fluids and/or blood incident to the anesthesia or surgery.

(2) "STANDBY SERVICES": When an anesthesiologist is required to participate in the general care of the patient during a surgical procedure, but does not administer anesthesia, these services may be charged on the basis of detention or on the basis of the indicated anesthesia value in accordance with the extent of the services rendered.

(3) In procedures where no value is listed, the basic portion of the calculated value will be the same as listed for a comparable procedure.

(4) Where unusual detention with the patient is essential for the safety and welfare of such patient, see 99038, 99040.

(5) Local infiltration, digital block or topical anesthesia administered by the operating surgeon is included in the unit value for the original surgical procedure.

(6) SUPPLEMENTAL SKILLS: When warranted by the necessity of supplemental skills, values for the services of the two or more physicians will be allowed.

(7) Adjunctive services provided during anesthesia and certain other circumstances may warrant an additional charge.

ANESTHESIA MODIFIERS

Since the values of anesthesia services are related to the procedure for which the anesthesia was performed, the anesthesia service is billed under the code number of the procedure. Add appropriate anesthesia modifier -40 to -49 to the procedure number to indicate that billing is for anesthesia service and not the medical or surgical procedure.

Listed values for most procedures may be modified under certain circumstances. When applicable, the modifying circumstances should be identified by the addition of the appropriate "modifier code number" (including hyphen) after the usual procedure number. The value should be listed as a single modified total for the procedure. (When multiple modifiers are applicable to a single procedure, see modifier code -49.)

		Unit Value
-40	ANESTHESIA SERVICE: Add this modifier (-40) to the usual procedure number and use value listed in "Anes." column for normal, uncomplicated anesthesia.	
	(For therapeutic hypothermia, see 96250, 96255)	
-47	ANESTHESIA BY SURGEON: When regional or general anesthesia is provided by the surgeon use the "Basic" anesthesia value without the added value for time. (Note: Surgical units and anesthesia units are not the same dollar value.) List separately from the surgical service provided and identify by adding this modifier (-47) to the usual procedure number.	
	(For local infiltration, digital block or topical anesthesia, see WAC 296-21-125, item 5.)	
-49	MULTIPLE ANESTHESIA MODIFIERS: Two or more modifiers may be necessary to identify the anesthesia service (e.g., anesthesia performed on a critically ill patient under hypothermic technique). Identify by adding this modifier (-49) to the usual procedure number and briefly indicate the modifying circumstances	BR+
-95	SUPERVISORY ANESTHESIA: Supervisory anesthesia is allowable to the supervising anesthesiologist when provided in the hospital and when the Registered Nurse Anesthetist is not in the employ of the supervising anesthesiologist. The basic value is paid to the supervising anesthesiologist and the time units are paid to the nurse anesthetist. Identify by adding modifier -95 to the procedure code.	

[Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-24-041 (Order 81-28), § 296-21-125, filed 11/30/81, effective 1/1/82; Order 74-7, § 296-21-125, filed 1/30/74; Order 68-7, § 296-21-125, filed 11/27/68, effective 1/1/69.]

WAC 296-21-128 Special services and billing procedures--Anesthesia.

		Unit Value
	(ANESTHESIA)	
99105	Anesthesia risk as when patient has incapacitating systemic disease that is constant threat to life	2.0
99110	Anesthesia complicated by prone position and/or intubation to avoid surgical field	1.0
99115	Anesthesia complicated by total body hypothermia above 30°C	5.0
99120	below 30°C	10.0
99125	Anesthesia complicated by extracorporeal circulation, e.g., heart pump oxygenator bypass or pump assist, with or without hypothermia	10.0
99130	Anesthesia complicated by hyperbaric or compression chamber pressurization	BR+
99135	Anesthesia employed in controlled hypotension	BR

[Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-24-041 (Order 81-28), § 296-21-128, filed 11/30/81, effective 1/1/82; Order 74-7, § 296-21-128, filed 1/30/74.]

Chapter 296-22 WAC
SURGICAL FEES

WAC

SURGERY
296-22-010 General information and instructions.
296-22-022 Introduction.
296-22-023 Repair.

INTEGUMENTARY SYSTEM
296-22-025 Free skin grafts.
296-22-027 Destruction.

MUSCULOSKELETAL SYSTEM
296-22-042 Head.
296-22-053 Spine (vertebral column).
296-22-063 Shoulder.
296-22-067 Humerus (upper arm) and elbow.
296-22-071 Forearm and wrist.
296-22-073 Hand and fingers.
296-22-082 Femur (thigh region) and knee joint.
296-22-091 Foot.

RESPIRATORY SYSTEM
296-22-100 Nose respiratory system.
296-22-105 Accessory sinuses.
296-22-110 Larynx.
296-22-115 Trachea and bronchi.

CARDIOVASCULAR SYSTEM
296-22-120 Heart and pericardium.

HEMIC AND LYMPHATIC SYSTEMS
296-22-135 Lymph nodes and lymphatic channels.

DIGESTIVE SYSTEM
296-22-150 Tongue, floor of mouth.

DENTOALVEOLAR STRUCTURES
296-22-190 Stomach.
296-22-235 Abdomen, peritoneum and omentum.

URINARY SYSTEM
296-22-255 Bladder.

FEMALE GENITAL SYSTEM
296-22-333 Oviduct.

MATERNITY CARE AND DELIVERY
296-22-340 Maternity care and delivery.

NERVOUS SYSTEM
296-22-365 Skull, meninges, and brain.
296-22-370 Spine and spinal cord.
296-22-375 Extracranial nerves, peripheral nerves and autonomic nervous system.

EYE AND OCULAR ADNEXA
296-22-405 Eyeball.
296-22-420 Anterior segment—Iris, ciliary body.

AUDITORY SYSTEM
296-22-465 External ear.
296-22-470 Middle ear.

SURGERY

WAC 296-22-010 General information and instructions. Rules and billing procedures pertaining to all practitioners rendering services to injured workers are presented in the General Information Section beginning with WAC 296-20-010. Some commonalities are repeated here for the convenience of those doctors referring to the Surgery Section. Definitions and rules unique to Surgery are also included here. *Doctor's services* rendered for office, home, hospital, consultations and other services are listed in the Medicine Section.

(1) Listed values for all surgical procedures include the surgery, local infiltration, digital block or topical anesthesia when used and the normal uncomplicated follow-up care for the period indicated in days in the column headed "Follow-up Days".

(2) Follow-up care for diagnostic procedures (e.g., endoscopy, injection procedures for radiography, etc.) includes only that care related to recovery from the diagnostic procedure itself. Care of the condition for which the diagnostic procedure was performed or other concomitant conditions is not included and may be charged for in accordance with the services rendered.

(3) Follow-up care for therapeutic surgical procedures includes only that care usually a part of the surgical service. Complications, exacerbations, recurrence or the presence of other diseases or injuries requiring additional services concurrent with the procedure(s) or during the listed period of normal follow-up care may warrant additional charges. (See modifier -68).

When an additional surgical procedure(s) is carried out within the listed period of follow-up care for a previous surgery, the follow-up periods will continue concurrently to their normal terminations.

(4) PRE-OPERATIVE VISITS AND SERVICES: Under most circumstances the immediate pre-operative visit in the hospital or elsewhere necessary to examine the patient, complete the hospital records, and initiate

the treatment program is included in the listed value for the surgical procedure.

Additional charges may be warranted for pre–operative services under the following circumstances:

(a) When the pre–operative visit is the initial visit (e.g., an emergency, etc.) and prolonged detention or evaluation is required to prepare the patient or to establish the need for and type of surgical procedure.

(b) When the pre–operative visit is a consultation as defined in WAC 296–21–030.

(c) When procedures not usually part of the basic surgical procedure (e.g., bronchoscopy prior to chest surgery, etc.) are provided during the immediate pre–operative period.

(5) CONCURRENT SERVICES BY MORE THAN ONE PHYSICIAN: Charges for concurrent services of two or more physicians may be warranted under the following circumstances:

(a) Medical services provided during the surgical procedure or in the post–operative period (e.g., diabetic management, operative monitoring of cardiac or brain conditions, management of post–operative electrolyte imbalance, etc.).

(b) TWO SURGEONS: Under certain circumstances the skills of two surgeons (e.g., a urologist and a general surgeon in the creation of an ileal conduit, etc.). By prior agreement, the total value may be apportioned in relation to the responsibility of work done. The total value may be increased by 25% in lieu of the assistant's charge. (See modifier –62).

(c) CO–SURGEONS: Under certain circumstances, two surgeons (usually with similar skills) may function simultaneously as primary surgeons performing distinct parts of a total surgical service (e.g., two surgeons simultaneously applying skin grafts to different parts of the body of the same patient). By prior agreement, the total value may be apportioned in relation to the responsibility and work done. The total value may be increased by an appropriate amount in lieu of the usual assistant's charge. (See modifier –64).

(d) SURGICAL TEAM: Under some circumstances highly complex procedures requiring the concomitant services of several physicians, often of different specialties, plus other highly skilled, specially trained personnel and various types of complex equipment are carried out under the surgical team concept with a single, global fee for the total service. The services included in the "global" charge vary widely and no single value can be listed. The value should be supported by a report to include itemization of the physician(s) services, paramedical personnel and equipment included in the "global" charge. (See modifier –66).

(6) ASTERISK (*) PROCEDURES OR ITEMS: Certain relatively small surgical services involve a readily identifiable surgical procedure but include variable pre–operative and post–operative services (e.g., incision and drainage of an abscess, injection of a tendon sheath, manipulation of a joint under anesthesia, dilation of the urethra, etc.). Because of the indefinite pre– and post–operative services the usual "package" concept for surgical services (see above) cannot be applied. Such procedures are identified by an asterisk (*) preceding or following the procedure code number.

Where an asterisk (*) precedes or follows a procedure number and its value, the following rules apply:

(a) The services as listed includes the surgical procedure only. Associated pre– and post–operative services are not included.

(b) Pre–operative services are considered as one of the following:

(i) When the asterisk (*) procedure is carried out at the time of an initial visit (new patient) and this procedure constitutes the major service at that visit, procedure number 99025 is listed in lieu of the usual initial visit as an additional service.

(ii) When the asterisk (*) procedure is carried out at the time of an initial or other visit involving significant identifiable services (e.g., removal of a small skin lesion at the time of a comprehensive history and physical examination), the appropriate visit is listed in addition to the asterisk (*) procedure and its follow–up care.

(iii) When the asterisk (*) procedure is carried out at the time of a follow–up (established patient) visit and this procedure constitutes the major service at that visit, no visit service is usually added.

(iv) When the asterisk (*) procedure requires hospitalization, an appropriate hospital visit is listed in addition to the asterisk (*) procedure and its follow–up care.

(c) All post–operative care is to be added on a service–by–service basis (e.g., office or hospital visit, cast change, etc.).

(d) Complications are added on a service–by–service basis (as with all surgical procedures).

(7) MULTIPLE OR BILATERAL SURGICAL PROCEDURES:

(a) When multiple or bilateral surgical procedures which add significant time or complexity to patient care are performed at the same operative session (See modifier –50).

(b) Incidental procedures (e.g., incidental appendectomy, incidental scar incision, puncture of ovarian cysts, simple lysis of adhesions, simple repair of hiatal hernia, etc.) do not warrant an additional charge. (See modifier –52). THESE PROCEDURES MUST BE AUTHORIZED IN ADVANCE.

(8) SURGERY AND FOLLOW–UP CARE PROVIDED BY DIFFERENT PHYSICIANS: When one physician performs the surgical procedure itself and another provides the follow–up care, the value may be apportioned between them by agreement along with notification to the department of the fee distribution. (See modifier –54 or –55).

(9) ANESTHESIA BY SURGEON: When regional or general anesthesia is provided by the surgeon, value as "Basic" value for anesthesia procedure without added value for time. (See modifier –47) (For local infiltration, digital block or topical anesthesia, see WAC 296–22–010, item 1).

(10) In cases where the claimant does not survive, the percentage of the flat fee paid the physician shall be commensurate with the services rendered.

(11) The emergency room will be considered the office for those physicians providing regular emergency room care to the hospital and fees will be allowed on this basis.

(12) Materials supplied by physician: Supplies and materials provided by the physician, e.g., sterile trays/drugs, over and above those usually included with the office visit or other services rendered may be listed separately. List drugs, trays, supplies, and materials provided. Identify as 99070.

(13) Separate or multiple procedures: It is appropriate to designate multiple procedures that are rendered on the same date by separate entries. (See Modifier -50 below.)

(14) Special report: A service that is rarely provided, unusual, variable, or new may require a special report in determining medical appropriateness of the service. Pertinent information should include an adequate definition or description of the nature, extent, and need for the procedure, and the time, effort, and equipment necessary to provide the service. Additional items which may be included are: Complexity of symptoms, final diagnosis, pertinent physical findings (such as size, location, and number of lesion(s), if appropriate), diagnostic and therapeutic procedures (including major and supplementary surgical procedures, if appropriate), concurrent problems, and follow-up care. See WAC 296-20-01002 for "BR" By Report instructions.

(15) Surgery modifiers: (For other modifiers, see appropriate sections.)

Listed values and procedures may be modified under certain circumstance. When applicable, the modifying circumstance should be identified by the addition of the appropriate "modifier code number" which is a two digit number placed after the usual procedure number from which it is separated by a hyphen. If more than one modifier is used, the "multiple modifiers" placed first after the procedure code indicates one or more additional modifier codes will follow. All modifiers and their respective codes are listed in Appendix A. Modifiers commonly used in surgery are as follows:

		Unit Value
-20	When the surgical service is performed using the techniques of micro-surgery in an operating room and under the operating microscope, the modifier -20 may be added to the surgical procedure. The total value of the surgical procedure may be increased by 20%. A special report may be appropriate to document the necessity of the micro-surgical approach. The department will publish a list of surgical procedures that have approval for this modifier.	
-22	UNUSUAL SERVICES: When the service(s) provided is greater than that usually required for the listed procedure, it may be identified by adding modifier '-22' to the usual procedure number. List modified value. A report may be required.	
-23	UNUSUAL ANESTHESIA: Periodically, a procedure, which usually requires either no anesthesia or local anesthesia, because of unusual circumstances must be done under general anesthesia. This circumstance may be reported by adding the modifier '-23' to the procedure code of the basic service.	BR
-26	PROFESSIONAL COMPONENT: Certain procedures (e.g., laboratory, radiology, electrocardiogram, specific diagnostic services) are a combination of a physician component and a technical component. When the physician component is reported separately, the service may be identified by adding the modifier '-26' to the usual procedure number.	BR
-47	ANESTHESIA BY SURGEON: When regional or general anesthesia is provided by the surgeon, it may be reported by adding to modifier '-47' to the basic service. (This does not include local anesthesia.)	

Use the "basic" anesthesia value only. (Note: Surgical units and anesthesia units are not of the same dollar values.) List separately from the surgical service provided and identify by adding this modifier '-47' to the usual procedure number. (For local infiltration, digital block or topical anesthesia, see WAC 296-21-125, item 5.)

-50	MULTIPLE OR BILATERAL PROCEDURES: When multiple or bilateral procedures which add significant time or complexity to patient care are provided at the same operative session, identify and value the first or major procedure as listed. Identify secondary or lesser procedure(s) by '-50' to the usual procedure number(s) and value at 50% of the listed value(s) unless otherwise indicated.	
-52	REDUCED VALUES: Under certain circumstances, the listed value for a procedure is reduced or eliminated at the physician's election.	

		Unit Value
	Under these circumstances, the service provided can be identified by it's usual procedure number and the addition of modifier '–52', signifying that the service is reduced. For example: (a) Incidental procedures (e.g., incidental appendectomies, incidental scar excisions, puncture of ovarian cysts, simple lysis of adhesions, simple repair of a hiatal hernia, etc.) do not warrant an additional charge. (b) When the listed value is reduced in conformity with a ground rule (e.g., rereduction of a fracture). (c) When charges for multiple procedures (e.g., multiple lacerations, etc.) are reduced at the physician's election to achieve an appropriate total charge.	
–54	SURGICAL PROCEDURE ONLY: When one physician performs the surgical procedure and another provides the pre– and/or post–operative management surgical services may be identified by adding the modifier '–54' to the usual procedure number. Value may be apportioned between them by agreement.	
–55	POST–OPERATIVE MANAGEMENT ONLY: When one physician performs the post–operative management and another has performed the surgical procedure, the post operative component may be identified by adding the modifier '–55' to the usual procedure number. Value may be apportioned between them by agreement.	
–56	PREOPERATIVE MANAGEMENT ONLY: When one physician performs the preoperative care and evaluation and another physician performs the surgical procedure, the preoperative component may be identified by adding the modifier '–56' to the usual procedure number. Value is apportioned as per agreement between practitioners involved.	
–62	TWO SURGEONS: Under certain circumstances the skills of two surgeons (usually with different skills) may be required in the management of a specific surgical problem (e.g., a urologist and a general surgeon in the creation of an ileal conduit, etc.) By prior agreement, the total value may be apportioned in relation to the responsibility and work done. The total value may be increased by 25% in lieu of the assistant's charge. Under these circumstances the services of each surgeon should be identified by adding this modifier '–62' to the joint procedure number(s) and valued as agreed upon. (Usual charges for surgical assistance may also be warranted if still another physician is required as part of the surgical team.)	
–64	CO–SURGEONS: Under certain circumstances, two surgeons (usually with similar skills) may function simultaneously as primary surgeons performing distinct parts of a total surgical service (e.g., two surgeons simultaneously applying skin grafts to different parts of the body or two surgeons repairing different fractures in the same patient). By prior agreement, the total value may be apportioned in relation to the responsibility and work done. The total value may be increased by 25% in lieu of the usual assistant's charge. Under these circumstances the services of each surgeon should be identified by adding this modifier '–64' to the joint procedure number(s) and valued as agreed upon. (Usual charges for surgical assistance may also be warranted if still another physician is required as part of the surgical team.)	
–66	SURGICAL TEAM: Under some circumstances, highly complex procedures requiring the concomitant services of several physicians, often of different specialities, plus other highly skilled, specially trained personnel and various types of complex equipment are carried out under the "surgical team" concept. Such circumstances should be identified by	

		Unit Value
	adding this modifier '-66' to the basic procedure number. The value should be supported by a report to include itemization of the physician(s) services, paramedical personnel and equipment included in the charge	BR+
-68	COMPLICATIONS: Complications or circumstances requiring unusual additional services during the listed follow-up period may warrant additional charges on a fee-for-service basis. Identify these conditions by adding this modifier '-68' to the usual procedure number(s) for the additional service(s) rendered and indicate the appropriate value(s). May require a report.	
-75	CONCURRENT CARE, SERVICES RENDERED BY MORE THAN ONE PHYSICIAN: When the patient's condition requires the additional services of more than one physician, each physician may identify his or her services by adding the modifier '-75' to the basic service performed.	
-76	REPEAT PROCEDURE BY SAME PHYSICIAN: The physician may need to indicate that a procedure or service was repeated subsequent to the original service. This may be reported by adding the modifier '-76' to the procedure code of the repeated service.	
-77	REPEAT PROCEDURE BY ANOTHER PHYSICIAN: The physician may need to indicate that a basic procedure performed by another physician had to be repeated. This may be reported by adding modifier '-77' to the repeated service.	
-80	ASSISTANT SURGEON: Surgical assistant services are identified by adding this modifier '-80' to the usual procedure number(s) and are valued at 20% of the listed value of the surgical procedure(s)	
	OR	
-81	MINIMUM ASSISTANT SURGEON ALLOWANCE: Identify by adding this modifier '-81' to the usual procedure number and value at	1.7
-90	REFERENCE (OUTSIDE) LABORATORY: When laboratory procedures are performed by a party other than the treating or reporting physician, the procedure may be identified by adding the modifier '-90' to the usual procedure number.	
-99	MULTIPLE MODIFIERS: Under certain circumstances, two or more modifiers may be necessary to completely delineate a service. In such situations, modifier '-99' should be added to the procedure number and other applicable modifiers may be listed as part of the description of the service	BR+

[Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-24-041 (Order 81-28), § 296-22-010, filed 11/30/81, effective 1/1/82; 80-18-055 (Order 80-25), § 296-22-010, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-010, filed 1/30/74; Order 70-12, § 296-22-010, filed 12/1/70, effective 1/1/71; Order 68-7, § 296-22-010, filed 11/27/68, effective 1/1/69.]

INTEGUMENTARY SYSTEM

WAC 296-22-022 Introduction.

		Unit Value	Follow-up Days=	Basic Anes@
*11900	Injection, intralesional; up to and including seven lesions	*0.4	0	3.0
*11901	more than seven lesions	*0.72	0	
	(For veins, see 36470, 36471)			
11920	Tattooing, intradermal introduction of insoluble opaque pigments to correct color defects of skin; up to 6.0 sq cm	BR		
11921	6.0 to 20.0 sq cm	BR		
11922	each additional 20.0 sq cm	BR		
11950	Subcutaneous injection of "filling" material (e.g., silicone); up to 1 cc	BR		
11951	1 to 5 cc	BR		
11952	5 to 10 cc	BR		
11954	over 10 cc	BR		

[Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 80-18-055 (Order 80-25), § 296-22-022, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-022, filed 1/30/74; Order 68-7, § 296-22-022, filed 11/27/68, effective 1/1/69.]

Reviser's note -- Erratum: Through a clerical error in the publication process of the 1980 edition of the Washington Administrative Code, certain numerals were omitted from the tables in WAC 296-22-022. The error has been corrected in the section as displayed above.

WAC 296-22-023 Repair. The repair of wounds may be classified as Simple, Intermediate or Complex.

SIMPLE REPAIR is used when the wound is superficial; i.e., involving skin and/or subcutaneous tissues, without significant involvement of deeper structures, and

which requires simple suturing. For closure with adhesive strips, list appropriate visit only.

INTERMEDIATE REPAIR includes the repair of wounds that, in addition to the above, require layer closure. Such wounds usually involve deeper layers such as fascia or muscle, to the extent that at least one of deeper layers requires separate closure.

COMPLEX REPAIR includes the repairs of wounds requiring reconstructive surgery, complicated wound closures, skin grafts or unusual and time consuming techniques of repair to obtain the maximum functional and cosmetic result. It may include creation of the defect and necessary preparation for repairs or the debridement and repair of complicated lacerations or avulsions.

Instructions for listing services at time of wound repair.

1. The repaired wound(s) should be measured and recorded in centimeters, whether curved, angular or stellate.

2. When multiple wounds are repaired, add together the lengths of those in the same classification (see above) and report as a single item.

When more than one classification of wounds is repaired, list the more complicated as the primary procedure and the less complicated as the secondary procedure, using modifier '-50'.

3. Decontamination and/or debridement: Only when gross contamination requires prolonged cleansing is this to be considered a separate procedure. Debridement is considered a separate procedure only when appreciable amounts of devitalized or contaminated tissue are removed.

4. Involvement of nerves, blood vessels and tendons: Report under appropriate system (Nervous, Cardiovascular, Musculoskeletal) for repair of these structures. The repair of the associated wound is included in the primary procedure unless it qualifies as a complex wound, in which case modifier '-50' applies.

Simple ligation of vessels in an open wound is considered as part of any wound closure.

Simple "exploration" of nerves, blood vessels or tendons exposed in an open wound is also considered part of the essential treatment of the wound and is not a separate procedure unless appreciable dissection is required.

		Unit Value	Follow-up Days=	Basic Anes@
	REPAIR-SIMPLE			
	(Sum of lengths of repairs)			
12001*	Simple repair of superficial wounds of scalp, neck, axillae, external genitalia, trunk and/or extremities (including hands and feet); up to 2.5 cm	0.4	0	3.0
12002*	2.5 cm to 7.5 cm	0.6	0	3.0
12004*	7.5 cm to 12.5 cm	0.8	0	3.0
12005	12.5 cm to 20.0 cm	1.0	0	3.0
12006	20.0 cm to 30.0 cm	1.2	0	3.0
12007	over 30.0 cm	BR		
12011*	Simple repair of superficial wounds of face, ears, eyelids, nose, lips and/or mucous membranes; up to 2.5 cm	0.6	0	3.0
12013*	2.5 cm to 5.0 cm	0.8	0	3.0
12014	5.0 cm to 7.5 cm	1.0	0	3.0
12015	7.5 cm to 12.5 cm	1.2	0	3.0
12016	12.5 cm to 20.0 cm	1.4	0	3.0
12017	20.0 cm to 30.0 cm	1.6	0	3.0
12018	over 30.0 cm	BR		
	REPAIR - INTERMEDIATE			
12031*	Layer closure of wounds of scalp, axillae, trunk and/or extremities (excluding hands and feet); up to 2.5 cm	0.6	0	3.0
12032*	2.5 cm to 7.5 cm	0.8	0	3.0
12034	7.5 cm to 12.5 cm	1.0	0	3.0
12035	12.5 cm to 20.0 cm	1.2	0	3.0
12036	20.0 cm to 30.0 cm	1.4	0	3.0
12037	over 30.0 cm	BR		
12041*	Layer closure of wounds of neck, hands, feet and/or external genitalia; up to 2.5 cm	0.8	0	3.0
12042	2.5 cm to 7.5 cm	1.0	0	3.0
12044	7.5 cm to 12.5 cm	1.2	0	3.0
12045	12.5 cm to 20.0 cm	1.4	0	3.0
12046	20.0 cm to 30.0 cm	1.6	0	3.0
12047	over 30.0 cm	BR		
12051*	Layer closure of wounds of face, ears, eyelids, nose, lips and/or mucous membranes; up to 2.5 cm	1.0	0	3.0
12052	2.5 cm to 5.0 cm	1.2	0	3.0
12053	5.0 cm to 7.5 cm	1.4	0	3.0
12054	7.5 cm to 12.5 cm	1.6	0	3.0
12055	12.5 cm to 20.0 cm	1.8	0	3.0
12056	20.0 cm to 30.0 cm	2.0	0	3.0
12057	over 30.0 cm	BR		

[Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 80-18-055 (Order 80-25), § 296-22-023, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-023, filed 1/30/74; Order 68-7, § 296-22-023, filed 11/27/68, effective 1/1/69.]

Reviser's note -- Erratum: Through a clerical error in the publication process of the 1980 edition of the Washington Administrative Code, certain numerals were omitted from the table in WAC 296-22-023. The error has been corrected in the section as displayed above.

WAC 296-22-025 Free skin grafts.

Identify by the size and location of the defect (recipient area) and the type of graft; includes simple debridement of granulations or recent avulsion.

When a primary procedure such as orbitectomy, radical mastectomy or deep tumor removal requires skin graft for definitive closure, see appropriate anatomical subsection for primary procedure and this section for skin graft.

(Repair of donor site requiring skin graft or local flaps to be added as additional procedure)

		Unit Value	Follow-up Days=	Basic Anes@
15000	Excisional preparation or creation of recipient site by excision of essentially intact skin (including subcutaneous tissue), scar, or other lesion prior to repair with free skin graft (list as separate service in addition to skin graft)	*3.6		3.0
	(For appropriate skin grafts, see 15050-15261; list the free graft separately by its procedure number when the graft, immediate or delayed is applied)			
*15050	Pinch graft, single or multiple, to cover small ulcer, tip of digit or other minimal open area (except on face), up to defect size 2 cm diameter	*1.2	0	3.0

		Unit Value	Follow-up Days=	Basic Anes@
15100	Split graft, trunk, scalp, arms, legs, hands and/or feet (except multiple digits); up to 100 sq cm or each one percent of body area of infants and children (except 15050)	6.0	45	3.0
15101	each additional 100 sq cm, or each one percent of body area of infants and children, or part thereof	1.2		3.0
15120	Split graft, face, eyelids, mouth, neck, ears, orbits, genitalia, and/ or multiple digits; up to 100 sq cm, or each one percent of body area of infants and children (except 15050)	11.0	45	3.0
15121	100 sq cm, or each one percent of body area of infants and children, or part thereof	2.0		
	(For eyelids, see also 67952 et seq.)			
15200	Full thickness graft, free, including direct closure of donor site, trunk; up to 20 sq cm	4.0	45	3.0
15201	each additional 20 sq cm	2.0		
15220	Full thickness graft, free, including direct closure of donor site, scalp, arms and/or legs; up to 20 sq cm	6.0	45	3.0
15221	each additional 20 sq cm	3.0		
15240	Full thickness graft, free, including direct closure of donor site, forehead, cheeks, chin, mouth, neck, axillae, genitalia, hands and/or feet; up to 20 sq cm	8.0	45	3.0
	(For finger tip graft, see 15050)			
	(For repair of syndactyly, fingers, see 26560–26562)			
15241	each additional 20 sq cm	4.0		
15260	Full thickness graft, free, including direct closure of donor site, nose, ears, eyelids, and/or lips; up to 20 cm	10.0	45	3.0
15261	each additional 20 sq cm	5.0		
	(For eyelids, see also 67952 et seq.)			
	(Repair of donor site requiring skin graft or local flaps, to be added as additional separate procedure)			
15350	Homograft, skin	5.0	45	3.0
15400	Heterograft, skin	6.0	45	3.0
15410	Free transplantation of skin flap by microsurgical technique, including microvascular anastomosis; up to 100 sq cm	5.0	45	3.0
15412	between 101 and 160 sq cm	6.0	45	3.0
15414	between 161 and 230 sq cm	7.0	45	3.0
15416	over 230 sq cm	BR		

PEDICLE FLAPS (SKIN AND DEEP TISSUES)

Regions listed refer to the recipient area (not donor site) when flap is being attached in transfer or to final site.

Regions listed refer to donor site when tube is formed for later transfer or when "delay" of flap is prior to transfer.

Procedures 15500–15730 do not include extensive immobilization, e.g., large plaster casts and other immobilizing devices are considered additional separate procedures.

(Repair of donor site requiring skin graft or local flaps is considered an additional separate procedure)

		Unit Value	Follow-up Days=	Basic Anes@
15500	Formation of tube pedicle without transfer, or major "delay" of large flap without transfer; on trunk	7.0	45	3.0
15505	on scalp, arms or legs	7.0	45	3.0
15510	on forehead, cheeks, chin, mouth, neck, axillae, genitalia, hands or feet	7.0	45	3.0
15515	on eyelids, nose, ears or lips	7.0	45	3.0
15540	Primary attachment of open or tubed pedicle flap to recipient site requiring minimal preparation; to trunk	9.0	45	3.0
15545	to scalp, arms and legs	9.0	45	3.0
15550	to forehead, cheeks, chin, mouth, neck, axillae, genitalia, or hands (except 15580), feet	9.0	45	3.0
	(For cross finger pedicle flap, see 15580)			
15555	to eyelids, nose, ears and lips	9.0	45	3.0
15580	cross finger pedicle flap, including free graft to donor site	9.0	45	3.0
	(For major debridement or excisional preparation of recipient area at the time of attachment of pedicle flap, see 15700–15730)			
15600	Intermediate "delay" of any flap, primary "delay" of small flap, or sectioning pedicle of tubed or direct flap; at trunk	4.0	45	3.0
15610	at scalp, arms and legs	5.0	45	3.0
15620	at forehead, cheeks, chin, neck, axillae, genitalia, hands (except 15625), or feet	6.0	45	3.0
15625	section pedicle of cross finger flap			
15630	at eyelids, nose, ears and lips	6.0	45	3.0
15650	Transfer, intermediate, of any pedicle flap (e.g., abdomen to wrist, "Walking" tube), any location	BR+		3.0
15700	Excision of lesion and/or excisional preparation of recipient site and attachment of direct or tubed pedicle flap; trunk	9.0	45	3.0
15710	scalp, arms and legs	11.0	45	3.0
15720	forehead, cheeks, chin, mouth, neck, axillae, genitalia, hands or feet	16.0	45	3.0
15730	eyelids, nose, ears or lips	16.0	45	3.0
	(For eyelids, nose, ears, or lips, see also anatomical area)			
	(For revision, defatting or rearranging of transferred pedicle flap or skin graft, see 13100 –14300)			
	OTHER GRAFTS			
15740	Graft, island pedicle flap	12.0	90	3.0
15745	myocutaneous flap	BR	90	3.0
15750	neurovascular pedicle flap	10.0	90	3.0
15755	free flap (microvascular transfer)	BR	90	3.0
15760	composite (full thickness of external ear or nasal ala), including primary closure, donor area	10.0	45	3.0
15770	derma–fat–fascia	12.0	60	3.0
15775	Punch graft for hair transplant; 1 to 15 punch grafts	0.5	90	3.0
15776	more than 15 punch grafts	BR+		3.0
	(For strip transplant, 15220)			
	MISCELLANEOUS PROCEDURES			
15780	Abrasion of skin for removal of scars, tattoos, actinic changes (keratoses), primary or secondary; total face	12.0	90	3.0
15785	regional (1/4 face, cheeks, chin, forehead or elsewhere)	4.0	90	3.0
15786*	Abrasion; single lesion (e.g., keratosis, scar)	0.5	0	3.0
15787	each additional four lesions or less	0.3		
15790	Superficial chemosurgery (acid peel) total face and neck	BR+		3.0
15791	regional, face, neck, or elsewhere	BR+		3.0
15800	Abrasion of skin, total face, with combined superficial chemosurgery (acid peel) of remaining face (eyelids, neck, shoulders)	16.0	90	3.0
15810	Salabrasion; up to 20 sq cm			
15811	20 sq cm and over			

		Unit Value	Follow-up Days=	Basic Anes@
15820	Blepharoplasty, lower eyelids;	12.0	30	3.0
15821	with extensive herniated fat pads	14.0	30	3.0
	(See also 67916, 67917, 67923, 67924)			
15822	Rhytidectomy; upper eyelids	8.0	30	3.0
15823	with excessive skin weighting down lids	12.0	30	3.0
15824	Rhytidectomy; forehead	10.0	30	3.0
15826	glabellar frown	8.0	30	3.0
15827	submetal fat pad	8.0	30	3.0
15828	cheeks, chin and neck	30.0	45	3.0
15831	Excision, excessive skin and subcutaneous tissue (including lipectomy); abdomen	30.0	45	3.0
15832	thighs	25.0	45	3.0
15833	legs	30.0	45	3.0
15834	hips	30.0	45	3.0
15835	buttocks	30.0	45	3.0
15836	arms	25.0	45	3.0
15837	forearms	25.0	45	3.0
15840	Graft for facial nerve paralysis; free fascia graft, (including obtaining fascia)	30.0	90	3.0
15841	free muscle graft (including obtaining graft)	35.0	45	3.0
15842	free muscle graft by microsurgical technique	35.0	45	3.0
15845	reanimation, muscle transfers	BR+		3.0
	(For nerve transfers, decompression, or repair, see 64830–64876, 64905–64907, 69720–69725, 69740–69745, 69955)			
	DECUBITUS ULCERS (PRESSURE SORES)			
15920	Coccygectomy; primary suture	BR		
15922	with flap closure	BR		
15930	Excision, sacral decubitus ulcer; with skin flap closure	BR		
15932	with ostectomy	BR		
15933	with ostectomy and primary suture	BR		
15940	Excision, ischial decubitus ulcer; direct suture	BR		
15941	with ostectomy (ischiectomy)	BR		
15942	skin and muscle flap closure	BR		
15943	skin and muscle flap closure, with ostectomy	BR		
15950	Excision, trochanteric decubitus ulcer; direct suture	BR		
15951	with ostectomy	BR		
15952	skin flap closure	BR		
15953	skin flap closure, with ostectomy	BR		
	(For free skin graft to close ulcer or donor site, see 15000 et seq.)			

[Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-24-041 (Order 81-28), § 296-22-025, filed 11/30/81, effective 1/1/82; 80-18-055 (Order 80-25), § 296-22-025, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-025, filed 1/30/74; Order 68-7, § 296-22-025, filed 11/27/68, effective 1/1/69.]

Reviser's note -- Erratum: Through a clerical error in the publication process of the 1980 edition of the Washington Administrative Code, a numeral was omitted from the table in WAC 296-22-025. The section as published in the Washington State Register, WSR 80-18-055, accurately reflects Order 80-25 of the Department of Labor and Industries, and should be used to determine the effective text of the rule before January 1, 1982, when the amendment contained in Register 81-24-041 (Order 81-28) took effect. The error has been corrected in the section as displayed above.

WAC 296-22-027 Destruction.

		Unit Value	Follow-up Days=	Basic Anes@
	(For electrosurgical destruction of malignant skin lesions, see 11600–11646)			
	(For condylomata, see 46900–46933, 54050–54065, 56500–56515)			
*17000	Destruction by any method, with or without surgical curettement, all facial lesions or premalignant lesions in any location, including local anesthesia; one lesion	*0.6	0	3.0
17001	second and third lesions, each	0.3		
17002	over 3 lesions, each additional lesion	0.15		
17010	complicated lesion(s)	BR+		3.0
*17100	Destruction by any method of benign skin lesions on any area other than the face, including local anesthesia; one lesion	*0.4	0	3.0
17101	second lesion	0.2		
17102	over two lesions, each additional lesion up to 15 lesions	0.1		
17104	15 or more lesions	0.1		
17105	complicated lesions	BR+		3.0
*17110	Destruction by any method of flat (plane, juvenile) warts or molluscum contagiosum, milia, up to 15 lesions	*0.4	0	3.0
	(Retreatment same as office visit)			
*17200	Electrosurgical destruction of multiple tags; up to 15 lesions	*0.4	0	3.0
17201	each additional 10 lesions	0.2		
	(For excision of fibrocutaneous tags, see 11200, 11201)			
*17250	Chemical cauterization of a wound	BR		
17300	Chemosurgery (Mohs type technique), malignancies of skin, including removal of lesion and microscopic delineation of margins and base; first stage—fulguration and application of chemicals	5.0	30	3.0
17301	subsequent treatment, up to five microscopic sections	1.6	30	3.0
17302	subsequent treatment, over five additional microscopic sections	0.2		
	(For initiation or follow-up care of topical chemotherapy (e.g., 5-FU or similar agents), see appropriate office visits)			
*17340	Cryotherapy (CO_2 slush, liquid N_2)	*0.3	0	
*17360	Chemical exfoliation for acne (e.g., acne paste, acid)	*0.3	0	
*17380	Electrolysis epilation, each 1/2 hour	*0.6	0	
	(For actinotherapy, see 96900)			
17999	Unlisted procedure, skin, mucous membrane and subcutaneous tissue	BR		

[Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 80-18-055 (Order 80-25), § 296-22-027, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-027, filed 1/30/74; Order 68-7, § 296-22-027, filed 11/27/68, effective 1/1/69.]

Reviser's note -- Erratum: Through a clerical error in the publication process of the 1980 edition of the Washington Administrative Code, a numeral was omitted from the table in WAC 296-22-027. The error has been corrected in the section as displayed above.

MUSCULOSKELETAL SYSTEM

WAC 296-22-042 Head.

		Unit Value	Follow-up Days=	Basic Anes@
	(Skull, facial bones and temporomandibular joint)			
	INCISION			
	(For drainage of superficial abscess and hematoma, see 20000)			
	(For removal of embedded foreign body from dentoalveolar structure, see 418105, 41806)			
21010	Arthrotomy, temporomandibular joint; unilateral	BR		
21011	bilateral	BR		
	EXCISION			
	(For biopsy, see 20220, 20240)			
21020	Craniectomy or sequestrectomy for osteomyelitis	BR+		8.0
	(For other craniectomies, see 61304 et seq.)			
21030	Excision of benign tumor or cyst of facial bone other than mandible	BR+		5.0
21034	Excision of malignant tumor of facial bone other than mandible	BR		5.0
21040	Excision of benign cyst or tumor of mandible; simple	5.0	90	5.0
21041	complex	BR+		5.0
21044	Excision of malignant tumor of mandible;	BR		
21045	radical resection	BR		
	(For bone graft, see 21215)			
21050	Arthrectomy, temporomandibular joint; unilateral	18.0	90	5.0
21051	bilateral	20.0	90	5.0
21060	Meniscectomy, temporomandibular joint; unilateral	18.0	90	5.0
21061	bilateral	20.0	90	5.0
21070	Coronoidectomy (separate procedure); unilateral	18.0	90	5.0
21071	bilateral	20.0	90	5.0
	INTRODUCTION OR REMOVAL			
	(For application or removal of caliper or tongs, see 20660, 20665)			
*21100	Application of halo type appliance for maxillofacial fixation, includes removal (separate procedure)	*2.0	0	3.0
21110	Application of interdental fixation device for conditions other than fracture or dislocation	8.0	90	3.0
	REPAIR, REVISION OR RECONSTRUCTION			
	(For cranioplasty, see 62140 –62145)			
21200	Osteoplasty of mandible for prognathism, micrognathism	30.0	90	5.0
21202	mandible, segmental	BR	90	5.0
21204	maxilla, total	BR	90	5.0
21206	maxilla, segmental	BR	90	5.0
21210	Graft, bone; nasal, maxillary and malar areas (includes obtaining graft)	20.0	120	5.0
	(For cleft palate repair, see 42200–42225)			
21215	mandible (includes obtaining graft)	20.0	120	5.0
21230	Graft; rib cartilage, autogenous, to face, chin, nose or ear (includes obtaining graft)	18.0	120	5.0
21235	ear cartilage to nose or ear (includes obtaining graft)	12.0	60	5.0
21239	Implant, chin, homologous, heterologous, or alloplastic	BR		
21240	Arthroplasty, temporomandibular joint; unilateral	BR+		5.0
21241	bilateral	BR		5.0
21250	Osteoplasty of maxilla and/or other facial bones for midface hypoplasia or retrusion (LeFort type operation); without bone graft	BR		
21254	with bone graft	BR		
21260	Orbital hypertelorism correction (periorbital) osteotomies, bilateral, with bone grafts; extracranial approach	BR		
21261	combined intra– and extracranial approach	BR		
21263	with forehead advancement	BR		
21267	Orbital repositioning, periorbital osteotomies, unilateral, with bone grafts; extracranial approach	BR		
21268	combined intra– and extracranial approach	BR		
21270	Reconstruction for Treacher Collins syndrome (periorbital and zygomatic reconstruction with multiple bone grafts)	BR		
21275	Secondary revision for orbitocraniofacial reconstruction	BR		
	FRACTURE AND/OR DISLOCATION			
21300	Treatment of closed skull fracture without operation	Sv.&		
	(For operative repair, see 62000–62010)			
21310	Treatment of closed or open nasal fracture without manipulation	Sv.&		
*21315	Manipulative treatment nasal bone fracture; without stabilization	*1.1	0	3.0
21320	with stabilization	3.0	90	3.0
21325	Open treatment of nasal fracture; uncomplicated	4.0	90	3.0
21330	complicated, with internal and/or external skeletal fixation	9.5	90	3.0
21335	with concomitant open of fractured septum	17.0	90	3.0
21337	Treatment of closed nasal septal fracture	BR	90	3.0
21338	Open treatment of nasoethmoid fracture; without external fixation	BR	90	3.0
21339	with external fixation	BR	90	3.0
21340	Treatment of closed or open nasoethmoid complex fracture, with splint, wire or headcap fixation, including repair of canthal ligaments and/or the nasolacrimal apparatus	BR		
21345	Treatment of nasomaxillary complex fracture (LeFort II type), with interdental wire fixation or fixation of denture or splint	BR		
21346	Open treatment of nasomaxillary complex fracture (Lefort II type); with wiring and/or local fixation	BR		
21347	with multiple approaches	BR		
21350	Treatment of closed or open fracture of malar area, including zygomatic arch and malar tripod without manipulation	Sv.&		
*21355	Manipulative treatment of closed or open fracture of malar area, including zygomatic arch and malar tripod, towel clip technique	*1.0	2	3.0
21360	Open treatment of closed or open depressed malar fracture, including zygomatic arch and malar tripod	7.0	90	3.0
21365	Open treatment of closed or open complicated (e.g., multiple fractures) of malar area, including zygomatic arch and malar tripod, with internal skeletal fixation and multiple surgical approaches	13.0	90	3.0
21380	Treatment of orbital floor "blow–out" fracture without manipulation	Sv.&		
21385	Open treatment of orbital floor "blow-out" fracture; transantral approach (Caldwell–Luc type operation)	12.0	90	3.0
21386	periorbital approach	13.0	90	3.0
21387	combined approach	15.0	90	3.0

		Unit Value	Follow-up Days=	Basic Anes@
21390	periorbital approach, with alloplastic or other implant	14.0	90	3.0
21395	periorbital approach with bone graft (includes obtaining graft)	18.0	90	3.0
21400	Treatment of fracture of orbit, except "blowout"; without manipulation	SV		
21401	with manipulation	6.0	90	3.0
21406	Open treatment of fracture of orbit, except "blowout"; without implant	7.0	90	3.0
21407	with implant	8.0	90	3.0
21420	Treatment of closed or open maxillary fracture without manipulation			
21421	Treatment of palatal or alveolar ridge fractures (Lefort I type); closed manipulation with interdental wire fixation or fixation of denture or splint	7.0	90	3.0
21422	open treatment	12.0	90	3.0
21431	Treatment of craniofacial separation (LeFort III type) using interdental wire fixation of denture or splint	8.0	90	4.0
21432	Open treatment of craniofacial separation (LeFort III type); with wiring and/or local fixation	BR		4.0
21433	complicated (e.g., multiple approaches)	BR		5.0
21435	complicated, fixation by head cap, halo device, multiple surgical approaches, internal fixation, and/or wiring teeth	BR+		5.0
	(For removal of internal or external fixation device, see 20670)			
21440	Manipulative treatment of alveolar ridge fracture (separate procedure)	BR		
21445	Open treatment of alveolar ridge fracture (separate procedure)	BR		
21450	Treatment of closed or open mandibular fracture without manipulation	Sv.&		
21451	with manipulation, may include external fixation	BR		
21452	Treatment of open mandibular fracture; without manipulation	BR		
21453	with manipulation	BR		
21454	Open treatment of closed or open mandibular fracture with external fixation	BR		
21455	Closed manipulative treatment by interdental fixation of closed or open mandibular fracture	8.0	90	5.0
21461	Open treatment of closed or open mandibular fracture; with or without interdental fixation	16.0	90	5.0
21462	with interdental fixation	16.0	90	5.0
21470	Open treatment of complicated closed or open mandibular fracture by multiple surgical approaches including internal fixation, interdental fixation, and/or wiring of dentures or splints	BR+		5.0
21480	Uncomplicated treatment of temperomandibular dislocation, initial or subsequent	Sv.&		3.0
21485	Complicated manipulate treatment of temperomandibular dislocation, initial or subsequent	BR+		3.0
21490	Open treatment of temperomandibular dislocation	BR+		3.0
	(For interdental wire fixation, see 21462)			
21493	Treatment of closed or open hyoid fracture; without manipulation	SV		
21494	with manipulation	7.0	90	3.0
21495	Open treatment of closed or open hyoid fracture	8.0	90	3.0
	(For treatment of fracture of larynx, see 31584-31586)			
21497	Interdental wiring, for condition other than fracture	BR		
21499	Unlisted procedure, head	BR		

[Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-24-041 (Order 81-28), § 296-22-042, filed 11/30/81, effective 1/1/82; 80-18-055 (Order 80-25), § 296-22-042, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-042, filed 1/30/74.]

WAC 296-22-053 Spine (vertebral column).

		Unit Value	Follow-up Days=	Basic Anes@
	(Cervical, thoracic (dorsal), and lumbar spine)			
	(For injection procedure for myelography, see 63510-63520)			
	(For injection procedure for discography, see 63530-63535)			
EXCISION				
22010	Biopsy, soft tissues; superficial	1.2	7	3.0
22011	deep	2.4	15	3.0
22030	Excision, benign tumor, subcutaneous	3.0	15	3.0
22031	Excision, benign tumor, deep, subfascial, intramuscular; cervical	4.0	15	3.0
22032	thoracic	3.0	15	3.0
22033	lumbar	3.0	15	3.0
	(For discectomy without arthrodesis (excision of intervertebral disc), see 63400-63415)			
	(For laminectomy, Gill procedure, see 63010)			
22100	Partial resection of vertebral component, spinous processes (e.g., "kissing" spines); cervical	8.0	90	8.0
22101	thoracic	8.0	90	7.0
22102	lumbar	8.0	90	7.0
22105	Partial resection of vertebral component for tumor (e.g., partial facetectomy without primary grafting); cervical	12.0	90	8.0
22106	thoracic	12.0	90	7.0
22107	lumbar	12.0	90	7.0
22110	Partial excision of vertebrae (craterization, saucerization) for osteomyelitis, cervical;	BR+		8.0
22111	with suction irrigation	BR		8.0
22112	Partial excision of vertebrae (craterization, saucerization) for osteomyelitis, thoracic;	BR		7.0
22113	with suction irrigation	BR		7.0
22114	Partial excision of vertebrae (craterization, saucerization) for osteomyelitis, lumbar;	BR		7.0
22115	with suction irrigation	BR		7.0
22120	Radical resection of vertebral body or component with primary grafting, includes obtaining graft; cervical	BR+		8.0
22121	thoracic	BR		7.0
22122	lumbar	BR		7.0
	(For repair of pseudarthrosis, see 22600-22735)			
INTRODUCTION				
	(For injection procedure for myelography, see 62284)			
	(For injection procedure for diskography, see 62290, 62291)			
	(For injection procedure, chemonucleolysis, single or multiple levels, see 62292-62293)			
REPAIR, REVISION, RECONSTRUCTION				
22200	Osteotomy of spine for correction fixed deformity (not scoliosis); anterior OR posterior, lumbar	32.0	180	7.0
22201	thoracic or cervical	40.0	180	7.0

		Unit Value	Follow-up Days=	Basic Anes@
22202	Osteotomy of spine for correction fixed deformity (not scoliosis); anterior AND posterior, lumbar	40.0	180	7.0
22203	cervical	46.0	180	7.0
22206	Osteotomy of spine for correction fixed deformity, single or multiple (including vertebral body resection), for scoliosis with or without internal fixation; transthoracic	32.0	180	7.0
22207	transabdominal or retroperitoneal	40.0	180	7.0
	(For primary arthrodesis without osteotomy in scoliosis, see 22800–22840)			
	FRACTURE AND/OR DISLOCATION			
22305	Treatment of vertebral process fracture, each	Sv.&		
22310	Treatment of vertebral body fracture and/or dislocation; without reduction; each	Sv.&		
22315	with or without anesthesia by manipulation or traction, each	7.0	180	3.0
22325	Open treatment of vertebral body fracture and/or dislocation; lumbar, each	24.0	180	7.0
22326	cervical, each	24.0	180	8.0
22327	thoracic, each	24.0	180	7.0
	Procedural codes 22330–22371 are for a SINGLE level procedure; for additional levels, see 22730–22735			
22330	Open treatment and fusion, cervical spine, posterior approach, with local bone graft and/or internal fixation for fracture	28.0	180	8.0
22335	posterior approach, with iliac or other autogenous bone graft (includes obtaining graft), for fracture	31.0	180	8.0
22345	anterior approach, with iliac or other autogenous bone graft (includes obtaining graft) for fracture	30.0	180	7.0
	(For cervicocranial fusion, see 22620)			
22355	Open treatment and fusion, posterior approach, with local bone graft and/or internal fixation for fracture; lumbar	26.0	180	7.0
22356	thoracic	26.0	180	7.0
22360	Open treatment and fusion, posterior approach, with iliac or other autogenous bone graft (includes obtaining graft), for fracture; lumbar	30.0	180	7.0
22361	thoracic	30.0	180	7.0
22370	Open treatment and fusion, posterolateral or anterolateral approach, with iliac or other autogenous bone graft (includes obtaining graft) for fracture, lumbar	BR+		7.0
22371	thoracic	BR		7.0
22379	Harrington rod technique (list separately in addition to code for fracture and/or dislocation)	BR		
	MANIPULATION			
22500	Manipulation of the spine, any region;	0.3	0	
*22505	requiring anesthesia	*1.4	0	3.0
	ARTHRODESIS WITH DISKECTOMY (Intervertebral disk excision, laminotomy or laminectomy and fusion)			
	Procedural codes 22550–22565 are for SINGLE level procedure; for additional levels, see 22730–22735.			
	(For diskectomy without arthrodesis, see 63020–63076)			
22550	Arthrodesis with diskectomy, cervical, posterior approach; local bone graft and/or internal fixation	28.0	180	8.0
22552	with iliac or other autogenous bone graft (includes obtaining graft)	32.0	180	8.0
22555	Arthrodesis with diskectomy, cervical, anterior interbody approach, with iliac or other autogenous bone graft (includes obtaining graft)	28.0	180	7.0
22560	Arthrodesis with diskectomy, lumbar or thoracic, posterior posterolateral or posterior interbody approach; local bone graft and/or internal fixation	26.0	180	7.0
22561	with iliac or other autogenous bone graft (includes obtaining graft)	30.0	180	7.0
22565	Arthrodesis with diskectomy, lower lumbar spine, anterior interbody approach, (includes obtaining graft)	24.0	180	7.0
	(For supplemental skills of two surgeons, see WAC 296–22–010, item 5b and modifier –62.)			
	ARTHRODESIS, PRIMARY OR REPAIR OF PSEUDARTHROSIS			
	Procedural codes 22600–22720 are for SINGLE level procedures; for additional levels, see 22730–22735.			
22600	Cervical fusion, posterior approach below C–1 level; local bone graft and/or internal fixation	24.0	180	8.0
22605	with iliac or other autogenous bone graft (includes obtaining graft)	28.0	180	8.0
22615	Cervical fusion, anterior approach (C3–T1) with iliac or other autogenous bone graft (includes obtaining graft)	28.0	180	7.0
22617	Atlas–axis fusion (C1–C2 or C3) with iliac or other autogenous bone graft (includes obtaining graft) (posterior or anterior approach)	29.0	180	8.0
22620	Cervicocranial fusion (occiput through C2) with iliac or other autogenous bone graft) (includes obtaining graft)	30.0	180	8.0
22640	Thoracic or lumbar fusion, posterior or posterolateral approach; local bone graft and/or internal fixation	24.0	180	7.0
22645	with iliac or other autogenous bone graft (includes obtaining graft) (see also 22720)	28.0	180	7.0
22655	Thoracic or lumbar fusion; posterior interbody technique, with iliac or other autogenous bone graft, (includes obtaining graft)	32.0	180	7.0
22670	lateral approach (transverse process to transverse process and/or sacrum) with iliac or other autogenous bone graft and/or internal fixation (includes obtaining graft)	32.0	180	7.0
22680	anterolateral or anterior interbody fusion, transthoracic approach (includes obtaining graft)	BR+		11.0
22700	Lumbar spine fusion, anterior interbody fusion (includes obtaining graft)	24.0	180	7.0
	(For supplemental skills of two surgeons, see WAC 296–22–010, item 5b and modifier –62.)			
22720	posterior approach, Harrington or Knodt rod distraction fusion, with iliac or other autogenous bone graft (includes obtaining graft)	30.0	180	7.0
22730	Arthrodesis, primary or repair of pseudarthrosis, two levels (list separately in addition to code for single level arthrodesis, 22600–22720)	6.0		
22735	more than two levels (list separately in addition to code for single level arthrodesis, 22600–22720)	BR+		
	(For single or multiple osteotomy type of scoliosis correction, see 22206, 22207)			
22800	Arthrodesis, primary for scoliosis (includes first postoperative cast), 6 or less vertebrae; local bone graft	29.0	180	7.0
22801	with iliac or other autogenous bone graft	30.0	180	7.0
22802	Arthrodesis, primary for scoliosis (includes first postoperative cast) seven or			

		Unit Value	Follow-up Days=	Basic Anes@
	more vertebrae; local bone graft	BR		7.0
22803	with iliac or other autogenous bone graft	BR		7.0
22840	Harrington rods technique (list separately in addition to procedures 22800-22803)	50.0	180	7.0
22845	Dwyer instrumentation technique (list separately in addition to procedures 22800-22803)	BR		
22850	Harrington rod removal	BR		
22855	Dwyer instrument removal	BR		
	(For presurgical braces, Milwaukee or other, casts of any type, see section on application of casts or strapping)			
	MISCELLANEOUS			
22899	Unlisted procedure, spine	BR		

[Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-24-041 (Order 81-28), § 296-22-053, filed 11/30/81, effective 1/1/82; 80-18-055 (Order 80-25), § 296-22-053, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-053, filed 1/30/74.]

WAC 296-22-063 Shoulder.

		Unit Value	Follow-up Days=	Basic Anes@
	(Clavicle, scapula, humerus head and neck, sternoclavicular joint, acromioclavicular joint and shoulder joint)			
	INCISION			
23000	Removal of subdeltoid (or intratendinous) calcareous deposits	6.0	60	3.0
	(For excision of subdeltoid bursa, see 23110)			
23020	Capsular contracture release (Sever type procedure) for Erb's palsy	11.0	60	3.0
	(For incision and drainage procedures, superficial, see 10000-10160)			
23030	Incision and drainage; deep abscess or hematoma	BR		
23031	infected bursa	BR		
23035	Incision, deep, with opening of cortex for osteomyelitis or bone abscess;	BR		
23036	with suction irrigation	BR		
23040	Arthrotomy with exploration, drainage, or removal of foreign body, glenohumeral joint	11.0	60	3.0
	(For incision and drainage procedures, superficial, see 10000-10160)			
23042	with suction irrigation	12.0	60	3.0
23044	Arthrotomy with exploration, drainage or removal of foreign body, acromioclavicular, sternoclavicular joint	10.0	60	3.0
	EXCISION			
23065	Biopsy, soft tissues; superficial	1.2	7	3.0
23066	deep	2.4	15	3.0
23075	Excision, benign tumor; subcutaneous	3.0	7	3.0
23076	deep, subfascial or intramuscular	4.0	15	3.0
23100	Arthrotomy for biopsy, glenohumeral joint	11.0	60	3.0
23101	Arthrotomy for biopsy or for excision of torn cartilage, acromioclavicular, sternoclavicular joint	11.0	60	4.0
23105	Arthrotomy for synovectomy; glenohumeral joint	BR+		3.0
23106	acromioclavicular, sternoclavicular joint	BR		3.0
23110	Excision, subacromial subdeltoid bursa excision	6.0	60	3.0
23120	Claviculectomy; partial	8.5	60	3.0
23125	total	16.0	60	3.0
23130	Acromiectomy, partial or total	8.5	60	3.0
23140	Excision or curettage of bone cyst or benign tumor of clavicle or scapula;	6.0	60	3.0
23145	with primary autogenous graft (includes obtaining graft)	9.0	120	3.0
23146	with homogenous or other nonautogenous graft	11.0	120	3.0
23150	Excision or curettage of bone cyst or benign tumor of proximal humerus;	6.0	120	3.0
23155	with primary autogenous graft (includes obtaining graft)	9.0	120	3.0
23156	with homogenous or other nonautogenous graft	11.0	120	3.0
23170	Sequestrectomy for osteomyelitis or bone abscess, clavicle;	BR		
23171	with suction irrigation	BR		
23172	Sequestrectomy for osteomyelitis or bone abscess, scapula;	BR		
23173	with suction irrigation	BR		
23174	Sequestrectomy for osteomyelitis or bone abscess, humeral head to surgical neck;	BR		
23175	with suction irrigation	BR		
23180	Partial excision of bone (craterization, saucerization or diaphysectomy) for osteomyelitis, clavicle	5.0	60	3.0
23181	with suction irrigation	5.0	60	4.0
23182	Partial excision of bone (craterization, saucerization, or diaphysectomy) for osteomyelitis, scapula;	6.0	60	4.0
23183	with suction irrigation	5.0	60	4.0
23184	Partial excision of bone (craterization, saucerization, or diaphysectomy) for osteomyelitis, proximal humerus;	6.0	60	4.0
23185	with suction irrigation	5.0	60	4.0
23190	Ostectomy of scapula, partial (e.g., superior medial angle)	7.0	60	3.0
23195	Resection humeral head	BR		
	(For replacement with implant, see 23470)			
23200	Radical resection for tumor; clavicle	BR+		3.0
23210	scapula	BR+		3.0
23220	Radical resection for tumor, proximal humerus;	BR		
23221	with autogenous bone graft, (includes obtaining graft)	BR		
23222	with prosthetic replacement	BR		
	INTRODUCTION OR REMOVAL			
	(For arthrocentesis or needling of bursa, see 20610)			
	(For K wire or pin insertion or removal, see 20650, 20670, 20680.)			
23330	Removal of foreign body; subcutaneous	8.0	60	3.0
23331	deep (e.g., prosthetic removal)	11.0	60	3.0
23350	Injection procedure for shoulder arthrography	0.6	0	3.0
	(For shoulder arthrography, see 73040)			
	REPAIR, REVISION OR RECONSTRUCTION			
	(For neurorrhaphy or neuroplasty, 64700 et seq.)			
	(For repair of deep wound, see 20800)			
	(For sternoclavicular reconstruction, see 23530)			
	(For acromioclavicular joint reconstruction, see 23550)			
23395	Muscle transfer, any type for paralysis of shoulder or upper arm; single	20.0	90	4.0
23397	multiple	BR		
23400	Scapulopexy (e.g., Sprengel's deformity or for paralysis)	22.0	90	3.0
23405	Tenomyotomy; single	7.0	60	4.0
23406	multiple through same incision	13.0	60	4.0
23410	Repair of ruptured supraspinatus tendon or musculotendinous cuff; acute	14.0	120	3.0

		Unit Value	Follow-up Days=	Basic Anes@
23412	chronic	16.0	120	4.0
23415	Coracoacromial ligament release for chronic ruptured supraspinatus tendon	6.5		3.0
23420	Repair of complete shoulder cuff avulsion, chronic (includes acromionectomy)	18.0	120	3.0
23430	Tenodesis for rupture of long tendon of biceps	12.0	90	3.0
23440	Resection or transplantation of long tendon of biceps, for chronic tenosynovitis	12.0	90	3.0
23450	Capsulorrhaphy for recurrent dislocation, anterior; Putti-Platt procedure or Magnuson type operation	17.0	90	3.0
23455	Bankhart type operation	19.0	90	3.0
23460	Capsulorrhaphy for recurrent dislocation, anterior, any type; with bone block	20.0	120	3.0
23462	with coracoid process transfer	18.0	120	3.0
23465	Capsulorrhaphy for recurrent dislocation, posterior, with or without bone graft	17.0	90	3.0
	(For sternoclavicular and acromioclavicular reconstruction, see 23530 or 23550)			
23470	Arthroplasty with proximal humeral implant (e.g., Neer type operation)	20.0	120	3.0
23472	Arthroplasty with glenoid and proximal humeral replacement (e.g., total shoulder)	BR		3.0
	(For osteotomy proximal humerus, see 24400)			
23480	Osteotomy, clavicle, with or without internal fixation;	10.0	90	3.0
23485	with bone graft for nonunion or malunion (includes obtaining graft and/or necessary fixation)	13.0	120	3.0

FRACTURE AND/OR DISLOCATION

23500	Treatment of closed clavicular fracture; without manipulation	Sv.&		
23505	with manipulation	3.0	90	3.0
23510	Treatment of open clavicular fracture, with uncomplicated soft tissue closure	5.0	90	3.0
23515	Open treatment of closed or open clavicular fracture, with or without internal or external skeletal fixation	9.0	90	3.0
23520	Treatment of closed sternoclavicular dislocation; without manipulation	Sv.&		
23525	with manipulation	2.8	90	3.0
23530	Open treatment of closed or open Sternoclavicular dislocation, acute or chronic;	10.0	90	5.0
23532	with fascial graft (includes obtaining graft)	12.0	90	5.0
23540	Treatment of closed acromioclavicular dislocation, without manipulation	Sv.&		
23545	with manipulation	2.4	45	3.0
23550	Open treatment of closed or open acromioclavicular dislocation, acute or chronic;	12.0	90	3.0
23552	with fascial graft (includes obtaining graft)	15.0	90	3.0
23570	Treatment of closed scapular fracture; without manipulation	Sv.&		
23575	with manipulation (with or without shoulder joint involvement)	2.8	90	3.0
23580	Treatment of open scapular fracture, with uncomplicated soft tissue closure	5.0	90	3.0
23585	Open treatment of closed or open scapular fracture juxtaarticular	12.0	90	3.0
23600	Treatment of closed humeral (surgical or anatomical neck) fracture; without manipulation	Sv.&		
23605	with manipulation	5.0	90	3.0
23610	Treatment of open humeral (surgical or anatomical neck) fracture, with uncomplicated soft tissue closure	7.0	90	3.0
23615	Open treatment of closed or open humeral (surgical or anatomical neck) fracture, with or without internal or external skeletal fixation	12.0	90	3.0
23620	Treatment of closed greater tuberosity fracture; without manipulation	Sv.&		
23625	with manipulation	3.5	90	3.0
23630	Open treatment of closed or open greater tuberosity fracture, with or without internal or external skeletal fixation	9.0	90	3.0
23650	Treatment of closed shoulder dislocation, with manipulation; without anesthesia	Sv.&		
*23655	requiring anesthesia	*1.2	0	3.0
23658	Treatment of open shoulder dislocation, with uncomplicated soft tissue closure			
23660	Open treatment of closed or open shoulder dislocation	12.0	90	3.0
23665	Treatment of closed shoulder dislocation, with fracture of greater tuberosity, with manipulation	3.0	90	3.0
23670	Open treatment of closed or open shoulder dislocation, with fracture of greater tuberosity	12.0	90	3.0
23675	Treatment of closed shoulder dislocation, with surgical or anatomical neck fracture, with manipulation	4.0	90	3.0
23680	Open treatment of closed or open shoulder dislocation, with surgical or anatomical neck fracture	14.0	90	3.0

MANIPULATION

*23700	Manipulation under anesthesia, including application of fixation apparatus (dislocation excluded)	*1.2	0	3.0

ARTHRODESIS

23800	Arthrodesis, shoulder joint, with or without local bone graft	20.0	120	3.0
23802	with primary autogenous graft (includes obtaining graft)	24.0	120	3.0

AMPUTATION

23900	Interthoracoscapular amputation (forequarter)	24.0	90	11.0
23920	Disarticulation of shoulder	18.0	90	5.0
23921	secondary closure or scar revision	5.0	30	3.0

MISCELLANEOUS

23929	Unlisted procedure, shoulder	BR		

[Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-24-041 (Order 81-28), § 296-22-063, filed 11/30/81, effective 1/1/82; 80-18-055 (Order 80-25), § 296-22-063, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-063, filed 1/30/74.]

WAC 296-22-067 Humerus (upper arm) and elbow.

		Unit Value	Follow-up Days=	Basic Anes@
	(Elbow area includes head and neck of radius and olecranon process.)			

INCISION

	(For incision and drainage procedures, superficial, see 10000-10160)			
23930	Incision and drainage; deep abscess or hematoma	5.0	15	3.0
23931	infected bursa	5.0	15	3.0
23935	Incision, deep, with opening of cortex for osteomyelitis or bone abscess;	8.0	15	3.0
23936	with suction irrigation	8.0	15	3.0
24000	Arthrotomy, elbow, with exploration, drainage, or removal of foreign body;	10.0	60	3.0
24001	with suction irrigation	8.0	15	3.0

EXCISION

		Unit Value	Follow-up Days=	Basic Anes@
	(For muscle or bone biopsy, see 20200–20245)			
24065	Biopsy, soft tissues; superficial	2.0	7	3.0
24066	deep	3.0	15	3.0
24075	Excision, benign tumor; subcutaneous	4.0	15	3.0
24076	deep, subfascial or intramuscular	4.5	15	3.0
24100	Arthrotomy, elbow, for synovial biopsy only	10.0	60	3.0
24101	with joint exploration, with or without biopsy, with or without removal of foreign body			
24102	for synovectomy	14.0	90	3.0
24105	Excision, olecranon bursa	4.8	60	3.0
24110	Excision or curettage of bone cyst or benign tumor, humerus;	9.5	60	3.0
24115	with primary autogenous graft (includes obtaining graft)	12.5	120	3.0
24116	with homogenous or other nonautogenous graft	13.0	120	3.0
24120	Excision or curettage of bone cyst or bone tumor of head or neck of radius or olecranon process	8.0	60	3.0
24125	with primary autogenous graft (includes obtaining graft)	10.0	120	3.0
24126	with homogenous or other nonautogenous graft	11.0	120	3.0
24130	Excision, radial head	8.0	60	3.0
	(For replacement with implant, see 24366)			
24134	Sequestrectomy for osteomyelitis or bone abscess, shaft or distal humerus;	BR		
24135	with suction irrigation	BR		
24136	Sequestrectomy for osteomyelitis or bone abscess, radial head or neck;	BR		
24137	with suction irrigation	BR		
24138	Sequestrectomy for osteomyelitis or bone abscess, olecranon process;	BR		
24139	with suction irrigation	BR		
24140	Partial excision of bone (craterization, saucerization or diaphysectomy), for osteomyelitis, humerus,	7.0	60	3.0
24144	with suction irrigation	8.0	60	3.0
24145	Partial excision of bone (craterization, saucerization or diaphysectomy,) for osteomyelitis, radial head or neck;	7.0	6.0	3.0
24146	with suction irrigation	8.0	6.0	3.0
24147	Partial excision of bone (craterization, saucerization or diaphysectomy) for osteomyelitis, olecranon process;	7.0	60	3.0
24148	with suction irrigation	8.0	60	3.0
24150	Radical resection for tumor, shaft or distal humerus;	BR+		3.0
24151	with autogenous bone graft (includes obtaining graft)	BR		
24152	Radical resection for tumor, radial head or neck;	BR		
24153	with autogenous bone graft (includes obtaining graft)	BR		
24155	Resection of elbow joint (arthrectomy)	BR		

INTRODUCTION OR REMOVAL

	(For K wire or pin insertion or removal, see 20650, 20670, 20680)			
	(For arthrocentesis or needling of bursa or joint, see 20605)			
24160	Implant removal; elbow joint	6.0	60	3.0
24164	radial head	4.8	60	3.0
24200	Removal of foreign body; subcutaneous	BR		
24201	deep	BR		
24220	Injection procedure for elbow arthrography	BR		
	(For elbow arthrography, see 73085)			
	(For injection of tennis elbow, see 20550)			

REPAIR, REVISION, AND RECONSTRUCTION

	(For neurorrhaphy or neuroplasty, arm, see 64700 et seq.)			
	(For repair of deep wound, see 20800)			
24301	Muscle or tendon transfer, any type, single (excluding 24330)	BR+		3.0
24305	Tendon lengthening; single, each	BR		3.0
24310	Tenotomy, open, elbow to shoulder, single, each	5.0	30	3.0
24320	Tenoplasty, with muscle transfer, with or without free graft, elbow to shoulder, single (Seddon–Brookes type procedure)	BR+		3.0
24330	Flexor–plasty, elbow (e.g., Steindler type advancement);	8.0	90	3.0
24331	with extensor advancement	8.0	90	3.0
24340	Tenodesis for rupture of biceps tendon at elbow	14.0	90	3.0
24342	Reinsertion of ruptured biceps tendon, distal, with or without tendon graft (includes obtaining graft)	14.0	90	3.0
24350	Fasciotomy, lateral or medial (e.g., "tennis elbow" or epicondylitis);	6.0	30	3.0
24351	with extensor origin detachment	5.0	30	3.0
24352	with annular ligament resection	6.0	30	3.0
24354	with stripping	BR		
24356	with partial ostectomy	BR		
24360	Arthroplasty, elbow, with membrane	BR+		
24361	with distal humeral prosthetic replacement	BR		
24362	with implant and fascia lata ligament reconstruction	BR		
24363	with distal humerus and proximal ulnar prosthetic replacement ("total elbow")	BR		
24365	Arthroplasty, radial head;	10.0	120	3.0
24366	with implant	BR		
24400	Osteotomy, humerus, with or without internal fixation	12.0	90	3.0
24410	Multiple osteotomies with realignment on intramedullary rod (Sofield type procedure)	14.0	90	3.0
24420	Osteoplasty, humerus (e.g., shortening or lengthening)	BR+		3.0
24430	Repair of nonunion or malunion, humerus; without graft (e.g., compression technique, etc.)	17.0	90	3.0
24435	with iliac or other autogenous bone graft (includes obtaining graft)	20.0	120	3.0
	(For proximal radius and/or ulna, see 25400–25420)			
24470	Hemiepiphyseal arrest (e.g., for cubitus varus or valgus, distal humerus)	7.0	120	3.0
24495	Decompression fasciotomy, forearm, with brachial artery exploration	BR		

FRACTURE AND/OR DISLOCATION

24500	Treatment of closed humeral shaft fracture; without manipulation	Sv.&		
24505	with manipulation	5.0	90	3.0
24510	Treatment of open humeral shaft fracture, with uncomplicated soft tissue closure	7.0	90	3.0
24515	Open treatment of closed or open humeral shaft fracture, with or without internal or external skeletal fixation	11.0	90	3.0
24530	Treatment of closed supracondylar or transcondylar fracture, without manipulation	Sv.&		
24531	with traction (pin or skin)			
24535	Treatment of closed supracondylar or transcondylar fracture, with manipulation	5.0	90	3.0
24536	with traction (pin or skin)	9.0	90	3.0
24538	with percutaneous skeletal fixation	10.0	90	3.0
24540	Treatment of open supracondylar or transcondylar fracture, with uncomplicated soft tissue closure;	7.0	90	3.0
24542	with traction (pin or skin)	11.0	90	3.0

		Unit Value	Follow-up Days=	Basic Anes@
24545	Open treatment of closed or open supracondylar or transcondylar fracture, with or without internal or external skeletal fixation	10.0	90	3.0
24560	Treatment of closed epicondylar fracture, medial or lateral; without manipulation	Sv.&		
24565	with manipulation	4.0	90	3.0
24570	Treatment of open epicondylar fracture, medial or lateral with uncomplicated soft tissue closure	6.0	90	3.0
24575	Open treatment of closed or open epicondyler fracture, medial or lateral, with or without internal or external skeletal fixation	9.0	90	3.0
24576	Treatment of closed condylar fracture, medial or lateral; without manipulation	SV		
24577	with manipulation	4.0	90	3.0
24578	Treatment of open condylar fracture, medial or lateral, with uncomplicated soft tissue closure	5.0	90	3.0
24579	Open treatment of closed or open condylar fracture, medial or lateral, with or without internal or external skeletal fixation	7.0	90	3.0
24580	Treatment of closed comminuted elbow fracture (fracture distal humerus and/or proximal ulna and/or proximal radius), treatment with traction, (pin or skin); without manipulation	SV		
24581	with manipulation	8.0	90	3.0
24583	Treatment of open comminuted elbow fracture (fracture distal humerus and/or proximal ulna and/or proximal radius), with uncomplicated soft tissue closure	9.0	90	3.0
24585	Open treatment of closed or open comminuted elbow fracture (fracture distal humerus and/or proximal ulna/radius), with or without internal or external skeletal fixation;	12.0	90	3.0
24586	with elbow resection	BR		
24587	with implant	BR		
	(See also 24361)			
24588	with implants and fascia lata ligament reconstruction	BR		
	(See also 24362)			
24600	Treatment of closed elbow dislocation; without anesthesia	Sv.&		
*24605	requiring anesthesia	*1.0	0	3.0
24610	Treatment of open elbow dislocation, with uncomplicated soft tissue closure	6.0	45	3.0
24615	Open treatment of closed or open elbow dislocation	12.0	90	3.0
24620	Treatment of closed Monteggia type of fracture dislocation at elbow (fracture proximal end of ulna with dislocation of radial head)	4.0	90	3.0
24625	Treatment of closed Monteggia type fracture dislocation at elbow (fracture proximal end of ulna with dislocation of the radial head), with uncomplicated soft tissue closure	6.0	90	3.0
24635	Open treatment of closed or open Monteggia type fracture dislocation at elbow (fracture proximal end of ulna with dislocation of radial head), with or without internal or external skeletal fixation	12.0	90	3.0
24640	Treatment of radial head subluxation in child, "nursemaid elbow," with manipulation	Sv.&		
24650	Treatment of closed radial head or neck fracture; without manipulation	Sv.&		
24655	with manipulation	3.0	90	3.0
24660	Treatment of open radial head or neck fracture, with uncomplicated soft tissue closure	4.0	90	3.0
24665	Open treatment of closed or open radial head or neck fracture, with or without internal fixation or radial head excision	8.0	90	3.0
24666	with implant	9.0	90	3.0
24670	Treatment of closed ulnar fracture, proximal end (olecranon process); without manipulation	Sv.&		
24675	with manipulation	3.0	90	3.0
24680	Treatment of open ulnar fracture, proximal end (olecranon process), with uncomplicated soft tissue closure	4.0	90	3.0
24685	Open treatment of closed or open ulnar fracture proximal end (olecranon process), with or without internal or external skeletal fixation	8.0	90	3.0
	MANIPULATION			
*24700	Manipulation under general anesthesia (includes application of traction or other fixation device)	*1.0	0	3.0
	ARTHRODESIS			
24800	Arthrodesis, elbow joint; with or without local or homogenous bone graft	16.0	120	3.0
24802	with primary autogenous bone graft (includes obtaining graft)	16.0	120	3.0
	AMPUTATION			
24900	Amputation, arm through humerus; with primary closure	10.0	90	3.0
24920	open, flap or circular (guillotine)	9.0	90	3.0
24925	secondary closure or scar revision	3.0	30	3.0
24930	reamputation	10.0	90	3.0
24931	with implant	10.0	90	3.0
24935	Stump elongation	3.0	90	3.0
24940	Cineplasty, upper extremity, complete procedure	BR+		3.0
	MISCELLANEOUS			
24999	Unlisted procedure, humerus or elbow	BR		

[Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-24-041 (Order 81-28), § 296-22-067, filed 11/30/81, effective 1/1/82; 80-18-055 (Order 80-25), § 296-22-067, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-067, filed 1/30/74.]

WAC 296-22-071 Forearm and wrist.

		Unit Value	Follow-up Days=	Basic Anes@
	(Radius, ulna, carpal bones and joints)			
	INCISION			
25000	Tendon sheath incision; at radial styloid for De Quervain's disease	4.4	30	3.0
25005	at wrist for other stenosing tenosynovitis	4.0	30	3.0
	(For decompression median nerve or for carpal tunnel syndrome, see 64721)			
25020	Decompression fasciotomy, flexor and/or extensor compartment;	3.5	30	3.0
25023	with debridement of nonviable muscle and/or nerve	4.0	30	3.0
	(For decompression fasciotomy with brachial artery exploration, see 24495)			
	(For incision and drainage procedures, superficial, see 10000-10160)			
25028	Incision and drainage; deep abscess or hematoma	1.0	30	3.0
25031	infected bursa	1.5	30	3.0
25035	Incision, deep, with opening of cortex for osteomyelitis or bone abscess;	2.0	30	3.0
25036	with suction irrigation	2.5	30	3.0
25040	Arthrotomy with exploration, drainage, or removal of loose or foreign body, infection, radiocarpal or mediocarpal joint;	5.0	60	3.0

		Unit Value	Follow-up Days=	Basic Anes@
25041	with suction irrigation	5.5	60	3.0
EXCISION				
25065	Biopsy, soft tissues; superficial	2.0	7	3.0
25066	deep	3.0	15	3.0
25075	Excision, benign tumor; subcutaneous	4.0	15	3.0
25076	deep, subfascial or intramuscular	4.0	15	3.0
25085	Capsulotomy, wrist (e.g., for contracture)	4.0	15	3.0
25100	Arthrotomy, wrist joint, for biopsy	5.0	60	3.0
25101	with joint exploration, with or without biopsy, with or without removal of foreign body	7.0	60	3.0
25105	for synovectomy	8.0	90	3.0
25107	Arthrotomy, distal radioulnar joint for excision triangular cartilage	9.0	60	3.0
25110	Excision, lesion of tendon sheath	3.0	30	3.0
25111	Excision of ganglion, wrist (dorsal or volar); primary	5.0	30	3.0
25112	recurrent	4.0	30	3.0
	(For hand or finger, see 26160)			
25115	Radical excision of bursa synovia of wrist, or forearm tendon sheaths (e.g., tenosynovitis, fungus, Tbc., or other granulomas, rheumatoid arthritis); flexors	10.0	60	3.0
25116	extensors (with or without transposition of dorsal retinaculum)	10.0	60	3.0
	(For finger synovectomies, see 26145)			
25118	Synovectomy, extensor tendon sheaths, wrist, single compartment;	10.0	60	3.0
25119	with resection of distal ulna	11.0	60	3.0
25120	Excision or curettage of bone cyst or benign tumor of radius or ulna (excluding head or neck of radius and olecranon process);	7.0	60	3.0
	(For head or neck of radius or olecranon process, see 24120, 24126)			
25125	with primary autogenous graft (includes obtaining graft)	10.0	120	3.0
25126	with homogenous or other nonautogenous graft	10.0	120	3.0
25130	Excision or curettage of bone cyst or benign tumor of carpal bones	5.0	60	3.0
25135	with primary autogenous graft (includes obtaining graft)	7.0	120	3.0
25136	with homogenous or other nonautogenous graft	7.0	120	3.0
25145	Sequestrectomy for osteomyelitis or bone abscess;	BR		
25146	with suction irrigation	BR		
25150	Partial excision of bone (craterization, saucerization or diaphysectomy) for osteomyelitis, ulna	5.0	60	3.0
25151	radius	5.0	60	3.0
25153	radius or ulna, with suction irrigation	5.5	60	3.0
	(For head or neck of radius or olecranon process, see 24145, 24148)			
25170	Radical resection for tumor, radius or ulna	BR+		3.0
25210	Carpectomy, one bone	7.0	60	3.0
	(For carpectomy with implant, see 25441–25445)			
25215	all bones or proximal row	10.0	60	3.0
25230	Radial styloidectomy (separate procedure)	5.0	60	3.0
25240	Excision distal ulna (Darrach type procedure)	6.0	60	3.0
	(For implant replacement, distal ulna, see 25442)			
	(For obtaining fascia for interposition, see 20920, 20922)			
INTRODUCTION OR REMOVAL				
	(For K wire, pin, or rod insertion or removal, see 20650, 20670, 20680)			
25246	Injection procedure for wrist arthrography	BR		
	(For wrist arthrography, see 73115)			
	(For foreign body removal, superficial see 20520)			
25248	Exploration for removal of deep foreign body	BR		
REPAIR, REVISION OR RECONSTRUCTION				
	(For repair of deep wounds, see 20800)			
	(For neurorrhaphy or neuroplasty, see 64700 et seq.)			
	(For tenotomy or tenoplasty, see 24310, 24320)			
25260	Repair, tendon or muscle, flexor; primary, single, each tendon or muscle	7.0	90	3.0
25263	secondary, single, each tendon or muscle	1.5	90	3.0
25265	secondary, with free graft (includes obtaining graft), each tendon or muscle	3.0	90	3.0
25270	Repair, tendon or muscle, extensor; primary, single, each tendon or muscle	5.0	90	3.0
25272	secondary, single, each tendon or muscle	1.5	90	3.0
25274	Repair, tendon or muscle, extensor, secondary, with tendon graft (includes obtaining graft), each tendon	8.0	90	3.0
25280	Lengthening or shortening of flexor or extensor tendon, single, each tendon	7.0	90	3.0
25290	Tenotomy, open, single, flexor or extensor tendon, each tendon	4.0	90	3.0
25295	Tenolysis, single flexor or extensor tendon, each tendon	1.0	90	3.0
25300	Tenodesis, wrist; flexors of fingers	8.0	90	3.0
25301	extensors of fingers	6.0	90	3.0
25310	Tendon transplantation or transfer, flexor or extensor, single, each tendon	9.5	90	3.0
25312	with tendon graft(s) (includes obtaining graft), each tendon	8.0	90	3.0
25315	Flexor origin slide for cerebral palsy;	8.0	90	3.0
25316	with tendon(s) transfer	9.0	90	3.0
25317	Flexor origin slide for Volkmann contracture;	12.0	120	3.0
25318	with tendon(s) transfer	13.0	120	3.0
25320	Capsulorrhaphy or reconstruction, capsulectomy, wrist (includes synovectomy, resection of capsule, tendon insertions)	BR+		3.0
25330	Arthroplasty, wrist	8.0	120	3.0
25331	with implant	BR		
25332	pseudarthrosis type with internal fixation	BR		
	(For obtaining fascia for interposition, see 20920–20922)			
25335	Transposition and realignment of hand over ulna with or without removal of bone or bones, and with or without tendon transfer or advancement (Riordon type operation)	BR		
25350	Osteotomy, radius, distal third	10.0	90	3.0
25355	middle or proximal third	12.0	90	3.0
25360	Osteotomy, ulna	10.0	90	3.0
25365	radius and ulna	14.0	90	3.0
25370	Multiple osteotomies, with realignment on intramedullary rod (Sofield type procedure), radius OR ulna	12.0	90	3.0
25375	radius AND ulna	18.0	90	3.0
25390	Osteoplasty, radius OR ulna; shortening	BR+		3.0
25391	lengthening with autogenous bone graft	BR		3.0
25392	Osteoplasty, radius AND ulna; shortening	BR		3.0
25393	lengthening with autogenous bone			

		Unit Value	Follow-up Days=	Basic Anes@
	graft	BR		3.0
25400	Repair of nonunion or malunion, radius OR ulna; without graft (e.g., compression technique, etc.)	14.0	90	3.0
25405	with iliac or other autogenous bone graft (includes obtaining graft)	17.0	120	3.0
25415	Repair of nonunion or malunion, radius AND ulna; without graft (e.g., compression technique, etc.)	20.0	90	3.0
25420	with iliac or other autogenous bone graft (includes obtaining graft)	23.0	120	3.0
25425	Repair of defect with autogenous bone graft; radius OR ulna	14.0	120	3.0
25426	radius AND ulna	20.0	120	3.0
25440	Repair of nonunion, scaphoid (navicular) bone, with or without radial styloidectomy (includes obtaining graft and necessary fixation)	14.0	120	3.0
25441	Arthroplasty with prosthetic replacement; distal radius	18.0	120	3.0
25442	distal ulna	12.5	120	3.0
25443	scaphoid (navicular)	15.5	120	3.0
25444	lunate	15.5	120	3.0
25445	trapezium	15.5	120	3.0
25446	distal radius and partial or entire carpus ("total wrist")	20.0	120	3.0
25449	Arthroplasty with removal of implant	BR	120	3.0
25450	Epiphyseal arrest by epiphysiodesis or stapling; distal radius OR ulna	6.0	120	3.0
25455	distal radius AND ulna	8.0	120	3.0
	FRACTURE AND/OR DISLOCATION			
25500	Treatment of closed radial shaft fracture; without manipulation	Sv.&		
25505	with manipulation	4.2	90	3.0
25510	Treatment of open radial shaft fracture, with uncomplicated soft tissue closure	5.0	90	3.0
25515	Open treatment of closed or open radial shaft fracture, with or without internal or external skeletal fixation	8.0	90	3.0
25530	Treatment of closed ulnar shaft fracture; without manipulation	Sv.&		
25535	with manipulation	4.0	90	3.0
25540	Treatment of open ulnar shaft fracture with uncomplicated soft tissue closure	5.0	90	3.0
25545	Open treatment of closed or open ulnar shaft fracture, with or without internal or external skeletal fixation	8.0	90	3.0
25560	Treatment of closed radial and ulnar shaft fractures; without manipulation	Sv.&		
25565	with manipulation	5.4	90	3.0
25570	Treatment of open radial and ulnar shaft fractures, with uncomplicated soft tissue closure	6.0	90	3.0
25575	Open treatment of closed or open radial and ulnar shaft fractures, with or without internal or external skeletal fixation	12.0	90	3.0
25600	Treatment of closed distal radial fracture (e.g., Colles or Smith type) or epiphyseal separation, with or without fracture of ulnar styloid, without manipulation	Sv.&		
25605	with manipulation	4.0	90	3.0
25610	Treatment of closed, complex, distal radial fracture (e.g., Colles or Smith type) or epiphyseal separation, with or without fracture of ulnar styloid, requiring manipulation; without external skeletal fixation or percutaneous pinning	6.0	90	3.0
25611	with external skeletal fixation or percutaneous pinning	8.0	120	3.0
25615	Treatment of open distal radial fracture (e.g., Colles or Smith type) or epiphyseal separation, without fracture of ulnar styloid, with uncomplicated soft tissue closure	5.0	90	3.0
25620	Open treatment of closed or open distal radial fracture (e.g., Colles or Smith type) or epiphyseal separation, with or without fracture of the ulnar styloid, with or without internal or external skeletal fixation	8.0	90	3.0
25622	Treatment of closed carpal scaphoid (navicular) fracture; without manipulation	SV		
25624	with manipulation	4.0	90	3.0
25626	Treatment of open carpal scaphoid (navicular) fracture, with uncomplicated soft tissue closure	5.0	90	3.0
25628	Open treatment of closed or open carpal scaphoid (navicular) fracture, with or without skeletal fixation	8.0	90	3.0
25630	Treatment of closed carpal bone fracture (excluding carpal scaphoid (navicular)); without manipulation, each bone	Sv.&		
25635	with manipulation, each bone	4.0	90	3.0
25640	Treatment of open carpal bone fracture (excluding carpal scaphoid (navicular)); without manipulation, each bone	5.0	90	3.0
25645	Open treatment of closed or open carpal bone fracture (excluding carpal scaphoid (navicular)), each bone	6.0	90	3.0
25650	Treatment of closed ulnar styloid fracture	BR		3.0
*25660	Treatment of closed radiocarpal or intercarpal dislocation, one or more bones, with manipulation	*1.2	0	3.0
25665	Treatment of open radiocarpal dislocation or intercarpal, one or more bones, with uncomplicated soft tissue closure	4.0	45	3.0
25670	Open treatment of closed or open radiocarpal or intercarpal dislocation, one or more bones	8.0	90	3.0
25675	Treatment of closed distal radioulnar dislocation with manipulation	3.2	60	3.0
25676	Open treatment of closed or open distal radioulnar dislocation, acute or chronic	6.0	90	3.0
25680	Treatment of closed trans-scaphoperilunar type of fracture dislocation, with manipulation	6.0	45	3.0
25685	Open treatment of closed or open trans-scaphoperilunar type of fracture dislocation	12.0	90	3.0
25690	Treatment of lunate dislocation, with manipulation	4.0	90	3.0
25695	Open treatment of lunate dislocation	8.0	90	3.0
	MANIPULATION			
*25700	Manipulation of wrist joint under general anesthesia	*1.0	0	3.0
	ARTHRODESIS			
25800	Arthrodesis, wrist joint, without bone graft	12.0	120	3.0
25805	with sliding graft	14.0	120	3.0
25810	with iliac or other autogenous bone graft (includes obtaining graft)	16.0	120	3.0
	AMPUTATION			
25900	Amputation, forearm, through radius and ulna	9.0	90	3.0
25905	open flap or circular (guillotine)	8.0	90	3.0
25907	secondary closure or scar revision	3.0	30	3.0
25909	reamputation	9.0	90	3.0
25915	Krukenberg procedure	9.0	90	3.0
25920	Disarticulation through wrist	8.0	90	3.0
25922	secondary closure or scar revision	3.0	90	3.0
25924	reamputation	9.0	90	3.0
25927	Transmetacarpal amputation;	10.0	90	3.0
25929	secondary closure or scar revision	3.0	90	3.0
25931	reamputation	10.0	90	3.0
	MISCELLANEOUS			
25999	Unlisted procedure, forearm or wrist	BR		

[Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-24-041 (Order 81-28), § 296-22-071, filed 11/30/81, effective 1/1/82; 80-18-055 (Order 80-25), § 296-22-071, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-071, filed 1/30/74.]

WAC 296-22-073 Hand and fingers.

		Unit Value	Follow-up Days=	Basic Anes@
	INCISION			
	(For drainage of paronychia, see 10100, 10101)			
*26010	Drainage of finger tip abscess; simple	*0.72	0	3.0
26011	complicated (e.g., felon, etc.)	BR+		3.0
26020	Drainage of tendon sheath, one digit and/or palm	4.0	30	3.0
	(For drainage of simple abscess, see 10020, 10060)			
26025	Drainage of palmar bursa; single, ulnar or radial	5.0	30	3.0
26030	multiple or complicated	BR+		3.0
26032	with suction irrigation	5.0	30	3.0
26034	Incision, deep, with opening of cortex for osteomyelitis or bone abscess	4.0	30	3.0
26035	Decompression fingers and/or hand, injection injury (e.g., grease gun, etc.)	BR		
26040	Fasciotomy, palmar, for Dupuytren's contracture; closed (subcutaneous)	3.6	60	3.0
26045	open, partial	5.0	60	3.0
	(For fasciectomy, see 26120–26128)			
26055	Tendon sheath incision for trigger finger	2.0	30	3.0
*26060	Tenotomy, subcutaneous, single, each digit	*1.2	0	3.0
26070	Arthrotomy with exploration, drainage or removal of loose or foreign body; carpometacarpal joint	5.0	60	3.0
26075	metacarpophalangeal joint	5.0	60	3.0
26080	interphalangeal joint, each	4.0	60	3.0
	EXCISION			
	(For finger nail, see 11700–11750)			
	(For biopsy, see 20200–20240)			
	(For neuroma, see 64200–64210)			
26100	Arthrotomy for synovial biopsy; carpometacarpal joint	5.0	60	3.0
26105	metacarpophalangeal joint	5.0	60	3.0
26110	interphalangeal joint, each	4.0	60	3.0
26115	Excision of benign tumor; subcutaneous	4.0	15	3.0
26116	deep, subfascial, intramuscular	4.0	30	3.0
26120	Fascietomy palmer, simple, for Dupuytren's contracture, partial excision	6.0	60	3.0
26122	up to 1/2 palmar fascia, with single digit involvement, with or without Z-plasty or other local tissue rearrangement	10.0	60	3.0
	(For fasciotomy, see 26040–26045)			
26124	Fasciectomy, palmar, complicated, requiring skin grafting (includes obtaining graft); with single digit involvement	14.0	90	3.0
26126	each additional digit	18.0	90	3.0
26128	each finger joint release	BR		
	(For skin grafts, etc., see 14000–15240)			
26130	Synovectomy, carpometacarpal joint	10.0	90	3.0
26135	Synovectomy, metocarpophalangeal joint including intrinsic release and extensor hood reconstruction, each digit	5.0	90	3.0
26140	Synovectomy, proximal interphalangeal joint, including extensor reconstruction, each interphalangeal joint	5.0	90	3.0
26145	Synovectomy, tendon sheath, radical (tenosynovectomy), flexor, palm or finger, single, each digit	10.0	90	3.0
	(For tendon sheath synovectomies at wrist, see 25115, 25116)			
26160	Excision of lesion of tendon sheath or capsule (e.g., cyst or ganglion)	2.4	30	3.0
	(For wrist ganglion, see 25111, 25112)			
	(For trigger digit, see 26055)			
26170	Excision of tendon, palm, flexor, single (independent procedure), each	BR+		3.0
26180	Excision of tendon, finger, flexor (separate procedure)	BR+		3.0
26200	Excision or curettage of bone cyst or benign tumor of metacarpal;	6.0	60	3.0
26205	with autogenous graft (includes obtaining graft)	7.0	120	3.0
26206	with homogenous or other nonautogenous graft	7.0	120	3.0
26210	Excision or curettage of bone cyst or benign tumor of proximal, middle or distal phalanx;	5.0	60	3.0
26215	with autogenous graft (includes obtaining graft)	6.0	120	3.0
26216	with homogenous or other nonautogenous graft	6.0	120	3.0
26230	Partial excision of bone (craterization, saucerization, or diaphysectomy) for osteomyelitis, metacarpal	6.0	60	3.0
26235	proximal or middle phalanx	5.0	60	3.0
26236	distal phalanx	5.0	60	3.0
26250	Radical resection (ostectomy) for tumor, metacarpal;	12.0	120	3.0
26255	with autogenous graft (includes obtaining graft)	12.0	120	3.0
26260	Radical resection (ostectomy) for tumor, proximal or middle phalanx	10.0	120	3.0
26261	with autogenous graft (includes obtaining graft)	10.0	120	3.0
26262	Radical resection (ostectomy) for tumor, distal phalanx	BR		
	INTRODUCTION OR REMOVAL			
	(For arthrocentesis (injection or aspiration) see 20600)			
	(For K wire or pin insertion or removal, see 20650, 20670, 20680)			
26320	Removal of implant from finger or hand	BR		
	REPAIR, REVISION OR RECONSTRUCTION			
	(For neurorrhaphy, neuroplasty or neurolysis, see 64700 et seq.)			
26350	Flexor tendon repair or advancement, single, not in "no man's land"; primary or secondary without free graft, each tendon	7.0	120	3.0
26352	secondary with free graft (includes obtaining graft), each tendon	BR+		3.0
26356	Flexor tendon repair or advancement, single, in "no man's land"; primary, each tendon	7.0	120	3.0
26358	secondary with free graft (includes obtaining graft), each tendon	BR		3.0
26370	Profundus tendon repair or advancement, with intact sublimis; primary	BR		3.0
26372	secondary with free graft (includes obtaining graft)	BR		3.0
26373	secondary without free graft	BR		3.0
26390	Flexor tendon excision, implantation of plastic tube or rod for delayed tendon graft	BR		3.0
26392	Removal of tube or rod and insertion of tendon graft (includes obtaining graft)	BR		3.0
26410	Extensor tendon repair, dorsum of hand, single, primary or secondary; without free graft, each tendon	3.0	120	3.0
26412	with free graft (includes obtaining graft); each tendon	BR+		3.0
26418	Extensor tendon repair, dorsum of finger, single, primary or secondary; without free graft, each tendon	4.0	120	3.0
26420	with free graft (includes obtaining graft) each tendon	BR+		3.0

		Unit Value	Follow-up Days=	Basic Anes@
26426	Extensor tendon repair, central slip repair, secondary (boutonniere deformity); using local tissues	4.0	120	3.0
26428	with free graft (includes obtaining graft)	BR		
26432	Extensor tendon repair, distal insertion ("mallet finger"), closed, splinting with or without percutaneous pinning	5.0	120	3.0
26433	Extensor tendon repair, open, primary or secondary repair; without graft	6.0	120	3.0
26434	with free graft (includes obtaining graft)	BR		
	(For tenovaginotomy for trigger finger, see 26055)			
26440	Tenolysis, simple, flexor tendon, palm, OR finger, single, each tendon	5.0	60	3.0
26442	palm AND finger, each tendon	6.0	60	3.0
26445	Tenolysis, extensor tendon, dorsum of hand or finger; each tendon	6.0	60	3.0
26449	Tenolysis, complex, extensor tendon, dorsum of hand or finger, including hand and forearm	BR		3.0
	(For fascia or other implant, see 20920, 20922)			
26450	Tenotomy, flexor, single, palm, open each	4.0	30	3.0
26455	Tenotomy, flexor, single, finger, open, each	5.0	30	3.0
26460	Tenotomy, extensor, hand or finger, single, each	BR+		3.0
26471	Tenodesis; for proximal interphalangeal joint stabilization	8.0	120	3.0
26474	for distal joint stabilization	7.0	120	3.0
26476	Tendon lengthening, extensor, single, each	8.0	120	3.0
26477	Tendon shortening, extensor, single, each	8.0	120	3.0
26480	Tendon transfer or transplant, carpometacarpal area or dorsum of hand, single; without free graft, each	8.0	90	3.0
26483	with free tendon graft (includes obtaining graft), each tendon	11.0	90	3.0
26485	Tendon transfer or transplant, palmar, single, each tendon, without free tendon graft	10.0	90	3.0
26489	with free tendon graft (includes obtaining graft), each tendon	11.0	90	3.0
26490	Opponens plasty, sublimis tendon transfer type	9.5	120	3.0
26492	tendon transfer with graft (includes obtaining graft)	11.0	120	3.0
26494	hypothenar muscle transfer	12.0	120	3.0
26496	other methods	BR+		3.0
	(For thumb fusion in opposition, see 26820)			
26497	Sublimis transfer to correct claw finger; IV and V	BR		
26498	II, III, IV and V	BR		
26499	Correction claw finger, other methods	BR		
26500	Tendon pulley reconstruction; with local tissues (separate procedure)	6.0	90	3.0
26502	with tendon or fascial graft (includes obtaining graft) (separate procedure)	8.0	90	3.0
26508	Thenar muscle release for thumb contracture	8.0	90	3.0
26516	Capsulodesis for M-P joint stabilization; single digit	6.0	90	3.0
26517	two digits	8.0	90	3.0
26518	three or four digits	10.0	90	3.0
26520	Capsulectomy for contracture, metacarpophalangeal joint, single, each	7.0	90	3.0
26525	interphalangeal joint, single, each	7.0	90	3.0
26530	Arthroplasty, metacarpophalangeal joint, single, each	7.0	90	3.0
26531	with prosthetic implant, single, each	9.0	90	3.0
26535	Arthroplasty interphalangeal joint; single, each	8.0	90	3.0
26536	with prosthetic implant, single, each	BR+		3.0
26540	Reconstruction, collateral ligament, metacarpophalangeal joint	10.0	90	3.0
26541	with tendon or fascial graft (includes obtaining graft)	12.0	90	3.0
26545	Reconstruction, collateral ligament, interphalangeal joint, single, including graft, each joint	8.0	90	3.0
26550	Pollicization of a digit	BR+		3.0
26552	Reconstruction thumb with toe	BR		
26555	Positional change of other finger	BR+		3.0
26557	Toe to finger transfer; first stage	BR		
26558	each delay	BR		
26559	second stage	BR		
26560	Repair of syndactyly (web finger), each web space; with skin flaps	9.5	45	3.0
26561	with skin flaps and grafts	12.5	45	3.0
26562	complex, involving bone, nails, etc.	BR+		3.0
26565	Osteotomy for correction of deformity; metacarpal	8.0	90	3.0
26567	phalanx	5.0	90	3.0
26570	Bone graft, (includes obtaining graft); metacarpal	10.0	120	3.0
26574	phalanx	7.0	120	3.0
26580	Repair cleft hand	BR		
26585	Repair bifid digit	BR		
26590	Repair macrodactylia	BR		
	FRACTURES AND/OR DISLOCATION			
26600	Treatment of closed metacarpal fracture, single; without manipulation, each bone	Sv.&		
26605	with manipulation, each bone	2.4	90	3.0
26610	Treatment of open metacarpal fracture, single, with uncomplicated soft tissue closure, each bone	3.0	90	3.0
26615	Open treatment of closed or open metacarpal fracture, single, with or without internal or external skeletal fixation, each bone	7.0	90	3.0
26641	Treatment of carpometacarpal dislocation, thumb, with manipulation	Sv.&		
26645	Treatment of closed carpometacarpal fracture dislocation, thumb (Bennett fracture), with manipulation;	4.0	45	3.0
26650	with skeletal fixation	6.0	45	3.0
26655	Treatment of open carpometacarpal fracture dislocation, thumb (Bennett fracture), with uncomplicated soft tissue closure;	5.0	45	3.0
26660	with skeletal fixation	7.0	45	3.0
26665	Open treatment of closed or open carpometacarpal fracture dislocation, thumb (Bennett fracture), with or without internal or external skeletal fixation	10.0	90	3.0
*26670	Treatment of closed carpometacarpal dislocation, other than Bennett fracture, single, with manipulation; without anesthesia	*0.72	0	
26675	requiring anesthesia	2.0	45	3.0
26680	Treatment of open carpometacarpal dislocation, other than Bennett fracture, single, with uncomplicated soft tissue closure	3.0	45	3.0
26685	Open treatment of closed or open carpometacarpal dislocation, other than Bennett fracture; single, with or without internal or external skeletal fixation	6.0	90	3.0
26686	complex, multiple or delayed reduction	BR		
*26700	Treatment of closed metacarpophalangeal dislocation, single, with manipulation; without anesthesia	*0.72	0	
26705	requiring anesthesia	2.0	45	3.0
26710	Treatment of open metacarpophalangeal dislocation, single, with uncomplicated soft tissue closure	3.0	45	3.0
26715	Open treatment of closed or open metacarpal phalangeal dislocation, single, with or without internal or external skeletal fixation	6.0	90	3.0
26720	Treatment of closed phalangeal shaft fracture, proximal or middle phalanx,			

		Unit Value	Follow-up Days=	Basic Anes@
	finger or thumb; without manipulation, each	Sv.&		
26725	with manipulation, each	1.6	45	3.0
26727	Treatment of unstable phalangeal shaft fracture, proximal or middle phalanx, finger or thumb, with manipulation, requiring traction or fixation, each	2.0	45	3.0
26730	Treatment of open phalangeal shaft fracture, proximal or middle phalanx, finger or thumb, with uncomplicated soft tissue closure, each	2.2	45	3.0
26735	Open treatment of closed or open phalangeal shaft fracture, proximal or middle phalanx, finger or thumb, with or without internal or external skeletal fixation, each	4.0	60	3.0
26740	Treatment of closed articular fracture, involving metacarpophalangeal or proximal interphalangeal joint; without manipulation, each	Sv.		
26742	with manipulation, each	2.0	60	3.0
26743	with manipulation requiring traction for fixation, each	4.0	60	3.0
26744	Treatment of open articular fracture, involving metacarpophalangeal or proximal interphalangeal joint, with uncomplicated soft tissue closure, each	1.5	60	3.0
26746	Open treatment of closed or open articular fracture, involving metacarpophalangeal or proximal interphalangeal joint, each	2.5	60	3.0
26750	Treatment of closed distal phalangeal fracture, finger or thumb; without manipulation, each	Sv.&		
26755	with manipulation, each	*0.72	0	3.0
26760	Treatment of open distal phalangeal fracture, finger or thumb, with uncomplicated soft tissue closure, each	1.2	30	3.0
26765	Open treatment of closed or open distal phalangeal fracture, finger or thumb, each	2.4	45	3.0
26770	Treatment of closed interphalangeal joint dislocation, single, with manipulation; without anesthesia	*0.72	0	
26775	requiring anesthesia	1.2	45	3.0
26780	Treatment of open interphalangeal joint dislocation, single, with uncomplicated soft tissue closure	1.6	45	3.0
26785	Open treatment of closed or open interphalangeal joint dislocation, single	2.4	60	3.0
ARTHRODESIS				
26820	Fusion in opposition, thumb, with autogenous graft (includes obtaining graft)	10.0	120	3.0
26841	Arthrodesis, carpometacarpal joint, thumb, with or without internal fixation;	8.0	120	3.0
26842	with autogenous graft (includes obtaining graft)	10.0	120	3.0
26843	Arthrodesis, carpometacarpal joint, digits, other than thumb;	8.0	120	3.0
26844	with autogenous graft (includes obtaining graft)	10.0	120	3.0
26850	Arthrodesis metacarpophalangeal joint, with or without internal fixation	7.0	120	3.0
26852	with autogenous graft (includes obtaining graft)	8.0	120	3.0
26860	Arthrodesis, interphalangeal joint, with or without internal fixation	5.0	120	3.0
26861	each additional interphalangeal joint	4.0	120	3.0
26862	with autogenous graft (includes obtaining graft)	6.0	120	3.0
26863	with autogenous graft (includes obtaining graft), each additional joint	5.0	120	3.0
AMPUTATION				
	(For hand through metacarpal bones, see 25927)			
26910	Amputation, metacarpal, with finger or thumb (ray amputation), single, with or without interosseous transfer	7.0	90	3.0
	(For repositioning, see 26550–26555)			
26951	Amputation, finger or thumb, primary or secondary, any joint or phalanx, single, including neurectomies; with direct closure	3.5	45	3.0
26952	with local advancement flaps (V–Y, hood)	5.0	45	3.0
	(For repair of soft tissue defect requiring split or full thickness graft or other pedicle grafts, see 15050–15750)			
MISCELLANEOUS				
26989	Unlisted procedure, hands or fingers	BR		

[Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81–24–041 (Order 81–28), § 296–22–073, filed 11/30/81, effective 1/1/82; 80–18–055 (Order 80–25), § 296–22–073, filed 12/3/80, effective 3/1/81; Order 74–7, § 296–22–073, filed 1/30/74.]

WAC 296-22-082 Femur (thigh region) and knee joint.

(including tibial plateaus)

		Unit Value	Follow-up Days=	Basic Anes@
INCISION				
	(For incision and drainage of abscess or hematoma, superficial, see 10000–10160)			
27301	Incision and drainage of deep abscess, infected bursa, or hematoma	BR		
27303	Incision, deep, with opening of bone cortex for osteomyelitis or bone abscess;	BR		3.0
27304	with suction irrigation	BR		3.0
	(For open tenotomy, see 27390, 27392)			
27305	Fasciotomy, iliotibial (tenotomy), open	6.0	45	3.0
	(For combined Ober–Yount fasciotomy, see 27025)			
27306	Tenotomy, subcutaneous, closed, adductor or hamstring, (separate procedure); single	1.2	60	3.0
27307	multiple	4.0	60	3.0
27310	Arthrotomy, knee, with exploration, drainage or removal of foreign body;	12.0	90	3.0
27311	with suction irrigation	13.0	90	3.0
27315	Neurectomy, hamstring muscle	11.0	30	3.0
27320	Neurectomy, popliteal (gastrocnemius)	11.0	30	3.0
EXCISION				
27323	Biopsy, soft tissues; superficial	1.2	7	3.0
27324	deep	2.4	15	3.0
27327	Excision, benign tumor; subcutaneous	3.0	7	3.0
27328	deep, subfascial, or intramuscular	4.0	15	3.0
27330	Arthrotomy, knee; for synovial biopsy only	12.0	90	3.0
27331	with joint exploration, with or without biopsy, with or without removal of loose bodies	13.0	90	3.0
27332	Arthrotomy, knee, for excision of semilunar cartilage (meniscectomy); medial OR lateral	14.0	90	3.0
27333	medial AND lateral	20.0	90	3.0
27334	Arthrotomy, knee, for synovectomy; anterior OR posterior	17.0	120	3.0
27335	anterior AND posterior including popliteal area	14.0	120	3.0
27340	Excision, prepatellar bursa	5.0	60	3.0
27345	Excision of synovial cyst of popliteal space (Baker's cyst)	8.0	60	3.0
27350	Patellectomy or hemipatellectomy	12.0	90	3.0

		Unit Value	Follow-up Days=	Basic Anes@
27355	Excision or curettage of bone cyst or benign tumor of femur	11.0	60	3.0
27356	with homogenous graft	12.0	60	3.0
27357	with primary autogenous graft (includes obtaining graft)	14.0	120	3.0
27358	with internal fixation (list in addition to 27355, 27356, or 27357)	15.0	120	3.0
27360	Excision of bone, partial (craterization, saucerization or diaphysectomy), for osteomyelitis, femur, proximal tibia and/or fibula;	10.0	60	3.0
27361	with suction irrigation	13.0	120	3.0
27365	Radical resection for tumor (bone or soft tissue)	BR+		3.0
	INTRODUCTION AND/OR REMOVAL			
	(For arthrocentesis or needling of bursa or joint, see 20610)			
	(For removal of Rush pin, intramedullary rod, etc., see 20680)			
27370	Injection procedure for knee arthrography	0.6	0	
	(For knee arthrography, see 73580, 73581)			
27372	Removal foreign body, deep	BR		
27373	Arthroscopy, knee, diagnostic (separate procedure);	5.4		
27374	Arthroscopy, knee, surgical; debridement with cartilage shaving and/or drilling and/or resection of reactive synovium	BR		3.0
27376	with synovial biopsy	14.7	90	3.0
27377	with removal of loose body	15.7	90	3.0
27378	with partial meniscectomy	16.7	90	3.0
27379	with plica resection and/or shelf resection	BR		3.0
	(When knee arthroscopy is performed in conjunction with arthrotomy, see Modifier -50)			
	REPAIR, REVISION OR RECONSTRUCTION			
	(For repair of deep wound, see 20800)			
27380	Suture of infrapatellar tendon; primary	11.0	90	3.0
27381	secondary reconstruction, including fascial or tendon graft	BR		
27385	Suture of quadriceps or hamstring muscle rupture; primary	13.0	90	3.0
27386	secondary reconstruction, including fascial or tendon graft	15.0	90	3.0
27390	Tenotomy, open, hamstring, knee to hip; single	6.0	45	3.0
27391	multiple, one leg	6.0	90	3.0
27392	multiple, bilateral	8.0	45	3.0
27393	Lengthening of hamstring tendon; single	8.0	90	3.0
27394	multiple, one leg	12.0	90	3.0
27395	multiple, bilateral	16.0	120	3.0
	(For subcutaneous tenotomy, see 27300, 27302)			
27396	Transplant, hamstring tendon to patella; single	16.0	120	3.0
27397	multiple	14.0	120	3.0
27400	Tendon or muscle transfer, hamstrings to femur (Eggers type procedure)	16.0	120	3.0
27405	Suture, primary, torn, ruptured or severed ligament, with or without meniscectomy, knee; collateral	14.0	120	3.0
27407	cruciate	16.0	120	3.0
27408	collateral, with pes anserinus transfer	14.0	120	3.0
27409	collateral and cruciate ligaments	18.0	120	3.0
27410	Suture, secondary repair, torn, ruptured, or severed ligament, with or without meniscectomy, knee; collateral OR cruciate ligament	19.0	120	3.0
27411	medial ligament and capsule	19.0	120	3.0
27413	collateral or cruciate ligament, with pes anserinus transfer or fascial or tendon graft	23.0	120	3.0
27414	Suture, secondary repair, torn, ruptured, or severed ligament with or without meniscectomy, knee, collateral AND cruciate ligaments	22.0	120	3.0
27415	with pes anserinus transfer or fascial or tendon graft	23.0	120	3.0
27416	Advancement, pes anserinus, Slocum type procedure, (separate procedure)	14.0	120	3.0
27420	Reconstruction for recurrent dislocating patella; (Hauser type procedure)	14.0	120	3.0
27422	with extensor realignment and/or muscle advancement or release (Campbell, Goldthwaite, etc., type procedure)	15.0	120	3.0
27424	with patellectomy	17.0	120	3.0
27425	Lateral retinacular release (any method)	6.0	120	3.0
27430	Quadriceps plasty (Bennett or Thompson type)	15.0	120	3.0
27435	Capsulotomy, knee, posterior capsular release	14.0	90	3.0
27437	Arthroplasty, patella; without prosthesis			
27438	with prosthesis	22.0	120	3.0
27440	Arthroplasty, knee, tibial plateau;	20.0	120	3.0
27441	with debridement and partial synovectomy	BR	120	3.0
27442	Arthroplasty, knee, femoral condyles or tibial plateaus	24.0	120	3.0
27443	with debridement and partial synovectomy	BR		
27444	Arthroplasty, knee, total; fascial	28.0	120	3.0
27445	prosthetic (e.g., Walldius type)	28.0	120	3.0
27446	Arthroplasty, knee, total, condyle and plateau ("total knee" replacement); medial OR lateral compartment	BR	120	3.0
27447	medial AND lateral compartments ("total knee")	40.0	120	3.0
27448	Osteotomy, femur, shaft or supracondylar, without fixation; unilateral	13.0	120	3.0
27449	bilateral	15.0	120	3.0
27450	Osteotomy, femur, shaft or supracondylar, with fixation; unilateral	19.0	90	3.0
27452	bilateral	24.0	120	3.0
27454	Osteotomy, multiple, femoral shaft, with realignment on intramedullary rod (Sofield type procedure)	20.0	90	3.0
27455	Osteotomy, proximal tibia, including fibular excision or osteotomy (includes correction of genu varus (bowleg) or genu valgus (knock knee)), unilateral; before epiphyseal closure	12.0	90	3.0
27457	after epiphyseal closure	14.0	90	3.0
27460	Osteotomy, proximal tibia, including fibular excision or osteotomy (includes correction of genu varus (bowleg) or genu valgus (knock-knee), bilateral; before epiphyseal closure	18.0	90	3.0
27462	after epiphyseal closure	21.0	90	3.0
27465	Osteoplasty, femur; shortening	20.0	180	3.0
27466	lengthening	26.0	180	3.0
27468	combined, lengthening and shortening with femoral segment transfer	40.0	180	4.0
27470	Repair, nonunion or malunion, femur, distal to head and neck; without graft (e.g., compression technic, etc.)	20.0	120	3.0
27472	with iliac or other autogenous bone graft (includes obtaining graft)	23.0	120	3.0
27475	Epiphyseal arrest by epiphysiodesis or stapling; distal femur	14.0	120	3.0
27477	tibia and fibula, proximal	16.0	120	3.0
27479	combined, distal femur, proximal tibia and fibula	20.0	120	3.0
27485	Arrest, hemiepiphyseal, distal femur or proximal leg (e.g., for genu varus or valgus)	11.0	120	3.0
	FRACTURES AND/OR DISLOCATION			
27500	Treatment of closed femoral shaft fracture (including supracondylar); without manipulation (includes traction)	Sv.&		
27502	with manipulation	7.0	90	3.0
27504	Treatment of open femoral shaft fracture (including supracondylar), with uncomplicated soft tissue closure	11.0	90	3.0

		Unit Value	Follow-up Days=	Basic Anes@
27506	Open treatment of closed or open femoral shaft fracture (including supracondylar), with or without internal or external skeletal fixation	19.0	90	3.0
27508	Treatment of closed femoral fracture, distal end, medial or lateral condyle; without manipulation	Sv.&		
27510	with manipulation	8.0	90	3.0
27512	Treatment of open femoral fracture, distal end, medial or lateral condyle, with uncomplicated soft tissue closure	12.0	90	3.0
27514	Open treatment of closed or open femoral fracture, distal end, medial or lateral condyle, with or without internal or external skeletal fixation	20.0	90	3.0
27516	Treatment of closed distal femoral epiphyseal separation; without manipulation (includes traction)	SV		
27517	with manipulation	7.0	120	3.0
27518	Treatment of open distal femoral epiphyseal separation, with uncomplicated soft tissue closure	8.0	120	3.0
27519	Open treatment of closed or open distal femoral epiphyseal separation, with or without internal or external skeletal fixation	18.0	120	3.0
27520	Treatment of closed patellar fracture, without manipulation	Sv.&		
27522	Treatment of open patellar fracture, with uncomplicated soft tissue closure	4.0	90	3.0
27524	Open treatment of closed or open patellar fracture, with repair and/or excision	12.0	90	3.0
27530	Treatment of closed tibial fracture, proximal (plateau); without manipulation	Sv.&		
27532	with manipulation	5.0	90	3.0
27534	Treatment of open tibial fracture, proximal (plateau), with uncomplicated soft tissue closure	8.0	90	3.0
27536	Open treatment of closed or open tibial fracture, proximal (plateau), with or without internal or external skeletal fixation;	14.0	90	3.0
27537	with autogenous graft (includes obtaining graft)	16.0	120	3.0
27538	Treatment of closed intercondylar spine(s) fracture(s)	Sv.&		
27540	Open treatment of closed or open intercondylar spine(s) fractures(s), with internal fixation	14.0	90	3.0
27550	Treatment of closed knee dislocation; without anesthesia	Sv.&		
27552	requiring anesthesia	3.6	45	3.0
27554	Treatment of open knee dislocation, with uncomplicated soft tissue closure	7.0	45	3.0
27556	Open treatment of closed or open knee dislocation, with or without internal or external skeletal fixation; without primary ligamentous repair	15.0	90	3.0
27557	with primary ligamentous repair	BR	120	3.0
27560	Treatment of closed patellar dislocation; without anesthesia	Sv.&		
27562	requiring anesthesia	3.6	45	3.0
27564	Treatment of open patellar dislocation, with uncomplicated soft tissue closure	5.0	45	3.0
27566	Open treatment of closed or open patellar dislocation, with or without partial or total patellectomy	12.0	90	3.0
	(For recurrent dislocation, see 27420–27424)			
	MANIPULATION			
*27570	Manipulation of knee joint under general anesthesia (includes application of traction or other fixation devices)	*1.2	0	3.0
	ARTHRODESIS			
27580	Fusion of knee, any technique	20.0	120	3.0
	AMPUTATION			
27590	Amputation, thigh, through femur, any level;	14.5	120	4.0
27591	immediate fitting technique including first cast	BR	30	3.0
27592	open, flap or circular (guillotine)	14.0	120	4.0
27594	secondary closure or scar revision	Sv.&		3.0
27596	reamputation	BR+		4.0
27598	Disarticulation at knee	14.0	120	4.0
	MISCELLANEOUS			
27599	Unlisted procedure, femur or knee	BR		

[Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81–24–041 (Order 81–28), § 296–22–082, filed 11/30/81, effective 1/1/82; 80–18–055 (Order 80–25), § 296–22–082, filed 12/3/80, effective 3/1/81; Order 76–34, § 296–22–082, filed 11/24/76, effective 1/1/77; Order 75–39, § 296–22–082, filed 11/28/75, effective 1/1/76; Order 74–7, § 296–22–082, filed 1/30/74.]

WAC 296-22-091 Foot.

		Unit Value	Follow-up Days=	Basic Anes@
	INCISION			
	(For incision and drainage procedures, superficial, see 10000–10160)			
28001	Incision and drainage, infected bursa	SV		
28002	Deep infection, below fascia, requiring deep dissection, with or without tendon sheath involvement; single bursal space, specify	BR		3.0
28003	multiple areas	BR		3.0
28004	multiple areas with suction irrigation	BR		3.0
28005	Incision, deep, with opening of bone cortex for osteomyelitis or bone abscess;	BR		3.0
28006	with suction irrigation	BR		3.0
28008	Fasciotomy, plantar and/or toe, subcutaneous (see also 28060, 28062, 28250)	2.4	60	3.0
*28010	Tenotomy, subcutaneous, toe; single	*0.8	0	3.0
*28011	multiple	*1.2	0	3.0
	(For open tenotomy, see 28230, 28234)			
28020	Arthrotomy, with exploration, drainage or removal of loose or foreign body; intertarsal or tarsometatarsal joint	6.0	60	3.0
28022	metatarsophalangeal joint	3.6	60	3.0
28024	interphalangeal joint	2.4	60	3.0
28030	Neurectomy of intrinsic musculature of foot	BR+		3.0
28035	Tarsal tunnel release (posterior tibial nerve decompression)	8.0	60	3.0
	EXCISION			
	(For toenail, see 11730–11750)			
28043	Excision, benign tumor; subcutaneous	3.0	7	3.0
28045	deep, subfascial, intramuscular	4.0	15	3.0
28050	Arthrotomy for synovial biopsy; intertarsal or tarsometatarsal joint	6.0	60	3.0
28052	metatarsophalangeal joint	3.6	60	3.0
28054	interphalangeal joint	2.4	60	3.0
28060	Faciectomy, excision of plantar fascia; partial (separate procedure)	6.0	60	3.0
28062	radical (separate procedure)	BR+		3.0
	(For plantar fasciotomy, see 28008, 28250)			
28070	Synovectomy, intertarsal or tarsometatarsal joint, each	6.0	90	3.0
28072	metatarsophalangeal joint, each	3.6	90	3.0
28080	Excision of Morton neuroma, single, each	3.6	30	3.0
28086	Synovectomy, tendon sheath; flexor	6.0	90	3.0
28088	extensor	6.0	90	3.0

		Unit Value	Follow-up Days=	Basic Anes@
28090	Excision of lesion of tendon or fibrous sheath or capsule (including synovectomy) (cyst or ganglion); foot	3.6	30	3.0
28092	toes	2.4	30	3.0
28100	Excision or curettage of bone cyst or benign tumor, talus or calcaneus;	6.0	60	3.0
28102	with iliac or other autogenous bone graft (includes obtaining graft)	7.0	120	3.0
28103	with homogenous bone graft	8.0	120	3.0
28104	Excision or curettage of bone cyst or benign tumor, tarsal or metatarsal bones, except talus or calcaneus;	4.8	60	3.0
28106	with iliac or other autogenous bone graft (includes obtaining graft)	5.6	120	3.0
28107	with homogenous bone graft	6.6	120	3.0
28108	Excision or curettage of bone cyst or benign tumor, phalanges;	3.6	60	3.0
28109	with homogenous bone graft	4.6	60	3.0
	(For ostectomy, partial (e.g., hallux valgus, Silver type procedure) see 28290)			
28110	Ostectomy, partial excision, fifth metatarsal head (bunionette) (separate procedure)	2.4	60	3.0
28111	Ostectomy; complete excision of first metatarsal head	7.0	90	3.0
28112	other metatarsal head (second, third or fourth)	4.0	60	3.0
28113	fifth metatarsal head	1.0	90	3.0
28114	all metatarsal heads with partial proximal phalangectomies (Clayton type procedure)	12.0	60	3.0
28116	Ostectomy, excision of tarsal coalition	7.0	60	3.0
28118	Ostectomy, calcaneus; partial (Cotton scoop type procedure)	7.0	60	3.0
28119	for spur, with or without plantar fascial release			
28120	Partial excision of bone (craterization, saucerization, sequestrectomy, or diaphysectomy) for osteomyelitis, talus or calcaneus;	6.0	60	3.0
28121	with suction irrigation	7.0	60	3.0
28122	Partial excision of bone (craterization, saucerization or diaphysectomy) for osteomyelitis, tarsal or metatarsal bone, except talus or calcaneus;	4.8	60	3.0
28123	with suction irrigation	5.0	60	3.0
28124	Partial excision of bone (craterization, saucerization, or diaphysectomy) for osteomyelitis, phalanx	3.6	60	3.0
28126	Condylectomy, phalangeal base, single toe, each	8.0	60	3.0
28130	Talectomy (astragalectomy)	10.0	120	3.0
28135	Calcanectomy	10.0	120	3.0
28140	Metatarsectomy	6.0	60	3.0
28150	Phalangectomy, single, each	3.6	30	3.0
28153	Resection, head of phalanx	6.0	30	3.0
28160	Hemiphalangectomy or interphalangeal joint excision, single, each	3.0	30	3.0
28171	Radical resection for tumor; tarsal (except talus or calcaneus)	BR+		3.0
28173	metatarsal	BR		3.0
28175	phalanx	BR		3.0
	(For talus or calcaneous, see 27647)			

INTRODUCTION AND/OR REMOVAL

(For arthrocenteses (injections or aspiration), see 20600, 20605)

(For K wire or pin insertion or removal, see 20650, 20670)

28190	*Remove foreign body; subcutaneous	BR		3.0
28192	deep	BR		3.0
28193	complicated	BR		3.0

REPAIR, REVISION OR RECONSTRUCTION

28200	Repair or suture of tendon, foot, flexor, single; primary or secondary, without free graft, each tendon	6.0	90	3.0
28202	secondary with free graft, each tendon (includes obtaining graft)	8.0	90	3.0
28208	Repair or suture of tendon, foot, extensor, single; primary or secondary, each tendon	2.8	90	3.0
28210	secondary with free graft, each tendon (includes obtaining graft)	4.4	90	3.0
28220	Tenolysis, flexor, single	5.0	60	3.0
28222	multiple (through same incision), each	6.0	60	3.0
28225	Tenolysis, extensor; single	2.8	60	3.0
28226	multiple (through same incision), each	3.6	60	3.0
28230	Tenotomy, open, flexor, foot, single or multiple (separate procedure)	3.0	30	3.0
28232	toe, single (separate procedure)	1.4	30	3.0
28234	Tenotomy, open, extensor, foot or toe	1.0	30	3.0
28236	Transfer of tendon, anterior tibial into tarsal bone (e.g., Lowman–Young type procedure)	5.0	120	3.0
28238	Advancement of posterior tibial tendon with excision of accessory navicular bone (Kidner type procedure)	7.0	120	3.0
	(For subcutaneous tenotomy, see 28010, 28011)			
	(For transfer or transplant of tendon with muscle redirection or rerouting, see 27690–27692)			
	(For extensor hallucis longus transfer, great toe, IP fusion, see 28760)			
28240	Tenotomy or release, abductor hallucis muscle (McCauley type procedure)	3.6	60	3.0
28250	Division of plantar fascia and muscle ("Steindler stripping") (separate procedure)	6.0	60	3.0
28260	Capsulotomy, midfoot; medial release only (separate procedure)	BR+		3.0
28261	with tendon lengthening	BR+		3.0
28262	extensive, including posterior talotibial capsulotomy and tendon(s) lengthening as for resistant clubfoot deformity	BR		
28264	Capsulotomy, midtarsal (Heyman type procedure)	12.0	90	3.0
28270	Capsulotomy for contracture, metatarsophalangeal joint, with or without tenorrhaphy, single, each joint (separate procedure)	3.0	60	3.0
28272	interphalangeal joint, single, each joint (separate procedure)	1.4	60	3.0
28280	Webbing operation (create syndactylism of toes) for soft corn (Kelikian type procedure)	3.6	46	3.0
28285	Hammer toe operation, one toe (e.g., interphalangeal fusion, filleting, phalangectomy) (separate procedure)	4.8	90	3.0
28286	for cock–up fifth toe with plastic skin closure, (Ruiz–Mora type procedure)	3.6	120	3.0
28288	Ostectomy, partial, exostectomy or condylectomy, single, metatarsal head, second through fifth, each metatarsal head, (separate procedure)	7.0	120	3.0
28290	Hallux valgus (bunion) correction, with or without sesamoidectomy; simple exostectomy (Silver type procedure)	4.8	60	3.0
28292	Keller, McBride or Mayo type procedure	7.0	90	3.0
28293	resection of joint with implant	8.0	120	3.0
28294	with tendon transplants (Joplin type procedure)	9.5	90	3.0
28296	with metatarsal osteotomy (Mitchell or Lapidus type procedure)	9.5	120	3.0
28298	Hallux valgus (bunion) correction; by phalanx osteotomy	7.0	120	3.0
28299	by other methods (e.g., double osteotomy)	BR		3.0
28300	Osteotomy; calcaneus (Dwyer or Chambers type procedure) with or without internal fixation	9.5	90	3.0
28302	talus	9.0	90	3.0
28304	Osteotomy, midtarsal bones, other than calcaneus or talus;	8.0	90	3.0
28305	with autogenous graft (includes obtaining graft) (Fowler type)	9.0	120	3.0

		Unit Value	Follow-up Days=	Basic Anes@
28306	Osteotomy, metatarsal, base or shaft, single, for shortening or angular correction; first metatarsal	7.0	90	3.0
28308	other than first metatarsal	5.6	90	3.0
28309	Osteotomy, metatarsals, multiple, for cavus foot (Swanson type procedure)	BR	120	3.0
28310	Osteotomy for shortening, angular or rotational correction; proximal phalanx, first toe (separate procedure)	2.8	90	3.0
28312	other phalanges, any toe	2.0	90	3.0
28315	Sesamoidectomy, first toe (separate procedure)	BR		
28320	Repair of nonunion or malunion; tarsal bones (calcaneus, talus, etc.)	BR+		3.0
28322	metatarsal, with or without bone graft (includes obtaining graft)	4.8	120	3.0

FRACTURE AND/OR DISLOCATION

28400	Treatment of closed calcaneal fracture; without manipulation	Sv.&		
28405	with manipulation including Cotton or Bohler type reductions	BR+		3.0
28406	with manipulation and skeletal fixation	BR	120	3.0
28410	Treatment of open calcaneal fracture, with uncomplicated soft tissue closure	4.0	90	3.0
28415	Open treatment of closed or open calcaneal fracture, with or without internal or external skeletal fixation	10.0	90	3.0
28420	with primary iliac or other autogenous bone graft (includes obtaining graft)	14.5	90	3.0
28430	Treatment of closed talus fracture; without manipulation	Sv.&		
28435	with manipulation	3.0	90	3.0
28440	Treatment of open talus fracture, with uncomplicated soft tissue closure	4.0	90	3.0
28445	Open treatment of closed or open talus fracture, with or without internal or skeletal fixation	10.0	90	3.0
28450	Treatment of closed tarsal bone fracture (except talus and calcaneous); without manipulation, each	Sv.&		
28455	with manipulation, each	2.0	90	3.0
28460	Treatment of open tarsal bone fracture (except talus and calcaneus), with uncomplicated soft tissue closure, each	3.0	90	3.0
28465	Open treatment of closed or open tarsal bone fracture (except talus and calcaneus), with or without internal or external skeletal fixation, each	6.0	90	3.0
28470	Treatment of closed metatarsal fracture; without manipulation, each	Sv.&		
28475	with manipulation, each	2.2	90	3.0
28480	Treatment of open metatarsal fracture, with uncomplicated soft tissue closure, each	3.0	90	3.0
28485	Open treatment of closed or open metatarsal fracture, with or without internal or external skeletal fixation, each	6.0	90	3.0
28490	Treatment of closed fracture great toe, phalanx or phalanges; without manipulation	Sv.&		
28495	with manipulation	1.2	30	3.0
28500	Treatment of open fracture great toe, phalanx or phalanges, with uncomplicated soft tissue closure	1.8	30	3.0
28505	Open treatment of closed or open fracture great toe, phalanx or phalanges, with or without internal or external skeletal fixation	3.6	45	3.0
28510	Treatment of closed fracture, phalanx or phalanges, other than great toe; without manipulation, each	Sv.&		
28515	with manipulation, each	1.0	30	3.0
28520	Treatment of open fracture, phalanx or phalanges, other than great toe, with uncomplicated soft tissue closure, each	1.6	30	3.0
28525	Open treatment of closed or open fracture, phalanx or phalanges; other than great toe, with or without internal or external skeletal fixation, each	3.0	45	3.0
*28540	Treatment of closed tarsal bone dislocation; without anesthesia	*0.72	0	
28545	requiring anesthesia	2.0	45	3.0
28546	Treatment of closed tarsal bone dislocation, with percutaneous skeletal fixation			
28550	Treatment of open tarsal bone dislocation, with uncomplicated soft tissue closure	2.8	45	3.0
28555	Open treatment of closed or open tarsal bone dislocation, with or without internal or external skeletal fixation	6.0	90	3.0
*28570	Treatment of closed talotarsal joint dislocation; without anesthesia	*1.0	0	
28575	requiring anesthesia	2.4	45	3.0
28580	Treatment of open talotarsal joint dislocation, with uncomplicated soft tissue closure	3.2	45	3.0
28585	Open treatment of closed or open talotarsal joint dislocation, with or without internal or external skeletal fixation	10.0	90	3.0
*28600	Treatment of closed tarsometatarsal joint dislocation, without anesthesia	*0.72	0	
28605	requiring anesthesia	2.0	45	3.0
28606	Treatment of closed tarsometatarsal joint dislocation, with percutaneous skeletal fixation	3.0		
28610	Treatment of open tarsometatarsal joint dislocation, with uncomplicated soft tissue closure	2.8	45	3.0
28615	Open treatment of closed or open tarsometatarsal joint dislocation, with or without internal or external skeletal fixation	6.0	90	3.0
*28630	Treatment of closed metatarsophalangeal joint dislocation; without anesthesia	*0.72	0	
28635	requiring anesthesia	1.4	45	3.0
28640	Treatment of open metatarsophalangeal joint dislocation, with uncomplicated soft tissue closure	2.0	45	3.0
28645	Open treatment of closed or open metatarsophalangeal joint dislocation	4.0	90	3.0
*28660	Treatment of closed interphalangeal joint dislocation; without anesthesia	*0.72	0	
28665	requiring anesthesia	1.2	45	3.0
28670	Treatment of open interphalangeal joint dislocation, with uncomplicated soft tissue closure	1.6	45	3.0
28675	Open treatment of closed or open interphalangeal joint dislocation	2.4	60	3.0

ARTHRODESIS

28705	Pantalar arthrodesis	19.0	120	3.0
28715	Triple arthrodesis	15.0	120	3.0
28725	Subtalar arthrodesis (includes Grice type procedure)	12.0	120	3.0
28730	Arthrodesis, midtarsal or tarsometatarsal, multiple or transverse;	11.0	120	3.0
28735	with osteotomy as for flat foot correction	14.0	120	3.0
28737	Arthrodesis, midtarsal navicular-cuneiform, with tendon lengthening and advancement (Miller type procedure)	7.0	120	3.0
28740	Arthrodesis, midtarsal or tarsometatarsal, single joint	9.0	120	3.0
28750	Arthrodesis, great toe; metatarsophalangeal joint	7.0	120	3.0
28755	interphalangeal joint	4.0	120	3.0
28760	Arthrodesis, great toe, interphalangeal joint, with extensor hallucis longus transfer to first metatarsal neck (Jones type procedure)	6.0	120	3.0

(For hammer toe operation or interphalangeal fusion, see 28285)

AMPUTATION

28800	Amputation, foot; midtarsal (Chopart type procedure)	10.0	90	3.0
28805	transmetatarsal	10.0	90	3.0
28810	Amputation, metatarsal, with toe, single	6.0	90	3.0
28820	Amputation, toe; metatarsophalangeal joint	3.0	45	3.0
28825	interphalangeal joint	2.0	45	3.0

		Unit Value	Follow-up Days=	Basic Anes@
	MISCELLANEOUS			
28899	Unlisted procedure, foot or toes	BR		
	(For skin grafts and flaps, see 15050-15770)			

[Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-24-041 (Order 81-28), § 296-22-091, filed 11/30/81, effective 1/1/82; 80-18-055 (Order 80-25), § 296-22-091, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-091, filed 1/30/74.]

RESPIRATORY SYSTEM

WAC 296-22-100 Nose respiratory system.

		Unit Value	Follow-up Days=	Basic Anes@
	INCISION			
	(For simple furuncle see 10020)			
*30000	Drainage abscess or hematoma, nasal, internal approach	*1.2	0	3.0
	(For external approach, see 10020, 10060, 10140)			
*30020	Drainage of abscess or hematoma, nasal septum	*1.4	0	3.0
	(For lateral rhinotomy, see specific application, e.g., 30118, 30320)			
	EXCISION			
	(For excision of nasopharyngeal fibroma, see 42880)			
	(For biopsy of nasopharynx, see 42804)			
30100	Biopsy, intranasal	0.6	7	3.0
	(For biopsy skin of nose, see 11100, 11101)			
30110	Excision of nasal polyp(s) simple; unilateral	1.4	15	3.0
30111	bilateral	BR		3.0
30115	Excision, nasal polyp(s), extensive; unilateral	4.0	30	3.0
30116	bilateral	BR		3.0
30117	Excision, intranasal lesion; internal approach	BR		
30118	external approach (lateral rhinotomy)	BR		
30120	Excision or surgical planing of skin of nose for rhinophyma	10.0	60	3.0
30124	Excision dermoid cyst, nose; simple, skin, subcutaneous	2.5	0	4.0
30125	complex, under bone or cartilage	BR	30	4.0
30130	Excision turbinate, partial or complete	2.0	30	3.0
30140	Submucous resection turbinate, partial or complete	6.0	90	3.0
	(For submucous resection of nasal septum, see 30500)			
30150	Rhinectomy; partial	BR		
30160	total	BR		
	(For closure and/or reconstruction, primary or delayed, see integumentary System, 13150-13152, 14060-14300, 15120-15730, 15760, 20900-20910)			
	INTRODUCTION			
*30200	Injection into turbinate(s), therapeutic	*0.48	0	
30210*	Displacement therapy (Proetz type)	0.2	0	4.0
30220	Insertion, nasal septal prosthesis (button)	BR		4.0
	REMOVAL FOREIGN BODY			
*30300	Removal foreign body; internasal; office type procedure	*0.4	0	3.0
30310	requiring general anesthesia	2.0	7	3.0
30320	by lateral rhinotomy	BR+		3.0
	REPAIR			
	(For obtaining tissues for graft, see 20900-20926, 21210)			
	(See also repair-complex, 13000-15760 and 21210-21235)			
30400	Rhinoplasty, primary, lateral and alar cartilages and/or elevation of nasal tip.	12.0	180	3.0
	(For columellar reconstruction, see 13150 et seq.)			
30410	complete, external parts including bony pyramid, lateral and alar cartilages, and/or elevation of nasal tip	18.0	180	3.0
30420	including major septal repair	20.0	180	3.0
30430	Rhinoplasty, secondary; minor revision (small amount of nasal tip work)	3.0	45	3.0
30435	intermediate revision (bony work with osteotomies)	BR	45	3.0
30450	major revision (nasal tip work and osteotomies)	BR		4.0
30500	Submucous resection nasal septum, classic	8.0	90	3.0
	(For submucous resection of turbinates, see 30140)			
30520	Septoplasty with or without cartilage implant, (separate procedure)	10.0	90	3.0
30540	Repair choanal atresia; intranasal	11.0	60	3.0
30545	transpalatine	20.0	365	3.0
*30560	Lysis intranasal synechia	*0.4	0	3.0
30580	Repair fistula; oromaxillary (combine with 31030 if antrotomy is included)	10.0	90	3.0
30600	oronasal	BR+		3.0
30620	Reconstruction, functional, internal nose (septal or other septal dermatoplasty) (does not include obtaining graft)	10.0	90	3.0
30630	Repair nasal septal perforations	BR		
	DESTRUCTION			
*30800	Cauterization turbinates, unilateral or bilateral (separate procedure); superficial	*0.4	0	3.0
30805	intramural	1.4	7	3.0
30820	Cryosurgery of turbinates, unilateral or bilateral	BR		
	OTHER PROCEDURES			
	(30900 Control of anterior nasal hemorrhage has been expanded into 30901-30904)			
*30901	Control nasal hemorrhage, anterior, simple (cauterization); unilateral	*0.6	0	
*30902	bilateral	*0.8		0
*30903	Control nasal hemorrhage, anterior, complex (cauterization); unilateral	BR		
*30904	bilateral	BR		
*30905	Control nasal hemorrhage, posterior, with posterior nasal packs; initial	*2.4	0	3.0
*30906	subsequent	*1.6	0	3.0
30915	Ligation, arteries, ethmoidal	10.0	30	3.0
30920	internal maxillary artery, transantral	BR		
	(For ligation external carotid artery, see 37600)			
30930	Fracture nasal turbinate(s) therapeutic	BR		
30999	Unlisted procedure, nose	BR		

[Statutory Authority: RCW 51.04.020(4), 51.04.030,

and 51.16.120(3). 81-24-041 (Order 81-28), § 296-22-100, filed 11/30/81, effective 1/1/82; 80-18-055 (Order 80-25), § 296-22-100, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-100, filed 1/30/74; Order 68-7, § 296-22-100, filed 11/27/68, effective 1/1/69.]

WAC 296-22-105 Accessory sinuses.

		Unit Value	Follow-up Days=	Basic Anes@
	INCISION			
*31000	Lavage by cannulation; maxillary sinus, unilateral (antrum puncture or natural ostium)	*0.4	0	3.0
*31001	maxillary sinuses, bilateral	*0.6	0	3.0
31002*	sphenoid sinus	0.8	0	3.0
31020	Sinusotomy, maxillary (antrotomy); intranasal, unilateral	3.0	90	3.0
31021	intranasal, bilateral	6.0	90	3.0
31030	radical, unilateral (Caldwell-Luc) without removal of antrochoanal polyps	10.0	90	3.0
31031	radical, bilateral (Caldwell-Luc) without removal of antrochoanal polyps	12.0	90	3.0
31032	radical unilateral (Caldwell-Luc) with removal of antrochoanal polyps	11.0	3.0	
31033	radical, bilateral (Caldwell-Luc) with removal of antrochoanal polyps	16.0	3.0	
31040	Surgery on pterygomaxillary fossa contents by transantral approach	BR		
	(For transantral ligation of internal maxillary artery, see 30920)			
31050	Sinusotomy, sphenoid	11.0	30	3.0
31070	Sinusotomy, frontal; external, simple (trephine operation)	10.0	30	3.0
31075	transorbital, unilateral (for mucocele or osteoma, Lynch type)	16.0	180	3.0
31080	obliterative without osteoplastic flap, brow incision	24.0	180	3.0
31081	obliterative, without osteoplastic flap, coronal incision	BR		
31084	obliterative, with osteoplastic flap, brow incision	BR		
31085	obliterative, with osteoplastic flap, coronal incision	BR		
31090	Sinusotomy combined, three or more sinuses	26.0	180	3.0
	EXCISION			
31200	Ethmoidectomy; intranasal, anterior	6.0	90	3.0
31201	intranasal, total	10.0	90	3.0
31205	extranasal total	13.0	90	3.0
31225	Maxillectomy; without orbital exenteration	24.0	180	3.0
31230	with orbital exenteration (en bloc)	24.0	180	3.0
	(For orbital exenteration as an independent procedure, see 65110 et seq.)			
	(For skin grafts, see 15120 et seq.)			
	OTHER PROCEDURES			
	(For hypophysectomy, transeptal, see 61665)			
	(For transcranial hypophysectomy, see 61546)			
31245	Transnasal pituitary procedure other than hypophysectomy	BR		
31299	Unlisted procedure, accessory sinuses	BR		

[Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-24-041 (Order 81-28), § 296-22-105, filed 11/30/81, effective 1/1/82; 80-18-055 (Order 80-25), § 296-22-105, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-105, filed 1/30/74; Order 68-7, § 296-22-101, filed 11/27/68, effective 1/1/69.]

WAC 296-22-110 Larynx.

		Unit Value	Follow-up Days=	Basic Anes@
	EXCISION			
31300	Laryngotomy (thyrotomy, laryngofissure); with removal of tumor or laryngocele, cordectomy	16.0	90	6.0
31320	diagnostic	8.0	60	6.0
31360	Laryngectomy; total, without radical neck dissection	26.0	180	6.0
31365	total, with radical neck dissection	34.0	180	6.0
31367	subtotal supraglottic, without radical neck dissection	30.0	180	6.0
31368	subtotal supraglottic, with radical neck dissection	30.0	180	6.0
31370	Partial laryngectomy (hemilaryngectomy); horizontal	30.0	180	6.0
31375	laterovertical	20.0	180	6.0
31380	anterovertical	20.0	180	6.0
31382	antero-latero-vertical	20.0	180	6.0
31390	Pharyngolaryngectomy, with radical neck dissection; without reconstruction	BR		
31395	with reconstruction	BR		
31400	Arytenoidectomy or arytenoidopexy, external approach	20.0	180	6.0
	(For endoscopic arytenoidectomy, see 31560)			
31420	Epiglottidectomy	16.0	180	6.0
	INTRODUCTION			
31500	Intubation, endotracheal, emergency procedure	1.4	0	
	(For injection procedure for bronchography, see 31656, 31708, 31710)			
	ENDOSCOPY			
31505	Laryngoscopy, indirect (separate procedure); diagnostic			
31510	with biopsy	BR		
31511	with removal of foreign body	BR		
31512	with removal of lesion	BR		
31513	with vocal cord injection	BR		
31515	Laryngoscopy, direct; for aspiration	0.6	0	
31520	diagnostic, newborn	2.4	7	4.0
31525	diagnostic, except newborn	4.0	7	4.0
31526	diagnostic, with operating microscope	BR		
31527	with insertion of obturator	BR		4.0
31528	with dilatation, initial	BR		4.0
31529	with dilatation, subsequent	BR		4.0
31530	Laryngoscopy, operative, with foreign body removal;	6.0	30	4.0
31531	with operating microscope	BR		
31535	Laryngoscopy, operative, with biopsy;	6.0	30	4.0
31536	with operating microscope	BR		
31540	Laryngoscopy, operative, with excision of tumor and/or stripping of vocal cords or epiglottis;	6.0	90	4.0
31541	with operating microscope	BR		
31560	Laryngoscopy, operative, with arytenoidectomy;	15.0	90	4.0
31561	with operating microscope	BR		
31570	Laryngoscopy with injection into vocal cord(s), therapeutic;	6.0	90	4.0
31571	with operating microscope	BR		
31575	Laryngoscopy, flexible fibercopic, diagnostic	BR	90	4.0
31576	with biopsy	BR	90	4.0
31577	with removal of foreign body	BR	90	4.0
31578	with removal of lesion	BR	90	4.0
	REPAIR			
31580	Laryngoplasty; for laryngeal web, two stage, with keel insertion and removal	BR		
31582	for laryngeal stenosis, with graft or			

		Unit Value	Follow-up Days=	Basic Anes@
	core mold, including tracheotomy ...	BR		
31584	with open reduction of fracture	BR		
31585	Treatment of closed laryngeal fracture; without manipulation	BR		
31586	with closed manipulative reduction ..	BR		
31590	Laryngeal reinnervation by neuromuscular pedicle	BR	90	4.0
DESTRUCTION				
31595	Section recurrent laryngeal nerve, therapeutic (separate procedure), unilateral	BR	90	4.0
OTHER PROCEDURES				
31599	Unlisted procedure, larynx.....	BR		

[Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-24-041 (Order 81-28), § 296-22-110, filed 11/30/81, effective 1/1/82; 80-18-055 (Order 80-25), § 296-22-110, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-110, filed 1/30/74; Order 68-7, § 296-22-110, filed 11/27/68, effective 1/1/69.]

WAC 296-22-115 Trachea and bronchi.

		Unit Value	Follow-up Days=	Basic Anes@
INCISION				
31600	Tracheostomy, planned (separate procedure);.....	5.4	15	5.0
31601	under two years	6.0	15	6.0
31603	Tracheostomy, emergency procedure, transtracheal.....	BR	90	5.0
31605	Cricothyroid membrane	BR		
31610	Tracheostomy, fenestration procedure with skin flaps	7.0	15	4.0
	(For endotracheal intubation, see 31500)			
	(For tracheal aspiration under direct vision, see 31515)			
31612	Tracheal puncture, percutaneous for aspiration of mucus (transtracheal aspiration).....	BR		
31613	Tracheostoma revision; simple, without flap rotation	BR	30	5.0
31614	complex, with flap rotation	BR	30	5.0
ENDOSCOPY				
31615	Tracheoscopy through established tracheostomy incision	BR		
31620	Bronchoscopy; diagnostic, rigid bronchoscope	3.6	30	4.0
31621	diagnostic, fiberoptic bronchoscope (flexible)	3.6	7	5.0
31625	with biopsy, rigid bronchoscope.....	5.0	30	4.0
31626	with biopsy, fiberoptic bronchoscope (flexible)	5.0	7	5.0
31627	with brushing, fiberoptic bronchoscope (flexible)	5.0	7	5.0
31630	with tracheal or broncheal dilation or closed reduction of fracture	6.0	30	6.0
31635	with removal of foreign body.....	5.6	30	4.0
31640	with excision of tumor	5.0	30	4.0
31645	with therapeutic aspiration of tracheo-bronchial tree, initial	4.0	30	4.0
31646	with therapeutic aspiration of tracheobronchial tree, subsequent ..	2.6	30	4.0
	(For catheter aspiration of tracheobronchial tree at bedside, see 31725)			
31650	with drainage of lung abscess or cavity, initial	4.0	30	4.0
31651	with drainage of lung abscess or cavity, subsequent.....	2.6	30	4.0
31656	with injection of contrast material for segmental bronchography (fiberscope only)	4.0	30	4.0
31659	with other bronchoscopic procedures .	BR		
INTRODUCTION				
	(For endotracheal intubation, see 31500)			
	(For tracheal aspiration under direct vision, see 31515)			
31700	Catheterization transglottic (separate procedure)	3.6	0	
31708	Instillation of contrast material for laryngography or bronchography, without catheterization	0.9	0	
31710	Catheterization for bronchography, with or without instillation of contrast material	0.8	0	
	(For bronchoscopic catheterization for bronchography, fiberscope only, see 31656)			
31715	Transtracheal injection for bronchography.....	0.8	0	
	(For detention time, see 99150, 99151)			
31717	Catheterization with bronchial brush biopsy	BR		
31719	Transtracheal (percutaneous) introduction of indwelling tube for therapy (tickle tube)	BR		
31720	Catheter aspiration (separate procedure); nasotracheobronchial	0.8	0	
31725	tracheobronchial with fiberscope, bedside	1.0	0	
REPAIR				
31750	Tracheoplasty; cervical.....	BR+		6.0
31755	tracheopharyngeal fistulization (Asai technique), each stage	BR+		6.0
31760	intrathoracic	BR+		12.0
31770	Bronchoplasty; graft repair	BR+		11.0
31775	excision stenosis and anastomosis	BR+		11.0
	(For lobectomy and bronchoplasty, see 32485)			
31780	Excision tracheal stenosis and anastomosis; cervical	BR		
31781	cervicothoracic	BR		
31785	Excision of tracheal tumor or carcinoma; cervical	BR		
31786	thoracic	BR		
SUTURE				
31800	Suture of external tracheal wound or injury; cervical	BR+		6.0
31805	intrathoracic	BR+		12.0
31820	Surgical closure tracheostomy or fistula; without plastic repair	4.0	30	4.0
31825	with plastic repair.....	6.0	30	4.0
	(For repair of tracheoesophageal fistula, see 43305-43310)			
31830	Revision of tracheostomy scar	5.60	30	4.0
31899	Unlisted procedure, trachea, bronchi ...	BR		

[Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-24-041 (Order 81-28), § 296-22-115, filed 11/30/81, effective 1/1/82; 80-18-055 (Order 80-25), § 296-22-115, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-115, filed 1/30/74; Order 68-7, § 296-22-115, filed 11/27/68, effective 1/1/69.]

CARDIOVASCULAR SYSTEM

The listed values are for the principal surgeon only. For concurrent services of other physicians (e.g., team surgery, co–surgeon), see WAC 296–22–010, item 5 and appropriate unit value modifiers.

(For monitoring, operation of pump and other non–surgical services, see 90900–90930)

(For procedures listed "with bypass" (heart pump oxygenator or pump assist), see Anesthesia modifier –45.)

(For medical or laboratory related services, see appropriate section.)

WAC 296–22–120 Heart and pericardium.

		Unit Value	Follow–up Days=	Basic Anes@
	(For monitoring, operation of pump and other nonsurgical services, see 99150, 99151, 99160–99162, 99190–99192)			
	(For other medical or laboratory related services, see appropriate section)			
PERICARDIUM				
33010*	Pericardiocentesis; initial	1.2	0	
33011*	subsequent	1.0	0	
33015	Tube pericardiostomy	BR		
33020	Pericardiostomy for removal of clot or foreign body (primary procedure)	20.0	90	13.0
33025	Creation of pericardial window or partial resection for drainage	20.0	15	1.5
33030	Partial resection for chronic constrictive pericarditis, without bypass	30.0	90	1.5
33035	Complete ventricular decortication, with bypass	40.0	90	1.5
33050	Excision of pericardial cyst or tumor	20.0	90	1.3
33100	Pericardiectomy (separate procedure)	34.0	90	15.0
CARDIAC TUMOR				
33120	Excision of intracardiac tumor, resection with bypass	50.0	90	15.0
33130	Resection of external cardiac tumor	25.0	90	12.0
	(For injection procedure for coronary arteriography, see 36230)			
	(For cardiac catheterization, see 93500–93566)			
	(For electronic analysis of internal pacemaker system, see 93795, 93796)			
	(For fluoroscopy and radiography procedure with insertion of pacemaker, see 71090)			
33200	Insertion of permanent pacemaker with epicardial electrode; by thoracotomy	24.0	90	15.0
33201	by xiphoid approach	24.0	90	15.0
33205	Insertion of permanent pacemaker with transvenous electrodes	14.0	90	
33210	Insertion of temporary transvenous cardiac electrode, or pacemaker catheter (separate procedure)	7.0	15	Sv,&
33212	Insertion or replacement of pulse generator only	4.0	30	6.0
33216	Insertion, replacement, or repositioning of permanent transvenous electrodes only (15 days or more after initial insertion)	8.0	30	6.0
33218	Repair of pacemaker; electrodes only	5.0	30	6.0
33219	with replacement of pulse generator	BR		
WOUNDS OF THE HEART AND GREAT VESSELS				
33300	Repair of cardiac wound; without bypass	24.0	90	15.0
33305	with bypass	30.0	90	15.0
33310	Cardiotomy, exploratory (includes removal of foreign body); without bypass	22.0	90	15.0
33315	with bypass	34.0	90	15.0
33320	Suture repair of aorta or great vessels; without bypass	20.0	90	15.0
33322	with bypass	30.0	90	15.0
33330	Insertion of graft; without bypass	30.0	90	15.0
33335	with bypass	40.0	90	15.0
33350	Great vessel repair with other major procedure	BR		15.0
CARDIAC VALVES AORTIC VALVE				
33400	Valvuloplasty, aortic valve, open, with bypass	50.0	90	15.0
33405	Replacement, aortic valve	52.0	90	15.0
33407	Valvotomy, aortic valve (commissurotomy); with bypass	BR		
33408	with inflow occlusion	BR		
	(For multiple valve replacement, see 33480–33492)			
33415	Resection of aortic valve for subvalvular stenosis	40.0	90	15.0
33417	Aortoplasty (gusset) for supravalvular stenosis	40.0	90	15.0
MITRAL VALVE				
33420	Valvotomy, mitral valve (commissurotomy); closed	32.0	90	15.0
33422	open, with bypass	50.0	90	15.0
33425	Valvuloplasty, mitral valve, with bypass	52.0	90	15.0
33430	Replacement, mitral valve, with bypass	52.0	90	15.0
TRICUSPID VALVE				
33450	Valvotomy, tricuspid valve (commissurotomy); closed	32.0	90	15.0
33452	open, with bypass	50.0	90	15.0
33460	Valvuloplasty or valvectomy, tricuspid valve, with bypass;	50.0	90	15.0
33465	replacement	52.0	90	15.0
	(For multiple valve replacement, see 33480–33492)			
33468	Tricuspid valve repositioning and plication for Ebstein anomaly	50.0	90	15.0
PULMONARY VALVE				
33470	Valvotomy, pulmonary valve (commissurotomy); closed (transventricular)	32.0	90	15.0
33472	open, with inflow occlusion	32.0	90	15.0
33474	open, with bypass	50.0	90	15.0
33476	Right ventricular resection for infundibular stenosis, with or without commissurotomy	50.0	90	15.0
33478	Outflow tract augmentation (gusset), with or without commissurotomy or infundibular resection	52.0	90	15.0
MULTIPLE VALVE PROCEDURES				
33480	Replacement and/or repair, double valve procedure, by methods 33400–33465	70.0	90	15.0
33481	Single valve replacement; with commissurotomy or valvuloplasty of another valve	56.0	90	15.0
33482	with commissurotomy or valvuloplasty of two valves	60.0	90	15.0
33483	Double valve replacement;	65.0	90	15.0
33485	with commissurotomy or valvuloplasty of one valve	67.0	90	15.0
33490	Replacement and/or repair, triple valve procedure, by methods 33400 to 33465	80.0	90	15.0
33492	Triple valve replacement	85.0	90	15.0
CORONARY ARTERY PROCEDURES				
33502	Anomalous coronary artery; ligation	20.0	90	15.0
33503	graft, without bypass	25.0	90	15.0
33504	graft, with bypass	35.0	90	15.0
33510	Coronary artery bypass, autogenous graft, e.g., saphenous vein or internal mammary artery; single artery	35.0	90	15.0
33511	two coronary arteries	56.0	90	15.0
33512	three coronary arteries	67.0	90	15.0
33513	four coronary arteries	67.0	90	15.0

		Unit Value	Follow-up Days=	Basic Anes@
33514	five coronary arteries	67.0	90	15.0
33516	six or more coronary arteries	67.0	90	15.0
	(For separate procurement of autogenous graft, see modifier -75, services rendered by more than one physician)			
33520	Coronary artery bypass, nonautogenous graft (e.g., synthetic or cadaver); single artery	30.0	90	15.0
33525	two coronary arteries	35.0	90	15.0
33528	three or more coronary arteries	50.0	90	15.0
33532	Myocardial implantation, one or more systemic arteries (Vineberg type operation)	25.0	90	15.0
	POSTINFARCTION MYOCARDIAL PROCEDURES			
33542	Myocardial resection (e.g., ventricular aneurysmectomy)	35.0	90	15.0
33545	Repair of postinfarction ventricular septal defect, with or without myocardial resection	50.0	90	15.0
33560	Myocardial operation combined with coronary bypass procedure	BR		
33570	Coronary angioplasty (end arterectomy, with or without gas, arterial implantation or anastomosis), with bypass;	60.0	90	15.0
33575	combined with vascularization	68.0	90	15.0
	SEPTAL DEFECT			
33640	Repair atrial septal defect, secundum; without bypass	32.0	90	15.0
33641	with bypass	46.0	90	15.0
33643	patch closure, with or without anomalous pulmonary venous drainage	30.0	90	15.0
33645	Direct or patch closure, sinus venosus, with or without anomalous pulmonary venous drainage	30.0	90	15.0
33649	Repair of tricuspid atresia (e.g., Fontan, Gago procedures)	BR		
33660	Patch closure, endocardial cushion defect, with or without repair of mitral and/or tricuspid cleft;	50.0	90	15.0
33665	with repair of separate ventricular septal defect	35.0	90	15.0
33670	Repair of complete atrioventricular canal, with or without prosthetic valve	50.0	90	15.0
33681	Closure ventricular septal defect; direct	35.0	90	15.0
33682	patch	50.0	90	15.0
33684	with pulmonary valvotomy or infundibular resection (acyanotic)	50.0	90	15.0
33688	with removal of pulmonary artery band, with or without gusset	5.0		
33690	Banding of pulmonary artery	15.0	90	15.0
33692	Total repair tetralogy of Fallot; intact outflow tract	50.0	90	15.0
33694	with outflow tract gusset	50.0	90	15.0
33696	with closure of previous shunt	8.0		
	SINUS OF VALSALVA			
33702	Repair sinus of Valsalva fistula, with bypass;	50.0	90	15.0
33710	with repair of ventricular septal defect	35.0	90	15.0
33720	Repair sinus of Valsalva aneurysm, with bypass	50.0	90	15.0
	TOTAL ANOMALOUS PULMONARY VENOUS DRAINAGE			
33730	Complete repair of anomalous venous return (supracardiac, intracardiac, or infracardiac types)	50.0	90	15.0
	(For partial anomalous return, see atrial septal defect)			
	SHUNTING PROCEDURES			
33735	Atrial septectomy; closed (Blalock-Hanlon type operation)	32.0	90	15.0
33737	open, with inflow occlusion	40.0	90	15.0
33738	transvenous method, balloon, Rashkind type (includes cardiac catheterization)	50.0	90	15.0
33750	Shunt; subclavian to pulmonary artery (Blalock-Taussig type operation)	30.0	90	15.0
33755	ascending aorta to pulmonary artery (Waterston type operation)	30.0	90	15.0
33762	descending aorta to pulmonary artery (Potts-Smith type operation)	30.0	90	15.0
33766	vena cava to pulmonary artery (Glenn type operation)	30.0	90	15.0
	TRANSPOSITION OF THE GREAT VESSELS			
33782	Repair transposition of great vessels, atrial baffle procedure (Mustard type); with bypass	50.0	90	15.0
33783	with removal of pulmonary artery band, with or without gusset	50.0	90	15.0
33784	with closure of ventricular septal defect	50.0	90	15.0
	TRUNCUS ARTERIOSUS			
33786	Total repair, truncus arteriosus (Rastelli type operation)	50.0	90	15.0
33788	Replant pulmonary artery for hemitruncus	30.0	90	15.0
	(For pulmonary artery band, see 33690)			
	AORTIC ANOMALIES			
33802	Division of aberrant vessel (vascular ring);	18.0	90	15.0
33803	with reanastomosis	20.0	90	15.0
33810	Creation of aortopulmonary window; without bypass	20.0	90	15.0
33812	with bypass	30.0	90	15.0
33820	Patent ductus arteriosus; ligation (primary procedure)	15.0	90	15.0
33822	division, under 18 years	18.0	90	15.0
33824	division, 18 years and older	20.0	90	15.0
33830	ligation or division when performed with another procedure	5.0		
33840	Excision of coarctation of aorta, with or without associated patent ductus arteriosus; with direct anastomosis	20.0	90	15.0
33845	with graft	30.0	90	15.0
33850	with shunt, left subclavian to descending aorta (Blalock-Park type operation)	30.0	90	15.0
	THORACIC AORTIC ANEURYSM			
33860	Ascending aorta graft, with bypass; with or without valve suspension	40.0	90	15.0
33865	with valve replacement	50.0	90	15.0
33870	Transverse arch graft, with bypass	60.0	90	15.0
33875	Descending thoracic aorta graft, with or without bypass	20.0	90	15.0
	PULMONARY ARTERY			
33910	Pulmonary artery embolectomy; with bypass	30.0	90	15.0
33915	without bypass	20.0	90	15.0
	MISCELLANEOUS			
33950	Cardiac transplantation, including removal of donor heart	BR		
33960	Prolonged extracorporeal circulation for cardiopulmonary insufficiency	BR		
33970	Intra-aortic balloon counterpulsation; insertion and removal	10.0	10	29
33972	monitoring only	BR		
33999	Unlisted procedure, cardiac surgery	BR		

[Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-24-041 (Order 81-28), § 296-22-120, filed 11/30/81, effective 1/1/82; 80-18-055 (Order 80-25), § 296-22-120, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-120, filed 1/30/74; Order 68-7, § 296-22-120, filed 11/27/68, effective 1/1/69.]

HEMIC AND LYMPHATIC SYSTEMS

WAC 296-22-135 Lymph nodes and lymphatic channels.

		Unit Value	Follow-up Days=	Basic Anes@
	INCISION			
*38300	Drainage of lymph node abscess or lymphadenitis, simple	*0.6	0	3.0
38305	extensive	BR+		3.0
38308	Lymphangiotomy or other operations on lymphatic channels	BR		
38380	Suture and/or ligation of thoracic duct; cervical approach	BR		
38381	thoracic approach	BR		
	EXCISION			
38500	Biopsy or excision of lymph node; unspecified (separate procedure)	1.4	15	3.0
38510	deep, cervical node	3.4	30	3.0
38520	deep cervical node with excision scalene fat pad	5.0	30	3.0
38530	internal mammary node (separate procedure)	7.0	60	3.0
38540	Dissection; deep cervical node	BR	60	3.0
38542	deep jugular node	BR	60	3.0
	(For radical cervical neck dissection, see 38720, 38721)			
38550	Excision of cystic hygroma, axillary or cervical, without deep neurovascular dissection; simple	6.0	60	3.0
38555	complex	BR+		3.0
	RADICAL LYMPHADENECTOMY (RADICAL RESECTION OF LYMPH NODES)			
38700	Suprahyoid lymphadenectomy; unilateral	12.0	60	4.0
38701	bilateral	15.0	60	4.0
38720	Cervical lymphadenectomy (complete); unilateral	19.0	60	4.0
38721	bilateral	22.0	60	4.0
38740	Axillary lymphadenectomy; superficial	8.0	60	3.0
38745	complete	14.0	60	3.0
38760	Inquinofemoral lymphadenectomy, superficial, including Cloquet's node (separate procedure); unilateral	8.0	60	3.0
38761	bilateral	12.0	60	3.0
38765	Inquinofemoral lymphadenectomy, superficial, in continuity with pelvic lymphadenectomy, including external iliac hypogastric and obturator nodes (separate procedure); unilateral	20.0	60	5.0
38766	bilateral	24.0	60	5.0
38770	Pelvic lymphadenectomy, including external iliac, hypogastric, and obturator nodes (separate procedure); unilateral	12.0	60	6.0
38771	bilateral	20.0	60	6.0
38780	Retroperitoneal lymphadenectomy, extensive, including pelvic, aortic, and renal nodes (separate procedure)	28.0	90	7.0
	(For excision and repair of lymphedematous skin and subcutaneous tissue, see 15000, 15500–15730)			
	INTRODUCTION			
38790	Injection procedure for lymphangiography; unilateral	3.0	7	
38791	bilateral	4.0	7	
38794	Cannulation, thoracic duct	BR		
38999	Unlisted procedure, hemic or lymphatic system	BR		

[Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-24-041 (Order 81-28), § 296-22-135, filed 11/30/81, effective 1/1/82; 80-18-055 (Order 80-25), § 296-22-135, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-135, filed 1/30/74; Order 68-7, § 296-22-135, filed 11/27/68, effective 1/1/69.]

DIGESTIVE SYSTEM

WAC 296-22-150 Tongue, floor of mouth.

		Unit Value	Follow-up Days=	Basic Anes@
	INCISION			
*41000	Incision and drainage of intraoral abscess, cyst, or hematoma of tongue or floor of mouth; lingual	*0.4	0	3.0
41005*	sublingual, superficial	0.4	0	4.0
41006	sublingual, deep, supramylohyoid	BR	0	4.0
41007	submental space	BR	0	4.0
41008	submandibular space	BR	0	4.0
41009	masticator space	BR	0	4.0
41010	Incision of lingual frenum (frenotomy)	0.4	15	4.0
41015	Incision and drainage of extraoral abscess, cyst, or hematoma of floor of mouth; sublingual	0.6	15	4.0
41016	submental	BR		4.0
41017	submandibular	BR		4.0
41018	masticator space	BR		4.0
	(For frenoplasty, see 41520)			
	EXCISION			
41100	Biopsy of tongue, anterior two-thirds	1.0	15	3.0
41105	posterior one-third	0.6	15	3.0
41108	Biopsy, floor of mouth	1.0	15	4.0
41110	Excision lesion of tongue; without closure	BR		4.0
41112	with closure, anterior two-thirds	BR		4.0
41113	with closure, posterior one-third	BR		4.0
41115	Excision of lingual frenum (frenectomy)	BR		4.0
41116	Excision lesion of floor of mouth	BR		4.0
41120	Glossectomy; less than one-half tongue	8.0	120	6.0
41130	Hemiglossectomy	12.0	120	6.0
41135	partial, with unilateral radical neck dissection	20.0	120	6.0
41140	complete or total, with or without tracheostomy, without radical neck dissection	18.0	120	6.0
41145	complete or total, with or without tracheostomy, with unilateral radical neck dissection	26.0	120	6.0
41150	composite procedure with resection floor of mouth and mandibular resection, without radical neck dissection	BR+		6.0
41153	composite procedure with resection floor of mouth, with suprahyoid neck dissection	BR	120	6.0
41155	composite procedure with resection floor of mouth, mandibular resection, and radical neck dissection (Commando type)	BR	120	6.0
	REPAIR			
41250*	Repair laceration up to 2 cm; floor of mouth and/or anterior two-thirds of tongue	1.0	0	4.0
41251*	posterior one-third of tongue	1.0	0	4.0
41252*	Repair laceration of tongue, floor of mouth, over 2 cm or complex	BR		4.0
	OTHER PROCEDURES			
41500	Fixation tongue, mechanical, other than suture (e.g., K-wire)	5.0	30	3.0
41510	Suture tongue to lip for micrognathia (Douglas type procedure)	10.0	30	3.0
41520	Frenoplasty (surgical revision of frenum, e.g., with Z-plasty)	BR		
	(For frenotomy, see 40806, 41010)			
41599	Unlisted procedure, tongue, floor of mouth	BR		

		Unit Value	Follow-up Days=	Basic Anes@
	(For plastic repair of tongue, see 13000–15760)			
	(For frenuloplasty, see 13000, 13140, 14040)			
	(For suture of injury, see 12020, 12140, 12240, 13000–13300)			

[Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81–24–041 (Order 81–28), § 296–22–150, filed 11/30/81, effective 1/1/82; 80–18–055 (Order 80–25), § 296–22–150, filed 12/3/80, effective 3/1/81; Order 74–7, § 296–22–150, filed 1/30/74; Order 68–7, § 296–22–150, filed 11/27/68, effective 1/1/69.]

DENTOALVEOLAR STRUCTURES

WAC 296-22-190 Stomach.

		Unit Value	Follow-up Days=	Basic Anes@
INCISION				
43500	Gastrotomy with exploration or foreign body removal	12.0	45	5.0
43510	with esophageal dilation and insertion of plastic tubes	BR		
43520	Pyloromyotomy, cutting of pyloric muscle (Fredet–Ramstedt type operation)	10.0	45	6.0
EXCISION				
43600	Biopsy of stomach; by capsule, tube, peroral (one or more specimens)	3.0	0	
43605	by laparotomy	12.0	45	5.0
43610	Local excision of ulcer or tumor	14.5	45	6.0
43620	Gastrectomy, total; including intestinal anastomosis	28.0	90	7.0
43625	with repair by intestinal transplant	34.0	90	7.0
43630	Hemigastrectomy or distal subtotal gastrectomy including pyloroplasty, gastroduodenostomy or gastrojejunostomy; without vagotomy	19.0	60	6.0
43635	with vagotomy, any type	21.0	60	6.0
43638	Hemigastrectomy or proximal subtotal gastrectomy, thoracic or abdominal approach	19.0	60	6.0
43640	Vagotomy and pyloroplasty, with or without gastrostomy	17.0	60	6.0
	(For pyloroplasty, see 43800)			
	(For vagotomy, see 64752–64760)			
ENDOSCOPY				
43700	Gastroscopy, fiberoptic, without esophagoscopy; diagnostic	4.0	7	3.0
43702	with biopsy and/or collection of specimen by brushing or washing for cytology	2.0	0	
43709	with removal of foreign body	3.0	7	3.0
43711	with removal of polyp(s)	5.0	7	3.0
43712	for control of hemorrhage	5.0	7	3.0
43714	with fulguration of mucosal lesion	5.0	7	3.0
	(For esophagogastroduodenoscopy, see 43235–43264)			
INTRODUCTION				
*43760	Change of gastrostomy tube; simple	BR		
*43765	complicated	BR		
SUTURE				
43800	Pyloroplasty	13.0	45	5.0
	(For pyloroplasty and vagotomy, see 43640)			
43810	Gastroduodenostomy	14.0	45	5.0
43820	Gastrojejunostomy	14.0	45	5.0
43825	with vagotomy any type	18.0	45	6.0
43830	Gastrostomy, temporary (tube, rubber, or plastic) (separate procedure);	13.0	45	5.0
43831	neonatal, for feeding	8.0	30	5.0
43832	Gastrostomy, permanent, with construction of gastric tube	16.0	45	5.0
43840	Gastrorrhaphy, suture of perforated duodenal or gastric ulcer, wound, or injury	13.0	45	6.0
43850	Revision of gastroduodenal anastomosis (gastroduodenostomy) with reconstruction, without vagotomy	20.0	60	5.0
43855	with vagotomy	23.0	60	6.0
43860	Revision of gastrojejunal anastomosis (gastrojejunostomy) with reconstruction; without vagotomy	20.0	60	5.0
43865	with vagotomy	23.0	60	6.0
43870	Closure of gastrostomy, surgical	12.0	45	5.0
43880	Closure of gastrocolic fistula	BR+		5.0
43885	Anterior gastropexy for hiatal hernia (separate procedure)	BR		
43999	Unlisted procedure, stomach	BR		

[Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81–24–041 (Order 81–28), § 296–22–190, filed 11/30/81, effective 1/1/82; 80–18–055 (Order 80–25), § 296–22–190, filed 12/3/80, effective 3/1/81; Order 74–7, § 296–22–190, filed 1/30/74; Order 68–7, § 296–22–190, filed 11/27/68, effective 1/1/69.]

WAC 296-22-235 Abdomen, peritoneum and omentum.

		Unit Value	Follow-up Days=	Basic Anes@
INCISION				
49000	Exploratory laparotomy, exploratory celiotomy (separate procedure) (see WAC 296–22–010, item 7b)	10.0	45	4.0
49002	Reopening of recent laparotomy incision for exploration; removal of hematoma, control of bleeding			
49010	Exploration, retroperitoneal area (separate procedure)	10.0	45	5.0
49020	Drainage of peritoneal abscess or localized peritonitis, exclusive of appendiceal abscess, transabdominal	11.0	45	4.0
	(For appendiceal abscess, see 44900)			
49040	Drainage of subdiaphragmatic or subphrenic abscess	12.0	45	5.0
49060	Drainage of retroperitoneal abscess	11.0	45	5.0
*49080	Peritoneocentesis, abdominal paracentesis; initial	*0.8	0	
*49081	subsequent	*0.6	0	
49085	Removal of peritoneal foreign body	BR		
	(For lysis of intestinal adhesions, see 44000)			
EXCISION				
49200	Excision of intra-abdominal or retroperitoneal tumors or cysts or endometriomas	14.0	60	5.0
49201	extensive	BR		
49250	Umbilectomy, omphalectomy, excision of umbilicus (separate procedure)	BR		
49255	Omentectomy, epiploectomy, resection of omentum (separate procedure)	BR		
ENDOSCOPY				
49300	Peritoneoscopy; without biopsy	4.0	15	3.0
49301	with biopsy	6.0	10	5.0

		Unit Value	Follow-up Days=	Basic Anes@
49302	Peritoneoscopy with guided transhepatic cholangiography; without biopsy	7.0	10	5.0
49303	with biopsy	8.0	10	5.0
	(For sterilization by laparoscopic technique, see 58982)			
	INTRODUCTION			
*49400	Pneumoperitoneum; initial	*1.0	0	
*49401	subsequent	*0.6	0	
*49420	Insertion of intraperitoneal cannula or catheter for drainage or dialysis; temporary	*1.0	0	
49421	permanent	BR		
49425	Peritoneal-venous shunt (e.g., LeVeen shunt)	BR		3.0
49430	Injection procedure for retroperitoneal pneumography	2.4	0	
49440	Injection procedure for pelvic pneumography	0.8	0	
	REPAIR			
	HERNIOPLASTY, HERNIORRHAPHY, HERNIOTOMY			
	(For bilateral herniorrhaphy or with bowel resection, see WAC 296-22-010, item 7)			
	(For reduction and repair of intra-abdominal hernia, see 44050)			
49500	Repair inguinal hernia, under age 5 years, with or without hydrocelectomy; unilateral	7.0	45	3.0
49501	bilateral	9.5	45	3.0
49505	Repair inguinal hernia, age 5 or over; unilateral	9.0	45	3.0
49506	bilateral	12.0	45	3.0
49510	Repair of inguinal hernia, age 5 or over; unilateral, with orchiectomy, with or without implantation of prosthesis	9.5	45	3.0
49515	with excision of hydrocele or spermatocele	9.5	45	3.0
49520	recurrent	10.0	45	3.0
49525	sliding	10.0	45	3.0
49530	incarcerated	12.0	45	3.0
49535	strangulated	12.0	45	3.0
49540	Repair lumbar hernia	10.0	45	3.0
49550	Repair femoral hernia, groin incision; unilateral	9.0	45	3.0
49551	bilateral	14.0	45	3.0
49552	Repair femoral hernia, Henry approach; unilateral	10.0	45	3.0
49553	bilateral	15.0	45	3.0
49555	Repair femoral hernia, recurrent, any approach	10.0	45	3.0
49560	Repair ventral hernia (separate procedure);	11.0	45	3.0
49565	recurrent	12.0	45	3.0
49570	Repair epigastric hernia, properitoneal fat (separate procedure); simple	3.0	45	3.0
49575	complex	7.0	45	3.0
49580	Repair umbilical hernia; under age 5 years	7.0	45	3.0
49581	age 5 or over	8.5	45	3.0
49590	Repair spigelian hernia	9.0	45	3.0
49600	Repair of omphalocele; small, with primary closure	9.5	45	6.0
49605	large or gastroschisis, with or without prosthesis	14.5	60	9.0
49606	with staged closure of prosthesis, reduction in operating room, under anesthesia	BR		9.0
49610	Repair of omphalocele (Gross type operation); first stage	12.0	60	8.0
49611	second stage	12.0	60	7.0
	(For diaphragmatic or hiatal hernia repair, see 39500-39531)			
49630	Reduction of torsion, omentum	BR		
49635	Omentopexy for establishing collateral circulation in portal obstruction	BR		
49640	Omentoplasty (omental flap reconstruction for transfer of omentum with intact blood supply to thorax, neck or axilla)	BR		
	SUTURE			
49900	Suture, secondary, of abdominal wall for evisceration or dehiscence	6.0	30	5.0
	(For suture of ruptured diaphragm, see 39540-39541)			
49910	Suture of omentum, omentorrhaphy for wound or injury	BR		
49999	Unlisted procedure, abdomen, peritoneum and omentum	BR		

[Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-24-041 (Order 81-28), § 296-22-235, filed 11/30/81, effective 1/1/82; 80-18-055 (Order 80-25), § 296-22-235, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-235, filed 1/30/74; Order 68-7, § 296-22-235, filed 11/27/68, effective 1/1/69.]

URINARY SYSTEM

(For supply of anticarcinogenic agents, use 99070 in addition to primary procedure)

WAC 296-22-255 Bladder.

		Unit Value	Follow-up Days=	Basic Anes@
	INCISION			
51000	Aspiration of bladder by needle	0.4	0	
*51005	Aspiration of bladder; by trocar or intracatheter	*1.0	0	
51010	with insertion of suprapubic catheter	2.0	30	5.0
51020	Cystotomy or cystostomy; with fulguration and/or insertion of radioactive material	14.5	90	5.0
51030	with cryosurgical destruction of intravesical lesion	14.5	90	5.0
51040	Cystostomy, cystotomy with drainage	12.0	90	5.0
51045	Cystotomy, with insertion of ureteral catheter (separate procedure)	14.5	90	5.0
51050	Cystolithotomy, cystotomy with removal of calculus, without vesical neck resection	14.5	90	5.0
51060	Transvesical ureterolithotomy	19.0	90	5.0
51065	Cystotomy, with stone basket extraction of ureteral calculus	12.0	30	5.0
51080	Drainage of perivesical or prevesical space abscess	8.0	90	5.0
	EXCISION			
51500	Excision of urachal cyst or sinus, with or without umbilical hernia repair	14.0	90	5.0
51520	Cystotomy; for simple excision of vesical neck (separate procedure)	16.0	90	5.0
51525	for excision of bladder diverticulum, single or multiple (separate procedure)	20.0	90	5.0
51530	for excision of bladder tumor	16.0	90	5.0
	(For transurethral excision, see 52200-52240)			
51535	Cystotomy for excision, incision or repair of ureterocele; unilateral	16.0	90	5.0
51536	bilateral	18.0	90	5.0
	(For transurethral excision, see 52300)			
51550	Cystectomy, partial; simple	18.0	90	6.0
51555	complicated (e.g., postradiation, previous surgery, difficult location)	20.0	90	6.0

		Unit Value	Follow-up Days=	Basic Anes@
51565	Cystectomy, partial, with reimplantation of ureter(s) into bladder (ureter–oneocystostomy)	24.0	90	6.0
51570	Cystectomy, complete; (separate procedure)	26.0	90	6.0
51575	with bilateral pelvic lymphadenectomy, including external iliac, hypogastric and obturator nodes	34.0	90	6.0
51580	Cystectomy, complete with ureterosigmoidostomy or ureterocutaneous transplantations;	34.0	120	7.0
51585	with bilateral pelvic lymphadenectomy, including external iliac, hypogastric and obturator nodes	40.0	120	7.0
51590	Cystectomy, complete, with ureteroileal conduit or sigmoid bladder, including bowel anastomosis;	44.0	120	7.0
51595	with bilateral lymphadenectomy, including external iliac, hypogastric and obturator nodes	50.0	120	7.0
51597	Pelvic exenteration, complete, for vesical, prostatic, or urethral malignancy, with removal of bladder and ureteral transplantations, with or without hysterectomy and/or abdominoperineal resection of rectum and colon and colostomy, or any combination thereof	BR		
	(For supplemental skills of two surgeons, see WAC 296–22–010, item 5b, and modifier –62)			

INTRODUCTION

	(For bladder catheterization, see 53670–53675)			
51600	Injection procedure for cystography or voiding urethracystography	0.2	0	
51605	Injection procedure and placement of chain for contrast and/or chain urethrocystography	0.4	0	
51610	Injection procedure for retrograde urethrocystography	0.3	0	
	(For injection procedure for retroperitoneal pneumography, see 49430)			
*51700	Bladder irrigation, simple, lavage and/or instillation	*0.2	0	
51705*	Change of cystostomy tube; simple	0.3	0	
51710*	complicated	BR		
51720	Bladder instillation of anticarcinogenic agent (including detention time)	0.8	0	

URODYNAMICS

The following section (51725–51796) lists procedures that may be used separately or in many and varied combinations. All of the presently known urodynamic procedures are listed as are some of their most frequently used combinations. When multiple procedures are performed in the same investigative session, modifier '–51' should be employed.

All procedures in this section imply that these services are performed by, or are under the direct supervision of, a physician and that all instruments, equipment, fluids, gases, probes, catheters, technician's fees, medications, gloves, trays, tubing and other sterile supplies be provided by the physician. When the physician only interprets the results and/or operates the equipment, a p.c. (professional component modifier '–26') should be used to identify physicians' services.

		Unit Value	Follow-up Days=	Basic Anes@

Only the urodynamic testing is included in this section. The nerve blocks that are listed may be pudendal, unilateral or bilateral; sacral, unilateral or bilateral, single or multiple; or subarachnoid and epidural of the sacral segments. They are listed in the neurosurgical section 62274–62279 and 64430–64441.

CYSTOMETROGRAM STUDIES (CMG)

As a single procedure (separate procedure) performed in any body position, including residual urine volume, volume at first urge to void, bladder capacity, tracing (if available), interpretation and report. (For simultaneous electromyogram see 51786 and 51788)

51725	Simple cystometrogram (e.g., spinal manometer)			BR
51726	Complex cystometrogram (e.g., calibrated electronic equipment); with gas			
51727	with liquid			BR
51728	with simultaneous (rectal, gastric or intraperitoneal) "intra–abdominal" pressure			BR
51729	with voiding pressure			BR
51730	with simultaneous "intra–abdominal" and voiding pressure			BR
51731	before and after pharmacological testing, with gas			BR
51732	before and after pharmacological testing, with liquid			BR
51733	before and after nerve block, gas or liquid			BR

UROFLOWMETRIC STUDIES (UFR)

As a single procedure (separate procedure) performed in any body position, including volume, flow rate, and tracing (if available), interpretation and report. (For simultaneous electromyogram see 51787, 51788). (For simultaneous voiding pressure see 51795–51796)

EXTERNAL MEASUREMENTS

51736	Simple uroflowmetry (e.g., stop–watch flow rate, mechanical uroflowmeter);			BR
51737	before and after pharmacological testing			BR
51738	before and after nerve block			BR
51739	Sound recording of external stream (e.g., Lyons type)			BR
51741	Electronic uroflowmetry (e.g., calibrated electronic equipment); initial recording			.8
51742	additional recordings			BR
51743	before and after pharmacological testing			BR
51744	before and after nerve block			BR
51746	Complex uroflowmetry (e.g., urodropspectrometry, urodynamometry, stream anemometry); initial recording			1.4
51747	additional recordings			BR
51748	before and after pharmacological testing			BR
51749	before and after nerve block			BR

INTERNAL STREAM MEASUREMENTS

51751	Continuous wave or pulsed Doppler of urethra during urination to determine local stream velocity, flow rate and urethral diameter; one voiding, one transducer			BR
51752	additional voidings, one transducer			BR
51753	additional transducers, one voiding			BR
51754	additional transducers, additional voidings			BR

		Unit Value	Follow-up Days=	Basic Anes@
51755	before and after pharmacological testing, one transducer	BR		
	(For additional transducers, see 51753, 51754)			
51756	before and after nerve block, one transducer	BR		
	(For additional transducers, see 51753, 51754)			
51758	Rotating scan Doppler during urination to provide videotape or computer printout of dynamic urethral cross section; one voiding	BR		
51759	additional voidings	BR		
51761	Acoustical measurements of urethra during urination to determine local velocity, flow rate, urethral diameter; one voiding, one transducer	BR		
51762	additional voidings, one transducer	BR		
51763	additional transducers, one voiding	BR		
51764	additional transducers, additional voidings	BR		
51765	before and after pharmacological testing, one transducer	BR		
	(For additional transducers, see 51763, 51764)			
51766	before and after nerve block, one transducer	BR		
	(For additional transducers, see 51763, 51764)			
51768	Urethral fluid conductance measurement during urination (e.g., to determine local urethral volume for presence of stricture or dynamic testing of sphincter action); one location, one voiding	BR		
51769	additional locations	BR		

URETHRAL PRESSURE PROFILE STUDIES – URETHRAL CLOSURE PRESSURE PROFILE (UPP)

As a single procedure (separate procedure) performed in any body position, including up to three recordings of urethral length and pressure, tracing (if available), interpretation and report. Any initial volume.

51772	Urethral pressure profile, gas or liquid; initial recording	BR		
51773	additional recordings	BR		
51774	Urethral pressure profile, gas or liquid, with simultaneous bladder pressure; initial recording	BR		
51775	additional recordings	BR		
51776	Urethral pressure profile, gas or liquid, with simultaneous (rectal, gastric, or intraperitoneal) "intra-abdominal" pressure; initial recording	BR		
51777	additional recordings	BR		
51778	Urethral pressure profile, gas or liquid, with simultaneous bladder and "intra-abdominal" pressure; initial recording			
51779	additional recordings	BR		
51780	Urethral pressure profile, gas or liquid, before and after pharmacological testing; up to 6 recordings	BR		
51781	additional recordings	BR		
51782	Urethral pressure profile, gas or liquid, before and after nerve block; up to 6 recordings	BR		
51783	additional recordings	BR		

ELECTROMYOGRAPHIC STUDIES (EMG)

Anal or urethral sphincter, detrusor, urethra, perineum or abdominal musculature. (Usually not a separate procedure).

51785	Electromyography; one lead using needle, wire, anal plug or catheter	BR		
51786	during cystometrogram	BR		
51787	during oroflowmetry	BR		
51788	during cystometrogram and uroflowmetry	BR		
51789	additional leads	BR		
51790	before and after pharmacological testing	BR		
51791	before and after nerve block	BR		
51792	Stimulus evoked response (e.g., measurement of bulbocavernosus reflex latency time)	BR		

VOIDING PRESSURE STUDIES – BLADDER VOIDING PRESSURE (VP)

As a single procedure (separate procedure) performed in any body position, including residual fluid volume, bladder volume at time of voiding, tracing (if available), interpretation and report.

51795	Voiding pressure study with liquid or gas; with pressure probe inserted per urethra	BR		
51796	with pressure probe inserted per suprapubic puncture	BR		
	(For insertion of pressure probe by suprapubic puncture, see 51005)			
	(For simultaneous CMG, see 51729, 51730)			
	For simultaneous UPP, see 51774, 51775, 51778, 51779)			

REPAIR

51800	Cystoplasty or cystourethroplasty, plastic operation on bladder and/or vesical neck (anterior Y-plasty, vesical fundus resection), any procedure, with or without wedge resection of posterior vesical neck	20.0	90	5.0
51820	Cystourethroplasty with unilateral or bilateral ureteroneocystostomy	30.0	90	5.0
51840	Anterior vesicourethropexy, or urethropexy (Marshall-Marchetti type); simple	14.5	90	4.0
51841	complicated (e.g., secondary repair)	21.0	90	4.0
	(For urethropexy (Peyreya type), see 57289)			
51860	Cystorrhaphy, suture of bladder wound, injury or rupture; simple	14.5	90	4.0
51865	complicated	BR+		6.0
51880	Closure of cystostomy (separate procedure)	8.0	90	3.0
51900	Closure of vesicovaginal fistula, abdominal approach	22.0	90	5.0
	(For vaginal approach, see 57320-57330)			
51920	Closure of vesicouterine fistula;	20.0	90	5.0
51925	with hysterectomy	20.0	90	5.0
	(For closure of vesicoenteric fistula, see 44660, 44661)			
	(For closure of rectovesical fistula, see 45800-45805)			
51940	Closure of exstrophy (see also 54390)	BR+		5.0
51960	Enterocystoplasty, including bowel anastomosis	30.0	90	5.0
	(For supplemental skills of two surgeons, see WAC 296-22-010, item 5b, and modifier -62)			
51980	Cutaneous vesicostomy	18.0	90	5.0

ENDOSCOPY – CYSTOSCOPY, URETHROSCOPY, CYSTOURETHROSCOPY

NOTES

Endoscopic descriptions are listed so that the main procedure can be identified without having to list all the minor related functions performed at the same time. For example: meatotomy, urethral calibration and/or dilation, urethroscopy, and cystoscopy prior to a

transurethral resection of prostate; ureteral catheterization following extraction of ureteral calculus; internal urethrotomy and bladder neck fulguration when performing a cystourethroscopy for the female urethral syndrome. When the secondary procedure requires significant additional time and effort, it may be identified by the addition of modifier '-22.' For example: Urethrotomy performed for a documented pre-existing stricture or bladder neck contracture.

		Unit Value	Follow-up Days=	Basic Anes@
52000	Cystourethroscopy (separate procedure), office;	1.2	7	3.0
52005	with ureteral catheterization, with or without irrigation, instillation, or ureterpyelography, exclusive of radiologic service	1.6	7	3.0
52007	with ureteral catheterization and brush biopsy of ureter or renal pelvis for cytology	BR	3	3.0
52010	with ejaculatory duct catheterization	1.6	7	
52100	Cystourethroscopy, hospital	2.0	7	3.0
52105	with ureteral catheterization, with or without irrigation, instillation, or ureteropyelography exclusive of radiologic service	3.6	7	3.0
52107	with ureteral catheterization and brush biopsy of ureter or renal pelvis for cytology	BR	3	3.0
52110	with ejaculatory duct catheterization	3.6	7	3.0
52190	Differential quantitative and chemical renal function test (Howard or Stamey type)	SV.&		3.0
	TRANSURETHRAL SURGERY (URETHRA, PROSTATE, BLADDER, URETER)			
52202	Cystourethroscopy, with biopsy; hospital	2.6	7	3.0
52204	office	2.0	7	3.0
52212	Cystourethroscopy, with fulguration (including cryosurgery) of trigone, bladder neck, prostatic fossa, urethra, or periurethral glands; hospital	2.6	7	3.0
52214	office	2.0	7	3.0
52222	Cystourethroscopy, with fulguration (including cryosurgery) or treatment of MINOR (less than 0.5 cm) lesion(s), with or without biopsy; hospital	2.6	7	3.0
52224	office	2.0	7	3.0
52232	Cystourethroscopy, with fulguration (including cryosurgery) and/or resection of SMALL bladder tumor(s) (0.5 cm to 2.0 cm); hospital	6.0	30	3.0
52234	office	5.0	30	3.0
52235	Cystourethroscopy, with fulguration (including cryosurgery) and/or resection of; MEDIUM bladder tumor(s) (2.0-5.0 cm)	12.0	30	3.0
52240	LARGE bladder tumor(s)	18.0	30	5.0
52250	Cystourethroscopy with insertion of radioactive substance, with or without biopsy or fulguration	6.0	30	3.0
52260	Cystourethroscopy, with dilation of bladder for interstitial cystitis; general or conduction (spinal) anesthesia	3.0	30	3.0
52265	local anesthesia	1.4	7	
52270	Cystourethroscopy, with internal urethrotomy; female	4.0	45	3.0
52275	male	4.0	45	3.0
52276	Cystourethroscopy, with direct vision internal urethrotomy	4.0	45	3.0
52277	Cystourethroscopy, with resection of external sphincter (sphincterotomy)	6.0	30	3.0
52280	Cystourethroscopy, with calibration and/or dilation of urethral stricture or stenosis, with or without meatotomy, and injection procedure for cystography male or female; hospital	3.0	7	3.0
52281	office	2.4	7	
52282	Cystourethroscopy, with steroid injection into stricture; hospital	3.2	7	3.0
52283	office	2.0	7	
52285	Cystourethroscopy for treatment of the female urethral syndrome with any or all of the following: urethral meatotomy, urethral dilation, internal urethrotomy, lysis of urethrovaginal septal fibrosis, lateral incisions of the bladder neck, and fulguration of urethral polyps, bladder neck, and trigone	3.4	7	3.0
52290	Cystourethroscopy; with ureteral meatotomy, unilateral or bilateral	4.0	30	3.0
52300	with resection or fulguration of ureterocele, unilateral or bilateral	6.0	30	3.0
52305	with incision or resection of orifice of bladder diverticulum, single or multiple	6.0	30	3.0
52310	Cystourethroscopy, with removal of foreign body or calculus from urethra or bladder; simple	4.0	30	3.0
52315	complicated	BR+		3.0
52320	Cystourethroscopy, with removal of ureteral calculus	7.0	30	3.0
52330	with manipulation, without removal of ureteral calculus	5.0	30	3.0
52332	with insertion of indwelling ureteral stent (e.g., Gibbons type)	BR	7	3.0
52335	Cystourethroscopy, with ureteroscopy and/or pyeloscopy	4.2	7	3.0
52340	Cystourethroscopy, with incision, fulguration or resection of bladder neck and/or posterior urethra (congenital valves, obstructive hypertrophic mucosal folds)	6.0	30	3.0
52500	Transurethral resection of bladder neck, (separate procedure)	10.0	90	4.0
52601	Transurethral resection of prostate, including control of post-operative bleeding during the hospitalization, complete (vasectomy, meatotomy, cystourethroscopy, urethral calibration and/or dilation, and internal urethrotomy are included)	20.0	90	5.0
52605	Transurethral fulguration for postoperative bleeding after leaving hospital; (in hospital)	4.2	0	3.0
52606	office	2.4	0	
	(For other approaches, see 55801-55845)			
52612	Transurethral resection of prostate; first stage of two-stage resection (partial resection)	15.0	90	5.0
52614	second stage of two-stage resection (resection completed)	11.0	90	5.0
52620	Transurethral resection; of residual obstructive tissue after 90 days postoperative	6.0	90	5.0
52630	of regrowth of obstructive tissue longer than one year postoperative	20.0	90	5.0
52640	of postoperative bladder neck contracture	10.0	90	5.0
52650	Transurethral cryosurgical removal of prostrate (postoperative irrigations and aspirations of sloughing tissue included)	20.0	120	5.0
52700	Transurethral drainage of prostatic abscess	8.0	60	5.0
52800	Litholapaxy, crushing of calculus in bladder and removal of fragments; simple, small (less than 2.5 cm)	10.0	30	3.0
52805	complicated or large (over 2.5 cm)	14.0	30	3.0

[Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-24-041 (Order 81-28), § 296-22-255, filed 11/30/81, effective 1/1/82; 80-18-055 (Order 80-25), § 296-22-255, filed 12/3/80, effective

3/1/81; Order 74-7, § 296-22-255, filed 1/30/74; Order 68-7, § 296-22-255, filed 11/27/68, effective 1/1/69.]

FEMALE GENITAL SYSTEM

(For pelvic laparotomy, see 49000)

(For endometriomas resection, see 49200, 49201)

(For paracentesis, see 49080, 49081)

(For injection procedure for pelvic pneumography, see 49440)

(For secondary closure of abdominal wall evisceration or disruption, see 49900)

(For chemotherapy, see 90790–90793)

WAC 296-22-333 Oviduct.

		Unit Value	Follow-up Days=	Basic Anes@
INCISION				
58600	Transection of fallopian tube, abdominal or vaginal approach, unilateral or bilateral	12.0	45	4.0
58605	Transection of fallopian tube, abdominal or vaginal approach, postpartum, during same hospitalization (separate procedure)	7.0	45	4.0
	(For laparoscopic procedures, see 58980–58987)			
58611	Ligation or transection of fallopian tube(s) when done at the time of Cesarean section or intra-abdominal surgery (not a separate procedure, included in major procedure.)			
58615	Occlusion of fallopian tube(s) by device (e.g., band, clip, Falope ring) vaginal or suprapubic approach	BR		4.0
	(For laparoscopic approach, see 58983)			
58618	Lysis of adnexal adhesions other than by laparoscopy	BR		
	(For laparoscopic approach, see 58985)			
EXCISION				
58700	Salpingectomy, complete or partial, unilateral or bilateral (separate procedure)	12.0	45	4.0
58720	Salpingo-oophorectomy, complete or partial, unilateral or bilateral (separate procedure)	12.0	45	4.0
58740	Salpingoplasty, unilateral or bilateral (separate procedure)	14.0	45	4.0

[Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-24-041 (Order 81-28), § 296-22-333, filed 11/30/81, effective 1/1/82; 80-18-055 (Order 80-25), § 296-22-333, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-333, filed 1/30/74.]

MATERNITY CARE AND DELIVERY

WAC 296-22-340 Maternity care and delivery.

NOTES

The services normally required in uncomplicated maternity cases include antepartum care, delivery and postpartum care.

Antepartum care includes usual prenatal services (initial and subsequent history, physical examinations, recording of weight, blood pressure, fetal heart tones, routine chemical urinalyses, maternity counseling).

Delivery includes vaginal delivery (with or without episiotomy, with or without forceps or breech delivery) or Cesarean section, and resuscitation of new born infant when necessary.

Postpartum care includes hospital and office visits following vaginal or Cesarean section delivery.

For medical complications of pregnancy (toxemia, cardiac problems, neurological problems or other problems requiring additional or unusual services or requiring hospitalization), see services in MEDICINE section. For surgical complications of pregnancy not listed below, see appropriate procedures in SURGERY.

If a physician provides all or part of the antepartum and/or postpartum patient care but does not perform the delivery due to termination of pregnancy by abortion or referral to another physician for delivery, see 59420–59430.

(For circumcision of newborn, see 54150–54160)

		Unit Value	Follow-up Days=	Basic Anes@
INCISION				
59000	Amniocentesis for diagnostic purposes, abdominal approach	1.0	0	
59010*	Amnioscopy	1.0	0	
59011*	Amnioscopy (intraovular)	BR	0	
59020*	Fetal oxytocin stress test	1.0	0	
59025	Fetal nonstress test	1.0		
59030*	Fetal scalp blood sampling;	1.0	0	
59031*	repeat	0.5	0	
59050	Initiation and/or supervision of internal fetal monitoring during labor by consultant	1.0	0	
EXCISION				
59100	Hysterotomy, abdominal, for removal of hydatidiform mole;	14.0	45	5.0
59101	with tubal ligation	14.0	45	6.0
59105	Hysterotomy, abdominal, for legal abortion;	16.0	45	6.0
59106	with tubal ligation	18.0	45	6.0
EXCISION				
59120	Surgical treatment of ectopic pregnancy; tubal, requiring salpingectomy and/or oophorectomy, abdominal or vaginal approach	14.0	45	5.0
59121	tubal, without salpingectomy and/or oophorectomy	BR		
59125	ovarian, requiring oophorectomy and/or salpingectomy	BR+		5.0
59126	ovarian, without oophorectomy and/or salpingectomy	BR		
59130	abdominal	BR+		5.0
59135	interstitial, uterine pregnancy requiring hysterectomy, total or subtotal	BR+		5.0

		Unit Value	Follow-up Days=	Basic Anes@
59140	cervical	BR+		5.0
59160	Dilation and curettage for postpartum hemorrhage (separate procedure)	4.0	15	3.0
	INTRODUCTION			
	(For intrauterine fetal transfusion, see 36460)			
	(For introduction of hypertonic solution and/or prostaglandins to initiate labor, see 59850)			
	REPAIR			
	(For tracheloplasty, see 57700)			
59300	Episiotomy or vaginal repair only, by other than delivering physician; simple	2.0	0	3.0
59305	extensive	BR+		3.0
59350	Hysterorrhaphy of ruptured uterus; (separate procedure)	BR		
59351	following dilation and curettage, including both procedures	BR		
	DELIVERY, ANTEPARTUM AND POSTPARTUM CARE			
59400	Total obstetrical care (all-inclusive, "global" care) includes antepartum care, vaginal delivery (with or without episiotomy, and/or forceps or breech delivery) and postpartum care:	8.0	45	3.0
59410	Vaginal delivery only (with or without episiotomy, forceps or breech delivery) including in-hospital postpartum care (separate procedure)	4.0	45	3.0
59420	Antepartum care only (separate procedure)	Sv.&		
59430	Postpartum care only (separate procedure)	Sv.&		
	CESAREAN SECTION			
	(For standby attendance of infant, see 99151)			
59500	Cesarean section, low cervical, including in-hospital postpartum care; (separate procedure)	10.0	7	5.0
59501	including antepartum and postpartum care	13.0	45	5.0
59520	Cesarean section, classic, including in-hospital postpartum care; (separate procedure)	10.0	7	5.0
59521	including antepartum and postpartum care	13.0	45	5.0
59540	Cesarean section, extraperitoneal, including in-hospital postpartum care; (separate procedure)	12.0	7	5.0
59541	including antepartum and postpartum care	16.0	45	5.0
59560	Cesarean section with hysterectomy, subtotal, including in-hospital postpartum care; (separate procedure)	12.0	7	6.0
59561	including antepartum and postpartum care	16.0	45	6.0
59580	Cesarean section with hysterectomy, total, including in-hospital postpartum care; (separate procedure)	12.0	7	6.0
59581	including antepartum and postpartum care	16.0	45	6.0
	ABORTION			
59800	Treatment of abortion, first trimester; completed medically	Sv.&		
59801	completed surgically (separate procedure)	4.0	45	3.0
59810	Treatment of abortion, second trimester; completed medically	Sv.&		
59811	completed surgically (separate procedure)	4.0	45	3.0
59820	Treatment of missed abortion, any trimester, completed medically or surgically	Sv.&		3.0
59830	Treatment of septic abortion	Sv.&		
59840	Legal (therapeutic) abortion, by dilation and curettage, and/or vacuum extraction	6.0	45	3.0
59841	Legal (therapeutic) abortion, by dilation and evacuation	6.0	45	3.0
59850	Legal (therapeutic) abortion, by one or more intra-amniotic injections (amniocentesis-injections) (including hospital admission and visits, delivery of fetus and secundines);	6.0	45	5.0
59851	with dilation and curettage	BR		
59852	with hysterotomy (failed saline)	BR		
	OTHER PROCEDURES			
59899	Unlisted procedure, maternity care and delivery	BR		

[Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-24-041 (Order 81-28), § 296-22-340, filed 11/30/81, effective 1/1/82; 80-18-055 (Order 80-25), § 296-22-340, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-340, filed 1/30/74; Order 68-7, § 296-22-340, filed 11/27/68, effective 1/1/69.]

NERVOUS SYSTEM

WAC 296-22-365 Skull, meninges, and brain.

		Unit Value	Follow-up Days=	Basic Anes@
	(For injection procedure for cerebral angiography, see 36100-36220)			
	(For injection procedure for ventriculography, see 61025, 61030, 61120, 61130)			
	(For injection procedure for pneumoencephalography, see 61053, 62286)			
	PUNCTURE FOR INJECTION, DRAINAGE OR ASPIRATION			
*61000	Subdural tap through fontanelle (infant); unilateral or bilateral; initial	*2.0	0	
*61001	subsequent taps	*1.4	0	
*61020	Ventricular puncture through previous burr hole, fontanelle, or implanted ventricular catheter/reservoir; without injection	*2.0	0	
61025	with gas injection procedure for ventriculography	5.0	7	7.0
61030	with injection procedure for positive contrast ventriculography	5.6	7	7.0
61045*	with injection procedure of dye or radioactive material for CSF flow study, including lumbar puncture	5.6	7	7.0
*61050	Cisternal or lateral cervical puncture; (separate procedure)	*1.8	0	
61051*	with injection of dye or drug	2.5	0	6.0
61052*	with injection of gas or contrast media for myelography	3.0	0	6.0
61053*	with injection of gas or contrast media for cisternography or pneumoencephalography	4.5	0	6.0
61070*	Puncture of shunt tubing or reservoir for aspiration or injection procedure	2.0	0	0
	BURR HOLE(S) OR TREPHINE			
61105	Twist drill hole for subdural or ventricular puncture; not followed by other surgery	BR		
61106	followed by other surgery	BR		
61120	Burr hole(s) for ventricular puncture (including injection of gas, contrast media, dye, or radioactive material); not followed by other surgery	10.0	30	7.0
61130	followed by other surgery	7.0	0	

		Unit Value	Follow-up Days=	Basic Anes@
61140	Burr hole(s) or trephine; for biopsy of brain or intracranial lesion	20.0	0	5.0
61150	Burr hole(s) for drainage of brain abscess or cyst	24.0	90	9.0
61151	subsequent tappingaspiration of intracranial abscess or cyst	2.0	0	4.0
61154	Burr hole(s); for evacuation and/or drainage of hematoma, extradural or subdural; unilateral	26.0	90	9.0
61155	bilateral	39.0	90	9.0
61156	for aspiration of hematoma or cyst, intracerebral	25.0	90	9.0
61210	for implanting ventricular catheter, reservoir, or pressure recording device	8.0	30	7.0
61250	Burr hole(s) or trephine, supratentorial, exploratory, not followed by other surgery; unilateral	15.0	30	7.0
61251	bilateral	22.0	30	7.0
61253	Burr hole(s) or trephine, infratentorial, unilateral or bilateral	BR		
	(If burr hole(s) or trephine followed by craniotomy at same operative session, use 61304–61321; do not use 61250, 61251, or 61253)			
	CRANIECTOMY OR CRANIOTOMY			
61304	Craniectomy or craniotomy, exploratory; supratentorial	34.0	90	9.0
61305	infratentorial (posterior fossa)	40.0	90	10.0
61310	Craniectomy or craniotomy, evacuation of hematoma, extradural, subdural or intracerebral; supratentorial	28.0	90	13.0
61311	infratentorial	26.0	90	13.0
61320	Craniectomy or craniotomy, drainage of intracranial abscess; supratentorial	28.0	90	11.0
61321	infratentorial	28.0	90	13.0
61330	Exploration or decompression of orbit only, transcranial approach; unilateral	26.0	90	9.0
61331	bilateral	BR		
61332	Exploration of orbit (transcranial approach); with biopsy	BR		
61333	with removal of lesion	BR		
61334	with removal of foreign body	BR		
61340	Other cranial decompression (e.g., subtemporal), supratentorial; unilateral	16.0	90	9.0
61341	bilateral	24.0	90	9.0
61345	Other cranial decompression, posterior fossa	22.0	90	13.0
	(For orbital decompression by lateral wall approach, Kroenlein type, see 67440)			
61440	Craniotomy for section of tentorium cerebelli (separate procedure)	BR		
61450	Craniectomy for section, compression, or decompression of sensory root of gasserian ganglion	28.0	90	10.0
61458	Craniectomy, suboccipital; for exploration or decompression of cranial nerves	30.0	90	10.0
61460	for section of one or more cranial nerves	34.0	90	10.0
61470	for medullary tractotomy	40.0	90	11.0
61480	for mesencephalic tractotomy or pedunculotomy	40.0	90	11.0
61490	Craniotomy for lobotomy, including cingulotomy; unilateral	24.0	90	9.0
61491	bilateral	30.0	90	11.0
61500	Craniectomy, trephination, bone flap craniotomy; for tumor of skull	BR+		8.0
61510	for excision of brain tumor, supratentorial; except meningioma	34.0	90	12.0
61512	for excision of meningioma, supratentorial	40.0	90	11.0
61514	for excision of brain abscess, supratentorial	32.0		9.0
61516	for excision or fenestration of cyst, supratentorial	30.0		11.0
61518	Craniectomy for excision of brain tumor, infratentorial or posterior fossa; except meningioma or cerebellopontine angle tumor	40.0	90	11.0
61519	meningioma	44.0	90	13.0
61520	cerebellopontine angle tumor	40.0	90	11.0
61522	Craniectomy, infratentorial or posterior fossa; for excision of brain abscess	30.0	90	13.0
61524	for excision or fenestration of cyst	30.0	90	13.0
61526	Craniectomy, bone flap craniotomy, transtemporal (mastoid) for excision of cerebellopontine angle tumor;	30.0	90	13.0
61530	combined with middle/posterior fossa craniotomy	BR		
61532	Craniectomy, trephination, bone flap craniotomy; for excision of intracranial vascular malformation	BR+		13.0
61534	for excision of cerebral cortical scar	BR+		9.0
61536	for excision of cerebral cortical scar, with electrocorticography during surgery	BR+		9.0
61538	for lobectomy with electrocorticography during surgery, temporal lobe	38.0	90	9.0
61539	for lobectomy with electrocorticography during surgery, other than temporal lobe, partial or total	38.0	90	9.0
61542	for hemispherectomy	48.0	90	9.0
61544	for excision or coagulation of choroid plexus	30.0	90	11.0
61546	Craniotomy for hypophysectomy; intracranial approach	34.0	90	10.0
61548	Hypophysectomy, transnasal or transseptal approach, nonstereotactic	BR+		4.0
	(For stereotaxis, see 61715)			
61550	Craniectomy for craniostenosis; single suture	18.0	90	9.0
61552	multiple sutures, one stage	22.0	90	9.0
61553	each stage of multiple stages	BR		
61555	Reconstruction of skull by multiple bone flaps	BR		
	(For sequestrectomy for osteomyelitis, see 21020)			
61570	(Craniectomy or craniotomy for excision of foreign body from brain	BR		
61571	for penetrating wound of brain	BR		
	SURGERY FOR ANEURYSM OR ARTERIOVENOUS MALFORMATION			
	(For excision of vascular malformation, see 61532)			
61700	Surgery of intracranial aneurysm, intracranial approach; carotid circulation	40.0	90	13.0
61702	vertebral–basilar circulation	44.0	90	15.0
61703	Surgery of intracranial aneurysm, cervical approach by application of occluding clamp to cervical carotid artery (Selverstone–Crutchfield type)	BR		7.0
	(For cervical approach for direct ligation of carotid artery, see 37600–37606)			
61705	Surgery of aneurysm, vascular malformation or carotid–cavernous fistula; by intracranial and cervical occlusion of carotid artery	32.0	90	15.0
61708	by intracranial electrothrombosis	30.0	90	9.0
61710	by intra–arterial embolization, injection procedure	24.0	90	9.0
61711	Anastomosis, arterial, extracranial–intracranial (e.g., middle cerebral/cortical) arteries	36.0	90	15.0
	(For carotid or vertebral thromboendarterectomy, see 35300)			
61712	Microdissection, intracranial or spinal procedure (list separately in addition to code for primary procedure)	BR		
	STEREOTAXIS			
61715	Stereotactic hypophysectomy, transnasal	24.0	90	5.0
	(For nonstereotaxis, see 61548)			

		Unit Value	Follow-up Days=	Basic Anes@
61720	Stereotactic lesion, any method, including burr hole(s) and localizing and recording techniques, single or multiple stages; globus pallidus or thalamus	38.0	90	8.0
61735	subcortical structure other than globus pallidus or thalamus	38.0	90	8.0
61750	Stereotactic biopsy, aspiration or excision, including burr hole(s) for intracranial lesion	BR		8.0
61780	Stereotactic localization, including burr hole(s), ventriculography and introduction of subcortical electrodes	BR+		8.0
61790	Stereotactic lesion of gasserian ganglion, percutaneous, by neurolytic agent (e.g., alcohol, thermal, electrical, radiofrequency)	18.0	90	7.0
	NEUROSTIMULATORS, INTRACRANIAL			
61850	Burr or twist drill hole(s) for implantation of neurostimulator electrodes; cortical	15.0	30	8.0
61855	subcortical	18.0	30	8.0
61860	Craniectomy or craniotomy for implantation of neurostimulator electrodes, cerebral; cortical	15.0	30	6.0
61865	subcortical	18.0	30	6.0
61870	Craniectomy for implantation of neurostimulator electrodes, cerebellar; cortical	18.0	30	7.0
61875	subcortical	19.0	30	7.0
61880	Revision or removal of intracranial neurostimulator electrodes	BR		
61885	Incision for subcutaneous placement of neurostimulator receiver, direct or inductive coupling	BR		
61888	Revision or removal of intracranial neurostimulator receiver (See WAC 296-22-010, item 2)	BR		
	REPAIR			
62000	Elevation of depressed skull fracture; simple, extradural	18.0	90	9.0
62005	compound or comminuted, extradural	24.0	90	9.0
62010	with debridement of brain and repair of dura	29.0	90	11.0
62100	Repair of dural/CSF leak, including surgery for rhinorrhea/otorrhea	30.0	90	9.0
	(For repair of spinal dural/CSF leak, see 63708)			
62120	Repair of encephalocele, including cranioplasty	BR+		9.0
62140	Cranioplasty for skull defect, up to 5 cm diameter	20.0	90	9.0
62141	larger than 5 cm diameter	BR+		9.0
62145	Cranioplasty for skull defect with reparative brain surgery	BR+		11.0
	CSF SHUNT			
62180	Ventriculocisternostomy (Torkildsen type operation)	32.0	90	11.0
62190	Creation of shunt; subdural-atrial, -jugular, -auricular	24.0	90	9.0
62192	subdural-peritoneal, -pleural, -other terminus	22.0	90	9.0
62194	Replacement or irrigation, subdural catheter	6.0	90	5.0
62200	Ventriculocisternostomy, third ventricle	32.0	90	11.0
62220	Creation of shunt; ventriculo-atrial, -jugular, -auricular	26.0	90	11.0
62223	ventriculo-peritoneal, -pleural, -other terminus	24.0	90	9.0
62225	Replacement or irrigation, ventricular catheter	10.0	90	5.0
62230	Replacement or revision of shunt, obstructed valve, or distal catheter in shunt system	20.0	90	11.0
62256	Removal of complete shunt system; without replacement	10.0	90	11.0
62258	with replacement by similar or other shunt at same operation	3.0	0	9.0
	(For percutaneous irrigation or aspiration of shunt reservoir, see 61070)			

[Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-24-041 (Order 81-28), § 296-22-365, filed 11/30/81, effective 1/1/82; 80-18-055 (Order 80-25), § 296-22-365, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-365, filed 1/30/74; Order 68-7, § 296-22-365, filed 11/27/68, effective 1/1/69.]

WAC 296-22-370 Spine and spinal cord.

		Unit Value	Follow-up Days=	Basic Anes@
	(For application of caliper or tongs, see 20660.)			
	(For treatment of fracture or dislocation of spine, see 22325-22370.)			
	PUNCTURE FOR INJECTION, DRAINAGE OR ASPIRATION			
62270*	Spinal puncture, lumbar; diagnostic	1.6	0	
62273*	Injection, lumbar epidural, of blood or clot patch	2.1		
62274*	Injection of anesthetic substance, diagnostic or therapeutic; subarachnoid or subdural, simple	2.1	0	
62276*	subarachnoid or subdural, differential	3.5	0	
62277*	subarachnoid or subdural, continuous	3.0		
62278*	epidural or caudal, single	2.1	0	
62279*	epidural or caudal, continuous	3.0		
62280*	Injection of neurolytic substance (e.g., alcohol, phenol, iced saline solutions); subarachnoid	5.0		
62282*	epidural or caudal	5.0		
62284*	Injection procedure for myelography, spinal or posterior fossa	3.0	7	
62286*	Injection procedure for pneumoencephalography, lumbar	4.0	7	
62289*	Injection of substance other than anesthetic, contrast, or neurolytic solutions; epidural or caudal	2.8		
62290*	Injection procedure for diskography, single or multiple levels; lumbar	2.8		
62291*	cervical	2.8		
62294*	Injection procedure, arterial, for occlusion of arteriovenous malformation, spinal	2.8		
	LAMINECTOMY OR LAMINOTOMY, FOR EXPLORATION OR DECOMPRESSION			
62295	Laminectomy for exploration of intraspinal canal, one or two segments; cervical	32	90	8.0
62296	thoracic	32.0	90	8.0
62297	lumbar	26.0	90	8.0
62299	sacral	26.0	90	8.0
62301	Laminectomy for exploration of intraspinal canal, more than two segments; cervical	BR		9.0
62302	thoracic	BR		8.0
62303	lumbar	BR		7.0
63001	Laminectomy for decompression of spinal cord and/or cauda equina, one or two segments; cervical	30.0	90	9.0
63003	thoracic	30.0	90	8.0
63005	lumbar, except for spondylolisthesis	24.0	90	7.0
63010	lumbar for spondylolisthesis (Gill type procedure)	28.0	90	7.0
63011	sacral	24.0	90	7.0
63015	Laminectomy for decompression of spinal cord and/or cauda equina, more			

		Unit Value	Follow-up Days=	Basic Anes@
	than two segments; cervical	BR+		8.0
63016	thoracic	BR		7.0
63017	lumbar	BR		7.0
	(When followed by arthrodesis, see 22550–22565)			
63020	Laminotomy (hemilaminectomy), for herniated intervertebral disk, and/or decompression of nerve root; one interspace, cervical, unilateral	26.0	90	9.0
63021	one interspace, cervical, bilateral	28.0	90	9.0
63030	one interspace, lumbar, unilateral	25.0	90	7.0
63031	one interspace, lumbar, bilateral	27.0	90	7.0
63035	additional interspaces, cervical or lumbar	BR		9.0
63040	Laminotomy (hemilaminectomy), for herniated intervertebral disk, and/or decompression of nerve root, any level, extensive or reexploration; cervical	BR		9.0
63041	thoracic	BR		8.0
63042	lumbar	BR		7.0
	(Do not use both 63035 and 63040–63042 for same procedure)			
63060	Hemilaminectomy (laminectomy) for herniated intervertebral disk, thoracic; posterior approach	28.0	90	8.0
63064	costovertebral approach	30.0	90	8.0
63075	Diskectomy, cervical, anterior approach, without arthrodesis; single interspace	26.0	90	9.0
63076	additional interspaces	5.0		
	(For diskectomy with arthrodesis, see 22550–22566)			
	INCISION			
63170	Laminectomy for myelotomy (Bischof type), thoracic or thoracolumbar	BR	90	8.0
63180	Laminectomy and section of dentate ligaments, with or without dural graft, cervical; one or two segments	38.0	90	8.0
63182	more than two segments	BR		
63185	Laminectomy for rhizotomy; one or two segments	28.0	90	8.0
63190	more than two segments	BR		8.0
63194	Laminectomy for cordotomy, unilateral, one stage; cervical	32.0	90	8.0
63195	thoracic	32.0	90	7.0
63196	Laminectomy for cordotomy, bilateral, one stage; cervical	32.0	90	8.0
63197	thoracic	32.0	90	7.0
63198	Laminectomy for cordotomy, bilateral, two stages within fourteen days; cervical	40.0	90	8.0
63199	thoracic	40.0	90	7.0
	EXCISION FOR LESION OTHER THAN HERNIATED INTERVERTEBRAL DISK			
63210	Laminectomy, one or two segments, for excision of intraspinal lesion; cervical	34.0	90	8.0
63215	thoracic	34.0	90	7.0
63220	lumbar	30.0	90	7.0
63225	sacral	30.0	90	7.0
63240	Laminectomy, more than two segments, for excision of intraspinal lesion; cervical	BR		9.0
63241	thoracic	BR		8.0
63242	lumbar	BR		7.0
63250	Laminectomy for excision or occlusion of arteriovenous malformation of cord; cervical	BR		9.0
63251	thoracic	BR		8.0
	STEREOTAXIS			
63600	Stereotactic lesion of spinal cord, percutaneous, any modality (including stimulation and/or recording)	18.0	90	
63610	Stereotactic stimulation of spinal cord, percutaneous, separate procedure not followed by other surgery	8.0	0	
	NEUROSTIMULATORS, SPINAL			
63650	Percutaneous implantation of neurostimulator electrodes; epidural	BR		
63652	intradural (spinal cord)	BR		
63655	Laminectomy for implantation of neurostimulator electrodes; epidural	BR		
63656	endodural	BR		
63657	subdural	BR		
63658	spinal cord (dorsal or ventral)	BR		
63660	Revision or removal of spinal neurostimulator electrodes	BR		
63685	Incision for subcutaneous placement of neurostimulator receiver, direct or inductive coupling	BR		
63688	Revision or removal of spinal neurostimulator receiver	BR		
	REPAIR			
63700	Repair of meningocele; less than 5 cm diameter	20.0	90	9.0
63702	larger than 5 cm diameter	BR		
63704	Repair of myelomeningocele; less than 5 cm diameter	BR		
63706	larger than 5 cm diameter	BR		
	(For complex skin closure, see Integumentary System)			
63708	Repair dural/CSF leak	BR		
63710	Dural graft, spinal	BR		
	(For laminectomy and section of dentate ligaments, with or without dural graft, cervical, see 63180–63182)			
	SHUNT, SPINAL CSF			
63740	Creation of shunt, lumbar, subarachnoid–peritoneal, –pleural or other	26.0	90	9.0
63744	Replacement, irrigation or revision of lumbar–subarachnoid shunt	10.0	90	5.0
63746	Removal of entire lumbosubarachnoid shunt system without replacement	10.0	90	5.0

[Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81–24–041 (Order 81–28), § 296–22–370, filed 11/30/81, effective 1/1/82; 80–18–055 (Order 80–25), § 296–22–370, filed 12/3/80, effective 3/1/81; Order 74–7, § 296–22–370, filed 1/30/74; Order 68–7, § 296–22–370, filed 11/27/68, effective 1/1/69.]

WAC 296–22–375 Extracranial nerves, peripheral nerves and autonomic nervous system.

		Unit Value	Follow-up Days=	Basic Anes@
	(For intracranial surgery on cranial nerves, see 61450, 61460, 61790)			
	INTRODUCTION/INJECTION OF ANESTHETIC AGENT (NERVE BLOCK), DIAGNOSTIC OR THERAPEUTIC SOMATIC NERVES			
	Anesthetic Agent (diagnostic or therapeutic)			
	(For anesthesia services in conjunction with surgical procedures, see Anesthesia section)			
	Somatic			
64400*	Injection, anesthetic agent; trigeminal nerve, any division or branch	*3.0	0	
64402*	facial nerve	*2.5	0	
64405*	greater occipital nerve	*2.5	0	
64408*	vagus nerve	*2.5	0	
64410*	phrenic nerve	*2.5	0	
64412*	spinal accessory nerve	*2.5	0	
64415*	brachial plexus	*2.5	0	
64417*	axillary nerve	*2.5	0	
64420*	intercostal nerve, single	*2.0	0	
64421*	intercostal nerves, multiple, regional			

		Unit Value	Follow-up Days=	Basic Anes@
	block	*2.5	0	
64425*	ilioinguinal, iliohypogastric nerves	*2.0	0	
64430*	pudendal nerve	*2.5	0	
64435*	paracervical (uterine) nerve	*2.5	0	
64440*	paravertebral nerve (thoracic, lumbar, sacral, coccygeal), single	*3.0	0	
64441*	paravertebral nerves, multiple, regional block	*3.2	0	
64445*	sciatic nerve	*2.5	0	
64450*	other peripheral nerve or branch	*2.0	0	
	(For phenol destruction, see 64600–64640)			
	(For subarachnoid or subdural, see 62274–62277)			
	(For epidural or caudal, see 62278, 62279)			

SYMPATHETIC NERVES

64505*	Injection, anesthetic agent; sphenopalatine ganglion	*3.0	0	
64508*	carotid sinus (separate procedure)	*2.5	0	
64510*	stellate ganglion (cervical sympathetic)	*2.0	0	
64520*	lumbar or thoracic (paravertebral sympathetic)	*3.0	0	
64530*	celiac plexus, with or without radiologic monitoring	*4.0		

NEUROSTIMULATORS, PERIPHERAL NERVE

64550	Application of surface (transcutaneous) neurostimulator	BR		
64553	Percutaneous implantation of neurostimulator electrodes; cranial nerve	BR		
64555	peripheral nerve	BR		
64560	autonomic nerve	BR		
64565	neuromuscular	BR		
64573	Incision for implantation of neurostimulator electrodes; cranial nerve	BR		
64575	peripheral nerve	BR		
64577	autonomic nerve	BR		
64580	neuromuscular	BR		
64585	Revision or removal of peripheral neurostimulator electrodes	BR		
64590	Incision for subcutaneous placement of neurostimulator receiver, direct or inductive coupling	BR		
64595	Revision or removal of peripheral neurostimulator receiver	BR		

DESTRUCTION BY NEUROLYTIC AGENT (E.G., CHEMICAL, THERMAL, ELECTRICAL, RADIOFREQUENCY) SOMATIC NERVES

64600	Destruction by neurolytic agent, trigeminal nerve; supraorbital, infraorbital, mental, or inferior alveolar branch	5.0	7	
64605	second and third division branches at foramen ovale	5.0	30	
64610	second and third division branches at foramen ovale under radiologic monitoring	5.0	30	
64620	Destruction by neurolytic agent; intercostal nerve	4.0	7	
64630	pudendal nerve	5.0		
64640	Other peripheral nerve or branch	5.0		

SYMPATHETIC NERVES

64680	Destruction by neurolytic agent, celiac plexus, with or without radiologic monitoring	6.0	7	
64702	Neurolysis; digital, one or both, same digit	4.8	90	3.0
64704	nerve of hand or foot	8.0	90	3.0
64708	Neurolysis, major peripheral nerve; arm or leg; other than specified	12.0	90	3.0
64712	sciatic nerve	BR+		3.0
64713	brachial plexus	BR+		3.0
64714	lumbar plexus	BR		3.0
64716	Neurolysis and/or transposition; cranial nerve (specify)	BR		
64718	ulnar nerve at elbow	15.0	90	3.0
64719	ulnar nerve at wrist	9.0	90	3.0
64721	median nerve at carpal tunnel	10.0	90	3.0
64722	Decompression; unspecified nerve(s) (specify)	BR		
64726	plantar digital nerve	6.0	90	3.0
64727	Internal neurolysis by dissection, with or without microdissection (list separately in addition to code for primary neuroplasty)	BR		

INTRODUCTION/INJECTION OF ANESTHETIC AGENT (NERVE BLOCK), DIAGNOSTIC OR THERAPEUTIC SOMATIC NERVES

TRANSECTION OR AVULSION OR NERVES

64732	Transection or avulsion of; supraorbital nerve	7.0	30	3.0
64734	infraorbital nerve	7.0	30	3.0
64736	mental nerve	7.0	30	3.0
64738	inferior alveolar nerve by osteotomy	10.0	30	3.0
64740	lingual nerve	BR		
64742	facial nerve, differential or complete	BR+		3.0
64744	greater occipital nerve	7.0	30	3.0
	(For section of recurrent laryngeal nerve, see 31595)			
64746	phrenic nerve	5.0	30	3.0
64752	vagus nerve (vagotomy), transthoracic	14.0	45	11.0
64755	vagi limited to proximal stomach (selective proximal vagotomy, proximal gastric vagotomy, parietal cell vagotomy, supra– or highly selective vagotomy)	BR	45	3.0
64760	vagus nerve (vagotomy), abdominal	14.0	45	6.0
64761	pudendal nerve, unilateral	BR		
64762	pudendal nerve, bilateral	BR		
64763	Transection or avulsion of obturator nerve, extrapelvic, with or without adductor tenotomy; unilateral	6.0	45	3.0
64764	bilateral	9.0	45	3.0
64766	Transection or avulsion of obturator nerve, intrapelvic, with or without adductor tenotomy; unilateral	10.0	60	4.0
64768	bilateral	13.0	60	4.0
64772	Transection or avulsion of other spinal nerve, extradural	BR+		3.0

Excision

(For excision of tender scar, skin and subcutaneous tissues with or without tiny neuroma, see 11400–11460, 13000–13300)

EXCISION–SOMATIC NERVES

(For Morton neurectomy, see 28080)

64774	Excision of neuroma; cutaneous nerve, surgically identifiable	3.0	30	3.0
64776	digital nerve, one or both, same digit	3.0	30	3.0
64778	digital nerve, each additional digit (list separately by this number)	2.0		
64782	hand or foot, except digital nerve	6.0	30	3.0
64783	hand or foot, each additional nerve, except same digit (list separately by this number)	3.0	30	3.0
64784	major peripheral nerve except sciatic	10.0	30	3.0
64786	sciatic nerve	BR		
64787	Insertion of plastic cap on nerve end	BR		
64788	Excision of neurofibroma or neurolemmoma, cutaneous nerve	6.0	30	3.0
64790	major peripheral nerve	BR+		3.0
64792	extensive (including malignant type)	BR+		3.0
64795	Biopsy of nerve	BR		

EXCISION–SYMPATHETIC NERVES

64802	Sympathectomy, cervical; unilateral	14.5	60	6.0

		Unit Value	Follow-up Days=	Basic Anes@
64803	bilateral	19.0	60	6.0
64804	Sympathectomy, cervicothoracic; unilateral, one stage	20.0	60	6.0
64806	bilateral or two stage unilateral	28.0	60	8.0
64809	Sympathectomy, thoracolumbar; unilateral	20.0	60	6.0
64811	bilateral	28.0	60	8.0
64814	Sympathectomy, hypogastric or presacral neurectomy (separate procedure)	14.0	60	5.0
64818	Sympathectomy, lumbar; unilateral	15.0	60	5.0
64819	bilateral	21.0	60	5.0
64824	periarterial	24.0	60	5.0
	NERVE REPAIR BY SUTURE (NEURORRHAPHY)			
64830	Microdissection and/or microrepair of nerve (list separately in addition to code for nerve repair)			
64831	Suture of digital nerve, hand or foot; one nerve	4.8	90	3.0
64832	each additional digit nerve	1.2		
64834	Suture of one nerve, hand or foot; common sensory nerve	8.0	90	3.0
64835	median motor thenar	10.0	90	3.0
64836	ulnar motor	12.0	90	3.0
64837	Suture of each additional nerve, hand or foot	BR		
64840	Suture of posterior tibial nerve	BR		
64856	Suture of major peripheral nerve, arm or leg, except sciatic; including transposition	14.0	90	3.0
64857	without transposition	BR	90	3.0
64858	Suture of sciatic nerve	BR+		3.0
64859	Suture of each additional major peripheral nerve	BR		
64861	Suture of; brachial plexus	BR+		3.0
64862	lumbar plexus	BR		
64864	Suture of facial nerve; extracranial	BR+		3.0
64865	intratemporal, with or without grafting	BR		
64866	Anastomosis; facial-spinal accessory	26.0	90	3.0
64868	facial-hypoglossal	26.0	90	3.0
64870	facial-phrenic	26.0	90	3.0
64872	Suture of nerve; requiring secondary or delayed suture (list separately in addition to code for primary neurorrhaphy)	BR		
64874	requiring extensive proximal mobilization, or transposition of nerve (list separately in addition to code for nerve suture)	BR		3.0
64876	requiring shortening of bone of extremity (list separately in addition to code for nerve suture)	BR		
	NEURORRPHAPHY WITH NERVE GRAFT			
64890	Nerve graft (includes obtaining graft), single strand, hand or foot; up to 4 cm length	BR	90	3.0
64891	more than 4 cm length	BR	90	3.0
64892	Nerve graft (includes obtaining graft), single strand, arm or leg; up to 4 cm length	BR	90	3.0
64893	more than 4 cm length	BR	90	3.0
64895	Nerve graft (includes obtaining graft), multiple strands (cable), hand or foot; up to 4 cm length	BR	90	3.0
64896	more than 4 cm length	BR	90	3.0
64897	Nerve graft (includes obtaining graft), multiple strands (cable), arm or leg; up to 4 cm length	BR	90	3.0
64898	more than 4 cm length	BR	90	3.0
64901	Nerve graft, each additional nerve; single strand	BR	90	3.0
64902	multiple strands (cable)	BR	90	3.0
64905	Nerve pedicle transfer; first stage	BR	90	3.0
64907	second stage	BR	90	3.0
	OTHER PROCEDURES			
64999	Unlisted procedure, nervous system	BR		

[Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-24-041 (Order 81-28), § 296-22-375, filed 11/30/81, effective 1/1/82; 80-18-055 (Order 80-25), § 296-22-375, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-375, filed 1/30/74; Order 68-7, § 296-22-375, filed 11/27/68, effective 1/1/69.]

EYE AND OCULAR ADNEXA

(For diagnostic and treatment ophthalmological services, see medicine, ophthalmology, page 18, and 92002 et seq)

WAC 296-22-405 Eyeball.

		Unit Value	Follow-up Days=	Basic Anes@
	(For goniotomy, see 65820)			
	REMOVAL OF EYE			
65091	Evisceration ocular contents; without implant	10.0	30	3.0
65093	with implant	12.0	30	3.0
65101	Enucleation of eye, without implant	10.0	30	3.0
65103	with implant, muscles not attached to implant	11.0	30	3.0
65105	with, muscles attached to implant, muscles attached to implant	12.0	30	3.0
	(For conjunctivoplasty after enucleation, see 68320 et seq)			
65110	Exenteration orbit (does not include skin graft), removal orbital contents; only	20.0	60	4.0
65112	with therapeutic removal of bone	BR		4.0
65114	with temporalis muscle transplant	25.0	60	4.0
	(For skin graft to orbit (split skin), see 15120, 15121; free, full thickness, see 15260, 15261)			
	(For eyelid repair involving more than skin, see 67930 et seq)			
	SECONDARY IMPLANT PROCEDURES			
	An ocular implant is an implant inside muscular cone; an orbital implant is an implant outside muscular cone.			
65130	Insertion ocular implant secondary; after evisceration, in scleral shell	8.0	30	4.0
65135	after enucleation, muscles not attached to implant	10.0	30	4.0
65140	after enucleation, muscles attached to implant	14.0	30	4.0
65150	Reinsertion ocular implant; with or without conjunctival graft	BR		4.0
65155	with use of foreign material for reinforcement and/or attachment of muscles to implant	BR		4.0
65175	Removal ocular implant	BR		4.0
	(For orbital implant (implant outside muscle cone) insertion, see 67550; removal, see 67560)			
	REMOVAL OF OCULAR FOREIGN BODY			
	(For removal of implanted material: Ocular implant, see 65175; anterior segment implant, see 65920; posterior segment implant, see 67120; orbital implant, see 67560)			
	(For diagnostic x-ray for foreign body, see 70030-70050)			
	(For diagnostic echography for foreign body, see 76529)			
	(For removal of foreign body from orbit: frontal approach, see 67413; lateral approach, see 67430; transcranial approach, see 61334)			

		Unit Value	Follow-up Days=	Basic Anes@
	(For removal of foreign body from eyelid, embedded, see 67938)			
	(For removal of foreign body from lacrimal system, see 68530)			
65205*	Removal foreign body, external eye; conjunctival superficial	0.2	0	4.0
65210*	conjunctival embedded (includes concretions), subconjunctival, or scleral nonperforating	0.6	0	4.0
65220*	corneal, without slit lamp	0.6	0	4.0
65222*	corneal, with slit lamp	0.8	0	4.0
	(For repair of corneal laceration with foreign body, see 65275)			
65230	Removal foreign body intraocular; from anterior chamber, magnetic extraction	12.0	45	6.0
65235	from anterior chamber, nonmagnetic extraction	16.0	45	8.0
65240	from lens (without extraction lens), magnetic extraction	12.0	30	6.0
65245	from lens (without extraction lens), nonmagnetic extraction	BR		
	(For removal implanted material anterior segment, see 65920)			
65260	from posterior segment, magnetic extraction, anterior or posterior route	12.0	30	6.0
65265	from posterior segment, nonmagnetic extraction	18.0	30	8.0
	(For removal implanted material posterior segment, see 67120)			
	REPAIR OF LACERATION OF EYEBALL			
	(For fracture of orbit, see 21380 et seq)			
	(For repair wound of eyelid, skin, linear, simple, see 12011–12018; intermediate, layered closure, see 12051–12057; linear, complex, see 13150–13300; other, see 67930–67935)			
	(For repair wound of lacrimal system, see 68700)			
	(For repair operative wound, see 66250)			
65270*	Repair laceration; conjunctiva, with or without nonperforating laceration sclera, direct closure	0.9	0	4.0
65272	conjunctiva, by mobilization and rearrangement, without hospitalization	BR		4.0
65273	conjunctiva, by mobilization and rearrangement, with hospitalization	BR		4.0
65275	cornea, nonperforating, with or without removal foreign body	SV		4.0
65280	cornea and/or sclera, perforating, not involving uveal tissue	BR	30	5.0
65285	cornea and/or sclera, perforating, with reposition or resection of uveal tissue	BR	30	5.0
	(Repair of laceration includes use of conjunctival flap and restoration of anterior chamber, by air or saline injection when indicated)			
	(For repair of iris or ciliary body, see 66680)			
65290	Repair wound extraocular muscle, tendon and/or Tenon's capsule	4.4	30	4.0

[Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81–24–041 (Order 81–28), § 296–22–405, filed 11/30/81, effective 1/1/82; 80–18–055 (Order 80–25), § 296–22–405, filed 12/3/80, effective 3/1/81; Order 74–7, § 296–22–405, filed 1/30/74; Order 68–7, § 296–22–405, filed 11/27/68, effective 1/1/69.]

WAC 296-22-420 Anterior segment--Iris, ciliary body.

		Unit Value	Follow-up Days=	Basic Anes@
	IRIDOTOMY, IRIDECTOMY			
66500	Iridotomy by stab incision (separate procedure); except transfixion	5.0	30	3.0
66505	with transfixion as for iris bombe	5.0	30	3.0
66600	Iridectomy, with corneoscleral or corneal section; for removal of lesion	14.0	45	3.0
66605	with cyclectomy	20.0	45	3.0
66625	peripheral for glaucoma (separate procedure)	10.0	45	3.0
66630	sector for glaucoma (separate procedure)	10.0	45	3.0
66635	"optical" (separate procedure)	10.0	45	3.0
	(For "iridotomy" by photocoagulation, see 66761)			
	(For "coreoplasty" by photocoagulation, see 66762)			
	REPAIR			
66680	Repair of iris, ciliary body (as for iridodialysis)	10.0	45	3.0
	(For reposition or resection of uveal tissue with perforating wound of cornea or sclera, see 65285)			
66682	Suture of iris, ciliary body (separate procedure) with retrieval of suture through small incision (e.g., McCannel suture)	BR	45	3.0
	DESTRUCTION			
66700	Cyclodiathermy; initial	8.0	30	3.0
66701	subsequent	4.0	30	3.0
66720	Cyclocryotherapy; initial	6.0	30	3.0
66721	subsequent	3.0	30	3.0
66740	Cyclodialysis; initial	12.0	45	3.0
66741	subsequent	6.0	45	3.0
66761	Coreoplasty ("irodotomy") by photocoagulation; for glaucoma	5.0	30	3.0
66762	other than for glaucoma	5.0	30	3.0
66770	Destruction of cyst or lesion iris or ciliary body (nonexcisional procedure)	9.0	45	3.0
	(For excision lesion iris, ciliary body, see 66600, 66605; for removal epithelial downgrowth, see 65900)			
	OTHER PROCEDURES			
	(For unlisted procedures on iris, ciliary body, see 66999)			

[Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81–24–041 (Order 81–28), § 296–22–420, filed 11/30/81, effective 1/1/82; 80–18–055 (Order 80–25), § 296–22–420, filed 12/3/80, effective 3/1/81; Order 74–7, § 296–22–420, filed 1/30/74; Order 68–7, § 296–22–420, filed 11/27/68, effective 1/1/69.]

AUDITORY SYSTEM

(For diagnostic services, e.g., audiometry, vestibular tests, see 92502 et seq.)

WAC 296-22-465 External ear.

		Unit Value	Follow-up Days=	Basic Anes@
	INCISION			

		Unit Value	Follow-up Days=	Basic Anes@
*69000	Drainage external ear, abscess or hematoma; simple	*0.4	0	3.0
69005	complicated	BR+		3.0
*69020	Drainage external auditory canal, abscess	*0.4	0	3.0
69090	Ear piercing	0.6	7	
	EXCISION			
	(For plastic closure, see 13000–15760)			
69100	Biopsy external ear	0.6	7	3.0
69105	Biopsy external auditory canal	0.6	7	3.0
69110	Excision external ear; partial, simple repair	3.0	30	3.0
69120	complete amputation	8.0	90	3.0
	(For reconstruction of ear, see 15120 et seq.)			
69140	Excision exostosis(es), of external auditory canal	12.0	90	3.0
69145	Excision soft tissue lesion, external auditory canal	0.6	90	3.0
69150	Radical excision external auditory canal lesion; without neck dissection	BR+		3.0
69155	with neck dissection	BR+		6.0
	(For resection of temporal bone, see 69535)			
	(For skin grafting, see 15000–15261)			
	REMOVAL FOREIGN BODY			
*69200	Removal foreign body from external auditory canal; without general anesthesia	*0.4	0	
69205	with general anesthesia	2.0	7	3.0
69210	Removal impacted cerumen (separate procedure), one or both ears	0.5	0	3.0
69220	Debridement, mastoidectomy cavity, simple (e.g., routine cleaning; unilateral	BR		3.0
69221	bilateral	BR		3.0
69222	Debridement, mastoidectomy cavity, complex (e.g., with anesthesia or more than routine cleaning); unilateral	BR		3.0
69223	bilateral	BR		3.0
	REPAIR			
	(For suture of wound or injury of external ear, see 12011–14300)			
69300	Otoplasty protruding ear, with or without size reduction; unilateral	10.0	180	3.0
69301	bilateral	16.0	180	3.0
69320	Reconstruction external auditory canal for congenital atresia, single stage	16.0	180	3.0
	(For combination with middle ear reconstruction see 69631, 69641)			
	(For other reconstructive procedures with grafts (skin, cartilage, bone), see 13150–15760, 21230–21235)			
	OTHER PROCEDURES			
	(For otoscopy under general anesthesia, see 92502)			
69399	Unlisted procedure, external ear	BR		

[Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-24-041 (Order 81-28), § 296-22-465, filed 11/30/81, effective 1/1/82; 80-18-055 (Order 80-25), § 296-22-465, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-465, filed 1/30/74; Order 68-7, § 296-22-465, filed 11/27/68, effective 1/1/69.]

WAC 296-22-470 Middle ear.

		Unit Value	Follow-up Days=	Basic Anes@
	INTRODUCTION			
69400	Eustachian tube inflation, transnasal; with catheterization	0.3	0	
69401	without catheterization	0.3	0	
69405	Eustachian tube catheterization, transtympanic	BR		
69410	Focal application of phase control substance, middle ear (baffle technique)	BR		
	INCISION			
*69420	Myringotomy, including aspiration and/or eustachian tube inflation	*0.6	0	3.0
*69433	Tympanostomy (requiring insertion of ventilating tube); local or topical anesthesia; unilateral	1.6	7	3.0
*69434	bilateral	1.8	0	3.0
	(69433, 69434 would normally be completed in an office setting)			
69436	Tympanostomy (requiring insertion of ventilating tube), general anesthesia; unilateral	2.0		3.0
69437	bilateral	3.0		3.0
	(69436, 69437 would normally require the facilities available in an office surgical suite or in a hospital)			
69440	Middle ear exploration through postauricular or ear canal incision	10.0	30	3.0
	(For atticotomy, see 69601 et seq.)			
	EXCISION			
69501	Transmastoid antrotomy ("simple" mastoidectomy)	12.0	180	5.0
69502	Mastoidectomy; complete	18.0	180	5.0
69505	modified radical	20.0	180	6.0
69511	radical	20.0	180	6.0
	(For skin graft, see 15000 et seq.)			
	(For mastoidectomy cavity debridement, see 69220–69223)			
69530	Petrous apicectomy including radical mastoidectomy	30.0	180	6.0
69535	Resection temporal bone, external approach	BR	180	6.0
	(For middle fossa approach, see 69950–69970)			
69540	Excision aural polyp,	1.0	15	3.0
69550	Excision aural glomus tumor; transcanal	BR		
69552	transmastoid	BR		
69554	extended (extratemporal)	BR		
	REPAIR			
69601	Revision mastoidectomy; resulting in complete mastoidectomy	15.0	180	6.0
69602	resulting in modified radical mastoidectomy	20.0	180	5.0
69603	resulting in radical mastoidectomy	20.0	180	5.0
69604	resulting in tympanoplasty	BR		
	(For planned secondary tympanoplasty after mastoidectomy, see 69631, 69632)			
69605	with apicectomy	BR		
	(For skin graft, see 15120, 15121, 15260, 15261)			
69610	Tympanic membrane repair, with or without site preparation or perforation preparation for closure without patch	0.6	0	3.0
69611	Tympanic membrane patching with tissue graft	0.6	0	3.0
69620	Myringoplasty, (surgery confined to drumhead and donor area)	13.0	180	3.0
69631	Tympanoplasty, without mastoidectomy (including canalplasty, atticotomy			

		Unit Value	Follow-up Days=	Basic Anes@
	and/or middle ear surgery), initial or revision; without ossicular chain reconstruction	22.0	180	3.0
69632	with ossicular chain reconstruction, e.g., postfenestration	22.0	180	3.0
69633	with ossicular chain reconstruction and synthetic prosthesis (e.g., total ossicular replacement prosthesis, TORP)	BR		
69635	Tympanoplasty with antrotomy or mastoidotomy (including canalplasty, atticotomy, middle ear surgery, and/or tympanic membrane repair); without ossicular chain reconstruction	22.0	180	6.0
69636	with ossicular chain reconstruction	24.0	180	6.0
69637	with ossicular chain reconstruction and synthetic prosthesis (e.g., total ossicular replacement prosthesis, TORP)	BR	0	6.0
69641	Tympanoplasty with mastoidectomy (including canalplasty, middle ear surgery, tympanic membrane repair); without ossicular chain reconstruction	23.0	180	5.0
69642	with ossicular chain reconstruction	26.0	180	5.0
69643	with intact or reconstructed wall, without ossicular chain reconstruction	26.0	180	5.0
69644	with intact or reconstructed canal wall, with ossicular chain reconstruction	28.0	180	5.0
69645	radical or complete, without ossicular chain reconstruction	24.0	180	5.0
69646	radical or complete, with ossicular chain reconstruction	26.0	180	5.0
69650	Stapes mobilization	12.0	90	3.0
69660	Stapedectomy with reestablishment of ossicular continuity, with or without use of foreign material	20.0	90	5.0
69661	with footplate drill out	BR	90	5.0
	(For revision, see 69632)			
69666	Repair oval window fistula	20.0	180	5.0
69667	Repair round window fistula	20.0	180	5.0
69670	Mastoid obliteration (separate procedure)	BR+		6.0
69676	Tympanic neurectomy; unilateral	3.0	180	6.0
69677	bilateral	BR	180	6.0
OTHER PROCEDURES				
69700	Closure postauricular fistula, mastoid (separate procedure)	7.0	60	3.0
69720	Decompression, facial nerve, intratemporal; lateral to geniculate ganglion	24.0	180	6.0
69725	including medial to geniculate ganglion	26.0	180	6.0
69740	Suture facial nerve, intratemporal, with or without graft or decompression; lateral to geniculate ganglion	30.0	180	6.0
69745	including medial to geniculate ganglion	30.0	180	6.0
	(For extracranial suture of facial nerve, see 64864)			
69799	Unlisted procedure, middle ear	BR		

[Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-24-041 (Order 81-28), § 296-22-470, filed 11/30/81, effective 1/1/82; 80-18-055 (Order 80-25), § 296-22-470, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-470, filed 1/30/74; Order 68-7, § 296-22-470, filed 11/27/68, effective 1/1/69.]

Chapter 296-23 WAC
RADIOLOGY, RADIATION THERAPY, NUCLEAR MEDICINE, PATHOLOGY, HOSPITAL, CHIROPRACTIC, PHYSICAL THERAPY AND DRUGLESS THERAPEUTICS

WAC

296-23-01002 Custody of x-rays.
296-23-01006 Radiology, radiation therapy, nuclear medicine and modifiers.
296-23-013 Repealed.
296-23-015 Head and neck.
296-23-020 Chest.
296-23-025 Spine and pelvis.
296-23-030 Upper extremities.
296-23-035 Lower extremities.
296-23-040 Abdomen.
296-23-045 Gastrointestinal tract.
296-23-065 Vascular system.
296-23-079 Miscellaneous.
296-23-07906 Obstetrics, gynecology and pelvis.
296-23-080 Radiotherapy—General information and instructions.
296-23-200 Pathology general information and instruction.
296-23-204 Panel or profile tests.
296-23-208 Urinalysis.
296-23-212 Chemistry and toxicology.
296-23-216 Hematology.
296-23-221 Immunology.
296-23-224 Microbiology.
296-23-228 Anatomic pathology.
296-23-301 Rates for daily and ancillary services.
296-23-356 Billing procedures.
296-23-357 X-rays.
296-23-395 Repealed.
296-23-610 General instructions.
296-23-615 Office visits and special services.
296-23-710 Physical therapy rules.
296-23-811 Office visits and special services.
296-23-940 Vocational service providers.
296-23-9401 Reasons for holding provider ineligible for referral.
296-23-9402 Time lines.
296-23-9403 Services requiring authorization.
296-23-9408 Vocational fee schedule.

DISPOSITION OF SECTIONS FORMERLY CODIFIED IN THIS CHAPTER

296-23-013 Footnotes. [Order 74-7, § 296-23-013, filed 1/30/74.] Repealed by 81-24-041 (Order 81-28), filed 11/30/81, effective 1/1/82. Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3).

296-23-395 Recovery room—Use of. [Order 74-7, § 296-23-395, filed 1/30/74; Order 68-7, § 296-23-395, filed 11/27/68, effective 1/1/69.] Repealed by 81-24-041 (Order 81-28), filed 11/30/81, effective 1/1/82. Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3).

WAC 296-23-01002 Custody of x-rays. (1) Radiographs should not be sent to the department or self-insurer unless they are requested for comparison and interpretation in determining a permanent disability, administrative or legal decisions and for cases in litigation. X-rays must be retained for a period of ten years by the radiologist or the attending doctor.

(2) X-rays must be made available upon request to consultants, to medical examiners, to the department, to self-insurers and/or the Board of Industrial Insurance Appeals.

(3) In cases where the injured worker transfers from one doctor to another, the former attending doctor will

immediately forward all films in his possession to the new attending doctor.

(4) When a doctor's office is closed because of death, retirement or upon leaving the state, department approved custodial arrangements must be made to insure availability on request. If a radiological office is closed for any of the previously listed reasons or because the partnership or corporation is being dissolved, disposition of x-rays for industrial injuries will be handled in the same manner. In the event custodial arrangements are to be made, the department must approve the arrangements prior to transfer of x-rays to the custodian so as to assure their availability to the department or self-insurer upon request.

(5) Reports of x-ray findings must accompany bills for x-ray services. See WAC 296-20-125 for additional billing information. [Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-24-041 (Order 81-28), § 296-23-01002, filed 11/30/81, effective 1/1/82; 81-01-100 (Order 80-29), § 296-23-01002, filed 12/23/80, effective 3/1/81; Order 77-27, § 296-23-01002, filed 11/30/77, effective 1/1/78; Emergency Order 77-26, § 296-23-01002, filed 12/1/77; Emergency Order 77-16, § 296-23-01002, filed 9/6/77; Order 76-34, § 296-23-01002, filed 11/24/76, effective 1/1/77.]

WAC 296-23-01006 Radiology, radiation therapy, nuclear medicine and modifiers. Listed services and procedures may be modified under certain circumstances. When applicable, the modifying circumstance should be identified by the addition of the appropriate modifier code which is a two digit number placed after the usual procedure number from which it is separated by a hyphen. If more than one modifier is used, the "multiple modifiers" code placed first after the procedure code indicates that one or more additional modifier codes will follow. Modifiers commonly used in RADIOLOGY (INCLUDING NUCLEAR MEDICINE AND DIAGNOSTIC ULTRASOUND) are as follows:

-22 UNUSUAL SERVICES: When the service(s) provided is greater than that usually required for the listed procedure, it may be identified by adding modifier '-22' to the usual procedure number. List modified value. A report may also be appropriate. Note: Modifier -22 may be utilized with computerized tomography numbers when additional slices are required or a more detailed examination is necessary.

-26 PROFESSIONAL COMPONENT: Certain procedures (e.g., laboratory, radiology, electrocardiogram, specific, diagnostic services,) are a combination of a physician component and a technical component. When the physician component is billed separately, the procedure may be identified by adding the modifier '-26' to the usual procedure number and value as appropriate. The total cost of procedure cannot exceed the Basic Unit Value.

-50 MULTIPLE OR BILATERAL PROCEDURES: When multiple or bilateral procedures are provided at the same operative session, the first major procedure may be reported as listed. The secondary or lesser procedure(s) may be identified by adding the modifier '-50' to the usual procedure number(s) and value at 50 percent of the listed values unless otherwise indicated.

-52 REDUCED SERVICES: Under certain circumstances a service or procedure is partially reduced or eliminated at the physician's election. Under these circumstances the service provided can be identified by its usual procedure number and the addition of the modifier '-52' signifying that the service is reduced. This provides a means of reporting reduced services at reduced charge without disturbing the identification of the basic service. Note: Modifier -52 may be utilized with computerized tomography numbers for a limited study or a follow-up study.

-75 CONCURRENT CARE, SERVICES RENDERED BY MORE THAN ONE PHYSICIAN: When the patient's condition requires the additional services of more than one physician, each physician may identify his or her services by adding the modifier '-75' to the basic service performed.

-76 REPEAT PROCEDURE BY SAME PHYSICIAN: The physician may need to indicate that a procedure or service was repeated subsequent to the original service. This may be reported by adding the modifier '-76' to the procedure code of the repeated service.

-77 REPEAT PROCEDURE BY ANOTHER PHYSICIAN: The physician may need to indicate that a basic procedure performed by another physician had to be repeated. This may be reported by adding modifier '-77' to the repeated service.

-90 REFERENCE (OUTSIDE) LABORATORY: When laboratory procedures are performed by a party other than the treating or reporting physician the procedure(s) may be identified by adding the modifier '-90' to the usual procedure number and shall be billed as charged to the physician.

-99 MULTIPLE MODIFIERS: Under certain circumstances two or more modifiers may be necessary to completely delineate a service. In such situations modifier '-99' should be added to the basic procedure, and other applicable modifiers may be listed as a part of the description of the service. Value in accordance with appropriate modifiers.

[Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-24-041 (Order 81-28), § 296-23-01006, filed 11/30/81, effective 1/1/82; 81-01-100 (Order 80-29), § 296-23-01006, filed 12/23/80, effective 3/1/81; Order 76-34, § 296-23-01006, filed 11/24/76, effective 1/1/77.]

WAC 296-23-013 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-23-015 Head and neck.

		Unit Value	Professional Component
70002	Pneumoencephalography, supervision and interpretation only		16.0
70003	complete, procedure	40.0	
	(For injection procedure only for pneumoencephalography, see 62286)		
70010	Myelography, posterior fossa supervision and interpretation only	BR+	
70011	complete procedure	BR	
	(For injection procedure, see 61052)		
70015	Cisternography, positive contrast; supervision and interpretation only	BR	
70016	complete procedure	BR	
	(For injection procedure only for cisternography, see 61053)		
70020	Ventriculography, air or positive contrast supervision and interpretation only		8.0
70021	positive contrast, supervision and interpretation only	24.0	
	(For injection procedures for ventriculography, see 61025, 61030, 61120)		
70022	Stereotaxic localization	BR+	
70030	Radiologic examination, eye, for detection of foreign body	8.8	3.5
70040	for localization of foreign body (does not include detection)	14.0	6.4
70050	for detection and localization of foreign body	18.0	8.0
70100	Radiologic examination, mandible, less than four views	6.0	2.4
70110	complete, minimum of four views	10.0	4.0
70120	Radiologic examination, mastoid(s), less than three views per side	6.0	2.4
70130	complete minimum of three views per side	12.0	4.8
70134	Radiologic examination, internal auditory meati, complete	12.0	4.8
70140	Radiologic examination, facial bones, less than three views	6.0	2.4
70150	complete, minimum of three views	10.0	4.0
70160	Radiologic examination, nasal bones complete, minimum of three views	6.4	2.6
70170	Nasolacrimal duct (dacryocystography) supervision and interpretation only		4.0
70171	complete procedure	10.0	
	(For injection procedure for dacryocystography, see 68850)		
70190	Radiologic examination, optic foramina,	6.0	2.4
70200	orbits, complete, minimum of four views	8.0	3.2
70210	Paranasal sinuses, less than three views	5.0	2.0
70220	Radiologic examination, sinuses, paranasal, complete, minimum of three views without contrast studies	8.8	3.5
70230	with contrast studies, supervision and interpretation only	10.0	4.0
70231	with contrast studies, complete procedure	16.0	5.3
70240	Radiologic examination, sella turcica	5.0	2.0
70250	Radiologic examination, skull, limited, less than four views, with or without stereo	6.0	2.4
70260	complete, minimum of four views, with or without stereo	12.0	4.8
70300	Radiologic examination, teeth, single view	2.0	0.8
70310	partial examination, less than full mouth	4.0	1.6
70320	complete examination, full mouth	8.0	3.2
70328	Radiologic examination, temporomandibular joints, unilateral, open and closed mouth	6.0	2.4
70330	bilateral	8.8	3.5
70350	Cephalogram (orthodontic)	4.0	1.6
70355	Orthopantogram	10.0	4.0

		Unit Value	Professional Component
70360	Radiologic examination, neck for soft tissues	4.0	1.6
70370	pharynx or larynx, including fluoroscopy	8.0	3.2
70373	Laryngography, contrast; supervision and interpretation only		9.6
70374	complete procedure	24.0	

(For injection procedure only for laryngography, see 31708)

70380	Radiologic examination, salivary gland for calculus	6.4	2.6
70390	Sialography supervision and interpretation only		3.2
70391	complete procedure	8.0	

(For injection procedure only for sialography, see 42550)

70400	Orbitography, air or positive contrast; supervision and interpretation only		BR
70401	complete procedure		BR

(For injection procedure only for orbitography, see 67510)

70450	Computerized tomography, head; without contrast material	58.0	13.0
70460	with contrast material	64.0	13.0
70470	without intravenous contrast, followed by intravenous contrast and further sections	71.0	13.0
70480	Computerized tomography, orbit; without contrast material	58.0	13.0
70481	with contrast material	64.0	13.0
70482	without contrast material, followed by contrast material and further sections	71.0	13.0

[Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-24-041 (Order 81-28), § 296-23-015, filed 11/30/81, effective 1/1/82; 81-01-100 (Order 80-29), § 296-23-015, filed 12/23/80, effective 3/1/81; Order 76-34, § 296-23-015, filed 11/24/76, effective 1/1/77; Order 74-39, § 296-23-061 (codified § 296-23-015), filed 11/22/74, effective 1/1/75; Order 74-7, § 296-23-015, filed 1/30/74; Order 68-7, § 296-23-015, filed 11/27/68, effective 1/1/69.]

WAC 296-23-020 Chest.

		Unit Value	Professional Component
71000	Chest, "Minifilm"	1.7	0.7
71010	single view, posteroanterior	4.0	1.6
71015	stereo, posteroanterior	5.0	2.0
71020	two views, posteroanterior and lateral	7.0	2.8
71021	apical lordotic procedure	7.2	2.9
71022	oblique projections	7.2	2.9
71030	complete, minimum of four views	8.0	3.2
71034	including fluoroscopy	10.0	4.0

(For independent chest fluoroscopy, see 76000)

71035	Radiologic examination, chest, special views, e.g., lateral decubitus, Bucky studies	BR	
71036	Fluoroscopic localization for needle biopsy of intrathoracic lesion, including follow-up films	BR+	
71038	Fluoroscopic localization for transbronchial biopsy or brushing	BR	

(For biopsy procedure, see 32420)

71040	Bronchography, unilateral; supervision and interpretation only		5.6
71041	complete procedure	14.0	
71060	bilateral		8.8
71061	complete procedure	22.0	

(For injection procedure only for bronchography, see 31715, 31710)

71090	Insertion pacemaker, fluoroscopy and radiography, supervision and interpretation only	BR	
71100	Ribs, unilateral, minimum of two views	7.2	2.9
71101	including posteroanterior chest; minimum of three views	BR	
71110	bilateral, minimum of three views	10.0	4.0
71111	including posteroanterior chest, minimum of four views	BR	
71120	Sternum, minimum of two views	6.0	2.4

		Unit Value	Professional Component
71130	Sternoclavicular joint(s), minimum of three views ..	6.0	2.4
71250	Computerized tomography, thorax; without contrast material	77.0	22.0
71260	with contrast material(s)	84.0	22.0
71270	without contrast material, followed by contrast material and further sections	90.0	22.0

[Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-24-041 (Order 81-28), § 296-23-020, filed 11/30/81, effective 1/1/82; 81-01-100 (Order 80-29), § 296-23-020, filed 12/23/80, effective 3/1/81; Order 76-34, § 296-23-020, filed 11/24/76, effective 1/1/77; Order 74-39, § 296-23-064 (codified § 296-23-020), filed 11/22/74, effective 1/1/75; Order 74-7, § 296-23-020, filed 1/30/74; Order 68-7, § 296-23-020, filed 11/27/68, effective 1/1/69.]

WAC 296-23-025 Spine and pelvis.

		Unit Value	Professional Component
72010	Spine, entire, survey study (A-P & lateral)	16.0	6.4
72020	Radiologic examination, spine, single view, specify level	BR	
72040	cervical, A-P and lateral	6.0	2.4
72050	complete, minimum of four views	10.0	4.0
72052	including oblique and flexion and extension views	15.2	6.1
72070	thoracic, A-P and lateral	9.0	3.6
72072	thoracic, A-P and lateral, including swimmer's view of the cervicothoracic junction .	12.0	4.8
72074	thoracic, complete inc. obliques, minimum of four views	16.0	6.4
72080	thoraco-lumbar, A-P and lateral	9.0	3.6
72090	scoliosis study, including supine and erect studies .	6.0	2.4
72100	lumbo-sacral, A-P and lateral	9.0	3.6
72110	lumbosacral, complete, with oblique views	16.0	6.4
72114	including bending views	18.5	7.4
72120	bending views only, minimum of four views	10.0	4.0
72145	Computerized tomography, spine	70.0	28.0

(For injection procedure, see 62284)

72170	Pelvis, A-P only	5.0	2.0
72180	stereo	6.4	2.6
72190	complete, minimum of three views	8.0	3.2

(For pelvimetry, see 74710)

72200	Sacro-iliac joints, less than three views	5.0	2.0
72202	complete, minimum of three views	8.0	3.2
72220	Sacrum and coccyx, minimum of two views	6.4	2.6
72240	Myelography, cervical supervision and interpretation only		7.2
72241	complete procedure	18.0	
72255	thoracic supervision and interpretation only		7.2
72256	complete procedure	18.0	
72265	lumbosacral supervision and interpretation only .		7.2
72266	complete procedure	18.0	
72270	entire spinal canal supervision and interpretation only		12.0
72271	complete procedure	30.0	

(For injection procedures for myelography, see 62284)

72285	Diskography, cervical supervision and interpretation only		8.0
72286	complete procedure	20.0	
72295	lumbar supervision and interpretation only		8.0
72296	complete procedure	20.0	

(For injection procedures for diskography, see 62290, 62291)

[Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-24-041 (Order 81-28), § 296-23-025, filed 11/30/81, effective 1/1/82; 81-01-100 (Order 80-29), § 296-23-025, filed 12/23/80, effective 3/1/81; Order 76-34, § 296-23-025, filed 11/24/76, effective 1/1/77; Order 74-39, § 296-23-067 (codified

§ 296-23-025), filed 11/22/74, effective 1/1/75; Order 74-7, § 296-23-025, filed 1/30/74; Order 68-7, § 296-23-025, filed 11/27/68, effective 1/1/69.]

WAC 296-23-030 Upper extremities.

		Unit Value	Professional Component
73000	Clavicle	4.8	1.9
73010	Scapula	6.0	2.4
73020	Shoulder, limited, one view	4.0	1.6
73030	complete, minimum of two views	6.0	2.4
73040	arthrography supervision and interpretation only		4.0
73041	complete procedure	10.0	
	(For injection procedure for arthrography, see 23350)		
73050	Acromio-clavicular joints, bilateral, with or without weighted distraction	7.0	2.8
73060	Humerus, minimum of two views	4.8	1.9
73070	Elbow, limited, A-P and lateral	4.8	1.9
73080	complete, minimum of three views	6.0	2.4
73085	Radiologic examination, elbow, arthrography; supervision and interpretation only		4.0
73086	complete procedure	10.0	
	(For injection procedure only for arthrography, see 24220)		
73090	Forearm, including one joint, A-P and lateral	4.8	1.9
73092	upper extremity, infant, minimum of two views	3.6	1.4
73100	Wrist, limited, A-P and lateral	4.0	1.6
73110	complete, minimum of three views	6.0	2.4
73115	Radiologic examination, wrist, arthrography; supervision and interpretation only		4.0
73116	complete procedure	10.0	
	(For injection procedure only for arthrography, see 25246)		
73120	Hand, limited, minimum of two views	4.0	1.6
73130	complete, minimum of three views	6.0	2.4
73140	Finger(s), minimum of two views	3.6	1.4
73200	Computerized tomography, upper extremity; without contrast material	58.0	13.0
73201	with contrast material(s)	64.0	13.0
73202	without contrast material, followed by contrast material(s) and further sections	71.0	13.0

[Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-24-041 (Order 81-28), § 296-23-030, filed 11/30/81, effective 1/1/82; 81-01-100 (Order 80-29), § 296-23-030, filed 12/23/80, effective 3/1/81; Order 76-34, § 296-23-030, filed 11/24/76, effective 1/1/77; Order 74-39, § 296-23-071 (codified § 296-23-030), filed 11/22/74, effective 1/1/75; Order 74-7, § 296-23-030, filed 1/30/74; Order 68-7, § 296-23-030, filed 11/27/68, effective 1/1/69.]

WAC 296-23-035 Lower extremities.

		Unit Value	Professional Component
73500	Radiologic examination, hip, unilateral, one view	5.0	2.0
73510	complete, minimum of two views	7.0	2.8
73520	Radiologic examination, hips, bilateral, complete minimum of two views of each hip (including A-P of pelvis)	9.6	3.8
73525	Radiologic examination, hip, arthrography; supervision and interpretation only		BR
73526	complete procedure	BR	BR
	(For injection procedure only for arthrography, see 27093, 27094)		
73530	Radiologic examination, hip, during operative procedure, up to four studies	16.0	6.4
73531	each additional study, over four	3.0	1.2
73540	Radiologic examination, hip and pelvis, infant or child, minimum of two views	6.4	2.6

		Unit Value	Professional Component
73550	Radiologic examination, femur (thigh), A–P and lateral	6.0	2.4
73560	Radiologic examination, knee, A–P and lateral	4.4	1.8
73562	A–P and lateral, with oblique(s), minimum three views	6.4	2.6
73564	complete, including obliques, and/or tunnel, and/or patella and/or standing views	8.4	3.3
73580	Radiologic examination, knee, arthrography supervision and interpretation only		6.4
73581	complete procedure	16.0	

(For injection procedure for arthrography, see 27370)

73590	Radiologic examination, tibia and fibula (leg), including one joint, A–P and lateral	4.8	1.9
73592	lower extremity, infant, minimum of two views	4.0	1.6
73600	Radiologic examination, ankle, limited, A–P and lateral	4.4	1.8
73610	complete, minimum of three views	6.0	2.4
73615	Radiologic examination, ankle, arthrography; supervision and interpretation only	4.0	
73616	complete procedure	10.0	

(For injection procedure only for arthrography, see 27648)

73620	Radiologic examination, foot, limited, A–P and lateral	4.0	1.6
73630	complete, minimum of three views	5.6	2.2
73650	Radiologic examination, calcaneus, minimum of two views	4.4	1.8
73660	Toe(s), minimum of two views	3.6	1.4
73700	Computerized tomography, lower extremity; without contrast material	58.0	13.0
73701	with contrast material(s)	64.0	13.0
73702	without contrast material, followed by contrast materials and further sections	71.0	13.0

[Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-24-041 (Order 81-28), § 296-23-035, filed 11/30/81, effective 1/1/82; 81-01-100 (Order 80-29), § 296-23-035, filed 12/23/80, effective 3/1/81; Order 76-34, § 296-23-035, filed 11/24/76, effective 1/1/77; Order 74-39, § 296-23-074 (codified § 296-23-035), filed 11/22/74, effective 1/1/75; Order 74-7, § 296-23-035, filed 1/30/74; Order 68-7, § 296-23-035, filed 11/27/68, effective 1/1/69.]

WAC 296-23-040 Abdomen.

		Unit Value	Professional Component
74000	Abdomen, single view (KUB) A–P	6.0	2.4
74010	with additional oblique or cone view	8.0	3.2
74020	complete, includes ducubitus and/or erect views	11.0	4.4
74150	Computerized tomography, abdomen; without contrast material	77.0	22.0
74160	with contrast material	84.0	22.0
74170	without contrast material, followed by contrast material and further sections	90.0	22.0

[Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-24-041 (Order 81-28), § 296-23-040, filed 11/30/81, effective 1/1/82; 81-01-100 (Order 80-29), § 296-23-040, filed 12/23/80, effective 3/1/81; Order 76-34, § 296-23-040, filed 11/24/76, effective 1/1/77; Order 74-39, § 296-23-077 (codified § 296-23-040), filed 11/22/74, effective 1/1/75; Order 74-7, § 296-23-040, filed 1/30/74; Order 68-7, § 296-23-040, filed 11/27/68, effective 1/1/69.]

WAC 296-23-045 Gastrointestinal tract.

		Unit Value	Professional Component
74210	Pharynx and/or cervical esophagus	8.8	4.8
74220	Esophagus	8.8	4.8
74230	Pharynx and/or esophagus, by cineradiography	12.0	6.6
74240	Uppergastrointestinal tract, with or without delayed films, without KUB	14.0	7.7
74241	with KUB	15.2	8.0
74245	with small bowel, includes multiple serial films	17.6	8.8
74246	Radiological exam gastrointestinal tract, upper, air contrast, with specific high density barium, effervescent agent, with or without glucagon, with or without delayed films; without KUB	BR	
74247	with KUB	BR	
74250	Small bowel, includes multiple serial films	14.0	7.0
74260	Duodenography, hypotonic	BR	
74270	Colon, barium enema	12.0	6.6
74280	Air contrast with specific high density barium with or without glucagon	14.0	7.0
74285	high kilovoltage technique for polyp study	BR	
74290	Cholecystography, oral contrast	9.6	3.8
74291	repeat examination, same study or multiple exam	4.8	1.9
74300	Cholangiography, operative	10.0	4.0
74301	operative, additional set	3.0	1.2
74305	postoperative	12.0	6.0

(For biliary duct stone extraction, percutaneous, see 47630; via basket catheter, see 74327)

74310	intravenous	16.0	6.4
74315	oral	12.0	4.8
74320	percutaneous, transhepatic supervision and interpretation only		6.4
74321	complete procedure	16.0	

(For injection procedure for percutaneous transhepatic cholangiography, see 47500)

74325	Diagnostic pneumoperitoneum; supervision and interpretation only	BR	
74326	complete procedure	BR	

(For injection procedure only for pneumoperitoneum, see 49400)

74327	Postoperative biliary duct stone removal, fluoroscopic monitoring and radiography	BR	
74328	Endoscopic catheterization of the biliary ductal system, fluoroscopic monitoring and radiography	BR	
74329	Endoscopic catheterization of the pancreatic ductal system, fluoroscopic monitoring and radiography	BR	
74330	Combined endoscopic catheterization of the biliary and pancreatic ductal systems, fluoroscopic monitoring and radiography	BR	
74331	with endoscopic sphincterotomy	BR	
74340	Introduction of long gastrointestinal tube (e.g., Miller–Abbott), with multiple fluoroscopies and films	BR	

[Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-24-041 (Order 81-28), § 296-23-045, filed 11/30/81, effective 1/1/82; 81-01-100 (Order 80-29), § 296-23-045, filed 12/23/80, effective 3/1/81; Order 76-34, § 296-23-045, filed 11/24/76, effective 1/1/77; Order 74-7, § 296-23-045, filed 1/30/74; Order 68-7, § 296-23-045, filed 11/27/68, effective 1/1/69.]

WAC 296-23-065 Vascular system.

(For vascular injection procedures, see 36000–36299.)

(For cardiac fluoroscopy, see 93280)

(For cardiac catheterization, see 93501–93599.)

When multiple vascular radiographic procedures are performed at the same time (e.g., aortic arch study plus renal arteriogram), the total value shall be the value for the major procedure plus 50% of the value for the lesser procedure(s) unless otherwise indicated. See modifier –5. The cost of catheters, drugs and contrast media is included in the listed value for the radiographic procedure.

		Unit Value	Professional Component
HEART			
75500	Angiocardiography, by cineradiography supervision and interpretation only ...		8.8
75501	complete procedure (including catheterization) .	22.0	
75505	Angiocardiography by serialography (single plane;) supervision and interpretation only	9.2	—
75506	complete procedure (including catheterization) .	23.0	
75507	Angiocardiography by serialography, multi-plane; supervision and interpretation only		18.4
75509	complete procedure (including catheterization) .	46.0	
75510	Angiocardiography, CO_2 or positive contrast, intravenous, for pericardial effusion or atrial wall thickness; supervision and interpretation only		8.0
75511	complete procedure	20.0	
75519	Cardiac radiography, selective cardiac catheterization; right side, supervision and interpretation only		17.2
75520	complete procedure		43.0
75523	left side, supervision and interpretation only		8.6
75524	left side, complete procedure.....	21.5	
75528	Cardiac radiography, selective cardiac catheterization, right and left side, complete procedure.....	55.0	
AORTA AND ARTERIES			
	(For injection procedure only, see 36100–36299)		
Aortography			
75600	thoracic or abdominal, without serialography supervision and interpretation only		8.0
75601	complete procedure	20.0	
75605	by serialography supervision and interpretation only		11.0
75606	complete procedure	30.0	
75620	Abdominal, including lower extremities, without serialography.....	32.0	11.2
75622	Abdominal, catheter, without serialography	32.0	11.2
75625	Aortography, abdominal, translumbar, by serialography; supervision and interpretation only.....		15.2
75626	complete procedure	40.0	
75627	Aortography, abdominal, catheter, by serialography; supervision and interpretation only		17.0
75628	complete procedure	48.0	
75630	Aortography, abdominal plus bilateral ileofemoral lower extremity, catheter, by serialography; supervision and interpretation only		BR
75631	complete procedure	BR	
75650	Angiography, cervicocerebral, catheter, including vessel origin; supervision and interpretation only ...		17.2
75651	complete procedure	40.0	
75652	Angiography, cervicocerebral, selective catheter, including vessel origin; one vessel, supervision and interpretation only.....		12.6
75653	one vessel, complete procedure	36.0	
75654	two vessels, supervision and interpretation only .		13.3
75655	two vessels, complete procedure	38.0	
75656	three or four vessels, supervision and interpretation only		17.2
75657	three or four vessels, complete procedure	40.0	
75658	Angiography, brachial, retrograde; supervision and interpretation only		17.2
75659	complete procedure	40.0	
75660	Angiography, carotid, cerebral, unilateral, selective external; supervision and interpretation only		17.2
75661	complete procedure	40.0	
75662	Angiography, carotid, cerebral, bilateral, selective external; supervision and interpretation only		21.5
75663	complete procedure	50.0	

		Unit Value	Professional Component
75665	Angiography, carotid, cerebral, unilateral; supervision and interpretation only ...		17.2
75667	direct puncture, complete procedure	40.0	
75669	catheter, complete procedure	46.0	19.7
75671	Angiography, carotid, cerebral, bilateral; supervision and interpretation only ...		21.5
75672	direct puncture, complete procedure	50.0	
75673	catheter, complete procedure	54.0	23.2
75676	Angiography, carotid, cervical, unilateral; supervision and interpretation only		17.2
75677	direct puncture, complete procedure	40.0	
75678	catheter, complete procedure	46.0	19.7
75680	Angiography, carotid, cervical, bilateral; supervision and interpretation only ...		21.5
75681	direct puncture, complete procedure	50.0	
75682	catheter, complete procedure	54.0	23.2
75685	Angiography, vertebral; supervision and interpretation only		17.2
75686	direct puncture, complete procedure	40.0	
75687	catheter, complete procedure	46.0	19.7
75690	Angiography, vertebral, cervical, unilateral; supervision and interpretation only		17.2
75691	direct puncture, complete procedure	40.0	
75692	catheter, complete procedure	46.0	19.7
75695	Angiography, vertebral, cervical, bilateral; supervision and interpretation only		21.5
75696	direct puncture, complete procedure	50.0	
75697	catheter, complete procedure	54.0	23.2
75705	Angiography, spinal, selective; supervision and interpretation only		9.8
75706	complete procedure	28.0	
75710	Angiography, extremity, unilateral, supervision and interpretation only		10.5
75711	without serialography, complete procedure	30.0	
75712	by serialography, complete procedure	32.0	11.2
75716	Angiography, extremity, bilateral; supervision and interpretation only		11.2
75717	without serialography, complete procedure	32.0	
75718	by serialography, complete procedure	34.0	11.9
75722	Angiography, renal, unilateral, selective (including flush aortogram); supervision and interpretation only		17.2
75723	complete procedure	40.0	
75724	Angiography, renal, bilateral, selective (including flush aortogram); supervision and interpretation only		25.8
75725	complete procedure	60.0	
75726	Angiography, visceral; selective or supraselective, supervision and interpretation only		19.7
75727	selective (including flush aortogram), complete procedure	46.0	19.7
75728	supraselective, complete procedure	48.0	20.6
75731	Angiography, adrenal, unilateral, selective; supervision and interpretation only		19.7
75732	complete procedure	46.0	
75733	Angiography, adrenal, bilateral, selective; supervision and interpretation only		20.6
75734	complete procedure	48.0	
75736	Angiography, pelvic; selective or supraselective, supervision and interpretation only		18.9
75737	selective, complete procedure	44.0	
75738	supraselective, complete procedure	46.0	19.7

		Unit Value	Professional Component
75741	Angiography, pulmonary, unilateral, selective; supervision and interpretation only		10.5
75742	complete procedure	30.0	
75743	Angiography, pulmonary, bilateral, selective; supervision and interpretation only		21.5
75744	complete procedure	50.0	
75746	Angiography, pulmonary; by nonselective catheter or venous injection, supervision and interpretation only		10.5
75747	catheter, nonselective, complete procedure	30.0	
75748	venous injection, complete procedure	40.0	15.2
75750	Angiography, coronary, root injection; supervision and interpretation only		25.8
75751	complete procedure	60.0	
75752	Angiography, coronary, unilateral selective injection, including left ventricular and supravalvular angiogram and pressure recording; supervision and interpretation only		30.1
75753	complete procedure	70.0	
75754	Angiography, coronary, bilateral selective injection, including left ventricular and supravalvular angiogram and pressure recording; supervision and interpretation only		34.4
75755	complete procedure	80.0	
75756	Angiography, internal mammary; supervision and interpretation only		15.2
75757	complete procedure	40.0	
75762	Angiography, coronary bypass, unilateral selective injection; supervision and interpretation only		BR
75764	complete procedure	BR	
75766	Angiography, coronary bypass, multiple selective injection; supervision and interpretation only		BR
75767	complete procedure	BR	

VEINS AND LYMPHATICS

(For injection procedure only for venous system, see 36400–36510)

(For injection procedure only for lymphatic system, see 38790–38794)

		Unit Value	Professional Component
75801	Lymphangiography, extremity only, unilateral; supervision and interpretation only		9.6
75802	complete procedure	25.0	
75803	Lymphangiography, extremity only, bilateral; supervision and interpretation only		12.0
75804	complete procedure	35.0	
75805	Lymphangiography, pelvic/abdominal, unilateral; supervision and interpretation only		12.0
75806	complete procedure	35.0	
75807	Lymphangiography, pelvic/abdominal, bilateral; supervision and interpretation only		12.0
75808	complete procedure	35.0	
75810	Splenoportography; supervision and interpretation only		15.2
75811	complete procedure	40.0	

(For injection procedure for splenoportography, see 38200)

		Unit Value	Professional Component
75820	Venography, extremity, unilateral supervision and interpretation only		8.0
75821	complete procedure	16.0	
75822	Venography, extremity, bilateral; supervision and interpretation only		10.0
75823	complete procedure	26.0	
75825	caval, inferior or superior, with serialography		16.0
75826	complete procedure	32.0	
75827	Venography, caval, superior, with serialography; supervision and interpretation only		12.0
75828	complete procedure	35.0	
75831	Venography, renal, unilateral, selective; supervision and interpretation only		15.2
75832	complete procedure	40.0	

		Unit Value	Professional Component
75833	Venography, renal, bilateral, selective; supervision and interpretation only		19.5
75834	complete procedure	45.0	
75840	Venography, adrenal, unilateral, selective; supervision and interpretation only		10.8
75841	complete procedure	30.0	
75842	Venography, adrenal, bilateral, selective; supervision and interpretation only		12.2
75843	complete procedure	32.0	
75845	Venography, azygos; selective or nonselective, supervision and interpretation only		10.6
75846	selective, complete procedure	30.0	
75847	nonselective, complete procedure	28.0	10.6
75850	Venography, intraosseous; supervision and interpretation only		12.2
75851	complete procedure	32.0	
75860	Venography, sinus or jugular, catheter; supervision and interpretation only	30.0	10.8
75861	complete procedure	32.0	12.2
75870	Venography, superior sagittal sinus; supervision and interpretation only		12.2
75871	complete procedure, including direct puncture	32.0	
75872	Venography, epidural; supervision and interpretation only		BR
75873	complete procedure	BR	
75880	Venography, orbital; supervision and interpretation only		13.7
75881	complete procedure	36.0	
75885	Percutaneous transhepatic portography with hemodynamic evaluation; supervision and interpretation only		13.7
75886	complete procedure	36.0	
75887	Percutaneous transhepatic portography without hemodynamic evaluation; supervision and interpretation only		12.9
75888	complete procedure	34.0	
75889	Hepatic venography wedged or free, with hemodynamic evaluation; supervision and interpretation only		14.4
75890	complete procedure	38.0	
75891	Hepatic venography, wedged or free, without hemodynamic evaluation; supervision and interpretation only		12.9
75892	complete procedure	34.0	
75893	Venous sampling thru catheter without angiography (e.g., for parathyroid hormone, renin)	5.0	1.9

TRANSCATHETER THERAPY AND BIOPSY

75894	Transcatheter therapy, embolization, including angiography; supervision and interpretation only		15.2
75895	complete procedure	40.0	
75896	Transcatheter therapy, infusion, including angiography; supervision and interpretation only		15.9
75897	complete procedure	42.0	
75898	Angiogram through existing catheter for follow-up study for transcatheter therapy, embolization or infusion	10.0	3.8
75950	Transcatheter intravascular occlusion, temporary; supervision and interpretation only		BR
75951	complete procedure	BR	
75955	Transcatheter intravascular occlusion, permanent; supervision and interpretation only		BR
75956	complete procedure	BR	
75970	Transcatheter biopsy; supervision and interpretation only		BR
75971	complete procedure	BR	

(For transcatheter renal and ureteral biopsy, see 52007, 52107)

75972	Percutaneous transluminal angioplasty, unilateral; supervision and interpretation only		BR
75973	complete procedure	BR	

		Unit Value	Professional Component
75974	Percutaneous transluminal angioplasty, bilateral; single catheter, supervision and interpretation only ...		BR
75975	complete procedure	BR	
75976	Percutaneous transluminal angioplasty, bilateral, dual catheters; supervision and interpretation only		BR
75977	complete procedure	BR	
75980	Percutaneous transhepatic biliary drainage with monitoring; supervision and interpretation only.....		BR
75981	complete procedure	BR	
75982	Percutaneous placement of drainage catheter for combined internal and external biliary drainage or of a drainage stent for internal biliary drainage in patients with an inoperable mechanical biliary obstruction; supervision and interpretation only		BR
75983	complete procedure	BR	
75984	Change of percutaneous drainage catheter with contrast monitoring (i.e., biliary tract, urinary tract); supervision and interpretation only		BR
75985	complete procedure	BR	

[Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-24-041 (Order 81-28), § 296-23-065, filed 11/30/81, effective 1/1/82; 81-01-100 (Order 80-29), § 296-23-065, filed 12/23/80, effective 3/1/81; Order 76-34, § 296-23-065, filed 11/24/76, effective 1/1/77; Order 74-7, § 296-23-065, filed 1/30/74; Order 68-7, § 296-23-065, filed 11/27/68, effective 1/1/69.]

WAC 296-23-079 Miscellaneous.

		Unit Value	Professional Component
	(For arthrography of shoulder, see 73040, 73041; elbow, see 73085, 73086; wrist, see 73115, 73116; hip, see 73525, 73526; knee, see 73580, 73581; ankle, see 73615, 73616)		
76000	Fluoroscopy (independent procedures).....	3.0	3.0
76020	Bone age studies.....	6.0	2.4
76040	Bone length studies (orthoroentgenogram)	10.0	4.0
76061	Bone survey (e.g., for metastases)	15.2	6.1
76062	complete (axial and appendicular skeleton)..	BR	
76065	osseous survey, infant ..	13.2	5.3
76080	Fistula or sinus tract study supervision and interpretation only		4.8
76081	complete procedure	12.0	
76090	Mammography, unilateral.	8.8	3.5
76091	bilateral	13.2	5.3
76100	Laminography (tomography, planigraphy, body section radiography) (independent procedure) ..	13.2	9.2
76105	to complement routine examination	7.0	2.8
76120	Cineradiography (independent procedure)	13.2	5.3
76125	to complement routine examination	7.0	2.8
76127	Procedures using Polaroid or similar photographic media	0.8	0.3
76130	Radiologic examination; at bedside or in operating room, not otherwise specified	BR	
76135	in home.....	BR	
76137	after regular hours.....	BR	
76140	Written consultation on x-ray examination made elsewhere	BR+	—
76150	Xeroradiography	6.0	
76300	Thermography	BR	
76350	Subtraction in conjunction with contrast studies	BR	
76360	Computerized tomography guidance for needle biopsy; supervision and interpretation only		BR
76361	complete procedure	BR	

		Unit Value	Professional Component
76365	Computerized tomography guidance for cyst aspiration; supervision and interpretation only		BR
76366	complete procedure	BR	
76370	Computerized tomography guidance for placement of radiation therapy fields	BR	
76499	Unlisted diagnostic radiologic procedure	BR	

[Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-24-041 (Order 81-28), § 296-23-079, filed 11/30/81, effective 1/1/82; 81-01-100 (Order 80-29), § 296-23-079, filed 12/23/80, effective 3/1/81; Order 76-34, § 296-23-079, filed 11/24/76, effective 1/1/77; Order 74-7, § 296-23-079, filed 1/30/74.]

WAC 296-23-07906 Obstetrics, gynecology and pelvis.

		Unit Value
76805	Echography, pelvic scan B-mode, (e.g., obstetrics, gynecology, or transplants); complete	21.2
76815	fetal growth rate only	9.7
76855	Echography, pelvic area (Doppler)	11.4
76856	Echography, pelvic, real time	BR
	EXTREMITIES	
76880	Echography, extremity, B-scan	BR

[Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-24-041 (Order 81-28), § 296-23-07906, filed 11/30/81, effective 1/1/82; 81-01-100 (Order 80-29), § 296-23-07906, filed 12/23/80, effective 3/1/81; Order 75-39, § 296-23-07906, filed 11/28/75, effective 1/1/76.]

WAC 296-23-080 Radiotherapy--General information and instructions. (1) Radiation therapy as listed in this section includes teletherapy (i.e., the use of X-ray and other high-energy modalities, radium, cobalt, etc.) and brachytherapy for surface, intracavitary or interstitial application. For treatment by injectable or ingestible radioactive isotopes, see section on Nuclear Medicine.

The services listed do not include the provision of radium or other radioelements. Those materials supplied by the physician should be listed separately and identified by the code 79900.

Where the radiologist renders full medical care (in addition to radiotherapy management) of a patient while in the hospital, such additional care may be identified by the appropriate procedure from the MEDICINE or SURGERY section.

		Unit Value
	TREATMENT PLANNING PROCESS (EXTERNAL AND INTERNAL SOURCES)	
77260	Radiation therapy treatment planning; inclusive service (including interpretation of special testing, patient contour and localization of internal structures)	BR
77265	interpretation of special testing ordered by the radiation therapist	BR
77270	patient contour and localization of internal structures	BR
77275	setting of each treatment port	BR
77280	Radiation therapy simulator aided field setting; simple	BR
77285	intermediate	BR
77290	complex	BR
77299	Unlisted procedure, radiation therapy planning	BR
	DOSIMETRY (EXTERNAL SOURCE FIELDS) RADIATION PHYSICS	
77300	Radiation therapy, central axis depth dose computation	4.0
77305	Radiation therapy, isodose plan; simple (one or two therapy beams)	3.0
77310	intermediate (three or more therapy beams)	4.0
77315	complex (one or more beams plus additional procedures)	6.0
77320	Radiation therapy isodose plan; wedge fields	5.0
77325	arc field	5.0
77330	rotation field	6.0
77335	moving strip field	6.0
77340	isocentric (in addition to above)	2.0
77345	Radiation therapy; tissue and geometric inhomogeneity correction (in addition to above)	2.0
77350	electron beam (in addition to above)	2.0
77355	neutron beam (in addition to above)	2.0
77360	special beam considerations (in addition to above)	2.0
77399	Unlisted procedure, external radiation dosimetry	BR
	TREATMENT MANAGEMENT	
	Except as specified, assumes treatment on daily (usually 5 per week) basis and use of supervoltage/megavoltage or high energy particle sources	
77400	Daily radiation therapy treatment management; simple	2.0

		Unit Value
77405	intermediate	3.0
77410	complex	4.0
77415	Radiation treatment port verification films	3.0
77420	Weekly radiation therapy treatment management; simple	4.0
77425	intermediate	5.0
77430	complex	6.0
77435	Course of radiation therapy treatment management; simple	6.0
77440	intermediate	8.0
77445	complex	10.0
77450	Daily transvaginal external radiation treatment	2.0
77455	Daily per oral external radiation treatment	1.0
77460	Course of superficial external radiation treatment, (including Grenz rays) with or without auxiliary shielding	1.0
	For complicated shielding devices, see treatment aids, 77600–77635	
77465	Daily orthovoltage external treatment	2.0
77499	Unlisted procedure, radiation therapy treatment management	BR

TREATMENT AIDS

77600	Radiation therapy treatment aid(s); wedge filter design and fabrication	2.0
77605	bolus design and fabrication	2.0
77610	field block design and fabrication	2.0
77615	compensating filter design and fabrication	2.0
77620	moulds or casts for immobilization	2.0
77625	stents or bite blocks	2.0
77630	Provision of external compensating shield; for radium sources	3.0
77635	for radioisotope sources	3.0
77699	Unlisted procedure, radiation therapy treatment aid	BR

DOSIMETRY (INTERNAL SOURCES) RADIATION PHYSICS

77700	Radium therapy dosimetry and interpretation of application	BR
77705	Radioisotope therapy dosimetry and interpretation of application	BR
77749	Unlisted procedure, internal radiation dosimetry	BR

RADIUM AND RADIOISOTOPE THERAPY

(Professional service component only)

77750	Infusion of radioactive materials for therapy (includes handling and loading)	5.0
77755	Supervision and consultation of radioelement application only	5.0
77760	Intracavitary radium application (includes handling and loading)	5.0
77765	Intracavitary radioisotope application (includes handling and loading)	5.0
77770	Interstitial radium application (includes handling and loading)	5.0
77775	Interstitial radioisotope therapy (includes handling and loading)	5.0
77780	Radium handling and loading	5.0
77785	Radioisotope handling and loading	5.0
77799	Unlisted procedure, radium and radioisotope therapy	BR

[Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81–24–041 (Order 81–28), § 296–23–080, filed 11/30/81, effective 1/1/82; 81–01–100 (Order 80–29), § 296–23–080, filed 12/23/80, effective 3/1/81; Order 74–7, § 296–23–080, filed 1/30/74; Order 68–7, § 296–23–080, filed 11/27/68, effective 1/1/69.]

WAC 296–23–200 Pathology general information and instruction. Rules and billing procedure pertaining to all practitioners rendering service to injured workers are presented in General information section beginning with WAC 296–20–010. Some commonalities are repeated here for convenience of those doctors referring to Pathology section. Definitions and rules to Pathology are also included here.

(1) The following values apply only when these services are performed by or under the responsible supervision of a physician. Unless otherwise specified, the listed values include the collection and handling of the specimens by the laboratory performing the procedure.

(2) Lab reports must be attached to bills for lab services. See WAC 296–20–125 for further billing instruction.

(3) Laboratory procedures performed by other than the billing physician shall be billed at the value charged that physician by the reference (outside) laboratory under the individual procedure number or the panel procedure number listed under "PANEL OR PROFILE TESTS" (see modifier –90).

(4) The department or self–insurer may deny payment for lab procedures which are determined to be excessive or unnecessary for management of the injury or conditions.

(5) Panel (profile) tests: Panel (profile) tests are defined as certain multiple tests performed on a single specimen of blood or urine. They are distinguished from the single or multiple test(s) performed on an "individual," "immediate" or "stat" reporting basis. . denotes test performed as part of a panel, see 80003–80013. [Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81–24–041 (Order 81–28), § 296–23–

200, filed 11/30/81, effective 1/1/82; 81-01-100 (Order 80-29), § 296-23-200, filed 12/23/80, effective 3/1/81; Order 74-7, § 296-23-200, filed 1/30/74; Order 70-12, § 296-23-200, filed 12/1/70, effective 1/1/71; Order 68-7, § 296-23-200, filed 11/27/68, effective 1/1/69.]

WAC 296-23-204 Panel or profile tests.

The following list contains those tests that can be and are frequently done as groups and combinations ("profiles") on automated multichannel equipment. For reporting two tests, regardless of method of testing, use appropriate single test code numbers. For any combination of three or more tests among those listed immediately below, use the appropriate number 80003-80019. Groups of the tests listed here are distinguished from multiple tests performed individually for immediate or "stat" reporting.

The following unit values apply when three or more of the tests listed below are performed on the same blood or urine specimen under the conditions described under item 6, page 188.

(For collection and handling of specimen, see 99000 and 99001)

Albumin
Albumin/globulin ratio
Bilirubin, direct
Bilirubin, total
Calcium
Carbon dioxide content
Chloride
Cholesterol
Creatinine
Globulin
Glucose (sugar)
Lactic dehydrogenase (LDH)
Phosphatase, acid
Phosphatase, alkaline
Phosphorus
Potassium
Protein, total
Sodium
Transaminase, glutamic, oxaloacetic (SGOT)
Transaminase, glutamic, pyruvic (SGPT)
Urea Nitrogen (BUN)
Uric Acid

		Unit Value
80003	3 tests	28.0
80004	4 tests	32.0
80005	5 tests	36.0
80006	6 tests	40.0
80007	7 tests	44.0
80008	8 tests	48.0
80009	9 tests	52.0
80010	10 tests	56.0
80011	11 tests	60.0
80012	12 tests	64.0
80016	13-16 clinical chemistry tests, per additional test	2.8
80018	17-18 clinical chemistry tests, per additional test	3.0
80019	19 or more clinical chemistry tests (indicate instrument used and number of tests performed), per additional test	3.2

THERAPEUTIC DRUG MONITORING
(e.g., antiepilepsy drugs, cardiac drugs, antibiotics, sedatives)

80031	Therapeutic quantitative drug monitoring in blood and/or urine; measurement one drug (if drug not specified by individual code number)	BR
80032	2 drugs measured	BR
80033	3 drugs measured	BR
80034	4 or more drugs measured	BR

[Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-24-041 (Order 81-28), § 296-23-204, filed 11/30/81, effective 1/1/82; 81-01-100 (Order 80-29), § 296-23-204, filed 12/23/80, effective 3/1/81; Order 74-39, § 296-23-204, filed 11/22/74, effective 1/1/75; Order 74-7, § 296-23-204, filed 1/30/74.]

WAC 296-23-208 Urinalysis.

(For specific analyses, see appropriate section)

		Unit Value
81000	Urinalysis, routine, complete	12.0
81002	routine, without microscopy	8.0
81004	components, single, not otherwise listed, specify	5.0
81005	chemical, qualitative any number of constituents	8.0
81006	urine volume measurement	5.0
81010	concentration and dilution test	14.0
81011	water deprivation test	BR
81012	water deprivation test with vasopressin response	BR
81015	microscopic	10.0
81020	two or three glass test	10.0
81030	Quantitative sediment analysis and quantitative protein (Addis count)	40.0
81099	Unlisted urinalysis procedure	BR

[Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-24-041 (Order 81-28), § 296-23-208, filed 11/30/81, effective 1/1/82; 81-01-100 (Order 80-29), § 296-23-208, filed 12/23/80, effective 3/1/81; Order 74-7, § 296-23-208, filed 1/30/74. Formerly WAC 296-23-245.]

WAC 296-23-212 Chemistry and toxicology.

The material for examination can be from any source. Examination is quantitative unless specified. (For list of automated, multichannel tests, see 80003–80019).

		Unit Value
82000	Acetaldehyde, blood	40.0
82003	Acetaminophen, urine	40.0
	(Acetic anhydride, see volatiles, 84600)	
82005	Acetoacetic acid, serum	40.0
82009	Acetone, qualitative	12.0
82010	quantitative	12.0
	(For acetone bodies, see 82009–82010, 82635, 83947)	
82011	Acetylsalicylic acid; quantitative	32.0
82012	qualitative	32.0
82013	Acetylcholinesterase,	40.0
	(Acid, gastric, see gastric acid, 82926–82932)	
	(Acid phosphatase, see 84060–84065)	
82015	Acidity, titratable, urine	30.0
	(ACTH, see 82024)	
	(Adrenalin–Noradrenalin, see catecholamines, 82382–82384)	
82024	Adrenocorticotrophic hormone (ACTH), RIA	120.0
82030	Adenosine5'–diphosphate and 5'–monophosphate, (AMP), cyclic, RIA blood	40.0
82035	5'–triphosphate, blood	40.0
82040	Albumin, serum	°20.0
82042	urine, quantitative (specify method, e.g., Esbach)	20.0
	(For albumin/globulin ratio, albumin/globulin ratio by electrophoretic method, see 84155–84200.)	
82055	Alcohol (ethanol), blood, chemical	30.0
82060	by gas–liquid chromatography	40.0
82065	urine, chemical	30.0
82070	by gas–liquid chromatography	40.0
82072	Alcohol (ethanol) gelation	30.0
82075	breath	60.0
82076	Alcohol; isopropyl	60.0
82078	methyl	60.0
82085	Aldolase, blood, kinetic ultraviolet method	26.0
82086	colorimetric	20.0
82087	Aldosterone; double isotope technique	120.0
82088	RIA blood	100.0
82089	RIA urine	100.0
	(Alkaline phosphatase, see 84075–84080)	
82095	Alkaloids, tissue, screening	80.0
82096	quantitative	120.0
82100	urine, screening	80.0
82101	quantitative	120.0
	(See also 82486, 82600, 82662, 82755, 84231)	
	(Alpha amino acid nitrogen, see 82126)	
	(Alpha–hydroxybutyric (HBD) dehydrogenase, see 83485, 83486)	
	(Alphaketoglutarate, see 83584)	
	(Alpha tocopherol (Vitamin E), see 84446)	
82126	Alpha amino acid nitrogen	50.0
82128	Amino acids, qualitative	40.0
82130	Amino acids, urine, chromatographic fractionation and quantitation	180.0
82134	Aminohippurate, para (PAH)	30.0
	(For administration, see 36410, 99070)	
82135	Aminolevulinic acid, delta (ALA)	50.0
82137	Aminophylline	60.0
82138	Amitriptyline	60.0
82140	Ammonia, blood	40.0
82141	urine	40.0
82142	Ammonium chloride loading test	40.0
82143	Amniotic fluid scan (spectrophotometric)	50.0
	(For L/S ratio, see 83661)	
	(Amobarbital, see 82205–82210)	
82145	Amphetamine, or methamphetamine, chemical, quantitative	80.0
82150	Amylase, serum	30.0
82155	isoenzymes electrophoretic	BR+
82156	urine (diastase)	30.0
82157	Androstenedione RIA	80.0
82159	Androsterone	50.0
	(See also 83593–83596)	
	(Angiotensin I, see renin, 84244)	
82163	Angiotensin II, RIA	BR
82165	Aniline	BR
82168	Antihistamines	BR
82170	Antimony, urine	80.0
	(Antimony, screen, see 83015)	
	(Antitrypsin, alpha–1–, see 86329)	
82173	Arginine tolerance test	BR
82175	Arsenic, blood, urine, gastric contents, hair or nails, quantitative	80.0
	(For heavy metal screening, see 83015)	
82180	Ascorbic acid, blood	40.0
	(Aspirin, see acetylsalicylic acid, 82011, 82012)	
	(Atherogenic index, blood, ultracentrifugation, quantitative, see 83717)	
82205	Barbiturates quantitative	60.0
82210	quantitative and identification	80.0

		Unit Value
	(For qualitative screen, see 82486, 82660, 82662, 82755, 84231)	
82225	Barium	BR
	(Bence–Jones protein, 84185)	
82230	Beryllium, urine	80.0
82235	Bicarbonate excretion, urine	BR
82236	Bicarbonate loading test	BR
	(Bicarbonate, see 82374)	
82240	Bile acids, blood, fractionated	120.0
82245	Bile pigments, urine	8.0
°82250	Bilirubin, blood, total or direct	°24.0
82251	blood, total AND direct	30.0
82252	feces, qualitative	BR
82260	urine, quantitative	12.0
82265	amniotic fluid, quantitative	30.0
82268	Bismuth	80.0
82270	Blood, feces, occult, screening	8.0
82273	duodenal, gastric contents, qualitative	BR
	(Blood urea nitrogen (BUN), see 84520–84525, 84545)	
	(Blood volume, see 84605–84610, 78110, 78111)	
82280	Boric acid, blood	100.0
82285	urine	100.0
82286	Bradykinin	BR
82290	Bromides, blood	24.0
82291	urine	40.0
	(For bromsulphthalein (BSP), see 84382)	
82300	Cadmium, urine	100.0
82305	Caffeine	60.0
82306	Calcifediol (25–OH Vitamin D–3), chromatographical technique	BR
82307	Calciferol (Vitamin D) RIA	BR
82308	Calcitonin, RIA	80.0
°82310	Calcium, blood, chemical	°22.0
°82315	fluorometric	°22.0
82320	emission flame photometry	22.0
82325	atomic absorption flame photometry	24.0
82330	fractionated, diffusible	60.0
82331	after calcium infusion test	24.0
82335	urine, qualitative (Sulkowitch)	11.0
82340	quantitative timed specimen	32.0
82345	feces, quantitative timed specimen	80.0
82355	Calculus (stone) qualitative, chemical	40.0
82360	quantitative, chemical	60.0
82365	infrared spectroscopy	60.0
82370	X–ray defraction	50.0
	(Carbamates, see individual listings)	
82372	Carbamazepine, serum	BR
82374	Carbon dioxide, combining power or content	10.0
	(See also 82801–82803, 82817)	
82375	Carbon monoxide, (carboxyhemoglobin); quantitative	48.0
82376	qualitative	48.0
	(Carbon tetrachloride, see 84600)	
	(Carboxyhemoglobin, see 82375, 82376)	
82380	Carotene, blood	40.0
	(Carotene plus Vitamin A, see 84595)	
82382	Catecholamines (dopamine, norepinephrine, epinephrine); total urine	BR
82383	blood	BR
82384	fractionated	BR
	(For urine metabolites, see 83835, 84585)	
82390	Ceruloplasmin (copper oxidase), blood	40.0
	(For gel diffusion technique, see 86331; immunodiffusion technique, see 86329)	
82400	Chloral hydrate, blood	60.0
82405	urine	40.0
82415	Chloramphenicol, blood	40.0
82418	Chlorazepate dipotassium	40.0
82420	Chlordiazepoxide, blood	60.0
82425	urine	60.0
°82435	Chlorides, blood, (specify chemical or electrometric)	°20.0
82436	urine, (specify chemical, electrometric or Fantus test)	20.0
82437	sweat (without iontophoresis)	20.0
	(For iontophoresis, see 89360)	
82438	spinal fluid	20.0
82441	Chlorinated hydrocarbons, screen	20.0
82443	Chlorothiazide–hydrochlorothiazide	60.0
	(Chlorpromazine, see 84021, 84022)	
°82465	Cholesterol, serum; total	°22.0
82470	total and esters	30.0
82480	Cholinesterase, serum	40.0
82482	RBC	60.0
82484	serum and RBC	80.0
82485	Chondroitin B sulfate, quantitative	BR
	(Chorionic gonadotropin, see gonadotropin, 82996–83002)	
82486	Chromatography; gas–liquid, compound and method not elsewhere specified	BR
82487	paper, 1–dimensional, compound and method not elsewhere specified	BR

		Unit Value
82488	paper, 2–dimensional, not elsewhere specified	BR
82489	thin layer, not elsewhere specified	BR
82490	Chromium, blood	100.0
82495	urine	100.0
82505	Chymotrypsin, duodenal contents	30.0
82507	Citric acid	80.0

(Cocaine, screen, see 82486, 82660, 82662, 82755, 84231)

(Codeine, quantitative, see 82096, 82101)

(Complement, see 86159–86162)

(Compound S, see 82634)

82525	Copper, blood	60.0
82526	urine	60.0

(Coprobilinogen, feces, 84575)

(Coproporphyrins, see 84118–84121)

(Corticosteroids, see 83492–83496)

82528	Corticosterone, RIA	BR

(See also 83593–83597)

82529	Cortisol; fluorometric, plasma	36.0
82531	CPB, plasma	75.0
82532	CPB, urine	75.0
82533	RIA, plasma	90.0
82534	RIA, urine	90.0
82536	after adrenocorticotropic hormone (ACTH) Administration	BR
82537	48 hours after continuous ACTH infusion	BR
82538	after metyrapone tartrate administration	BR
82539	dexamethasone suppression test, plasma and/or urine	BR
82540	Creatine, blood	24.0
82545	urine	40.0
82546	Creatine and creatinine	50.0
82550	Creatine phosphokinase (CPK), blood, timed kinetic ultraviolet method	26.0
82552	isoenzymes	30.0
82555	colorimetric	20.0
°82565	Creatinine, blood	°20.0
°82570	urine	°20.0
°82575	clearance	°40.0
82585	Cryofibrinogen, blood	40.0
82595	Cryoglobulin, blood	40.0

(Crystals, pyrophosphate vs. urate, see 84208)

82600	Cyanide, blood	80.0
82601	tissue	80.0
82606	Cyanocobalamin (Vitamin B–12); bioassay	BR
82607	RIA	BR

(Cyclic AMP, see 82030)

(Cyclic GMP, see 83008)

82614	Cystine, blood, qualitative	BR
82615	Cystine, and homocystine, urine, qualitative	30.0
82620	quantitative	40.0
82624	Cystine aminopeptidase	BR

(D hemoglobin, see 83053)

(Delta–aminolevulinic acid (ALA), see 82135)

82626	Dehydroepiandrosterone, RIA	BR

(See also 83593–83596)

82628	Desipramine	BR
82633	Desoxycorticosterone, 11–RIA	BR

(See also 83593–83596)

82634	Desoxycortisol, 11–(compound S), RIA	80.0

(See also 83492)

82635	Diacetic acid	18.0

(Diagnex Blue, tubeless gastric, see 82939)

(Diastase, urine, see 82156)

82636	Diazepam	50.0
82638	Dibucaine number	34.0
82639	Dicumarol	BR

(Dichloroethane, see 84600)

(Dichloromethane, see 84600)

(Diethylether, see 84600)

82640	Digitoxin digitalis, blood RIA	BR+
82641	urine	BR+
82643	Digoxin, RIA	36.0
82646	Dihydrocodinone	BR

(Dihydrocodinone screen, see 82486–82489, 82662, 82755, 84231)

82649	Dihydromorphinone, quantitative	75.0

(Dihydromorphinone screen, see 82486, 82489, 82662, 82755, 84231)

82651	Dihydrotestosterone (DHT)	BR
82654	Dimethadione	BR

(Diphenylhydantoin, see 84045)

(Dopamine, see 82382–82384)

82656	Doxepin	BR
82660	Drug screen (amphetamines, barbiturates, alkaloids)	80.0

(See also 82486–82489, 82662, 82755, 84231)

(Duodenal contents, see individual enzymes; for intubation and collection, see 89100)

		Unit Value
82662	Enzyme immunoassay technique for drugs, EMIT	30.0
82664	Electrophoretic technique, not elsewhere specified	45.0
82666	Epiandrosterone	BR
	(See also 83593, 83596)	
	(Epinephrine, see 82382–82384)	
82668	Erythropoietin, bioassay	BR
	(For HI method, see 86280)	
82670	Estradiol, RIA (placental)	90.0
82671	Estrogens; fractionated	85.0
82672	total	60.0
82673	Estriol, placental; fluorometric	54.0
82674	GLC	45.0
82676	Estriol, nonpregnancy; chemical	75.0
82677	RIA	105.0
82678	Estrone; chemical	75.0
82679	RIA	90.0
	(Ethanol, see 82055–82075)	
82690	Ethchlorvynol (Placidyl), blood	60.0
82691	urine	60.0
82692	Ethosuximide	BR
	(Ethyl alcohol, see 82055–82075)	
82694	Etiocholanolone	BR
	(See also 83593, 83596)	
	(Evans Blue, see blood volume, 84605–84610)	
82705	Fat or lipids, feces, screening	10.0
82710	quantitative, 24 or 72 hour specimen	100.0
82715	Fat differential, feces, quantitative	BR
82720	Fatty acids, blood, esterified	40.0
82725	nonesterified	40.0
82727	Ferric chloride, urine	BR
82728	Ferritin, specify method (e.g., RIA, immunoradiometric assay)	BR
	(Fetal hemoglobin, see hemoglobin 83020, 83033, and 85460)	
	(Fetoprotein, alpha–1, see 86329)	
82730	Fibrinogen, quantitative	21.0
	(See also 85371, 85377)	
82735	Fluoride, blood	100.0
82740	urine	100.0
82742	Flurazepam	BR
82745	Folic acid, (folate), blood bioassay	BR+
82746	RIA	45.0
	(Follicle stimulating hormone (FSH), see 83000, 83001)	
82750	Formimino–glutamic acid (FIGLU), urine	100.0
82755	Free radical assay technique for drugs (FRAT)	BR
82756	Free thyroxine index (T–7)	BR
82757	Fructose, semen	BR
	(Fructose, TLC screen see 84375)	
82759	Galactokinase, RBC	BR
82760	Galactose, blood	40.0
82763	tolerance test	75.0
82765	urine	40.0
82775	Galactose–1–phosphate uridyl transferase	60.0
	(For TLC screen, see 84375)	
82776	screen	18.0
82780	Gallium	BR
82784	Gammaglobulin, A, D, G, M nephelometric, each	12.0
82785	Gammaglobulin, E, RIA	75.0
82786	Gammaglobulin, salt precipitation method	21.0
	(Gammaglobulin by gel (immuno) diffusion, see 86329)	
	(Gamma–glutamyl transpeptidase (GGT), see 82977)	
82790	Gases, blood, oxygen saturation; by calculation from pO_2	40.0
82791	by manometry	40.0
82792	by oximetry	20.0
82793	by spectrophotometry	40.0
82795	by calculation from pCO_2	6.0
82800	Gases, blood, pH, only	20.0
82801	pCO_2	24.0
82802	pH, pCO_2 by electrode	42.0
82803	pH, pCO_2, pO_2 simultaneous	54.0
82804	pO_2 by electrode	40.0
82812	pO_2 by manometry	24.0
82817	pH, pCO_2 by tonometry	24.0
	(For arterial puncture, see 36600)	
	(For blood gas studies as a part of pulmonary function studies, see 94700–94710)	
82926	Gastric acid, free and total; single specimen	11.2
82927	each additional specimen	9.0
82928	Gastric acid, free or total; single specimen	9.0
82929	each additional specimen	7.5
82931	Gastric acid, pH titration; single specimen	24.0
82932	each additional specimen	18.0
82939	Gastric analysis, tubeless (Diagnex blue)	BR
	(Gastric analysis, with stimulation, see 89140, 89141)	
	(Gastric analysis, pepsin, see 83974)	

		Unit Value
	(For gastric intubation, see 89130, 74340)	
	(For aspiration of specimens with insulin administration (Hollander test), see 91075)	
82941	Gastrin, RIA	48.0
	(GGT, see 82977)	
	(GLC, gas liquid chromatography, see 82486)	
82942	Globulin, serum	10.5
	(See also 82784, 82786, 84155–84200, 86329)	
82943	Glucagon, RIA	BR
82944	Glucosamine	6.0
82947	Glucose; except urine (e.g., blood, spinal fluid, joint fluid)	10.5
82948	blood, stick test	8.2
82949	fermentation	22.5
82950	post glucose dose (includes glucose)	13.5
82951	tolerance test (GTT), three specimens (includes glucose)	37.5
82952	tolerance test, each additional beyond three specimens	10.5
	(For intravenous glucose tolerance test, use 36410, 99070)	
	(For GTT with medication, use 36410, 90730, 99070)	
82953	tolbutamide tolerance test	15.0
	(For insulin tolerance test, see 82937)	
82954	urine	20.0
	(For intubation, see 89130, 79340)	
82955	Glucose–6–phosphate dehydrogenase, erythrocyte	60.0
82960	screen	56.0
82961	Glucose tolerance test, intravenous	BR
82965	Glutamate dehydrogenase, blood	40.0
82975	Glutamine (glutamic acid amide), spinal fluid	80.0
82977	Glutamyl transpeptidase, gamma (GGT)	BR
82978	Glutathione	BR
82979	Glutathione reductase, RBC	BR
82980	Glutethimide	56.2
82985	Glycoprotein electrophoresis	60.0
82995	Gold, blood	100.0
82996	Gonadotropin, chorionic, bioassay; qualitative	30.0
82997	quantitative	30.0
82998	Gonadotropin, chorionic, RIA	BR
	(For immunoassay, qualitative, see 86006, 86007)	
	(For quantitative titer, see 86008, 86009)	
83000	Gonadotropin, pituitary FSH; bioassay	90.0
83001	RIA	90.0
83002	(LH)(ICSH)RIA	90.0
83003	Growth hormone (HGH), (somatotropin) RIA	48.0
83004	after glucose tolerance test	48.0
83005	Guanase, blood	40.0
83008	Guanosine monophosphate, cyclic, RIA	BR
83010	Haptoglobin, chemical	60.0
83011	quantitative, electrophoresis	30.0
83012	phenotypes, electrophoresis	60.0
83015	Heavy metal screen (arsenic, bismuth, mercury, antimony); chemical (e.g., Reinsch, Gutzeit)	30.0
83018	chromatography, DEAE column	BR
83020	Hemoglobin, electrophoresis (includes A_2, S, C, etc.)	80.0
	(Hemoglobin, carboxyhemoglobin (CO), see 82375, 82376; colorimetric, see 85018, 85031)	
83030	F (fetal), chemical	40.0
83033	F(fetal), qualitative (APT) test, fecal	56.0
83036	glycosylated (Alc)	60.0
83040	methemoglobin, electrophoretic separation	80.0
83045	qualitative	20.0
83050	quantitative	40.0
83051	plasma	40.0
83052	sickle, turbidimetric	34.0
83053	solubility, S–D, etc.	40.0
83055	sulfhemoglobin, qualitative	20.0
83060	quantitative	40.0
83065	thermolabile	BR
83068	unstable, screen	BR
83069	urine	BR
83070	Hemosiderin, urine	12.0
	(Heroin, screening, see 82660, 82486, 82662, 82755, 84231; quantitative, see 82096, 82101)	
	(HIAA, see 83497)	
83086	Histidine; blood, qualitative	BR
83087	urine, qualitative	BR
83088	Histamine	100.0
	(Hollander test, see 91075)	
	(Homocystine, qualitative, see 82615)	
	(Homocystine, quantitative, see 82620)	
83093	Homogentisic acid; blood, qualitative	BR
83094	Homogentisic acid, urine, qualitative	20.0
83095	quantitative	40.0
	(Hormones, see individual alphabetic listings in chemistry section)	
83150	homo–vanillic acid (HVA), urine	80.0

		Unit Value
83485	Hydroxybutyric dehydrogenase, alpha (HBD), blood; kinetic ultraviolet method	22.0
83486	colorimetric method	20.0
83492	Hydroxycorticosteroids, 17– (17–OHCS); gas liquid chromatography (GLC)	82.0
83493	blood, Porter–Silber type	45.0
83494	blood, fluorometric	38.0
83495	urine, Porter–Silber type	52.0
83496	urine, fluorometric	52.0
	(See also 82531–82534, 82634, 84409)	
83497	Hydroxyindolacetic acid, 5–(HIAA), urine	60.0
	(For HIAA, blood, see 84260)	
83498	Hydroxyprogesterone, 17–d, RIA	105.0
83499	Hydroxyprogesterone, 20–	BR
83500	Hydroxy–proline, urine, free only	100.0
83505	total only	100.0
83510	free and total	180.0
83523	Imipramine	67.0
	(Immunoglobulines, see 82784, 82785, 82786, 86329, 86335)	
83524	Indican, urine	35.0
83525	Insulin, RIA	40.0
83526	Insulin tolerance	80.0
	(For proinsulin, see 84206)	
83530	Insulin clearance	40.0
	(For administration, see 36410, 99070)	
83533	Iodine; protein bound (PBI)	45.0
83534	total	60.0
	(For thyroxine, see 84441)	
	(For triiodothyronine (true T–3), RIA, see 84480)	
	(For T–3 or T–4 radioactive resin uptake, see RT3U, 84250; for RT3U+thyroxine, see 84251)	
83540	Iron, serum, chemical	20.0
83545	automated	12.0
83546	radioactive uptake method	30.0
83550	binding capacity, serum chemical	20.0
83555	automated	12.0
83565	radioactive uptake method	30.0
83570	Isocitric dehydrogenase (IDH), blood, kinetic ultraviolet	26.0
83571	colorimetric	20.0
	(Isopropyl alcohol, see alcohol 82076)	
83576	Isonicotinic acid hydrazide (INH)	105.0
83582	Ketogenic steroids, urine; 17–(17–KGS)	45.0
83583	11–desoxy: 11–oxy ratio	75.0
83584	Ketoglutarate, alpha	40.0
	(Ketone bodies, see 82005–82010; urine, see 81000–81005)	
83586	Ketosteroids, 17–(17–KS), blood; total	38.0
83587	fractionation, alpha/beta	75.0
83589	Ketosteroids, 17–(17–KS), urine; total	36.0
83590	fractionation, alpha/beta	60.0
83593	chromatographic fractionation	75.0
83596	D/A/E ratio	BR
83597	11–desoxy: 11–oxy ratio	75.0
	(See also 82528, 82632, 82633, 82666, 82694)	
83600	Kynurenic acid	90.0
83605	Lactate, lactic acid	40.0
83615	Lactic dehydrogenase (LDH), blood, kinetic ultraviolet method	26.0
°83620	colorimetric or fluorometric	°20.0
83624	heat or urea inhibition (total not included)	24.0
83625	isozymes, electrophoretic separation and quantitation	60.0
83626	chemical separation	20.0
83628	Lactic dehydrogenase, liver (LLDH)	20.0
83629	Lactic dehydrogenase (LDH), urine	20.0
83631	Lactic dehydrogenase (LDH), CSF	20.0
	(For hydroxybutyric dehydrogenase (HBD), see 83485)	
83632	Lactogen, placental (HPL) chorionic somatomammotropin, RIA	30.0
83633	Lactose, urine; qualitative	20.0
83634	quantitative	20.0
	(For tolerance, see 82951–82952)	
	(For TLC screen, see 84375)	
83645	Lead, screening, blood	20.0
83650	urine	20.0
83655	quantitative, blood	60.0
83660	urine	60.0
83661	Lecithin–sphingomyelin ratio (L/S ratio), amniotic fluid	75.0
83670	Leucine amino–peptidase (LAP), blood, kinetic ultraviolet method	26.0
83675	colorimetric	20.0
83680	urine	26.0
83681	Leucine tolerance test	26.0
83685	Lidocaine	20.0
83690	Lipase, blood	30.0
83700	Lipids, blood, total	30.0
83705	fractionated (cholesterol, triglycerides, phospholipids)	60.0
	(For feces, see 82705–82715)	
83715	Lipoprotein, blood, electrophoretic separation and quantitation	60.0

		Unit Value
83717	ultracentrifugation, analytic, (atherogenic index)	100.0
83718	precipitation test	80.0
83725	Lithium, blood, quantitative	60.0
	(Luteinizing hormone (LH), see 83002)	
83728	Lysergic acid diethylamide (LSD) RIA	BR
83730	(Macroglobulins (sia test)	30.0
83735	Magnesium, blood, chemical	20.0
83740	fluorometric	20.0
83750	atomic absorption	40.0
83755	urine, chemical	40.0
83760	fluorometric	40.0
83765	atomic absorption	40.0
83775	Malate dehydrogenase, kinetic ultraviolet method	30.0
	(Maltose tolerance, see 82951, 82952)	
	(Mammotropin, see 84146)	
83785	Manganese, blood or urine	60.0
83790	Mannitol clearance	BR
	(Marijuana, see tetrahydrocannabinol THC, 84408)	
83795	Melanin, urine, quantitative	60.0
83799	Meperidine, quantitative	54.0
	(For screen, see 82486, 82489, 82662, 82755, 84231)	
83805	Meprobamate, blood or urine	60.0
	(For screen, see 82486, 82489, 84231)	
83825	Mercury quantitative, blood	70.0
83830	urine	70.0
	(Mercury screen, see 83015)	
83835	Metanephrines, urine	52.0
	(For catecholamines, see 82382–82384)	
83840	Methadone	60.0
	(Methamphetamine, see 82145)	
	(Methanol, see 82078)	
83842	Methapyrilene	50.0
83845	Methaqualone	90.0
	(For metals, heavy, screening (Reinsch test), see 82177)	
83857	Methemalbumin	32.0
	(Methemoglobin, see hemoglobin 83045–83050)	
83858	Methsuximide, serum	90.0
	(Methyl alcohol, see 82078)	
83859	Methyprylon	90.0
83860	Morphine, screening	80.0
83861	quantitative	120.0
83862	RIA	82.0
83864	Mucopolysaccharides, acid, blood	60.0
83865	Mucopolysaccharides, acid, urine quantitative	60.0
83866	screen	21.0
83870	Mucoprotein, blood (seromucoid)	40.0
83872	Mucin, synovial fluid (rope test)	21.0
83874	Myoglobin, electrophoresis	30.0
83875	Myoglobin, urine	40.0
83880	Nalorphine	60.0
83885	Nickel, urine	100.0
83887	Nicotine	75.0
83895	Nitrogen, urine, total, 24 hour specimen	60.0
83900	feces, 24 hour specimen	100.0
83910	Nonprotein nitrogen, blood	20.0
	(Norepinephrine, see 82382–82384)	
83915	Nucleotidase 5'–	25.0
83917	Organic acids; screen, qualitative	30.0
83918	quantitative	30.0
83920	Ornithine carbonyl transferase, (OCT)	24.0
83930	Osmolality, blood	20.0
83935	urine	20.0
83938	Ouabain	BR
83945	Oxalate, urine	40.0
	(For alpha oxoglutarate, see 82120)	
83946	Oxazepam	40.0
83947	Oxybutyric acid, beta	40.0
83948	Oxycodinone	52.0
	(Oxygen, see gases, blood, 82790–82817)	
83949	Oxytocinase, RIA	52.0
	(Para–aminohippuric acid, see 82134)	
83965	Paraldehyde, blood, quantitative	60.0
83970	Parathormone (parathyroid hormone), RIA	165.0
	(PBI, see 83533)	
83971	Penicillin, urine	50.0
83972	Pentazocine	60.0
83973	Pentose, urine, qualitative	13.5
	(For TLC screen, see 84375)	
83974	Pepsin, gastric	23.0
83975	Pepsinogen, blood	40.0
83985	Pesticide, other than chlorinated hydrocarbons, blood, urine or other material	BR+
	(Pesticide, chlorinated hydrocarbons, see 82441)	
83986	pH, body fluid, except blood	BR
	(For blood, see 82800, 82802, 82803, 82817)	
83992	Phencyclidine (PCP)	38.0
83995	Phenol, blood or urine	60.0

		Unit Value
84005	Phenolsulphonphthalein (PSP), urine	20.0
	(For injection procedure, see 36410 for provision of materials, see 99070)	
84021	Phenothiazine, urine	100.0
	(See also 82486 et seq.)	
84022	quantitative, chemical	BR
	(For also individual drugs)	
84030	Phenylalanine, blood, Guthrie	12.0
	(Phenylalanine–tyrosine ratio, see 84030, 84510)	
84031	fluorometric	12.0
84033	Phenylbutazone	20.0
84035	Phenylketones; blood, qualitative	20.0
84037	urine, qualitative	20.0
84038	Phenylpropanolamine	20.0
84039	Phenylpyruvic acid; blood	20.0
84040	Phenylpyruvic acid, urine	20.0
	(For qualitative chemical tests, urine, see 81005)	
84045	Phenytoin	80.0
°84060	Phosphatase, acid, blood	°24.0
84065	(prostatic) fraction	40.0
°84075	alkaline, blood	°24.0
84078	heat stable (total not included)	
84080	isoenzymes, electrophoretic method	BR+
84082	Phosphates, tubular reabsorption of (TRP)	60.0
	(Phosphates, inorganic, see 84100–84105)	
	(Phosphates, organic, see 82480–82484)	
84083	Phosphoglucomutase, isoenzymes	60.0
84085	Phosphogluconate, 6–, dehydrogenase, RBC	18.0
84087	Phosphohexose isomerase	30.0
84090	Phospholipids, blood	30.0
	(See also 83705)	
	(For lecithin/sphingomyelin ratio, see 83661)	
°84100	Phosphorus, blood	°24.0
°84105	urine	°24.0
	(Pituitary gonadotropins, see 83000–83002)	
	(PKU, see 81005, 84030, 84031)	
84106	Porphobilinogen, urine; qualitative	20.0
84110	Porphobilinogen, urine, quantitative	20.0
84118	Porphyrins, copro–, urine; quantitative	30.0
84119	qualitative	24.0
84120	Porphyrins, urine, fractionated (uroporphyrin and coproporphyrin)	64.0
84121	uro–, copro–, and porphobilinogen, urine	80.0
	(For porphyrin precursors, see 82630)	
84126	feces, quantitative	100.0
84128	Porphyrins, plasma	82.0
	(For protoporphyrin, RBC, see 84202, 84203)	
84132	Potassium, blood	°24.0
84133	urine	°24.0
84136	Pregnanediol	54.0
84139	Pregnantriol	54.0
84141	Primidone	60.0
84142	Procainamide	60.0
84144	Progesterone, any method	105.0
	(For proinsulin, RIA, see 84206)	
84146	Prolactin (mammotropin), RIA	225.0
84147	Propoxyphene	60.0
	(For screen, see 82486 et seq.)	
84149	Propranolol	BR
84150	Prostaglandin, any one, RIA	BR
84155	Protein, total, serum, chemical	°20.0
84160	refractometric	12.0
84165	electrophoretic fractionation and quantitation	60.0
84170	total and albumin/globulin ratio	°40.0
	(For serum albumin, see 82040, for serum globulin, 82942)	
84175	other sources, quantitative	24.0
84176	Protein, special studies (e.g., monoclonal protein analysis)	BR
84180	urine, quantitative, 24 hour specimen	24.0
84185	Bence–Jones	12.0
84190	electrophoretic fractionation and quantitation	80.0
84195	spinal fluid semi–quantitative (Pandy)	20.0
84200	electrophoretic fractionation and quantitation	80.0
	(For protein bound iodine (PBI), see 83533)	
84201	Protirelin, thyrotropin releasing hormone (TRH) test	BR
84202	Protoporphyrin, RBC; quantitative	30.0
84203	screen	20.0
84205	Protiptylene	68.0
84206	Proinsulin, RIA	60.0
84207	Pyridoxine (Vitamin B–6)	BR
84208	Pyrophosphate vs. urate, crystals (polarization)	12.0
84210	Pyruvate, blood	30.0
84220	Pyruvic–kinase, RBC	30.0
84228	Quinine	30.0
84230	Quinidine, blood	40.0
84231	Radioimmunoassay (RIA) not elsewhere specified	BR

		Unit Value
	(Reinsch test, see 83015)	
84232	Releasing factor	BR
84233	Receptor assay; estrogen (estradiol)	BR
84234	progesterone	BR
84235	endocrine, other than estrogen or progesterone (specify hormone)	BR
84244	Renin (RIA)	60.0
	(See also 82163, angiotensin II)	
84246	furosemide test	BR
84250	Resin uptake T-3, or T-4 (RT3U);	42.0
84251	with total thyroxine, any method	BR
84252	Riboflavin (Vitamin B-2)	BR
	(Salicylates, see 82011, 82012)	
	(Saline infusion test, see 82091)	
	(Secretin test, see 99070, 89100 and appropriate analyses)	
84255	Selenium, blood, urine or tissue	100.0
84260	Serotonin, blood	120.0
	(For urine metabolites, see 83497)	
84275	Sialic acid, blood	50.0
	(Sickle hemoglobin, see 83020, 83052, 83053, 85660)	
84285	Silica, blood, urine or tissue	100.0
°84295	Sodium, blood	°24.0
°84300	urine	°24.0
	(Somatomammotropin, see 83632)	
	(Somatotropin, see 83003; chorionic, see 83632)	
84310	Sorbitol dehydrogenase, serum	26.0
84315	specific gravity (except urine)	8.0
84317	Starch, feces, screening	8.0
84318	Stercobilin, qualitative, feces	BR
	(For stone analysis see 82355-82370)	
84324	Strychnine	75.0
	(Sugar, see under glucose)	
84375	sugars chromatographic separation	80.0
	(Sulfhemoglobin, see hemoglobin, 83055-83060)	
84382	Sulfobromophthalein (BSP)	32.0
	(For injection, see 36410, 99070)	
84395	Sulfonamide, blood chemical	20.0
84397	crystals, qualitative	20.0
	(T-3, see 84480, 84250)	
	(T-4, see 84441)	
84401	Testosterone, blood; double isotope	BR
84403	RIA	105.0
84404	Testosterone, urine; double isotope	BR
84405	RIA	120.0
84406	Testosterone, binding protein	BR
84407	Tetracaine	BR
84408	Tetrahydrocannabinol THC (marijuana)	BR
84409	Tetrahydrocortisone or tetrahydrocortisol	105.0
	(See also 83492-83497)	
84410	Thallium, blood or urine	100.0
84420	Theophylline, blood or saliva	60.0
84425	Thiamine (Vitamin B-1)	BR
84430	Thiocyanate, blood	30.0
84434	Thioridazine	40.0
84441	Thyroxine (T-4), specify method (e.g., CPB, RIA)	40.0
84442	Thyroxine binding globulin (TBG)	52.0
	(Thyroxine, free thyroxine index, T-7, see 82756)	
	(Thyroid hormones, PBI, thyroxine, etc., see 84480, 84441, 84250)	
84443	Thyroid stimulating hormone (TSH), RIA	60.0
84444	Thyrotropin releasing factor, RIA;	BR
84445	plus long acting (LATS)	BR
84446	Tocopherol alpha (Vitamin E)	38
	(Tolbutamide tolerance, see 82951-82952)	
84447	Toxicology, screen; general	BR
84448	sedative (acid and neutral drugs, volatiles)	45.0
84450	Transaminase, blood, glutamic oxaloacetic (SGOT), timed kinetic ultraviolet method	24.0
°84455	colorimetric or fluorometric	°20.0
84460	glutamic pyruvic (SGPT), blood timed kinetic ultraviolet	24.0
°84465	colorimetric or fluorometric	°20.0
	(Transferrin, see 86329)	
84472	Trichloroethanol	60.0
84474	Trichloroacetic acid	36.0
	(Trichloroacetaldehyde, see 82400-82405)	
84476	Trifluoperazine	36.0
84478	Triglycerides, blood	30.0
	(See also 83705)	
84480	Triiodothyronine (true T-3), RIA	36.0
84483	Trimethadione	36.0
84485	Trypsin, duodenal fluid	30.0
84488	Trypsin, feces, quantitative, 24 hour specimen	30.0
84490	quantitative	30.0
	(Tubular reabsorption of phosphate, blood and urine, see 84082)	
84510	Tryosine, blood	40.0
	(Ultracentrifugation, lipoprotein, see 82190)	

		Unit Value
	(Urate vs. pyrophosphate crystals, see 84208)	
°84520	Urea nitrogen, blood (BUN); quantitative	°22.0
84525	stick test	8.0
°84540	urine	°20.0
°84545	clearance	°40.0
°84550	Uric acid, blood, chemical	°20.0
84555	uricase, ultraviolet method	26.0
84560	urine	20.0
84565	Urobilin, urine, qualitative	12.0
84570	quantitative, timed specimen	24.0
84575	feces, quantitative	60.0
84577	Urobilinogen, feces, quantitative	30.0
84578	Urobilinogen, urine, qualitative	24.0
84580	quantitative, timed specimen	24.0
84583	semiquantitative	20.0
84584	Uropepsin, urine	24.0
	(Uroporphyrins, see 84120, 84121)	
84585	Vanillymandelic acid (VMA), urine	24.0
84588	Vasopressin (antidiuretic hormone), RIA	BR
84589	Viscosity, fluid	10.0
84590	Vitamin A, blood	40.0
84595	including carotene (see also 82380)	60.0
	(Vitamin B-1, see 84425)	
	(Vitamin B-2, see 84252)	
	(Vitamin B-6, see 84207)	
	(Vitamin B-12, blood, see 82606, 82607)	
	(Vitamin B-12, absorption (Schilling), see 78270, 78271)	
	(Vitamin C, see 82180)	
	(Vitamin E, see 84446)	
84597	Vitamin K	BR
	(VMA, see 84585)	
84600	Volatiles (acetic anhydride, carbon tetrachloride, dichloroethane, dichloromethane, diethylether)	45.0
	(For acetaldehyde, see 82000)	
84605	Volume, blood, dye method (Evans blue)	30.0
84610	including total plasma and total blood cell volume	50.0
	(Volume, blood, RISA or Cr-51, see 78110, 78111)	
84613	Warfarin	BR
84615	Xanthurenic acid	BR
84620	Xylose tolerance test, blood	40.0
84630	Zinc, quantitative, blood	100.0
84635	urine	100.0
84645	Zinc sulphate turbidity	20.0
84999	Unlisted chemistry or toxicology procedure	BR

NOTE:

Gas-liquid chromatography, paper chromatography, electrophoresis, nuclear medicine, enzyme immunoassay and radioimmunossay techniques are being extended constantly for the analysis of many drugs, hormones and other substances. Where these methodologies are not specifically listed under the compound in question, such tests should be coded under the listing for the specific general methodology. (For immunodiffusion, immunoprecipitin, and counter-immunoelectrophoretic methods other than enzyme and radioimmunoassay techniques, see Immunology section)

[Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-24-041 (Order 81-28), § 296-23-212, filed 11/30/81, effective 1/1/82; 81-01-100 (Order 80-29), § 296-23-212, filed 12/23/80, effective 3/1/81; Order 74-7, § 296-23-212, filed 1/30/74.]

Reviser's note -- Erratum: Through a clerical error in the publication process of the 1980 edition of the Washington Administrative Code, certain numerals were omitted from the tables in WAC 296-23-212. The section as published in the Washington State Register, WSR 81-01-100, accurately reflects Order 80-29 of the Department of Labor and Industries, and should be used to determine the effective text of the rule before January 1, 1982, when the amendment contained in Register 81-24-041 (Order 81-28) took effect. The error has been corrected in the section as displayed above.

WAC 296-23-216 Hematology.

		Unit Value
	(Includes blood clotting (coagulation) procedures. For blood banking procedures, see under Immunology.)	
	(Agglutinins, see Immunology)	
	(Antifactor (specific coagulation factors), see 85300-85341)	
	(Antiplasmin, see 85410)	
	(Antiprothrombinase, see 85311)	
	(Antithrombin III, see 85300)	
	(Basophil count, see 85005)	
85000	Bleeding time Duke	10.0
85002	Ivy	24.0
85003	Adelson-Crosby immersion method	20.0
	(Blood cell morphology only, see 85548)	
85005	Blood count; basophil count, direct	10.0
85007	differential WBC count (includes RBC morphology and platelet estimation)	7.5
	(See also 85548, 85585)	

		Unit Value
	(For other fluids, e.g., CSF, see 89051, 89190)	
85009	differential WBC count, buffy coat	12.0
85012	eosinophil count, direct	10.0
	(For nasal smear, see 89180)	
85014	hematocrit	8.0
85018	hemoglobin, colorimetric	8.0
	(For other hemoglobin determination, see 83020–83068)	
85021	hemogram, automated RBC, WBC, Hgb, Hct and indices only)	10.5
85022	hemogram, automated, differential WBC count (CBC)	15.0
85027	hemogram, automated, with platelet count	12.0
85028	hemogram, automated, and differential WBC count (CBC) with platelet count	17.0
	(For additional laboratory testing utilizing automated hemogram techniques, use Modifier –22, Unusual Services)	
85031	hemogram, manual, complete CBC (RBC, WBC, Hgb, Hct, differential and indices)	16.5
85041	red blood cell (RBC)	8.0
	(See also 85021–85031, 89050)	
85044	reticulocyte count	12.0
85048	white blood cell (WBC)	8.0
	(See also 85021–85034)	
85095	Bone marrow; aspiration only	45.0
85100	Bone marrow, aspiration, staining, and interpretation of smears	140.0
	(For special stains, see 85535, 85540, 85560, 88312–88313)	
85101	aspiration and staining only (smears)	75.0
85102	biopsy core (needle)	75.0
	(For trocar, see 20220)	
85103	cell block or biopsy, stain and interpretation	60.0
85105	interpretation only	100.0
85109	staining and preparation only	30.0
85120	Bone marrow transplant	50.0
85150	Calcium clotting time	40.0
85160	Calcium saturation clotting test	40.0
85165	Capillary fragility test (Rumpel–Leede) (independent procedure)	20.0
85170	Clot retraction	8.0
85171	quantitative	45.0
85172	inhibition by drugs	BR
85175	Clot lysis time, whole blood dilution	40.0
	(Clotting factor I (fibrinogen), see 82730, 85371–85377)	
85210	factor II (prothrombin assay)	40.0
	(See also 85610–85618)	
85220	factor V (AcG or pro–accelerin) labile factor	40.0
85230	factor VII (proconvertin stable factor)	40.0
85240	factor VIII (AHG) one stage	40.0
85242	factor VIII (AHG), two stage	40.0
85250	factor IX (PTC or Christmas)	40.0
85260	factor X (Stuart–Prower)	40.0
85270	factor XI (PTA)	40.0
85280	factor XII (Hagemann)	40.0
85290	factor XIII (fibrin stabilizing)	40.0
85291	factor XIII (fibrin stabilizing), screen solubility	40.0
85300	Clotting inhibitors or anti–coagulants, anti–thrombin	40.0
85310	anti–thromboplastins	40.0
85311	anti–prothrombinase	40.0
85320	anti–prothromboplastins	40.0
85330	anti–factor VIII	40.0
85340	cross recalcification time (mixtures)	40.0
85341	PTT inhibition test	BR
85345	Coagulation time (Lee and White)	30.0
85347	Coagulation time, activated	20.0
85348	other methods	BR
	(Complete blood count, see 85021–85031)	
	(Differential count, see 85007 et seq.)	
	(Drug inhibition, clot retraction, see 85172)	
	(Duke bleeding time, see 85000)	
	(Eosinophil count, direct, see 85012)	
	(Eosinophils, microscopic examination for, in various body fluids, see 89180)	
	(Ethanol gel, see 85363)	
85360	Euglobulin lysis	40.0
	(Fetal hemoglobin, see 83030–83033, 85460)	
85362	Fibrin degradation (split) products (FDP)(FSP); agglutination, slide	12.0
85363	ethanol gel	10.0
85364	hemagglutination inhibition (Merskey), microtiter	36.0
85365	immunoelectrophoresis	BR
85367	precipitation	18.0
85368	protamine paracoagulation (PPP)	BR
85369	staphylococcal clumping	12.0
	(Fibrinogen, quantitative, see 82730)	
85371	Fibrinogen, semiquantitative; latex	40.0
85372	turbidimetric	22.5

		Unit Value
85376	Fibrinogen; thrombin with plasma dilution	24.0
85377	thrombin time dilution	36.0
85390	Fibrinolysins, screening	20.0
85392	with EACA control	BR
85395	semi-quantitative	30.0
85396	lysis of homologous clot	105.0
85398	Fibrinolysis, quantitative	45.0
85400	Fibrinolytic mechanisms, plasmin	BR+
85410	anti-plasmin	BR+
85420	plasminogen	BR+

(For plasminogen activator, see 85665)

(Fragility, red blood cell, see 85547, 85555–85557)

85441	Heinz bodies; direct	9.0
85445	induced, acetyl phenylhydrazine	19.5

(For hematocrit (pcv), see 85014, 85021–85031)

(For hemoglobin, see 83020–83060, 85050)

85460	Hemoglobin, fetal, differential lysis (Kleihauer)	26.0

(See also 83030, 83033)

(Hemogram, see 85021–85031)

(Hemolysins, see 86006, 86281, 86282)

85520	Heparin assay	60.0
85530	Heparin-protamine tolerance test	60.0
85535	Iron stain (RBC or bone marrow smears)	18.0

(Ivy bleeding time, see 85002)

85538	Leder stain (esterase) blood or bone marrow	30.0
85540	Leucocyte alkaline phosphatase	20.0
85544	Lupus erythematosus (LE) cell prep	20.0

(Lysozyme, see 85549)

85547	Mechanical fragility, RBC	30.0
85548	Morphology of red blood cells, only	9.0
85549	Muramidase, serum	52.0
85550	Nitroblue tetrazolium test (NBT)	36.0
85555	Osmotic fragility, RBC;	15.0
85556	incubated, qualitative	18.0
85557	incubated, quantitative	60.0

(Packed cell volume, see 85014)

(Partial thromboplastin time, see 85730–85732)

(Parasites, blood, e.g., malaria smears, see 87207)

85560	Peroxidase stain, WBC	15.0

(Plasmin, see 85400)

(Plasminogen, see 85420)

(Plasminogen activator, see 85665)

85575	Platelet; adhesiveness (in vivo)	45.0
85577	aggregation (glass bead)	30.0
85580	Platelet, count (Rees–Ecker)	14.0
85585	estimation on smear, only	10.0

(See also 85007)

85590	phase microscopy	20.0
85595	electronic technique	20.0
85610	Prothrombin time	16.0

(See also 85618)

85612	Russell viper venom type (includes venom)	36.0
85614	two stage	30.0
85615	Prothrombin utilization (consumption)	40.0
85618	Prothrombin–Proconvertin, P & P (Owren)	18.0

(Red blood cell count, see 85021–85031)

85630	Red blood cell size (Price–Jones)	40.0
85632	Red blood cell peroxide hemolysis	30.0
85635	Reptilase test	33.0

(Reticulocyte count, see 85044)

(Rumpel–Leede test, see 85165)

85640	Reticulocyte count	14.0
85650	Sedimentation rate (esr) Wintrobe type	14.0
85651	Westergren type	10.5
85660	Sickling of red blood cells reduction slide method	14.0

(Sickling, electrophoresis, see 83020)

(Sickling, solubility, S–D, see 83053)

(Sickling, turbidimetric (Sickledex dithionate), see 83052)

(Siderocytes, see 85535)

(Smears for parasites, malaria, etc., see 87207)

(Staphyloccoccal clumping test, see 85369)

85665	Streptokinase titer (plasminogen activator)	BR
85670	Thrombin time, plasma	20.0
85675	titer	12.0
85680	Thrombo test	20.0
85700	Thromboplastin generation test, screening (Hicks–Pitney)	40.0
85710	definitive, with platelet substitute	45.0
85711	with patient's platelets	45.0
85720	all factors	BR+

(For individual clotting factors, see 85210 et seq.)

85730	Thromboplastin time, partial (PTT) plasma or whole blood	30.0
85732	substitution plasma	30.0

(For thromboplastin inhibition test, see 85341)

(For tourniquet test, see 85165)

		Unit Value
85810	Viscosity, blood	40.0
85820	serum or plasma	40.0

(WBC count, see 85021–85031, 85048, 89050)

85999	Unlisted hematology procedure	BR

[Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-24-041 (Order 81-28), § 296-23-216, filed 11/30/81, effective 1/1/82; 81-01-100 (Order 80-29), § 296-23-216, filed 12/23/80, effective 3/1/81; Order 74-7, § 296-23-216, filed 1/30/74. Formerly WAC 296-23-210.]

WAC 296-23-221 Immunology.

		Unit Value

(Includes serology, immuno-hematology and blood banking)

(Acid hemolysins, see 86281)

(Actinomycosis, see 86000–86009, 86450)

86000	Agglutinins febrile, each	14.0
86002	panel (typhoid O & H, paratyphoid A & B, brucella and Proteus OX-19	45.0
86004	warm	36.0

(Agglutinins and autohemolysins, see 86004, 86011–86013, 86281–86283, 86006–86009)

(Agglutinins, auto, see 86282–86283, 86011, 86013)

(Agglutinins, cold, see 86006, 86013, 86282, 86283)

(Alpha-1 antitrypsin, see 86329)

(Alpha-1 feto-protein, see 86329)

(Amebiasis, see 86171, 86280)

86006	Antibody, qualitative, not otherwise specified; first antigen, slide or tube	12.0
86007	each additional antigen	7.5
86008	Antibody, quantitative titer, not otherwise specified; first antigen	18.0
86009	each additional antigen	12.0
86011	Antibody, detection, leukocyte antibody	44.0
86012	Antibody absorption, cold auto absorption; per serum	30.0

(For elution, see 86019)

86013	differential	45.0
86014	Antibody, platelet antibodies (agglutinins)	45.0
86016	Antibodies, RBC, saline; high protein and antihuman globulin technique	30.0

(See also 86032)

		Unit Value
86017	with ABO + Rh(D) typing (for holding blood instead of complete crossmatch)	24.0
86018	enzyme technique including antihuman globulin	17.0
86019	elution, any method	45.0
86021	Antibody identification; leukocyte antibodies	60.0
86022	platelet antibodies	75.0
86024	RBC antibodies (8–10 cell panel) standard techniques	38.0
86026	RBC antibodies (8–10 cell panel), with enzyme technique including antihuman globulin	52.0

(For absorption and elution, see 86012–86013, 86019)

86028	saline or high protein, each (Rh, AB, etc.)	12.0

(Anti-DNA, see 86225)

(Anti-deoxyribonuclease titer, see 86215)

86031	Antihuman globulin test; direct (Coombs) 1–3 dilutions	12.0
86032	indirect, qualitative (broad, gamma or nongamma, each)	15.0
86033	indirect, titer (broad, gamma or nongamma each)	12.0
86034	enzyme technique, qualitative	30.0
86035	drug sensitization, identification (e.g., penicillin)	75.0

(For antibody detection (screening), see 86016, 86017)

(Antihyaluronidase titer, see 86315)

(Antinuclear antibodies, see 86255, 86256)

86045	Antistreptococcal carbohydrate, anti-A CHO	40.0

(Antistreptococcal antibody, anti-DNAse, see 86215)

(Antistreptokinase titer, see 86590)

86060	Anti-streptolysin O titre	20.0
86063	screen	10.0
86066	Antitrypsin, alpha-1, determination, Pi (Protease inhibitor) typing	20.0
86067	Antitrypsin, alpha-1, determination	20.0

(Autoagglutinins, see 86282, 86283)

(Autoantibodies, see specific antigens)

(Blastomycosis, see 86006–86009, 86460)

86068	Blood, cross match, complete standard technique, includes typing and antibody screening of recipient and donor; first unit	60.0

		Unit Value
86069	each additional unit	45.0
86072	Blood crossmatch; enzyme technique	10.5
86073	screening for compatible unit saline and/or high protein	26.0
86074	antiglobulin technique	15.0

(For enzyme technique, see 86018)

86075	Blood crossmatch, minor only (plasma, Rh immune globulin), includes recipient and donor typing and antibody screening; first unit	44.0
86076	each additional unit	27.0

(For incompatibility problems, see 86004, 86011–86014, 86016–86026, 86031–86035, 86068–86076)

(For typing, antibody screening and blood in lieu of crossmatch, see 86017)

(For blood transfusion, see 36430–36460, 36510, 36660)

86080	Blood typing; ABO only	12.0
86082	ABO and Rho(D)	18.0
86090	M N	20.0
86095	Blood typing, RBC antigens other than ABO or Rho(D); antiglobulin technique, each antigen	10.5
86096	direct, slide or tube, including Rh subtypes, each antigen	10.5
86100	Blood typing; Rho(D) only	12.0
86105	Rh genotyping, complete	45.0

(For Rho variant Du, see 86095)

86115	anti-Rh immuno-globulin testing (Rhogam type)	68.0
86120	special (Kell, Duffy, etc.)	BR+
86128	Blood autotransfusion, including collection, processing and storage	45.0

(For nondonor phlebotomy, see 96450)

86129	Blood component processing not otherwise specified	30.0
86131	Blood unit for direct transfusion, up to 50 ml	BR
86134	Blood unit for transfusion; processing by blood bank, includes collection	BR
86138	replacement	BR
86139	splitting, open or closed, system, each	BR

(Bovine milk antibody, see 86008, 86009)

(Brucellosis, see 86000–86002, 86470)

86140	C-reactive protein	20.0

(Candidiasis, see 86008)

86149	Carcinoembryonic antigen; gel diffusion	60.0
86151	RIA	60.0

(Cat scratch disease, see 86171, 86480)

86155	Chemotaxis assay, specify method	BR

(Coccidioidomycosis, see 86006–86009, 86171, 86490)

(Cold agglutinin or hemolysin, see 86006–86013, 86282, 86283)

86158	Complement; C'1 esterase	52.0
86159	C'2 esterase	52.0
86162	total (CH 50)	70.0

(For complement fractions, quantitative, see 86329)

86171	Complement fixation tests, each (e.g., cat scratch fever, coccidioidomycosis, histoplasmosis, leptospirosis, psittacosis, rubella, streptococcus MG, syphilis) – specify test	40.0

(Coombs test, see 86031–86035)

86185	Counterelectrophoresis, each antigen	24.0

(For HAA, see 86285, 86286)

(Crossmatch, see 86068–86076)

86201	Cryoprecipitate, preparation; each unit	30.0
86202	with thawing and pooling, each unit	1.5

(Cryptococcosis, see 86008, 86009, 86255, 86256)

(Cysticercosis, see 86280)

86209	Cytotoxic testing	BR
86215	Deoxyribonuclease, antibody	36.0
86225	Deoxyribonucleic acid (DNA) antibody	36.0

(Diphtheria, see 86280)

(Direct antiglobulin test (Coombs), see 86031)

(Donath–Landsteiner screen, see 86008, 86009)

(Drug sensitization, RBC, see 86035)

(Echinococcosis, see 86171, 86280, 86500)

(Eosinophils, microscopic examination for, in various body fluids, see 89180)

86235	Extractable nuclear antigen (ENA), antibody	30.0
86240	Factor VIII; concentrate, lyophilized unit, 100 units	BR
86241	dilution, each bottle	3.0

(For cryoprecipitate, see 86201, 86202)

86243	Fc receptor assay, specify method	BR

(Feto-protein, alpha-1, see 86329)

86245	Fibrinogen, unit	82.0

(Filariasis, see 86280)

86255	Fluorescent antibody; screen	24.0

		Unit Value
86256	titer	36.0
	(Fluorescent technique for antigen identification in tissue, see 88345)	
	(Frei test, see 86530)	
86265	Frozen blood, preparation for freezing, each unit including processing and collection;	BR
86266	with thawing	BR
86267	with freezing and thawing	BR
	(FTA, see 86650)	
	(Gc grouping, see 86335)	
	(Gel (agar) diffusion tests, see 86331)	
	(Gm grouping, see 86335)	
	(Gonadotropins, chorionic, see 82996–82998)	
86272	Globulin, gamma 1 ml	BR
86273	Globulin Rh immune, 1 ml	60.0
86274	Globulin vaccinia, immune, 1 ml	BR
	(HAA, see 86285–86287)	
	(Ham test, see 86281)	
86280	Hemagglutination inhibition tests (HAI), each (e.g., amebiasis, rubella, viral)	60.0
86281	Hemolysins, acid (for paroxysmal hemoglobinuria) (Ham test)	24.0
86282	Hemolysins and agglutinins, auto, screen, each;	30.0
86283	incubated with glucose (e.g., ATP)	75.0
	(Cold, see 86006–86009, warm 86004, acid 86281)	
86285	Hepatitis associated agent (Australian antigen)(HAA); counterelectrophoresis method	18.0
86286	counterelectrophoresis with concentration of serum	24.0
86287	RIA method	36.0
	(For gel diffusion technique, see 86331; CF, see 86171; HAI, see 86280)	
86300	Heterophile antibodies, screening (includes mono–type test) slide or tube	20.0
86305	quantitative titer	30.0
86310	plus titers after absorption, beef cells and guinea pig kidney	30.0
	(Histoplasmosis, see 86006–86009, 86171)	
	(HLA typing, see 86597)	
	(For hormones, see individual alphabetic listing in chemistry section)	
86315	Hyaluronidase, antibody	30.0
86320	Immuno–electrophoresis, serum, each specimen (plate)	100.0
86325	other fluids (e.g., urine) with concentration, each specimen	100.0
86329	Immunodiffusion; quantitative, each IgA, IgD, IgG, IgM, ceruloplasmin, transferrin, alpha–1 feto protein, alpha–2, macroglobulin, complement fractions, alpha–1 antitrypsin, or other (specify)	30.0
86331	gel diffusion, qualitative (Ouchterlony)	30.0
	(For ceruloplasmin by chemical method, see 83290)	
	(IgE, RIA, see 82785; RIST, see 86358)	
86335	Immunoglobulin typing (Gc, Gm, Inv), each	BR
	(Insulin antibody, see 86016)	
	(Intrinsic factor, antibody (fluorescent), see 86255, 86256)	
	(Inv grouping, see 86335)	
	(Kveim test, see 86565)	
	(Latex fixation, see individual antigen or antibody; also 86006, 86007)	
	(LE cell preparation, see 85544)	
	(LE factor, see 86006, 86007, 86255, 86256)	
	(Leishmaniasis, see 86280)	
	(Leptospirosis, see 86006–86009, 86171)	
	(Leukoagglutinins, see 86013, 86021)	
86343	Leukocyte histamine release test (LHR)	BR
86344	Leukocyte phagocytosis	BR
86345	Leukocyte poor blood, nylon filter preparation, including collection and processing	82.5
86346	Leukocyte poor blood, invert spin preparation; including collection and processing	67.5
86347	not including collection and processing	9.0
86349	Leukocyte transfusion (leukapheresis)	BR
	(Lymphocyte culture, see 86353)	
86351	Lymphocyte storage, liquid nitrogen, including preparation	BR
86353	Lymphocyte transformation, PHA or other	120.0
86357	Lymphocytes; T & B differentiation	165.0
86358	B–cell evaluation	BR
	(Malaria, see 86171, 86280, 87207)	
86365	Mast cell degranulation test (MDT)	BR
	(Melioidosis, see 86280)	
86377	Microsomal antibody (thyroid)	30.0

		Unit Value
86378	Migration inhibitory factor test (MIF)	BR
	(Milk antibody, anti–bovine, see 86008–86009)	
	(Mitochondrial antibody, liver, see 86255)	
	(Mononucleosis screening slide, see 86006–86007)	
86382	Neutralization test, viral	BR
86384	Nitroblue tetrazolium dye test (NTD)	BR
	(Ouchterlony diffusion, see 86331)	
	(Parietal cell antibody, see 86255, 86256)	
86385	Paternity testing, ABO + Rh factors + MN (per individual);	37.5
86386	each additional antigen system	15.0
	(Penicillin antibody RBC, see 86035)	
86388	Plasma, single donor, fresh frozen	BR
86389	Plasmapheresis, each unit	75.0
86391	Plasma protein fraction unit	BR
	(Platelet antibodies (agglutinins), see 86014)	
86392	Platelet concentrate; preparation	45.0
86393	mix and pool, each unit	1.5
86398	Platelet rich plasma, preparation	36.0
86402	Precipitin determination, gel diffusion, in aspergillosis, bagassosis, farmer lung, pigeon breeder disease, silo filler disease, other alveolitis (specify)	BR
86405	Precipitin test for blood (species identification)	BR
	(Pregnancy test, see 82996, 82997, 86006–86009)	
86415	Prothrombin complex; dilute and pretest	7.5
86416	lyophilized, unit	120.0
	(Psittacosis, CF, see 86171)	
86421	Radioallergosorbent test (RAST); up to 5 antigens	BR
86422	6 or more antigens	BR
86423	Radioimmunosorbent test (RIST) IgE, quantitative	BR
	(Rapid plasma reagin test (RPR), see 86592)	
86424	Rat mast cell technique (RMCT)	BR
86425	Red blood cells, packed; preparation gravity method, unit in addition to collection and processing	6.0
86426	centrifuge method in addition to collection and processing	9.0
86427	processing by blood bank, includes collection	60.0
	(Rh immune globulin, see 86273)	
86430	(Rheumatoid factor)	12.0
	(RIST, see 86423)	
	(RMCT, see 86423)	
	(RPR, see 86592)	
	(Rubella, CF, see 86171; HAI, see 86280)	
	(Schistosomiasis agglutination, see 86006–86009)	
	(Serologic test for syphilis (STS), see 86171, 86592, 86593)	
86450	Skin test, actinomycosis	20.0
86460	blastomycosis	20.0
86470	brucellosis	20.0
86480	cat–scratch fever	20.0
86490	coccidioidomycosis	20.0
86495	diphtheria (Schick)	20.0
86500	echinococcosis	20.0
86510	histoplasmosis	20.0
86520	leptospirosis	20.0
86530	lymphogranuloma venereum (Frei test)	20.0
86540	mumps	20.0
86550	psittacosis	20.0
86565	sarcoidosis Kveim test, includes skin test only	20.0
	(For biopsy see 11100, for microscopic study, see 88304, 88313)	
86570	trichinosis	20.0
86580	tuberculosis patch or intradermal	20.0
86585	tine test	12.0
	(For skin tests for allergy testing, see 95005–95199, Medicine section)	
	(Smooth muscle antibody, see 86255, 86256)	
	(Sporotrichosis, see 86006–86009)	
	(Streptococcus MG, see 86171)	
86590	Streptokinase, antibody	27.0
	(Streptolysis O antibody, see anti–streptolysis O, 86060–86061)	
	(Streptobacillus, see 86008, 86009)	
86592	Syphilis, precipitation or flocculation tests, qualitative VDRL, RPR, DRT	9.0
	(See also 89006, 89007)	
86593	Syphilis, precipitation or flocculation tests, quantitative	15.0
	(Syphilis serology, see also 86171)	
	(Tetanus, see 86280)	
	(Thyroglobulin antibody, see 86006–86009, 86171)	
86594	Thyroid autoantibodies	BR
86595	Tissue; culture	BR
86597	typing	BR
86600	Toxoplasmosis dye test	80.0
	(For CF, see 86171; IFA, see 86255, 86256)	

		Unit Value
86630	Transfer factor test (TFT)	BR
86650	Treponema antibodies, fluorescent, absorbed (FTA-abs)	30.0
86660	Treponema pallidum immobilization (TPI)	80.0
86662	Treponema pallidum test, other, specify (e.g., TPIA, TPA, TPMB, TPCF, RPCF)	BR
	(Trichinosis, see 86006-86009)	
	(Trypanosomiasis, see 86171, 86280)	
	(Tuberculosis, see 86580, 86585, 87116-87118, 87190)	
	(Vaccinia immune globulin, see 86274)	
	(VDRL, see 86592, 86593)	
	(Viral antibodies, see 86171, 86280, 86382)	
	(Visceral larval migrans, see 86280)	
	(Warm agglutinins, see 86004)	
86670	Washed red blood cells for transfusion, preparation not including unit collection and processing	75.0
86999	Unlisted immunology procedure	BR

[Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-24-041 (Order 81-28), § 296-23-221, filed 11/30/81, effective 1/1/82; 81-01-100 (Order 80-29), § 296-23-221, filed 12/23/80, effective 3/1/81; Order 74-7, § 296-23-221, filed 1/30/74.]

Reviser's note -- Erratum: Through a clerical error in the publication process of the 1980 edition of the Washington Administrative Code, a numeral was omitted from the tables in WAC 296-23-221. The section as published in the Washington State Register, WSR 81-01-100, accurately reflects Order 80-29 of the Department of Labor and Industries, and should be used to determine the effective text of the rule before January 1, 1982, when the amendment contained in Register 81-24-041 (Order 81-28) took effect. The error has been corrected in the section as displayed above.

WAC 296-23-224 Microbiology.

		Unit Value
	(Includes bacteriology, mycology, parasitology and virology)	
87001	Animal inoculation, small animal; with observation	36.0
87003	with observation and dissection	45.0
87015	concentration (any type) for parasites, ova or tubercle bacillus (T.B. AFB)	20.0
87040	Culture, bacterial, definitive aerobic; blood (may include anaerobic screen)	48.0
87045	stool	25.0
87060	throat or nose	20.0
87070	any other source	16.0
	(For urine, see 87086-87088)	
87072	Culture, presumptive, pathogenic organisms, by commercial kit, any source except urine (For urine, see 87087)	BR
87075	Culture, bacterial, any source; anaerobic (isolation)	36.0
87076	definitive identification, including gas chromatography in addition to anaerobic culture	60.0
87081	Culture, bacterial, screening only, for single organisms	15.0
87082	Culture, presumptive, pathogenic organisms, screening only, by commercial kit (specify type); for single organisms	BR
87083	multiple organisms	BR
87084	with colony estimation from density chart (includes throat cultures)	BR
87085	with colony count	BR
	(For urine colony count, see 87086)	
87086	Culture, bacterial, urine; quantitative, colony count	15.0
87087	commercial kit	12.0
87088	identification, in addition to quantitative or commercial kit	12.0
87101	Culture, fungi, isolation; skin	15.0
87102	other source	18.0
87106	definitive identification, by culture, per organism, in addition to skin or other source	30.0
87109	Culture, mycoplasma, any source	75.0
87116	Culture, tubercle or other acid-fast bacilli (e.g., TB, AFB, mycobacteria); any source, isolation only	18.0
87117	concentration plus isolation	30.0
87118	definitive identification, per organism, (does not include isolation and/or concentration)	30.0
87140	culture, typing fluorescent method each antiserum	20.0
87143	gas liquid chromatography (GLC) method	45.0
87145	phage method	40.0
87147	serological method agglutination grouping, per antiserum	20.0
87151	serologic method, speciation	20.0
87155	precipitin method, grouping, per antiserum	12.0
87158	other methods	20.0
87163	Culture, special extensive definitive diagnostic studies, beyond usual definitive studies	25.0
87164	Dark field examination, any source (e.g., penile, vaginal, oral, skin); includes specimen collection	60.0

		Unit Value
87166	without collection	30.0
87173	Endotoxin, bacterial (pyrogens); animal inoculation	36.0
87174	chemical	24.0
87176	homogenization, tissue, for culture	15.0
87177	Ova and parasites, direct smears, concentration and identification	36.0

(Individual smears and procedures, see 87015, 87208, 87205–87211)

(Trichrome, iron hemotoxylin and other special stains, see 88312)

87181	Sensitivity study antibiotic, agar diffusion method, each antibiotic	40.0
87184	disc method, each plate (12 or less discs)	24.0
87186	microtiter, minimum inhibitory concentration (MIC), 8 or less antibiotics	45.0
87188	tube dilution method, each antibiotic	30.0
87190	Sensitivity study of tubercle bacillus, (TB, AFB), each drug	60.0
87205	Smear, primary source, with interpretation; routine stain for bacteria, fungi, or cell types	12.0
87206	fluorescent and/or acid fast stain for bacteria, fungi, or cell types	18.0
87207	special stain for inclusion bodies or intracellular parasites (e.g., malaria, kala azar)	24.0
87208	direct or concentrated, dry, for ova and parasites	12.0

(For concentration, see 87015; complete examination, see 87177)

(For complex special stains, see 88312–88313)

(For fat, meat, fibers, nasal eosinophils, and starch, see miscellaneous section)

87210	wet mount with simple stain and interpretation, for bacteria, fungi, ova, and/or parasites	12.0
87211	wet and dry mount, with interpretation, for ova and parasites	18.0
87220	Tissue examination for fungi (e.g., KOH slide)	BR
87250	Virus, inoculation of embryonated eggs, suitable tissue culture, or small animal, includes observation and dissection	12.0

(For electron microscopy, see 88348)

(For inclusion bodies in tissue sections, see 88304–88309; in smears, see 87207–87210; in fluids, see 88106)

87300	Autogenous vaccine	140.0
87999	Unlisted microbiology procedure	BR

[Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81–24–041 (Order 81–28), § 296–23–224, filed 11/30/81, effective 1/1/82; 81–01–100 (Order 80–29), § 296–23–224, filed 12/23/80, effective 3/1/81; Order 74–7, § 296–23–224, filed 1/30/74. Formerly WAC 296–23–205.]

WAC 296-23-228 Anatomic pathology.

		Unit Value
	POSTMORTEM EXAMINATION	

(Procedures 88000 through 88099 represent physician services only. See modifier –90 for outside laboratory services.)

88000	Necropsy (Autopsy) without CNS, gross examination only	400.0
88005	with brain	500.0
88007	with brain and spinal cord	600.0
88012	infant with brain	300.0
88014	stillborn or newborn with brain	300.0
88016	macerated stillborn	400.0
88020	Necropsy (autopsy) without CNS, gross and microscopic examination	800.0
88025	with brain	900.0
88027	with brain and spinal cord	1000.0
88028	infant with brain	700.0
88029	stillborn or newborn with brain	700.0
88036	Necropsy (autopsy), limited, gross and/or microscopic; regional	BR
88037	single organ	BR+
88040	Necropsy (autopsy); forensic examination	BR
88045	coroner's call	BR
88099	Unlisted necropsy (autopsy) procedure	BR

CYTOPATHOLOGY

88104	Cytopathology, fluids, washings or brushings, with centrifugation except cervical or vaginal; smears and interpretation	45.0
88106	filter method only with interpretation	45.0
88107	smears and filter preparation with interpretation	60.0
88109	smears and cell block with interpretation	90.0

(For cervical or vaginal smears, see 88150)

(For cell block only, see 88302)

(For gastric intubation with lavage, see 89130–89141, 91055)

(For x–ray localization, see 74340)

		Unit Value
88125	Cytopathology, forensic (e.g., sperm)	75.0
88130	Sex chromatin identification; (Barr bodies)	40.0
88140	peripheral blood smear, polymorphonuclear "drum sticks"	40.0
	(For Guard stain, see 88313)	
88150	Cytopathology, smears, cervical or vaginal (e.g., Papanicolaou), screening and interpretation, up to three smears;	30.0
88155	with definitive hormonal evaluation (e.g., maturation index, karyopyknotic index, estrogenic index)	40.0
88160	Cytopathology, any other source (e.g., sputum), screening and interpretation	36.0
	(For aerosol collection of sputum, see 89350)	
	(For special stains, see 88312, 88313)	
88199	Unlisted cytopathology procedure	BR
	(For electron microscopy, see 88348, 88349)	

CYTOGENETIC STUDIES

88260	Chromosome analysis; lymphocytes, count 1–4 cells, screening	180.0
88261	count 1–4 cells, 1 karyotype	375.0
88262	count 1–20 cells for mosaicism, 2 karyotypes	525.0
88265	Chromosome analysis; myeloid cells, 2 karyotypes (Philadelphia chromosome)	225.0
88267	amniotic fluid, count 1–4 cells, 1 karyotype	600.0
88268	skin, count 1–4 cells, 1 karyotype	600.0
88270	other tissue cells, count 1–4 cells, 1 karyotype	BR
88280	additional karyotyping	75.0
88285	additional cells counted	15.0
88299	Unlisted cytogenetic study	BR

SURGICAL PATHOLOGY

(Procedures 88300 through 88399 include accession, handling and reporting)

88300	Surgical pathology, gross examination only	20.0

NOTE: Only one of the numbers 88302–88309 should be used in reporting specimens (single or multiple) that are removed during a single surgical procedure.

88302	Surgical pathology, gross and microscopic; examination for identification and record purposes (e.g., uterine tubes, vas deferens, sympathetic ganglion)	60.0
88304	diagnostic exam, small or uncomplicated specimen (e.g., skin lesion(s), needle biopsy)	75.0
88305	diagnostic exam, larger specimen or multiple small specimens (e.g., prostate clippings, uterine curettings, segment of stomach)	105.0
88307	complex diagnostic exam, large specimen(s), organs or multiple tissues requiring multiple slides	150.0
88309	comprehensive diagnostic exam (e.g., specimen with regional nodes, detailed anatomic dissection or diagnostic problem)	BR
88311	decalcification procedure	12.0
88312	Special stains; Group I stains for microorganisms, (e.g., Gridley, acid fast, methenamine silver, Levaditi)	25.0
88313	Group II, all other special stains	12.0
88314	Histochemical staining with frozen section(s)	BR
88316	Preparation of duplicate slides, stained or unstained, requested by consultant	BR
88317	Interpretation by treating physician of previously diagnosed histologic slide (without consultation)	BR
88321	consultation and report on referred slides prepared elsewhere	140.0
88323	Consultation and report on referred material requiring preparation of slides	BR
88325	comprehensive review of records and slides, with report on referred material	BR+
88329	consultation during surgery	100.0
88331	with frozen section(s)	90.0
88332	each additional frozen section during same visit to surgical operating suite	30.0
	(For permanent paraffin section, see 88302–88309)	
88345	Immunofluorescent study	BR
88348	Electron microscopy; diagnostic	BR
88349	scanning	BR
88360	Whole organ sections for special studies	200.0
88399	Unlisted surgical pathology procedure	BR

[Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-24-041 (Order 81-28), § 296-23-228, filed 11/30/81, effective 1/1/82; 81-01-100 (Order 80-29), § 296-23-228, filed 12/23/80, effective 3/1/81; Order 74-7, § 296-23-228, filed 1/30/74. Formerly WAC 296-23-240.]

WAC 296-23-301 Rates for daily and ancillary services. The department or self-insurer will pay rates for

daily and ancillary services as approved by the Washington state hospital commission. Doctor services (other than professional component) are *not* included in WSHC rates and should be billed using appropriate fee schedule procedure codes. [Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-24-041 (Order 81-28), § 296-23-301, filed 11/30/81, effective 1/1/82; 81-01-100 (Order 80-29), § 296-23-301, filed 12/23/80, effective 3/1/81; Order 76-34, § 296-23-301, filed 11/24/76, effective 1/1/77; Order 75-39, § 296-23-301, filed 11/28/75, effective 1/1/76.]

WAC 296-23-356 Billing procedures. (1) Bills for hospital services can be submitted on department or UB-16 bill forms. The self-insurer may accept other bill forms. Regardless of form used, the following information must appear: Claim number, claimant name and address, worker's social security number (if available), employer name, date of injury, diagnosis or nature of injury, date of service, and description of service rendered. If UB-16 forms are used, summarize charges by revenue codes as per UB-16 instructions. Itemized detail of summary charges must be attached.

(2) For a bill to be considered for payment, it should be received by the department or self-insurer within ninety days from the date of service.

(3) Supporting documentation of services rendered must be attached to billings. The reports needed are:

(a) X-ray findings
(b) Laboratory findings
(c) Diagnostic study findings
(d) Emergency room reports
(e) Admission history and physical
(f) Discharge summary
(g) Operative report
(h) Physical therapy notes
(i) Occupational therapy notes.

(4) The department or the self-insurer may reject bills for services rendered in violation of the medical aid rules.

(5) The emergency room will be considered the office for those physicians providing regular emergency room care to the hospital, and fees will be allowed on this basis.

(6) Call back between 6 p.m. and 8 a.m. provided that laboratory, x-ray and surgical staff are normally not on duty during this period of time will be billed at commission approved rates.

(7) The claim number must be placed on each bill and on each page of attached documents in the upper right hand corner. [Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-24-041 (Order 81-28), § 296-23-356, filed 11/30/81, effective 1/1/82; 81-01-100 (Order 80-29), § 296-23-356, filed 12/23/80, effective 3/1/81; Order 77-27, § 296-23-356, filed 11/30/77, effective 1/1/78; Emergency Order 77-26, § 296-23-356, filed 12/1/77; Emergency Order 77-16, § 296-23-356, filed 9/6/77; Order 76-34, § 296-23-356, filed 11/24/76, effective 1/1/77; Order 75-39, § 296-23-356, filed 11/28/75, effective 1/1/76; Order 74-39, § 296-23-356, filed 11/22/74, effective 1/1/75; Order 74-7, § 296-23-356, filed 1/30/74; Order 71-6, § 296-23-356, filed 6/1/71; Order 70-12, § 296-23-356, filed 12/1/70, effective 1/1/71. Formerly WAC 296-23-355 (part).]

WAC 296-23-357 X-rays. (1) X-rays should not be sent to the department or self-insurer unless requested for comparison and interpretation in determining permanent disability, other administrative or legal decisions, and for cases in litigation. X-rays must be retained for a period of ten years by the hospital.

(2) X-rays must be made available upon request to consultants, to medical examiners, to the department, to self-insurers and/or the board of industrial insurance appeals.

(3) If a hospital ceases to function as an acute care facility, department approved custodial arrangements must be made to insure availability of x-rays on request. [Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-24-041 (Order 81-28), § 296-23-357, filed 11/30/81, effective 1/1/82; 81-01-100 (Order 80-29), § 296-23-357, filed 12/23/80, effective 3/1/81; Order 77-27, § 296-23-357, filed 11/30/77, effective 1/1/78; Emergency Order 77-26, § 296-23-357, filed 12/1/77; Emergency Order 77-16, § 296-23-357, filed 9/6/77; Order 76-34, § 296-23-357, filed 11/24/76, effective 1/1/77; Order 74-7, § 296-23-357, filed 1/30/74.]

WAC 296-23-395 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-23-610 General instructions. (1) Please refer to WAC 296-20-010 through WAC 296-20-125 for general information and rules pertaining to treatment of injured workers.

(2) The maximum fee is determined by multiplying the unit value of a procedure by a conversion factor. The appropriate conversion factor table for chiropractic services is the medicine tables. For x-ray services – use radiology conversion tables and procedure numbers.

(3) In addition to the rules found in WAC 296-20-010 to 296-20-125, the following rules apply when chiropractic treatment is being rendered:

(a) No more than one chiropractic adjustment per day will be authorized or paid, *except* on the initial and next two subsequent visits. The attending doctor must submit a detailed report regarding the need for the additional treatment.

(b) Treatment beyond the first 20 treatments or 60 days, whichever comes first, will not be authorized without submission of a consultation report or a comprehensive comparative exam report regarding need for further care. (See WAC 296-20-051 re: Consultation.)

(c) If needed, x-rays immediately prior to and immediately following the initial chiropractic treatment may be allowed without prior authorization.

(d) X-rays before and after subsequent chiropractic treatment will not be paid unless previously authorized. Prior authorization must be obtained for x-rays subsequent to the initial treatment.

(e) No payment will be made for excessive or unnecessary x–rays taken on initial or subsequent visits.

(f) No services or x–rays will be paid on rejected or closed claims except those rendered in conjunction with a reopening application.

(g) See WAC 296–23–01002 for custody requirements for x–rays.

(h) Treatment as a maintenance or supportive measure will not be authorized nor paid.

(4) Billing procedures itemized in WAC 296–20–125 must be followed. [Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81–24–041 (Order 81–28), § 296–23–610, filed 11/30/81, effective 1/1/82; 81–01–100 (Order 80–29), § 296–23–610, filed 12/23/80, effective 3/1/81; Order 76–34, § 296–23–610, filed 11/24/76, effective 1/1/77; Order 75–39, § 296–23–610, filed 11/28/75, effective 1/1/76; Order 74–39, § 296–23–610, filed 11/22/74, effective 1/1/75; Order 74–7, § 296–23–610, filed 1/30/74; Order 71–6, § 296–23–610, filed 6/1/71; Order 70–12, § 296–23–610, filed 12/1/70, effective 1/1/71; Order 68–7, § 296–23–610, filed 11/27/68, effective 1/1/69.]

WAC 296–23–615 Office visits and special services.

DEFINITIONS:

Routine Office Visit: A level of service pertaining to the evaluation and treatment of a condition requiring only an abbreviated history and exam, i.e.:

(1) Palpation, exam and adjustment of one or more areas.

(2) Brief exam and no adjustment.

Extended Office Visit: A level of service pertaining to an evaluation of patient with a new or existing problem requiring a detailed history, review of records, exam, and a formal conference with patient or family to evaluate and/or adjust therapeutic treatment management and progress.

Comprehensive Office Visit: A level of service pertaining to an indepth evaluation of a patient with a new or existing problem, requiring development or complete re–evaluation of treatment data; includes recording of chief complaints and present illness, family history, past treatment history, personal history, system review; and a complete exam to evaluate and determine appropriate therapeutic treatment management and progress.

REPORTING:

Reporting requirements are outlined in WAC 296–20–06101. The department or self–insurer will accept a brief narrative report of treatment received and the patient's progress as supporting documentation for billings in lieu of routine follow–up office notes.

CHIROPRACTIC MODIFIERS:

–22 Unusual Services: When treatment services provided are greater than that usually required for listed procedures. Use of this modifier must be based on the injured worker's need for extended or unusual care. A report is required; the modifier –22 should be added to the procedure number.

–52 Reduced Services: Under certain circumstances no treatment may be given, in these cases the procedure should be reduced by *10 unites* and modifier –52 should be added to the procedure number.

MATERIAL SUPPLIED BY DOCTOR:

Department or self–insurer will reimburse the doctor for materials supplied, i.e. cervical collars, heel lifts, etc., at cost only. In addition, a handling fee, not to exceed five percent of the wholesale cost of the item, will be paid. See RCW 19.68.010, Professional License Statutes. Use Procedure Number C99070.

SPECIAL SERVICES:

The following services are generally part of the basic services listed in the maximum fee schedule but do involve additional expenses to the chiropractor for materials, for his time or that of his employees. These services are generally provided as an adjunct to common chiropractic services and should be used only when circumstances clearly warrant an additional charge over and above the usual charges for the basic services.

		Unit Value
C90001	Completion of Report of Accident . .	12.0
C90097	Completion of Reopening Application	12.0
C99032	Mileage, one way, each mile beyond 7 mile radius of point of origin (office or home), per mile	2.0
C99040	Completion of Disability Card	2.0
C99052	Services requested between 6:00 p.m. and 8:00 a.m. in addition to basic services, provided the office is closed during this period of time . . .	12.0
C99054	Services requested on Sundays and holidays in addition to basic services provided office is closed	12.0
C99070	Supplies, materials provided by doctor. Bill at cost	BR
C99080	Special report requested by the agency or 60–day report (see WAC 296–20–06101.)	BR

INITIAL VISIT

C90000	Routine examination, history, chiropractic adjustment and submission of a report	20.0
C90017	Extended office visit including treatment – report required	30.0
C90020	Comprehensive office visit including treatment – report required in addition to the Report of Accident . . .	40.0

		Unit Value
FOLLOW-UP VISITS		
C90050	Office visit including chiropractic adjustment	16.0
C90070	Extended office visit including treatment – report required	30.0

[Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-24-041 (Order 81-28), § 296-23-615, filed 11/30/81, effective 1/1/82; 81-01-100 (Order 80-29), § 296-23-615, filed 12/23/80, effective 3/1/81; Order 76-34, § 296-23-615, filed 11/24/76, effective 1/1/77; Order 75-39, § 296-23-615, filed 11/28/75, effective 1/1/76; Order 74-39, § 296-23-615, filed 11/22/74, effective 4/1/75; Order 74-7, § 296-23-615, filed 1/30/74; Order 68-7, § 296-23-615, filed 11/27/68, effective 1/1/69.]

WAC 296-23-710 Physical therapy rules. Practitioners should refer to WAC 296-20-010 through 296-20-125 for general information and rules pertaining to the care of injured workers. See WAC 296-20-125 for billing instructions.

Physical therapy treatment will be permitted only when given by a licensed registered physical therapist or a physical therapist assistant serving under the direction of a licensed registered physical therapist upon written prescription by a doctor. Doctor's rendering physical therapy should refer to WAC 296-21-095.

Use of diapulse or similar machine on injured workers is not authorized. See WAC 296-20-03002 for further information.

A physical therapy progress report must be submitted to the attending doctor and the department or the self-insurer following 12 treatment visits or one month, whichever occurs first. Such report must be attached to the billing for services. Physical therapy treatment beyond initial 12 treatments will be authorized only upon substantiation of improvement in the worker's condition in terms of functional modalities, i.e.: Range of motion; sitting and standing tolerance; reduction in medication; etc. In addition, an outline of the proposed treatment program, the expected restoration goals, and the expected length of treatment will be required.

Upon justification and subsequent authorization by the department, or self-insurer, physical therapy treatment to separate noncontiguous areas (i.e., low back, knee) requiring individual treatment or special procedures will be allowed at full rate for each area with a maximum of two areas allowed.

Physical therapy in the home and/or places other than the practitioners usual and customary business facilities will be allowed only upon prior justification and authorization by the department or self-insurer.

No in-patient physical therapy treatment will be allowed when such treatment constitutes the only or major treatment received by the worker. See WAC 296-20-030 for further information.

Physical therapy treatments exceeding once per day must be justified by attending doctor.

Biofeedback treatment may be rendered on doctor's orders only, by those R.P.T.'s and L.P.T.'s working under the supervision of a R.P.T. The extent of biofeedback treatment is limited to those procedures allowed within the scope of practice of the R.P.T. or L.P.T. See WAC 296-21-0501 for rules pertaining to conditions authorized and report requirements. [Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-24-041 (Order 81-28), § 296-23-710, filed 11/30/81, effective 1/1/82; 81-01-100 (Order 80-29), § 296-23-710, filed 12/23/80, effective 3/1/81; Order 75-39, § 296-23-710, filed 11/28/75, effective 1/1/76; Order 74-39, § 296-23-710, filed 11/22/74, effective 1/1/75; Order 74-7, § 296-23-710, filed 1/30/74; Order 71-6, § 296-23-710, filed 6/1/71; Order 70-12, § 296-23-710, filed 12/1/70, effective 1/1/71; Order 68-7, § 296-23-710, filed 11/27/68, effective 1/1/69.]

WAC 296-23-811 Office visits and special services.

Definitions:

Routine office visit: A level of service pertaining to the evaluation and treatment of a condition requiring only an abbreviated history and exam.

Extended office visit: A level of service pertaining to an evaluation of patient with a new or existing problem requiring a detailed history, review of records, exam, and a formal conference with patient or family to evaluate and/or adjust therapeutic treatment management and progress.

Comprehensive office visit: A level of service pertaining to an indepth evaluation of a patient with a new or existing problem, requiring development or complete re-evaluation of treatment data; includes recording of chief complaints and present illness, family history, past treatment history, personal history, system review; and a complete exam to evaluate and determine appropriate therapeutic treatment management and progress.

Reporting:

Reporting requirements are outlined in WAC 296-20-06101. The department or self-insurer will accept a brief narrative report of treatment received and the patient's progress as supporting documentation for billings in lieu of routine follow-up office notes.

Drugless Therapeutic Modifiers:

-22 Unusual services: When treatment services provided are greater than that usually required for listed procedures. Use of this modifier must be based on the injured worker's need for extended or unusual care. A report may be required. The modifier -22 should be added to the procedure number.

-52 Reduced services: Under certain circumstances no treatment may be given, in these cases the procedure should be reduced by *10 units* and modifier -52 should be added to the procedure number.

Material Supplied by Doctor:

Department or self–insurer will reimburse the doctor for materials supplied, i.e. cervical collars, heel lifts, etc., at cost only. In addition, a handling fee not to exceed five percent of the wholesale cost of the item, will be paid. See RCW 19.68.010, Professional License Statutes. Procedure Number D99070 should be used to bill these charges.

Special Services:

The following services are generally part of the basic services listed in the maximum fee schedule but do involve additional expenses to the drugless therapeutic practitioner for materials, for his time or that of his employees. These services are generally provided as an adjunct to common drugless therapeutic services and should be used only when circumstances clearly warrant an additional charge over and above the usual charges for the basic services.

		Unit Value
D90001	Completion of Report of Accident	12.0
D90097	Completion of Reopening Application	12.0
D99032	Mileage, one way, each mile beyond 7 mile radius of point of origin (office or home), per mile	2.0
D99040	Completion of Disability Card	2.0
D99052	Services requested between 6:00 p.m. and 8:00 a.m. in addition to basic services, provided the office is closed during this period of time	12.0
D99054	Services requested on Sundays and holidays in addition to basic services provided office is closed	12.0
D99070	Supplies, materials provided by doctor – bill at cost	BR
D99080	Special report requested by the agency or 60 day report. See WAC 296–20–06101	BR
INITIAL VISIT		
D90000	Routine examination, history, and/or treatment (routine procedure), and submission of a report	20.0
D90017	Extended office visit including treatment – report required	30.0
D90020	Comprehensive office visit including treatment – report required in addition to the Report of Accident	40.0
Follow–Up Treatment		
D90050	Routine office visit including evaluation and/or treatment	16.0
D90070	Extended office visit including treatment – report required	30.0

[Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81–24–041 (Order 81–28), § 296–23–811, filed 11/30/81, effective 1/1/82; 81–01–100 (Order 80–29), § 296–23–811, filed 12/23/80, effective 3/1/81; Order 76–34, § 296–23–811, filed 11/24/76, effective 1/1/77; Order 75–39, § 296–23–811, filed 11/28/75, effective 1/1/76; Order 74–39, § 296–23–815, (codified as WAC 296–23–811), filed 11/22/74, effective 4/1/75; Order 74–7, § 296–23–811, filed 1/30/74; Order 68–7, § 296–23–811, filed 11/27/68, effective 1/1/69.]

WAC 296–23–940 Vocational service providers. Vocational service providers will be selected from the list of registered vocational providers maintained by the department of labor and industries office of rehabilitation review.

Vocational service providers must comply with the rules contained in chapter 296–16 WAC and WAC 296–23–940 through 296–23–9408.

In addition vocational service providers must carry general liability insurance, automobile liability insurance, and errors and omissions/malpractice insurance. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 82–24–050 (Order 82–39), § 296–23–940, filed 11/29/82, effective 1/1/83.]

WAC 296–23–9401 Reasons for holding provider ineligible for referral. Vocational service providers may be held ineligible for referral of injured workers by the department of labor and industries or self–insurer for one or more of the following reasons:

(1) Failure to comply with department rules and regulations.

(2) Collusion with an injured worker or other person in submission of false or misleading information to the department or self–insurer.

(3) Failure, neglect, or refusal to submit complete accurate reports to the department or self–insurer.

(4) Failure, neglect, or refusal to respond to department or self–insurer requests for information.

(5) Failure to report to the department or self–insurer when injured worker has returned to any type of work whether compensated or not.

(6) Submission of false or misleading bills.

(7) Charging or attempting to charge an injured worker fees in addition to those paid by the department or self–insurer.

(8) Conviction in any court of any offense involving moral turpitude, in which case the record of such conviction shall be conclusive evidence.

(9) Repeated acts of gross misconduct in the practice of the profession.

(10) Removal of office of rehabilitation review registration. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 82–24–050 (Order 82–39), § 296–23–9401, filed 11/29/82, effective 1/1/83.]

WAC 296–23–9402 Time lines. The department of labor and industries is implementing guidelines which will apply to all providers of vocational rehabilitation services before the department.

On all cases referred by the department it is expected that the following time frames will be met:

(1) Initial contact with the injured worker be made within fourteen days of referral to the provider.

(2) Thirty days after referral, a written report of your initial contact is to be made to the department.

(3) Compliance with report guidelines under WAC 296-16-080 through 296-16-120. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 82-24-050 (Order 82-39), § 296-23-9402, filed 11/29/82, effective 1/1/83.]

WAC 296-23-9403 Services requiring authorization. In addition, all services must be authorized in advance by the department or self-insurer except for immediate job placement assistance as specified in the instructions for assessments on open, active claims. Charges for the following items which are considered overhead will not be approved and not chargeable to the department or self-insurer:

(1) Typing of reports and copies of reports.

(2) Telephone calls to the department or self-insurer other than emergency or requested calls. Routine calls summarizing a forth-coming report, advice seeking calls on how to proceed with your job or general information calls will not be paid.

(3) Charges levied on provider phone bill for long distance calls made on the department or self-insurer cases.

(4) In-house staffing time.

(5) Postage.

All bills must be itemized and accompanied by a report. The number of billed hours must be justified and consistent with written reports.

An exception to these guidelines must be thoroughly documented. If not documented, not justified, or not consistent, remittance will be reduced accordingly. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 82-24-050 (Order 82-39), § 296-23-9403, filed 11/29/82, effective 1/1/83.]

WAC 296-23-9408 Vocational fee schedule.

Code		
V10001	Professional Time – Full Service Providers (Includes initial assessment/evaluation; vocational counseling; testing – administration and interpretation; job development and placement; coordination of services; telephone contact with doctor; monitoring of rehab plan; and follow-up.)	$48.00/hour
V10002	Travel and Waiting Time (waiting time limited to one hour) If more than one client is being seen in the area, travel time must be split among ALL clients.	$25.00/hour
V10003	Mileage If more than one client is being seen in the area, mileage must be split among ALL clients seen.	18.5¢/mile
V10004	Group Sessions (2 to 5/group) (workshops; job clubs; counseling sessions.) Maximum of 40 billable hours.	$22.00/hour
V10005	Group Sessions (6 to 10/group) (Maximum of 50 billable hours.)	$18.00/hour
V10006	Placement – Employment Agency Providers Only Maximum of two hours assessment of placement potential includes report to department or VRC.	$35.00/hour
V10007	Placement – Employment Agency Providers Only Flat fee paid on placement.	$300.00/flat fee
V10008	Placement – Employment Agency Providers Only Flat fee paid sixty days post-placement when worker has been continuously employed for sixty days.	$900.00/flat fee
V10009	Court Testimony – ALL PROVIDERS	To be arranged between provider and Attorney General's Office.

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 82-24-050 (Order 82-39), § 296-23-9408, filed 11/29/82, effective 1/1/83.]

Chapter 296-24 WAC
GENERAL SAFETY AND HEALTH STANDARDS

Reviser's note: To simplify the organization of this lengthy chapter and to assist the user in locating the desired subject matter, the agency has divided this chapter into subchapters. Only the names of such subchapters are shown in this chapter digest; for a full listing of sections within subchapters refer to the appropriate subchapter digest preceding the text of such sections.

Subchapters

Part A-1 General, educational, medical and first aid requirements. (WAC 296-24-001 through 296-24-073)

Part A-2 Personal protective equipment. (WAC 296-24-075 through 296-24-094)

Part B-1 Sanitation, temporary labor camps and nonwater carriage disposal systems. (WAC 296-24-120 through 296-24-13013)

Part B-2 Safety color code for marking physical hazards, etc., window washing. (WAC 296-24-135 through 296-24-14519)

Part C Machinery and machine guarding. (WAC 296-24-150 through 296-24-20533)

Part E Hazardous materials, flammable and combustible liquids, spray finishing, dip tanks. (WAC 296-24-295 through 296-24-450)

Part G Means of egress, fire protection and fire suppression equipment. (WAC 296-24-550 through 296-24-63599)

Part L Electrical. (WAC 296-24-950 through 296-24-960)

Part A-1
GENERAL, EDUCATIONAL, MEDICAL AND FIRST AID REQUIREMENTS

WAC

296-24-060 First-aid training and certification.

296-24-070 First-aid room.

WAC 296-24-060 First-aid training and certification. The purpose of this section is to assure that all employees of this state can be afforded quick and effective first-aid attention in the event that an injury occurs on the job. The means of achieving this purpose is to assure the presence of personnel trained in first-aid procedures at or near those places where employees are working. Compliance with the provisions of this section may require the presence of more than one first-aid trained person.

(1) In addition to RCW 51.36.030, every employer shall comply with the department's requirements for first–aid training and certification.

(2) There shall be present or available at all times, a person or persons holding a valid certificate of first–aid training. (A valid first–aid certificate is one which is less than three years old.)

(3) Compliance with the requirements of subsection (2) of this section may be achieved as follows:

(a) All foremen, supervisors, or persons in direct charge of crews working in physically dispersed operations, shall have a valid first–aid certificate: *Provided,* That if the duties or work of the foreman, supervisor or person in direct charge of the crew requires an absence from the crew, another person holding a valid first–aid certificate shall be present. For the purposes of this section, a crew shall mean a group of two or more employees working at a work site separate and remote from the main office or fixed work place such as occurs in construction, logging, etc. If there is no foreman, supervisor or person in direct charge assigned to the crew, at least one employee shall have a valid first–aid certificate.
In emergencies, foremen, supervisors and persons in direct charge of a crew will be permitted to work up to 30 days without having the required certificate, providing an employee in the crew or another foreman in the immediate work area has the necessary certificate.

(b) In fixed establishments, all foremen, supervisors, or persons in direct charge of a group or groups of employees shall have a valid first–aid certificate: *Provided,* That in fixed establishments where the foreman, supervisor, or person in charge has duties which require his absence from the work site of the group, another person holding a valid first–aid certificate shall be present or available to the group.

Note: Foremen, supervisors or persons in direct charge of a group or groups of employees will be permitted to work up to 30 days without having the required certificate, providing an employee in the crew or another foreman in the immediate work area has the necessary certificate.

(c) In fixed establishments organized into distinct departments or equivalent organizational units such as department stores, large company offices, etc., a person or persons holding a valid first–aid certificate shall be present or available at all times employees are working within that department or organizational unit.

(d) In small businesses, offices or similar types of fixed workplaces, compliance may be achieved by having a number of such small businesses, offices, etc., combined into a single unit for the purpose of assuring the continued presence or availability of a person or persons holding a valid first–aid training certificate.

A plan for combining a number of small businesses etc., into such a group shall be submitted to the division of industrial safety and health, safety education section, for approval. That section is also available to assist employers who wish to develop such a plan. Criteria for approval by the division shall include:

(i) The businesses within the group must not be widely dispersed;

(ii) The name(s) of the person or persons holding the first–aid certificates, their usual places of work, their phone numbers, and other appropriate information shall be posted in each establishment which is a member of the group, in a place which can reasonably be expected to give notice to employees of that establishment;

(iii) First–aid kits must be available as required by WAC 296–24–065.

(e) Valid certification shall be achieved by passing a course of first–aid instruction and participation in practical application of the following subject matter.

Bleeding control and bandaging.
Practical methods of artificial respiration, including mouth to mouth and mouth to nose resuscitation.
Closed chest heart massage.
Poisons.
Shock, unconsciousness, stroke.
Burns, scalds.
Sunstroke, heat exhaustion.
Frostbite, freezing, hypothermia.
Strains, sprains, hernias.
Fractures, dislocations.
Proper transportation of the injured.
Bites, stings.
Subjects covering specific health hazards likely to be encountered by co–workers of first–aid students enrolled in the course.

(4) In physically dispersed operations, at least one member of each crew shall have a valid first–aid certificate. A crew shall mean a group of two or more employees working at a work site separate and remote from the main office or fixed workplace such as occurs in construction, logging, etc.

(5) Industrial first–aid course instructors will, upon request, be furnished by the division of industrial safety and health, department of labor and industries, either directly or through a program with the community colleges or vocational education.

(6) Employers of employees working in fixed establishments, meeting the following criteria, are exempt from the requirements of this section: *Provided*

(a) They can submit written evidence to the department, upon request, that the worksite of their employees is within a two–minute time frame of response by an aid car, medic unit or established ambulance service with first–aid trained attendants.

(b) There is a back–up aid car, medic unit or established ambulance service within the two–minute response time; or that a first–aid trained person with readily available transportation is on the site of the posted emergency phone number for immediate dispatch in the event the primary unit is not available.

(c) There are no traffic impediments, such as draw bridges, railroad track; etc., along the normal route of travel of the aid car, medic unit or established ambulance service that would delay arrival beyond the required two minute time frame.

(d) Emergency telephone numbers are posted on all first-aid kits and at all telephones on the worksite.

(e) The above services are available or exist at all times when more than one employee is on the worksite.

Note: A construction site that will be of more than six months duration, such as a large building, shall be considered a fixed establishment for the purposes of this section. Doctor's offices and clinics are not to be considered as alternates due to the fact that very often doctor's schedules require them to be away from their offices.

[Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81-13-053 (Order 81-9), § 296-24-060, filed 6/17/81. Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, chapters 42.30 and 43.22 RCW. 80-17-014 (Order 80-20), § 296-24-060, filed 11/13/80; 78-12-017 (Order 78-22), § 296-24-060, filed 11/13/78; Order 74-27, § 296-24-060, filed 5/7/74; Order 73-5, § 296-24-060, filed 5/9/73 and Order 73-4, § 296-24-060, filed 5/7/73.]

WAC 296-24-070 First-aid room. (1) A first-aid room meeting the requirements of this section shall be required when:

(a) A fixed establishment employs more than 200 employees at one central location,

Exception: The department may permit the employer to follow the requirements of WAC 296-24-060, 296-24-065 and 296-24-067 as appropriate when employees would be better served for first-aid purposes and the following conditions are present:

(i) In low hazard occupations such as retail clothing stores, banks, or general office work where exposure to manufacturing processes or heavy materials handling does not exist, and

(ii) Where the 200 or more employees have physically dispersed normal work stations which would result in excessive travel to the first-aid room. (Excessive travel shall mean travel of one quarter mile or more or three or more floors of vertical travel.)

(b) At construction sites which are expected to remain construction sites for six months or more.

(2) First-aid rooms shall be located as close as possible to the heaviest concentrated work area. They shall be identified in such a manner as to be easily recognizable as first-aid rooms.

(3) The first-aid room shall be well lighted and ventilated, kept clean and orderly, provided with hot and cold running water, and maintained in a fully-equipped condition.

(4) The first-aid room shall be manned and maintained by:

(a) A licensed physician, or

(b) A licensed or registered nurse, or

(c) An employee who:

(i) Holds a valid advanced first-aid certificate as recognized by the department,

(ii) works in the vicinity of the first-aid room, and

(iii) does not perform other work of the nature that is likely to affect adversely her/his ability to administer first-aid.

(5) First-aid rooms shall be equipped with items recommended by the consulting physician or plant medical officer and, as a minimum, should contain an adequate supply of the following:

Antiseptic soap
3/4" or 1" adhesive compresses
Adhesive knuckle bands
2" Bandage compresses
4" Bandage compresses
3" x 3" gauze pads
Assorted sizes of large gauze pads
2" roller bandages
3" roller bandages
4" roller bandages
Assorted adhesive tape rolls
Eye dressings
Ammonia inhalants
Burn ointment
Triangular bandages
Scissors, forceps, razor and blades, medicine droppers
Safety pins
Drinking cups
Rubbing alcohol
Absorbent cotton
Arm and leg splints
Antidotes for specific industrial poisons
Pressure points chart
Stretcher
Wool blankets and clean linen
Hot water bottles
Quick colds or ice bag
Emergency first-aid kit
A method of sterilizing instruments

(6) A poster shall be maintained on, or in the cover of, each first-aid cabinet and near each first-aid room phone. Such poster will state phone numbers of available doctors, hospitals, and ambulance services with in the employer's district. [Statutory Authority: RCW 49.17-.040, 49.17.050 and 49.17.240. 81-13-053 (Order 81-9), § 296-24-070, filed 6/17/81; Order 73-5, § 296-24-070, filed 5/9/73 and Order 73-4, § 296-24-070, filed 5/7/73.]

Part A-2

PERSONAL PROTECTIVE EQUIPMENT

WAC

296-24-081 Repealed.
296-24-08101 Repealed.
296-24-08103 Repealed.
296-24-08105 Repealed.
296-24-08107 Repealed.
296-24-08109 Repealed.
296-24-08111 Repealed.
296-24-08113 Repealed.

DISPOSITION OF SECTIONS FORMERLY CODIFIED IN THIS SUBCHAPTER

296-24-081 Respiratory protection. [Order 73-5, § 296-24-081, filed 5/9/73 and Order 73-4, § 296-24-081, filed 5/7/73.] Repealed by 81-16-016 (Order 81-19), filed 7/27/81. Statutory Authority: 49.17.040, 49.17-.050 and 49.17.240. Later promulgation, see chapter 296-62 WAC.

296-24-08101 Permissible practice. [Order 73-5, § 296-24-08101, filed 5/9/73 and Order 73-4, § 296-24-08101, filed 5/7/73.] Repealed by 81-16-016 (Order 81-19), filed 7/27/81. Statutory Authority: 49.17.040, 49.17-.050 and 49.17.240.

296-24-08103 Requirements for a minimal acceptable program. [Statutory Authority: RCW 49.17.040, 49.17.050, and 49.17.240. 80-11-010 (Order 80-14), § 296-24-08103, filed 8/8/80; Order 73-5, § 296-24-08103, filed 5/9/73 and Order 73-4, § 296-24-08103, filed 5/7/73.] Repealed by 81-16-016 (Order 81-19), filed 7/27/81. Statutory Authority: 49.17.040, 49.17-.050 and 49.17.240.

296-24-08105 Selection of respirators. [Order 73-5, § 296-24-08105, filed 5/9/73 and Order 73-4, § 296-24-08105, filed 5/7/73.] Repealed by 81-16-016 (Order 81-19), filed 7/27/81. Statutory Authority: 49.17-.040, 49.17.050 and 49.17.240.

296-24-08107 Air quality. [Statutory Authority: RCW 49.17.040, 49.17.050, and 49.17.240. 80-11-010 (Order 80-14), § 296-24-08107, filed 8/8/80; Order 73-5, § 296-24-08107, filed 5/9/73 and Order 73-4, § 296-24-08107, filed 5/7/73.] Repealed by 81-16-016 (Order 81-19), filed 7/27/81. Statutory Authority: 49.17-.040, 49.17.050 and 49.17.240.

296-24-08109 Use of respirators. [Statutory Authority: RCW 49-.17.040, 49.17.050, and 49.17.240. 80-11-010 (Order 80-14), § 296-24-08109, filed 8/8/80; Order 73-5, § 296-24-08109, filed 5/9/73 and Order 73-4, § 296-24-08109, filed 5/7/73.] Repealed by 81-16-016 (Order 81-19), filed 7/27/81. Statutory Authority: 49.17.040, 49.17.050 and 49.17.240.

296-24-08111 Maintenance and care of respirators. [Order 73-5, § 296-24-08111, filed 5/9/73 and Order 73-4, § 296-24-08111, filed 5/7/73.] Repealed by 81-16-016 (Order 81-19), filed 7/27/81. Statutory Authority: 49.17.040, 49.17.050 and 49.17.240.

296-24-08113 Identification of gas mask canisters. [Order 73-5, § 296-24-08113, filed 5/9/73 and Order 73-4, § 296-24-08113, filed 5/7/73.] Repealed by 81-16-016 (Order 81-19), filed 7/27/81. Statutory Authority: 49.17.040, 49.17.050 and 49.17.240.

WAC 296-24-081 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-24-08101 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-24-08103 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-24-08105 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-24-08107 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-24-08109 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-24-08111 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-24-08113 Repealed. See Disposition Table at beginning of this chapter.

Part B-1

SANITATION, TEMPORARY LABOR CAMPS AND NONWATER CARRIAGE DISPOSAL SYSTEMS

WAC

296-24-12005 Water supply.
296-24-12007 Toilet facilities.
296-24-12009 Washing facilities.
296-24-130 Repealed.
296-24-13001 Repealed.
296-24-13003 Repealed.
296-24-13005 Repealed.
296-24-13007 Repealed.
296-24-13009 Repealed.
296-24-13011 Repealed.
296-24-13013 Repealed.

DISPOSITION OF SECTIONS FORMERLY CODIFIED IN THIS SUBCHAPTER

296-24-130 Nonwater carriage disposal systems. [Order 73-5, § 296-24-130, filed 5/9/73 and Order 73-4, § 296-24-130, filed 5/7/73.] Repealed by 82-08-026 (Order 82-10), filed 3/30/82. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-24-13001 Acceptable industrial disposal systems. [Order 73-5, § 296-24-13001, filed 5/9/73 and Order 73-4, § 296-24-13001, filed 5/7/73.] Repealed by 82-08-026 (Order 82-10), filed 3/30/82. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-24-13003 Privy specifications. [Order 73-5, § 296-24-13003, filed 5/9/73 and Order 73-4, § 296-24-13003, filed 5/7/73.] Repealed by 82-08-026 (Order 82-10), filed 3/30/82. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-24-13005 Chemical toilet specifications. [Order 73-5, § 296-24-13005, filed 5/9/73 and Order 73-4, § 296-24-13005, filed 5/7/73.] Repealed by 82-08-026 (Order 82-10), filed 3/30/82. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-24-13007 Seepage pit construction. [Order 73-5, § 296-24-13007, filed 5/9/73 and Order 73-4, § 296-24-13007, filed 5/7/73.] Repealed by 82-08-026 (Order 82-10), filed 3/30/82. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-24-13009 Combustion toilet. [Order 73-5, § 296-24-13009, filed 5/9/73 and Order 73-4, § 296-24-13009, filed 5/7/73.] Repealed by 82-08-026 (Order 82-10), filed 3/30/82. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-24-13011 Recirculating toilet specifications. [Order 73-5, § 296-24-13011, filed 5/9/73 and Order 73-4, § 296-24-13011, filed 5/9/73.] Repealed by 82-08-026 (Order 82-10), filed 3/30/82. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-24-13013 Portable toilet construction. [Order 73-5, § 296-24-13013, filed 5/9/73 and Order 73-4, § 296-24-13013, filed 5/7/73.] Repealed by 82-08-026 (Order 82-10), filed 3/30/82. Statutory Authority: RCW 49.17.040 and 49.17.050.

WAC 296-24-12005 Water supply. (1) Potable water.

(a) Potable water shall be provided in all places of employment, for drinking, washing of the person, cooking, washing of foods, washing of cooking or eating utensils, washing of food preparation or processing premises, and personal service rooms.

(b) Portable drinking water dispensers shall be designed, constructed, and serviced so that sanitary conditions are maintained, shall be capable of being closed, and shall be equipped with a tap.

(c) Open containers such as barrels, pails, or tanks for drinking water from which the water must be dipped or poured, whether or not they are fitted with a cover, are prohibited.

(d) A common drinking cup and other common utensils are prohibited.

(2) Nonpotable water.

(a) Outlets for nonpotable water, such as water for industrial or firefighting purposes shall be posted or otherwise marked in a manner that will indicate clearly that the water is unsafe and is not to be used for drinking, washing of the person, cooking, washing of food, washing of cooking or eating utensils, washing of food preparation or processing premises, or personal service rooms, or for washing clothes.

(b) Construction of nonpotable water systems or systems carrying any other nonpotable substance shall be such as to prevent backflow or backsiphonage into a potable water system.

Nonpotable water shall not be used for washing any portion of the person, cooking or eating utensils, or clothing. Nonpotable water may be used for cleaning work premises, other than food processing and preparation premises and personal service rooms: *Provided*, That this nonpotable water does not contain concentrations of chemicals, fecal coliform, or other substances which could create unsanitary conditions or be harmful to employees. [Statutory Authority: RCW 49.17.040 and 49-.17.050. 82-13-045 (Order 82-22), § 296-24-12005, filed 6/11/82; Order 74-27, § 296-24-12005, filed 5/7/74; Order 73-5, § 296-24-12005, filed 5/9/73 and Order 73-4, § 296-24-12005, filed 5/7/73.]

WAC 296-24-12007 Toilet facilities. (1) General. (a) Except as otherwise indicated in this section, toilet facilities, in toilet rooms separate for each sex, shall be provided in all places of employment in accordance with table B-1 of this section. The number of facilities to be provided for each sex shall be based on the number of employees of that sex for whom the facilities are furnished. Where toilet rooms will be occupied by no more than one person at a time, can be locked from the inside, and contain at least one water closet, separate toilet rooms for each sex need not be provided. Where such single-occupancy rooms have more than one toilet facility, only one such facility in each toilet room shall be counted for the purpose to table B-1.

TABLE B-1

Number of employees:	Minimum number of water closets
1 to 15	1
16 to 35	2
36 to 55	3
56 to 80	4
81 to 110	5
111 to 150	6
Over 150	One additional fixture for each additional 40 employees

Where toilet facilities will not be used by women, urinals may be provided instead of water closets in such cases shall not be reduced to less than 2/3 of the minimum specified.

(b) The requirements of subdivision (a) of this subsection do not apply to mobile crews or to normally unattended work locations so long as employees working at these locations have transportation immediately available to nearby toilet facilities which meet the other requirements of this section.

(c) The sewage disposal method shall not endanger the health of employees.

(d) Toilet paper with holder shall be provided for every water closet.

(2) Construction of toilet rooms. Each water closet shall occupy a separate compartment with a door and walls or partitions between fixtures sufficiently high to assure privacy. [Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-12007, filed 12/24/81. Statutory Authority: RCW 49-.17.040, 49.17.050, 49.17.240, chapters 43.22 and 42.30 RCW. 80-17-015 (Order 80-21), § 296-24-12007, filed 11/13/80; Order 74-27, § 296-24-12007, filed 5/7/74; Order 73-5, § 296-24-12007, filed 5/9/73 and Order 73-4, § 296-24-12007, filed 5/7/73.]

WAC 296-24-12009 Washing facilities. (1) General. Facilities for maintaining personal cleanliness shall be provided in every place of employment pursuant to the provisions of this section. These shall be convenient for the employees for whom they are provided and shall be maintained in a sanitary condition.

(2) Lavatories. (a) Lavatories shall be made available in all places of employment. The requirements of this subsection do not apply to mobile crews or to normally unattended work locations if employees working at these locations have transportation readily available to nearby washing facilities which meet the other requirements of this section.

(b) Each lavatory shall be provided with hot and cold running water, or tepid running water.

(c) Hand soap or similar cleansing agents shall be provided.

(d) Individual hand towels or sections thereof, of cloth or paper, warm air blowers or clean individual sections of continuous cloth toweling, convenient to the lavatories, shall be provided.

(3) Showers. (a) Whenever showers are required by a particular standard, the showers shall be provided, in

accordance with subdivisions (b) through (e) of this subsection.

(b) One shower shall be provided for each 10 employees of each sex, or numerical fraction thereof, who are required to shower during the same shift.

(c) Body soap or other appropriate cleansing agents convenient to the showers shall be provided as specified in this section.

(d) Showers shall be provided with hot and cold water feeding a common discharge line.

(e) Employees who use showers shall be provided with individual clean towels. [Statutory Authority: RCW 49-.17.040 and 49.17.050. 82-08-026 (Order 82-10), § 296-24-12009, filed 3/30/82. Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, chapters 43.22 and 42.30 RCW. 80-17-015 (Order 80-21), § 296-24-12009, filed 11/13/80; Order 74-27, § 296-24-12009, filed 5/7/74; Order 73-5, § 296-24-12009, filed 5/9/73 and Order 73-4, § 296-24-12009, filed 5/7/73.]

WAC 296-24-130 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-24-13001 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-24-13003 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-24-13005 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-24-13007 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-24-13009 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-24-13011 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-24-13013 Repealed. See Disposition Table at beginning of this chapter.

Part B-2
SAFETY COLOR CODE FOR MARKING PHYSICAL HAZARDS, ETC., WINDOW WASHING

WAC

296-24-13501 Color identification.
296-24-14007 Sign design and colors.

WAC 296-24-13501 Color identification. (1) Red. Red shall be the basic color for the identification of:

(a) Fire protection equipment and apparatus, except motorized apparatus, as used on roads.

(b) Danger. Safety cans or other portable containers of flammable liquids having a flashpoint at or below 80°F. table containers of flammable liquids (open cup tester), excluding shipping containers, shall be painted red with some additional clearly visible identification either in the form of a yellow band around the can or the name of the contents conspicuously stenciled or painted on the can in yellow. Red lights shall be provided at barricades and at temporary obstructions, as specified in ANSI Safety Code for Building Construction, A10.2-1944. Danger signs shall be painted red.

(c) Stop. Emergency stop bars on hazardous machines such as rubber mills, wire blocks, flat work ironers, etc., shall be red. Stop buttons or electrical switches used for emergency stopping of machinery shall be red.

(2) Yellow. Yellow shall be the basic color for designating caution and for marking physical hazards such as: striking against, stumbling, falling, tripping, and "caught in between." Solid yellow, yellow and black stripes, yellow and black checkers (or yellow with suitable contrasting background) should be used interchangeably, using the combination which will attract the most attention in the particular environment. Yellow shall be the basic color for designating caution, limited to warning against the starting, the use of, or the movement of equipment under repair or being worked upon. [Statutory Authority: RCW 49.17.040 and 49.17.050. 82-13-045 (Order 82-22), § 296-24-13501, filed 6/11/82; Order 73-5, § 296-24-13501, filed 5/9/73 and Order 73-4, § 296-24-13501, filed 5/7/73.]

WAC 296-24-14007 Sign design and colors. (1) All signs shall be furnished with rounded or blunt corners and shall be free form sharp edges, burrs, splinters, or other sharp projections. The ends or heads of bolts or other fastening devices shall be located in such a way that they do not constitute a hazard.

(2) Danger signs.

(a) The colors red, black, and white shall be those of opaque glossy samples as specified in Table 1 of Fundamental Specification of Safety Colors for CIE Standard Source "C," American National Standard Z53.1-1971.

(b) Standard proportions shall be as indicated in Table J-1, and format shall be as in Fig. J-1.

(3) Radiation warning signs.

(a) Standard color of the background shall be yellow; the panel, reddish purple with yellow letters; the symbol, reddish purple; any letters used against the yellow background shall be black. The colors shall be those of opaque glossy samples as specified in Table 1 of American National Standard, Z53.1-1971.

(b) The standard symbol shall be as in Figure J-3. Method of dimensioning, design, and orientation of the standard symbol (one blade pointed downward and centered on the vertical axis) shall be executed as illustrated. The symbol shall be prominently displayed, and of a size consistent with the size of the equipment or material or area to which it is attached.

(c) Format shall be as in Figure J-2. Sign proportions shall be the same as those for danger signs in Table J-1.

(4) Caution signs.

(a) Standard color of the background shall be yellow; and the panel, black with yellow letters. Any letters used against the yellow background shall be black. The colors shall be those of opaque glossy samples as specified in Table 1 of American National Standard Z53.1-1971.

(b) Standard proportions shall be as indicated in Table J-2, and format shall be as in Figure J-4.

(5) Exit signs. Exit signs shall be in accordance with WAC 296-24-56531.

(6) Safety instruction signs.

(a) Standard color of the background shall be white; and the panel, green with white letters. Any letters used against the white background shall be black. The colors shall be those of opaque glossy samples as specified in Table 1 of American National Standard, Z53.1-1971.

(b) Standard proportions shall be as indicated in Table J-3, and format shall be as in Figure J-5.

(7) Directional signs.

(a) Standard color of the background shall be white; and the panel, black with white directional symbol. Any letters used against the white background shall be black. The colors shall be those of opaque glossy samples as specified in Table 1 of American National Standard Z53.1-1971.

(b) Standard proportions shall be as indicated in Table J-4, and format shall be as in Figure J-6.

(8) In-plant traffic signs. Regulatory and control signs required for the safe movement of vehicles and pedestrians on thoroughfares on plant property shall conform to the standards established in American National Standard Manual on Uniform Traffic Control Devices for Streets and Highways, D6.1-1971.

(9) Informational signs. Blue shall be the standard color for informational signs. It may be used as the background color for the complete sign or as a panel at the top of such types of "Notice" signs, which have a white background. The colors shall be those of opaque glossy samples as specified in Table 1 of American National Standard Z53.1-1971.

(10) Slow-moving vehicle emblem. This emblem (see Fig. J-7) consists of a fluorescent yellow-orange triangle with a dark red reflective border. The yellow-orange fluorescent triangle is a highly visible color for daylight exposure. The reflective border defines the shape of the fluorescent color in daylight and creates a hollow red triangle in the path of motor vehicle headlights at night. The emblem is intended as a unique identification for, and it shall be used only, on vehicles which by design move slowly (25 M.P.H. or less) on the public roads. The emblem is not a clearance marker for wide machinery nor is it intended to replace required lighting or marking of slow-moving vehicles. Neither the color film pattern and its dimensions nor the backing shall be altered to permit use of advertising or other markings. The material, location, mounting, etc., of the emblem shall be in accordance with the American Society of Agricultural Engineers Emblem for Identifying Slow-Moving Vehicles, ASAE R276, 1967, or ASAE S276.2 (ANSI B114.1-1971).

(11) Symbols. Symbols used on signs shall follow recognized practices, such as in Figure J-8. For radioactive materials, see symbol in Figure J-3. [Statutory Authority: RCW 49.17.040 and 49.17.050. 82-13-045 (Order 82-22), § 296-24-14007, filed 6/11/82; Order 73-5, § 296-24-14007, filed 5/9/73 and Order 73-4, § 296-24-14007, filed 5/7/73.]

Part C

MACHINERY AND MACHINE GUARDING

WAC

296-24-16503 Machine construction general.
296-24-16539 Inspection and maintenance of woodworking machinery.
296-24-170 Repealed.
296-24-17001 Repealed.
296-24-17003 Repealed.
296-24-17005 Repealed.
296-24-17007 Repealed.
296-24-17009 Repealed.
296-24-17011 Repealed.
296-24-17013 Repealed.
296-24-17015 Repealed.
296-24-17017 Repealed.
296-24-17019 Repealed.
296-24-17021 Repealed.
296-24-17023 Repealed.
296-24-17025 Repealed.
296-24-17027 Repealed.
296-24-17029 Repealed.
296-24-17031 Repealed.
296-24-17033 Repealed.
296-24-17035 Repealed.
296-24-17037 Repealed.
296-24-17039 Repealed.
296-24-17041 Repealed.
296-24-17043 Repealed.
296-24-17045 Repealed.
296-24-17047 Repealed.
296-24-19509 Design, construction, setting and feeding of dies.

DISPOSITION OF SECTIONS FORMERLY CODIFIED IN THIS CHAPTER

296-24-170 Cooperage machinery. [Order 73-5, § 296-24-170, filed 5/9/73 and Order 73-4, § 296-24-170, filed 5/7/73.] Repealed by 82-13-045 (Order 82-22), filed 6/11/82. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-24-17001 Definitions. [Order 73-5, § 296-24-17001, filed 5/9/73 and Order 73-4, § 296-24-17001, filed 5/7/73.] Repealed by 82-13-045 (Order 82-22), filed 6/11/82. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-24-17003 Heading bolt sawing machine. [Order 73-5, § 296-24-17003, filed 5/9/73 and Order 73-4, § 296-24-17003, filed 5/7/73.] Repealed by 82-13-045 (Order 82-22), filed 6/11/82. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-24-17005 Bolt, equalizer, stave, and heading saws (tilting table style). [Order 73-5, § 296-24-17005, filed 5/9/73 and Order 73-4, § 296-24-17005, filed 5/7/73.] Repealed by 82-13-045 (Order 82-22), filed 6/11/82. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-24-17007 Barrel stave saws (cylindrical saws). [Order 73-5, § 296-24-17007, filed 5/9/73 and Order 73-4, § 296-24-17007, filed 5/7/73.] Repealed by 82-13-045 (Order 82-22), filed 6/11/82. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-24-17009 Hand-fed ripsaws. [Order 73-5, § 296-24-17009, filed 5/9/73 and Order 73-4, § 296-24-17009, filed 5/7/73.] Repealed by 82-13-045 (Order 82-22), filed 6/11/82. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-24-17011 Self-feed stave and heading equalizer saws. [Order 73-5, § 296-24-17011, filed 5/9/73 and Order 73-4, § 296-24-17011, filed 5/7/73.] Repealed by 82-13-045 (Order 82-22), filed 6/11/82. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-24-17013 Stave and heading planers (single and double heads). [Order 73-5, § 296-24-17013, filed 5/9/73 and Order 73-4, § 296-24-17013, filed 5/7/73.] Repealed by 82-13-045 (Order 82-22), filed 6/11/82. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-24-17015 Stave jointing machines (wheel). [Order 73-5, § 296-24-17015, filed 5/9/73 and Order 73-4, § 296-24-17015, filed 5/7/73.] Repealed by 82-13-045 (Order 82-22), filed 6/11/82. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-24-17017 Heading jointer and doweler machine (wheel). [Order 73-5, § 296-24-17017, filed 5/9/73 and Order 73-4, § 296-24-17017, filed 5/7/73.] Repealed by 82-13-045 (Order 82-22), filed 6/11/82. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-24-17019 Heading rounder. [Order 73-5, § 296-24-17019, filed 5/9/73 and Order 73-4, § 296-24-17019, filed 5/7/73.] Repealed by 82-13-045 (Order 82-22), filed 6/11/82. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-24-17021 Power windlass machine. [Order 73-5, § 296-24-17021, filed 5/9/73 and Order 73-4, § 296-24-17021, filed 5/7/73.] Repealed by 82-13-045 (Order 82-22), filed 6/11/82. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-24-17023 Crozing machine (stationary heads). [Order 73-5, § 296-24-17023, filed 5/9/73 and Order 73-4, § 296-24-17023, filed 5/7/73.] Repealed by 82-13-045 (Order 82-22), filed 6/11/82. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-24-17025 Heading-up machine. [Order 73-5, § 296-24-17025, filed 5/9/73 and Order 73-4, § 296-24-17025, filed 5/7/73.] Repealed by 82-13-045 (Order 82-22), filed 6/11/82. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-24-17027 Head charring machine. [Order 73-5, § 296-24-17027, filed 5/9/73 and Order 73-4, § 296-24-17027, filed 5/7/73.] Repealed by 82-13-045 (Order 82-22), filed 6/11/82. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-24-17029 Bilge truss hoop ring removing machine. [Order 73-5, § 296-24-17029, filed 5/9/73 and Order 73-4, § 296-24-17029, filed 5/7/73.] Repealed by 82-13-045 (Order 82-22), filed 6/11/82. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-24-17031 Hoop elevators and conveyors. [Order 73-5, § 296-24-17031, filed 5/9/73 and Order 73-4, § 296-24-17031, filed 5/7/73.] Repealed by 82-13-045 (Order 82-22), filed 6/11/82. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-24-17033 Barrel sanding machine. [Order 73-5, § 296-24-17033, filed 5/9/73 and Order 73-4, § 296-24-17033, filed 5/7/73.] Repealed by 82-13-045 (Order 82-22), filed 6/11/82. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-24-17035 Hoop drivers and trussers. [Order 73-5, § 296-24-17035, filed 5/9/73 and Order 73-4, § 296-24-17035, filed 5/7/73.] Repealed by 82-13-045 (Order 82-22), filed 6/11/82. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-24-17037 Head sanding machine. [Order 73-5, § 296-24-17037, filed 5/9/73 and Order 73-4, § 296-24-17037, filed 5/7/73.] Repealed by 82-13-045 (Order 82-22), filed 6/11/82. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-24-17039 Hand jointer. [Order 73-5, § 296-24-17039, filed 5/9/73 and Order 73-4, § 296-24-17039, filed 5/7/73.] Repealed by 82-13-045 (Order 82-22), filed 6/11/82. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-24-17041 Hoop punching and coiling machine. [Order 73-5, § 296-24-17041, filed 5/9/73 and Order 73-4, § 296-24-17041, filed 5/7/73.] Repealed by 82-13-045 (Order 82-22), filed 6/11/82. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-24-17043 Hoop riveting machine. [Order 73-5, § 296-24-17043, filed 5/9/73 and Order 73-4, § 296-24-17043, filed 5/7/73.] Repealed by 82-13-045 (Order 82-22), filed 6/11/82. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-24-17045 Hoop flaring and expanding machine. [Order 73-5, § 296-24-17045, filed 5/9/73 and Order 73-4, § 296-24-17045, filed 5/7/73.] Repealed by 82-13-045 (Order 82-22), filed 6/11/82. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-24-17047 Inspection and maintenance of cooperage machinery. [Order 73-5, § 296-24-17047, filed 5/9/73 and Order 73-4, § 296-24-17047, filed 5/7/73.] Repealed by 82-13-045 (Order 82-22), filed 6/11/82. Statutory Authority: RCW 49.17.040 and 49.17.050.

WAC 296-24-16503 Machine construction general. (1) Each machine shall be so constructed as to be free from sensible vibration when the largest size tool is mounted and run idle at full speed.

(2) Arbors and mandrels shall be constructed so as to have firm and secure bearing and be free from play.

(3) Any automatic cutoff saw that strokes continuously without the operator being able to control each stroke shall not be used.

(4) Saw frames or tables shall be constructed with lugs cast on the frame or with an equivalent means to limit the size of the saw blade that can be mounted, so as to avoid overspeed caused by mounting a saw larger than intended.

(5) Circular saw fences shall be so constructed that they can be firmly secured to the table or table assembly without changing their alignment with the saw. For saws with tilting tables or tilting arbors the fence shall be so constructed that it will remain in a line parallel with the saw, regardless of the angle of the saw with the table.

(6) Circular saw gages shall be so constructed as to slide in grooves or tracks that are accurately machined, to insure exact alignment with the saw for all positions of the guide.

(7) Hinged saw tables shall be so constructed that the table can be firmly secured in any position and in true alignment with the saw.

(8) All belts, pulleys, gears, shafts, and moving parts shall be guarded in accordance with the specific requirements of WAC 296-24-20501 through 296-24-20533.

(9) It is recommended that each power-driven woodworking machine be provided with a disconnect switch that can be locked in the off position.

(10) The frames and all exposed, noncurrent-carrying metal parts of portable electric woodworking machinery operated at more than 90 volts to ground shall be grounded and other portable motors driving electric tools which are held in the hand while being operated shall be grounded if they operate at more than 90 volts to ground. The ground shall be provided through use of a separate ground wire and polarized plug and receptacle.

(11) For all circular saws where conditions are such that there is a possibility of contact with the portion of the saw either beneath or behind the table, that portion of the saw shall be covered with an exhaust hood, or, if no exhaust system is required, with a guard that shall be so arranged as to prevent accidental contact with the saw.

(12) Revolving double arbor saws shall be fully guarded in accordance with all the requirements for circular crosscut saws or with all the requirements for circular ripsaws, according to the kind of saws mounted on the arbors.

(13) No saw, cutter head, or tool collar shall be placed or mounted on a machine arbor unless the tool has been accurately machined to size and shape to fit the arbor.

(14) Combs (featherboards) or suitable jigs shall be provided at the workplace for use when a standard guard cannot be used, as in dadoing, grooving, jointing, moulding and rabbeting. [Statutory Authority: RCW 49.17.040 and 49.17.050. 82-13-045 (Order 82-22), § 296-24-16503, filed 6/11/82; Order 73-5, § 296-24-16503, filed 5/9/73 and Order 73-4, § 296-24-16503, filed 5/7/73.]

WAC 296-24-16539 Inspection and maintenance of woodworking machinery. (1) Dull, badly set, improperly filed, or improperly tensioned saws shall be immediately removed from service, before they begin to cause the material to stick, jam, or kick back when it is fed to the saw at normal speed. Saws to which gum has adhered on the sides shall be immediately cleaned.

(2) All knives and cutting heads of woodworking machines shall be kept sharp, properly adjusted, and firmly secured. Where two or more knives are used in one head, they shall be properly balanced.

(3) Bearings shall be kept free from lost motion and shall be well lubricated.

(4) Arbors of all circular saws shall be free from play.

(5) Sharpening or tensioning of saw blades or cutters shall be done only by persons of demonstrated skill in this kind of work.

(6) Emphasis is placed upon the importance of maintaining cleanliness around woodworking machinery, particularly as regards the effective functioning of guards and the prevention of fire hazards in switch enclosures, bearings, and motors.

(7) All cracked saws shall be removed from service.

(8) The practice of inserting wedges between the saw disk and the collar to form what is commonly known as a "wobble saw" shall not be permitted.

(9) Push sticks or push blocks shall be provided at the work place in the several sizes and types suitable for the work to be done.

(10) The knife blade of jointers shall be so installed and adjusted that it does not protrude more than one-eighth inch beyond the cylindrical body of the head. Push sticks or push blocks shall be provided at the work place in the several sizes and types suitable for the work to be done.

(11) Whenever veneer slicers or rotary veneer-cutting-machines have been shutdown for the purpose of inserting logs or to make adjustments, operators shall make sure that machine is clear and other workmen are not in a hazardous position before starting the machine.

(12) Operators shall not ride the carriage of a veneer slicer. [Statutory Authority: RCW 49.17.040 and 49.17-.050. 82-13-045 (Order 82-22), § 296-24-16539, filed 6/11/82; Order 73-5, § 296-24-16539, filed 5/9/73 and Order 73-4, § 296-24-16539, filed 5/7/73.]

WAC 296-24-170 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-24-17001 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-24-17003 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-24-17005 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-24-17007 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-24-17009 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-24-17011 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-24-17013 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-24-17015 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-24-17017 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-24-17019 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-24-17021 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-24-17023 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-24-17025 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-24-17027 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-24-17029 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-24-17031 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-24-17033 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-24-17035 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-24-17037 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-24-17039 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-24-17041 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-24-17043 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-24-17045 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-24-17047 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-24-19509 Design, construction, setting and feeding of dies. (1) General requirements. Effective February 1, 1975, the employer shall:

(a) Use dies and operating methods designed to control or eliminate hazards to operating personnel, and

(b) Furnish and enforce the use of hand tools for freeing and removing stuck work or scrap pieces from the die, so that no employee need reach into the point of operation for such purposes.

(2) [Reserved].

(3) Scrap handling. The employer shall provide means for handling scrap from roll feed or random length stock operations. Scrap cutters used in conjunction with scrap handling systems shall be safeguarded in accordance with WAC 296-24-19507 and 296-24-205, Mechanical Power-Transmission Apparatus.

(4) Guide post hazard. The hazard created by a guide post (when it is located in the immediate vicinity of the operator) when separated from its bushing by more than one-fourth inch shall be considered as a point of operation hazard and be protected in accordance with WAC 296-24-19507.

(5) Unitized tooling. If unitized tooling is used, the opening between the top of the punch holder and the face of the slide, or striking pad, shall be safeguarded in accordance with the requirements of WAC 296-24-19507.

(6) Tonnage, stroke and weight designation. All dies shall be:

(a) Stamped with the tonnage and stroke requirements, or have these characteristics recorded if these records are readily available to the die setter;

(b) Stamped to indicate upper die weight when necessary for air counterbalance pressure adjustment; and

(c) Stamped to indicate complete die weight when handling equipment may become overloaded.

(7) Die fastening. Provision shall be made in both the upper and lower shoes for securely mounting the die to the bolster and slide. Where clamp caps or setscrews are used in conjunction with punch stems, additional means of securing the upper shoe to the slide shall be used.

(8) Die handling. Handling equipment attach points shall be provided on all dies requiring mechanical handling.

(9) Diesetting. (a) The employer shall establish a diesetting procedure that will insure compliance with WAC 296-24-19507.

(b) The employer shall provide spring loaded turnover bars, for presses designed to accept such turnover bars.

(c) The employer shall provide die stops or other means to prevent losing control of the die while setting or removing dies in presses which are inclined.

(d) The employer shall provide and enforce the use of safety blocks for use whenever dies are being adjusted or repaired in the press.

(e) The employer shall provide brushes, swabs, lubricating rolls and automatic or manual pressure guns so that operators and diesetters shall not be required to reach into the point of operation or other hazard areas to lubricate material, punches or dies. [Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-19509, filed 12/24/81; Order 76-6, § 296-24-19509, filed 3/1/76; Order 73-5, § 296-24-19509, filed 5/9/73 and Order 73-4, § 296-24-19509, filed 5/7/73.]

Part E

HAZARDOUS MATERIALS, FLAMMABLE AND COMBUSTIBLE LIQUIDS, SPRAY FINISHING, DIP TANKS

WAC

296-24-33001 Definitions.
296-24-37011 Protection.
296-24-40513 Extinguishment.

WAC 296-24-33001 Definitions. The following definitions are applicable to all sections of this chapter which include WAC 296-24-330 in the section number.

(1) Aerosol shall mean a material which is dispensed from its container as a mist, spray, or foam by a propellant under pressure.

(2) Atmospheric tank shall mean a storage tank which has been designed to operate at pressures from atmospheric through 0.5 p.s.i.g.

(3) Automotive service station shall mean that portion of property where flammable or combustible liquids used as motor fuels are stored and dispensed from fixed equipment into the fuel tanks of motor vehicles and shall include any facilities available for the sale and service of tires, batteries, and accessories, and for minor automotive maintenance work. Major automotive repairs, painting, body and fender work are excluded.

(4) Basement shall mean a story of a building or structure having one-half or more of its height below ground level and to which access for fire fighting purposes is unduly restricted.

(5) Boiling point shall mean the boiling point of a liquid at a pressure of 14.7 pounds per square inch absolute (p.s.i.a.) (760 mm.). Where an accurate boiling point is unavailable for the material in question, or for mixtures which do not have a constant boiling point, for purposes of this section the 10 percent point of a distillation performed in accordance with the Standard Method of Test for Distillation of Petroleum Products, ASTM D-86-62, may be used as the boiling point of the liquid.

(6) Boilover shall mean the expulsion of crude oil (or certain other liquids) from a burning tank. The light fractions of the crude oil burnoff producing a heat wave in the residue, which on reaching a water strata may result in the expulsion of a portion of the contents of the tank in the form of froth.

(7) Bulk plant shall mean that portion of a property where flammable or combustible liquids are received by tank vessel, pipelines, tank car, or tank vehicle, and are stored or blended in bulk for the purpose of distributing such liquids by tank vessel, pipeline, tank car, tank vehicle, or container.

(8) Chemical plant shall mean a large integrated plant or that portion of such a plant other than a refinery or distillery where flammable or combustible liquids are produced by chemical reactions or used in chemical reactions.

(9) Closed container shall mean a container as herein defined, so sealed by means of a lid or other device that neither liquid nor vapor will escape from it at ordinary temperatures.

(10) Crude petroleum shall mean hydrocarbon mixtures that have a flash point below 150°F. and which have not been processed in a refinery.

(11) Distillery shall mean a plant or that portion of a plant where flammable or combustible liquids produced by fermentation are concentrated, and where the concentrated products may also be mixed, stored, or packaged.

(12) Fire area shall mean an area of a building separated from the remainder of the building by construction having a fire resistance of at least 1 hour and having all communicating openings properly protected by an assembly having a fire resistance rating of at least 1 hour.

(13) Fire resistance or fire resistive construction shall mean construction to resist the spread of fire.

(14) Flammable aerosol shall mean an aerosol which is required to be labeled "Flammable" under the Federal Hazardous Substances Labeling Act (15 U.S.C. 1261). For the purposes of WAC 296-24-33009, such aerosols are considered Class IA liquids.

(15) "Flashpoint" means the minimum temperature at which a liquid gives off vapor within a test vessel in sufficient concentration to form an ignitable mixture with air near the surface of the liquid, and shall be determined as follows:

(a) For a liquid which has a viscosity of less than 45 SUS at 100°F. (37.8°C), does not contain suspended solids, and does not have a tendency to form a surface film while under test, the procedure specified in the Standard Method of Test for Flashpoint by Tag Closed Tester (ASTM D-56-70) shall be used.

(b) For a liquid which has a viscosity of 45 SUS or more at 100°F. (37.8°C.), or contains suspended solids, or has a tendency to form a surface film while under test, the Standard Method of Test for Flashpoint by Pensky-Martens Closed Tester (ASTM D-93-71) shall be used, except that the methods specified in Note 1 to section 1.1 of ASTM D-93-71 may be used for the respective materials specified in the Note.

(c) For a liquid that is a mixture of compounds that have different volatilities and flashpoints, its flashpoint shall be determined by using the procedure specified in (15)(a) or (b) of this section on the liquid in the form it is shipped. If the flashpoint, as determined by this test, is 100°F. (37.8°C) or higher, an additional flashpoint determination shall be run on a sample of the liquid evaporated to 90 percent of its original volume, and the lower value of the two tests shall be considered the flashpoint of the material.

(d) Organic peroxides, which undergo autoaccelerating thermal decomposition, are excluded from any of the flashpoint determination methods specified in this section.

(16) Hotel shall mean buildings or groups of buildings under the same management in which there are sleeping accommodations for hire primarily used by transients who are lodged with or without meals including but not limited to inns, clubs, motels, and apartment hotels.

(17) Institutional occupancy shall mean the occupancy or use of a building or structure or any portion thereof by persons harbored or detained to receive medical, charitable or other care or treatment, or by persons involuntarily detained.

(18) Liquid shall mean, for the purpose of these standards, any material which has a fluidity greater than that of 300 penetration asphalt when tested in accordance with ASTM Test for Penetration for Bituminous Materials, D-5-65. When not otherwise identified, the term liquid shall include both flammable and combustible liquids.

(19) "Combustible liquid" means any liquid having a flashpoint at or above 100°F (37.8°C.). Combustible liquids shall be divided into two classes as follows:

(a) "Class II liquids" shall include those with flashpoints at or above 100°F. (37.8°C.) and below 140°F. (60°C.), except any mixture having components with flashpoints of 200°F. (93.3°C.) or higher, the volume of which make up 99 percent or more of the total volume of the mixture.

(b) "Class III liquids" shall include those with flashpoints at or above 140°F. (60°C.). Class III liquids are subdivided into two subclasses:

(i) "Class IIIA liquids" shall include those with flashpoints at or above 140°F. (60°C.) and below 200°F. (93.3°C.) except any mixture having components with flashpoints of 200°F. (93.3°C.) or higher, the total volume of which make up 99 percent or more of the total volume of the mixture.

(ii) "Class IIIB liquids" shall include those with flashpoints at or above 200°F. (93.3°C.). This section does not cover Class IIIB liquids. Where the term "Class III liquids" is used in this section, it shall mean only Class IIIA liquids.

(c) When a combustible liquid is heated for use to within 30°F. (16.7°C.) of its flashpoint, it shall be handled in accordance with the requirements for the next lower class of liquids.

(20) "Flammable liquid" means any liquid having a flashpoint below 100°F, (37.8°C.), except any mixture having components with flashpoints of 100°F, (37.8°C.)

or higher, the total of which make up 99 percent or more of the total volume of the mixture. Flammable liquids shall be known as Class I liquids. Class I liquids are divided into three classes as follows:

(a) Class IA shall include liquids having flashpoints below 73°F. (22.8°C.) and having a boiling point below 100°F. (37.8°C.)

(b) Class IB shall include liquids having flashpoints below 73°F. (22.8°C.) and having a boiling point at or above 100°F. (37.8°C.).

(c) Class IC shall include liquids having flashpoints at or above 73°F. (22.8°C.) and below 100°F. (37.8°C.).

(21) Unstable (reactive) liquid shall mean a liquid which in the pure state or as commercially produced or transported will vigorously polymerize, decompose, condense, or will become self-reactive under conditions of shocks, pressure, or temperature.

(22) Low-pressure tank shall mean a storage tank which has been designed to operate at pressures above 0.5 p.s.i.g. but not more than 15 p.s.i.g.

(23) Marine service station shall mean that portion of a property where flammable or combustible liquids used as fuels are stored and dispensed from fixed equipment on shore, piers, wharves, or floating docks into the fuel tanks or self-propelled craft, and shall include all facilities used in connection therewith.

(24) Mercantile occupancy shall mean the occupancy or use of a building or structure or any portion thereof for the displaying, selling, or buying of goods, wares, or merchandise.

(25) Office occupancy shall mean the occupancy or use of a building or structure or any portion thereof for the transaction of business, or the rendering or receiving of professional services.

(26) Portable tank shall mean a closed container having a liquid capacity over 60 U.S. gallons and not intended for fixed installation.

(27) Pressure vessel shall mean a storage tank or vessel which has been designed to operate at pressures above 15 p.s.i.g.

(28) Protection for exposure shall mean adequate fire protection for structures on property adjacent to tanks, where there are employees of the establishment.

(29) Refinery shall mean a plant in which flammable or combustible liquids are produced on a commercial scale from crude petroleum, natural gasoline, or other hydrocarbon sources.

(30) Safety can shall mean an approved container, of not more than 5 gallons capacity, having a spring-closing lid and spout cover and so designed that it will safely relieve internal pressure when subjected to fire exposure.

(31) Vapor pressure shall mean the pressure, measured in pounds per square inch (absolute) exerted by a volatile liquid as determined by the "Standard Method of Test for Vapor Pressure of Petroleum Products (Reid Method)," American Society for Testing and Materials ASTM D323-68.

(32) Ventilation as specified in these standards is for the prevention of fire and explosion. It is considered adequate if it is sufficient to prevent accumulation of significant quantities of vapor-air mixtures in concentration over one-fourth of the lower flammable limit.

(33) Storage: Flammable or combustible liquids shall be stored in a tank or in a container that complies with WAC 296-24-33009(2).

(34) Barrel shall mean a volume of 42 U.S. gallons.

(35) Container shall mean any can, barrel, or drum.

(36) Approved unless otherwise indicated, approved, or listed by at least one of the following nationally recognized testing laboratories: Underwriters Laboratories, Inc.; Factory Mutual Engineering Corp.

(37) Listed see "approved" in WAC 296-24-33001(36).

(38) "SUS" means Saybolt Universal Seconds as determined by the Standard Method of Test for Saybolt Viscosity (ASTM D-88-56), and may be determined by use of the SUS conversion tables specified in ASTM Method D2161-66 following determination of viscosity in accordance with the procedures specified in the Standard Method of Test for Viscosity of Transparent and Opaque Liquids (ASTM D445-65).

(39) "Viscous" means a viscosity of 45 SUS or more.

NOTE: The volatility of liquids is increased when artificially heated to temperatures equal to or higher than their flashpoints. When so heated Class II and III liquids shall be subject to the applicable requirements for Class I or II liquids. These standards may also be applied to high flashpoint liquids when so heated even though these same liquids when not heated are outside of its scope.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-08-026 (Order 82-10), § 296-24-33001, filed 3/30/82. Statutory Authority: RCW 49.17.040, 49.17-.050, 49.17.240, chapters 43.22 and 42.30 RCW. 80-17-015 (Order 80-21), § 296-24-33001, filed 11/13/80; Order 76-29, § 296-24-33001, filed 9/30/76; Order 76-6, § 296-24-33001, filed 3/1/76; Order 74-27, § 296-24-33001, filed 5/7/74; Order 73-5, § 296-24-33001, filed 5/9/73 and Order 73-4, § 296-24-33001, filed 5/7/73.]

WAC 296-24-37011 Protection. (1) Conformance. In sprinklered buildings, the automatic sprinkler system in rooms containing spray finishing operations shall conform to the requirements of WAC 296-24-607. In unsprinklered buildings where sprinklers are installed only to protect spraying areas, the installation shall conform to such standards insofar as they are applicable. Sprinkler heads shall be located so as to provide water distribution throughout the entire booth.

(2) Valve access. Automatic sprinklers protecting each spray booth (together with its connecting exhaust) shall be under an accessibly located separate outside stem and yoke (OS&Y) subcontrol valve.

(3) Cleaning of heads. Sprinklers protecting spraying areas shall be kept as free from deposits as practical by cleaning daily if necessary. (See also WAC 296-24-37013.)

(4) Portable extinguishers. An adequate supply of suitable portable fire extinguishers shall be installed near all spraying areas. [Statutory Authority: RCW 49.17-.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-37011, filed 12/24/81; Order 73-5, § 296-24-37011, filed 5/9/73 and Order 73-4, § 296-24-37011, filed 5/7/73.]

WAC 296-24-40513 Extinguishment. (1) Extinguishers. Areas in the vicinity of dip tanks shall be provided with manual fire extinguishers suitable for flammable and combustible liquid fires, conforming to WAC 296-24-592.

(2) Automatic water spray extinguishing systems. Automatic water spray extinguishing systems shall conform to WAC 296-24-627 and shall be arranged to protect tanks, drainboards, and stock over drainboards.

(3) Automatic foam extinguishing systems. Automatic foam extinguishing systems shall conform to WAC 296-24-627 and;

(a) Foam producing material selected shall be suitable for intended use, taking into account characteristics of the dip tank liquid;

(b) Overflow pipe shall be arranged to prevent the floating away of foam and clogging overflow pipe. This may be accomplished by either of the following:

(i) Overflow pipe may be extended through tank wall and terminated in an ell pointing downward. The bottom of the overflow pipe at the point it pierces tank wall should not be over 2 inches above the opening or face of the ell.

(ii) Overflow pipe inlet may be provided with a removable screen of 1/4-inch mesh having an area at least twice the cross-sectional area of overflow pipe. Screens which may be clogged by dip tank ingredients shall be inspected and cleaned periodically.

(4) Automatic carbon dioxide systems. Automatic carbon dioxide systems shall conform to WAC 296-24-623 and shall be arranged to protect both dip tanks and drainboards and unless stock over drainboards is otherwise protected with automatic extinguishing facilities, shall also be arranged to protect such stock.

(5) Dry chemical extinguishing systems. Dry chemical extinguishing systems shall conform to WAC 296-24-622 and shall be arranged to protect both dip tanks and drainboards, and unless stock over drainboards is otherwise protected with automatic extinguishing facilities, shall also be arranged to protect such stock.

(6) Dip tank covers. (a) Covers arranged to close automatically in the event of fire shall be actuated by approved automatic devices and shall also be arranged for manual operation.

(b) Covers shall be of substantial noncombustible material or of tin-clad type with enclosing metal applied with locked joints.

(c) Chains or wire rope shall be used for cover support or operating mechanism where the burning of a cord would interfere with the action of a device.

(d) Covers shall be kept closed when tanks are not in use. [Statutory Authority: RCW 49.17.040 and 49.17-.050. 82-02-003 (Order 81-32), § 296-24-40513, filed 12/24/81; Order 73-5, § 296-24-40513, filed 5/9/73 and Order 73-4, § 296-24-40513, filed 5/7/73.]

Part G

MEANS OF EGRESS, FIRE PROTECTION AND FIRE SUPPRESSION EQUIPMENT

WAC

296-24-55001 Definitions.
296-24-56527 Fire alarm signaling systems.
296-24-567 Employee emergency plans and fire prevention plans.
296-24-56701 Appendix.
296-24-58503 Scope, application and definitions applicable.
296-24-58505 Fire brigades.
296-24-58507 Organization.
296-24-58509 Training and education.
296-24-58511 Fire fighting equipment.
296-24-58513 Protective clothing.
296-24-58515 Respiratory protection devices.
296-24-58517 Appendix A—Fire brigades.
296-24-592 Portable fire extinguishers.
296-24-59201 Scope and application.
296-24-59203 Exemptions.
296-24-59205 General requirements.
296-24-59207 Selection and distribution.
296-24-59209 Inspection, maintenance and testing.
296-24-59211 Hydrostatic testing.
296-24-59213 Training and education.
296-24-59215 Appendix A—Portable fire extinguishers.
296-24-602 Standpipe and hose systems.
296-24-60201 Scope and application.
296-24-60203 Protection of standpipes.
296-24-60205 Equipment.
296-24-60207 Water supply.
296-24-60209 Tests and maintenance.
296-24-60299 Appendix A—Standpipe and hose systems.
296-24-607 Automatic sprinkler systems.
296-24-60701 Scope and application.
296-24-60703 Exemptions.
296-24-60705 General requirements.
296-24-60799 Appendix A—Automatic sprinkler systems.
296-24-617 Fixed extinguishing systems, general.
296-24-61701 Scope and application.
296-24-61703 General requirements.
296-24-61705 Total flooding systems with potential health and safety hazards to employees.
296-24-61799 Appendix A—Fixed extinguishing systems, general.
296-24-622 Fixed extinguishing systems, dry chemical.
296-24-62201 Scope and application.
296-24-62203 Specific requirements.
296-24-62299 Appendix A—Fixed extinguishing systems, dry chemical.
296-24-623 Fixed extinguishing systems, gaseous agent.
296-24-62301 Scope and application.
296-24-62303 Specific requirements.
296-24-62399 Appendix A—Fixed extinguishing systems, gaseous agent.
296-24-627 Fixed extinguishing systems, water spray and foam.
296-24-62701 Scope and application.
296-24-62703 Specific requirements.
296-24-62799 Appendix A—Fixed extinguishing systems, water spray and foam.
296-24-629 Fire detection systems.
296-24-62901 Scope and application.
296-24-62903 Installation and restoration.
296-24-62905 Maintenance and testing.
296-24-62907 Protection of fire detectors.
296-24-62909 Response time.
296-24-62911 Number, location and spacing of detecting devices.
296-24-62999 Appendix A—Fire detection systems.
296-24-631 Employee alarm systems.
296-24-63101 Scope and application.
296-24-63103 General requirements.
296-24-63105 Installation and restoration.
296-24-63107 Maintenance and testing.

296-24-63109 Manual operation.
296-24-63199 Appendix A—Employee alarm systems.
296-24-63299 Appendix B—National consensus standards.
296-24-63399 Appendix C—Fire protection references for further information.
296-24-63499 Appendix D—Availability of publications incorporated by references in WAC 296-24-58505—Fire brigades.
296-24-63599 Appendix E—Test methods for protective clothing.

WAC 296-24-55001 Definitions. (1) Means of egress. A means of egress is a continuous and unobstructed way of exit travel from any point in a building or structure to a public way and consists of three separate and distinct parts: The way of exit access, the exit, and the way of exit discharge. A means of egress comprises the vertical and horizontal ways of travel and shall include intervening room spaces, doorways, hallways, corridors, passageways, balconies, ramps, stairs, enclosures, lobbies, escalators, horizontal exits, courts, and yards.

(2) Exit access. Exit access is that portion of a means of egress which leads to an entrance to an exit.

(3) Exit. Exit is that portion of a means of egress which is separated from all other spaces of the building or structure by construction or equipment as required in these standards to provide a protected way of travel to the exit of discharge.

(4) Exit discharge. Exit discharge is that portion of a means of egress between the termination of an exit and a public way.

(5) Low hazard contents. Low hazard contents shall be classified as those of such low combustibility that no self–propagating fire therein can occur and that consequently the only probable danger requiring the use of emergency exits will be from panic, fumes, or smoke, or fire from some external source.

(6) High–hazard contents. High–hazard contents shall be classified as those which are liable to burn with extreme rapidity or from which poisonous fumes or explosions are to be feared in the event of fire.

(7) Ordinary hazard contents. Ordinary hazard contents shall be classified as those which are liable to burn with moderate rapidity and to give off a considerable volume of smoke but from which neither poisonous fumes nor explosions are to be feared in case of fire.

(8) Approved. For the purposes of these standards approved shall mean listed or approved equipment by a nationally recognized testing laboratory.

(9) Emergency action plan. A plan for a workplace, or parts thereof, describing what procedures the employer and employees must take to ensure employee safety from fire or other emergencies.

(10) Emergency escape route. The route that employees are directed to follow in the event they are required to evacuate the workplace or seek a designated refuge area. [Statutory Authority: RCW 49.17.040 and 49.17-.050. 82–02–003 (Order 81–32), § 296–24–55001, filed 12/24/81; Order 73–5, § 296–24–55001, filed 5/9/73 and Order 73–4, § 296–24–55001, filed 5/7/73.]

WAC 296-24-56527 Fire alarm signaling systems. The employer shall assure that fire alarm signaling systems are maintained and tested in accordance with the requirements of WAC 296–24–63107. [Statutory Authority: RCW 49.17.040 and 49.17.050. 82–02–003 (Order 81–32), § 296–24–56527, filed 12/24/81; Order 73–5, § 296–24–56527, filed 5/9/73 and Order 73–4, § 296–24–56527, filed 5/7/73.]

WAC 296-24-567 Employee emergency plans and fire prevention plans. (1) Emergency action plan.

(a) Scope and application. This subdivision applies to all emergency action plans required by a particular WISHA standard. The emergency action plan shall be in writing (except as provided in the last sentence of (1)(e)(iii) of this section) and shall cover those designated actions employers and employees must take to ensure employee safety from fire and other emergencies.

(b) Elements. The following elements, at a minimum, shall be included in the plan:

(i) Emergency escape procedures and emergency escape route assignments;

(ii) Procedures to be followed by employees who remain to operate critical plant operations before they evacuate;

(iii) Procedures to account for all employees after emergency evacuation has been completed;

(iv) Rescue and medical duties for those employees who are to perform them;

(v) The preferred means of reporting fires and other emergencies; and

(vi) Names or regular job titles of persons or departments who can be contacted for further information or explanation of duties under the plan.

(c) Alarm systems.

(i) The employer shall establish an employee alarm system which complies with WAC 296–24–631.

(ii) If the employee alarm system is used for alerting fire brigade members, or for other purposes, a distinctive signal for each purpose shall be used.

(d) Evacuation. The employer shall establish in the emergency action plan the types of evacuation to be used in emergency circumstances.

(e) Training.

(i) Before implementing the emergency action plan, the employer shall designate and train a sufficient number of persons to assist in the safe and orderly emergency evacuation of employees.

(ii) The employer shall review the plan with each employee covered by the plan at the following times:

(A) Initially when the plan is developed;

(B) Whenever the employee's responsibilities or designated actions under the plan change; and

(C) Whenever the plan is changed.

(iii) The employer shall review with each employee upon initial assignment those parts of the plan which the employee must know to protect the employee in the event of an emergency. The written plan shall be kept at the workplace and made available for employee review. For those employers with ten or fewer employees the

plan may be communicated orally to employees and the employer need not maintain a written plan.

(2) Fire prevention plan.

(a) Scope and application. This subsection applies to all fire prevention plans required by a particular WISHA standard. The fire prevention plan shall be in writing, except as provided in the last sentence of (2)(d)(ii) of this section.

(b) Elements. The following elements, at a minimum, shall be included in the fire prevention plan:

(i) A list of the major workplace fire hazards and their proper handling and storage procedures, potential ignition sources (such as welding, smoking and others) and their control procedures, and the type of fire protection equipment or systems which can control a fire involving them;

(ii) Names or regular job titles of those personnel responsible for maintenance of equipment and systems installed to prevent or control ignitions or fires; and

(iii) Names or regular job titles of those personnel responsible for control of fuel source hazards.

(c) Housekeeping. The employer shall control accumulations of flammable and combustible waste materials and residues so that they do not contribute to a fire emergency. The housekeeping procedures shall be included in the written fire prevention plan.

(d) Training.

(i) The employer shall apprise employees of the fire hazards of the materials and processes to which they are exposed.

(ii) The employer shall review with each employee upon initial assignment those parts of the fire prevention plan which the employee must know to protect the employee in the event of an emergency. The written plan shall be kept in the workplace and made available for employee review. For those employers with ten or few employees, the plan may be communicated orally to employees and the employer need not maintain a written plan.

(e) Maintenance. The employer shall regularly and properly maintain, according to established procedures, equipment and systems installed on heat producing equipment to prevent accidental ignition of combustible materials. The maintenance procedures shall be included in the written fire prevention plan. [Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-567, filed 12/24/81.]

WAC 296-24-56701 Appendix. This appendix serves as a nonmandatory guideline to assist employers in complying with the appropriate requirements.

(1) Employee emergency plans. Emergency action plan elements. The emergency action plan should address emergencies that the employer may reasonably expect in the workplace. Examples are: Fire, toxic chemical releases; hurricanes; tornadoes; blizzards; floods; and others. The elements of the emergency action plan presented in WAC 296-24-567(1)(b) can be supplemented by the following to more effectively achieve employee safety and health in an emergency. The employer should list in detail the procedures to be taken by those employees who have been selected to remain behind to care for essential plant operations until their evacuations become absolutely necessary. Essential plant operations may include the monitoring of plant power supplies, water supplies, and other essential services which cannot be shut down for every emergency alarm. Essential plant operations may also include chemical or manufacturing processes which must be shut down in stages or steps where certain employees must be present to assure that safe shut down procedures are completed.

The use of floor plans or workplace maps which clearly show the emergency escape routes should be included in the emergency action plan. Color coding will aid employees in determining their route assignments.

The employer should also develop and explain in detail what rescue and medical first aid duties are to be performed and by whom. All employees are to be told what actions they are to take in these emergency situations that the employer anticipates may occur in the workplace.

(2) Emergency evacuation. At the time of an emergency, employees should know what type of evacuation is necessary and what their role is in carrying out the plan. In some cases where the emergency is very grave, total and immediate evacuation of all employees is necessary. In other emergencies, a partial evacuation of nonessential employees with a delayed evacuation of others may be necessary for continued plant operation. In some cases, only those employees in the immediate area of the fire may be expected to evacuate or move to a safe area such as when a local application fire suppression system discharge employee alarm is sounded. Employees must be sure that they know what is expected of them in all such emergency possibilities which have been planned in order to provide assurance of their safety from fire or other emergency.

The designation of refuge or safe areas for evacuation should be determined and identified in the plan. In a building divided into fire zones by fire walls, the refuge area may still be within the same building but in a different zone from where the emergency occurs.

Exterior refuge or safe areas may include parking lots, open fields or streets which are located away from the site of the emergency and which provide sufficient space to accommodate the employees. Employees should be instructed to move away from the exit discharge doors of the building, and to avoid congregating close to the building where they may hamper emergency operations.

(3) Emergency action plan training. The employer should assure that an adequate number of employees are available at all times during working hours to act as evacuation wardens so that employees can be swiftly moved from the danger location to the safe areas. Generally, one warden for each twenty employees in the workplace should be able to provide adequate guidance and instruction at the time of a fire emergency. The employees selected or who volunteer to serve as wardens should be trained in the complete workplace layout and the various alternative escape routes from the workplace. All wardens and fellow employees should be made aware

of handicapped employees who may need extra assistance, such as using the buddy system, and of hazardous areas to be avoided during emergencies. Before leaving, wardens should check rooms and other enclosed spaces in the workplace for employees who may be trapped or otherwise unable to evacuate the area.

After the desired degree of evacuation is completed, the wardens should be able to account for or otherwise verify that all employees are in the safe areas.

In buildings with several places of employment, employers are encouraged to coordinate their plans with the other employers in the building. A building-wide or standardized plan for the whole building is acceptable provided that the employers inform their respective employees of their duties and responsibilities under the plan. The standardized plan need not be kept by each employer in the multi-employer building provided there is an accessible location within the building where the plan can be reviewed by affected employees. When multi-employer, building-wide plans are not feasible, employers should coordinate their plans with the other employers within the building to assure that conflicts and confusion are avoided during time of emergencies. In multistory buildings where more than one employer is on a single floor, it is essential that these employers coordinate their plans with each other to avoid conflicts and confusion.

(4) Fire prevention housekeeping. The standard calls for the control of accumulations of flammable and combustible waste materials.

It is the intent of this standard to assure that hazardous accumulations of combustible waste materials are controlled so that a fast developing fire, rapid spread of toxic smoke, or an explosion will not occur. This does not necessarily mean that each room has to be swept each day. Employers and employees should be aware of the hazardous properties of materials in their workplaces, and the degree of hazard each poses. Certainly, oil soaked rags have to be treated differently than general paper trash in office areas. However, large accumulations of waste paper or corrugated boxes, etc., can pose a significant fire hazard. Accumulations of materials which can cause large fires or generate dense smoke that are easily ignited or may start from spontaneous combustion, are the types of materials with which this standard is concerned. Such combustible materials may be easily ignited by matches, welder's sparks, cigarettes, and similar low level energy ignition sources.

(5) Maintenance of equipment under the fire prevention plan. Certain equipment is often installed in workplaces to control heat sources or to detect fuel leaks. An example is a temperature limit switch often found on deep-fat food fryers found in restaurants. There may be similar switches for high temperature dip tanks, or flame failure and flashback arrester devices on furnaces and similar heat producing equipment. If these devices are not properly maintained or if they become inoperative, a definite fire hazard exists. Again employees and supervisors should be aware of the specific type of control devices on equipment involved with combustible materials in the workplace and should make sure, through periodic inspection or testing, that these controls are operable. Manufacturers' recommendations should be followed to assure proper maintenance procedures. [Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-56701, filed 12/24/81.]

WAC 296-24-58503 Scope, application and definitions applicable. (1) Scope. This subpart contains requirements for fire brigades, and all portable and fixed fire suppression equipment, fire detection systems, and fire or employee alarm systems installed to meet the fire protection requirements of chapter 296-24 WAC.

(2) Application. This subpart applies to all employments except for maritime, construction, and agriculture.

(3) Definitions applicable to this subpart.

(a) "After-flame," means the time a test specimen continues to flame after the flame source has been removed.

(b) "Aqueous film forming foam (AFFF)," means a fluorinated surfactant with a foam stabilizer which is diluted with water to act as a temporary barrier to exclude air from mixing with the fuel vapor by developing an aqueous film on the fuel surface of some hydrocarbons which is capable of suppressing the generation of fuel vapors.

(c) "Approved," means acceptable to the director under the following criteria:

(i) If it is accepted, or certified, or listed, or labeled or otherwise determined to be safe by a nationally recognized testing laboratory, such as, but not limited to, Underwriters' Laboratories, Inc. or the Factory Mutual System; or

(ii) With respect to an installation or equipment of a kind which no nationally recognized testing laboratory accepts, certifies, lists, labels, or determines to be safe, if it is inspected or tested by another Federal agency and found in compliance with the provisions of the applicable National Fire Protection Association Fire Code; or

(iii) With respect to custom-made equipment or related installations which are designed, fabricated for, and intended for use by manufacturer on the basis of test data which the employer keeps and makes available for inspection to the director; and

(iv) For the purposes of this subsection (3)(c) of this section:

(A) Equipment is listed if it is of a kind mentioned in a list which is published by a nationally recognized testing laboratory which makes periodic inspections of the production of such equipment and which states that such equipment meets nationally recognized standards or has been tested and found safe for use in a specified manner;

(B) Equipment is labeled if there is attached to it a label, symbol, or other identifying mark of a nationally recognized testing laboratory which makes periodic inspections of the production of such equipment and whose labeling indicates compliance with nationally recognized standards or tests to determine safe use in a specified manner;

(C) Equipment is accepted if it has been inspected and found by a nationally recognized testing laboratory

to conform to specified plans or to procedures of applicable codes; and

(D) Equipment is certified if it has been tested and found by a nationally recognized testing laboratory to meet nationally recognized standards or to be safe for use in a specified manner or is of a kind whose production is periodically inspected by a nationally recognized testing laboratory, and if it bears a label, tag, or other record of certification.

(d) "Automatic fire detection device," means a device designed to automatically detect the presence of fire by heat, flame, light, smoke or other products of combustion.

(e) "Buddy–breathing device," means an accessory to self–contained breathing apparatus which permits a second person to share the same air supply as that of the wearer of the apparatus.

(f) "Carbon dioxide," means a colorless, odorless, electrically nonconductive inert gas (chemical formula CO_2) that is a medium for extinguishing fires by reducing the concentration of oxygen or fuel vapor in the air to the point where combustion is impossible.

(g) "Class A fire," means a fire involving ordinary combustible materials such as paper, wood, cloth, and some rubber and plastic materials.

(h) "Class B fire," means a fire involving flammable or combustible liquids, flammable gases, greases and similar materials, and some rubber and plastic materials.

(i) "Class C fire," means a fire involving energized electrical equipment where safety to the employee requires the use of electrically nonconductive extinguishing media.

(j) "Class D fire," means a fire involving combustible metals such as magnesium, titanium, zirconium, sodium, lithium and potassium.

(k) "Dry chemical," means an extinguishing agent composed of very small particles of chemicals such as, but not limited to, sodium bicarbonate, potassium bicarbonate, urea–based potassium bicarbonate, potassium chloride, or monoammonium phosphate supplemented by special treatment to provide resistance to packing and moisture absorption (caking) as well as to provide proper flow capabilities. Dry chemical does not include dry powders.

(l) "Dry powder," means a compound used to extinguish or control Class D fires.

(m) "Education," means the process of imparting knowledge or skill through systematic instruction. It does not require formal classroom instruction.

(n) "Enclosed structure," means a structure with a roof or ceiling and at least two walls which may present fire hazards to employees, such as accumulations of smoke, toxic gases and heat similar to those found in buildings.

(o) "Extinguisher classification," means the letter classification given an extinguisher to designate the class or classes of fire on which an extinguisher will be effective.

(p) "Extinguisher rating," means the numerical rating given to an extinguisher which indicates the extinguishing potential of the unit based on standardized tests developed by Underwriters' Laboratories, Inc.

(q) "Fire brigade," (private fire department, industrial fire department) means an organized group of employees who are knowledgeable, trained, and skilled in at least basic fire fighting operations.

(r) "Fixed extinguishing system," means a permanently installed system that either extinguishes or controls a fire at the location of the system.

(s) "Flame resistance," is the property of materials, or combinations of component materials, to retard ignition and restrict the spread of flame.

(t) "Foam," means a stable aggregation of small bubbles which flow freely over a burning liquid surface and form a coherent blanket which seals combustible vapors and thereby extinguishes the fire.

(u) "Gaseous agent," is a fire extinguishing agent which is in the gaseous state at normal room temperature and pressure. It has low viscosity, can expand or contract with changes in pressure and temperature, and has the ability to diffuse readily and to distribute itself uniformly throughout an enclosure.

(v) "Halon 1211," means a colorless, faintly sweet smelling, electrically nonconductive liquefied gas (chemical formula $CBrC1F_2$) which is a medium for extinguishing fires by inhibiting the chemical chain reaction of fuel and oxygen. It is also known as bromochlorodifluoromethane.

(w) "Halon 1301," means a colorless, odorless, electrically nonconductive gas (chemical formula $CBrF_3$) which is a medium for extinguishing fires by inhibiting the chemical chain reaction of fuel and oxygen. It is also known as bromotrifluoromethane.

(x) "Helmet," is a head protective device consisting of a rigid shell, energy absorption system and chin strap intended to be worn to provide protection for the head or portions thereof, against impact, flying or falling objects, electric shock, penetration, heat and flame.

(y) "Incipient stage fire," means a fire which is in the initial or beginning stage and which can be controlled or extinguished by portable fire extinguishers, Class II standpipe or small hose systems without the need for protective clothing or breathing apparatus.

(z) "Inspection," means a visual check of fire protection systems and equipment to ensure that they are in place, charged, and ready for use in the event of a fire.

(aa) "Interior structural fire fighting," means the physical activity of fire suppression, rescue or both, inside of buildings or enclosed structures which are involved in a fire situation beyond the incipient stage.

(bb) "Lining," means a material permanently attached to the inside of the outer shell of a garment for the purpose of thermal protection and padding.

(cc) "Local application system," means a fixed fire suppression system which has a supply of extinguishing agent, with nozzles arranged to automatically discharge extinguishing agent directly on the burning material to extinguish or control a fire.

(dd) "Maintenance," means the performance of services on fire protection equipment and systems to assure that they will perform as expected in the event of a fire. Maintenance differs from inspection in that maintenance requires the checking of internal fitting, devices and agent supplies.

(ee) "Multipurpose dry chemical," means a dry chemical which is approved for use on Class A, Class B and Class C fires.

(ff) "Outer shell," is the exterior layer of material on the fire coat and protective trousers which forms the outermost barrier between the fire fighter and the environment. It is attached to the vapor barrier and liner and is usually constructed with a storm flap, suitable closures, and pockets.

(gg) "Positive–pressure breathing apparatus," means self–contained breathing apparatus in which the pressure in the breathing zone is positive in relation to the immediate environment during inhalation and exhalation.

(hh) "Pre–discharge employee alarm," means an alarm which will sound at a set time prior to actual discharge of an extinguishing system so that employees may evacuate the discharge area prior to system discharge.

(ii) "Quick disconnect valve," means a device which starts the flow of air by inserting of the hose (which leads from the facepiece) into the regulator of self–contained breathing apparatus, and stops the flow of air by disconnection of the hose from the regulator.

(jj) "Sprinkler alarm," means an approved device installed so that any waterflow from a sprinkler system equal to or greater than that from single automatic sprinkler will result in an audible alarm signal on the premises.

(kk) "Sprinkler system," means a system of piping designed in accordance with fire protection engineering standards and installed to control or extinguish fires. The system includes an adequate and reliable water supply, and a network of specially sized piping and sprinklers which are interconnected. The system also includes a control valve and a device for actuating an alarm when the system is in operation.

(ll) "Standpipe systems:"

(i) "Class I standpipe system," means a two and one–half–inch (6.3 cm) hose connection for use by fire departments and those trained in handling heavy fire streams.

(ii) "Class II standpipe system," means a one and one–half–inch (3.8 cm) hose system which provides a means for the control or extinguishment of incipient stage fires.

(iii) "Class III standpipe system," means a combined system of hose which is for the use of employees trained in the use of hose operations and which is capable of furnishing effective water discharge during the more advanced stages of fire (beyond the incipient stage) in the interior of workplaces. Hose outlets are available for both one and one–half–inch (3.8 cm) and two and one–half–inch (6.3 cm) hose.

(iv) "Small hose system," means a system of hose ranging in diameter from five–eighths–inch (1.6 cm) up to one and one–half–inch (3.8 cm) which is for the use of employees and which provides a means for the control and extinguishment of incipient stage fires.

(mm) "Total flooding system," means a fixed suppression system which is arranged to automatically discharge a predetermined concentration of agent into an enclosed space for the purpose of fire extinguishment or control.

(nn) "Training," means the process of making proficient through instruction and hands–on practice in the operation of equipment, including respiratory protection equipment, that is expected to be used in the performance of assigned duties.

(oo) "Vapor barrier," means that material used to prevent or substantially inhibit the transfer of water, corrosive liquids and steam or other hot vapors from the outside of a garment to the wearer's body. [Statutory Authority: RCW 49.17.040 and 49.17.050. 82–02–003 (Order 81–32), § 296–24–58503, filed 12/24/81.]

WAC 296–24–58505 Fire brigades. Scope and application.

(1) Scope. This section contains requirements for the organization, training and personal protective equipment of fire brigades whenever they are established by an employer.

(2) Application. The requirements of this section apply to fire brigades, industrial fire departments and private or contractual type fire departments. Personal protective equipment requirements apply only to members of fire brigades performing interior structural fire fighting. The requirements of this section do not apply to airport crash rescue or forest fire fighting operations. [Statutory Authority: RCW 49.17.040 and 49.17.050. 82–02–003 (Order 81–32), § 296–24–58505, filed 12/24/81.]

WAC 296–24–58507 Organization. (1) Organizational statement. The employer shall prepare and maintain a statement or written policy which establishes the existence of a fire brigade; the basic organizational structure; the type, amount, and frequency of training to be provided to fire brigade members; the expected number of members in the fire brigade; and the functions that the fire brigade is to perform at the workplace. The organizational statement shall be available for inspection by the director and by employees or their designated representatives.

(2) Personnel. The employer shall assure that employees who are expected to do interior structural fire fighting are physically capable of performing duties which may be assigned to them during emergencies. The employer shall not permit employees with known heart disease, epilepsy, or emphysema, to participate in fire brigade emergency activities unless a physician's certificate of the employees' fitness to participate in such activities is provided. For employees assigned to fire brigades before September 15, 1980, this section is effective on September 15, 1990. For employees assigned to fire brigades on or after September 15, 1980, this section is effective thirty days after filing with the code

reviser. [Statutory Authority: RCW 49.17.040 and 49-.17.050. 82-02-003 (Order 81-32), § 296-24-58507, filed 12/24/81.]

WAC 296-24-58509 Training and education. (1) The employer shall provide training and education for all fire brigade members commensurate with those duties and functions that fire brigade members are expected to perform. Such training and education shall be provided to fire brigade members before they perform fire brigade emergency activities. Fire brigade leaders and training instructors shall be provided with training and education which is more comprehensive than that provided to the general membership of the fire brigade.

(2) The employer shall assure that training and education is conducted frequently enough to assure that each member of the fire brigade is able to perform the member's assigned duties and functions satisfactorily and in a safe manner so as not to endanger fire brigade members or other employees. All fire brigade members shall be provided with training at least annually. In addition, fire brigade members who are expected to perform interior structural fire fighting shall be provided with an education session or training at least quarterly.

(3) The quality of the training an education program for fire brigade members shall be similar to those conducted by such fire training schools as the Maryland Fire and Rescue Institute; Iowa Fire Service Extension; West Virginia Fire Service Extension; Georgia Fire Academy; New York State Department, Fire Prevention and Control; Louisiana State University Firemen Training Program; or Washington State's Fire Service Training Commission for Vocational Education. (For example, for the oil refinery industry, with its unique hazards, the training and education program for those fire brigade members shall be similar to those conducted by Texas A and M University, Lamar University, Reno Fire School, or the Delaware State Fire School.)

(4) The employer shall inform fire brigade members about special hazards such as storage and use of flammable liquids and gases, toxic chemicals, radioactive sources, and water reactive substances, to which they may be exposed during fire and other emergencies. The fire brigade members shall also be advised of any changes that occur in relation to the special hazards. The employer shall develop and make available for inspection by fire brigade members, written procedures that describe the actions to be taken in situations involving the special hazards and shall include these in the training and education program. [Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-58509, filed 12/24/81.]

WAC 296-24-58511 Fire fighting equipment. The employer shall maintain and inspect, at least annually, fire fighting equipment to assure the safe operational condition of the equipment. Portable fire extinguishers and respirators shall be inspected at least monthly. Fire fighting equipment that is in damaged or unserviceable condition shall be removed from service and replaced. [Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-58511, filed 12/24/81.]

WAC 296-24-58513 Protective clothing. The following requirements apply to those employees who perform interior structural fire fighting. The requirements do not apply to employees who use fire extinguishers or standpipe systems to control or extinguish fires only in the incipient stage.

(1) General.

(a) The employer shall provide at no cost to the employee and assure the use of protective clothing which complies with the requirements of this section. The employer shall assure that protective clothing ordered or purchased after January 1, 1982, meets the requirements contained in this section. As the new equipment is provided, the employer shall assure that all fire brigade members wear the equipment when performing interior structural fire fighting. After July 1, 1985, the employer shall assure that all fire brigade members wear protective clothing meeting the requirements of this section when performing interior structural fire fighting.

(b) The employer shall assure that protective clothing protects the head, body, and extremities, and consists of at least the following components: Foot and leg protection; hand protection; body protection; eye, face and head protection.

(2) Foot and leg protection.

(a) Foot and leg protection shall meet the requirements of subsection (2)(b) and (c) of this section, and may be achieved by either of the following methods:

(i) Fully extended boots which provide protection for the legs; or

(ii) Protective shoes or boots worn in combination with protective trousers that meet the requirements of subsection (3) of this section.

(b) Protective footwear shall meet the requirements of WAC 296-24-088 for Class 75 footwear. In addition, protective footwear shall be water-resistant for at least five inches (12.7 cm) above the bottom of the heel and shall be equipped with slip-resistant outer soles.

(c) Protective footwear shall be tested in accordance with paragraph (1) Appendix E, and shall provide protection against penetration of the midsole by a size 8D common nail when at least 300 pounds (1330 N) of static force is applied to the nail.

(3) Body protection.

(a) Body protection shall be coordinated with foot and leg protection to ensure full body protection for the wearer. This shall be achieved by one of the following methods:

(i) Wearing of a fire-resistive coat meeting the requirements of subsection (3)(b) of this section, in combination with fully extended boots meeting the requirements of subsection (2)(b) and (c) of this section; or

(ii) Wearing of fire-resistive coat in combination with protective trousers both of which meet the requirements of subsection (3)(b) of this section.

(b) The performance, construction, and testing of fire-resistive coats and protective trousers shall be at

least equivalent to the requirements of the National Fire Protection Association (NFPA) standard NFPA No. 1971–1975, "Protective Clothing for Structural Fire Fighting," (See Appendix D) with the following permissible variations from those requirements:

(i) Tearing strength of the outer shell shall be a minimum of eight pounds (35.6 N) in any direction when tested in accordance with paragraph (2) of Appendix E; and

(ii) The outer shell may discolor but shall not separate or melt when placed in a forced air laboratory oven at a temperature of 500°F (260° C) for a period of five minutes. After cooling to ambient temperature and using the test method specified in paragraph (3) of Appendix E, char length shall not exceed 4.0 inches (10.2 cm) and after–flame shall not exceed 2.0 seconds.

(4) Hand protection.

(a) Hand protection shall consist of protective gloves or glove system which will provide protection against cut, puncture, and heat penetration. Gloves or glove system shall be tested in accordance with the test methods contained in the National Institute for Occupational Safety and Health (NIOSH) 1976 publication, "The Development of Criteria for Fire Fighter's Gloves; Vol. II, Part II: Test Methods," (See Appendix D to Subpart L) and shall meet the following criteria for cut, puncture, and heat penetration:

(i) Materials used for gloves shall resist surface cut by a blade with an edge having a 60 degree included angle and a .025 mm (.001 inch) radius, under an applied force of 7.2 kg (16 pounds), and at a slicing velocity of greater or equal to 2.5 cm/sec (60 in/min);

(ii) Materials used for the palm and palm side of the fingers shall resist puncture by a penetrometer (simulating a 4d lath nail), under an applied force of 6 kg (13.2 pounds), and at a velocity greater or equal to .85 cm/sec (20 in/min); and

(iii) The temperature inside the palm and gripping surface of the fingers of gloves shall not exceed 57° C (135° F) when gloves or glove system are exposed to 500° C (932° F) for five seconds at 28 kPa (4 psi) pressure.

(b) Exterior materials of gloves shall be flame resistant and shall be tested in accordance with paragraph (3) of Appendix E. Maximum allowable after–flame shall be 2.0 seconds, and the maximum char length shall be 4.0 inches (10.2 cm).

(c) When design of the fire–resistive coat does not otherwise provide protection for the wrists, protective gloves shall have wristlets of at least 4.0 inches (10.2 cm) in length to protect the wrist area when the arms are extended upward and outward from the body.

(5) Head, eye and face protection.

(a) Head protection shall consist of a protective head device with ear flaps and chin strap which meet the performance, construction, and testing requirements of the National Fire Safety and Research Office of the National Fire Prevention and Control Administration, United States Department of Commerce (now known as the United States Fire Administration), which are contained in, "Model Performance Criteria for Structural Firefighters' Helmets," (August 1977) (See Appendix D).

(b) Protective eye and face devices which comply with WAC 296–24–078 shall be used by fire brigade members when performing operations where the hazards of flying or falling materials which may cause eye and face injuries are present. Protective eye and face devices provided as accessories to protective head devices (face shields) are permitted when such devices meet the requirements of WAC 296–24–078.

(c) Full facepieces, helmets, or hoods of breathing apparatus which meet the requirements of WAC 296–62–071 and 296–24–58515, shall be acceptable as meeting the eye and face protection requirements of subsection (5)(b) of this section. [Statutory Authority: RCW 49-.17.040 and 49.17.050. 82–02–003 (Order 81–32), § 296–24–58513, filed 12/24/81.]

WAC 296-24-58515 Respiratory protection devices. (1) General requirements.

(a) The employer shall provide at no cost to the employee and assure the use of respirators which comply with the requirements of this paragraph. The employer shall assure that respiratory protective devices worn by brigade members meet the requirements contained in WAC 296–62–071, and the requirements contained in this paragraph, and are certified under 30 CFR Part II.

(b) Approved self–contained breathing apparatus with full–facepiece, or with approved helmet or hood configuration, shall be provided to and worn by fire brigade members while working inside buildings or confined spaces where toxic products of combustion or an oxygen deficiency may be present. Such apparatus shall also be worn during emergency situations involving toxic substances.

(c) Approved self–contained breathing apparatus may be equipped with either a "buddy–breathing" device or a quick disconnect valve, even if these devices are not certified by NIOSH. If these accessories are used, they shall not cause damage to the apparatus, or restrict the air flow of the apparatus, or obstruct the normal operation of the apparatus.

(d) Approved self–contained compressed air breathing apparatus may be used with approved cylinders from other approved self–contained compressed air breathing apparatus provided that such cylinders are of the same capacity and pressure rating. All compressed air cylinders used with self–contained breathing apparatus shall meet DOT and NIOSH criteria.

(e) Self–contained breathing apparatus shall have a minimum service life rating of thirty minutes in accordance with the methods and requirements of the Mine Safety and Health Administration (MSHA) and NIOSH, except for escape self–contained breathing apparatus (ESCBA) used only for emergency escape purposes.

(f) Self–contained breathing apparatus shall be provided with an indicator which automatically sounds an audible alarm when the remaining service life of the apparatus is reduced to within a range of twenty to twenty–five percent of its rated service time.

(2) Positive–pressure breathing apparatus.

(a) The employer shall assure that self–contained breathing apparatus ordered or purchased after January 1, 1982, for use by fire brigade members performing interior structural fire fighting operations, are of the pressure–demand or other positive–pressure type. Effective July 1, 1983, only pressure–demand or other positive–pressure self–contained breathing apparatus shall be worn by fire brigade members performing interior structural fire fighting.

(b) This section does not prohibit the use of a self–contained breathing apparatus where the apparatus can be switched from a demand to a positive–pressure mode. However, such apparatus shall be in the positive–pressure mode when fire brigade members are performing interior structural fire fighting operations.

(c) Negative–pressure self–contained breathing apparatus with a rated service life of more than two hours and which have a minimum protection factor of 5,000, as determined by an acceptable quantitative fit test performed on each individual, is acceptable for use only during those interior structural fire fighting situations for which the employer demonstrates that long duration breathing apparatus is necessary. Quantitative fit test procedures shall be available for inspection by the director or authorized representative. Such negative–pressure breathing apparatus will continue to be acceptable for eighteen months after a positive–pressure breathing apparatus with the same or longer rated service life is certified by NIOSH. After this eighteen–month period, all self–contained breathing apparatus used for these long duration situations shall be of the positive–pressure type. [Statutory Authority: RCW 49.17.040 and 49.17.050. 82–02–003 (Order 81–32), § 296–24–58515, filed 12/24/81.]

WAC 296–24–58517 Appendix A--Fire brigades. (1) Scope. This section does not require an employer to organize a fire brigade. However, if an employer does decide to organize a fire brigade, the requirements of this section apply.

(2) Prefire planning. It is suggested that prefire planning be conducted by the local fire department and/or the workplace fire brigade in order for them to be familiar with the workplace and process hazards. Involvement with the local fire department or fire prevention bureau is encouraged to facilitate coordination and cooperation between members of the fire brigade and those who might be called upon for assistance during a fire emergency.

(3) Organizational statement. In addition to the information required in the organizational statement, WAC 296–24–58507(1), it is suggested that the organizational statement also contain the following information: A description of the duties that the fire brigade members are expected to perform; the line authority of each fire brigade officer; the number of the fire brigade officers and number of training instructors; and a list and description of the types of awards or recognition that brigade members may be eligible to receive.

(4) Physical capability. The physical capability requirement applies only to those fire brigade members who perform interior structural fire fighting. Employees who cannot meet the physical capability requirement may still be members of the fire brigade as long as such employees do not perform interior structural fire fighting. It is suggested that fire brigade members who are unable to perform interior structural fire fighting be assigned less stressful and physically demanding fire brigade duties, e.g., certain types of training, recordkeeping, fire prevention inspection and maintenance, and fire pump operations.

Physically capable can be defined as being able to perform those duties specified in the training requirements of WAC 296–24–58509. Physically capable can also be determined by physical performance tests or by a physical examination when the examining physician is aware of the duties that the fire brigade member is expected to perform.

It is also recommended that fire brigade members participate in a physical fitness program. There are many benefits which can be attributed to being physically fit. It is believed that physical fitness may help to reduce the number of sprain and strain injuries as well as contributing to the improvement of the cardiovascular system.

(5) Training and education. The paragraph on training and education does not contain specific training and education requirements because the type, amount, and frequency of training and education will be as varied as are the purposes for which fire brigades are organized. However, the paragraph does require that training and education be commensurate with those functions that the fire brigade is expected to perform; i.e., those functions specified in the organizational statement. Such a performance requirement provides the necessary flexibility to design a training program which meets the needs of individual fire brigades.

At a minimum, hands–on training is required to be conducted annually for all fire brigade members. However, for those fire brigade members who are expected to perform interior structural fire fighting, some type of training or education session must be provided at least quarterly.

In addition to the required hands–on training, it is strongly recommended that fire brigade members receive other types of training and education such as: Classroom instruction, review of emergency action procedures, prefire planning, review of special hazards in the workplace, and practice in the use of self–contained breathing apparatus.

It is not necessary for the employer to duplicate the same training or education that a fire brigade member receives as a member of a community volunteer fire department, rescue squad, or similar organization. However, such training or education must have been provided to the fire brigade member within the past year and it must be documented that the fire brigade member has received the training or education. For example: There is no need for a fire brigade member to receive another

training class in the use of positive–pressure self–contained breathing apparatus if the fire brigade member has recently completed such training as a member of a community fire department. Instead, the fire brigade member should receive training or education covering other important equipment or duties of the fire brigade as they relate to the workplace hazards, facilities and processes.

It is generally recognized that the effectiveness of fire brigade training and education depends upon the expertise of those providing the training and education as well as the motivation of the fire brigade members. Fire brigade training instructors must receive a higher level of training and education than the fire brigade members they will be teaching. This includes being more knowledgeable about the functions to be performed by the fire brigade and the hazards involved. The instructors should be qualified to train fire brigade members and demonstrate skills in communication, methods of teaching, and motivation. It is important for instructors and fire brigade members alike to be motivated toward the goal of the fire brigade and be aware of the importance of the service that they are providing for the protection of other employees and the workplace.

It is suggested that publications from the International Fire Service Training Association, the National Fire Protection Association (NFPA–1041), the International Society of Fire Service Instructors and other fire training sources be consulted for recommended qualifications of fire brigade training instructors.

In order to be effective, fire brigades must have competent leadership and supervision. It is important for those who supervise the fire brigade during emergency situations, e.g., fire brigade chiefs, leaders, etc., to receive the necessary training and education for supervising fire brigade activities during these hazardous and stressful situations. These fire brigade members with leadership responsibilities should demonstrate skills in strategy and tactics, fire suppression and prevention techniques, leadership principles, prefire planning, and safety practices. It is again suggested that fire service training sources be consulted for determining the kinds of training and education which are necessary for those with fire brigade leadership responsibilities.

It is further suggested that fire brigade leaders and fire brigade instructors receive more formalized training and education on a continuing basis by attending classes provided by such training sources as universities and university fire extension services.

The following recommendations should not be considered to be all of the necessary elements of a complete comprehensive training program, but the information may be helpful as a guide in developing a fire brigade training program.

All fire brigade members should be familiar with exit facilities and their location, emergency escape routes for handicapped workers, and the workplace "emergency action plan."

In addition, fire brigade members who are expected to control and extinguish fires in the incipient stage should, at a minimum, be trained in the use of fire extinguishers, standpipes, and other fire equipment they are assigned to use. They should also be aware of first aid medical procedures and procedures for dealing with special hazards to which they may be exposed. Training and education should include both classroom instruction and actual operation of the equipment under simulated emergency conditions. Hands–on type training must be conducted at least annually but some functions should be reviewed more often.

In addition to the above training, fire brigade members who are expected to perform emergency rescue and interior structural fire fighting should, at a minimum, be familiar with the proper techniques in rescue and fire suppression procedures. Training and education should include fire protection courses, classroom training, simulated fire situations including "wet drills" and, when feasible, extinguishment of actual mock fires. Frequency of training or education must be at least quarterly, but some drills or classroom training should be conducted as often as monthly or even weekly to maintain the proficiency of fire brigade members.

There are many excellent sources of training and education that the employer may want to use in developing a training program for the workplace fire brigade. These sources include publications, seminars, and courses offered by universities.

There are also excellent fire school courses by such facilities as Texas A and M University, Delaware State Fire School, Lamar University, and Reno Fire School, that deal with those unique hazards which may be encountered by fire brigades in the oil and chemical industry. These schools, and others, also offer excellent training courses which would be beneficial to fire brigades in other types of industries. These courses should be a continuing part of the training program, and employers are strongly encouraged to take advantage of these excellent resources.

It is also important that fire brigade members be informed about special hazards to which they may be exposed during fire and other emergencies. Such hazards as storage and use areas of flammable liquids and gases, toxic chemicals, water–reactive substances, etc., can pose difficult problems. There must be written procedures developed that describe the actions to be taken in situations involving special hazards. Fire brigade members must be trained in handling these special hazards as well as keeping abreast of any changes that occur in relation to these special hazards.

(6) Fire fighting equipment. It is important that fire fighting equipment that is in damaged or unserviceable condition be removed from service and replaced. This will prevent fire brigade members from using unsafe equipment by mistake.

Fire fighting equipment, except portable fire extinguishers and respirators, must be inspected at least annually. Portable fire extinguishers and respirators are required to be inspected at least monthly.

(7) Protective clothing.

(a) General. WAC 296–24–58513 does not require all fire brigade members to wear protective clothing. It is not the intention of these standards to require employers

to provide a full ensemble of protective clothing for every fire brigade member without consideration given to the types of hazardous environments to which the fire brigade member might be exposed. It is the intention of these standards to require adequate protection for those fire brigade members who might be exposed to fires in an advanced stage, smoke, toxic gases, and high temperatures. Therefore, the protective clothing requirements only apply to those fire brigade members who perform interior structural fire fighting operations.

Additionally, the protective clothing requirements do not apply to the protective clothing worn during outside fire fighting operations (brush and forest fires, crash crew operations) or other special fire fighting activities. It is important that the protective clothing to be worn during these types of fire fighting operations reflect the hazards which are expected to be encountered by fire brigade members.

(b) Foot and leg protection. WAC 296-24-58505 permits an option to achieve foot and leg protection.

The section recognizes the interdependence of protective clothing to cover one or more parts of the body. Therefore, an option is given so that fire brigade members may meet the foot and leg requirements by either wearing long fire-resistive coats in combination with fully extended boots, or by wearing shorter fire-resistive coats in combination with protective trousers and protective shoes or shorter boots.

(c) Body protection. WAC 296-24-58513(3) provides an option for fire brigade members to achieve body protection. Fire brigade members may wear a fire-resistive coat in combination with fully extended boots, or they may wear a fire-resistive coat in combination with protective trousers.

Fire-resistive coats and protective trousers meeting all of the requirements contained in NFPA 1971-1975, "Protective Clothing for Structural Fire Fighters," are acceptable as meeting the requirements of this standard.

The lining is required to be permanently attached to the outer shell. However, it is permissible to attach the lining to the outer shell material by stitching in one area such as at the neck. Fastener tape or snap fasteners may be used to secure the rest of the lining to the outer shell to facilitate cleaning. Reference to permanent lining does not refer to a winter liner which is a detachable extra lining used to give added protection to the wearer against the effects of cold weather and wind.

(d) Hand protection. The requirements of subsection (4) of this section on hand protection may be met by protective gloves or a glove system. A glove system consists of a combination of different gloves. The usual components of a glove system consist of a pair of gloves, which provide thermal insulation to the hand, worn in combination with a second pair of gloves which provide protection against flame, cut and puncture.

It is suggested that protective gloves provide dexterity and a sense of feel for objects. Criteria and test methods for dexterity are contained in the NIOSH publications, "The Development of Criteria for Firefighters' Gloves; Vol. I: Glove Requirements," and "Vol. II: Glove Criteria and Test Methods." These NIOSH publications also contain a permissible modified version of Federal Test Method 191, Method 5903, (paragraph (3) of Appendix E) for flame resistance when gloves, rather than glove material, are tested for flame resistance.

(e) Head, eye and face protection. Head protective devices which meet the requirements contained in NFPA No. 1972 are acceptable as meeting the requirements of this standard for head protection.

Head protective devices are required to be provided with ear flaps so that the ear flaps will be available if needed. It is recommended that ear protection always be used while fighting interior structural fires.

Many head protective devices are equipped with face shields to protect the eyes and face. These face shields are permissible as meeting the eye and face protection requirements of this paragraph as long as such face shields meet the requirements of WAC 296-24-078 of the General Safety and Health Standards.

Additionally, full facepieces, helmets or hoods of approved breathing apparatus which meet the requirements of WAC 296-62-071 and 296-24-58515 are also acceptable as meeting the eye and face protection requirements.

It is recommended that a flame resistant protective head covering such as a hood or snood, which will not adversely affect the seal of a respirator facepiece, be worn during interior structural fire fighting operations to protect the sides of the face and hair.

(8) Respiratory protective devices. Respiratory protection is required to be worn by fire brigade members while working inside buildings or confined spaces where toxic products of combustion or an oxygen deficiency is likely to be present; respirators are also to be worn during emergency situations involving toxic substances. When fire brigade members respond to emergency situations, they may be exposed to unknown contaminants in unknown concentrations. Therefore, it is imperative that fire brigade members wear proper respiratory protective devices during these situations. Additionally, there are many instances where toxic products of combustion are still present during mop-up and overhaul operations. Therefore, fire brigade members should continue to wear respirators during these types of operations.

Self-contained breathing apparatus are not required to be equipped with either buddy-breathing device or a quick disconnect valve. However, these accessories may be very useful and are acceptable as long as such accessories do not cause damage to the apparatus, restrict the air flow of the apparatus, or obstruct the normal operation of the apparatus.

Buddy-breathing devices are useful for emergency situations where a victim or another fire brigade member can share the same air supply with the wearer of the apparatus for emergency escape purposes.

The employer is encouraged to provide fire brigade members with an alternative means of respiratory protection to be used only for emergency escape purposes if the self-contained breathing apparatus becomes inoperative. Such alternative means of respiratory protection may be either a buddy-breathing device or an escape self-contained breathing apparatus (ESCBA). The

ESCBA is a short–duration respiratory protective device which is approved for only emergency escape purposes. It is suggested that if ESCBA units are used, that they be of at least five minutes service life.

Quick disconnect valves are devices which start the flow of air by insertion of the hose (which leads to the facepiece) into the regulator of self–contained breathing apparatus, and stop the flow of air by disconnecting the hose from the regulator. These devices are particularly useful for those positive–pressure self–contained breathing apparatus which do not have the capability of being switched from the demand to the positive–pressure mode.

The use of a self–contained breathing apparatus where the apparatus can be switched from a demand to a positive–pressure mode is acceptable as long as the apparatus is in the positive–pressure mode when performing interior structural fire fighting operations. Also acceptable are approved respiratory protective devices which have been converted to the positive–pressure type when such modification is accomplished by trained and experienced persons using kits or parts approved by NIOSH and provided by the manufacturer and by following the manufacturer's instructions.

There are situations which require the use of respirators which have a duration of two hours or more. Presently, there are no approved positive–pressure apparatus with a rated service life of more than two hours. Consequently, negative–pressure self–contained breathing apparatus with a rated service life of more than two hours and which have a minimum protection factor of 5,000 as determined by an acceptable quantitative fit test performed on each individual, will be acceptable for use during situations which require long duration apparatus. Long duration apparatus may be needed in such instances as working in tunnels, subway systems, etc. Such negative–pressure breathing apparatus will continue to be acceptable for a maximum of eighteen months after a positive–pressure apparatus with the same or longer rated service life of more than two hours is certified by NIOSH/MSHA. After this eighteen–month phase–in period, all self–contained breathing apparatus used for these long duration situations will have to be of the positive–pressure type.

Protection factor (sometimes called fit factor) is defined as the ratio of the contaminant concentrations outside of the respirator to the contaminant concentrations inside the facepiece of the respirator.

$$PF = \frac{\text{Concentration outside respirator}}{\text{Concentration inside facepiece}}$$

Protection factors are determined by quantitative fit tests. An acceptable quantitative fit test should include the following elements:

(a) A fire brigade member who is physically and medically capable of wearing respirators, and who is trained in the use of respirators, dons a self–contained breathing apparatus equipped with a device that will monitor the concentration of a contaminant inside the facepiece.

(b) The fire brigade member then performs a qualitative fit test to assure the best face–to–facepiece seal as possible. A qualitative fit test can consist of a negative–pressure test, positive–pressure test, isoamyl acetate vapor (banana oil) test, or an irritant smoke test. For more details on respirator fitting see the NIOSH booklet entitled, "A Guide to Industrial Respiratory Protection," June 1976, and HEW publication No. (NIOSH) 76–189.

(c) The wearer should then perform physical activity which reflects the level of work activity which would be expected during fire fighting activities. The physical activity should include simulated fire–ground work activity or physical exercise such as running–in–place, a step test, etc.

(d) Without readjusting the apparatus, the wearer is placed in a test atmosphere containing a nontoxic contaminant with a known, constant concentration.

The protection factor is then determined by dividing the known concentration of the contaminant in the test atmosphere by the concentration of the contaminant inside the facepiece when the following exercises are performed:

(i) Normal breathing with head motionless for one minute;

(ii) Deep breathing with head motionless for thirty seconds;

(iii) Turning head slowly from side to side while breathing normally, pausing for at least two breaths before changing direction. Continue for at least one minute;

(iv) Moving head slowly up and down while breathing normally, pausing for at least two breaths before changing direction. Continue for at least two minutes;

(v) Reading from a prepared text, slowly and clearly, and loudly enough to be heard and understood. Continue for one minute; and

(vi) Normal breathing with head motionless for at least one minute.

The protection factor which is determined must be at least 5,000. The quantitative fit test should be conducted at least three times. It is acceptable to conduct all three tests on the same day. However, there should be at least one hour between tests to reflect the protection afforded by the apparatus during different times of the day.

The above elements are not meant to be a comprehensive, technical description of a quantitative fit test protocol. However, quantitative fit test procedures which include these elements are acceptable for determining protection factors. Procedures for a quantitative fit test are required to be available for inspection by the director or authorized representative.

Organizations such as Los Alamos Scientific Laboratory, Lawrence Livermore Laboratory, NIOSH, and American National Standards Institute (ANSI) are excellent sources for additional information concerning qualitative and quantitative fit testing. [Statutory Authority: RCW 49.17.040 and 49.17.050. 82–02–003 (Order 81–32), § 296–24–58517, filed 12/24/81.]

WAC 296-24-592 Portable fire extinguishers. All sections of this chapter which include WAC 296-24-592 in the section number apply to portable fire extinguishers. [Statutory Authority: RCW 49.17.040 and 49.17-.050. 82-02-003 (Order 81-32), § 296-24-592, filed 12/24/81.]

WAC 296-24-59201 Scope and application. The requirements of this section apply to the placement, use, maintenance, and testing of portable fire extinguishers provided for the use of employees. WAC 296-24-59207 does not apply to extinguishers provided for employee use on the outside of workplace buildings or structures. Where extinguishers are provided but are not intended for employee use and the employer has an emergency action plan and a fire prevention plan which meet the requirements of WAC 296-24-567, then only the requirements of WAC 296-24-59209 and 296-24-59211 apply. [Statutory Authority: RCW 49.17.040 and 49-.17.050. 82-02-003 (Order 81-32), § 296-24-59201, filed 12/24/81.]

WAC 296-24-59203 Exemptions. (1) Where the employer has established and implemented a written fire safety policy which requires the immediate and total evacuation of employees from the workplace upon the sounding of a fire alarm signal and which includes an emergency action plan and a fire prevention plan which meet the requirements of WAC 296-24-567, and when extinguishers are not available in the workplace, the employer is exempt from all requirements of this section unless a specific standard in chapter 296-24 WAC requires that a portable fire extinguisher be provided.

(2) Where the employer has an emergency action plan meeting the requirements of WAC 296-24-567, which designates certain employees to be the only employees authorized to use the available portable fire extinguishers, and which requires all other employees in the fire area to immediately evacuate the affected work area upon the sounding of the fire alarm, the employer is exempt from the distribution requirements in WAC 296-24-59207. [Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-59203, filed 12/24/81.]

WAC 296-24-59205 General requirements. (1) The employer shall provide portable fire extinguishers and shall mount, locate and identify them so that they are readily accessible to employees without subjecting the employees to possible injury.

(2) Only approved portable fire extinguishers shall be used to meet the requirements of this section.

(3) The employer shall not provide or make available in the workplace portable fire extinguishers using carbon tetrachloride or chlorobromomethane extinguishing agents.

(4) The employer shall assure that portable fire extinguishers are maintained in a fully charged and operable condition and kept in their designated places at all times except during use.

(5) The employer shall permanently remove from service by January 1, 1982, all soldered or riveted shell self-generating soda acid or self-generating foam or gas cartridge water type portable fire extinguishers which are operated by inverting the extinguisher to rupture the cartridge or to initiate an uncontrollable pressure generating chemical reaction to expel the agent. [Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-59205, filed 12/24/81.]

WAC 296-24-59207 Selection and distribution. (1) Portable fire extinguishers shall be provided for employee use and selected and distributed based on the classes of anticipated workplace fires and on the size and degree of hazard which would affect their use.

(2) The employer shall distribute portable fire extinguishers for use by employees on Class A fires so that the travel distance for employees to any extinguisher is 75 feet (22.9 m) or less.

(3) The employer may use uniformly spaced standpipe systems or hose stations connected to a sprinkler system installed for emergency use by employees instead of Class A portable fire extinguishers, provided that such systems meet the respective requirements of WAC 296-24-602 or 296-24-607, that they provide total coverage of the area to be protected, and that employees are trained at least annually in their use.

(4) The employer shall distribute portable fire extinguishers for use by employees on Class B fires so that the travel distance from the Class B hazard area to any extinguisher is 50 feet (15.2 m) or less.

(5) The employer shall distribute portable fire extinguishers used for Class C hazards on the basis of the appropriate pattern for the existing Class A or Class B hazards.

(6) The employer shall distribute portable fire extinguishers or other containers of Class D extinguishing agent for use by employees so that the travel distance from the combustible metal working area to any extinguishing agent is 75 feet (22.9 m) or less. Portable fire extinguishers for Class D hazards are required in those combustible metal working areas where combustible metal powders, flakes, shavings, or similarly sized products are generated at least once every two weeks. [Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-59207, filed 12/24/81.]

WAC 296-24-59209 Inspection, maintenance and testing. (1) The employer shall be responsible for the inspection, maintenance and testing of all portable fire extinguishers in the workplace.

(2) Portable extinguishers or hose used in lieu thereof under WAC 296-24-59207(3) shall be visually inspected monthly.

(3) The employer shall assure that portable fire extinguishers are subjected to an annual maintenance check. Stored pressure extinguishers do not require an internal examination. The employer shall record the annual maintenance date and retain this record for one year after the last entry or the life of the shell, whichever is

less. The record shall be available to the director upon request.

(4) The employer shall assure that stored-pressure dry chemical extinguishers that require a twelve-year hydrostatic test are emptied and subjected to applicable maintenance procedures every six years. Dry chemical extinguishers having nonrefillable disposable containers are exempt from this requirement. When recharging or hydrostatic testing is performed, the six-year requirement begins from that date.

(5) The employer shall assure that alternate equivalent protection is provided when portable fire extinguishers are removed from service for maintenance and recharging. [Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-59209, filed 12/24/81.]

WAC 296-24-59211 Hydrostatic testing. (1) The employer shall assure that hydrostatic testing is performed by trained persons with suitable testing equipment and facilities.

(2) The employer shall assure that portable extinguishers are hydrostatically tested at the intervals listed in Table I of this section, except under any of the following conditions:

(a) When the unit has been repaired by soldering, welding, brazing, or use of patching compounds;

(b) When the cylinder or shell threads are damaged;

TABLE I

Type of Extinguishers	Test Interval (Years)
Soda acid (soldered brass shells) (until January 1, 1982)	(1)
Soda acid (stainless steel shell)	5
Cartridge operated water and/or antifreeze	5
Stored pressure water and/or antifreeze	5
Wetting agent	5
Foam (soldered brass shells) (until January 1, 1982)	(1)
Foam (stainless steel shell)	5
Aqueous film forming form (AFFF)	5
Loaded stream	5
Dry chemical with stainless steel	5
Carbon dioxide	5
Dry chemical, stored pressure, with mild steel, brazed brass or aluminum shells	12
Dry chemical, cartridge or cylinder operated, with mild steel shells	12
Halon 1211	12
Halon 1301	12
Dry powder, cartridge or cylinder operated, with mild steel shell	12

(1) Extinguishers having shells constructed of copper or brass joined by soft solder or rivets shall not be hydrostatically tested and shall be removed from service by January 1, 1982. (Not permitted.)

(c) When there is corrosion that has caused pitting, including corrosion under removable name plate assemblies;

(d) When the extinguisher has been burned in a fire; or

(e) When a calcium chloride extinguishing agent has been used in a stainless steel shell.

(3) In addition to an external visual examination, the employer shall assure that an internal examination of cylinders and shells to be tested is made prior to the hydrostatic tests.

(4) The employer shall assure that portable fire extinguishers are hydrostatically tested whenever they show new evidence of corrosion or mechanical injury, except under the conditions listed in subsection (2)(a) through (e) of this section.

(5) The employer shall assure that hydrostatic tests are performed on extinguisher hose assemblies which are equipped with a shut-off nozzle at the discharge end of the hose. The test interval shall be the same as specified for the extinguisher on which the hose is installed.

(6) The employer shall assure that carbon dioxide hose assemblies with a shut-off nozzle are hydrostatically tested at 1,250 psi (8,620 kPa).

(7) The employer shall assure that dry chemical and dry powder hose assemblies with a shut-off nozzle are hydrostatically tested at 300 psi (2,070 kPa).

(8) Hose assemblies passing a hydrostatic test do not require any type of recording or stamping.

(9) The employer shall assure that hose assemblies for carbon dioxide extinguishers that require a hydrostatic test are tested within a protective cage device.

(10) The employer shall assure that carbon dioxide extinguishers and nitrogen or carbon dioxide cylinders used with wheeled extinguishers are tested every five years at 5/3 of the service pressure as stamped into the cylinder. Nitrogen cylinders which comply with DOT 173.39(e)(15) may be hydrostatically tested every ten years.

(11) The employer shall assure that all stored pressure and Halon 1211 types of extinguishers are hydrostatically tested at the factory test pressure not to exceed two times the service pressure.

(12) The employer shall assure that acceptable self-generating type soda acid and foam extinguishers are tested at 350 psi (2,410 kPa).

(13) Air or gas pressure may not be for hydrostatic testing.

(14) Extinguisher shells, cylinders, or cartridges which fail a hydrostatic pressure test, or which are not fit for testing shall be removed from service and from the workplace.

(15)(a) The equipment for testing compressed gas type cylinders shall be of the water-jacket type. The equipment shall be provided with an expansion indicator which operates with an accuracy within one percent of the total expansion or 0.1 cc of liquid.

(b) The equipment for testing noncompressed gas type cylinders shall consist of the following:

(i) A hydrostatic test pump, hand or power operated, capable of producing not less than one hundred fifty

percent of the test pressure, which shall include appropriate check valves and fittings;

(ii) A flexible connection for attachment to fittings to test through the extinguisher nozzle, test bonnet, or hose outlet, as is applicable; and

(iii) A protective cage or barrier for personal protection of the tester, designed to provide visual observation of the extinguisher under test.

(16) The employer shall maintain and provide upon request to the director evidence that the required hydrostatic testing of fire extinguishers has been performed at the time intervals shown in Table I. Such evidence shall include the date of test, the test pressure used, and the person or agency performing the test. Such records shall be kept until the extinguisher is hydrostatically retested at the time interval specified in Table I, or until the extinguisher is taken out of service, whichever is less. [Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-59211, filed 12/24/81.]

WAC 296-24-59213 Training and education. (1) Where the employer has provided portable fire extinguishers for employee use in the workplace, the employer shall also provide an educational program to familiarize employees with the general principles of fire extinguisher use and the hazards involved with incipient stage fire fighting.

(2) The employer shall provide the education required in subsection (1) of this section upon initial employment and at least annually thereafter.

(3) The employer shall provide employees who have been designated to use fire fighting equipment as part of an emergency action plan with training in the use of the appropriate equipment.

(4) The employer shall provide the training required in subsection (3) of this section upon initial assignment to the designated group of employees and at least annually thereafter. [Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-59213, filed 12/24/81.]

WAC 296-24-59215 Appendix A--Portable fire extinguishers. (1) Scope and application. The scope and application of this section is written to apply to three basic types of workplaces. First, there are those workplaces where the employer has chosen to evacuate all employees from the workplace at the time of a fire emergency. Second, there are those workplaces where the employer has chosen to permit certain employees to fight fires and to evacuate all other nonessential employees at the time of a fire emergency. Third, there are those workplaces where the employer has chosen to permit all employees in the workplace to use portable fire extinguishers to fight fires.

The section also addresses two kinds of work areas. The entire workplace can be divided into outside (exterior) work areas and inside (interior) work areas. This division of the workplace into two areas is done in recognition of the different types of hazards employees may be exposed to during fire fighting operations. Fires in interior workplaces, pose a greater hazard to employees; they can produce greater exposure to quantities of smoke, toxic gases, and heat because of the capability of a building or structure to contain or entrap these products of combustion until the building can be ventilated. Exterior work areas, normally open to the environment, are somewhat less hazardous, because the products of combustion are generally carried away by the thermal column of the fire. Employees also have a greater selection of evacuation routes if it is necessary to abandon fire fighting efforts.

In recognition of the degree of hazard present in the two types of work areas, the standards for exterior work areas are somewhat less restrictive in regards to extinguisher distribution. WAC 296-24-59201 explains this by specifying which paragraphs in the section apply.

(2) Portable fire extinguisher exemptions. In recognition of the three options given to employers in regard to the amount of employee evacuation to be carried out, the standards permit certain exemptions based on the number of employees expected to use fire extinguishers.

Where the employer has chosen to totally evacuate the workplace at the time of a fire emergency and when fire extinguishers are not provided, the requirements of this section do not apply to that workplace.

Where the employer has chosen to partially evacuate the workplace or the effected area at the time of a fire emergency and has permitted certain designated employees to remain behind to operate critical plant operations or to fight fires with extinguishers, then the employer is exempt from the distribution requirements of this section. Employees who will be remaining behind to perform incipient fire fighting or members of a fire brigade must be trained in their duties. The training must result in the employees becoming familiar with the locations of fire extinguishers. Therefore, the employer must locate the extinguishers in convenient locations where the employees know they can be found. For example, they could be mounted in the fire truck or cart that the fire brigade uses when it responds to a fire emergency. They can also be distributed as set forth in the National Fire Protection Association's Standard No. 10, "Portable Fire Extinguishers."

Where the employer has decided to permit all employees in the workplace to use fire extinguishers, then the entire WISHA standard applies.

(3) Portable fire extinguisher mounting. Previous standards for mounting fire extinguishers have been criticized for requiring specific mounting locations. In recognition of this criticism, the standard has been rewritten to permit as much flexibility in extinguisher mounting as is acceptable to assure that fire extinguishers are available when needed and that employees are not subjected to injury hazards when they try to obtain an extinguisher.

It is the intent of WISHA to permit the mounting of extinguishers in any location that is accessible to employees without the use of portable devices such as a ladder. This limitation is necessary because portable devices can be moved or taken from the place where they

are needed and, therefore, might not be available at the time of an emergency.

Employers are given as much flexibility as possible to assure that employees can obtain extinguishers as fast as possible. For example, an acceptable method of mounting extinguishers in areas where fork lift trucks or tow–motors are used is to mount the units on retractable board which, by means of counterweighting, can be raised above the level where they could be struck by vehicular traffic. When needed, they can be lowered quickly for use. This method of mounting can also reduce vandalism and unauthorized use of extinguishers. The extinguishers may also be mounted as outlined in the National Fire Protection Association's Standard No. 10, "Portable Fire Extinguishers."

(4) Selection and distribution. The employer is responsible for the proper selection and distribution of fire extinguishers and the determination of the necessary degree of protection. The selection and distribution of fire extinguishers must reflect the type and class of fire hazards associated with a particular workplace.

Extinguishers for protecting Class A hazards may be selected from the following types: Water, foam, loaded stream, or multipurpose dry chemical. Extinguishers for protecting Class B hazards may be selected from the following types: Halon 1301, Halon 1211, carbon dioxide, dry chemicals, foam, or loaded stream. Extinguishers for Class C hazards may be selected from the following types: Halon 1301, Halon 1211, carbon dioxide, or dry chemical.

Combustible metal (Class D hazards) fires pose a different type of fire problem in the workplace. Extinguishers using water, gas, or certain dry chemicals cannot extinguish or control this type of fire. Therefore, certain metals have specific dry powder extinguishing agents which can extinguish or control this type of fire. Those agents which have been specifically approved for use on certain metal fires provide the best protection; however, there are also some "universal" type agents which can be used effectively on a variety of combustible metal fires if necessary. The "universal" type agents include: Foundry flux, Lith–X powder, TMB liquid, pyromet powder, TEC powder, dry talc, dry graphite powder, dry sand, dry sodium chloride, dry soda ash, lithium chloride, zirconium silicate, and dry dolomite.

Water is not generally accepted as an effective extinguishing agent for metal fires. When applied to hot burning metal, water will break down into its basic atoms of oxygen and hydrogen. This chemical breakdown contributes to the combustion of the metal. However, water is also a good universal coolant and can be used on some combustible metals, but only under proper conditions and application, to reduce the temperature of the burning metal below the ignition point. For example, automatic deluge systems in magnesium plants can discharge such large quantities of water on burning magnesium that the fire will be extinguished. The National Fire Protection Association has specific standards for this type of automatic sprinkler system. Further information on the control of metal fires with water can be found in the National Fire Protection Association's *Fire Protection Handbook.*

An excellent source of selection and distribution criteria is found in the National Fire Protection Association's Standard No. 10. Other sources of information include the National Safety Council and the employer's fire insurance carrier.

(5) Substitution of standpipe systems for portable fire extinguishers. The employer is permitted to substitute acceptable standpipe systems for portable fire extinguishers under certain circumstances. It is necessary to assure that any substitution will provide the same coverage that portable units provide. This means that fire hoses, because of their limited portability, must be spaced throughout the protected area so that they can reach around obstructions such as columns, machinery, etc., and so that they can reach into closets and other enclosed areas.

(6) Inspection, maintenance and testing. The ultimate responsibility for the inspection, maintenance and testing of portable fire extinguishers lies with the employer. The actual inspection, maintenance, and testing may, however, be conducted by outside contractors with whom the employer has arranged to do the work. When contracting for such work, the employer should assure that the contractor is capable of performing the work that is needed to comply with this standard.

If the employer should elect to perform the inspection, maintenance, and testing requirements of this section in–house, then the employer must make sure that those persons doing the work have been trained to do the work and to recognize problem areas which could cause an extinguisher to be inoperable. The National Fire Protection Association provides excellent guidelines in its standard for portable fire extinguishers. The employer may also check with the manufacturer of the unit that has been purchased and obtain guidelines on inspection, maintenance, and testing. Hydrostatic testing is a process that should be left to contractors or individuals using suitable facilities and having the training necessary to perform the work.

Any time the employer has removed an extinguisher from service to be checked or repaired, alternate equivalent protection must be provided. Alternate equivalent protection could include replacing the extinguisher with one or more units having equivalent or equal ratings, posting a fire watch, restricting the unprotected area from employee exposure, or providing a hose system ready to operate.

(7) Hydrostatic testing. As stated before, the employer may contract for hydrostatic testing. However, if the employer wishes to provide the testing service, certain equipment and facilities must be available. Employees should be made aware of the hazards associated with hydrostatic testing and the importance of using proper guards and water pressures. Severe injury can result if extinguisher shells fail violently under hydrostatic pressure.

Employers are encouraged to use contractors who can perform adequate and reliable service. Firms which have been certified by the Materials Transportation Board

(MTB) of the United States Department of Transportation (DOT), or state licensed extinguisher servicing firms, or recognized by the National Association of Fire Equipment Distributors in Chicago, Illinois, are generally acceptable for performing this service.

(8) Training and education. This part of the standard is of the utmost importance to employers and employees if the risk of injury or death due to extinguisher use is to be reduced. If an employer is going to permit an employee to fight a workplace fire of any size, the employer must make sure that the employee knows everything necessary to assure the employee's safety.

Training and education can be obtained through many channels. Often, local fire departments in larger cities have fire prevention bureaus or similar organizations which can provide basic fire prevention training programs. Fire insurance companies will have data and information available. The National Fire Protection Association and the National Safety Council will provide, at a small cost, publications that can be used in a fire prevention program.

Actual fire fighting training can be obtained from various sources in the country. The Texas A and M University, the University of Maryland's Fire and Rescue Institute, West Virginia University's Fire Service Extension, Iowa State University's Fire Service Extension and other state training schools and land grant colleges have fire fighting programs directed to industrial applications. Some manufacturers of extinguishers, such as the Ansul Company and Safety First, conduct fire schools for customers in the proper use of extinguishers. Several large corporations have taken time to develop their own on–site training programs which expose employees to the actual "feeling" of fire fighting. Simulated fires for training of employees in the proper use of extinguishers are also an acceptable part of a training program.

In meeting the requirements of this section, the employer may also provide educational materials, without classroom instruction, through the use of employee notice campaigns using instruction sheets or flyers or similar types of informal programs. The employer must make sure that employees are trained and educated to recognize not only what type of fire is being fought and how to fight it, but also when it is time to get away from it and leave fire suppression to more experienced fire fighters. [Statutory Authority: RCW 49.17.040 and 49-.17.050. 82–02–003 (Order 81–32), § 296–24–59215, filed 12/24/81.]

WAC 296–24–602 Standpipe and hose systems. This section establishes design and installation criteria for standpipe systems. [Statutory Authority: RCW 49.17-.040 and 49.17.050. 82–02–003 (Order 81–32), § 296–24–602, filed 12/24/81.]

WAC 296–24–60201 Scope and application. (1) Scope. This section applies to all small hose, Class II and Class III standpipe systems installed to meet the requirements of a particular WISHA standard.

(2) Exception. This section does not apply to Class I standpipe systems. [Statutory Authority: RCW 49.17-.040 and 49.17.050. 82–02–003 (Order 81–32), § 296–24–60201, filed 12/24/81.]

WAC 296–24–60203 Protection of standpipes. The employer shall assure that standpipes are located or otherwise protected against mechanical damage. Damaged standpipes shall be repaired promptly. [Statutory Authority: RCW 49.17.040 and 49.17.050. 82–02–003 (Order 81–32), § 296–24–60203, filed 12/24/81.]

WAC 296–24–60205 Equipment. (1) Reels and cabinets. Where reels or cabinets are provided to contain fire hose, the employer shall assure that they are designed to facilitate prompt use of the hose valves, the hose, and other equipment at the time of a fire or other emergency. The employer shall assure that the reels and cabinets are conspicuously identified and used only for fire equipment.

(2) Hose outlets and connections.

(a) The employer shall assure that hose outlets and connections are located high enough above the floor to avoid being obstructed and to be accessible to employees.

(b) The employer shall standardize screw threads or provide appropriate adapters throughout the system and assure that the hose connections are compatible with those used on the supporting fire equipment.

(3) Hose.

(a) The employer shall assure that every one and one–half inch (3.8 cm) or smaller hose outlet used to meet this standard is equipped with hose connected and ready for use. In extremely cold climates where such installation may result in damaged equipment, the hose may be stored in another location provided it is readily available and can be connected when needed.

(b) Standpipe systems installed after July 1, 1982, for use by employees, shall be equipped with lined hose. Unlined hose may remain in use on existing systems. However, after the effective date of this standard, unlined hose which becomes unserviceable shall be replaced with lined hose.

(c) Beginning July 1, 1982, the employer shall provide hose of such length that friction loss resulting from water flowing through the hose will not decrease the pressure at the nozzle below 30 psi (210 kPa). The dynamic pressure at the nozzle shall be within the range of 30 psi (210 kPa) to 125 psi (860 kPa).

(4) Nozzles. Beginning July 1, 1982, the employer shall assure that standpipe hose is equipped with shut–off type nozzles. [Statutory Authority: RCW 49.17.040 and 49.17.050. 82–02–003 (Order 81–32), § 296–24–60205, filed 12/24/81.]

WAC 296–24–60207 Water supply. The minimum water supply for standpipe and hose systems, which are provided for the use of employees, shall be sufficient to provide 100 gallons per minute (6.3 l/s) for a period of

at least thirty minutes. [Statutory Authority: RCW 49-.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-60207, filed 12/24/81.]

WAC 296-24-60209 Tests and maintenance. (1) Acceptance tests.

(a) The employer shall assure that the piping of Class II and Class III systems installed after July 1, 1982, including yard piping, is hydrostatically tested for a period of at least two hours at not less than 200 psi (1,380 kPa), or at least 50 psi (340 kPa) in excess of normal pressure when such pressure is greater than 150 psi (1,030 kPa).

(b) The employer shall assure that hose on all standpipe systems installed after July 1, 1982, is hydrostatically tested with couplings in place, at a pressure of not less than 200 psi (1,380 kPa), before it is placed in service. This pressure shall be maintained for at least fifteen seconds and not more than one minute during which time the hose shall not leak nor shall any jacket thread break during the test.

(2) Maintenance.

(a) The employer shall assure that water supply tanks are kept filled to the proper level except during repairs. When pressure tanks are used, the employer shall assure that proper pressure is maintained at all times except during repairs.

(b) The employer shall assure that valves in the main piping connections to the automatic sources of water supply are kept fully open at all times except during repair.

(c) The employer shall assure that hose systems are inspected at least annually and after each use to assure that all of the equipment and hose are in place, available for use, and in serviceable condition.

(d) When the system or any portion thereof is found not to be serviceable, the employer shall remove it from service immediately and replace it with equivalent protection such as extinguishers and fire watches.

(e) The employer shall assure that hemp or linen hose on existing systems is unracked, physically inspected for deterioration, and reracked using a different fold pattern at least annually. The employer shall assure that defective hose is replaced in accordance with WAC 296-24-60205(3)(b).

(f) The employer shall designate trained persons to conduct all inspections required under this section. [Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-60209, filed 12/24/81.]

WAC 296-24-60299 Appendix A--Standpipe and hose systems. (1) Scope and application. This section has been written to provide adequate coverage of those standpipe and hose systems that an employer may install in the workplace to meet the requirements of a particular WISHA standard. For example, WISHA permits the substitution of hose systems for portable fire extinguishers in WAC 296-24-592. If an employer chooses to provide hose systems instead of portable Class A fire extinguishers, then those hose systems used for substitution would have to meet the applicable requirements of WAC 296-24-592. All other standpipe and hose systems not used as a substitute would be exempt from these requirements.

The section specifically exempts Class I large hose systems. By large hose systems, WISHA means those two and one-half inch hose lines that are usually associated with fire departments of the size that provide their own water supply through fire apparatus. When the fire gets to the size that outside protection of that degree is necessary, WISHA believes that in most industries employees will have been evacuated from the fire area and the "professional" fire fighters will take control.

(2) Protection of standpipes. Employers must make sure that standpipes are protected so that they can be relied upon during a fire emergency. This means protecting the pipes from mechanical and physical damage. There are various means for protecting the equipment such as, but not limited to, enclosing the supply piping in the construction of the building, locating the standpipe in an area which is inaccessible to vehicles, or locating the standpipe in a stairwell.

(3) Hose covers and cabinets. The employer should keep fire protection hose equipment in cabinets or inside protective covers which will protect it from the weather elements, dirt or other damaging sources. The use of protective covers must be easily removed or opened to assure that hose and nozzle are accessible. When the employer places hose in a cabinet, the employer must make sure that the hose and nozzle are accessible to employees without subjecting them to injury. In order to make sure that the equipment is readily accessible, the employer must also make sure that the cabinets used to store equipment are kept free of obstructions and other equipment which may interfere with the fast distribution of the fire hose stored in the cabinet.

(4) Hose outlets and connections. The employer must assure that employees who use standpipe and hose systems can reach the hose rack and hose valve without the use of portable equipment such as ladders. Hose reels are encouraged for use because one employee can retrieve the hose, charge it, and place it into service without much difficulty.

(5) Hose. When the employer elects to provide small hose in lieu of portable fire extinguishers, those hose stations being used for the substitution must have hose attached and ready for service. However, if more than the necessary amount of small hose outlets are provided, hose does not have to be attached to those outlets that would provide redundant coverage. Further, where the installation of hose on outlets may expose the hose to extremely cold climates, the employer may store the hose in houses or similar protective areas and connect it to the outlet when needed.

There is approved lined hose available that can be used to replace unlined hose which is stored on racks in cabinets. The lined hose is constructed so that it can be folded and placed in cabinets in the same manner as unlined hose.

Hose is considered to be unserviceable when it deteriorates to the extent that it can no longer carry water at the required pressure and flow rates. Dry rotted linen or hemp hose, cross threaded couplings, and punctured hose are examples of unserviceable hose.

(6) Nozzles. Variable stream nozzles can provide useful variations in water flow and spray patterns during fire fighting operations and they are recommended for employee use. It is recommended that 100 psi nozzle pressure be used to provide good flow patterns for variable stream nozzles. The most desirable attribute for nozzles is the ability of the nozzle person to shut off the water flow at the nozzle when it is necessary. This can be accomplished in many ways. For example, a shut-off nozzle with a lever or rotation of the nozzle to stop flow would be effective, but in other cases a simple globe valve placed between a straight stream nozzle and the hose could serve the same purpose. For straight stream nozzles, 50 psi nozzle pressure is recommended. The intent of the standard is to protect the employee from "run-away" hoses if it becomes necessary to drop a pressurized hose line and retreat from the fire front and other related hazards.

(7) Design and installation. Standpipe and hose systems designed and installed in accordance with NFPA Standard No. 14-1976, "Standpipe and Hose Systems," are considered to be in compliance with this standard. [Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-60299, filed 12/24/81.]

WAC 296-24-607 Automatic sprinkler systems. The design and installation criteria for automatic sprinkler systems is contained in this section. [Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-607, filed 12/24/81.]

WAC 296-24-60701 Scope and application. (1) The requirements of this section apply to all automatic sprinkler systems installed to meet a particular WISHA standard.

(2) For automatic sprinkler systems used to meet WISHA requirements and installed prior to the effective date of this standard, compliance with the National Fire Protection Association (NFPA) or the National Board of Fire Underwriters (NBFU) standard in effect at the time of the system's installation will be acceptable as compliance with this section. [Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-60701, filed 12/24/81.]

WAC 296-24-60703 Exemptions. Automatic sprinkler systems installed in workplaces, but not required by WISHA are exempt from the requirements of this section. [Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-60703, filed 12/24/81.]

WAC 296-24-60705 General requirements. (1) Design.

(a) All automatic sprinkler designs used to comply with this standard shall provide the necessary discharge patterns, densities, and water flow characteristics for complete coverage in a particular workplace or zoned subdivision of the workplace.

(b) The employer shall assure that only approved equipment and devices are used in the design and installation of automatic sprinkler systems used to comply with this standard.

(2) Maintenance. The employer shall properly maintain an automatic sprinkler system installed to comply with this section. The employer shall assure that a main drain flow test is performed on each system annually. The inspector's test valve shall be opened at least every two years to assure that the sprinkler system operates properly.

(3) Acceptance tests. The employer shall conduct proper acceptance tests on sprinkler systems installed for employee protection after July 1, 1982, and record the dates of such tests. Proper acceptance tests include the following:

(a) Flushing of underground connections;

(b) Hydrostatic tests of piping in system;

(c) Air tests in dry-pipe systems;

(d) Dry-pipe valve operation; and

(e) Test of drainage facilities.

(4) Water supplies. The employer shall assure that every automatic sprinkler system is provided with at least one automatic water supply capable of providing design water flow for at least thirty minutes. An auxiliary water supply or equivalent protection shall be provided when the automatic water supply is out of service, except for systems of twenty or fewer sprinklers.

(5) Hose connections for fire fighting use. The employer may attach hose connections for fire fighting use to wet pipe sprinkler systems provided that the water supply satisfies the combined design demand for sprinklers and standpipes.

(6) Protection of piping. The employer shall assure that automatic sprinkler system piping is protected against freezing and exterior surface corrosions.

(7) Drainage. The employer shall assure that all dry sprinkler pipes and fittings are installed so that the systems may be totally drained.

(8) Sprinklers.

(a) The employer shall assure that only approved sprinklers are used on systems.

(b) The employer may not use older style sprinklers to replace standard sprinklers without a complete engineering review of the altered part of the system.

(c) The employer shall assure that sprinklers are protected from mechanical damage.

(9) Sprinkler alarms. On all sprinkler systems having more than twenty sprinklers, the employer shall assure that a local water-flow alarm is provided which sounds an audible signal on the premises upon water flow through the system equal to the flow from a single sprinkler.

(10) Sprinkler spacing. The employer shall assure that sprinklers are spaced to provide a maximum protection area per sprinkler, a minimum of interference to the

discharge pattern by building or structural members or building contents and suitable sensitivity to possible fire hazards. The minimum vertical clearance between sprinklers and material below shall be eighteen inches.

(11) Hydraulically designed systems. The employer shall assure that hydraulically designed automatic sprinkler systems or portions thereof are identified and that the location, number of sprinklers in the hydraulically designed section, and the basis of the design is indicated. Central records may be used in lieu of signs at sprinkler valves provided the records are available for inspection and copying by the director. [Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-60705, filed 12/24/81.]

WAC 296-24-60799 Appendix A--Automatic sprinkler systems. (1) Scope and application. This section contains the minimum requirements for design, installation and maintenance of sprinkler systems that are needed for employee safety. The Occupational Safety and Health Administration is aware of the fact that the National Board of Fire Underwriters is no longer an active organization, however, sprinkler systems still exist that were designed and installed in accordance with that organization's standards. Therefore, WISHA will recognize sprinkler systems designed to, and maintained in accordance with, NBFU and earlier NFPA standards.

(2) Exemptions. In an effort to assure that employers will continue to use automatic sprinkler systems as the primary fire protection system in workplaces, WISHA is exempting from coverage those systems not required by a particular WISHA standard and which have been installed in workplaces solely for the purpose of protecting property. Many of these types of systems are installed in areas or buildings with little or no employee exposure. An example is those warehouses where employees may enter occasionally to take inventory or move stock. Some employers may choose to shut down those systems which are not specifically required by WISHA rather than upgrade them to comply with the standards. WISHA does not intend to regulate such systems. WISHA only intends to regulate those systems which are installed to comply with a particular WISHA standard.

(3) Design. There are two basic types of sprinkler system design. Pipe schedule designed systems are based on pipe schedule tables developed to protect hazards with standard sized pipe, number of sprinklers, and pipe lengths. Hydraulic designed systems are based on an engineered design of pipe size which will produce a given water density or flow rate at any particular point in the system. Either design can be used to comply with this standard.

The National Fire Protection Association's Standard No. 13, "Automatic Sprinkler Systems," contains the tables needed to design and install either type of system. Minimum water supplies, densities, and pipe sizes are given for all types of occupancies.

The employer may check with a reputable fire protection engineering consultant or sprinkler design company when evaluating existing systems or designing a new installation.

With the advent of new construction materials for the manufacture of sprinkler pipe, materials, other than steel, have been approved for use as sprinkler pipe. Selection of pipe material should be made on the basis of the type of installation and the acceptability of the material to local fire and building officials where such systems may serve more than one purpose.

Before new sprinkler systems are placed into service, an acceptance test is to be conducted. The employer should invite the installer, designer, insurance representative, and a local fire official to witness the test. Problems found during the test are to be corrected before the system is placed into service.

(4) Maintenance. It is important that any sprinkler system maintenance be done only when there is minimal employee exposure to the fire hazard. For example, if repairs or changes to the system are to be made, they should be made during those hours when employees are not working or are not occupying that portion of the workplace protected by the portion of the system which has been shut down.

The procedures for performing a flow test via a main drain test or by the use of an inspector's test valve can be obtained from the employer's fire insurance company or from the National Fire Protection Association's Standard No. 13A, "Sprinkler System, Maintenance."

(5) Water supplies. The water supply to a sprinkler system is one of the most important factors an employer should consider when evaluating a system. Obviously, if there is no water supply, the system is useless. Water supplies can be lost for various reasons such as improperly closed valves, excessive demand, broken water mains, and broken fire pumps. The employer must be able to determine if or when this type of condition exists either by performing a main drain test or visual inspection. Another problem may be an inadequate water supply. For example, a light hazard occupancy may, through rehabilitation or change in tenants, become an ordinary or high hazard occupancy. In such cases, the exiting water supply may not be able to provide the pressure or duration necessary for proper protection. Employers must assure that proper design and tests have been made to assure an adequate water supply. These tests can be arranged through the employer's fire insurance carrier or through a local sprinkler maintenance company or through the local fire prevention organization.

Any time the employer must shut down the primary water supply for a sprinkler system, the standard requires that equivalent protection be provided. Equivalent protection may include a fire watch with extinguishers or hose lines in place and manned, or a secondary water supply such as a tank truck and pump, or a tank or fire pond with fire pumps, to protect the areas where the primary water supply is limited or shut down. The employer may also require evacuation of the workplace and have an emergency action plan which specifies such action.

(6) Protection of piping. Piping which is exposed to corrosive atmospheres, either chemical or natural, can

become defective to the extent that it is useless. Employers must assure that piping is protected from corrosion by its material of construction, e.g., stainless steel, or by a protective coating, e.g., paint.

(7) Sprinklers. When an employer finds it necessary to replace sprinkler system components or otherwise change a sprinkler's design, employer should make a complete fire protection engineering survey of that part of the system being changed. This review should assure that the changes to the system will not alter the effectiveness of the system as it is presently designed. Water supplies, densities and flow characteristics should be maintained.

(8) Protection of sprinklers. All components of the system must be protected from mechanical impact damage. This can be achieved with the use of mechanical guards or screens or by locating components in areas where physical contact is impossible or limited.

(9) Sprinkler alarms. The most recognized sprinkler alarm is the water–motor gong or bell that sounds when water begins to flow through the system. This is not however, the only type of acceptable water flow alarm. Any alarm that gives an indication that water is flowing through the system is acceptable. For example, a siren, a whistle, a flashing light, or similar alerting device which can transmit a signal to the necessary persons would be acceptable. The purpose of the alarm is to alert persons that the system is operating, and that some type of planned action is necessary.

(10) Sprinkler spacing. For a sprinkler system to be effective there must be an adequate discharge of water spray from the sprinkler head. Any obstructions which hinder the designed density or spray pattern of the water may create unprotected areas which can cause fire to spread. There are some sprinklers that, because of the system's design, are deflected to specific areas. This type of obstruction is acceptable if the system's design takes it into consideration in providing adequate coverage. [Statutory Authority: RCW 49.17.040 and 49.17.050. 82–02–003 (Order 81–32), § 296–24–60799, filed 12/24/81.]

WAC 296–24–617 Fixed extinguishing systems, general. This section applies to criteria required for fixed extinguisher systems and all sections of this chapter having number WAC 296–24–617 in the section number shall apply. [Statutory Authority: RCW 49.17.040 and 49.17.050. 82–02–003 (Order 81–32), § 296–24–617, filed 12/24/81.]

WAC 296–24–61701 Scope and application. (1) This section applies to all fixed extinguishing systems installed to meet a particular WISHA standard except for automatic sprinkler systems which are covered by WAC 296–24–607.

(2) This section also applies to fixed systems not installed to meet a particular WISHA standard, but which, by means of their operation, may expose employees to possible injury, death, or adverse health consequences caused by the extinguishing agent. Such systems are only subject to the requirements of WAC 296–24–61703(4) through (7) and 296–24–61705.

(3) Systems otherwise covered in subsection (2) of this section which are installed in areas with no employee exposure are exempted from the requirements of this section. [Statutory Authority: RCW 49.17.040 and 49.17.050. 82–02–003 (Order 81–32), § 296–24–61701, filed 12/24/81.]

WAC 296–24–61703 General requirements. (1) Fixed extinguishing system components and agents shall be designed and approved for use on the specific fire hazards they are expected to control or extinguish.

(2) If for any reason a fixed extinguishing system becomes inoperable, the employer shall notify employees and take the necessary temporary precautions to assure their safety until the system is restored to operating order. Any defects or impairments shall be properly corrected by trained personnel.

(3) The employer shall provide a distinctive alarm or signaling system which complies with WAC 296–24–631, and is capable of being perceived above ambient noise or light levels, on all extinguishing systems in those portions of the workplace covered by the extinguishing system to indicate when the extinguishing system is discharging. Discharge alarms are not required on systems where discharge is immediately recognizable.

(4) The employer shall provide effective safeguards to warn employees against entry into discharge areas where the atmosphere remains hazardous to employee safety or health.

(5) The employer shall post hazard warning or caution signs at the entrance to, and inside of, areas protected by fixed extinguishing systems which use agents in concentrations known to be hazardous to employee safety and health.

(6) The employer shall assure that fixed systems are inspected annually by a person knowledgeable in the design and function of the system to assure that the system is maintained in good operating condition.

(7) The employer shall assure that the weight and pressure of refillable containers is checked at least semiannually. If the container shows a loss in net content or weight of more than five percent, or a loss in pressure of more than ten percent, it shall be subjected to maintenance.

(8) The employer shall assure that factory charged nonrefillable containers which have no means of pressure indication are weighed at least semiannually. If a container shows a loss in net weight of more than five percent it shall be replaced.

(9) The employer shall assure that inspection and maintenance dates are recorded on the container, on a tag attached to the container, or in a central location. A record of the last semiannual check shall be maintained until the container is checked again or for the life of the container, whichever is less.

(10) The employer shall train employees designated to inspect, maintain, operate, or repair fixed extinguishing systems and annually review their training to keep them up–to–date in the functions they are to perform.

(11) The employer shall not use chlorobromomethane or carbon tetrachloride as an extinguishing agent where employees may be exposed.

(12) The employer shall assure that systems installed in the presence of corrosive atmospheres are constructed of noncorrosive material or otherwise protected against corrosion.

(13) Automatic detection equipment shall be approved, installed and maintained in accordance with WAC 296-24-629.

(14) The employer shall assure that all systems designed for and installed in areas with climatic extremes shall operate effectively at the expected extreme temperatures.

(15) The employer shall assure that at least one manual station is provided for discharge activation of each fixed extinguishing system.

(16) The employer shall assure that manual operating devices are identified as to the hazard against which they will provide protection.

(17) The employer shall provide and assure the use of the personal protective equipment needed for immediate rescue of employees trapped in hazardous atmospheres created by an agent discharge. [Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-61703, filed 12/24/81.]

WAC 296-24-61705 Total flooding systems with potential health and safety hazards to employees. (1) The employer shall provide an emergency action plan in accordance with WAC 296-24-567 for each area within a workplace that is protected by a total flooding system which provides agent concentrations exceeding the maximum safe levels.

(2) Systems installed in areas where employees cannot enter during or after the system's operation are exempt from the requirements of this section.

(3) On all total flooding systems the employer shall provide a predischarge employee alarm which complies with WAC 296-24-631, and is capable of being perceived above ambient light or noise levels before the system discharges, which will give employees time to safely exit from the discharge area prior to system discharge.

(4) The employer shall provide automatic actuation of total flooding systems by means of an approved fire detection device installed and interconnected with a predischarge employee alarm system to give employees time to safely exit from the discharge area prior to system discharge. [Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-61705, filed 12/24/81.]

WAC 296-24-61799 Appendix A--Fixed extinguishing systems, general. (1) Scope and application. This section contains the general requirements that are applicable to all fixed extinguishing systems installed to meet WISHA standards. It also applies to those fixed extinguishing systems, generally total flooding, which are not required by WISHA, but which, because of the agent's discharge, may expose employees to hazardous concentrations of extinguishing agents or combustion byproducts. Employees who work around fixed extinguishing systems must be warned of the possible hazards associated with the system and its agent. For example, fixed dry chemical extinguishing systems may generate a large enough cloud of dry chemical particles that employees may become visually disoriented. Certain gaseous agents can expose employees to hazardous byproducts of combustion when the agent comes into contact with hot metal or other hot surface. Some gaseous agents may be present in hazardous concentrations when the system has totally discharged because an extra rich concentration is necessary to extinguish deep-seated fires. Certain local application systems may be designed to discharge onto the flaming surface of a liquid, and it is possible that the liquid can splatter when hit with the discharging agent. All of these hazards must be determined before the system is placed into operation, and must be discussed with employees.

Based on the known toxicological effects of agents such as carbon tetrachloride and chlorobromomethane, WISHA is not permitting the use of these agents in areas where employees can be exposed to the agent or its side effects. However, chlorobromomethane has been accepted and may be used as an explosion suppression agent in unoccupied spaces. WISHA is permitting the use of this agent only in areas where employees will not be exposed.

(2) Distinctive alarm signals. A distinctive alarm signal is required to indicate that a fixed system is discharging. Such a signal is necessary on those systems where it is not immediately apparent that the system is discharging. For example, certain gaseous agents make a loud noise when they discharge. In this case, no alarm signal is necessary. However, where systems are located in remote locations or away from the general work area and where it is possible that a system could discharge without anyone knowing that it is doing so, then a distinctive alarm is necessary to warn employees of the hazards that may exist. The alarm can be a bell, gong, whistle, horn, flashing light, or any combination of signals as long as it is identifiable as a discharge alarm.

(3) Maintenance. The employer is responsible for the maintenance of all fixed systems, but this responsibility does not preclude the use of outside contractors to do such work. New systems should be subjected to an acceptance test before placed in service. The employer should invite the installer, designer, insurance representative and others to witness the test. Problems found during the test need to be corrected before the system is considered operational.

(4) Manual discharge stations. There are instances, such as for mechanical reasons and others, where the standards call for a manual backup activation device. While the location of this device is not specified in the standard, the employer should assume that the device should be located where employees can easily reach it. It could, for example, be located along the main means of egress from the protected area so that employees could activate the system as they evacuate the work area.

(5) Personal protective equipment. The employer is required to provide the necessary personal protective

equipment to rescue employees who may be trapped in a totally flooded environment which may be hazardous to their health. The equipment would normally include a positive-pressure self-contained breathing apparatus and any necessary first aid equipment. In cases where the employer can assure the prompt arrival of the local fire department or plant emergency personnel which can provide the equipment, this can be considered as complying with the standards. [Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-61799, filed 12/24/81.]

WAC 296-24-622 Fixed extinguishing systems, dry chemical. The design and installation requirements specifically applicable to fixed extinguishing systems, using dry chemical as the extinguishing agent, are contained in this section. [Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-622, filed 12/24/81.]

WAC 296-24-62201 Scope and application. This section applies to all fixed extinguishing systems using dry chemical as the extinguishing agent, installed to meet a particular WISHA standard. These systems shall also comply with WAC 296-24-617. [Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-62201, filed 12/24/81.]

WAC 296-24-62203 Specific requirements. (1) The employer shall assure that dry chemical agents are compatible with any foams or wetting agents with which they are used.

(2) The employer may not mix together dry chemical extinguishing agents of different compositions. The employer shall assure that dry chemical systems are refilled with the chemical stated on the approval nameplate or an equivalent compatible material.

(3) When dry chemical discharge may obscure vision, the employer shall provide a predischarge employee alarm which complies with WAC 296-24-631, and which will give employees time to safely exit from the discharge area prior to system discharge.

(4) The employer shall sample the dry chemical supply of all but stored pressure systems at least annually to assure that the dry chemical supply is free of moisture which may cause the supply to cake or form lumps.

(5) The employer shall assure that the rate of application of dry chemicals is such that the designed concentration of the system will be reached within thirty seconds of initial discharge. [Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-62203, filed 12/24/81.]

WAC 296-24-62299 Appendix A--Fixed extinguishing systems, dry chemical. (1) Scope and application. The requirements of this section apply only to dry chemical systems. These requirements are to be used in conjunction with the requirements of WAC 296-24-617.

(2) Maintenance. The employer is responsible for assuring that dry chemical systems will operate effectively. To do this, periodic maintenance is necessary. One test that must be conducted during the maintenance check is one which will determine if the agent has remained free of moisture. If an agent absorbs any moisture, it may tend to cake and thereby clog the system. An easy test for acceptable moisture content is to take a lump of dry chemical from the container and drop it from a height of four inches. If the lump crumbles into fine particles, the agent is acceptable. [Statutory Authority: RCW 49.17-.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-62299, filed 12/24/81.]

WAC 296-24-623 Fixed extinguishing systems, gaseous agent. This section contains the design and installation requirements for fixed extinguishing systems using gaseous agents. [Statutory Authority: RCW 49-.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-623, filed 12/24/81.]

WAC 296-24-62301 Scope and application. (1) Scope. This section applies to all fixed extinguishing systems, using a gas as the extinguishing agent, installed to meet a particular WISHA standard. These systems shall also comply with WAC 296-24-617. In some cases, the gas may be in a liquid state during storage.

(2) Application. The requirements of WAC 296-24-61703(2) and (4) through (7) shall apply only to total flooding systems. [Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-62301, filed 12/24/81.]

WAC 296-24-62303 Specific requirements. (1) Agents used for initial supply and replenishment shall be of the type approved for the system's application. Carbon dioxide obtained by dry ice conversion to liquid is not acceptable unless it is processed to remove excess water and oil.

(2) Except during overhaul, the employer shall assure that the designed concentration of gaseous agents is maintained until the fire has been extinguished or is under control.

(3) The employer shall assure that employees are not exposed to toxic levels of gaseous agent or its decomposition products.

(4) The employer shall assure that the designed extinguishing concentration is reached within thirty seconds of initial discharge except for Halon systems which must achieve design concentration within ten seconds.

(5) The employer shall provide a distinctive predischarge employee alarm capable of being perceived above ambient light or noise levels when agent design concentrations exceed the maximum safe level for employee exposure. A predischarge employee alarm for alerting employees before system discharge shall be provided on Halon 1211 and carbon dioxide systems with a design concentration of four percent or greater, and for Halon 1301 systems with a design concentration of ten percent or greater. The predischarge employee alarm shall provide employees time to safely exit the discharge area prior to system discharge.

(6)(a) Where egress from an area cannot be accomplished within one minute, the employer shall not use Halon 1301 in concentrations greater than seven percent.

(b) Where egress takes greater than thirty seconds but less than one minute, the employer shall not use Halon 1301 in a concentration greater than ten percent.

(c) Halon 1301 concentrations greater than ten percent are only permitted in areas not normally occupied by employees provided that any employee in the area can escape within thirty seconds. The employer shall assure that no unprotected employees enter the area during agent discharge. [Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-62303, filed 12/24/81.]

WAC 296-24-62399 Appendix A--Fixed extinguishing systems, gaseous agent. (1) Scope and application. This section applies only to those systems which use gaseous agents. The requirements of WAC 296-24-617 also apply to the gaseous agent systems covered in this section.

(2) Design concentrations. Total flooding gaseous systems are based on the volume of gas which must be discharged in order to produce a certain designed concentration of gas in an enclosed area. The concentration needed to extinguish a fire depends on several factors including the type of fire hazard and the amount of gas expected to leak away from the area during discharge. At times it is necessary to "super-saturate" a work area to provide for expected leakage from the enclosed area. In such cases, employers must assure that the flooded area has been ventilated before employees are permitted to reenter the work area without protective clothing and respirators.

(3) Toxic decomposition. Certain halogenated hydrocarbons will break down or decompose when they are combined with high temperatures found in the fire environment. The products of the decomposition can include toxic elements or compounds. For example, when Halon 1211 is placed into contact with hot metal it will break down and form bromide or fluoride fumes. The employer must find out which toxic products may result from decomposition of a particular agent from the manufacturer, and take the necessary precautions to prevent employee exposure to the hazard. [Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-62399, filed 12/24/81.]

WAC 296-24-627 Fixed extinguishing systems, water spray and foam. This section contains the design and installation requirements for extinguishing systems using water or foam solution as the extinguishing agent. [Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-627, filed 12/24/81.]

WAC 296-24-62701 Scope and application. This section applies to all fixed extinguishing systems, using water or foam solution as the extinguishing agent, installed to meet a particular WISHA standard. These systems shall also comply with WAC 296-24-617. This section does not apply to automatic sprinkler systems which are covered under WAC 296-24-607. [Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-62701, filed 12/24/81.]

WAC 296-24-62703 Specific requirements. (1) The employer shall assure that foam and water spray systems are designed to be effective in at least controlling fire in the protected area or on protected equipment.

(2) The employer shall assure that drainage of water spray systems is directed away from areas where employees are working and that no emergency egress is permitted through the drainage path. [Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-62703, filed 12/24/81.]

WAC 296-24-62799 Appendix A--Fixed extinguishing systems, water spray and foam. (1) Scope and application. This section applies to those systems that use water spray or foam. The requirements of WAC 296-24-617 also apply to this type of system.

(2) Characteristics of foams. When selecting the type of foam for a specific hazard, the employer should consider the following limitations of some foams.

(a) Some foams are not acceptable for use on fires involving flammable gases and liquefied gases with boiling points below ambient workplace temperatures. Other foams are not effective when used on fires involving polar solvent liquids.

(b) Any agent using water as part of the mixture should not be used on fire involving combustible metals unless it is applied under proper conditions to reduce the temperature of burning metal below the ignition temperature. The employer should use only those foams that have been tested and accepted for this application by a recognized independent testing laboratory.

(c) Certain types of foams may be incompatible and break down when they are mixed together.

(d) For fires involving water miscible solvents, employers should use only those foams tested and approved for such use. Regular protein foams may not be effective on such solvents.

Whenever employers provide a foam or water spray system, drainage facilities must be provided to carry contaminated water or foam overflow away from the employee work area and egress routes. This drainage system should drain to a central impounding area where it can be collected and disposed of properly. Other government agencies may have regulations concerning environmental considerations. [Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-62799, filed 12/24/81.]

WAC 296-24-629 Fire detection systems. The requirements for installation, restoration, maintenance, testing and protection of fire detection systems and the criteria for response time can be found in this section. [Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-629, filed 12/24/81.]

WAC 296-24-62901 Scope and application. This section applies to all automatic fire detection systems installed to meet the requirements of a particular WISHA standard. [Statutory Authority: RCW 49.17-.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-62901, filed 12/24/81.]

WAC 296-24-62903 Installation and restoration. (1) The employer shall assure that all devices and equipment constructed and installed to comply with this standard are approved for the purpose for which they are intended.

(2) The employer shall restore all fire detection systems and components to normal operating condition as promptly as possible after each test or alarm. Spare detection devices and components which are normally destroyed in the process of detecting fires shall be available on the premises or from a local supplier in sufficient quantities and locations for prompt restoration of the system. [Statutory Authority: RCW 49.17.040 and 49-.17.050. 82-02-003 (Order 81-32), § 296-24-62903, filed 12/24/81.]

WAC 296-24-62905 Maintenance and testing. (1) The employer shall maintain all systems in an operable condition except during repairs or maintenance.

(2) The employer shall assure that fire detectors and fire detection systems are tested and adjusted as often as needed to maintain proper reliability and operating condition except that factory calibrated detectors need not be adjusted after installation.

(3) The employer shall assure that pneumatic and hydraulic operated detection systems installed after July 1, 1982, are equipped with supervised systems.

(4) The employer shall assure that the servicing, maintenance and testing of fire detection systems, including cleaning and necessary sensitivity adjustments are performed by a trained person knowledgeable in the operations and functions of the system.

(5) The employer shall also assure that fire detectors that need to be cleaned of dirt, dust, or other particulates in order to be fully operational are cleaned at regular periodic intervals. [Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-62905, filed 12/24/81.]

WAC 296-24-62907 Protection of fire detectors. (1) The employer shall assure that fire detection equipment installed outdoors or in the presence of corrosive atmospheres be protected from corrosion. The employer shall provide a canopy, hood, or other suitable protection for detection equipment requiring protection from the weather.

(2) The employer shall locate or otherwise protect detection equipment so that it is protected from mechanical or physical impact which might render it inoperable.

(3) The employer shall assure that detectors are supported independently of their attachment to wires or tubing. [Statutory Authority: RCW 49.17.040 and 49-.17.050. 82-02-003 (Order 81-32), § 296-24-62907, filed 12/24/81.]

WAC 296-24-62909 Response time. (1) The employer shall assure that fire detection systems installed for the purpose of actuating fire extinguishment or suppression systems shall be designed to operate in time to control or extinguish a fire.

(2) The employer shall assure that fire detection systems installed for the purpose of employee alarm and evacuation be designed and installed to provide a warning for emergency action and safe escape of employees.

(3) The employer shall not delay alarms or devices initiated by fire detector actuation for more than thirty seconds unless such delay is necessary for the immediate safety of employees. When such delay is necessary, it shall be addressed in an emergency action plan meeting the requirements of WAC 296-24-567. [Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-62909, filed 12/24/81.]

WAC 296-24-62911 Number, location and spacing of detecting devices. The employer shall assure that the number, spacing and location of fire detectors is based upon design data obtained from field experience, or tests, engineering surveys, the manufacturer's recommendations, or a recognized testing laboratory listing. [Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-62911, filed 12/24/81.]

WAC 296-24-62999 Appendix A--Fire detection systems. (1) Installation and restoration. Fire detection systems must be designed by knowledgeable engineers or other professionals, with expertise in fire detection systems and when the systems are installed, there should be an acceptance test performed on the system to insure it operates properly. The manufacturer's recommendations for system design should be consulted. While entire systems may not be approved, each component used in the system is required to be approved. Custom fire detection systems should be designed by knowledgeable fire protection or electrical engineers who are familiar with the workplace hazards and conditions. Some systems may only have one or two individual detectors for a small workplace, but good design and installation is still important. An acceptance test should be performed on all systems, including these smaller systems.

WISHA has a requirement that spare components used to replace those which may be destroyed during an alarm situation be available in sufficient quantities and locations for prompt restoration of the system. This does not mean that the parts or components have to be stored at the workplace. If the employer can assure that the supply of parts is available in the local community or the general metropolitan area of the workplace, then the requirements for storage and availability have been met. The intent is to make sure that the alarm system is fully operational when employees are occupying the workplace, and that when the system operates it can be returned to full service the next day or sooner.

(2) Supervision. Fire detection systems should be supervised. The object of supervision is detection of any failure of the circuitry, and the employer should use any

method that will assure that the system's circuits are operational. Electrically operated sensors for air pressure, fluid pressure, or electrical circuits, can provide effective monitoring and are the typical types of supervision.

(3) Protection of fire detectors. Fire detectors must be protected from corrosion either by protective coating, by being manufactured from noncorrosive materials or by location. Detectors must also be protected from mechanical impact damage, either by suitable cages or metal guards where such hazards are present, or by locating them above or out of contact with materials or equipment which may cause damage.

(4) Number, location, and spacing of detectors. This information can be obtained from the approval listing for detectors or NFPA standards. It can also be obtained from fire protection engineers or consultants or manufacturers of equipment who have access to approval listing and design methods. [Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-62999, filed 12/24/81.]

WAC 296-24-631 Employee alarm systems. This section contains requirements for the design, installation, restoration and manual actuation of all types of emergency employee alarm systems. [Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-631, filed 12/24/81.]

WAC 296-24-63101 Scope and application. (1) This section applies to all emergency employee alarms installed to meet a particular WISHA standard. This section does not apply to those discharge or supervisory alarms required on various fixed extinguishing systems or to supervisory alarms on fire suppression, alarm or detection systems unless they are intended to be employee alarm systems.

(2) The requirements in this section that pertain to maintenance, testing and inspection shall apply to all local fire alarm signaling systems used for alerting employees regardless of the other functions of the system.

(3) All predischarge employee alarms installed to meet a particular WISHA standard shall meet the requirements of WAC 296-24-63103(1) through (4) and 296-24-63107(1). [Statutory Authority: RCW 49.17-.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-63101, filed 12/24/81.]

WAC 296-24-63103 General requirements. (1) The employee alarm system shall provide warning for necessary emergency action as called for in the emergency action plan, or for reaction time for safe escape of employees from the workplace or the immediate work area, or both.

(2) The employee alarm shall be capable of being perceived above ambient noise or light levels by all employees in the affected portions of the workplace. Tactile devices may be used to alert those employees who would not otherwise be able to recognize the audible or visual alarm.

(3) The employee alarm shall be distinctive and recognizable as a signal to evacuate the work area or to perform actions designated under the emergency action plan.

(4) The employer shall explain to each employee the preferred means of reporting emergencies, such as manual pull box alarms, public address systems, radio or telephones. The employer shall post emergency telephone numbers near telephones, or employee notice boards, and other conspicuous locations when telephones serve as a means of reporting emergencies. Where a communication system also serves as the employee alarm system, all emergency messages shall have priority over all nonemergency messages.

(5) The employer shall establish procedures for sounding emergency alarms in the workplace. For those employers with ten or fewer employees in a particular workplace, direct voice communication is an acceptable procedure for sounding the alarm provided all employees can hear the alarm. Such workplaces need not have a back-up system. [Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-63103, filed 12/24/81.]

WAC 296-24-63105 Installation and restoration. (1) The employer shall assure that all devices, components, combinations of devices or systems constructed and installed to comply with this standard are approved. Steam whistles, air horns, strobe lights or similar lighting devices, or tactile devices meeting the requirements of this section are considered to meet this requirement for approval.

(2) The employer shall assure that all employee alarm systems are restored to normal operating condition as promptly as possible after each test or alarm. Spare alarm devices and components subject to wear or destruction shall be available in sufficient quantities and locations for prompt restoration of the system. [Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-63105, filed 12/24/81.]

WAC 296-24-63107 Maintenance and testing. (1) The employer shall assure that all employee alarm systems are maintained in operating condition except when undergoing repairs or maintenance.

(2) The employer shall assure that a test of the reliability and adequacy of nonsupervised employee alarm systems is made every two months. A different actuation device shall be used in each test of a multi-actuation device system so that no individual device is used for two consecutive tests.

(3) The employer shall maintain or replace power supplies as often as is necessary to assure a fully operational condition. Back-up means of alarm, such as employee runners or telephones, shall be provided when systems are out of service.

(4) The employer shall assure that employee alarm circuitry installed after July 1, 1982, which is capable of being supervised is supervised and that it will provide positive notification to assigned personnel whenever a

deficiency exists in the system. The employer shall assure that all supervised employee alarm systems are tested at least annually for reliability and adequacy.

(5) The employer shall assure that the servicing, maintenance and testing of employee alarms are done by persons trained in the designed operation and functions necessary for reliable and safe operation of the system. [Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-63107, filed 12/24/81.]

WAC 296-24-63109 Manual operation. The employer shall assure that manually operated actuation devices for use in conjunction with employee alarms are unobstructed, conspicuous and readily accessible. [Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-63109, filed 12/24/81.]

WAC 296-24-63199 Appendix A--Employee alarm systems. (1) Scope and application. This section is intended to apply to employee alarm systems used for all types of employee emergencies except those which occur so quickly and at such a rapid rate (e.g., explosions) that any action by the employee is extremely limited following detection.

In small workplaces with ten or less employees the alarm system can be by direct voice communication (shouting) where any one individual can quickly alert all other employees. Radio may be used to transmit alarms from remote workplaces where telephone service is not available, provided that radio messages will be monitored by emergency services, such as fire, police or others, to insure alarms are transmitted and received.

(2) Alarm signal alternatives. In recognition of physically impaired individuals, WISHA is accepting various methods of giving alarm signals. For example, visual, tactile or audible alarm signals are acceptable methods for giving alarms to employees. Flashing lights or vibrating devices can be used in areas where the employer has hired employees with hearing or vision impairments. Vibrating devices, air fans, or other tactile devices can be used where visually and hearing impaired employees work. Employers are cautioned that certain frequencies of flashing lights have been claimed to initiate epileptic seizures in some employees and that this fact should be considered when selecting an alarm device. Two-way radio communications would be most appropriate for transmitting emergency alarms in such workplaces which may be remote or where telephones may not be available.

(3) Reporting alarms. Employee alarms may require different means of reporting, depending on the workplace involved. For example, in small workplaces, a simple shout throughout the workplace may be sufficient to warn employees of a fire or other emergency. In larger workplaces, more sophisticated equipment is necessary so that entire plants or high-rise buildings are not evacuated for one small emergency. In remote areas, such as pumping plants, radio communication with a central base station may be necessary. The goal of this standard is to assure that all employees who need to know that an emergency exists can be notified of the emergency. The method of transmitting the alarm should reflect the situation found at the workplace.

Personal radio transmitters, worn by an individual, can be used where the individual may be working, such as in a remote location. Such personal radio transmitters shall send a distinct signal and should clearly indicate who is having an emergency, the location, and the nature of the emergency. All radio transmitters need a feedback system to assure that the emergency alarm is sent to the people who can provide assistance.

For multistory buildings or single-story buildings with interior walls for subdivisions, the more traditional alarm systems are recommended for these types of workplaces. Supervised telephone or manual fire alarm or pull box stations with paging systems to transmit messages throughout the building is the recommended alarm system. The alarm box stations should be available within a travel distance of 200 feet. Water flow detection on a sprinkler system, fire detection systems (guard's supervisory station) or tour signal (watchman's service), or other related systems may be part of the overall system. The paging system may be used for nonemergency operations provided the emergency messages and uses will have precedence over all other uses of the system.

(4) Supervision. The requirements for supervising the employee alarm system circuitry and power supply may be accomplished in a variety of ways. Typically, electrically operated sensors for air pressure, fluid pressure, steam pressure, or electrical continuity of circuitry may be used to continuously monitor the system to assure it is operational and to identify trouble in the system and give a warning signal. [Statutory Authority: RCW 49-.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-63199, filed 12/24/81.]

WAC 296-24-63299 Appendix B--National consensus standards. The following table contains a cross-reference listing of those current national consensus standards which contains information and guidelines that would be considered acceptable in complying with requirements in the specific sections.

Section	National Consensus Standard
WAC 296-24-58505 .	ANSI/NFPA No. 1972, Structural Fire Fighter's Helmets. ANSI Z88.5 American National Standard, Practice for Respirator Protection for the Fire Service. ANSI/NFPA No. 1971, Protective Clothing for Structural Fire Fighters. NFPA No. 1041, Fire Service Instructor Professional Qualifications.
WAC 296-24-592 ...	ANSI/NFPA No. 10, Portable Fire Extinguishers.
WAC 296-24-602 ...	ANSI/NFPA No. 18, Wetting Agents. ANSI/NFPA No. 20, Centrifugal Fire Pumps. NFPA No. 21, Steam Fire Pumps. ANSI/NFPA No. 22, Water Tanks. NFPA No. 24, Outside Protection. NFPA No. 26, Supervision of Valves. NFPA No. 13E, Fire Department Operations in Properties Protected by Sprinkler, Standpipe Systems. ANSI/NFPA No. 194, Fire Hose Connections. NFPA No. 197, Initial Fire Attack,

Section	National Consensus Standard
	Training for.
	NFPA No. 1231, Water Supplies for Suburban and Rural Fire Fighting.
WAC 296-24-607 ...	ANSI/NFPA No. 13, Sprinkler Systems.
	NFPA No. 13A, Sprinkler Systems, Maintenance.
	ANSI/NFPA No. 18, Wetting Agents.
	ANSI/NFPA No. 20, Centrifugal Fire Pumps.
	ANSI/NFPA No. 22, Water Tanks.
	NFPA No. 24, Outside Protection.
	NFPA No. 26, Supervision of Valves.
	ANSI/NFPA No. 72B, Auxiliary Signaling Systems.
	NFPA No. 1231, Water Supplies for Suburban and Rural Fire Fighting.
WAC 296-24-617 ...	ANSI/NFPA No. 11, Foam Systems.
	ANSI/NFPA No. 11A, High Expansion Foam Extinguishing Systems.
	ANSI/NFPA No. 11B, Synthetic Foam and Combined Agent Systems.
	ANSI/NFPA No. 12, Carbon Dioxide Systems.
	ANSI/NFPA No. 12A, Halon 1301 Systems.
	ANSI/NFPA No. 12B, Halon 1211 Systems.
	ANSI/NFPA No. 15, Water Spray Systems.
	ANSI/NFPA No. 16, Foam-Water Spray Systems.
	ANSI/NFPA No. 17, Dry Chemical Systems.
	ANSI/NFPA No. 69, Explosion Suppression Systems.
WAC 296-24-622 ...	ANSI/NFPA No. 11B, Synthetic Foam and Combined Agent Systems.
	ANSI/NFPA No. 17, Dry Chemical Systems.
WAC 296-24-623 ...	ANSI/NFPA No. 12, Carbon Dioxide Systems.
	ANSI/NFPA No. 12A, Halon 1211 Systems.
	ANSI/NFPA No. 12B, Halon 1301 Systems.
	ANSI/NFPA No. 69, Explosion Suppression Systems.
WAC 296-24-627 ...	ANSI/NFPA No. 11, Foam Extinguishing Systems.
	ANSI/NFPA No. 11A, High Expansion Foam Extinguishing Systems.
	ANSI/NFPA No. 11B, Synthetic Foam and Combined Agent Systems.
	ANSI/NFPA No. 15, Water Spray Fixed Systems.
	ANSI/NFPA No. 16, Foam-Water Spray Systems.
	ANSI/NFPA No. 18, Wetting Agents.
	NFPA No. 26, Supervision of Valves.
WAC 296-24-629 ...	ANSI/NFPA No. 71, Central Station Signaling Systems.
	ANSI/NFPA No. 72A, Local Protective Signaling Systems.
	ANSI/NFPA No. 72B, Auxiliary Signaling Systems.
	ANSI/NFPA No. 72D, Proprietary Protective Signaling Systems.
	ANSI/NFPA No. 72E, Automatic Fire Detectors.
	ANSI/NFPA No. 101, Life Safety Code.
WAC 296-24-631 ...	ANSI/NFPA No. 71, Central Station Signaling Systems.
	ANSI/NFPA No. 72A, Local Protective Signaling Systems.
	ANSI/NFPA No. 72B, Auxiliary Protective Signaling Systems.
	ANSI/NFPA No. 72C, Remote Station Protective Signaling Systems.
	ANSI/NFPA No. 72D, Proprietary Protective Signaling Systems.
	ANSI/NFPA No. 101, Life Safety Code.
Metric Conversion....	ANSI/ASTM NSo. E380, American National Standard for Metric Practice.

NFPA standards are available from the National Fire Protection Association; 470 Atlantic Avenue; Boston, MA 02210.

ANSI Standards are available from the American National Standards Institute; 1430 Broadway; New York, NY 10018. [Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-63299, filed 12/24/81.]

WAC 296-24-63399 Appendix C--Fire protection references for further information. (I) Appendix general references. The following references provide information which can be helpful in understanding the requirements contained in all of the sections of Subpart L:

(A) Fire Protection Handbook, National Fire Protection Association, 470 Atlantic Avenue, Boston, MA 02210.

(B) Accident Prevention Manual for Industrial Operations, National Safety Council, 425 North Michigan Avenue, Chicago, IL 60611.

(C) Various associations also publish information which may be useful in understanding these standards. Examples of these associations are: Fire Equipment Manufacturers Association (FEMA) of Arlington, VA 22204, and the National Association of Fire Equipment Distributors (NAFED) of Chicago, IL 60601.

(II) Appendix references applicable to individual sections. The following references are grouped according to individual sections contained in Subpart L. These references provide information which may be helpful in understanding and implementing the standards of each section of Subpart L.

(A) WAC 296-24-58505 - Fire brigades:

(1) Private Fire Brigades, NFPA 27; National Fire Protection Association, 470 Atlantic Avenue, Boston, MA 02210.

(2) Initial Fire Attack, Training Standard On, NFPA 197; National Fire Protection Association, 470 Atlantic Avenue, Boston, MA 02210.

(3) Fire Fighter Professional Qualifications, NFPA 1001; National Fire Protection Association, 470 Atlantic Avenue, Boston, MA 02210.

(4) Organization for Fire Services, NFPA 1201; National Fire Protection Association, 470 Atlantic Avenue, Boston, MA 02210.

(5) Organization of a Fire Department, NFPA 1202; National Fire Protection Association, 470 Atlantic Avenue, Boston, MA 02210.

(6) Protective Clothing for Structural Fire Fighting, ANSI/NFPA 1971; National Fire Protection Association, 470 Atlantic Avenue, Boston, MA 02210.

(7) American National Standard for Men's Safety-Toe Footwear, ANSI Z4.1; American National Standards Institute, New York, NY 10018.

(8) American National Standard for Occupational and Educational Eye and Face Protection, ANSI Z87.1; American National Standards Institute, New York, NY 10018.

(9) American National Standard, Safety Requirements for Industrial Head Protection, ANSI Z89.1;

American National Standards Institute, New York, NY 10018.

(10) Specifications for Protective Headgear for Vehicular Users, ANSI Z90.1; American National Standards Institute, New York, NY 10018.

(11) Testing Physical Fitness; Davis and Santa Maria, Fire Command, April 1975.

(12) Development of a Job-Related Physical Performance Examination for Fire Fighters; Dotson and Others. A summary report for the National Fire Prevention and Control Administration, Washington, D.C., March 1977.

(13) Proposed Sample Standards for Fire Fighters' Protective Clothing and Equipment; International Association of Fire Fighters, Washington, D.C.

(14) A Study of Facepiece Leakage of Self-Contained Breathing Apparatus by DOP Man Tests; Los Alamos Scientific Laboratory, Los Alamos, N.M.

(15) The Development of Criteria for Fire Fighters' Gloves; Vol. II: Glove Criteria and Test Methods; National Institute for Occupational Safety and Health, Cincinnati, Ohio, 1976.

(16) Made Performance Criteria for Structural Fire Fighters' Helmets; National Fire Prevention and Control Administration, Washington, D.C., 1977.

(17) Firefighters; Job Safety and Health Magazine, Occupational Safety and Health Administration, Washington, D.C., June 1978.

(18) Eating Smoke—The Dispensable Diet; Utech, H.P. The Fire Independent, 1975.

(19) Project Monoxide—A Medical Study of an Occupational Hazard of Fire Fighters; International Association of Fire Fighters, Washington, D.C.

(20) Occupational Exposures to Carbon Monoxide in Baltimore Firefighters; Radford Baltimore, MD. Journal of Occupational Medicine, September, 1976.

(21) Fire Brigades; National Safety Council, Chicago, IL, 1966.

(22) American National Standard, Practice for Respiratory Protection for the Fire Service, ANSI Z88.5; American National Standards Institute, New York, NY 10018.

(23) Respirator Studies for the Nuclear Regulatory Commission; October 1, 1977—September 30, 1978. Evaluation and Performance of Open-Circuit Breathing Apparatus. NUREG/CR-1235. Los Alamos Scientific Laboratory; Los Alamos, NM 87545, January, 1980.

(B) WAC 296-24-592 - Portable fire extinguishers:

(1) Standard for Portable Fire Extinguishers, ANSI/NFPA 10; National Fire Protection Association, 470 Atlantic Avenue, Boston, MA 02210.

(2) Methods for Hydrostatic Testing of Compressed-Gas Cylinders, C-1; Compressed Gas Association, 500 Fifth Avenue, New York, NY 10036.

(3) Recommendations for the Disposition of Unserviceable Compressed-Gas Cylinders, C-2; Compressed Gas Association, 500 Fifth Avenue, New York, NY 10036.

(4) Standard for Visual Inspection of Compressed-Gas Cylinders, C-6; Compressed Gas Association, 500 Fifth Avenue, New York, NY 10036.

(5) Portable Fire Extinguisher Selection Guide, National Association of Fire Equipment Distributors; 111 East Wacker Drive, Chicago, IL 60601.

(C) WAC 296-24-602 - Standpipe and hose systems:

(1) Standard for the Installation of Sprinkler Systems, ANSI/NFPA 13; National Fire Protection Association, 470 Atlantic Avenue, Boston, MA 02210.

(2) Standard of the Installation of Standpipe and Hose Systems, ANSI/NFPA 14; National Fire Protection Association, 470 Atlantic Avenue, Boston, MA 02210.

(3) Standard for the Installation of Centrifugal Fire Pumps, ANSI/NFPA 20; National Fire Protection Association, 470 Atlantic Avenue, Boston, MA 02210.

(4) Standard for Water Tanks for Private Fire Protection, ANSI/NFPA 22; National Fire Protection Association, 470 Atlantic Avenue, Boston, MA 02210.

(5) Standard for Screw Threads and Gaskets for Fire Hose Connections, ANSI/NFPA 194; National Fire Protection Association, 470 Atlantic Avenue, Boston, MA 02210.

(6) Standard for Fire Hose, NFPA 196; National Fire Protection Association, 470 Atlantic Avenue, Boston, MA 02210.

(7) Standard for the Care of Fire Hose, NFPA 198; National Fire Protection Association, 470 Atlantic Avenue, Boston, MA 02210.

(D) WAC 296-24-607 - Automatic sprinkler systems:

(1) Standard of the Installation of Sprinkler Systems, ANSI/NFPA 13; National Fire Protection Association, 470 Atlantic Avenue, Boston, MA 02210.

(2) Standard for the Care and Maintenance of Sprinkler Systems, ANSI/NFPA 13A; National Fire Protection Association, 470 Atlantic Avenue, Boston, MA 02210.

(3) Standard for the Installation of Standpipe and Hose Systems, ANSI/NFPA 14; National Fire Protection Association, 470 Atlantic Avenue, Boston, MA 02210.

(4) Standard for the Installation of Centrifugal Fire Pumps, ANSI/NFPA 20; National Fire Protection Association, 470 Atlantic Avenue, Boston, MA 02210.

(5) Standard for Water Tanks for Private Fire Protection, ANSI/NFPA 22; National Fire Protection Association, 470 Atlantic Avenue, Boston, MA 02210.

(6) Standard for Indoor General Storage, ANSI/NFPA 231; National Fire Protection Association, 470 Atlantic Avenue, Boston, MA 02210.

(7) Standard for Rock Storage of Materials, ANSI/NFPA 231C; National Fire Protection Association, 470 Atlantic Avenue, Boston, MA 02210.

(E) WAC 296-24-617 - Fixed extinguishing systems, general information:

(1) Standard for Foam Extinguishing Systems, ANSI/NFPA 11; National Fire Protection Association, 470 Atlantic Avenue, Boston, MA 02210.

(2) Standard for Hi-Expansion Foam systems, ANSI/NFPA 11A; National Fire Protection Association, 470 Atlantic Avenue, Boston, MA 02210.

(3) Standard on Synthetic Foam and Combined Agent Systems, ANSI/NFPA 11B; National Fire Protection Association, 470 Atlantic Avenue, Boston, MA 02210.

(4) Standard on Carbon Dioxide Extinguishing Systems, ANSI/NFPA 12; National Fire Protection Association, 470 Atlantic Avenue, Boston, MA 02210.

(5) Standard on Halon 1301, ANSI/NFPA 12A; National Fire Protection Association, Boston, MA 02210.

(6) Standard on Halon 1211, ANSI/NFPA 12B; National Fire Protection Association, 470 Atlantic Avenue, Boston, MA 02210.

(7) Standard for Water Spray Systems, ANSI/NFPA 15; National Fire Protection Association, 470 Atlantic Avenue, Boston, MA 02210.

(8) Standard for Foam–Water Sprinkler Systems and Foam–Water Spray Systems, ANSI/NFPA 16; National Fire Protection Association, 470 Atlantic Avenue, Boston, MA 02210.

(9) Standard for Dry Chemical Extinguishing Systems, ANSI/NFPA 17; National Fire Protection Association, 470 Atlantic Avenue, Boston, MA 02210.

(F) WAC 296–24–622 – Fixed extinguishing systems, dry chemical:

(1) Standard for Dry Chemical Extinguishing Systems, ANSI/NFPA 17; National Fire Protection Association, 470 Atlantic Avenue, Boston, MA 02210.

(2) National Electrical Code, ANSI/NFPA 70; National Fire Protection Association, 470 Atlantic Avenue, Boston, MA 02210.

(3) Standard for the Installation of Equipment for the Removal of Smoke and Grease–Laden Vapor from Commercial Cooling Equipment, NFPA 96; National Fire Protection Association, 470 Atlantic Avenue, Boston, MA 02210.

(G) WAC 296–24–623 – Fixed extinguishing systems, gaseous agents:

(1) Standard on Carbon Dioxide Extinguishing Systems, ANSI/NFPA 12; National Fire Protection Association, 470 Atlantic Avenue, Boston, MA 02210.

(2) Standard on Halon 1301, ANSI/NFPA 12B; National Fire Protection Association, 470 Atlantic Avenue, Boston, MA 02210.

(3) Standard on Halon 1211, ANSI/NFPA 12; National Fire Protection Association, 470 Atlantic Avenue, Boston, MA 02210.

(4) Standard on Explosion Prevention Systems, ANSI/NFPA 69; National Fire Protection Association, 470 Atlantic Avenue, Boston, MA 02210.

(5) National Electrical Code, ANSI/NFPA 70; National Fire Protection Association, 470 Atlantic Avenue, Boston, MA 02210.

(6) Standard on Automatic Fire Detectors, ANSI/NFPA 72E; National Fire Protection Association, 470 Atlantic Avenue, Boston, MA 02210.

(7) Determination of Halon 1301/1211 Threshold Extinguishing Concentrations Using the Cup Burner Method, Riley and Olson, Ansul Report AL–530–A.

(H) WAC 296–24–627 – Fixed extinguishing systems, water spray and foam agents:

(1) Standard for Foam Extinguisher Systems, ANSI/NFPA 11; National Fire Protection Association, 470 Atlantic Avenue, Boston, MA 02210.

(2) Standard for High–Expansion Foam Systems, ANSI/NFPA 11A; National Fire Protection Association, 470 Atlantic Avenue, Boston, MA 02210.

(3) Standard for Water Spray Fixed Systems for Fire Protection, ANSI/NFPA 15; National Fire Protection Association, 470 Atlantic Avenue, Boston, MA 02210.

(4) Standard for the Installation of Foam–Water Sprinkler Systems and Foam–Water Spray Systems, ANSI/NFPA 16; National Fire Protection Association, 470 Atlantic Avenue, Boston, MA 02210.

(I) WAC 296–24–629 – Fire detection systems:

(1) National Electrical Code, ANSI/NFPA 70; National Fire Protection Association, 470 Atlantic Avenue, Boston, MA 02210.

(2) Standard for Central Station Signaling Systems, ANSI/NFPA 71; National Fire Protection Association, 470 Atlantic Avenue, Boston, MA 02210.

(3) Standard on Automatic Fire Detectors, ANSI/NFPA 72E; National Fire Protection Association, 470 Atlantic Avenue, Boston, MA 02210.

(J) WAC 296–24–631 – Employee alarm systems:

(1) National Electrical Code, ANSI/NFPA 70; National Fire Protection Association, 470 Atlantic Avenue, Boston, MA 02210.

(2) Standard for Central Station Signaling Systems, ANSI/NFPA 71; National Fire Protection Association, 470 Atlantic Avenue, Boston, MA 02210.

(3) Standard for Local Protective Signaling Systems, ANSI/NFPA 72A; National Fire Protection Association, 470 Atlantic Avenue, Boston, MA 02210.

(4) Standard for Auxiliary Protective Signaling Systems, ANSI/NFPA 72B; National Fire Protection Association, 470 Atlantic Avenue, Boston, MA 02210.

(5) Standard for Remote Station Protective Signaling Systems, ANSI/NFPA 72C; National Fire Protection Association, 470 Atlantic Avenue, Boston, MA 02210.

(6) Standard for Proprietary Protective Signaling Systems, ANSI/NFPA 72D; National Fire Protection Association, 470 Atlantic Avenue, Boston, MA 02210.

(7) Vocal Emergency Alarms in Hospitals and Nursing Facilities: Practice and Potential, National Bureau of Standards, Washington, D.C., July, 1977.

(8) Fire Alarm and Communication Systems, National Bureau of Standards, Washington, D.C., April, 1976. [Statutory Authority: RCW 49.17.040 and 49.17-.050. 82–02–003 (Order 81–32), § 296–24–63399, filed 12/24/81.]

WAC 296–24–63499 Appendix D--Availability of publications incorporated by references in WAC 296–24–58505--Fire brigades. The final standard for fire brigades, WAC 296–24–58505, contains provisions which incorporate certain publications by reference. The publications provide criteria and test methods for protective clothing worn by those fire brigade members who are expected to perform interior structural fire fighting. The standard references the publications as the chief sources

of information for determining if the protective clothing affords the required level of protection.

It is appropriate to note that the final standard does not require employers to purchase a copy of the referenced publications. Instead, employers can specify (in purchase orders to the manufacturers) that the protective clothing meet the criteria and test methods contained in the referenced publications and can rely on the manufacturers assurances of compliance. Employers, however, may desire to obtain a copy of the referenced publications for their own information.

The paragraph designation of the standard where the referenced publications appear, the title of the publications, and the availability of the publications are as follows:

Paragraph Designation	Referenced Publication	Available From
WAC 296-24-58513(3)(b)	"Protective Clothing for Structural Fire Fighting." NFPA No. 1971 (1975).	National Fire Protection Association, 470 Atlantic Avenue, Boston, MA 02210.
WAC 296-24-58513(4)(a)	"Development of Criteria for Fire Fighter's Gloves; Vol. II, Part II: Test Methods" (1976)	U.S. Government Printing Office, Washington, D.C. 20402. Stock No. for Vol. II is: 071-033-021-1.
WAC 296-24-58513(5)(a)	"Model Performance Criteria for Structural Firefighter's Helmets" (1977)	U.S. Fire Administration, National Fire Safety and Research Office, Washington, D.C. 20230.

The referenced publications (or a microfiche of the publications) are available for review at many universities and public libraries throughout the country. These publications may also be examined at the OSHA Technical Data Center, Room N2439-Rear, United States Department of Labor, 200 Constitution Avenue Northwest, Washington, D.C. 20210 (202-523-9700), or at any OSHA Regional Office (see telephone directories under United States Government-Labor Department). [Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-63499, filed 12/24/81.]

WAC 296-24-63599 Appendix E--Test methods for protective clothing. This appendix contains test methods which must be used to determine if protective clothing affords the required level of protection as specified in WAC 296-24-58505 - Fire brigades.

(1) Puncture resistance test method for foot protection.

(a) Apparatus. The puncture resistance test shall be performed on a testing machine having a movable platform adjusted to travel at one-quarter-inch per minute. Two blocks of hardwood, metal, or plastic shall be prepared as follows: The blocks shall be of such size and thickness as to insure a suitable rigid test ensemble and allow for at least one-inch of the pointed end of an 8D nail to be exposed for the penetration. One block shall have a hole drilled to hold an 8D common nail firmly at an angle of 98-1/2. The second block shall have a maximum one-half inch diameter hole drilled through it so that the hole will allow free passage of the nail after it penetrates the insole during the test.

(b) Procedure. The test ensemble consisting of the sample unit, the two prepared blocks, a piece of leather outsole ten to eleven irons thick and a new 8D nail, shall be placed as follows: The 8D nail in the hole, the sample of outsole stock superimposed above the nail, the area of the sole plate to be tested placed on the outsole, and the second block with hole so placed as to allow for free passage of the nail after it passes through the outsole stock and sole plate in that order. The machine shall be started and the pressure, in pounds required for the nail to completely penetrate the outsole and sole plate, recorded to the nearest five pounds. Two determinations shall be made on each sole plate and the results averaged. A new nail shall be used for each determination.

(c) Source. These test requirements are contained in "Military Specification For Fireman's Boots," MIL-B-2885D (1973 and amendment dated 1975) and are reproduced for your convenience.

(2) Test method for determining the strength of cloth by tearing: Trapezoid method.

(a) Test specimen. The specimen shall be a rectangle of cloth three-inches by six-inches. The long dimension shall be parallel to the warp for warp tests and parallel to the filling for filling tests. No two specimens for warp tests shall contain the same warp yarns, nor shall any two specimens for filling tests contain the same filling yarns. The specimen shall be taken no nearer the selvage than 1/10 the width of the cloth. An isosceles trapezoid having an altitude of three inches and bases of one and four inches in length, respectively, shall be marked on each specimen, preferably with the aid of a template. A cut approximately three-eighths inch in length shall then be made in the center of a perpendicular to the one inch edge.

(b) Apparatus.

(i) Six-ounce weight tension clamps shall be used so designed that the six ounces of weight are distributed evenly across the complete width of the sample.

(ii) The machine shall consist of three main parts: Straining mechanism, clamps for holding specimen, and load and elongation recording mechanisms.

(iii) A machine wherein the specimen is held between two clamps and strained by a uniform movement of the pulling clamp shall be used.

(iv) The machine shall be adjusted so that the pulling clamp shall have a uniform speed of 12 ± 10.5 inches per minute.

(v) The machine shall have two clamps with two jaws on each clamp. The design of the two clamps shall be such that one gripping surface or jaw may be an integral part of the rigid frame of the clamp or be fastened to allow a slight vertical movement, while the other gripping surface or jaw shall be completely moveable. The dimension of the immovable jaw of each clamp parallel to the application of the load shall measure one inch, and the dimension of the jaw perpendicular to this direction shall measure three inches or more. The face of

the moveable jaw of each clamp shall measure one inch by three inches.

Each jaw face shall have a flat, smooth, gripping surface. All edges which might cause a cutting action shall be rounded to a radius of not over 1/64 inch. In cases where a cloth tends to slip when being tested, the jaws may be faced with rubber or other material to prevent slippage. The distance between the jaws (gage length) shall be one inch at the start of the test.

(vi) Calibrated dial; scale or chart shall be used to indicate applied load and elongation. The machine shall be adjusted or set, so that the maximum load required to break the specimen will remain indicated on the calibrated dial or scale after the test specimen has ruptured.

(vii) The machine shall be of such capacity that the maximum load required to break the specimen shall be not greater than eighty–five percent or less than fifteen percent of the rated capacity.

(viii) The error of the machine shall not exceed two percent up to and including a fifty–pound load and one percent over a fifty–pound load at any reading within its loading range.

(ix) All machine attachments for determining maximum loads shall be disengaged during this test.

(c) Procedure.

(i) The specimen shall be clamped in the machine along the nonparallel sides of the trapezoid so that these sides lie along the lower edge of the upper clamp and the upper edge of the lower clamp with the cut halfway between the clamps. The short trapezoid base shall be held taut and the long trapezoid base shall lie in the folds.

(ii) The machine shall be started and the force necessary to tear the cloth shall be observed by means of an autographic recording device. The speed of the pulling clamp shall be 12 inches ± 0.5–inch per minute.

(iii) If a specimen slips between the jaws, breaks in or at the edges of the jaws, or if for any reason attributable to faulty technique, an individual measurement falls markedly below the average test results for the sample unit, such result shall be discarded and another specimen shall be tested.

(iv) The tearing strength of the specimen shall be the average of the five highest peak loads of resistance registered for three inches of separation of the tear.

(d) Report.

(i) Five specimens in each of the warp and filling direction shall be tested from each sample unit.

(ii) The tearing strength of the sample unit shall be the average of the result obtained from the specimens tested in each of the warp and filling directions and shall be reported separately to the nearest 0.1 pound.

(e) Source. These test requirements are contained in "Federal Test Method Standard 191, Method 5136," and are reproduced for your convenience.

(3) Test method for determining flame resistance of cloth; vertical.

(a) Test specimen. The specimen shall be a rectangle of cloth two and three–quarter inches (7.0 cm) by twelve inches (30.5 cm) with the long dimension parallel to either the warp or filling direction of the cloth. No two warp specimens shall contain the same warp yarns, and no two filling specimens shall contain the same filling yarn.

(b) Number of determinations. Five specimens from each of the warp and filling directions shall be tested from each sample unit.

(c) Apparatus.

(i) Cabinet. A cabinet and accessories shall be fabricated in accordance with the requirements specified in Figures L–1, L–2, and L–3. Galvanized sheet metal or other suitable metal shall be used. The entire inside back wall of the cabinet shall be painted black to facilitate the viewing of the test specimen and pilot flame.

(ii) Burner. The burner shall be equipped with a variable orifice to adjust the flame height, a barrel having a three–eighth inch (9.5 mm) inside diameter and a pilot light.

(A) The burner may be constructed by combining a three–eighth inch (9.5 mm) inside diameter barrel 3 ± 1/4–inches (76.2 ± 6.4 mm) long from a fixed orifice burner with a base from a variable orifice burner.

(B) The pilot light tube shall have a diameter of approximately one–sixteenth inch (1.6 mm) and shall be spaced one–eighth inch (3.2 mm) away from the burner edge with a pilot flame one–eighth inch (3.2 mm) long.

(C) The necessary gas connections and the applicable plumbing shall be as specified in Figure L–4 except that a solenoid valve may be used in lieu of the stopcock valve to which the burner is attached. The stopcock valve or solenoid valve, whichever is used, shall be capable of being fully opened or fully closed in 0.1 second.

(D) On the side of the barrel of the burner, opposite the pilot light there shall be a metal rod of approximately one–eighth inch (3.2 mm) diameter spaced one–half inch (12.7 mm) from the barrel and extending above the burner. The rod shall have two five–sixteenth inch (7.9 mm) prongs marking the distances of three–quarters inch (19 mm), and one and one–half inches (38.1 mm) above the top of the burner.

(E) The burner shall be fixed in a position so that the center of the barrel of the burner is directly below the center of the specimen.

(iii) There shall be a control valve system with a delivery rate designed to furnish gas to the burner under a pressure of 2–1/2 ± 1/4 pounds (1.1–kg ± 0.1–kg) per square inch at the burner inlet. The manufacturer's recommended delivery rate for the valve system shall be included in the required pressure.

(iv) A synthetic gas mixture shall be of the following composition within the following limits (analyzed at standard conditions): 55 ± 3 percent hydrogen, 24 ± 1 percent methane, 3 ± 1 percent ethane, and 18 ± 1 percent carbon monoxide which will give a specific gravity of 0.365 ± 0.018 (air = 1) and a B.T.U. content of 540 ± 20 per cubic foot (dry basis) at 69.8 F (21 C).

(v) There shall be metal hooks and weights to produce a series of total loads to determine length of char. The metal hooks shall consist of No. 19 gage steel wire or equivalent and shall be made from three inch (76.2 mm) lengths of wire and bent one–half inch (12.7 mm) from one end to a 45–degree hook. One end of the hook shall be fastened around the neck of the weight to be used.

(vi) There shall be a stop watch or other device to measure the burning time 0.2 second.

(vii) There shall be a scale, graduated in 0.1 inch (mm) to measure the length of char.

(d) Procedure.

(i) The material undergoing test shall be evaluated for the characteristics of after–flame time and char length on each specimen.

(ii) All specimens to be tested shall be at moisture equilibrium under standard atmospheric conditions in accordance with subsection (3)(c) of this appendix. Each specimen to be tested shall be exposed to the test flame within twenty seconds after removal from the standard atmosphere. In case of dispute, all testing will be conducted under Standard Atmospheric conditions in accordance with subsection (3)(c) of this appendix.

(iii) The specimen in its holder shall be suspended vertically in the cabinet in such a manner that the entire length of the specimen is exposed and the lower end is three–quarters inch (19 mm) above the top of the gas burner. The apparatus shall be set up in a draft–free area.

(iv) Prior to inserting the specimen, the pilot flame shall be adjusted to approximately one–eighth inch (3.2 mm) in height measured from its lowest point to the tip.

The burner flame shall be adjusted by means of the needle valve in the base of the burner to give a flame height of one and one–half inches (38.1 mm) with the stopcock fully open and the air supply to burner shut off and taped. The one and one–half inch (38.1 mm) flame height is obtained by adjusting the valve so that the uppermost portion (tip) of the flame is level with the tip of the metal prong (see Fig. L–2) specified for adjustment of flame height. It is an important aspect of the evaluation that the flame height to be adjusted with the tip of the flame level with the tip of the metal prong. After inserting the specimen, the stopcock shall be fully opened, and the burner flame applied vertically at the middle of the lower edge of the specimen for twelve seconds and the burner turned off. The cabinet door shall remain shut during testing.

(v) The after–flame shall be the time the specimen continues to flame after the burner flame is shut off.

(vi) After each specimen is removed, the test cabinet shall be cleared of fumes and smoke prior to testing the next specimen.

(vii) After both flaming and glowing have ceased, the char length shall be measured. The char length shall be the distance from the end of the specimen, which was exposed to the flame, to the end of a tear (made lengthwise) of the specimen through the center of the charred area as follows: The specimen shall be folded lengthwise and creased by hand along a line through the highest peak of the charred area. The hook shall be inserted in the specimen (or a hole, one–quarter inch (6.4 mm) diameter or less, punched out for the hook) at one side of the charred area one–quarter inch (6.4 mm) from the adjacent outside edge and one–quarter inch (6.4 mm) in from the lower end. A weight of sufficient size such that the weight and hook together shall equal the total tearing load required in Table L–2 of this section shall be attached to the hook.

(viii) A tearing force shall be applied gently to the specimen by grasping the corner of the cloth at the opposite edge of the char from the load and raising the specimen and weight clear of the supporting surface. The end of the tear shall be marked off on the edge and the char length measurement made along the undamaged edge.

Loads for determining char length applicable to the weight of the test cloth shall be as shown in Table L–2.

TABLE L–2

Specified weight per square yard of cloth before any fire retardant treatment or coating – ounces	Total learning weight for determining the charred length – pound
2.0 to 6.0	0.25
Over 6.0 to 15.0	0.50
Over 15.0 to 23.0	0.75
Over 23.0	1.0

(ix) The after–flame time of the specimen shall be recorded to the nearest 0.2 second and the car length to the nearest 0.1 inch (1 mm).

(e) Report.

(i) The after–flame time and char length of the sample unit shall be the average of the results obtained from the individual specimens tested. All values obtained from the individual specimens shall be recorded.

(ii) The after–flame time shall be reported in the nearest 0.2 second and the char length to the nearest 0.1 inch (1 mm).

(f) Source. These test requirements are contained in "Federal Test Method Standard 191, Method 5903 (1971)," and are reproduced for your convenience.

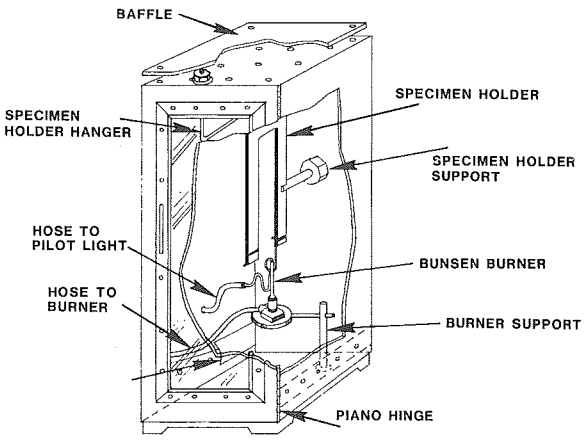


FIGURE L–1 – Vertical flame resistance textile apparatus.

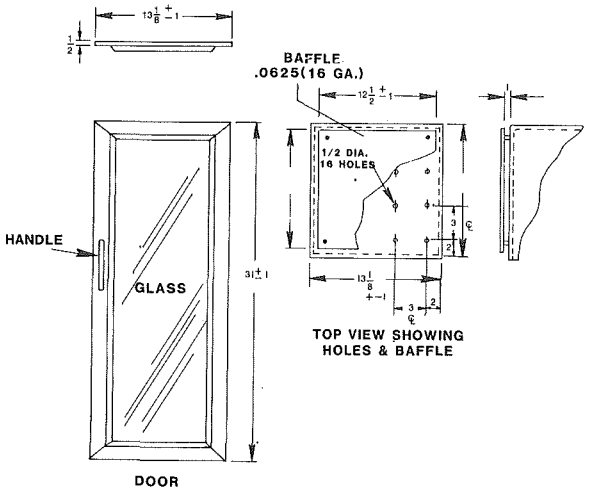


FIGURE L-2 – Vertical flame resistance textile apparatus, door and top view w/baffle.

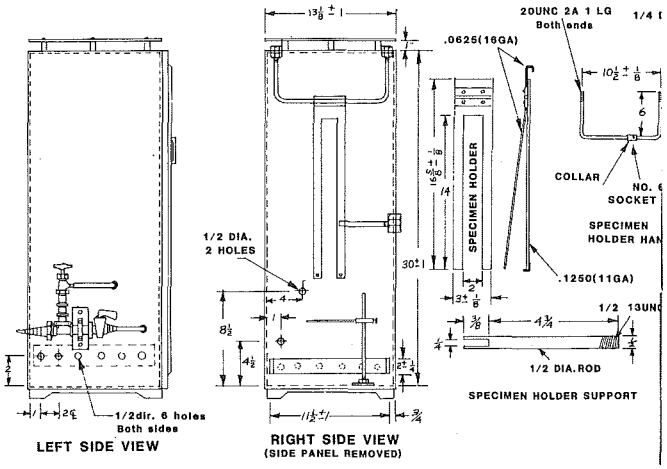


FIGURE L-3 – Vertical flame resistance textile apparatus, views and details.

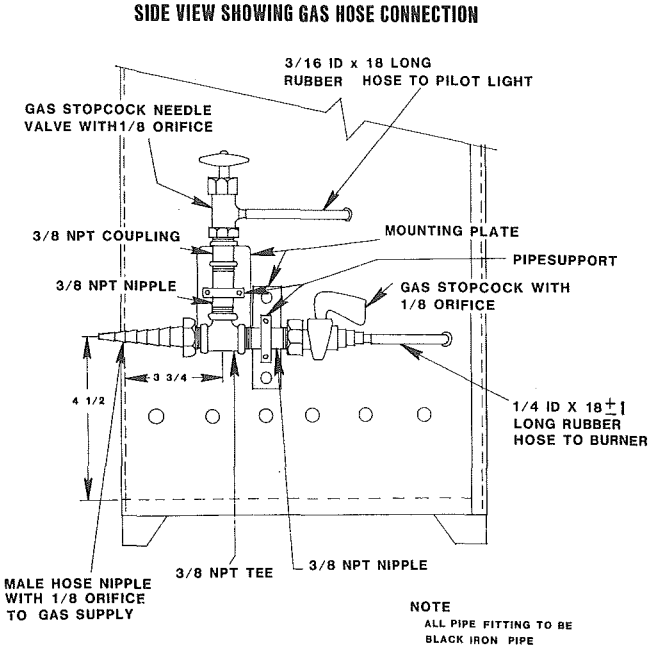


FIGURE L-4 – Vertical flame resistance textile apparatus.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-63599, filed 12/24/81.]

Part L
ELECTRICAL

WAC

296-24-955 Repealed.
296-24-956 Electrical.
296-24-95601 Definitions applicable to WAC 296-24-956 through 296-24-95615.
296-24-95603 Electric utilization systems.
296-24-95605 General requirements.
296-24-95607 Wiring design and protection.
296-24-95609 Wiring methods, components, and equipment for general use.
296-24-95611 Specific purpose equipment and installations.
296-24-95613 Hazardous (classified) locations.
296-24-95615 Special systems.
296-24-95617 Effective date.
296-24-95699 Appendices.
296-24-960 Proximity to overhead power lines.

DISPOSITION OF SECTIONS FORMERLY CODIFIED IN THIS SUBCHAPTER

296-24-955 National electrical code. [Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, chapters 42.30 and 43.22 RCW. 80-17-015 (Order 80-21), § 296-24-955, filed 11/13/80; 78-12-017 (Order 78-22), § 296-24-955, filed 11/13/78; Order 77-12, § 296-24-955, filed 7/11/77; Order 74-27, § 296-24-955, filed 5/7/74.] Repealed by 82-08-026 (Order 82-10), filed 3/30/82. Statutory Authority: RCW 49.17.040 and 49.17.050.

WAC 296-24-955 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-24-956 Electrical. This section addresses electrical safety requirements that are necessary for the practical safeguarding of employees in their workplaces. [Statutory Authority: RCW 49.17.040 and 49.17.050. 82-08-026 (Order 82-10), § 296-24-956, filed 3/30/82.]

WAC 296-24-95601 Definitions applicable to WAC 296-24-956 through 296-24-95615. Unless the context indicates otherwise, words used in this section shall have the meaning given.

(1) **Acceptable.** An installation or equipment is acceptable to the director of labor and industries, and approved within the meaning of this section:

(a) If it is accepted, or certified, or listed, or labeled, or otherwise determined to be safe by a nationally recognized testing laboratory, such as, but not limited to, Underwriters' Laboratories, Inc. and Factory Mutual Engineering Corp; or

(b) With respect to an installation or equipment of a kind which no nationally recognized testing laboratory accepts, certifies, lists, labels, or determines to be safe, if it is inspected or tested by another federal agency, or by a state, municipal, or other local authority responsible for enforcing occupational safety provisions of the National Electrical Code, and found in compliance with the provisions of the National Electrical Code as applied in this section; or

(c) With respect to custom-made equipment or related installations which are designed, fabricated for, and intended for use by a particular customer, if it is determined to be safe for its intended use by its manufacturer on the basis of test data which the employer keeps and makes available for inspection to the director and his authorized representatives.

(2) **Accepted.** An installation is "accepted" if it has been inspected and found by a nationally recognized testing laboratory to conform to specified plans or to procedures of applicable codes.

(3) **Accessible.** (As applied to wiring methods.) Capable of being removed or exposed without damaging the building structure of finish, or not permanently closed in by the structure or finish of the building. (See "concealed" and "exposed.")

(4) **Accessible.** (As applied to equipment.) Admitting close approach; not guarded by locked doors, elevation, or other effective means. (See "readily accessible.")

(5) **Ampacity.** Current-carrying capacity of electric conductors expressed in amperes.

(6) **Appliances.** Utilization equipment, generally other than industrial, normally built in standardized sizes or types, which is installed or connected as a unit to perform one or more functions such as clothes washing, air conditioning, food mixing, deep frying, etc.

(7) **Approved.** Acceptable to the authority enforcing this section. The authority enforcing this section is the director of labor and industries. The definition of "acceptable" indicates what is acceptable to the director and therefore approved within the meaning of this section.

(8) **Approved for the purpose.** Approved for a specific purpose, environment, or application described in a particular standard requirement.

Suitability of equipment or materials for a specific purpose, environment or application may be determined by a nationally recognized testing laboratory, inspection agency or other organization concerned with product evaluation as part of its listing and labeling program. (See "labeled" or "listed.")

(9) **Armored cable.** Type AC armored cable is a fabricated assembly of insulated conductors in a flexible metallic enclosure.

(10) **Askarel.** A generic term for a group of nonflammable synthetic chlorinated hydrocarbons used as electrical insulating media. Askarels of various compositional types are used. Under arcing conditions the gases produced, while consisting predominantly of noncombustible hydrogen chloride, can include varying amounts of combustible gases depending upon the askarel type.

(11) **Attachment plug (plug cap) (cap).** A device which, by insertion in a receptacle, establishes connection between the conductors of the attached flexible cord and the conductors connected permanently to the receptacle.

(12) **Automatic.** Self-acting, operating by its own mechanism when actuated by some impersonal influence, as, for example, a change in current strength, pressure, temperature, or mechanical configuration.

(13) **Bare conductor, see "conductor."**

(14) **Bonding.** The permanent joining of metallic parts to form an electrically conductive path which will assure electrical continuity and the capacity to conduct safely any current likely to be imposed.

(15) **Bonding jumper.** A reliable conductor to assure the required electrical conductivity between metal parts required to be electrically connected.

(16) **Branch circuit.** The circuit conductors between the final overcurrent device protecting the circuit and the outlet(s).

(17) **Building.** A structure which stands alone or which is cut off from adjoining structures by fire walls with all openings therein protected by approved fire doors.

(18) **Cabinet.** An enclosure designed either for surface or flush mounting, and provided with a frame, mat, or trim in which a swinging door or doors are or may be hung.

(19) **Cable tray system.** A cable tray system is a unit or assembly of units or sections, and associated fittings, made of metal or other noncombustible materials forming a rigid structural system used to support cables. Cable tray systems include ladders, troughs, channels, solid bottom trays, and other similar structures.

(20) **Cablebus.** Cablebus is an approved assembly of insulated conductors with fittings and conductor terminations in a completely enclosed, ventilated, protective metal housing.

(21) **Center pivot irrigation machine.** A center pivot irrigation machine is a multimotored irrigation machine which revolves around a central pivot and employs

alignment switches or similar devices to control individual motors.

(22) **Certified.** Equipment is "certified" if it (a) has been tested and found by a nationally recognized testing laboratory to meet nationally recognized standards or to be safe for use in a specified manner, or (b) is of a kind whose production is periodically inspected by a nationally recognized testing laboratory, and (c) it bears a label, tag, or other record of certification.

(23) **Circuit breaker.**

(a) **(600 volts nominal, or less).** A device designed to open and close a circuit by nonautomatic means and to open the circuit automatically on a predetermined overcurrent without injury to itself when properly applied within its rating.

(b) **(Over 600 volts, nominal).** A switching device capable of making, carrying, and breaking currents under normal circuit conditions, and also making, carrying for a specified time, and breaking currents under specified abnormal circuit conditions, such as those of short circuit.

(24) **Class I locations.** Class I locations are those in which flammable gases or vapors are or may be present in the air in quantities sufficient to produce explosive or ignitible mixtures. Class I locations include the following:

(a) **Class I, Division 1.** A Class I, Division 1 location is a location:

(i) In which hazardous concentrations of flammable gases or vapors may exist under normal operating conditions; or

(ii) In which hazardous concentrations of such gases or vapors may exist frequently because of repair or maintenance operations or because of leakage; or

(iii) In which breakdown or faulty operation of equipment or processes might release hazardous concentrations of flammable gases or vapors, and might also cause simultaneous failure of electric equipment.

NOTE: This classification usually includes locations where volatile flammable liquids or liquefied flammable gases are transferred from one container to another; interiors of spray booths and areas in the vicinity of spraying and painting operations where volatile flammable solvents are used; locations containing open tanks or vats of volatile flammable liquids; drying rooms or compartments for the evaporation of flammable solvents; locations containing fat and oil extraction equipment using volatile flammable solvents; portions of cleaning and dyeing plants where flammable liquids are used; gas generator rooms and other portions of gas manufacturing plants where flammable gas may escape; inadequately ventilated pump rooms for flammable gas or for volatile flammable liquids; the interiors of refrigerators and freezers in which volatile flammable materials are stored in open, lightly stoppered, or easily ruptured containers; and all other locations where ignitible concentrations of flammable vapors or gases are likely to occur in the course of normal operations.

(b) **Class I, Division 2.** A Class I, Division 2 location is a location:

(i) In which volatile flammable liquids or flammable gases are handled, processed, or used, but in which the hazardous liquids, vapors, or gases will normally be confined within closed containers or closed systems from which they can escape only in case of accidental rupture or breakdown of such containers or systems, or in case of abnormal operation of equipment; or

(ii) In which hazardous concentrations of gases or vapors are normally prevented by positive mechanical ventilation, and which might become hazardous through failure or abnormal operations of the ventilating equipment; or

(iii) That is adjacent to a Class I, Division 1 location, and to which hazardous concentrations of gases or vapors might occasionally be communicated unless such communication is prevented by adequate positive-pressure ventilation from a source of clean air, and effective safeguards against ventilation failure are provided.

NOTE: This classification usually includes locations where volatile flammable liquids or flammable gases or vapors are used, but which would become hazardous only in case of an accident or of some unusual operating condition. The quantity of flammable material that might escape in case of accident, the adequacy of ventilating equipment, the total area involved, and the record of the industry or business with respect to explosions or fires are all factors that merit consideration in determining the classification and extent of each location.

Piping without valves, checks, meters, and similar devices would not ordinarily introduce a hazardous condition even though used for flammable liquids or gases. Locations used for the storage of flammable liquids or a liquefied or compressed gases in sealed containers would not normally be considered hazardous unless also subject to other hazardous conditions.

Electrical conduits and their associated enclosures separated from process fluids by a single seal or barrier are classed as a Division 2 location if the outside of the conduit and enclosures is a nonhazardous location.

(25) **Class II locations.** Class II locations are those that are hazardous because of the presence of combustible dust. Class II locations include the following:

(a) **Class II, Division 1.** A Class II, Division 1 location is a location:

(i) In which combustible dust is or may be in suspension in the air under normal operating conditions, in quantities sufficient to produce explosives or ignitible mixtures; or

(ii) Where mechanical failure or abnormal operation of machinery or equipment might cause such explosive or ignitible mixtures to be produced, and might also provide a source of ignition through simultaneous failure of electric equipment, operation of protection devices, or from other causes; or

(iii) In which combustible dusts of an electrically conductive nature may be present.

NOTE: This classification may include areas of grain handling and processing plants, starch plants, sugar–pulverizing plants, malting plants, hay–grinding plants, coal pulverizing plants, areas where metal dusts and powders are produced or processed, and other similar locations which contain dust producing machinery and equipment (except where the equipment is dust–tight or vented to the outside). These areas would have combustible dust in the air, under normal operating conditions, in quantities sufficient to produce explosive or ignitible mixtures. Combustible dusts which are electrically nonconductive include dusts produced in the handling and processing of grain and grain products, pulverized sugar and cocoa, dried egg and milk powders, pulverized spices, starch and pastes, potato and woodflour, oil meal from beans and seed, dried hay, and other organic materials which may produce combustible dusts when processed or handled. Dusts containing magnesium or aluminum are particularly hazardous and the use of extreme caution is necessary to avoid ignition and explosion.

(b) **Class II, Division 2.** A Class II, Division 2 location is a location in which:

(i) Combustible dust will not normally be in suspension in the air in quantities sufficient to produce explosive or ignitible mixtures; and dust accumulations are normally insufficient to interfere with the normal operation of electrical equipment or other apparatus; or

(ii) Dust may be in suspension in the air as a result of infrequent malfunctioning of handling or processing equipment, and dust accumulations resulting therefrom may be ignitible by abnormal operation or failure of electrical equipment or other apparatus.

NOTE: This classification includes locations where dangerous concentrations of suspended dust would not be likely but where dust accumulations might form on or in the vicinity of electric equipment. These areas may contain equipment from which appreciable quantities of dust would escape under abnormal operating conditions or be adjacent to a Class II Division 1 location, as described above, into which an explosive or ignitible concentration of dust may be put into suspension under abnormal operating conditions.

(26) **Class III locations.** Class III locations are those that are hazardous because of the presence of easily ignitible fibers or flyings but in which such fibers or flyings are not likely to be in suspension in the air in quantities sufficient to produce ignitible mixtures. Class III locations include the following:

(a) **Class III, Division 1.** A Class III, Division 1 location is a location in which easily ignitible fibers or materials producing combustible flyings are handled, manufactured, or used.

NOTE: Such locations usually include some parts of rayon, cotton, and other textile mills; combustible fiber manufacturing and processing plants; cotton gins and cottonseed mills; flax–processing plants; clothing manufacturing plants; woodworking plants, and establishments; and industries involving similar hazardous processes or conditions.

Easily ignitible fibers and flyings include rayon, cotton (including cotton linters and cotton waste), sisal or henequen, istle, jute, hemp, tow, cocoa fiber, oakum, baled waste kapok, Spanish moss, excelsior, and other materials of similar nature.

(b) **Class III, Division 2.** A Class III, Division 2 location is a location in which easily ignitible fibers are stored or handled, except in process of manufacture.

(27) **Collector ring.** A collector ring is an assembly of slip rings for transferring electrical energy from a stationary to a rotating member.

(28) **Concealed.** Rendered inaccessible by the structure or finish of the building. Wires in concealed raceways are considered concealed, even though they may become accessible by withdrawing them. (See "accessible. (As applied to wiring methods.)")

(29) **Conductor.**

(a) **Bare.** A conductor having no covering or electrical insulation whatsoever.

(b) **Covered.** A conductor encased within material of composition or thickness that is not recognized as electrical insulation.

(c) **Insulated.** A conductor encased within material of composition and thickness that is recognized as electrical insulation.

(30) **Conduit body.** A separate portion of a conduit or tubing system that provides access through a removable cover(s) to the interior of the system at a junction of two or more sections of the system or at a terminal point of the system. Boxes such as FS and FD or larger cast or sheet metal boxes are not classified as conduit bodies.

(31) **Controller.** A device or group of devices that serves to govern, in some predetermined manner, the electric power delivered to the apparatus to which it is connected.

(32) **Cooking unit, counter–mounted.** A cooking appliance designed for mounting in or on a counter and consisting of one or more heating elements, internal wiring, and built–in or separately mountable controls. (See "oven, wall–mounted.")

(33) **Covered conductor.** See "conductor."

(34) **Cutout.** (Over 600 volts, nominal.) An assembly of a fuse support with either a fuseholder, fuse carrier, or disconnecting blade. The fuseholder or fuse carrier may include a conducting element (fuse link), or may act as the disconnecting blade by the inclusion of an nonfusible member.

(35) **Cutout box.** An enclosure designed for surface mounting and having swinging doors or covers secured directly to and telescoping with the walls of the box proper. (See "cabinet.")

(36) **Damp location.** See "location."

(37) **Dead front.** Without live parts exposed to a person on the operating side of the equipment.

(38) **Device.** A unit of an electrical system which is intended to carry but not utilize electric energy.

(39) **Dielectric heating.** Dielectric heating is the heating of a nominally insulating material due to its own dielectric losses when the materials is placed in a varying electric filed.

(40) **Disconnecting means.** A device, or group of devices, or other means by which the conductors of a circuit can be disconnected from their source of supply.

(41) **Disconnecting (or isolating) switch.** (Over 600 volts, nominal.) A mechanical switching device used for isolating a circuit or equipment from a source of power.

(42) **Dry location.** See "location."

(43) **Electric sign.** A fixed, stationary, or portable self–contained, electrically illuminated utilization equipment with words or symbols designed to convey information or attract attention.

(44) **Enclosed.** Surrounded by a case, housing, fence or walls which will prevent persons from accidentally contacting energized parts.

(45) **Enclosure.** The case or housing of apparatus, or the fence or walls surrounding an installation to prevent personnel from accidentally contacting energized parts, or to protect the equipment from physical damage.

(46) **Equipment.** A general term including material, fittings, devices, appliances, fixtures, apparatus, and the like, used as a part of, or in connection with, an electrical installation.

(47) **Equipment grounding conductor. See "grounding conductor, equipment."**

(48) **Explosion–proof apparatus.** Apparatus enclosed in a case that is capable of withstanding an explosion of a specified gas or vapor which may occur within it and of preventing the ignition of a specified gas or vapor surrounding the enclosure by sparks, flashes, or explosion of the gas or vapor within, and which operates at such an external temperature that it will not ignite a surrounding flammable atmosphere.

(49) **Exposed.** (As applied to live parts.) Capable of being inadvertently touched or approached nearer than a safe distance by a person. It is applied to parts not suitably guarded, isolated, or insulated. (See "accessible." and "concealed.")

(50) **Exposed.** (As applied to wiring methods.) On or attached to the surface or behind panels designed to allow access. (See "Accessible. (As applied to wiring methods.)")

(51) **Exposed.** (For the purpose of WAC 296–24–95615(5), Communications systems.) Where the circuit is in such a position that in case of failure of supports or insulation, contact with another circuit may result.

(52) **Externally operable.** Capable of being operated without exposing the operator to contact with live parts.

(53) **Feeder.** All circuit conductors between the service equipment, or the generator switchboard of an isolated plant, and the final branch–circuit overcurrent device.

(54) **Fitting.** An accessory such as a locknut, bushing, or other part of a wiring system that is intended primarily to perform a mechanical rather than an electrical function.

(55) **Fuse.** (Over 600 volts, nominal.) An overcurrent protective device with a circuit opening fusible part that is heated and severed by the passage of overcurrent through it. A fuse comprises all the parts that form a unit capable of performing the prescribed functions. It may or may not be the complete device necessary to connect it into an electrical circuit.

(56) **Ground.** A conducting connection, whether intentional or accidental, between an electrical circuit or equipment and the earth, or to some conducting body that serves in place of the earth.

(57) **Grounded.** Connected to earth or to some conducting body that serves in place of the earth.

(58) **Grounded, effectively.** (Over 600 volts, nominal.) Permanently connected to earth through a ground connection of sufficiently low impedance and having sufficient ampacity that ground fault current which may occur cannot build up to voltages dangerous to personnel.

(59) **Grounded conductor.** A system or circuit conductor that is intentionally grounded.

(60) **Grounding conductor.** A conductor used to connect equipment or the grounded circuit of a wiring system to a grounding electrode or electrodes.

(61) **Grounding conductor, equipment.** The conductor used to connect the noncurrent–carrying metal parts of equipment, raceways, and other enclosures to the system grounded conductor and/or the grounding electrode conductor at the service equipment or at the source of a separately derived system.

(62) **Grounding electrode conductor.** The conductor used to connect the grounding electrode to the equipment grounding conductor and/or to the grounded conductor of the circuit at the service equipment or at the source of a separately derived system.

(63) **Ground–fault circuit–interrupter.** A device whose function is to interrupt the electric circuit to the load when a fault current to ground exceeds some predetermined value that is less than that required to operate the overcurrent protective device of the supply circuit.

(64) **Guarded.** Covered, shielded, fenced, enclosed, or otherwise protected by means of suitable covers, casings, barriers, rails, screens, mats, or platforms to remove the likelihood of approach to a point of danger or contact by persons or objects.

(65) **Health care facilities.** Buildings or portions of buildings and mobile homes that contain, but are not limited to, hospitals, nursing homes, extended care facilities, clinics, and medical and dental offices, whether fixed or mobile.

(66) **Heating equipment.** For the purposes of WAC 296–24–95611(7), the term "heating equipment" includes any equipment used for heating purposes if heat is generated by induction or dielectric methods.

(67) **Hoistway.** Any shaftway, hatchway, well hole, or other vertical opening or space in which an elevator or dumbwaiter is designed to operate.

(68) **Identified.** Identified, as used in reference to a conductor or its terminal, means that such conductor or terminal can be readily recognized as grounded.

(69) **Induction heating.** Induction heating is the heating of a nominally conductive material due to its own I^2R losses when the material is placed in a varying electromagnetic field.

(70) **Insulated conductor.** See "conductor."

(71) **Interrupter switch.** (Over 600 volts, nominal.) A switch capable of making, carrying, and interrupting specified currents.

(72) **Irrigation machine.** An irrigation machine is an electrically driven or controlled machine, with one or more motors, not hand portable, and used primarily to transport and distribute water for agricultural purposes.

(73) **Isolated.** Not readily accessible to persons unless special means for access are used.

(74) **Isolated power system.** A system comprising an isolating transformer or its equivalent, a line isolation monitor, and its ungrounded circuit conductors.

(75) **Labeled.** Equipment is "labeled" if there is attached to it a label, symbol, or other identifying mark of a nationally recognized testing laboratory which, (a) makes periodic inspections of the production of such equipment, and (b) whose labeling indicates compliance with nationally recognized standards or tests to determine safe use in a specified manner.

(76) **Lighting outlet.** An outlet intended for the direct connection of a lampholder, a lighting fixture, or a pendant cord terminating in a lampholder.

(77) **Listed.** Equipment is "listed" if it is of a kind mentioned in a list which, (a) is published by a nationally recognized laboratory which makes periodic inspection of the production of such equipment, and (b) states such equipment meets nationally recognized standards or has been tested and found safe for use in a specified manner.

(78) **Location.**

(a) **Damp location.** Partially protected locations under canopies, marquees, roofed open porches, and like locations, and interior locations subject to moderate degrees of moisture, such as some basements, some barns, and some cold-storage warehouses.

(b) **Dry location.** A location not normally subject to dampness or wetness. A location classified as dry may be temporarily subject to dampness or wetness, as in the case of a building under construction.

(c) **Wet location.** Installations underground or in concrete slabs or masonry in direct contact with the earth, and locations subject to saturation with water or other liquids, such as vehicle-washing areas, and locations exposed to weather and unprotected.

(79) **Medium voltage cable.** Type MV medium voltage cable is a single or multiconductor solid dielectric insulated cable rated 2000 volts or higher.

(80) **Metal-clad cable.** Type MC cable is a factory assembly of one or more conductors, each individually insulated and enclosed in a metallic sheath of interlocking tape, or a smooth or corrugated tube.

(81) **Mineral-insulated metal-sheathed cable.** Type MI mineral-insulated metal-sheathed cable is a factory assembly of one or more conductors insulated with a highly compressed refractory mineral insulation and enclosed in a liquidtight and gaslight continuous copper sheath.

(82) **Mobile x-ray.** X-ray equipment mounted on a permanent base with wheels and/or casters for moving while completely assembled.

(83) **Nonmetallic-sheathed cable.** Nonmetallic-sheathed cable is a factory assembly of two or more insulated conductors having an outer sheath of moisture resistant, flame-retardant, nonmetallic material. Nonmetallic sheathed cable is manufactured in the following types:

(a) **Type NM.** The overall covering has a flame-retardant and moisture-resistant finish.

(b) **Type NMC.** The overall covering is flame-retardant, moisture-resistant, fungus-resistant, and corrosion-resistant.

(84) **Oil (filled) cutout.** (Over 600 volts, nominal.) A cutout in which all or part of the fuse support and its fuse link or disconnecting blade are mounted in oil with complete immersion of the contacts and the fusible portion of the conducting element (fuse link), so that arc interruption by severing of the fuse link or by opening of the contacts will occur under oil.

(85) **Open wiring on insulators.** Open wiring on insulators is an exposed wiring method using cleats, knobs, tubes, and flexible tubing for the protection and support of single insulated conductors run in or on buildings, and not concealed by the building structure.

(86) **Outlet.** A point on the wiring system at which current is taken to supply utilization equipment.

(87) **Outline lighting.** An arrangement of incandescent lamps or electric discharge tubing to outline or call attention to certain features such as the shape of a building or the decoration of a window.

(88) **Oven, wall-mounted.** An oven for cooking purposes designed for mounting in or on a wall or other surface and consisting of one or more heating elements, internal wiring, and built-in or separately mountable controls. (See "cooking unit, counter-mounted.")

(89) **Overcurrent.** Any current in excess of the rated current of equipment or the ampacity of a conductor. It may result from overload (see definition), short circuit, or ground fault. A current in excess of rating may be accommodated by certain equipment and conductors for a given set of conditions. Hence the rules for overcurrent protection are specific for particular situations.

(90) **Overload.** Operation of equipment in excess of normal, full load rating, or of a conductor in excess of rated ampacity which, when it persists for a sufficient length of time, would cause damage or dangerous overheating. A fault, such as a short circuit or ground fault, is not an overload. (See "overcurrent.")

(91) **Panelboard.** A single panel or group of panel units designed for assembly in the form of a single panel; including buses, automatic overcurrent devices, and with or without switches for the control of light, heat, or power circuits; designed to be placed in a cabinet or cutout box placed in or against a wall or partition and accessible only from the front. (See "switchboard.")

(92) **Permanently installed decorative fountains and reflection pools.** Those that are constructed in the ground, on the ground, or in a building in such a manner that the pool cannot be readily disassembled for storage and are served by electrical circuits of any nature. These units are primarily constructed for their aesthetic value and not intended for swimming or wading.

(93) **Permanently installed swimming pools, wading and therapeutic pools.** Those that are constructed in the ground, on the ground, or in a building in such a manner that the pool cannot be readily disassembled for storage whether or not served by electrical circuits of any nature.

(94) **Portable x-ray.** X-ray equipment designed to be hand-carried.

(95) **Power and control tray cable.** Type TC power and control tray cable is a factory assembly of two or more insulated conductors, with or without associated bare or covered grounding conductors under a nonmetallic sheath, approved for installation in cable trays, in raceways, or where supported by a messenger wire.

(96) **Power fuse.** (Over 600 volts, nominal.) See "Fuse."

(97) **Power-limited tray cable.** Type PLTC nonmetallic-sheathed power limited tray cable is a factory assembly of two or more insulated conductors under a nonmetallic jacket.

(98) **Power outlet.** An enclosed assembly which may include receptacles, circuit breakers, fuseholders, fused switches, buses and watt-hour meter mounting means; intended to supply and control power to mobile homes, recreational vehicles or boats, or to serve as a means for distributing power required to operate mobile or temporarily installed equipment.

(99) **Premises wiring system.** That interior and exterior wiring, including power, lighting, control, and signal circuit wiring together with all of its associated hardware, fittings, and wiring devices, both permanently and temporarily installed, which extends from the load end of the service drop, or load end of the service lateral conductors to the outlet(s). Such wiring does not include wiring internal to appliances, fixtures, motors, controllers, motor control centers, and similar equipment.

(100) **Qualified person.** One familiar with the construction and operation of the equipment and the hazards involved.

(101) **Raceway.** A channel designed expressly for holding wires, cables, or busbars, with additional functions as permitted in this subpart. Raceways may be of metal or insulating material, and the term includes rigid metal conduit, rigid nonmetallic conduit, intermediate metal conduit, liquidtight flexible metal conduit, flexible metallic tubing, flexible metal conduit, electrical metallic tubing, underfloor raceways, cellular concrete floor raceways, cellular metal floor raceways, surface raceways, wireways, and busways.

(102) **Readily accessible.** Capable of being reached quickly for operation, renewal, or inspections, without requiring those to whom ready access is requisite to climb over or remove obstacles or to resort to portable ladders, chairs, etc. (See "accessible.")

(103) **Receptacle.** A receptacle is a contact device installed at the outlet for the connection of a single attachment plug. A single receptacle is a single contact device with no other contact device on the same yoke. A multiple receptacle is a single device containing two or more receptacles.

(104) **Receptacle outlet.** An outlet where one or more receptacles are installed.

(105) **Remote-control circuit.** Any electric circuit that controls any other circuit through a relay or an equivalent device.

(106) **Sealable equipment.** Equipment enclosed in a case or cabinet that is provided with a means of sealing or locking so that live parts cannot be made accessible without opening the enclosure. The equipment may or may not be operable without opening the enclosure.

(107) **Separately derived system.** A premises wiring system whose power is derived from generator, transformer, or converter winding and has no direct electrical connection, including a solidly connected grounded circuit conductor, to supply conductors originating in another system.

(108) **Service.** The conductors and equipment for delivering energy from the electricity supply system to the wiring system of the premises served.

(109) **Service cable.** Service conductors made up in the form of a cable.

(110) **Service conductors.** The supply conductors that extend from the street main or from transformers to the service equipment of the premises supplied.

(111) **Service drop.** The overhead service conductors from the last pole or other aerial support to and including the splices, if any, connecting to the service-entrance conductors at the building or other structure.

(112) **Service-entrance cable.** Service-entrance cable is a single conductor or multiconductor assembly provided with or without an overall covering, primarily used for services and of the following types:

(a) *Type SE*, having a flame-retardant, moisture-resistant covering, but not required to have inherent protection against mechanical abuse.

(b) *Type USE*, recognized for underground use, having a moisture-resistant covering, but not required to have a flame-retardant covering or inherent protection against mechanical abuse. Single-conductor cables having an insulation specifically approved for the purpose do not require an outer covering.

(113) **Service-entrance conductors, overhead system.** The service conductors between the terminals of the service equipment and a point usually outside the building, clear of building walls, where joined by tap or splice to the servicedrap.

(114) **Service entrance conductors, underground system.** The service conductors between the terminals of the service equipment and the point of connection to the service lateral. Where service equipment is located outside the building walls, there may be no service-entrance conductors, or they may be entirely outside the building.

(115) **Service equipment.** The necessary equipment, usually consisting of a circuit breaker or switch and

fuses, and their accessories, located near the point of entrance of supply conductors to a building or other structure, or an otherwise defined area, and intended to constitute the main control and means of cutoff of the supply.

(116) **Service raceway.** The raceway that encloses the service-entrance conductors.

(117) **Shielded nonmetallic-sheathed cable.** Type SNM, shielded nonmetallic-sheathed cable is a factory assembly of two or more insulated conductors in an extruded core of moisture-resistant, flame-resistant metallic material, covered with an overlapping spiral metal tape and wire shield and jacketed with an extruded moisture-resistant, flame-resistant, oil-resistant, corrosion-resistant, fungus-resistant, and sunlight-resistant nonmetallic material.

(118) **Show window.** Any window used or designed to be used for the display of goods or advertising material, whether it is fully or partly enclosed or entirely open at the rear and whether or not it has a platform raised higher than the street floor level.

(119) **Sign.** See "electric sign."

(120) **Signaling circuit.** Any electric circuit that energizes signaling equipment.

(121) **Special permission.** The written consent of the authority having jurisdiction.

(122) **Storable swimming or wading pool.** A pool with a maximum dimension of 15 feet and a maximum wall height of 3 feet and is so constructed that it may be readily disassembled for storage and reassembled to its original integrity.

(123) **Switchboard.** A large single panel, frame, or assembly of panels which have switches, buses, instruments, overcurrent and other protective devices mounted on the face or back or both. Switchboards are generally accessible from the rear as well as from the front and are not intended to be installed in cabinets. (See "Panelboard.")

(124) **Switches.**

(a) **General-use switch.** A switch intended for use in general distribution and branch circuits. It is rated in amperes, and it is capable of interrupting its rated current at its rated voltage.

(b) **General-use snap switch.** A form of general-use switch so constructed that it can be installed in flush device boxes or on outlet box covers, or otherwise used in conjunction with wiring systems recognized by this subpart.

(c) **Isolating switch.** A switch intended for isolating an electric circuit from the source of power. It has no interrupting rating, and it is intended to be operated only after the circuit has been opened by some other means.

(d) **Motor-circuit switch.** A switch, rated in horsepower, capable of interrupting the maximum operating overload current of a motor of the same horsepower rating as the switch at the rated voltage.

(125) **Switching devices.** (Over 600 volts, nominal.) Devices designed to close and/or open one or more electric circuits. Included in this category are circuit breakers, cutouts, disconnecting (or isolating) switches, disconnecting means, interrupter switches, and oil (filled) cutouts.

(126) **Transportable x-ray.** X-ray equipment installed in a vehicle or that may readily be disassembled for transport in a vehicle.

(127) **Utilization equipment.** Utilization equipment means equipment which utilizes electric energy for mechanical, chemical, heating, lighting, or similar useful purpose.

(128) **Utilization system.** A utilization system is a system which provides electric power and light for employee workplaces, and includes the premises wiring system and utilization equipment.

(129) **Ventilated.** Provided with a means to permit circulation of air sufficient to remove an excess of heat, fumes, or vapors.

(130) **Volatile flammable liquid.** A flammable liquid having a flash point below 38 degrees C (100 degrees F) or whose temperature is above its flash point.

(131) **Voltage (of a circuit).** The greatest root-mean-square (effective) difference of potential between any two conductors of the circuit concerned.

(132) **Voltage, nominal.** A nominal value assigned to a circuit or system for the purpose of conveniently designating its voltage class (as 120/240, 480Y/277, 600, etc.). The actual voltage at which a circuit operates can vary from the nominal within a range that permits satisfactory operation of equipment.

(133) **Voltage to ground.** For grounded circuits, the voltage between the given conductor and that point or conductor of the circuit that is grounded; for undergrounded circuits, the greatest voltage between the given conductor and any other conductor of the circuit.

(134) **Watertight.** So constructed that moisture will not enter the enclosure.

(135) **Weatherproof.** So constructed or protected that exposure to the weather will not interfere with successful operation. Rainproof, raintight, or watertight equipment can fulfill the requirements for weatherproof where varying weather conditions other than wetness, such as snow, ice, dust, or temperature extremes, are not a factor.

(136) **Wet location.** See "location."

(137) **Wireways.** Wireways are sheet-metal troughs with hinged or removable covers for housing and protecting electric wires and cable and in which conductors are laid in place after the wireway has been installed as a complete system. [Statutory Authority: RCW 49.17-.040 and 49.17.050. 82-08-026 (Order 82-10), § 296-24-95601, filed 3/30/82.]

WAC 296-24-95603 Electric utilization systems. (1) **Scope.**

(a) **Covered.** The provisions of WAC 296-24-95603 through 296-24-95617 cover electrical installations and utilization equipment installed or used within or on buildings, structures, and other premises including:

(i) Yards;

(ii) Carnivals;

(iii) Parking and other lots;

(iv) Mobile homes;

(v) Recreational vehicles;

(vi) Industrial substations 750 volts and over, chapter 296-44 WAC, shall apply;

(vii) Conductors that connect the installations to a supply of electricity; and

(viii) Other outside conductors on the premises.

(b) **Not covered.** The provisions of WAC 296-24-95603 through 296-24-95617 do not cover:

(i) Installations in ships, watercraft, railway rolling stock, aircraft, or automotive vehicles other than mobile homes and recreational vehicles.

(ii) Installations underground in mines.

(iii) Installations of railways for generation, transformation, transmission, or distribution of power used exclusively for operation of rolling stock or installations used exclusively for signaling and communication purposes.

(iv) Installations of communication equipment under the exclusive control of communication utilities, located outdoors or in building spaces used exclusively for such installations.

(v) Installations under the exclusive control of electric utilities for the purpose of communication or metering; or for the generation, control, transformation, transmission, and distribution of electric energy located in buildings used exclusively by utilities for such purposes or located outdoors on property owned or leased by the utility or on public highways, streets, roads, etc., or outdoors by established rights on private property.

(2) **Extent of application.**

(a) The requirements contained in the sections listed below shall apply to all electrical installations and utilization equipment, regardless of when they were designed or installed:

Sections:

WAC 296-24-95605(2)	Examination, installation, and use of equipment.
" " (3)	Splices.
" " (4)	Arcing parts.
" " (5)	Marking.
" " (6)	Identification of disconnecting means.
" " (7)(b)	Guarding of live parts.
WAC 296-24-95607(5)(a)(i)	Protection of conductors and equipment.
" " (5)(a)(iv)	Location in or on premises.
" " (5)(a)(v)	Arcing or suddenly moving parts.
" " (6)(a)(ii)	2-Wire DC systems to be grounded.
" " (6)(a)(iii) and (iv)	AC Systems to be grounded.
" " (6)(a)(v)	AC Systems 50 to 1000 volts not required to be grounded.
" " (6)(c)	Grounding connections.
" " (6)(d)	Grounding path.
WAC 296-24-95607(6)(e)(iv)(A) through (D)	Fixed equipment required to be grounded.
" " (6)(e)(v)	Grounding of equipment connected by cord and plug.
" " (6)(e)(vi)	Grounding or nonelectrical equipment.
" " (6)(f)(i)	Methods of grounding fixed equipment.

Sections:

WAC 296-24-95609(7)(a)(i) and (ii)	Flexible cords and cables, uses.
" " (7)(a)(iii)	Flexible cords and cables prohibited.
" " (7)(b)(ii)	Flexible cords and cables, splices.
" " (7)(b)(iii)	Pull at joints and terminals of flexible cords and cables.
WAC 296-24-95613	Hazardous (classified) locations.

(b) Every electric utilization system and all utilization equipment installed after March 15, 1972, and every major replacement, modification, repair, or rehabilitation, after March 15, 1972, of any part of any electric utilization system or utilization equipment installed before March 15, 1972, shall comply with the provisions of WAC 296-24-956 through 296-24-95617.

NOTE: "Major replacements, modifications, repairs, or rehabilitations" include work similar to that involved when a new building or facility is built, a new wing is added, or an entire floor is renovated.

(c) The following provisions apply to electric utilization systems and utilization equipment installed after (effective date of this section):

WAC 296-24-95605(8)(d)(i) and (ii)	Entrance and access to work space (over 600 volts).
WAC 296-24-95607(5)(a)(vi)(B)	Circuit breakers operated vertically.
" " (5)(a)(vi)(C)	Circuit breakers used as switches.
" " (6)(g)(ii)	Grounding of systems of 1000 volts or more supplying portable or mobile equipment.
WAC 296-24-95611(3)(b)	Warning signs for elevators and escalators.
" " (9)	Electrically controlled irrigation machines.
" " (10)(e)	Ground-fault circuit interrupters for fountains.
WAC 296-24-95615(1)(a)(ii)	Physical protection of conductors over 600 volts.
" " (3)(b)	Marking of Class 2 and Class 3 power supplies.
" " (4)	Fire protective signaling circuits.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-08-026 (Order 82-10), § 296-24-95603, filed 3/30/82.]

WAC 296-24-95605 General requirements. (1) **Approval.** The conductors and equipment required or permitted by this section shall be acceptable only if approved.

(2) **Examination, installation, and use of equipment.**

(a) **Examination.** Electrical equipment shall be free from recognized hazards that are likely to cause death or serious physical harm to employees. Safety of equipment shall be determined using the following considerations:

(i) Suitability for installation and use in conformity with the provisions of this subpart. Suitability of equipment for an identified purpose may be evidenced by listing or labeling for that identified purpose.

(ii) Mechanical strength and durability, including, for parts designed to enclose and protect other equipment, the adequacy of the protection thus provided.

(iii) Electrical insulation.

(iv) Heating effects under conditions of use.

(v) Arcing effects.

(vi) Classification by type, size, voltage, current capacity, specific use.

(vii) Other factors which contribute to the practical safeguarding of employees using or likely to come in contact with the equipment.

(b) **Installation and use.** Listed or labeled equipment shall be used or installed in accordance with any instructions included in the listing or labeling.

(3) **Splices.** Conductors shall be spliced or joined with splicing devices suitable for the use or by brazing, welding, or soldering with a fusible metal or alloy. Soldered splices shall first be so spliced or joined as to be mechanically and electrically secure without solder and then soldered. All splices and joints and the free ends of conductors shall be covered with an insulation equivalent to that of the conductors or with an insulating device suitable for the purpose.

(4) **Arcing parts.** Parts of electric equipment which in ordinary operation produce arcs, sparks, flames, or molten metal shall be enclosed or separated and isolated from all combustible material.

(5) **Marking.** Electrical equipment may not be used unless the manufacturer's name, trademark, or other descriptive marking by which the organization responsible for the product may be identified is placed on the equipment. Other markings shall be provided giving voltage, current, wattage, or other ratings as necessary. The marking shall be of sufficient durability to withstand the environment involved.

(6) **Identification of disconnecting means and circuits.** Each disconnecting means required by this subpart for motors and appliances shall be legibly marked to indicate its purpose, unless located and arranged so the purpose is evident. Each service, feeder, and branch circuit, at its disconnecting means or overcurrent device, shall be legibly marked to indicate its purpose, unless located and arranged so the purpose is evident. These markings shall be of sufficient durability to withstand the environment involved.

(7) **600 volts, nominal, or less.**

(a) **Working space about electric equipment.** Sufficient access and working space shall be provided and maintained about all electric equipment to permit ready and safe operation and maintenance of such equipment.

(i) **Working clearances.** Except as required or permitted elsewhere, the dimension of the working space in the direction of access to live parts operating at 600 volts or less and likely to require examination, adjustment, servicing, or maintenance while alive may not be less than indicated in Table S-1. In addition to the dimensions shown in Table S-1, workspace may not be less than 30 inches wide in front of the electric equipment. Distances shall be measured from the live parts if they are exposed, or from the enclosure front or opening if the live parts are enclosed. Concrete, brick, or tile walls are considered to be grounded. Working space is not required in back of assemblies such as dead-front switchboards or motor control centers where there are no renewable or adjustable parts such as fuses or switches on the back and where all connections are accessible from locations other than the back.

Table S-1—*Working clearances*

Nominal voltage to ground	Minimum clear distance for condition[2] (ft)		
	(a)	*(b)*	*(c)*
0–150	[1]3	[1]3	3
151–600	[1]3	3 1/2	4

[1]Minimum clear distances may be 2 feet 6 inches for installations built prior to effective date of this section.

[2]Conditions *(a)*, *(b)*, *(c)*, are as follows: *(a)* Exposed live parts on one side and no live or grounded parts on the other side of the working space, or exposed live parts on both sides effectively guarded by suitable wood or other insulating material. Insulated wire or insulated busbars operating at not over 300 volts are not considered live parts. *(b)* Exposed live parts on one side and grounded parts on the other side *(c)* Exposed live parts on both sides of the workspace (not guarded as provided in Condition *(a)*) with the operator between.

(ii) **Clear spaces.** Working space required by this subpart may not be used for storage. When normally enclosed live parts are exposed for inspection or servicing, the working space, if in a passageway or general open space, shall be suitably guarded.

(iii) **Access and entrance to working space.** At least one entrance of sufficient area shall be provided to give access to the working space about electric equipment.

(iv) **Front working space.** Where there are live parts normally exposed on the front of switchboards or motor control centers, the working space in front of such equipment may not be less than 3 feet.

(v) **Illumination.** Illumination shall be provided for all working spaces about service equipment, switchboards, panelboards, and motor control centers installed indoors.

(vi) **Headroom.** The minimum headroom of working spaces about service equipment, switchboards, panelboards, or motor control centers shall be 6 feet 3 inches.

NOTE: As used in this section, a motor control center is an assembly of one or more enclosed sections having a common power bus and principally containing motor control units.

(b) **Guarding of live parts.**

(i) Except as required or permitted elsewhere in this section, live parts of electric equipment operating at 50 volts or more shall be guarded against accidental contact

by approved cabinets or other forms of approved enclosures, or by any of the following means:

(A) By location in a room, vault, or similar enclosure that is accessible only to qualified persons.

(B) By suitable permanent, substantial partitions or screens so arranged that only qualified persons will have access to the space within reach of the live parts. Any openings in such partitions or screens shall be so sized and located that persons are not likely to come into accidental contact with live parts or to bring conducting objects into contact with them.

(C) By location on a suitable balcony, gallery, or platform so elevated and arranged as to exclude unqualified persons.

(D) By elevation of 8 feet or more above the floor or other working surface.

(ii) In locations where electric equipment would be exposed to physical damage, enclosures or guards shall be so arranged and of such strength as to prevent such damage.

(iii) Entrances to rooms and other guarded locations containing exposed live parts shall be marked with conspicuous warning signs forbidding unqualified persons to enter.

(8) **Over 600 volts, nominal.**

(a) **General.** Conductors and equipment used on circuits exceeding 600 volts, nominal, shall comply with all applicable provisions of subsections (1) through (7) of this section and with the following provisions which supplement or modify those requirements. The provisions of (b), (c) and (d) of this subsection do not apply to equipment on the supply side of the service conductors.

(b) **Enclosure for electrical installations.** Electrical installations in a vault, room, closet or in an area surrounded by a wall, screen, or fence, access to which is controlled by lock and key or other approved means, are considered to be accessible to qualified persons only. A wall, screen, or fence less than 8 feet in height is not considered to prevent access unless it has other features that provide a degree of isolation equivalent to an 8 foot fence. The entrances to all buildings, rooms, or enclosures containing exposed live parts or exposed conductors operating at over 600 volts, nominal, shall be kept locked or shall be under the observation of a qualified person at all times.

(i) **Installations accessible to qualified persons only.** Electrical installations having exposed live parts shall be accessible to qualified persons only and shall comply with the applicable provisions of (c) of this subsection.

(ii) **Installations accessible to unqualified persons.** Electrical installations that are open to unqualified persons shall be made with metal-enclosed equipment or shall be enclosed in a vault or in an area, access to which is controlled by a lock. If metal-enclosed equipment is installed so that the bottom of the enclosure is less than 8 feet above the floor, the door or cover shall be kept locked. Metal-enclosed switchgear, unit substations, transformers, pull boxes, connection boxes, and other similar associated equipment shall be marked with appropriate caution signs. If equipment is exposed to physical damage from vehicular traffic, suitable guards shall be provided to prevent such damage. Ventilating or similar openings in metal-enclosed equipment shall be designed so that foreign objects inserted through these openings will be deflected from energized parts.

(c) **Workspace about equipment.** Sufficient space shall be provided and maintained about electric equipment to permit ready and safe operation and maintenance of such equipment. Where energized parts are exposed, the minimum clear workspace may not be less than 6 feet 6 inches high (measured vertically from the floor or platform), or less than 3 feet wide (measured parallel to the equipment). The depth shall be as required in Table S-2. The workspace shall be adequate to permit at least a 90-degree opening of doors or hinged panels.

(i) **Working space.** The minimum clear working space in front of electric equipment such as switchboards, control panels, switches, circuit breakers, motor controllers, relays, and similar equipment may not be less than specified in Table S-2 unless otherwise specified in this subpart. Distances shall be measured from the live parts if they are exposed, or from the enclosure front or opening if the live parts are enclosed. However, working space is not required in back of equipment such as deadfront switchboards or control assemblies where there are no renewable or adjustable parts (such as fuses or switches) on the back and where all connections are accessible from locations other than the back. Where rear access is required to work on deenergized parts on the back of enclosed equipment, a minimum working space of 30 inches horizontally shall be provided.

Table S-2—*Minimum Depth of Clear Working Space in Front of Electric Equipment*

Nominal voltage to ground	Conditions[2](ft)		
	(a)	*(b)*	*(c)*
601 to 2,500	3	4	5
2,501 to 9,000	4	5	6
9,001 to 25,000	5	6	9
25,001 to 75kV[1]	6	8	10
Above 75kV[1]	8	10	12

[1]Minimum depth of clear working space in front of electric equipment with a nominal voltage to ground above 25,000 volts may be the same as for 25,000 volts under Conditions *(a)*, *(b)* and *(c)* for installations built prior to April 16, 1981. (2) Conditions *(a)*, *(b)* and *(c)* are as follows: *(a)* Exposed live parts on one side and no live or grounded parts on the other side of the working space, or exposed live parts on both sides effectively guarded by suitable wood or other insulating materials. Insulated wire or insulated busbars operating at not over 300 volts are not considered live parts. *(b)* Exposed live parts on one side and grounded parts on the other side. Concrete, brick, or tile walls will be considered as grounded surfaces. *(c)* Exposed live parts on both sides of the workspace not guarded as provided in Condition (a) with the operator between.

(ii) **Illumination.** Adequate illumination shall be provided for all working spaces about electric equipment. The lighting outlets shall be so arranged that persons changing lamps or making repairs on the lighting system will not be endangered by live parts or other equipment. The points of control shall be so located that persons are not likely to come in contact with any live part or moving part of the equipment while turning on the lights.

(iii) **Elevation of unguarded live parts.** Unguarded live parts above working space shall be maintained at elevations not less than specified in Table S-3.

Table S-3—*Elevation of Unguarded Energized Parts Above Working Space*

Nominal voltage between phases	Minimum elevation
601 to 7,500	*8 feet 6 inches.
7,501 to 35,000	9 feet.
Over 35kV	9 feet + 0.37 inches per kV above 35kV.

*Note.—Minimum elevation may be 8 feet 0 inches for installations if the nominal voltage between phases is in the range of 601–6600 volts.

(d) **Entrance and access to workspace.** (See WAC 296-24-95603(2)(c).)

(i) At least one entrance not less than 24 inches wide and 6 feet 6 inches high shall be provided to give access to the working space about electric equipment. On switchboard and control panels exceeding 48 inches in width, there shall be one entrance at each end of such board where practicable. Where bare energized parts at any voltage or insulated energized parts above 600 volts are located adjacent to such entrance, they shall be suitably guarded.

(ii) Permanent ladders or stairways shall be provided to give safe access to the working space around electric equipment installed on platforms, balconies, mezzanine floors, or in attic or roof rooms or spaces. [Statutory Authority: RCW 49.17.040 and 49.17.050. 82-08-026 (Order 82-10), § 296-24-95605, filed 3/30/82.]

WAC 296-24-95607 Wiring design and protection. (1) **Use and identification of grounded and grounding conductors.**

(a) **Identification of conductors.** A conductor used as a grounded conductor shall be identifiable and distinguishable from all other conductors. A conductor used as an equipment grounding conductor shall be identifiable and distinguishable from all other conductors.

(b) **Polarity of connections.** No grounded conductor may be attached to any terminal or lead so as to reverse designated polarity.

(c) **Use of grounding terminals and devices.** A grounding terminal or grounding-type device on a receptacle, cord connector, or attachment plug may not be used for purposes other than grounding.

(2) **Branch circuits.**

(a) **Ground-fault protection for personnel on construction sites.** The employer shall use either ground-fault circuit interrupters as specified in item (a)(i) of this subsection or an assured equipment grounding conductor program as specified in item (a)(ii) of this subsection, to protect employees on construction sites. These requirements are in addition to any other requirements for equipment grounding conductors.

(i) **Ground-fault circuit interrupters.** All 120-volt, single-phase, 15-ampere and 20-ampere receptacle outlets on construction sites, which are not a part of the permanent wiring of the building or structure and which are in use by employees, shall have approved ground-fault circuit interrupters for personnel protection. Receptacles on a two-wire, single-phase portable or vehicle-mounted generator rated not more than 5 kW, where the circuit conductors of the generator are insulated from the generator frame and all other grounded surfaces, need not be protected with ground-fault circuit interrupters.

(ii) **Assured equipment grounding conductor program.** The employer shall establish and implement an assured equipment grounding conductor program on construction sites covering all cord sets, receptacles which are not a part of the permanent wiring of the building or structure, and equipment connected by cord and plug, which are available for use or used by employees. This program shall comply with the following minimum requirements:

(A) A written description of the program, including the specific procedures adopted by the employer, shall be available at the jobsite for inspection and copying by the director and any affected employee.

(B) The employer shall designate one or more competent persons (as defined in WAC 296-155-012) to implement the program.

(C) Each cord set, attachment cap, plug and receptacle of cord sets, and any equipment connected by cord and plug, except cord sets and receptacles which are fixed and not exposed to damage, shall be visually inspected before each day's use for external defects, such as deformed or missing pins or insulation damage, and for indication of possible internal damage. Equipment found damaged or defective may not be used until repaired.

(D) The following tests shall be performed on all cord sets, receptacles which are not a part of the permanent wiring of the building or structure, and cord-connected and plug-connected equipment required to be grounded:

(I) All equipment grounding conductors shall be tested for continuity and shall be electrically continuous.

(II) Each receptacle and attachment cap or plug shall be tested for correct attachment of the equipment grounding conductor. The equipment grounding conductor shall be connected to its proper terminal.

(E) All required tests shall be performed:

(I) Before first use;

(II) Before equipment is returned to service following any repairs;

(III) Before equipment is used after any incident which can be reasonably suspected to have caused damage (for example, when a cord set is run over); and

(IV) At intervals not to exceed 3 months, except that cord sets and receptacles which are fixed and not exposed to damage shall be tested at intervals not exceeding 6 months.

(F) The employer may not make available or permit the use by employees of any equipment which has not met the requirements of this item (a)(ii) of this subsection.

(G) Tests performed as required in this section shall be recorded. This test record shall identify each receptacle, cord set, and cord–connected and plug–connected equipment that passed the test, and shall indicate the last date it was tested or the interval for which it was tested. This record shall be kept by means of logs, color coding, or other effective means, and shall be maintained until replaced by a more current record. The record shall be made available on the jobsite for inspection by the director and any affected employee.

(b) **Outlet devices.** Outlet devices shall have an ampere rating not less than the load to be served.

(3) **Outside conductors, 600 volts, nominal, or less.** Subdivisions (a), (b), (c) and (d) of this subsection apply to branch circuit, feeder, and service conductors rated 600 volts, nominal, or less and run outdoors as open conductors. Subdivision (e) of this subsection applies to lamps installed under such conductors.

(a) **Conductors on poles.** Conductors supported on poles shall provide a horizontal climbing space not less than the following:

(i) Power conductors below communication conductors—30 inches.

(ii) Power conductors alone or above communication conductors: 300 volts or less—24 inches; more than 300 volts—30 inches.

(iii) Communication conductors below power conductors with power conductors 300 volts or less—24 inches; more than 300 volts—30 inches.

(b) **Clearance from ground.** Open conductors shall conform to the following minimum clearances:

(i) 10 feet—above finished grade, sidewalks, or from any platform or projection from which they might be reached.

(ii) 12 feet—over areas subject to vehicular traffic other than truck traffic.

(iii) 15 feet—over areas other than those specified in item (b)(iv) of this subsection that are subject to truck traffic.

(iv) 18 feet—over public streets, alleys, roads, and driveways.

(c) **Clearance from building openings.** Conductors shall have a clearance of at least 3 feet from windows, doors, porches, fire escapes, or similar locations. Conductors run above the top level of a window are considered to be out of reach from that window and, therefore, do not have to be 3 feet away.

(d) **Clearance over roofs.** Conductors shall have a clearance of not less than 8 feet from the highest point of roofs over which they pass, except that:

(i) Where the voltage between conductors is 300 volts or less and the roof has a slope of not less than 4 inches in 12, the clearance from the roofs shall be at least 3 feet; or

(ii) Where the voltage between conductors is 300 volts or less and the conductors do not pass over more than 4 feet of the overhang portion of the roof and they are terminated at a through–the–roof raceway or approved support, the clearance from the roofs shall be at least 18 inches.

(e) **Location of outdoor lamps.** Lamps for outdoor lighting shall be located below all live conductors, transformers, or other electric equipment, unless such equipment is controlled by a disconnecting means that can be locked in the open position or unless adequate clearances or other safeguards are provided for relamping operations.

(4) **Services.**

(a) **Disconnecting means.**

(i) **General.** Means shall be provided to disconnect all conductors in a building or other structure from the service–entrance conductors. The disconnecting means shall plainly indicate whether it is in the open or closed position and shall be installed at a readily accessible location nearest the point of entrance of the service–entrance conductors.

(ii) **Simultaneous opening of poles.** Each service disconnecting means shall simultaneously disconnect all ungrounded conductors.

(b) **Services over 600 volts, nominal.** The following additional requirements apply to services over 600 volts, nominal.

(i) **Guarding.** Service–entrance conductors installed as open wires shall be guarded to make them accessible only to qualified persons.

(ii) **Warning signs.** Signs warning of high voltage shall be posted where other than qualified employees might come in contact with live parts.

(5) **Overcurrent protection.**

(a) **600 volts, nominal, or less.** The following requirements apply to overcurrent protection of circuits rated 600 volts, nominal, or less.

(i) **Protection of conductors and equipment.** Conductors and equipment shall be protected from overcurrent in accordance with their ability to safely conduct current.

(ii) **Grounded conductors.** Except for motor running overload protection, overcurrent devices may not interrupt the continuity of the grounded conductor unless all conductors of the circuit are opened simultaneously.

(iii) **Disconnection of fuses and thermal cutouts.** Except for service fuses, all cartridge fuses which are accessible to other than qualified persons and all fuses and thermal cutouts on circuits over 150 volts to ground shall be provided with disconnecting means. This disconnecting means shall be installed so that the fuse or thermal cutout can be disconnected from its supply without disrupting service to equipment and circuits unrelated to those protected by the overcurrent device.

(iv) **Location in or on premises.** Overcurrent devices shall be readily accessible to each employee or authorized building management personnel. These overcurrent devices may not be located where they will be exposed to

physical damage nor in the vicinity of easily ignitible material.

(v) **Arcing or suddenly moving parts.** Fuses and circuit breakers shall be so located or shielded that employees will not be burned or otherwise injured by their operation.

(vi) **Circuit breakers.**

(A) Circuit breakers shall clearly indicate whether they are in the open (off) or closed (on) position.

(B) Where circuit breaker handles on switchboards are operated vertically rather than horizontally or rotationally, the up position of the handle shall be the closed (on) position. (See WAC 296-24-95603(2)(c).)

(C) If used as switches in 120-volt, fluorescent lighting circuits, circuit breakers shall be approved for the purpose and marked "SWD." (See WAC 296-24-95603(2)(c).)

(b) **Over 600 volts, nominal.** Feeders and branch circuits over 600 volts, nominal, shall have short-circuit protection.

(6) **Grounding.** Subdivisions (a) through (g) of this subsection contain grounding requirements for systems, circuits, and equipment.

(a) **Systems to be grounded.** The following systems which supply premises wiring shall be grounded:

(i) All 3-wire DC systems shall have their neutral conductor grounded.

(ii) Two-wire DC systems operating at over 50 volts through 300 volts between conductors shall be grounded unless:

(A) They supply only industrial equipment in limited areas and are equipped with a ground detector; or

(B) They are rectifier-derived from an AC system complying with items (a)(iii), (a)(iv), and (a)(v) of this subsection; or

(C) They are fire-protective signaling circuits having a maximum current of 0.030 amperes.

(iii) AC circuits of less than 50 volts shall be grounded if they are installed as overhead conductors outside of buildings or if they are supplied by transformers and the transformer primary supply system is ungrounded or exceeds 150 volts to ground.

(iv) AC systems of 50 volts to 1000 volts shall be grounded under any of the following conditions, unless exempted by item (a)(v) of this subsection:

(A) If the system can be so grounded that the maximum voltage to ground on the ungrounded conductors does not exceed 150 volts;

(B) If the system is nominally rated 480Y/277 volt, 3-phase, 4-wire in which the neutral is used as a circuit conductor;

(C) If the system is nominally rated 240/120 volt, 3-phase, 4-wire in which the midpoint of one phase is used as a circuit conductor; or

(D) If a service conductor is uninsulated.

(v) AC systems of 50 volts to 1000 volts are not required to be grounded under any of the following conditions:

(A) If the system is used exclusively to supply industrial electric furnaces for melting, refining, tempering, and the like.

(B) If the system is separately derived and is used exclusively for rectifiers supplying only adjustable speed industrial drives.

(C) If the system is separately derived and is supplied by a transformer that has a primary voltage rating less than 1000 volts, provided all of the following conditions are met:

(I) The system is used exclusively for control circuits;

(II) The conditions of maintenance and supervision assure that only qualified persons will service the installation;

(III) Continuity of control power is required; and

(IV) Ground detectors are installed on the control system.

(D) If the system is an isolated power system that supplies circuits in health care facilities.

(b) **Conductors to be grounded.** For AC premises wiring systems the identified conductor shall be grounded.

(c) **Grounding connections.**

(i) For a grounded system, a grounding electrode conductor shall be used to connect both the equipment grounding conductor and the grounded circuit conductor to the grounding electrode. Both the equipment grounding conductor and the grounding electrode conductor shall be connected to the grounded circuit conductor on the supply side of the service disconnecting means, or on the supply side of the system disconnecting means or overcurrent devices if the system is separately derived.

(ii) For an ungrounded service-supplied system, the equipment grounding conductor shall be connected to the grounding electrode conductor at the service equipment. For an ungrounded separately derived system, the equipment grounding conductor shall be connected to the grounding electrode conductor at, or ahead of, the system disconnecting means or overcurrent devices.

(iii) On extensions of existing branch circuits which do not have an equipment grounding conductor, grounding-type receptacles may be grounded to a grounded cold water pipe near the equipment.

(d) **Grounding path.** The path to ground from circuits, equipment, and enclosures shall be permanent and continuous.

(e) **Supports, enclosures, and equipment to be grounded.**

(i) **Supports and enclosures for conductors.** Metal cable trays, metal raceways, and metal enclosures for conductors shall be grounded, except that:

(A) Metal enclosures such as sleeves that are used to protect cable assemblies from physical damage need not be grounded; or

(B) Metal enclosures for conductors added to existing installations of open wire, knob-and-tube wiring, and nonmetallic-sheathed cable need not be grounded if all of the following conditions are met:

(I) Runs are less than 25 feet;

(II) Enclosures are free from probable contact with ground, grounded metal, metal laths, or other conductive materials; and

(III) Enclosures are guarded against employee contact.

(ii) **Service equipment enclosures.** Metal enclosures for service equipment shall be grounded.

(iii) **Frames of ranges and clothes dryers.** Frames of electric ranges, wall-mounted ovens, counter-mounted cooking units, clothes dryers, and metal outlet or junction boxes which are part of the circuit for these appliances shall be grounded.

(iv) **Fixed equipment.** Exposed noncurrent-carrying metal parts of fixed equipment which may become energized shall be grounded under any of the following conditions:

(A) If within 8 feet vertically or 5 feet horizontally of ground or grounded metal objects and subject to employee contact.

(B) If located in a wet or damp location and not isolated.

(C) If in electrical contact with metal.

(D) If in a hazardous (classified) location.

(E) If supplied by a metal-clad, metal-sheathed, or grounded metal raceway wiring method.

(F) If equipment operates with any terminal at over 150 volts to the ground; however, the following need not be grounded:

(I) Enclosures for switches or circuit breakers used for other than service equipment and accessible to qualified persons only;

(II) Metal frames of electrically heated appliances which are permanently and effectively insulated from ground; and

(III) The cases of distribution apparatus such as transformers and capacitors mounted on wooden poles at a height exceeding 8 feet above ground or grade level.

(v) **Equipment connected by cord and plug.** Under any of the conditions described in subitems (e)(v)(A) through (e)(v)(C) of this subsection, exposed noncurrent-carrying metal parts of cord-connected and plug-connected equipment which may become energized shall be grounded.

(A) If in hazardous (classified) locations (see WAC 296-24-95613).

(B) If operated at over 150 volts to ground, except for guarded motors and metal frames of electrically heated appliances if the appliance frames are permanently and effectively insulated from ground.

(C) If the equipment is of the following types:

(I) Refrigerators, freezers, and air conditioners;

(II) Clothes-washing, clothes-drying and dishwashing machines, sump pumps, and electrical aquarium equipment;

(III) Hand-held motor-operated tools;

(IV) Motor-operated appliances of the following types: Hedge clippers, lawn mowers, snow blowers, and wet scrubbers;

(V) Cord-connected and plug-connected appliances used in damp or wet locations or by employees standing on the ground or on metal floors or working inside of metal tanks or boilers;

(VI) Portable and mobile x-ray and associated equipment;

(VII) Tools likely to be used in wet and conductive locations; and

(VIII) Portable hand lamps. Tools likely to be used in wet and conductive locations need not be grounded if supplied through an isolating transformer with an ungrounded secondary of not over 50 volts. Listed or labeled portable tools and appliances protected by an approved system of double insulation, or its equivalent, need not be grounded. If such a system is employed, the equipment shall be distinctively marked to indicate that the tool or appliance utilizes an approved system of double insulation.

(vi) **Nonelectrical equipment.** The metal parts of the following nonelectrical equipment shall be grounded: Frames and tracks of electrically operated cranes; frames of nonelectrically driven elevator cars to which electric conductors are attached; hand operated metal shifting ropes or cables of electric elevators, and metal partitions, grill work, and similar metal enclosures around equipment of over 750 volts between conductors.

(f) **Methods of grounding fixed equipment.**

(i) Noncurrent-carrying metal parts of fixed equipment, if required to be grounded by this section, shall be grounded by an equipment grounding conductor which is contained within the same raceway, cable, or cord, or runs with or encloses the circuit conductors. For DC circuits only, the equipment grounding conductor may be run separately from the circuit conductors.

(ii) Electric equipment is considered to be effectively grounded if it is secured to, and in electrical contact with, a metal rack or structure that is provided for its support and the metal rack or structure is grounded by the method specified for the noncurrent-carrying metal parts of fixed equipment in item (f)(i) of this subsection. For installations made before (eff. date) only, electric equipment is also considered to be effectively grounded if it is secured to, and in metallic contact with, the grounded structural metal frame of a building. Metal car frames supported by metal hoisting cables attached to or running over metal sheaves or drums of grounded elevator machines are also considered to be effectively grounded.

(g) **Grounding of systems and circuits of 1000 volts and over (high voltage.).**

(i) **General.** If high voltage systems are grounded, they shall comply with all applicable provisions of subdivisions (a) through (f) of this subsection as supplemented and modified by the subdivision (g) of this subsection.

(ii) **Grounding of systems supplying portable or mobile equipment.** (See WAC 296-24-95603(2)(c).) Systems supplying portable or mobile high voltage equipment, other than substations installed on a temporary basis, shall comply with the following:

(A) Portable and mobile high voltage equipment shall be supplied from a system having its neutral grounded through an impedance. If a delta-connected high voltage system is used to supply the equipment, a system neutral shall be derived.

(B) Exposed noncurrent-carrying metal parts of portable and mobile equipment shall be connected by an equipment grounding conductor to the point at which the system neutral impedance is grounded.

(C) Ground–fault detection and relaying shall be provided to automatically de–energize any high voltage system component which has developed a ground fault. The continuity of the equipment grounding conductor shall be continuously monitored so as to de–energize automatically the high voltage feeder to the portable equipment upon loss of continuity of the equipment grounding conductor.

(D) The grounding electrode to which the portable or mobile equipment system neutral impedance is connected shall be isolated from and separated in the ground by at least 20 feet from any other system or equipment grounding electrode, and there shall be no direct connection between the grounding electrodes, such as buried pipe, fence, etc.

(iii) **Grounding of equipment.** All noncurrent–carrying metal parts of portable equipment and fixed equipment including their associated fences, housings, enclosures, and supporting structures shall be grounded. However, equipment which is guarded by location and isolated from ground need not be grounded. Additionally, pole–mounted distribution apparatus at a height exceeding 8 feet above ground or grade level need not be grounded. [Statutory Authority: RCW 49.17.040 and 49.17.050. 82–08–026 (Order 82–10), § 296–24–95607, filed 3/30/82.]

WAC 296–24–95609 Wiring methods, components, and equipment for general use. (1) **Wiring methods.** The provisions of this section do not apply to the conductors that are an integral part of factory–assembled equipment.

(a) **General requirements.**

(i) **Electrical continuity of metal raceways and enclosures.** Metal raceways, cable armor, and other metal enclosures for conductors shall be metallically joined together into a continuous electric conductor and shall be so connected to all boxes, fittings, and cabinets as to provide effective electrical continuity.

(ii) **Wiring in ducts.** No wiring systems of any type shall be installed in ducts used to transport dust, loose stock or flammable vapors. No wiring system of any type may be installed in any duct used for vapor removal or for ventilation of commercial–type cooking equipment, or in any shaft containing only such ducts.

(b) **Temporary wiring.** Temporary electrical power and lighting wiring methods may be of a class less than would be required for a permanent installation. Except as specifically modified in this paragraph, all other requirements of this subpart for permanent wiring shall apply to temporary wiring installations.

(i) **Uses permitted, 600 volts, nominal or less.** Temporary electrical power and lighting installations 600 volts, nominal, or less may be used only:

(A) During and for remodeling, maintenance, repair, or demolition of buildings, structures, or equipment, and similar activities;

(B) For experimental or development work; and

(C) For a period not to exceed 90 days for Christmas decorative lighting, carnivals, and similar purposes.

(ii) **Uses permitted, over 600 volts, nominal.** Temporary wiring over 600 volts, nominal, may be used only during periods of tests, experiments, or emergencies.

(iii) **General requirements for temporary wiring.**

(A) Feeders shall originate in an approved distribution center. The conductors shall be run as multiconductor cord or cable assemblies, or, where not subject to physical damage, they may be run as open conductors on insulators not more than 10 feet apart.

(B) Branch circuits shall originate in an approved power outlet or panelboard. Conductors shall be multiconductor cord or cable assemblies or open conductors. If run as open conductors they shall be fastened at ceiling height every 10 feet. No branch–circuit conductor may be laid on the floor. Each branch circuit that supplies receptacles or fixed equipment shall contain a separate equipment grounding conductor if run as open conductors.

(C) Receptacles shall be of the grounding type. Unless installed in a complete metallic raceway, each branch circuit shall contain a separate equipment grounding conductor and all receptacles shall be electrically connected to the grounding conductor.

(D) No bare conductors nor earth returns may be used for the wiring of any temporary circuit.

(E) Suitable disconnecting switches or plug connectors shall be installed to permit the disconnection of all ungrounded conductors of each temporary circuit.

(F) Lamps for general illumination shall be protected from accidental contact or breakage. Protection shall be provided by elevation of at least 7 feet from normal working surface or by a suitable fixture lampholder with a guard.

(G) Flexible cords and cables shall be protected from accidental damage. Sharp corners and projections shall be avoided. Where passing through doorways or other pinch points, flexible cords and cables shall be provided with protection to avoid damage.

(c) **Cable trays.**

(i) **Uses permitted.**

(A) Only the following may be installed in cable tray systems:

(I) Mineral–insulated metal–sheathed cable (Type MI);

(II) Armored cable (Type AC);

(III) Metal–clad cable (Type MC);

(IV) Power–limited tray cable (Type PLTC);

(V) Nonmetallic–sheathed cable (Type NM or NMC);

(VI) Shielded nonmetallic–sheathed cable (Type SNM);

(VII) Multiconductor service–entrance cable (Type SE or USE);

(VIII) Multiconductor underground feeder and branch–circuit cable (Type UF);

(IX) Power and control tray cable (Type TC);

(X) Other factory–assembled, multiconductor control, signal, or power cables which are specifically approved for installation in cable trays; or

(XI) Any approved conduit or raceway with its contained conductors.

(B) In industrial establishments only, where conditions of maintenance and supervision assure that only qualified persons will service the installed cable tray system, the following cables may also be installed in ladder, ventilated trough, or 4 inch ventilated channel–type cable trays:

(I) Single conductor cables which are 250 MCM or larger and are Types RHH, RHW, MV, USE, or THW, and other 250 MCM or larger single conductor cables if specifically approved for installation in cable trays. Where exposed to direct rays of the sun, cables shall be sunlight–resistant.

(II) Type MV cables, where exposed to direct rays of the sun, shall be sunlight–resistant.

(C) Cable trays in hazardous (classified) locations shall contain only the cable types permitted in such locations.

(ii) **Uses not permitted.** Cable tray systems may not be used in hoistways or where subjected to severe physical damage.

(d) **Open wiring on insulators.**

(i) **Uses permitted.** Open wiring on insulators is only permitted on systems of 600 volts, nominal, or less for industrial or agricultural establishments and for services.

(ii) **Conductor supports.** Conductors shall be rigidly supported on noncombustible, nonabsorbent insulating materials and may not contact any other objects.

(iii) **Flexible nonmetallic tubing.** In dry locations where not exposed to severe physical damage, conductors may be separately enclosed in flexible nonmetallic tubing. The tubing shall be in continuous lengths not exceeding 15 feet and secured to the surface by straps at intervals not exceeding 4 feet 6 inches.

(iv) **Through walls, floors, wood cross members, etc.** Open conductors shall be separated from contact with walls, floors, and wood cross members, or partitions through which they pass by tubes or bushings of noncombustible, nonabsorbent insulating material. If the bushing is shorter than the hole, a waterproof sleeve of nonconductive material shall be inserted in the hole and an insulating bushing slipped into the sleeve at each end in such a manner as to keep the conductors absolutely out of contact with the sleeve. Each conductor shall be carried through a separate tube or sleeve.

(v) **Protection from physical damage.** Conductors within 7 feet from the floor are considered exposed to physical damage. Where open conductors cross ceiling joints and wall studs and are exposed to physical damage, they shall be protected.

(2) **Cabinets, boxes, and fittings.**

(a) **Conductors entering boxes, cabinets, or fittings.** Conductors entering boxes, cabinets, or fittings shall be protected from abrasion, and openings through which conductors enter shall be effectively closed. Unused openings in cabinets, boxes, and fittings shall also be effectively closed.

(b) **Covers and canopies.** All pull boxes, junction boxes, and fittings shall be provided with covers approved for the purpose. If metal covers are used they shall be grounded. In completed installations each outlet box shall have a cover, faceplate, or fixture canopy. Covers of outlet boxes having holes through which flexible cord pendants pass shall be provided with bushings designed for the purpose or shall have smooth, well–rounded surfaces on which the cords may bear.

(c) **Pull and junction boxes for systems over 600 volts, nominal.** In addition to other requirements in this section for pull and junction boxes, the following shall apply to these boxes for systems over 600 volts, nominal:

(i) Boxes shall provide a complete enclosure for the contained conductors or cables.

(ii) Boxes shall be closed by suitable covers securely fastened in place. Underground box covers that weight over 100 pounds meet this requirement. Covers for boxes shall be permanently marked "HIGH VOLTAGE." The marking shall be on the outside of the box cover and shall be readily visible and legible.

(3) **Switches.**

(a) **Knife switches.** Single–throw knife switches shall be so connected that the blades are dead when the switch is in the open position. Single–throw knife switches shall be so placed that gravity will not tend to close them. Single–throw knife switches approved for use in the inverted position shall be provided with a locking device that will ensure that the blades remain in the open position when so set. Double–throw knife switches may be mounted so that the throw will be either vertical or horizontal. However, if the throw is vertical a locking device shall be provided to ensure that the blades remain in the open position when so set.

(b) **Faceplates for flush–mounted snap switches.** Flush snap switches that are mounted in ungrounded metal boxes and located within reach of conducting floors or other conducting surfaces shall be provided with faceplates of nonconducting, noncombustible material.

(4) **Switchboards and panelboards.** Switchboards that have any exposed live parts shall be located in permanently dry locations and accessible only to qualified persons. Panelboards shall be mounted in cabinets, cutout boxes, or enclosures approved for the purpose and shall be dead front. However, panelboards other than the dead front externally–operable type are permitted where accessible only to qualified persons. Exposed blades of knife switches shall be dead when open.

(5) **Enclosures for damp or wet locations.**

(a) Cabinets, cutout boxes, fittings, boxes, and panelboard enclosures in damp or wet locations shall be installed so as to prevent moisture or water from entering and accumulating within the enclosures. In wet locations the enclosures shall be weatherproof.

(b) Switches, circuit breakers, and switchboards installed in wet locations shall be enclosed in weatherproof enclosures.

(6) **Conductors for general wiring.** All conductors used for general wiring shall be insulated unless otherwise permitted in this section. The conductor insulation shall be of a type that is approved for the voltage, operating temperature, and location of use. Insulated conductors shall be distinguishable by appropriate color or other suitable means as being grounded conductors, ungrounded conductors, or equipment grounding conductors.

(7) **Flexible cords and cables.**

(a) **Use of flexible cords and cables.**

(i) Flexible cords and cables shall be approved and suitable for conditions of use and location. Flexible cords and cables shall be used only for:

(A) Pendants;

(B) Wiring of fixtures;

(C) Connection of portable lamps or appliances;

(D) Elevator cables;

(E) Wiring of cranes and hoists;

(F) Connection of stationary equipment to facilitate their frequent interchange;

(G) Prevention of the transmission of noise or vibration;

(H) Appliances where the fastening means and mechanical connections are designed to permit removal for maintenance and repair; or

(I) Data processing cables approved as a part of the date processing system.

(ii) If used as permitted in subitem (a)(i)(C), (a)(i)(F) or (a)(i)(H) of this subsection, the flexible cord shall be equipped with an attachment plug and shall be energized from an approved receptacle outlet.

(iii) Unless specifically permitted in item (a)(i) of this subsection, flexible cords and cables may not be used:

(A) As a substitute for the fixed wiring of a structure;

(B) Where run through holes in walls, ceilings, or floors;

(C) Where run through doorways, windows, or similar openings;

(D) Where attached to building surfaces; or

(E) Where concealed behind building walls, ceilings, or floors.

(iv) Flexible cords used in show windows and showcases shall be Type S, SO, SJ, SJO, ST, STO, SJT, SJTO, or AFS except for the wiring of chain-supported lighting fixtures and supply cords for portable lamps and other merchandise being displayed or exhibited.

(b) **Identification, splices, and terminations.**

(i) A conductor of a flexible cord or cable that is used as a grounded conductor or an equipment grounding conductor shall be distinguishable from other conductors. Types SJ, SJO, SJT, SJTO, S, SO, ST, and STO shall be durably marked on the surface with the type designation, size, and number of conductors.

(ii) Flexible cords shall be used only in continuous lengths without splice or tap. Hard service flexible cords No. 12 or larger may be repaired if spliced so that the splice retains the insulation, outer sheath properties, and usage characteristics of the cord being spliced.

(iii) Flexible cords shall be connected to devices and fittings so that strain relief is provided which will prevent pull from being directly transmitted to joints or terminal screws.

(8) **Portable cables over 600 volts, nominal.** Multiconductor portable cable for use in supplying power to portable or mobile equipment at over 600 volts, nominal, shall consist of No. 8 or larger conductors employing flexible stranding. Cables operated at over 2,000 volts shall be shielded for the purpose of confining the voltage stresses to the insulation. Grounding conductors shall be provided. Connectors for these cables shall be of a locking type with provisions to prevent their opening or closing while energized. Strain relief shall be provided at connections and terminations. Portable cables may not be operated with splices unless the splices are of the permanent molded, vulcanized, or other approved type. Termination enclosures shall be suitably marked with a high voltage hazard warning, and terminations shall be accessible only to authorized and qualified personnel.

(9) **Fixture wires.**

(a) **General.** Fixture wires shall be approved for the voltage, temperature, and location of use. A fixture wire which is used as a grounded conductor shall be identified.

(b) **Uses permitted.** Fixture wires may be used:

(i) For installation in lighting fixtures and in similar equipment where enclosed or protected and not subject to bending or twisting in use; or

(ii) For connecting lighting fixtures to the branch-circuit conductors supplying the fixtures.

(c) **Uses not permitted.** Fixture wires may not be used as branch-circuit conductors except as permitted for Class 1 power limited circuits.

(10) **Equipment for general use.**

(a) **Lighting fixtures, lampholders, lamps, and receptacles.**

(i) Fixtures, lampholders, lamps, rosettes, and receptacles may have no live parts normally exposed to employee contact. However, rosettes and cleat-type lampholders and receptacles located at least 8 feet above the floor may have exposed parts.

(ii) Handlamps of the portable type supplied through flexible cords shall be equipped with a handle of molded composition or other material approved for the purpose, and a substantial guard shall be attached to the lampholder or the handle.

(iii) Lampholders of the screw-shell type shall be installed for use as lampholders only. Lampholders installed in wet or damp locations shall be of the weatherproof type.

(iv) Fixtures installed in wet or damp locations shall be approved for the purpose and shall be so constructed or installed that water cannot enter or accumulate in wireways, lampholders, or other electrical parts.

(b) **Receptacles, cord connectors, and attachment plugs (caps).**

(i) Receptacles, cord connectors, and attachment plugs shall be constructed so that no receptacle or cord connector will accept an attachment plug with a different voltage or current rating than that for which the device is intended. However, a 20-ampere T-slot receptacle or cord connector may accept a 15-ampere attachment plug of the same voltage rating.

(ii) A receptacle installed in a wet or damp location shall be suitable for the location.

(c) **Appliances.**

(i) Appliances, other than those in which the current-carrying parts at high temperatures are necessarily exposed, may have no live parts normally exposed to employee contact.

(ii) A means shall be provided to disconnect each appliance.

(iii) Each appliance shall be marked with its rating in volts and amperes or volts and watts.

(d) **Motors.** This paragraph applies to motors, motor circuits, and controllers.

(i) **In sight from.** If specified that one piece of equipment shall be "in sight from" another piece of equipment, one shall be visible and not more than 50 feet from the other.

(ii) **Disconnecting means.**

(A) A disconnecting means shall be located in sight from the controller location. However, a single disconnecting means may be located adjacent to a group of coordinated controllers mounted adjacent to each other or a multimotor continuous process machine. The controller disconnecting means for motor branch circuits over 600 volts, nominal, may be out of sight of the controller, if the controller is marked with a warning label giving the location and identification of the disconnecting means which is to be locked in the open position.

(B) The disconnecting means shall disconnect the motor and the controller from all ungrounded supply conductors and shall be so designed that no pole can be operated independently.

(C) If a motor and the driven machinery are not in sight from the controller location, the installation shall comply with one of the following conditions:

(I) The controller disconnecting means shall be capable of being locked in the open position.

(II) A manually operable switch that will disconnect the motor from its source of supply shall be placed in sight from the motor location.

(D) The disconnecting means shall plainly indicate whether it is in the open (off) or closed (on) position.

(E) The disconnecting means shall be readily accessible. If more than one disconnect is provided for the same equipment, only one need be readily accessible.

(F) An individual disconnecting means shall be provided for each motor, but a single disconnecting means may be used for a group of motors under any one of the following conditions:

(I) If a number of motors drive special parts of a single machine or piece of apparatus, such as a metal or woodworking machine, crane, or hoist;

(II) If a group of motors is under the protection of one set of branch–circuit protective devices; or

(III) If a group of motors is in a single room in sight from the location of the disconnecting means.

(iii) **Motor overload, short–circuit, and ground–fault protection.** Motors, motor–control apparatus, and motor branch–circuit conductors shall be protected against overheating due to motor overloads or failure to start, and against short–circuits or ground faults. These provisions shall not require overload protection that will stop a motor where a shutdown is likely to introduce additional or increased hazards, as in the case of fire pumps, or where continued operation of a motor is necessary for a safe shutdown of equipment or process and motor overload sensing devices are connected to a supervised alarm.

(iv) **Protection of live parts--all voltages.**

(A) Stationary motors having commutators, collectors, and brush rigging located inside of motor end brackets and not conductively connected to supply circuits operating at more than 150 volts to ground need not have such parts guarded. Exposed live parts of motors and controllers operating at 50 volts or more between terminals shall be guarded against accidental contact by any of the following:

(I) By installation in a room or enclosure that is accessible only to qualified persons;

(II) By installation on a suitable balcony, gallery, or platform, so elevated and arranged as to exclude unqualified persons; or

(III) By elevation 8 feet or more above the floor.

(B) Where live parts of motors or controllers operating at over 150 volts to ground are guarded against accidental contact only by location, and where adjustment or other attendance may be necessary during the operation of the apparatus, suitable insulating mats or platforms shall be provided so that the attendant cannot readily touch live parts unless standing on the mats or platforms.

(e) **Transformers.**

(i) The following paragraphs cover the installation of all transformers except the following:

(A) Current transformers;

(B) Dry–type transformers installed as a component part of other apparatus;

(C) Transformers which are an integral part of an x–ray, high frequency, or electrostatic–coating apparatus;

(D) Transformers used with Class 2 and Class 3 circuits, sign and outline lighting, electric discharge lighting, and power–limited fire–protective signalling circuits; and

(E) Liquid–filled or dry–type transformers used for research, development, or testing, where effective safeguard arrangements are provided.

(ii) The operating voltage of exposed live parts of transformer installations shall be indicated by warning signs or visible markings on the equipment or structure.

(iii) Dry–type, high fire point liquid–insulated, and askarel–insulated transformers installed indoors and rated over 35kV shall be in a vault.

(iv) If they present a fire hazard to employees, oil–insulated transformers installed indoors shall be in a vault.

(v) Combustible material, combustible buildings and parts of buildings, fire escapes, and door and window openings shall be safeguarded from fires which may originate in oil–insulated transformers attached to or adjacent to a building or combustible material.

(vi) Transformer vaults shall be constructed so as to contain fire and combustible liquids within the vault and to prevent unauthorized access. Locks and latches shall be so arranged that a vault door can be readily opened from the inside.

(vii) Any pipe or duct system foreign to the vault installation may not enter or pass through a transformer vault.

(viii) Materials may not be stored in transformer vaults.

(f) **Capacitors.**

(i) All capacitors, except surge capacitors or capacitors included as a component part of other apparatus, shall be provided with an automatic means of draining the stored charge after the capacitor is disconnected from its source of supply.

(ii) Capacitors rated over 600 volts, nominal, shall comply with the following additional requirements:

(A) Isolating or disconnecting switches (with no interrupting rating) shall be interlocked with the load interrupting device or shall be provided with prominently displayed caution signs to prevent switching load current.

(B) For series capacitors (see WAC 296-24-95603(2)(c)), the proper switching shall be assured by use of at least one of the following:

(I) Mechanically sequenced isolating and bypass switches;

(II) Interlocks; or

(III) Switching procedure prominently displayed at the switching location.

(g) **Storage batteries.** Provisions shall be made for sufficient diffusion and ventilation of gases from storage batteries to prevent the accumulation of explosive mixtures. [Statutory Authority: RCW 49.17.040 and 49.17-.050. 82-08-026 (Order 82-10),§ 296-24-95609, filed 3/30/82.]

WAC 296-24-95611 Specific purpose equipment and installations. (1) **Electric signs and outline lighting.**

(a) **Disconnecting means.** Signs operated by electronic or electromechanical controllers located outside the sign shall have a disconnecting means located inside the controller enclosure or within sight of the controller location, and it shall be capable of being locked in the open position. Such disconnecting means shall have no pole that can be operated independently, and it shall open all ungrounded conductors that supply the controller and sign. All other signs, except the portable type, and all outline lighting installations shall have an externally operable disconnecting means which can open all ungrounded conductors and is within the sight of the sign or outline lighting it controls.

(b) Doors or covers giving access to uninsulated parts of indoor signs or outline lighting exceeding 600 volts and accessible to other than qualified persons shall either be provided with interlock switches to disconnect the primary circuit or shall be so fastened that the use of other than ordinary tools will be necessary to open them.

(2) **Cranes and hoists.** This subsection applies to the installation of electric equipment and wiring used in connection with cranes, monorail hoists, hoists, and all runways.

(a) **Disconnecting means.**

(i) A readily accessible disconnecting means shall be provided between the runway contact conductors and the power supply.

(ii) Another disconnecting means, capable of being locked in the open position, shall be provided in the leads from the runway contact conductors or other power supply on any crane or monorail hoist.

(A) If this additional disconnection means is not readily accessible from the crane or monorail hoist operating station, to open the power circuit to all motors of the crane or monorail hoist.

(B) The additional disconnect may be omitted if a monorail hoist or hand-propelled crane bridge installation meets all of the following:

(I) The unit is floor controlled;

(II) The unit is within view of the power supply disconnecting means; and

(III) No fixed work platform has been provided for servicing the unit.

(b) **Control.** A limit switch or other device shall be provided to prevent the load block from passing the safe upper limit of travel of any hoisting mechanism.

(c) **Clearance.** The dimension of the working space in the direction of access to live parts which may require examination, adjustment, servicing, or maintenance while alive shall be a minimum of 2 feet 6 inches. Where controls are enclosed in cabinets, the door(s) shall either open at least 90 degrees or be removable.

(3) **Elevators, dumbwaiters, escalators, and moving walks.**

(a) **Disconnecting means.** Elevators, dumbwaiters, escalators, and moving walks shall have a single means for disconnecting all ungrounded main power supply conductors for each unit.

(b) **Warning signs.** If interconnections between control panels are necessary for operation of the system on a multicar installation that remains energized from a source other than the disconnecting means, a warning sign shall be mounted on or adjacent to the disconnecting means. The sign shall be clearly legible and shall read "Warning—Parts of the control panel are not de-energized by this switch." (See WAC 296-24-95603(2)(c).)

(c) **Control panels.** If control panels are not located in the same space as the drive machine, they shall be located in cabinets with doors or panels capable of being locked closed.

(4) **Electric welders--disconnecting means.**

(a) A disconnecting means shall be provided in the supply circuit for each motor-generator arc welder, and for each AC transformer and DC rectifier arc welder which is not equipped with a disconnect mounted as an integral part of the welder.

(b) A switch or circuit breaker shall be provided by which each resistance welder and its control equipment can be isolated from the supply circuit. The ampere rating of this disconnecting means may not be less than the supply conductor ampacity.

(5) **Data processing systems--disconnecting means.** A disconnecting means shall be provided to disconnect the power to all electronic equipment in data processing or computer rooms. This disconnecting means shall be controlled from locations readily accessible to the operator at the principal exit doors. There shall also be a similar disconnecting means to disconnect the air conditioning system serving this area.

(6) **X-ray equipment.** This subsection applies to x-ray equipment for other than medical or dental use.

(a) **Disconnecting means.**

(i) A disconnecting means shall be provided in the supply circuit. The disconnecting means shall be operable from a location readily accessible from the x-ray control. For equipment connected to a 120-volt branch circuit of 30 amperes or less, a grounding-type attachment plug cap and receptacle of proper rating may serve as a disconnecting means.

(ii) If more than one piece of equipment is operated from the same high-voltage circuit, each piece or each group of equipment as a unit shall be provided with a high-voltage switch or equivalent disconnecting means. This disconnecting means shall be constructed, enclosed, or located so as to avoid contact by employees with its live parts.

(b) **Control.**

(i) **Radiographic and fluoroscopic types.** Radiographic and fluoroscopic-type equipment shall be effectively enclosed or shall have interlocks that de-energize the equipment automatically to prevent ready access to live current-carrying parts.

(ii) **Diffraction and irradiation types.** Diffraction-type and irradiation-type equipment shall be provided with a means to indicate when it is energized unless the equipment or installation is effectively enclosed or is provided with interlocks to prevent access to live current-carrying parts during operation.

(7) **Induction and dielectric heating equipment.**

(a) **Scope.** Subdivisions (b) and (c) of this subsection cover induction and dielectric heating equipment and accessories for industrial and scientific applications, but not for medical dental applications or for appliances.

(b) **Guarding and grounding.**

(i) **Enclosures.** The converting apparatus (including the DC line) and high-frequency electric circuits (excluding the output circuits and remote-control circuits) shall be completely contained within enclosures of noncombustible material.

(ii) **Panel controls.** All panel controls shall be of dead-front construction.

(iii) **Access to internal equipment.** Where doors are used for access to voltages from 500 to 1000 volts AC or DC, either door locks or interlocks shall be provided. Where doors are used for access to voltages of over 1000 volts AC or DC, either mechanical lockouts with a disconnecting means to prevent access until voltage is removed from the cubicle, or both door interlocking and mechanical door locks, shall be provided.

(iv) **Warning labels.** "Danger" labels shall be attached on the equipment and shall be plainly visible even when doors are open or panels are removed from compartments containing voltages of over 250 volts AC or DC.

(v) **Work applicator shielding.** Protective cages or adequate shielding shall be used to guard work applicators other than induction heating coils. Induction heating coils shall be protected by insulation and/or refractory materials. Interlock switches shall be used on all hinged access doors, sliding panels, or other such means of access to the applicator. Interlock switches shall be connected in such a manner as to remove all power from the applicator when any one of the access doors or panels is open. Interlocks on access doors or panels are not required if the applicator is an induction heating coil at DC ground potential or operating at less than 150 volts AC.

(vi) **Disconnecting means.** A readily accessible disconnecting means shall be provided by which each unit of heating equipment can be isolated from its supply circuit.

(c) **Remote control.** If remote controls are used for applying power, a selector switch shall be provided and interlocked to provide power from only one control point at a time. Switches operated by foot pressure shall be provided with a shield over the contact button to avoid accidental closing the switch.

(8) **Electrolytic cells.**

(a) **Scope.** These provisions for electrolytic cells apply to the installation of the electrical components and accessory equipment of electrolytic cells, electrolytic cell lines, and process power supply for the production of aluminum, cadmium, chlorine, copper, fluorine, hydrogen peroxide, magnesium, sodium, sodium chlorate, and zinc. Cells used as a source of electric energy and for electroplating processes and cells used for production of hydrogen are not covered by these provisions.

(b) **Definitions applicable to this subsection.**

Cell line: An assembly of electrically interconnected electrolytic cells supplied by a source of direct-current power.

Cell line attachments and auxiliary equipment: Cell line attachments and auxiliary equipment include, but are not limited to: Auxiliary tanks; process piping; duct work; structural supports; exposed cell line conductors; conduits and other raceways; pumps; positioning equipment and cell cutout or bypass electrical devices. Auxiliary equipment also includes tools, welding machines, crucibles, and other portable equipment used for operation and maintenance within the electrolytic cell line working zone. In the cell line working zone, auxiliary equipment includes the exposed conductive surfaces of ungrounded cranes and crane-mounted cell-servicing equipment.

Cell line working zone: The cell line working zone is the space envelope wherein operation or maintenance is normally performed on or in the vicinity of exposed energized surfaces of cell lines or their attachments.

Electrolytic cells: A receptacle or vessel in which electrochemical reactions are caused by applying energy for the purpose of refining or producing usable materials.

(c) **Application.** Installations covered by subsection (8) of this section shall comply with all applicable provisions of this section except as follows:

(i) Overcurrent protection of electrolytic cell DC process power circuits need not comply with the requirements of WAC 296-24-95607(5).

(ii) Equipment located or used within the cell line working zone or associated with the cell line DC power

circuits need not comply with the provisions of WAC 296-24-95607(6).

(iii) Electrolytic cells, cell line conductors, cell line attachments, and the wiring of auxiliary equipment and devices within the cell line working zone need not comply with the provisions of WAC 296-24-95605 and 296-24-95607(2) and (3).

(d) **Disconnecting means.**

(i) If more than one DC cell line process power supply serves the same cell line, a disconnecting means shall be provided on the cell line circuit side of each power supply to disconnect it from the cell line circuit.

(ii) Removable links or removable conductors may be used as the disconnecting means.

(e) **Portable electric equipment.**

(i) The frames and enclosures of portable electric equipment used within the cell line working zone may not be grounded. However, these frames and enclosures may be grounded if the cell line circuit voltage does not exceed 200 volts DC or if the frames are guarded.

(ii) Ungrounded portable electric equipment shall be distinctively marked and may not be interchangeable with grounded portable electric equipment.

(f) **Power supply circuits and receptacles for portable electric equipment.**

(i) Circuits supplying power to ungrounded receptacles for hand-held, cord-and plug-connected equipment shall be electrically isolated from any distribution system supplying areas other than the cell line working zone and shall be ungrounded. Power for these circuits shall be supplied through isolating transformers.

(ii) Receptacles and their mating plugs for ungrounded equipment may not have provision for a grounding conductor and shall be of a configuration which prevents their use for equipment required to be grounded.

(iii) Receptacles on circuits supplied by an isolating transformer with an ungrounded secondary shall have a distinctive configuration, shall be distinctively marked, and may not be used in any other location in the plant.

(g) **Fixed and portable electric equipment.**

(i) AC systems supplying fixed and portable electric equipment within the cell line working zone need not be grounded.

(ii) Exposed conductive surfaces, such as electric equipment housings, cabinets, boxes, motors, raceways and the like that are within the cell line working zone need not be grounded.

(iii) Auxiliary electrical devices, such as motors, transducers, sensors, control devices, and alarms, mounted on an electrolytic cell or other energized surface, shall be connected by any of the following means:

(A) Multiconductor hard usage or extra hard usage flexible cord;

(B) Wire or cable in suitable raceways; or

(C) Exposed metal conduit, cable tray, armored cable, or similar metallic systems installed with insulating breaks such that they will not cause a potentially hazardous electrical condition.

(iv) Fixed electric equipment may be bonded to the energized conductive surfaces of the cell line, its attachments, or auxiliaries. If fixed electric equipment is mounted on an energized conductive surface, it shall be bonded to that surface.

(h) **Auxiliary nonelectric connections.** Auxiliary nonelectric connections, such as air hoses, water hoses, and the like, to an electrolytic cell, its attachments, or auxiliary equipment may not have continuous conductive reinforcing wire, armor, braids, and the like. Hoses shall be of a nonconductive material.

(i) **Cranes and hoists.**

(i) The conductive surfaces of cranes and hoists that enter the cell line working zone need not be grounded. The portion of an overhead crane or hoist which contacts an energized electrolytic cell or energized attachments shall be insulated from ground.

(ii) Remote crane or hoist controls which may introduce hazardous electrical conditions into the cell line working zone shall employ one or more of the following systems:

(A) Insulated and ungrounded control circuit;

(B) Nonconductive rope operator;

(C) Pendent pushbutton with nonconductive supporting means and having nonconductive surfaces or ungrounded exposed conductive surfaces; or

(D) Radio.

(9) **Electrically driven or controlled irrigation machines.** (See WAC 296-24-95603(2)(c).)

(a) **Lightning protection.** If an electrically driven or controlled irrigation machines has a stationary point, a driven ground rod shall be connected to the machine at the stationary point for lightning protection.

(b) **Disconnecting means.** The main disconnecting means for a center pivot irrigation machine shall be located at the point of connection of electrical power to the machine and shall be readily accessible and capable of being locked in the open position. A disconnecting means shall be provided for each motor and controller.

(10) **Swimming pools, fountains, and similar installations.**

(a) **Scope.** Subdivisions (b) through (e) of this subsection apply to electric wiring for and equipment in or adjacent to all swimming, wading, therapeutic, and decorative pools and fountains, whether permanently installed or storable, and to metallic auxiliary equipment, such as pumps, filters, and similar equipment. Therapeutic pools in health care facilities are exempt from these provisions.

(b) **Lighting and receptacles.**

(i) **Receptacles.** A single receptacle of the locking and grounding type that provides power for a permanently installed swimming pool recirculating pump motor may be located not less than 5 feet from the inside walls of a pool. All other receptacles on the property shall be located at least 10 feet from the inside walls of a pool. Receptacles which are located within 15 feet of the inside walls of the pool shall be protected by ground-fault circuit interrupters.

Note: In determining these dimensions, the distance to be measured is the shortest path the supply cord

of an appliance connected to the receptacle would follow without piercing a floor, wall, or ceiling of a building or other effective permanent barrier.

(ii) **Lighting fixtures and lighting outlets.**

(A) Unless they are 12 feet above the maximum water level, lighting fixtures and lighting outlets may not be installed over a pool or over the area extending 5 feet horizontally from the inside walls of a pool. However, a lighting fixture or lighting outlet which has been installed before (eff. date), may be located less than 5 feet measured horizontally from the inside walls of a pool if it is at least 5 feet above the surface of the maximum water level and shall be rigidly attached to the existing structure. It shall also be protected by a ground–fault circuit interrupter installed in the branch circuit supplying the fixture.

(B) Unless installed 5 feet above the maximum water level and rigidly attached to the structure adjacent to or enclosing the pool, lighting fixtures and lighting outlets installed in the area extending between 5 feet and 10 feet horizontally from the inside walls of a pool shall be protected by a ground–fault circuit interrupter.

(c) **Cord–connected and plug–connected equipment.** Flexible cords used with the following equipment may not exceed 3 feet in length and shall have a copper equipment grounding conductor with a grounding–type attachment plug.

(i) Cord–connected and plug–connected lighting fixtures installed within 16 feet of the water surface of permanently installed pools.

(ii) Other cord–connected and plug–connected, fixed or stationary equipment used with permanently installed pools.

(d) **Underwater equipment.**

(i) A ground–fault circuit interrupter shall be installed in the branch circuit supplying underwater fixtures operating at more than 15 volts. Equipment installed underwater shall be approved for the purpose.

(ii) No underwater lighting fixtures may be installed for operation at over 150 volts between conductors.

(e) **Fountains.** All electric equipment operating at more than 15 volts, including power supply cords, used with fountains shall be protected by ground–fault circuit interrupters. (See WAC 296–24–95603(2)(c).) [Statutory Authority: RCW 49.17.040 and 49.17.050. 82–08–026 (Order 82–10),§ 296–24–95611, filed 3/30/82.]

WAC 296–24–95613 Hazardous (classified) locations. (1) **Scope.** This section covers the requirements for electric equipment and wiring in locations which are classified depending on the properties of the flammable vapors, liquids or gases, or combustible dusts or fibers which may be present therein and the likelihood that a flammable combustible concentration or quantity is present. Hazardous (classified) locations may be found in occupancies such as, but not limited to, the following: Aircraft hangars, gasoline dispensing and service stations, bulk storage plants for gasoline or other volatile flammable liquids, paint–finishing process plants, health care facilities, agricultural or other facilities where excessive combustible dusts may be present, marinas, boat yards, and petroleum and chemical processing plants. Each room, section or area shall be considered individually in determining its classification. These hazardous (classified) locations are assigned six designations as follows:

Class I, Division 1
Class I, Division 2
Class II, Division 1
Class II, Division 2
Class III, Division 1
Class III, Division 2

For definitions of these locations see WAC 296–24–95601(1). All applicable requirements in this subpart shall apply to hazardous (classified) locations, unless modified by provisions of this section.

(2) **Electrical installations.** Equipment, wiring methods, and installations of equipment in hazardous (classified) locations shall be intrinsically safe, or approved for the hazardous (classified) location, or safe for the hazardous (classified) location. Requirements for each of these options are as follows:

(a) **Intrinsically safe.** Equipment and associated wiring approved as intrinsically safe shall be permitted in any hazardous (classified) location for which it is approved.

(b) **Approved for the hazardous (classified) location.**

(i) Equipment shall be approved not only for the class of location but also for the ignitible or combustible properties of the specific gas, vapor, dust, or fiber that will be present.

Note: NFPA 70, the National Electrical Code, lists or defines hazardous gases, vapors, and dusts by "Groups" characterized by their ignitible or combustible properties.

(ii) Equipment shall be marked to show the class, group, and operating temperature or temperature range, based on operation in a 40 degrees C ambient, for which it is approved. The temperature marking may not exceed the ignition temperature of the specific gas or vapor to be encountered. However, the following provisions modify this marking requirement for specific equipment:

(A) Equipment of the nonheat–producing type, such as junction boxes, conduit, and fittings, and equipment of the heat–producing type having a maximum temperature not more than 100 degrees C (212 degrees F) need not have a marked operating temperature or temperature range.

(B) Fixed lighting fixtures marked for use in Class I, Division 2 locations only, need not be marked to indicate the group.

(C) Fixed general–purpose equipment in Class I locations, other than lighting fixtures, which is acceptable for use in Class I, Division 2 locations need not be marked with the class, group, division, or operating temperature.

(D) Fixed dust–tight equipment, other than lighting fixtures, which is acceptable for use in Class II, Division

2 and Class III locations need not be marked with the class, group, division, or operating temperature.

(c) **Safe for the hazardous (classified) location.** Equipment which is safe for the location shall be of a type and design which the employer demonstrates will provide protection from the hazards arising from the combustibility and flammability of vapors, liquids, gases, dusts, or fibers.

Note: The National Electrical Code, NFPA 70, contains guidelines for determining the type and design of equipment and installations which will meet this requirement. The guidelines of this document address electric wiring, equipment, and systems installed in hazardous (classified) locations and contain specific provisions for the following: Wiring methods, wiring connections; conductor insulation, flexible cords, sealing and drainage, transformers, capacitors, switches, circuit breakers, fuses, motor controllers, receptacles, attachment plugs, meters, relays, instruments, resistors, generators, motors, lighting fixtures, storage battery charging equipment, electric cranes, electric hoists and similar equipment, utilization equipment, signaling systems, alarm systems, remote control systems, local loud speaker and communication systems, ventilation piping, live parts, lighting surge protection, and grounding. Compliance with these guidelines will constitute one means, but not the only means, of compliance with this subsection.

(3) **Conduits.** All conduits shall be threaded and shall be made wrench-tight. Where it is impractical to make a threaded joint tight, a bonding jumper shall be utilized.

(4) **Equipment in Division 2 locations.** Equipment that has been approved for a Division 1 location may be installed in a Division 2 location of the same class and group. General-purpose equipment or equipment in general-purpose enclosures may be installed in Division 2 locations if the equipment does not constitute a source of ignition under normal operating conditions.

(5) Motors and generators.

(a) Motors and generators shall conform to the following: Class I, Division 1. In Class I, Division 1 locations, motors, generators and other rotating electric machinery shall be: (i) Approved for Class I, Division 1 locations (explosion-proof); or (ii) of the totally enclosed type supplied with positive-pressure ventilation from a source of clean air with discharge to a safe area, so arranged to prevent energizing of the machine until ventilation has been established and the enclosure has been purged with at least 10 volumes of air, and also arranged to automatically de-energize the equipment when the air supply fails; or (iii) of the totally enclosed inert-gas-filled type supplied with a suitable reliable source of inert gas for pressuring the enclosure, with devices provided to ensure a positive pressure in the enclosure and arranged to automatically de-energize the equipment when the gas supply fails; or (iv) of a type designed to be submerged in a liquid which is flammable only when vaporized and mixed with air, or in a gas or vapor at a pressure greater than atmospheric and which is flammable only when mixed with air; and the machine is so arranged to prevent energizing it until it has been purged with the liquid or gas to exclude air, and also arranged to automatically de-energize the equipment when the supply of liquid, or gas or vapor fails or the pressure is reduced to atmospheric. Totally enclosed motors of types (ii) and (iii) shall have no external surface with an operating temperature in degrees Celsius in excess of eighty percent of the ignition temperature of the gas or vapor involved, as determined by ASTM test procedure (Designation: D-2155-69). Appropriate devices shall be provided to detect any increase in temperature of the motor beyond design limits and automatically de-energize the equipment or provide an adequate alarm. Auxiliary equipment shall be of a type approved for the location in which it is installed.

(b) An installation or equipment is acceptable to the director of labor and industries, and approved within the meaning of WAC 296-24-95601(1) under the following conditions as stated in WAC 296-24-950(4)(b):

(i) If it is accepted, or certified, or listed, or labeled, or otherwise determined to be safe by a nationally recognized testing laboratory, such as, but not limited to, Underwriters' Laboratories, Inc., and Factory Mutual Engineering Corporation; or

(ii) With respect to an installation or equipment of a kind which no nationally recognized testing laboratory accepts, certifies, lists, labels, or determines to be safe, if it is inspected or tested by another Federal agency, or by a state, municipal, or local authority responsible for enforcing occupational safety provisions of the National Electrical Code, and found in compliance with the provisions of the National Electrical Code as applied in WAC 296-24-956; or

(iii) With respect to custom-made equipment or related installations which are designed, fabricated for, and intended for use by, a particular customer, if it is determined to be safe for its intended use by its manufacturer on the basis of test data which the employer keeps and makes available for inspection to the director and his authorized representatives. [Statutory Authority: RCW 49.17.040 and 49.17.050. 82-08-026 (Order 82-10),§ 296-24-95613, filed 3/30/82.]

WAC 296-24-95615 Special systems. (1) **Systems over 600 volts, nominal.** Subdivisions (a) through (d) of this subsection cover the general requirements for all circuits and equipment operated at over 600 volts.

(a) **Wiring methods for fixed installations.**

(i) Above-ground conductors shall be installed in rigid metal conduit, in intermediate metal conduit, in cable trays, in cablebus, in other suitable raceways, or as open runs of metal-clad cable suitable for the use and purpose. However, open runs of nonmetallic-sheathed cable or of bare conductors or busbars may be installed in locations accessible only to qualified persons. Metallic shielding components, such as tapes, wires, or braids for conductors, shall be grounded. Open runs of insulated wires and cables having a bare lead sheath or a braided

outer covering shall be supported in a manner designed to prevent physical damage to the braid or sheath.

(ii) Conductors emerging from the ground shall be enclosed in approved raceways. (See WAC 296-24-95603(2)(c).)

(b) **Interrupting and isolating devices.**

(i) Circuit breaker installations located indoors shall consist of metal-enclosed units or fire-resistant cell-mounted units. In locations accessible only to qualified personnel, open mounting of circuit breakers is permitted. A means of indicating the open and closed position of circuit breakers shall be provided.

(ii) Fused cutouts installed in buildings or transformer vaults shall be of a type approved for the purpose. They shall be readily accessible for fuse replacement.

(iii) A means shall be provided to completely isolate equipment for inspection and repairs. Isolating means which are not designed to interrupt the load current of the circuit shall be either interlocked with an approved circuit interrupter or provided with a sign warning against opening them under load.

(c) **Mobile and portable equipment.**

(i) **Power cable connections to mobile machines.** A metallic enclosure shall be provided on the mobile machine for enclosing the terminals of the power cable. The enclosure shall include provisions for a solid connection for the ground wire(s) terminal to effectively ground the machine frame. The method of cable termination used shall prevent any strain or pull on the cable from stressing the electrical connections. The enclosure shall have provision for locking so only authorized qualified persons may open it and shall be marked with a sign warning of the presence of energized parts.

(ii) **Guarding live parts.** All energized switching and control parts shall be enclosed in effectively grounded metal cabinets or enclosures. Circuit breakers and protective equipment shall have the operating means projecting through the metal cabinet or enclosure so these units can be reset without locked doors being opened. Enclosures and metal cabinets shall be locked so that only authorized qualified persons have access and shall be marked with a sign warning of the presence of energized parts. Collector ring assemblies on revolving-type machines (shovels, draglines, etc.) shall be guarded.

(d) **Tunnel installations.**

(i) **Application.** The provisions of this subsection apply to installation and use of high-voltage power distribution and utilization equipment which is portable and/or mobile, such as substations, trailers, cars, mobile shovels, draglines, hoists, drills, dredges, compressors, pumps, conveyors, and underground excavators.

(ii) **Conductors.** Conductors in tunnels shall be installed in one or more of the following:

(A) Metal conduit or other metal raceway,

(B) Type MC cable, or

(C) Other approved multiconductor cable.

Conductors shall also be so located or guarded as to protect them from physical damage. Multiconductor portable cable may supply mobile equipment. An equipment grounding conductor shall be run with circuit conductors inside the metal raceway or inside the multiconductor cable jacket. The equipment grounding conductor may be insulated or bare.

(iii) **Guarding live parts.** Bare terminals of transformers, switches, motor controllers, and other equipment shall be enclosed to prevent accidental contact with energized parts. Enclosures for use in tunnels shall be drip-proof, weatherproof, or submersible as required by the environmental conditions.

(iv) **Disconnecting means.** A disconnecting means that simultaneously opens all ungrounded conductors shall be installed at each transformer or motor location.

(v) **Grounding and bonding.** All nonenergized metal parts of electric equipment and metal raceways and cable sheaths shall be effectively grounded and bonded to all metal pipes and rails at the portal and at intervals not exceeding 1000 feet throughout the tunnel.

(2) **Emergency power systems.**

(a) **Scope.** The provisions for emergency systems apply to circuits, systems, and equipment intended to supply power for illumination and special loads, in the event of failure of the normal supply.

(b) **Wiring methods.** Emergency circuit wiring shall be kept entirely independent of all other wiring and equipment and may not enter the same raceway, cable, box, or cabinet as other wiring except either where common circuit elements suitable for the purpose are required, or for transferring power from the normal to the emergency source.

(c) **Emergency illumination.** Where emergency lighting is necessary, the system shall be so arranged that the failure of any individual lighting element, such as the burning out of a light bulb, cannot leave any space in total darkness.

(3) **Class 1, Class 2, and Class 3 remote control, signaling, and power-limited circuits.**

(a) **Classification.** Class 1, Class 2, or Class 3 remote control, signaling, or power-limited circuits are characterized by their usage and electrical power limitation which differentiates them from light and power circuits. These circuits are classified in accordance with their respective voltage and power limitations as summarized in items (a)(i) through (a)(iii) of this subsection.

(i) **Class 1 circuits.**

(A) A Class 1 power-limited circuit is supplied from a source having a rated output of not more than 30 volts and 1000 volt-amperes.

(B) A Class 1 remote control circuit or a Class 1 signaling circuit has a voltage which does not exceed 600 volts; however, the power output of the source need not be limited.

(ii) **Class 2 and Class 3 circuits.**

(A) Power for Class 2 and Class 3 circuits is limited either inherently (in which no overcurrent protection is required) or by a combination of a power source and overcurrent protection.

(B) The maximum circuit voltage is 150 volts AC or DC for a Class 2 inherently limited power source, and 100 volts AC or DC for a Class 3 inherently limited power source.

(C) The maximum circuit voltage is 30 volts AC and 60 volts DC for a Class 2 power source limited by overcurrent protection, and 150 volts AC or DC for a Class 3 power source limited by overcurrent protection.

(iii) The maximum circuit voltages in items (a)(i) and (a)(ii) of this subsection apply to sinusoidal AC or continuous DC power sources, and where wet contact occurrence is not likely.

(b) **Marking.** A Class 2 or Class 3 power supply unit shall be durably marked where plainly visible to indicate the class of supply and its electrical rating. (See WAC 296-24-95603(2)(c).)

(4) **Fire protective signaling systems.** (See WAC 296-24-95603(2)(c).)

(a) **Classifications.** Fire protective signaling circuits shall be classified either as nonpower limited or power limited.

(b) **Power sources.** The power sources for use with fire protective signaling circuits shall be either power limited or nonlimited as follows:

(i) The power supply of nonpower-limited fire protective signaling circuits shall have an output voltage not in excess of 600 volts.

(ii) The power for power-limited fire protective signaling circuits shall be either inherently limited, in which no overcurrent protection is required, or limited by a combination of power source and overcurrent protection.

(c) **Nonpower-limited conductor location.** Nonpower-limited fire protective signaling circuits and Class 1 circuits may occupy the same enclosure, cable, or raceway provided all conductors are insulated for maximum voltage of any conductor within the enclosure, cable or raceway. Power supply and fire protective signaling circuit conductors are permitted in the same enclosure, cable, or raceway only if connected to the same equipment.

(d) **Power-limited conductor location.** Where open conductors are installed, power-limited fire protective signaling circuits shall be separated at least 2 inches from conductors of any light, power, Class 1, and nonpower-limited fire protective signaling circuits unless a special and equally protective method of conductor separation is employed. Cables and conductors of two or more power-limited fire protective signaling circuits or Class 3 circuits are permitted in the same cable, enclosure, or raceway. Conductors of one or more Class 2 circuits are permitted within the same cable, enclosure, or raceway with conductors of power-limited fire protective signaling circuits provided that the insulation of Class 2 circuit conductors in the cable, enclosure, or raceway is at least that needed for the power-limited fire protective signaling circuits.

(e) **Identification.** Fire protective signaling circuits shall be identified at terminal and junction locations in a manner which will prevent unintentional interference with the signaling circuit during testing and servicing. Power-limited fire protective signaling circuits shall be durably marked as such where plainly visible at terminations.

(5) **Communications systems.**

(a) **Scope.** These provisions for communication systems apply to such systems as central-station-connected and noncentral-station-connected telephone circuits, radio and television receiving and transmitting equipment, including community antenna television and radio distribution systems, telegraph, district messenger, and outside wiring for fire and burglar alarm, and similar central station systems. These installations need not comply with the provisions of WAC 296-24-95605 through 296-24-95615(4) except WAC 296-24-95607(3)(a) and 296-24-95613(2).

(b) **Protective devices.**

(i) Communication circuits so located as to be exposed to accidental contact with light or power conductors operating at over 300 volts shall have each circuit so exposed provided with a protector approved for the purpose.

(ii) Each conductor of a lead-in from an outdoor antenna shall be provided with an antenna discharge unit or other suitable means that will drain static charges from the antenna system.

(c) **Conductor location.**

(i) **Outside of buildings.**

(A) Receiving distribution lead-in or aerial-drop cables attached to buildings and lead-in conductors to radio transmitters shall be so installed as to avoid the possibility of accidental contact with electric light or power conductors.

(B) The clearance between lead-in conductors and any lightning protection conductors may not be less than 6 feet.

(ii) **On poles.** Where practicable, communication conductors on poles shall be located below the light or power conductors. Communications conductors may not be attached to a crossarm that carries light or power conductors.

(iii) **Inside of buildings.** Indoor antennas, lead-ins, and other communication conductors attached as open conductors to the inside of buildings shall be located at least 2 inches from conductors of any light or power or Class 1 circuits unless a special and equally protective method of conductor separation, approved for the purpose, is employed.

(d) **Equipment location.** Outdoor metal structures supporting antennas, as well as self-supporting antennas such as vertical rods or dipole structures, shall be located as far away from overhead conductors of electric light and power circuits of over 150 volts to ground as necessary to avoid the possibility of the antenna or structure falling into or making accidental contact with such circuits.

(e) **Grounding.**

(i) **Lead-in conductors.** If exposed to contact with electric light and power conductors, the metal sheath of aerial cables entering buildings shall be grounded or shall be interrupted close to the entrance to the building by an insulating joint or equivalent device. Where protective devices are used, they shall be grounded in an approved manner.

(ii) **Antenna structures.** Masts and metal structures supporting antennas shall be permanently and effectively

grounded without splice or connection in the grounding conductor.

(iii) **Equipment enclosures.** Transmitters shall be enclosed in a metal frame or grill or separated from the operating space by a barrier, all metallic parts of which are effectively connected to ground. All external metal handles and controls accessible to the operating personnel shall be effectively grounded. Unpowered equipment and enclosures shall be considered grounded where connected to an attached coaxial cable with an effectively grounded metallic shield. [Statutory Authority: RCW 49.17.040 and 49.17.050. 82-08-026 (Order 82-10),§ 296-24-95615, filed 3/30/82.]

WAC 296-24-95617 Effective date. WAC 296-24-956 through 296-24-95617 shall become effective sixty days after filing with the Code Reviser. [Statutory Authority: RCW 49.17.040 and 49.17.050. 82-08-026 (Order 82-10),§ 296-24-95617, filed 3/30/82.]

WAC 296-24-95699 Appendices. Appendix A - Reference documents. The following references provide information which can be helpful in understanding and complying with the requirements contained in WAC 296-24-956 through 296-24-95615.

ANSI A17.1-71 Safety Code for Elevators, Dumbwaiters, Escalators and Moving Walks.
ANSI B9.1-71 Safety Code for Mechanical Refrigeration.
ANSI B30.2-76 Safety Code for Overhead and Gantry Cranes.
ANSI B30.3-75 Hammerhead Tower Cranes.
ANSI B30.4-73 Safety Code for Portal, Tower, and Pillar Cranes.
ANSI B30.5-68 Safety Code for Crawler, Locomotive, and Truck Cranes.
ANSI B30.6-77 Derricks.
ANSI B30.7-77 Base Mounted Drum Hoists.
ANSI B30.8-71 Safety Code for Floating Cranes and Floating Derricks.
ANSI B30.11-73 Monorail Systems and Underhung Cranes.
ANSI B30.12-75 Handling Loads Suspended from Rotorcraft.
ANSI B30.13-77 Controlled Mechanical Storage Cranes.
ANSI B30.15-73 Safety Code for Mobile Hydraulic Cranes.
ANSI B30.16-73 Overhead Hoists.
ANSI C2-81 National Electrical Safety Code.
ANSI C33.27-74 Safety Standard for Outlet Boxes and Fittings for Use in Hazardous Locations, Class I, Groups A, B, C, and D, and Class II, Groups E, F, and G.
ANSI K61.1-72 Safety Requirements for the Storage and Handling of Anhydrous Ammonia.
ASTM D2155-66 Test Method for Autoignition Temperature of Liquid Petroleum Products.
ASTM D3176-74 Method for Ultimate Analysis of Coal and Coke.
ASTM D3180-74 Method for Calculating Coal and Coke Analyses from As Determined to Different Bases.
IEEE 463-77 Standard for Electrical Safety Practices in Electrolytic Cell Line Working Zones.
NFPA 20-76 Standard for the Installation of Centrifugal Fire Pumps.
NFPA 30-78 Flammable and Combustible Liquids Code.
NFPA 32-74 Standard for Drycleaning Plants.
NFPA 33-73 Standard for Spray Application Using Flammable and Combustible Materials.
NFPA 34-74 Standard for Dip Tanks Containing Flammable or Combustible Liquids.
NFPA 35-76 Standard for the Manufacture of Organic Coatings.
NFPA 36-74 Standard for Solvent Extraction Plants.
NFPA 40-74 Standard for the Storage and Handling of Cellulose Nitrate Motion Picture Film.
NFPA 56A-73 Standard for the Use of Inhalation Anesthetics (Flammable and Nonflammable).
NFPA 56F-74 Standard for Nonflammable Medical Gas Systems.
NFPA 58-76 Standard for the Storage and Handling of Liquefied Petroleum Gases.
NFPA 59-76 Standard for the Storage and Handling of Liquefied Petroleum Gases at Utility Gas Plants.
NFPA 70-78 National Electrical Code.
NFPA 70C-74 Hazardous Locations Classification.
NFPA 70E Standard for the Electrical Safety Requirements for Employee Workplaces.
NFPA 71-77 Standard for the Installation, Maintenance, and Use of Central Station Signaling Systems.
NFPA 72A-75 Standard for the Installation, Maintenance, and Use of Local Protective Signaling Systems for Watchman, Fire Alarm, and Supervisory Service.
NFPA 72B-75 Standard for the Installation, Maintenance, and Use of Auxiliary Protective Signaling Systems for Fire Alarm Service.
NFPA 72C-75 Standard for the Installation, Maintenance, and Use of Remote Station Protective Signaling Systems.
NFPA 72D-75 Standard for the Installation, Maintenance, and Use of Proprietary Protective Signaling Systems for Watchman, Fire Alarm, and Supervisory Service.
NFPA 72E-74 Standard for Automatic Fire Detectors.
NFPA 74-75 Standard for Installation, Maintenance, and Use of Household Fire Warning Equipment.
NFPA 76A-73 Standard for Essential Electrical Systems for Health Care Facilities.
NFPA 77-72 Recommended Practice on Static Electricity.
NFPA 80-77 Standard for Fire Doors and Windows.
NFPA 86A-73 Standard for Ovens and Furnaces; Design, Location and Equipment.
NFPA 88A-73 Standard for Parking Structures.
NFPA 88B-73 Standard for Repair Garages.

NFPA 91-73 Standard for the Installation of Blower and Exhaust Systems for Dust, Stock, and Vapor Removal, or Conveying.
NFPA 101-78 Code for Safety to Life from Fire in Buildings and Structures. (Life Safety Code.)
NFPA 325M-69 Fire-Hazard Properties of Flammable Liquids, Gases, and Volatile Solids.
NFPA 493-75 Standard for Intrinsically Safe Apparatus for Use in Class I Hazardous Locations and Its Associated Apparatus.
NFPA 496-74 Standard for Purged and Pressurized Enclosures for Electrical Equipment in Hazardous Locations.
NFPA 497-75 Recommended Practice for Classification of Class I Hazardous Locations for Electrical Installations in Chemical Plants.
NFPA 505-75 Fire Safety Standard for Powered Industrial Trucks Including Type Designations and Areas of Use.
NMAB 353-1-79 Matrix of Combustion-Relevant Properties and Classification of Gases, Vapors, and Selected Solids.
NMAB 353-2-79 Test Equipment for Use in Determining Classifications of Combustible Dusts.
NMAB 353-3-80 Classification of Combustible Dusts in Accordance with the National Electrical Code. [Statutory Authority: RCW 49.17.040 and 49.17.050. 82-08-026 (Order 82-10),§ 296-24-95699, filed 3/30/82.]

WAC 296-24-960 Proximity to overhead power lines. (1) General requirements - high voltage lines.

(a) Minimum clearance.

(i) No work shall be performed, no material shall be piled, stored or otherwise handled, no scaffolding, commercial signs, or structures shall be erected or dismantled, nor any tools, machinery or equipment operated within the specified minimum distances from any energized high voltage electrical conductor capable of energizing the material or equipment; except where the electrical distribution and transmission lines have been deenergized and visibly grounded at point of work, or where insulating barriers not a part of or an attachment to the equipment have been erected, to prevent physical contact with the lines, equipment shall be operated proximate to, under, over, by, or near powerlines only in accordance with the following:

(ii) For lines rated 50 kv. or below, minimum clearance between the lines and any part of the equipment or load shall be 10 feet.

(iii) For lines rated over 50 kv. minimum, clearance between the lines and any part of the equipment or load shall be 10 feet plus 0.4 inch for each 1 kv. over 50 kv., or twice the length of the line insulator but never less than 10 feet.

(b) Overhead electric lines. Where overhead electric conductors are encountered in proximity to a work area, the employer shall be responsible for:

(i) Ascertaining the voltage and minimum clearance distance required, and

(ii) Maintaining the minimum clearance distance, and

(iii) Ensuring that the requirements of subsection (1) of this section are complied with.

(c) Not covered: Employees working under chapters 296-32 and 296-45 WAC.

(2) Low voltage lines. When work is being carried out in proximity to energized electrical service conductors operating at 750 volts or less, such work shall be performed in a manner to prevent contact by any worker with the energized conductors. [Statutory Authority: RCW 49.17.040 and 49.17.050. 82-13-045 (Order 82-22), § 296-24-960, filed 6/11/82; 82-02-003 (Order 81-32), § 296-24-960, filed 12/24/81.]

Chapter 296-27 WAC
RECORD KEEPING AND REPORTING

WAC

296-27-160 Safety and health inspections.
296-27-16001 Definitions.
296-27-16003 Conduct of inspections.
296-27-16005 Objects of inspection.
296-27-16007 Citations and penalty assessments.
296-27-16009 Follow-up inspections.
296-27-16011 Objection to inspection.
296-27-16013 WISHA—Required investigations and inspections.
296-27-16015 WITS—In general.
296-27-16017 WITS—Safety.
296-27-16019 WITS—Safety.
296-27-16021 WITS—Safety—Limit on number of inspections.
296-27-16023 Adjustment factors.

WAC 296-27-160 Safety and health inspections. The Washington Industrial Safety and Health Act (WISHA), chapter 49.17 RCW, authorizes the department of labor and industries (the department) to inspect work places to protect the health and safety of employees. The primary purpose of safety and health inspections is to determine whether employers are (1) complying with safety and health standards and regulations promulgated under WISHA, and (2) furnishing places of employment free from recognized hazards that are causing or are likely to cause death or serious physical harm to their employees. The following sections describe the method, manner, and frequency of the department's safety and health inspections. [Statutory Authority: RCW 49.17.040 and 49.17.050. 81-14-006 (Order 81-13), § 296-27-160, filed 6/22/81.]

WAC 296-27-16001 Definitions. For the purpose of these inspection rules:

(1) "BLS" shall mean bureau of labor statistics.

(2) "Compensable claim" shall mean an industrial insurance claim in which an injured worker or dependent has received, or is expected to receive, a time-loss, permanent partial disability, pension or burial payment. For the purposes of these rules, a compensable claim arises only if the injured worker loses three or more days because of injury.

(3) "Department" shall mean the department of labor and industries.

(4) "Incidence rate" shall mean the number of lost work day cases per 200,000 hours of exposure or 100 full-time equivalent workers.

(5) "Industrial insurance modification factor" is based on a comparison of the actual incurred losses to the expected losses for the oldest three of the four fiscal years preceding the effective date of premium rates.

(a) A modification factor greater than 1.0000 indicates that an employer's actual incurred losses are greater than expected.

(b) A modification factor of less than 1.0000 indicates that an employer's actual incurred losses are less than expected.

(c) New firms and some firms qualifying for transition rating adjustments are assigned a base modification factor of 1.0000. Self-insured employers will be assigned a modification factor of less than 1.0000.

(6) "Industry" shall mean a group of businesses classified by standard industrial classification code according to the type of activity in which they are engaged.

(7) "Target inspections" shall mean inspections scheduled under WITS.

(8) "WISHA" shall mean the Washington Industrial Safety and Health Act.

(9) "WITS" shall mean the Washington Inspection Targeting System.

(10) "Working hours" shall mean those times that an employee or employees work at the work place.

(11) "Work place" shall mean any plant, yard, premises, room, or other place where an employee or employees are employed for the performance of labor or service over which the employer has the right of access or control, and includes, but is not limited to, all work places covered by industrial insurance under Title 51 RCW, as now or hereafter amended. Work place shall include temporary labor camps. [Statutory Authority: RCW 49-.17.040 and 49.17.050. 81-14-006 (Order 81-13), § 296-27-16001, filed 6/22/81.]

WAC 296-27-16003 Conduct of inspections. (1) An inspection shall be made during working hours of the work place being inspected, unless the inspection is of a fatality, a catastrophe, or a complaint of imminent danger. RCW 49.17.190(1) prohibits an employer from receiving advance notice of an inspection, except as authorized by the director or his or her authorized representative.

(2) When an inspector arrives at a work place, he or she shall present his or her credentials to the highest available management official at the work place. The inspector shall keep trade secret information confidential as required by RCW 49.17.200. If necessary, the inspector may sign a form, approved by the Department, that is designed to protect an employer's trade secrets. The inspector may sign a visitor's register, plant pass, or other book or form used to control the entry and movement of persons. If a governmental security clearance is required for entry, the inspector shall obtain it before the inspection.

(3) Before beginning an inspection, the inspector should conduct a joint opening conference with the employer and employee representatives. The employee representative is the employee designated by the union, safety committee, or employees to accompany the inspector during the inspection. If the inspector determines that an employee representative is not available at the work place, separate conferences with the representatives can be held.

(4) A representative of the employer and a representative authorized by the employees shall have the opportunity to accompany the inspector during the inspection. During the inspection, the inspector may interview in private any employee who wants to discuss a possible violation. The inspector may conduct an interview at any time during an inspection. If the inspector determines that an interview would unduly hinder an employer's operations, however, the inspector should interview the employee during a break or after working hours. To determine whether an interview would unduly hinder an employer's operations, the inspector may consider such factors as the time the employee would spend away from machinery and the effects of the interview on other employees or processes. If the inspector receives a complaint during an inspection, he or she should inspect the alleged violation during that inspection.

The inspector may photograph a violation, take environmental samples, conduct tests, use sampling devices worn by employees, and employ other reasonable investigative techniques. A technique shall not be used if it reasonably could be believed to cause a hazard.

An employer may immediately correct some violations during the inspection. The inspector shall record the conditions and corrections to help judge the employer's good faith, compliance, and cooperation. Although corrected, a violation shall remain the basis for a citation and a proposed penalty.

(5) At the end of the inspection, the inspector should conduct a joint closing conference with the employer and employee representatives. If it is impractical to hold a joint conference, separate conferences can be held. The inspector should advise both the employer and employee representatives of their right to participate in later conferences.

An inspector shall not show or reveal the name of a complainant to the employer, unless the complainant authorizes the inspector to do so.

(6) If a safety inspector notices potential health hazards that indicate an industrial hygiene inspection is necessary, the inspector should report the hazards and request a health inspection. If a health inspector notices potential safety hazards that indicate a safety inspection is necessary, the inspector should report the hazards and request a safety inspection. [Statutory Authority: RCW 49.17.040 and 49.17.050. 81-14-006 (Order 81-13), § 296-27-16003, filed 6/22/81.]

WAC 296-27-16005 Objects of inspection. A safety and health inspection will primarily check for compliance with the substantive standards issued under WISHA. However, an inspector will also determine whether an employer has posted the WISHA notice that informs employees of their rights and obligations. The

inspector may also inspect the log and summary of recordable occupational injuries and illnesses, supplementary records of occupational injuries and illnesses, records of employee exposure to toxic chemicals and harmful physical agents, and other records mandated by specific occupational safety and health regulations. [Statutory Authority: RCW 49.17.040 and 49.17.050. 81-14-006 (Order 81-13), § 296-27-16005, filed 6/22/81.]

WAC 296-27-16007 Citations and penalty assessments. During an inspection, the inspector shall record the violations he or she observes on a compliance worksheet. From the information written on the worksheet, and the photographs and tests, an inspector shall prepare a citation and notice and, if applicable, a proposed penalty assessment. The citation and notice and the proposed penalty assessment shall be sent to the employer and may also be given to the highest available management official at the work place. The citation and notice shall contain an abatement date for each violation. This is the date by which the employer must correct the violation. [Statutory Authority: RCW 49.17.040 and 49-.17.050. 81-14-006 (Order 81-13), § 296-27-16007, filed 6/22/81.]

WAC 296-27-16009 Follow-up inspections. When an employer has been cited for a violation, the department conducts follow-up inspections to ensure that the violation has been corrected.

(1) If the department cited a serious violation, or a general violation for which a penalty was proposed, the department shall conduct a follow-up inspection. If there is more than one abatement date, more than one follow-up inspection may be necessary.

(2) The department may, but is not required, to conduct follow-up inspections after issuing a citation other than those set out in subsection (1) of this section. [Statutory Authority: RCW 49.17.040 and 49.17.050. 81-14-006 (Order 81-13), § 296-27-16009, filed 6/22/81.]

WAC 296-27-16011 Objection to inspection. (1) If the employer refuses to permit an inspection, or if the employer permits an inspection but interferes with or limits an important part of the inspection, the inspector may end the inspection or confine the inspection to the areas or limits that the employer will allow. The inspector shall attempt to ascertain the reason for the refusal, interference, or limitation, and shall report it to his or her supervisor. The supervisor may consult with the assistant attorney general. The department may seek an ex parte inspection warrant or other compulsory process from a court if an inspection is refused or limited.

(2) The department may seek an ex parte inspection warrant or other compulsory process from a court before an inspection if the department anticipates that permission to conduct the inspection might be denied or improperly limited.

(3) The department will seek an inspection warrant in response to a complaint only if the complaint is in written form and signed by the complainant, unless the complainant alleges an imminent danger that could cause serious injury or death. [Statutory Authority: RCW 49.17.040 and 49.17.050. 81-14-006 (Order 81-13), § 296-27-16011, filed 6/22/81.]

WAC 296-27-16013 WISHA--Required investigations and inspections. The department conducts the following kinds of inspections:

(1) The first kind of investigations or inspections is specifically required by WISHA, and includes investigations and inspections of fatalities, catastrophes, serious accidents, and complaints that allege an imminent danger or conditions that threaten physical harm to employees.

(2) The second kind of inspections is the routine inspection required by WISHA and made under the Washington Inspection Targeting System.

The department also conducts investigations or inspections of complaints or incidents that fall under subsection (1) of this section whenever it receives a complaint or knowledge of an incident. [Statutory Authority: RCW 49.17.040 and 49.17.050. 81-14-006 (Order 81-13), § 296-27-16013, filed 6/22/81.]

WAC 296-27-16015 WITS--In general. Some work places, because of the nature of their industry are likely to have more hazards than others. The health and safety of employees will be more efficiently protected if the department concentrates its inspections on the most hazardous work places and industries. The WITS program is a system that identifies the most hazardous industries and work places, and ranks them in an objective order for inspections. [Statutory Authority: RCW 49-.17.040 and 49.17.050. 81-14-006 (Order 81-13), § 296-27-16015, filed 6/22/81.]

WAC 296-27-16017 WITS--Safety. Some of the terms used in this section are defined in WAC 296-27-16001.

The department identifies the most hazardous industries and work places through information from the industrial insurance division of the department and the BLS Occupational Injury and Illness Survey.

(1) To identify the most hazardous industries, the department obtains data from the industrial insurance division that show the number of compensable claims in each industry for the most recent calendar year. The data are compiled statewide. The department does not count compensable claims that are related to health or likely could not have been prevented by a safety inspection, including compensable claims arising from contagious or infectious disease, dermatosis, exposure to low temperature, hearing impairment, environmental heat, hernia and rupture, systemic poisoning, pneumoconiosis, non-ionizing and ionizing radiation, hemorrhoids, circulatory system, complications to medical care, eye diseases, medical disorders, neoplasm, nervous system,

respiratory system, ill-defined conditions, NEC occupational disease, sexual assault, absence of physical injury, or heart attack. WITS also disregards injuries and illnesses caused by kicking, continual noise, bites, assaults by fellow workers, assaults by criminals, stabs, bodily reactions, overexertions, exposure to radiation, public transportation accidents, motor vehicle accidents, gunshots, and plane crashes.

The department ranks industries according to data compiled statewide according to the number of compensable claims from within each industry. The department also reviews the statewide lost work day case incidence rate for the same industries. Each industry is ranked according to the number of compensable claims, and it is also ranked according to the lost work day case incidence rate. The department combines the two rankings to produce a list of the 25 most hazardous industries in the state. The lists are compiled annually.

(2) Each month, the department examines the industrial insurance modification factors and recent compensable claims charged to employers where payments were made in the previous calendar month. For self-insured employers, claims received on Form LI 207-2 SI accident report for the previous month are counted.

(3) A work place is targeted for a safety inspection if it falls within the following categories:

(a) Category one. Work places having two or more compensable claims and having a modification factor equal to or greater than 1.0000.

(b) Category two. Work places having two or more compensable claims and having a modification factor of less than 1.0000.

(c) Category three. Work places having one compensable claim and having a modification factor equal to or greater than 1.0000.

(d) Category four. Work places in hazardous industries having one compensable claim and having a modification factor of less than 1.0000.

(4) If more than one work place appears in the same category, the department schedules inspections of the work place with the largest number of worker hours first, and each work place with the largest number of worker hours thereafter. [Statutory Authority: RCW 49.17.040 and 49.17.050. 81-14-006 (Order 81-13), § 296-27-16017, filed 6/22/81.]

WAC 296-27-16019 WITS--Safety. (1) After the department completes all inspections in the categories listed in WAC 296-27-16017(3)(a) through (d), the department inspects work places that are in hazardous industries. The hazardous industries are those industries that have been selected under the system described in WAC 296-27-16017(1).

(2) The department chooses work places in hazardous industries for inspection in the following manner:

(a) The department calculates the percentage of its total number of inspections that each of the 25 hazardous industries will receive by means of a percentage distribution calculation. The percentage distribution calculation ensures that the most hazardous industries will be assigned the largest number of inspections, and the least hazardous industries will be assigned the fewest inspections.

(b) The department determines the number of inspections that will be made during the year statewide in each hazardous industry by applying the results of the percentage distribution to the total number of inspections conducted during the previous year statewide.

(c) From the total compensable claims statewide, the department determines the percent of compensable claims that came from the hazardous industries from each county. The department determines the number of inspections to be made within each county from the percentage of compensable claims that arose from within each county.

(d) The number of inspections allotted to each hazardous industry, as assigned within each county, is distributed among four inspection cycles. In each inspection cycle, the department first inspects work places in the most hazardous industry, then in the second most hazardous industry, and so on in descending order. After the department has inspected the work places in the least hazardous industry, a new inspection cycle begins.

(e) The department selects particular employers within hazardous industries by the number of reported worker hours for the previous year. The department inspects employers with the largest number of reported worker hours first, then the employer with the next largest number of reported worker hours, and so on in decreasing number of reported worker hours. [Statutory Authority: RCW 49.17.040 and 49.17.050. 81-14-006 (Order 81-13), § 296-27-16019, filed 6/22/81.]

WAC 296-27-16021 WITS--Safety--Limit on number of inspections. (1) The department may not inspect more than twice a year a work place that falls within any of the categories in WAC 296-27-16017(3). The department may not inspect such a work place more than once in six months unless industrial insurance accident data available to the department indicate a hazardous condition at the work place that likely could be remedied by a safety inspection. For example, the department may notice from the industrial insurance data that the work place is causing numerous injuries of a type different from the injuries the work place had previously caused, or the department may know that an employer had installed a new plant, machinery, or method of operation at the work place. The department may also inspect the work place of a seasonal industry twice in six months if the work place falls within WAC 296-27-16017(3).

(2) The department may not inspect a work place under WAC 296-27-16019 more than once a year. A work place that has been inspected under WAC 296-27-16017 may not be scheduled in the same year for an inspection under WAC 296-27-16019.

(3) The limits in subsection (1) and (2) of this section apply only to inspections under WAC 296-27-16017 and 296-27-16019. The limits do not apply to investigations of fatalities, accidents, catastrophes, complaints, and inspections of hazards that are in plain view and are actually observed by the inspector. [Statutory Authority:

RCW 49.17.040 and 49.17.050. 81-14-006 (Order 81-13), § 296-27-16021, filed 6/22/81.]

WAC 296-27-16023 Adjustment factors. The department may depart from the WITS scheduling in the following circumstances:

(1) If an industry is seasonal, an inspection may need to be scheduled during the peak production period.

(2) In the scheduling of industries without fixed work places, such as construction and logging, the department does not schedule inspections by the number of worker hours because of the difficulty of determining how many employees are working on a particular day. [Statutory Authority: RCW 49.17.040 and 49.17.050. 81-14-006 (Order 81-13), § 296-27-16023, filed 6/22/81.]

Chapter 296-32 WAC
SAFETY STANDARDS FOR TELECOMMUNICATIONS

WAC
296-32-250 Tools and personal protective equipment—General.

WAC 296-32-250 Tools and personal protective equipment—General. (1) Personal protective equipment, protective devices and special tools needed for the work of employees shall be provided and the employer shall ensure that they are used by employees.

(a) Before each day's use the employer shall ensure that these personal protective devices, tools, and equipment are carefully inspected by a competent person to ascertain that they are in good condition.

(b) Tools found to be defective shall be taken out of service.

(2) Head protection. Head protection meeting the requirements of ANSI Z89.2-1971, "Safety Requirements for Industrial Protective Helmets for Electrical Workers, Class B" shall be provided whenever there is exposure to overhead hazards and/or possible high voltage electrical contact.

(a) Employees working in areas where there is a possible danger of head injury from impact, falling or flying objects, shall be protected by protective helmets. These helmets shall meet the specifications contained in American National Standards Institute, Z89.1-1969, Safety Requirements for Industrial Head Protection.

(b) The employer shall insure that the head protection is used by the employee.

(3) Eye protection. Protective eye and face equipment shall be required where there is a possibility of injury that can be prevented by such equipment. In such cases, employers shall make conveniently available a type of protector suitable for the work to be performed, and employees shall use such protectors.

(4) Tent heaters, torches and open flame. Open flames shall not be used within ground tents or on platforms within aerial tents unless:

(a) The tent covers are constructed of fire resistant materials, and

(b) Ventilation is provided to maintain safe oxygen levels and avoid harmful buildup of combustion products and combustible gases.

(5) Portable power equipment.

(a) All portable power equipment used in the telecommunications industry shall be grounded.

(b) Nominal 120V, or less, portable generators used for providing power at work locations do not require grounding if the output circuit is completely isolated from the frame of the unit.

(c) Grounding shall be omitted when using soldering irons, guns or wire-wrap tools on telecommunication circuits.

(6) Vehicle-mounted utility generators. Vehicle-mounted utility generators used for providing nominal 240V AC or less for powering portable tools and equipment need not be grounded to earth if all of the following conditions are met:

(a) One side of the voltage source is solidly strapped to the metallic structure of the vehicle;

(b) Grounding-type outlets are used, with a "grounding" conductor between the outlet grounding terminal and the side of the voltage source that is strapped to the vehicle;

(c) All metallic encased tools and equipment that are powered from this system are equipped with three-wire cords and grounding-type attachment plugs, except as designated in subsection (7) of this section.

(7) Portable lights, tools and appliances. When operated from commercial power such metal parts of these devices shall be grounded, unless these tools or appliances are protected by a system of double insulation, or its equivalent. Where such a system is employed, the equipment shall be distinctively marked to indicate double insulation.

(8) Lead work. When operated from commercial power the metal housing of electric solder pots shall be grounded. Electric solder pots may be used with the power equipment described in this subsection, without a grounding conductor.

The employer shall ensure that wiping gloves or cloths and eye protection are used in lead wiping operations. A drip pan to catch hot lead drippings shall also be provided and used.

(9) Fire extinguishers.

(a) Fire extinguishers shall be provided for the protection of both the building structure and the occupancy hazards contained therein.

(b) Employees shall be familiar with the location and operation of fire extinguishers.

(c) Any fire extinguishers showing defects shall be removed from service.

(d) Fire extinguishers shall be thoroughly examined and/or recharged or repaired to insure operability and safety once every year.

(e) Each fire extinguisher shall have a durable tag securely attached to show the maintenance or recharge date and the initials or signature of the person performing this service. [Statutory Authority: RCW 49.17.040 and 49.17.050. 82-13-045 (Order 82-22), § 296-32-

250, filed 6/11/82; Order 76-38, § 296-32-250, filed 12/30/76; Order 75-41, § 296-32-250, filed 12/19/75.]

Chapter 296-37 WAC
STANDARDS FOR COMMERCIAL DIVING OPERATIONS

WAC
296-37-510 Scope and application.
296-37-550 Scuba diving.
296-37-575 Recordkeeping requirements.

WAC 296-37-510 Scope and application. (1) The requirements included in this vertical chapter shall apply throughout the state wherever commercial diving takes place within the jurisdiction of the department of labor and industries. These requirements shall also be applicable to those diving related and supportive work activities not at the diving site but which have a direct effect on the safety of the diving operations. Examples may include but are not limited to: The supply of breathing air or gas; the supply of materials, equipment or supplies required by this chapter; the maintenance of diving equipment.

(2) This standard applies to diving and related support operations conducted in connection with all types of work and employments, including general industry, construction, ship repairing, shipbuilding, shipbreaking and longshoring. However, this standard does not apply to any diving operation:

(a) Performed solely for instructional purposes, using open-circuit, compressed-air scuba and conducted within the no-decompression limits; or

(b) Performed solely for search, rescue, or related public safety purposes by or under the control of a governmental agency; or

(c) Performed by noncommercial divers whose exposures may be of an entirely different type and whose operations are approved by the department of labor and industries;

(d) Governed by 45 CFR Part 46 (Protection of Human Subjects, United States Department of Health and Human Services) or equivalent rules or regulations established by another federal agency, which regulate research, development, or related purposes involving human subjects.

(3) This chapter shall augment the requirements of the general safety and health standard, chapter 296-24 WAC and the general occupational health standard, chapter 296-62 WAC. In instances where this chapter is in direct conflict with the requirements of any general horizontal standard, the requirements of this chapter shall apply.

(4) Hoisting gear used in diving operations shall be inspected and certified as required by chapter 296-56 WAC, safety standards for longshore, stevedore and related waterfront operations.

(5) Application in emergencies. An employer may deviate from the requirements of this standard to the extent necessary to prevent or minimize a situation which is likely to cause death, serious physical harm, or major environmental damage, provided that the employer:

(a) Notifies the assistant director of the department of labor and industries in Olympia or the chief safety inspector for the region within 48 hours of the onset of the emergency situation indicating the nature of the emergency and extent of the deviation from the prescribed regulations; and

(b) Upon request from the authority notified, submits such information in writing.

(6) Employer obligation. The employer shall be responsible for compliance with:

(a) All provisions of this standard of general applicability; and

(b) All requirements pertaining to specific diving modes to the extent diving operations in such modes are conducted. [Statutory Authority: RCW 49.17.040 and 49.17.050. 81-07-048 (Order 81-4), § 296-37-510, filed 3/17/81. Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, and chapters 42.30 and 43.22 RCW. 78-10-094 (Order 78-18), § 296-37-510, filed 10/2/78.]

WAC 296-37-550 Scuba diving. (1) General. Employers engaged in scuba diving shall comply with the following requirements, unless otherwise specified.

(2) Limits. SCUBA diving shall not be conducted:

(a) At depths deeper than 130 fsw;

(b) At depths deeper than 100 fsw or outside the no-decompression limits unless a decompression chamber is ready for use;

(c) Against currents exceeding one knot unless line-tended (this requirement does not preclude work swimming with, rather than against, the current); or

(d) In enclosed or physically confining spaces unless line-tended.

(3) Procedures. (a) A standby diver shall be available while a diver is in the water.

(b) A diver shall be line-tended from the surface, or accompanied by another diver in the water in continuous visual contact during the diving operation.

(c) A diver shall be stationed at the underwater point of entry when diving is conducted in enclosed or physically confining spaces and shall have positive means of communication with the diver or divers within the space.

(d) A diver-carried reserve breathing gas supply shall be provided for each diver consisting of:

(i) A manual reserve (J valve); or

(ii) An independent reserve cylinder with a separate regulator or connected to the underwater breathing apparatus.

(e) The valve of the reserve breathing gas supply shall be in the closed position prior to the dive. [Statutory Authority: RCW 49.17.040 and 49.17.050. 81-07-048 (Order 81-4), § 296-37-550, filed 3/17/81. Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, and chapters 42.30 and 43.22 RCW. 78-10-094 (Order 78-18), § 296-37-550, filed 10/2/78.]

WAC 296-37-575 Recordkeeping requirements. (1) Recording and reporting. (a) The employer shall record

and report occupational injuries and illnesses in accordance with requirements of chapters 296-27 and 296-350 WAC.

(b) The employer shall record the occurrence of any diving-related injury or illness which requires any dive team member to be hospitalized for 24 hours or more, specifying the circumstances of the incident and the extent of any injuries or illnesses.

(2) Availability of records. (a) Upon the request of the director of the department of labor and industries or his duly authorized designees, the employer shall make available for inspection and copying any record or document required by this standard.

Note: Requests for information or copies of records and reports by OSHA or NIOSH shall be made to the director of the department of labor and industries.

(b) Records and documents required by this standard shall be provided upon request to employees, designated representatives, and the assistant director in accordance with WAC 296-62-05201 through 296-62-05209 and 296-62-05213 through 296-62-05217. Safe practices manuals, depth-time profiles, recording of dives, decompression procedure assessment evaluations, and records of hospitalizations shall be provided in the same manner as employee exposure records or analyses using exposure or medical records. Equipment inspections and testing records which pertain to employees shall also be provided upon request to employees and their designated representatives.

(c) Records and documents required by this standard shall be retained by the employer for the following period:

(i) Dive team member medical records (physician's reports) (WAC 296-37-525) - five years;

(ii) Safe practices manual (WAC 296-37-530) - current document only;

(iii) Depth-time profile (WAC 296-37-540) - until completion of the recording of dive, or until completion of decompression procedure assessment where there has been an incident of decompression sickness;

(iv) Recording dive (WAC 296-37-545) one year, except five years where there has been an incident of decompression sickness;

(v) Decompression procedure assessment evaluations (WAC 296-37-545) - five years;

(vi) Equipment inspections and testing records (WAC 296-37-570) - current entry or tag, or until equipment is withdrawn from service;

(vii) Records of hospitalizations (WAC 296-37-575) - five years.

(d) After the expiration of the retention period of any record required to be kept for five years, the employer shall forward such records to the National Institute for Occupational Safety and Health, Department of Health and Human Services. The employer shall also comply with any additional requirements set forth in WAC 296-62-05215.

(e) In the event the employer ceases to do business:

(i) The successor employer shall receive and retain all dive and employee medical records required by this standard; or

(ii) If there is no successor employer, dive and employee medical records shall be forwarded to the National Institute for Occupational Safety and Health, Department of Health and Human Services. [Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81-18-029 (Order 81-21), § 296-37-575, filed 8/27/81. Statutory Authority: RCW 49.17.040, 49.17-.050, 49.17.240, and chapters 42.30 and 43.22 RCW. 78-10-094 (Order 78-18), § 296-37-575, filed 10/2/78.]

Chapter 296-45 WAC
SAFETY STANDARDS--ELECTRICAL WORKERS

WAC

296-45-65043 All motor vehicle and trailer operations.
296-45-660 Tree trimming.
296-45-66001 Electrical hazards.
296-45-66003 Tools and protective equipment.
296-45-66005 Insulated tools used for tree trimming.
296-45-66007 Aerial manlift equipment.
296-45-66009 All motor vehicle and trailer operations.
296-45-66011 Working in proximity to electrical hazards.

WAC 296-45-65043 All motor vehicle and trailer operations. When motor vehicles and trailers are operated on public right-of-way, highways or similar areas, the equipment shall be operated and maintained in conformance with the motor vehicle code of the state of Washington, chapters 46.04 through 46.61 RCW.

(1) Whenever and wherever such motor vehicle is operated, such equipment shall have a safe functioning brake and an emergency brake. In addition, all motor vehicles and trailers shall have such equipment as is necessary for the safe operation of the vehicle(s).

(a) When traveling, employees must ride inside the vehicle and shall not ride on the sides or on the top, nor shall employees ascend or descend a motor vehicle when such vehicle is in motion.

(b) Employees shall not ride on trailers except in cases where the trailer requires an employee to steer or brake the trailer.

(c) A truck shall not be moved from place to place with the ladder erect other than when positioning the truck at a given location. This rule does not apply to approved tower or fixed ladder trucks.

(d) Warning signs, flares and other protective devices shall be used which shall conform with the requirements for road construction or maintenance as set forth in chapter 46.37 RCW.

(2) Vehicles shall be positioned as far off the driving lanes as possible, while performing emergency operations or repairs. The 4-way flashers and rotation amber lights shall be actuated. The rotating amber lights shall be visible at 360 degrees, in accordance with chapter 204-38 WAC. Safety cones shall be installed in front of and behind the vehicle. If the operation is for more than a short duration, they shall comply with traffic control procedures. [Statutory Authority: RCW 49.17.040 and

49.17.050. 82-08-026 (Order 82-10), § 296-45-65043, filed 3/30/82; Order 76-38, § 296-45-65043, filed 12/30/76.]

WAC 296-45-660 Tree trimming. The purpose of this chapter is to make the workplace free from hazard. All sections of this chapter which include WAC 296-45-660 in the section number will apply. [Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81-13-053 (Order 81-9), § 296-45-660, filed 6/17/81.]

WAC 296-45-66001 Electrical hazards. (1) This section applies to tree trimming by contractors under WAC 296-17-506 (Class 1-6), tree trimming near energized power lines on utility property, governmental and privately owned systems.

(2) Definitions applicable to this section.

(a) "Aerial manlift equipment" - all types of equipment such as extended towers, boom-mounted cages or baskets and truck-mounted ladders. This equipment is primarily designed to place personnel and equipment aloft for working.

(b) "Qualified line-clearing tree trimmer" - a tree worker who through related training and on-the-job experience is familiar with the special techniques and hazards involved in line clearing.

(c) "Qualified line-clearing tree-trimmer trainee" - any worker regularly assigned to a line-clearing tree-trimming crew and undergoing related training and on-the-job training who, in the course of such training, has demonstrated his ability to perform his duties safely at his level of training.

(d) "Tree trimming groundman" - a member of crew working on the ground under the direction of foreman or tree trimmer.

(3) First aid. In addition to complying with the first aid provisions as found in WAC 296-24-060 through WAC 296-24-073, all employees whose duties require them to work near energized wires, or climb trees shall take an approved course in controlling bleeding and cardiopulmonary resuscitation, and be capable of aerial or tree rescue and remain proficient in its application. [Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81-13-053 (Order 81-9), § 296-45-66001, filed 6/17/81.]

WAC 296-45-66003 Tools and protective equipment. All protective hats shall be in accordance with the specifications of ANSI Z89.2-1971 Edition Industrial Protective Helmets for Electrical Workers, Class B, and shall be worn at the jobsite by employees who are exposed to overhead or electrical hazards.

(1) Defective ropes shall not be used and shall be replaced.

(2) Body belts with straps, saddles or lanyards shall be worn by employees working at an elevated position. Body belts, saddles and straps shall be inspected each day for defects before use. Defective body belts, saddles and straps shall not be used.

(3) Body belts, safety straps and saddles shall not be stored with any sharp-edged tools or near sharp objects. When a body belt, saddle, safety strap and climbers are kept in the same container, they shall be stored in such a manner as to avoid cutting or puncturing the material of the body belt, saddle or safety strap with the gaffs or climbers. [Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81-13-053 (Order 81-9), § 296-45-66003, filed 6/17/81.]

WAC 296-45-66005 Insulated tools used for tree trimming. (1) Only insulated tools having manufacturer's certification of withstanding the following minimum tests shall be used:

(a) 100,000 volts per foot of length for 5 minutes when the tool is made of fiberglass; or

(b) 75,000 volts per foot of length for 3 minutes when the tool is made of wood; or

(c) Other tests which equal or exceed (a) and (b) of this subsection.

(2) All insulated tools shall be visually inspected each day before use. All insulated tools shall be wiped clean before being used.

(3) Defective insulated tools shall not be used and shall be marked as defective and turned in for repair or replacement.

(4) Hand tools.

(a) All hydraulic tools which are used near energized lines or equipment shall use nonconductive hoses having approved strength for the normal operating pressures. The provisions of WAC 296-155-360(4)(a) and (b) are mandatory.

(b) All pneumatic tools which are used near energized lines or equipment shall:

(i) Have nonconducting hoses having approved strength for the normal operating pressures, and

(ii) Have an accumulator on the compressor to collect moisture.

(5) All tools shall be kept in good working condition and shall be properly stored. Defective tools shall be taken out of service.

(6) Wearing apparel. Goggles, hearing protection, respirators, and other such personal protective devices shall not be interchanged among employees unless they have been sanitized. [Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81-13-053 (Order 81-9), § 296-45-66005, filed 6/17/81.]

WAC 296-45-66007 Aerial manlift equipment. This section applies to aerial manlift equipment as defined in WAC 296-45-65005.

(1) A daily visual inspection and operating tests shall be made in accordance with the manufacturer's recommendation by the assigned operator.

(2) Aerial manlift equipment shall be of the type designed and maintained to meet the following safety factors:

(a) Stability test. All such equipment shall meet or exceed a safety factor of one and one-half to one in all working positions, based upon the posted working load.

(b) Structural and mechanical tests. All such equipment shall meet or exceed a safety factor of 2 to 1 in all

working positions, based upon the manufacturer's maximum rated capacity.

(c) The division of industrial safety and health will accept, in lieu of subdivision (b) of this section, the safety factor test data submitted by the manufacturer by a competent testing laboratory, or by a registered engineering firm. When and if there exists a reasonable doubt as to whether or not the equipment will meet the data required for stability in structural and mechanical testing, the division may require that such testing be performed on such equipment before it can be used. If the division in writing requires that the employer test its equipment or have such equipment tested, the employer will have a reasonable time within which to secure such information as is required by this rule.

(3) Employee shall not move any such equipment in the direction of an obstructed view unless the following requirements have been met. (An obstructed view exists even though the operator is able to see to the rear by reason of a system of mirrors or a mirror.)

(a) Vehicle can be backed up only when observer signals that it is safe to do so or the driver makes a walk–around inspection prior to backing up, or

(b) The vehicle has a reverse signal alarm audible above the surrounding noise level.

(4) Hydraulic fluids. All hydraulic fluids used for the insulated section of derrick trucks, aerial lifts, and hydraulic tools which are used around energized lines or equipment shall be of the insulating type.

(5) Mechanical adjustment or repairs shall not be attempted or performed in the field except by a person qualified to perform such work.

(6) Malfunction or needed repairs of manlift equipment shall be reported to the employee responsible for such repairs as soon as is reasonably possible. Use of equipment which is known to be in need of repairs or is malfunctioning is prohibited when such deficiency creates an unsafe operating condition.

(7) No employee shall ride in the basket while traveling to or from jobsites.

(8) When any aerial manlift equipment is parked for operation at the jobsite, the brakes shall be set. Wheel chocks shall be used to prevent accidental movement while parked on an incline. If the aerial manlift equipment has outriggers, the outriggers shall be used in accordance with manufacturer's specifications.

(9) Safety check valves shall be installed in the outrigger hydraulic system which will automatically lock the outrigger in position in case of failure of the hydraulic system except when outriggers are equipped with mechanically self–locking device.

(10) The truck shall not be moved until the boom or ladder is cradled and/or fastened down, the outrigger retracted, and the power take–off disengaged, except for a short move when the truck can be moved with care and under the direction of the employee in the elevated position.

(11) Employees shall not sit or stand on the basket edge, stand on materials placed in or across the basket, or work from a ladder set inside the basket.

(12) The basket shall not be rested on a fixed object(s) so that the weight of the boom is either totally or partially supported by the basket.

(13) Neither the basket, supporting boom or ladder on aerial equipment shall come within the prohibited distance of energized high voltage conductors or equipment as set forth in Table 1 unless protective equipment is installed by a qualified person.

(14) While working in aerial equipment employees shall wear an approved safety belt attached to the boom or basket, in a secure manner.

(15) No component of aerial devices shall be operated from the ground without permission from the employee in the basket except in case of emergency.

(16) Truck driver shall remain at tower controls while workers are working on towers except when the aerial manlift equipment has been properly chocked to prevent uncontrolled movement. Tower trucks shall be equipped with a reliable signaling device between the employees working on the tower and the truck driver.

(17) Operating levers or controls shall be kept clear of tools, materials or obstructions.

(18) Load limits as recommended by the manufacturer of aerial manlift equipment shall not be exceeded. Shock loading of the equipment is prohibited.

(19) A tree trimmer may climb out of a basket into a tree or from a tree back into the basket so long as he is properly tied into the tree during the entire maneuver.

(20) Employees shall not belt to trees, structures, or equipment while performing work from aerial devices.

(21) Whenever it is necessary to work beyond the guarded traffic work area, extreme care shall be exercised and all precautions taken to ensure the safety of the operation and the employees.

(22) Power tools not in use shall be disconnected from external power sources.

(23) Electrical, hydraulic or air tools shall have safety switches or devices to prevent accidental operation and, in addition, a quick means of disconnecting on electrically operated equipment shall be within easy reach of the operator.

(24) The basket shall be kept clean and all tools not in use shall be secured or removed.

(25) Approved warning light shall be operating when the boom leaves the cradle. This light shall be visible to approaching traffic when the boom is in position over any traveled area.

(26) Safety check valves shall be installed in the hydraulic system of aerial manlift equipment to automatically lock the boom or ladder in position in case of failure to any part of the hydraulic pressure system.

(27) All aerial manlift equipment shall have both upper and lower controls (except ladder trucks need not have upper controls). The upper controls shall not be capable of rendering the lower controls inoperative. The lower controls should be located at or near the base of the aerial structure.

If the lower controls are used, the operator shall have a view of the elevated employee(s) or there shall be communication between the operator and the employee

in the elevated aerial structure: *Provided*, That no employee shall be raised, lowered, or moved into or from the elevated position in any aerial manlift equipment unless there is another employee, not in the elevated aerial structure, available at the site to operate the lower controls, except as follows:

(a) Where there is a fixed method permanently attached to or part of the equipment which will permit an employee to descend from the elevated position without lowering the elevated structure, or

(b) Where there is a system which will provide operation from the elevated position in the event of failure or malfunction of the primary system.

This section shall not be interpreted as an exception to any other rule in this chapter.

(28) Controls in aerial manlift equipment shall be protected from accidental operation. Controls of the outriggers shall also be protected from accidental operation. Such protection may be by guarding or equivalent means.

(29) The manufacturer's recommended maximum load limit shall be posted at a conspicuous place near each set of controls and shall be kept in a legible condition.

(30) The manufacturer's operator's instruction manual shall be kept on the vehicle. [Statutory Authority: RCW 49.17.040 and 49.17.050. 82-13-045 (Order 82-22), § 296-45-66007, filed 6/11/82. Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81-13-053 (Order 81-9), § 296-45-66007, filed 6/17/81.]

WAC 296-45-66009 All motor vehicle and trailer operations. When motor vehicles and trailers are operated on public right-of-way, highways or similar areas, the equipment shall be operated and maintained in conformance with the motor vehicle code of the state of Washington, chapters 46.04 through 46.61 RCW.

(1) Whenever and wherever such motor vehicle is operated, such equipment shall have a safe functioning brake and an emergency brake. In addition, all motor vehicles and trailers shall have such equipment as is necessary for the safe operation of the vehicle(s).

(2) When traveling, employees must ride inside the vehicle and shall not ride on the sides or on the top, nor shall employees ascend or descend a motor vehicle when such vehicle is in motion.

(3) Warning signs, flares and other protective devices shall be used which shall conform with the requirements for road construction or maintenance as set forth in chapter 46.37 RCW. [Statutory Authority: RCW 49-.17.040, 49.17.050 and 49.17.240. 81-13-053 (Order 81-9), § 296-45-66009, filed 6/17/81.]

WAC 296-45-66011 Working in proximity to electrical hazards. (1) Contractors shall ensure that a close inspection is made by the employee and by the foreman or supervisor in charge before climbing, entering, or working around any tree, to determine whether an electrical power conductor passes through the tree, or passes within reaching distance of an employee working in the tree.

(2) Employees engaged in trimming, removing, or clearing trees from lines shall be required to consider all overhead electrical power conductors to be energized until such energized lines have been de-energized and grounded in accordance with the system policy.

(3) Only qualified line-clearing tree trimmer or tree trimming trainee familiar with the special techniques and hazards involved in line clearing, shall be permitted to perform the work if it is found that an electrical hazard exists.

(4) During all tree working operations aloft where an electrical hazard of more than 750 volts exists, there shall be a second employee or trainee qualified in line clearance tree trimming within normal voice communication.

(5) Where tree work is performed by employees qualified in line-clearing tree trimming and trainees qualified in line-clearing tree trimming, the clearances from energized conductors given in Table 1 shall apply.

TABLE I

Minimum Working Distances from Energized Conductors For Line-Clearing Tree Trimmers and Line-Clearing Tree Trimmer Trainees

Voltage Range (Phase to Phase) (kilovolts)	Minimum Working Distance
2.1 to 15.0	2 ft. 0 in.
15.1 to 35.0	2 ft. 4 in.
35.1 to 46.0	2 ft. 6 in.
46.1 to 72.5	3 ft. 0 in.
72.6 to 121.0	3 ft. 4 in.
138.0 to 145.0	3 ft. 6 in.
161.0 to 169.0	3 ft. 8 in.
230.0 to 242.0	5 ft. 0 in.
345.0 to 362.0	7 ft. 0 in.
500.0 to 552.0	11 ft. 0 in.
700.0 to 765.0	15 ft. 0 in.

(6) Branches hanging on an energized conductor may only be removed using approved insulated tools by a qualified line-clearing tree trimmer. [Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81-13-053 (Order 81-9), § 296-45-66011, filed 6/17/81.]

Chapter 296-46 WAC
SAFETY STANDARDS--INSTALLING ELECTRIC WIRES AND EQUIPMENT--ADMINISTRATIVE RULES

WAC

296-46-110 Foreword.
296-46-115 Definitions.
296-46-130 Classification of occupancies.
296-46-140 Plan review for educational, health care facilities and other buildings.
296-46-150 Wiring methods for designated building occupancies.
296-46-335 Unfinished areas.
296-46-350 Emergency systems.
296-46-355 Mobile home connections.
296-46-40101 Repealed.
296-46-424 Residential occupancies, ground fault circuit interrupters.
296-46-493 Electrical contractor license and administrator certificate fees.
296-46-500 Electrical advisory board.
296-46-501 Board of electrical examiners.

296-46-506 Responsibilities of electrical contractors administrator certificate holders—Revocation of certificates—Appeals.
296-46-510 Repealed.
296-46-515 Repealed.
296-46-520 Repealed.
296-46-525 Repealed.
296-46-910 Inspection fees.

DISPOSITION OF SECTIONS FORMERLY CODIFIED IN THIS CHAPTER

296-46-40101 Administrator fees. [Order 74-43, § 296-46-401, (codified as WAC 296-46-40101), filed 12/19/74.] Repealed by 81-06-037 (Order 81-5), filed 2/27/81, effective 4/1/81. Statutory Authority: RCW 19.28.060.

296-46-510 Definitions. [Statutory Authority: RCW 19.28.060. 78-02-098 (Order 77-31), § 296-46-510, filed 1/31/78; Order 74-43, § 296-46-510, filed 12/19/74.] Repealed by 81-06-037 (Order 81-5), filed 2/27/81, effective 4/1/81. Statutory Authority: RCW 19.28.060.

296-46-515 Officers. [Statutory Authority: RCW 19.28.060. 78-02-098 (Order 77-31), § 296-46-515, filed 1/31/78; Order 74-43, § 296-46-515, filed 12/19/74.] Repealed by 81-06-037 (Order 81-5), filed 2/27/81, effective 4/1/81. Statutory Authority: RCW 19.28.060.

296-46-520 Internal management. [Order 74-43, § 296-46-520, filed 12/19/74.] Repealed by 81-06-037 (Order 81-5), filed 2/27/81, effective 4/1/81. Statutory Authority: RCW 19.28.060.

296-46-525 Board duties. [Statutory Authority: RCW 19.28.060. 78-02-098 (Order 77-31), § 296-46-525, filed 1/31/78; Order 74-43, § 296-46-525, filed 12/19/74.] Repealed by 81-06-037 (Order 81-5), filed 2/27/81, effective 4/1/81. Statutory Authority: RCW 19.28.060.

WAC 296-46-110 Foreword. These rules and regulations are issued by the electrical inspection section of the department of labor and industries under the authority of chapter 19.28 RCW, Electrical Installations Law. The department is empowered by law to enforce these rules and regulations and the National Electrical Code.

The 1981 edition, National Electrical Code, is hereby adopted by reference as part of these rules and regulations. The rules and regulations are adopted for the safety of the public and are to be used in connection with the 1981 edition of the National Electrical Code. Other codes, manuals and reference works referred to in this code will be available for inspection and review in the office of the electrical inspection section of the division of building and construction safety inspection services, Olympia, during business hours. Where there is any conflict between the rules and regulations and the National Electrical Code, the rules and regulations shall be observed.

Electrical inspectors will give information as to the meaning or application of the National Electrical Code and these rules and regulations, but will not lay out work or act as consultants for contractors, owners or users.

A copy of chapter 19.28 RCW, Electrical Installations Law, may be obtained from the department of labor and industries. [Statutory Authority: RCW 19.28.060. 81-06-037 (Order 81-5), § 296-46-110, filed 2/27/81, effective 4/1/81; 78-02-098 (Order 77-31), § 296-46-110, filed 1/31/78; Order 74-43, § 296-46-110, filed 12/19/74; Order 72-7, § 296-46-110, filed 6/7/72; Order 69-2, § 296-46-110, filed 2/28/69, effective 4/1/69.]

WAC 296-46-115 Definitions. Whenever used in these rules, the words:

Advisory board: Shall mean the Washington state electrical advisory board appointed by the governor pursuant to RCW 19.28.065.

Examining board: Shall mean the board of electrical examiners.

Department: Shall mean the department of labor and industries of the state of Washington.

Director: Shall mean the director of the department of labor and industries.

Regular meeting: Shall mean the quarterly meetings held by the advisory board on the last Friday of January, April, July and October.

Board meeting: Shall mean the quarterly meetings held by the examining board on the first Monday of February, May, August and November of each year.

Special meeting: Shall mean any meeting of the advisory board or examining board called by the chairman thereof or the director and held at times other than the regular meetings. [Statutory Authority: RCW 19.28-.060. 81-06-037 (Order 81-5), § 296-46-115, filed 2/27/81, effective 4/1/81.]

WAC 296-46-130 Classification of occupancies. (1) Educational occupancy means a building or that portion thereof used primarily for educational purposes.

(2) Institutional occupancy means a building or that portion thereof where persons are harbored to receive care and are incapable of self-preservation or unable to provide for their own needs and safety without assistance of another person.

(3) Health care occupancy refers to hospitals, nursing homes, psychiatric hospitals, alcoholism hospitals, alcoholism detoxification facilities, residential treatment facilities for psychiatrically impaired children and youth and such other health care occupancies where patients may be unable to provide for their own needs and safety without the assistance of another person. See the National Electrical Code, Section 517-2 for the definition of health care facilities. [Statutory Authority: RCW 19-.28.060. 81-06-037 (Order 81-5), § 296-46-130, filed 2/27/81, effective 4/1/81; Order 72-7, § 296-46-130, filed 6/7/72; Order 69-2, § 296-46-130, filed 2/28/69, effective 4/1/69.]

WAC 296-46-140 Plan review for educational, health care facilities and other buildings. (1) All plans for new or altered installations in educational occupancies shall be reviewed and accepted by the state electrical inspection section prior to beginning such installations. Refer plans to the Electrical Division, 1616 B. Northeast 150th, Seattle, WA 98155.

(2) Plans for new or altered electrical installations in health care occupancies and other facilities which are required to submit plans for new construction for review

by the construction review unit, state department of social and health services, are to be sent directly to that unit where they will be reviewed by the department of labor and industries, electrical division.

(3) Charges for plan review of educational type buildings not including installations reviewed under subsection (2) of this section, will be based upon twenty percent of the job label fee as determined by WAC 296-46-495, plus a fee of twenty-five dollars. Review fee shall be due at time of plan submittal.

(4) Plan review for new or altered electrical installations of other types of construction may be voluntarily requested by the owner or other interested parties. The fee for such review service will be based upon an hourly rate of $30.00 per hour or major fraction thereof. [Statutory Authority: RCW 19.28.060. 81-06-037 (Order 81-5), § 296-46-140, filed 2/27/81, effective 4/1/81; 78-02-098 (Order 77-31), § 296-46-140, filed 1/31/78; Order 74-43, § 296-46-140, filed 12/19/74; Order 72-7, § 296-46-140, filed 6/7/72; Order 69-2, § 296-46-140, filed 2/28/69, effective 4/1/69.]

WAC 296-46-150 Wiring methods for designated building occupancies. (1) The fixed wiring methods for institutional, educational and health care occupancies shall be metal raceway, nonmetallic raceways encased in not less than two inches of concrete, M.I. or M.C. cable.

Exception No. 1—For signal and control circuits, open cable wiring approved for the purpose shall be permitted for Class 2 signal and control circuits as defined in Article 725 of the National Electrical Code for other than the following circuits and/or systems; nurse call systems, fire alarm systems actuated at manual stations, electric water flow alarm devices in connection with sprinkler systems, automatic fire or smoke or products of combustion devices, alarms required for systems used in the piping of nonflammable medical gases and communications systems used for issuing instructions during emergency conditions.

Exception No. 2—Open cable wiring approved for the purpose of (NFPA Bulletin No. 71) shall be permitted for Central Station Protective Systems installed and operator manned and supervised in accordance with the latest adopted edition of the National Fire Protection Association Bulletin No. 71 in other than hospitals and nursing homes.

Exception No. 3—Clinics, dental and medical offices and like occupancies except in patient care areas.

(2) Buildings to be licensed as boarding homes, alcoholism treatment facilities (other than alcoholism hospitals and alcoholism detoxification facilities), or birthing centers shall provide a safe electrical environment. A certificate of electrical inspection shall be obtained prior to occupancy.

Buildings of such use that are more than two stories in height or have more than 3,000 square feet of floor area above the first story shall be wired in metallic raceway.

(3) Other buildings. The fixed wiring method in the following building occupancies shall be busways, metal raceways, nonmetallic raceways encased in not less than two inches of concrete, cable trays or types SNM, TC, MI, MC cables; subject to the National Electrical Code.

(a) Commercial buildings: Commercial buildings open to the public and designed, intended or used for the purpose of accommodating 200 or more persons. For determination of such population capacity, the following number of square feet per person shall be applied: for standing capacity, 3 square feet per person for such building areas as transit stations, bus depots, court rooms and like buildings; for fixed seating capacity, 6 square feet per person for such building areas as church chapels, conference rooms, multi-purpose rooms and like buildings; for all other such commercial buildings, 25 square feet per person. Occupant capacity noted in Article 518 of the National Electrical Code governing those occupancies designated will not be recognized.

(b) Industrial plants: Industrial plants, except that open conductors of No. 4/0 or larger size may be installed on insulators not less than 20 feet above floor or working surface level in accordance with Article 320 of the National Electrical Code.

Exception No. 1—For signal and control circuits, other than those defined as Class 1 circuits per National Electrical Code, Sections 725-3(a) and 725-4, open cable wiring approved for the purpose shall be permitted for Class 2 signal and control circuits installed in accordance with Article 725 of the National Electrical Code.

Exception No. 2—Open cable wiring approved for the purpose (NFPA Bulletin No. 71) shall be permitted for Central Station Protective Systems installed and operator manned and supervised in accordance with the latest adopted edition of the National Fire Protection Association Bulletin No. 71.

Exception No. 3—Rigid nonmetallic conduit may be installed in areas outlined in National Electrical Code Section 300-6.

(4) Multifamily occupancy buildings (i.e., apartment buildings, hotels, motels and dormitories) of two or more stories, not including basement, shall be wired in accordance with Chapter 3 of the National Electrical Code

except feeders and subfeeders in such buildings shall be wired in a raceway(s). [Statutory Authority: RCW 19-.28.060. 81-06-037 (Order 81-5), § 296-46-150, filed 2/27/81, effective 4/1/81; 78-02-098 (Order 77-31), § 296-46-150, filed 1/31/78; Order 75-25, § 296-46-150, filed 8/4/75; Order 74-43, § 296-46-150, filed 12/19/74; Order 72-7, § 296-46-150, filed 6/7/72; Order 69-2, § 296-46-150, filed 2/28/69, effective 4/1/69.]

WAC 296-46-335 Unfinished areas. Space suitable for future living areas shall have circuits terminated or accessible for future electrical rough-in in accordance with the National Electrical Code, Chapter 3. Any wall being insulated in room areas as defined in NEC 210-52 shall have rough-in wiring in place and approved before such thermal insulation is installed. [Statutory Authority: RCW 19.28.060. 81-06-037 (Order 81-5), § 296-46-335, filed 2/27/81, effective 4/1/81; Order 74-43, § 296-46-335, filed 12/19/74; Order 72-7, § 296-46-335, filed 6/7/72.]

WAC 296-46-350 Emergency systems. See Article 700, National Electrical Code. Emergency systems shall comply with the latest adopted edition of the National Fire Protection Association Bulletin 101, Life Safety Code. In accordance with Section 700-12(d), National Electrical Code, separate emergency service conductors shall be provided and may be tapped on the load side of the electric utility metering equipment provided they are sufficiently separated and effectively fireproofed from the main service disconnecting means.

Emergency systems: Exit and emergency lights in places of assembly and including corridors must be installed where the seating capacity is 200 or more. The seating capacity will be determined by allowing a basis of 6 square feet per person. [Statutory Authority: RCW 19.28.060. 81-06-037 (Order 81-5), § 296-46-350, filed 2/27/81, effective 4/1/81; 78-02-098 (Order 77-31), § 296-46-350, filed 1/31/78; Order 72-7, § 296-46-350, filed 6/7/72; Order 69-2, § 296-46-350, filed 2/28/69, effective 4/1/69.]

WAC 296-46-355 Mobile home connections. (1) Mobile home service equipment on private property must be placed convenient and accessible to the occupant and the serving utility.

(2) Mobile home service equipment supplying a unit in a mobile home park must be located on the assigned lot space and conveniently accessible to the occupant. Feeder length from service equipment to the mobile home as noted in NEC 550-23(d) need not be considered.

(3) Overhead feeder strikes to a mobile home shall be supported within fifteen feet of the point of attachment.

(4) Where a mobile home is served from pedestal type equipment, the bottom of the enclosure containing the disconnecting means shall be a minimum of twenty-four inches above the finish grade. [Statutory Authority: RCW 19.28.060. 81-06-037 (Order 81-5), § 296-46-355, filed 2/27/81, effective 4/1/81.]

WAC 296-46-40101 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-46-424 Residential occupancies, ground fault circuit interrupters. In addition to complying with Article 210-8, National Electrical Code, there shall be a separate circuit and/or circuits limited to the bathroom(s), garage and those outdoor receptacles GFCI protected. Receptacles on the load side of the GFCI device shall be considered as being on a separate circuit. [Statutory Authority: RCW 19.28.060. 81-06-037 (Order 81-5), § 296-46-424, filed 2/27/81, effective 4/1/81; 78-02-098 (Order 77-31), § 296-46-424, filed 1/31/78; Order 75-25, § 296-46-424, filed 8/4/75.]

WAC 296-46-493 Electrical contractor license and administrator certificate fees.

(1) General electrical contractor license (annual) –	$200
(2) Specialty electrical contractor license (annual) –	$150
(3) Administrator certificate examination –	$ 50
(4) Administrator certificate renewal (annual) –	$ 20
(5) Late renewal of administrator certificate [–]	$ 40

[Statutory Authority: RCW 19.28.060 and 19.28.210. 82-18-036 (Order 82-29), § 296-46-493, filed 8/26/82. Statutory Authority: RCW 19.28.060. 78-02-098 (Order 77-31), § 296-46-493, filed 1/31/78.]

Reviser's note: RCW 34.04.058 requires the use of underlining and deletion marks to indicate amendments to existing rules, and deems ineffectual changes not filed by the agency in this manner. The bracketed material in the above section does not appear to conform to the statutory requirement.

WAC 296-46-500 Electrical advisory board. RCW 19.28.065 creates an electrical advisory board consisting of seven members appointed by the governor. It shall be the purpose and function of the advisory board to advise the director on all matters pertaining to the enforcement of chapter 19.28 RCW including, but not limited to, standards of electrical installations, minimum inspection procedures and the adoption of rules and regulations pertaining to the electrical inspection division.

No rules and regulations shall be amended or repealed until the electrical advisory board has first had an opportunity to consider any proposed amendments or repeals and had an opportunity to make recommendations to the director.

The advisory board shall, at each regular or special meeting, consider any written proposals made by any persons, firms or corporations for new electrical rules or regulations or for amendments to or repeal of existing electrical rules or regulations or for changes in administrative procedures of the electrical inspection section provided such proposals are submitted in writing to the secretary of the advisory board at least fifteen days prior to any such meeting so that the same may be properly included on the agenda for such meeting.

While the advisory board will, upon request of the director of the department of labor and industries or the

electrical inspection section thereof, aid in the administrative interpretation of the National Electrical Code and the rules and regulations covering standards for electrical installations in the state of Washington, it will not function as a board of appeal nor will it render decisions concerning the application or interpretation of any adopted rules and regulations to any person, firm or corporation engaged in the business of installing wires or equipment to convey electric current, or engaged in installing apparatus or appliances to be operated by such current.

In addition to the chairman and secretary of the advisory board as provided for by RCW 19.28.065, the advisory board shall elect from its members a vice chairman who shall perform all functions of the chairman in his absence. [Statutory Authority: RCW 19.28.060. 81-06-037 (Order 81-5), § 296-46-500, filed 2/27/81, effective 4/1/81; 78-02-098 (Order 77-31), § 296-46-500, filed 1/31/78; Order 74-43, § 296-46-500, filed 12/19/74.]

WAC 296-46-501 Board of electrical examiners. RCW 19.28.123 creates a board of electrical examiners consisting of nine members who are appointed by the governor. It shall be the purpose and function of the electrical examiners board to:

(1) Establish a general electrical contractors license and special electrical contractor license classification as the board deems appropriate.

(2) Establish and administer written examinations for general electrical contractors administrators license and various specialty electrical contractors administrators license.

(3) Certify to the director of the department of labor and industries all persons who are entitled to either a general so specialty electrical contractors administrators license.

(4) Advise the director as to the need of additional electrical inspectors and compliance officers to be utilized by the director on either a full- or part-time employment basis.

(5) Determine that all sums paid out of the electrical license fund are necessary to accomplish the intent of chapter 19.28 RCW. Such determination shall be made from reports of sums expended by the department from the electrical license fund. The department shall submit the reports to the board at the board's regular meetings.

(6) Advise the department on rules and regulations of examinations of applicants for journeyman and specialty electricians certificates of competency.

(7) Coordinate with the department in the preparation of an examination for journeyman and specialty electricians certificates of competency.

(8) Conduct hearings on appeals from revocations of electricians certificates of competency.

(9) Advise the department of labor and industries on all matters relative to RCW 19.28.500 through 19.28.620.

The board of electrical examiners shall elect a chairperson and a vice chairperson from its members. The vice chairperson shall perform all functions of the chairperson in the chairperson's absence. [Statutory Authority: RCW 19.28.060. 81-06-037 (Order 81-5), § 296-46-501, filed 2/27/81, effective 4/1/81.]

WAC 296-46-506 Responsibilities of electrical contractors administrator certificate holders--Revocation of certificates--Appeals. (1) The administrator under an electrical contractors license shall have the following responsibilities:

(a) The administrator must be a supervisory employee or member of the firm as required by RCW 19.28.125. The department will consider an administrator to be a supervisory employee or member of a firm only if the administrator actively directs or oversees the electrical work done by the electrical contractor and its employees. In determining whether the administrator is acting as a supervisor, the department will consider, but not be limited to, the following factors:

(i) Whether the administrator is a full-time employee of the electrical contractor.

(ii) Whether the administrator ensures that electrical work performed by the electrical contractor complies with state or local electrical codes.

(iii) Whether the administrator ensures that the electricians have been licensed as required by law and that electrical trainees are registered and supervised as required by law.

(iv) Whether the administrator ensures that electrical safety procedures are followed by the electrical contractor.

(v) Whether the administrator ensures that all electrical permits or labels required by law are procured.

(vi) Whether the administrator ensures that correlative notices issued by state or local electrical inspection agencies are obeyed.

(b) The administrator must notify the department immediately if his employment relationship with an electrical contractor is ended.

(2) The department may suspend or revoke an administrator's certificate for the administrator's failure to supervise electrical work performed by an electrical contractor or his failure to notify the department of the ending of his employment relationship with an electrical contractor.

(3) Any person whose administrator's certificate has been revoked or suspended by the department may appeal to the electrical board of appeals. The procedure for the appeal is specified in RCW 19.28.310. [Statutory Authority: RCW 19.28.060. 81-06-037 (Order 81-5), § 296-46-506, filed 2/27/81, effective 4/1/81.]

WAC 296-46-510 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-46-515 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-46-520 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-46-525 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-46-910 Inspection fees. To calculate the fees, amperage will be based on conductor ampacity. Voltage will be based on service conductor voltage in accordance with NEC Article 230-201, or load side of transformer.

Inspection fees shall be paid before connection by serving utility.

(1) New Service Fees:

	Single Multi-Family Residence (Each Family Dwelling Unit)	Other Than Residential			
		120/208 240 Volts	480-600 Volts	601 & Over Volts	
AMPS	1 phase	1 phase	3 phase	3 phase	3 phase
1- 100	$ 32.00	$ 32.00	$ 40.00	$ 48.00	$ 68.00
101- 200	40.00	44.00	52.00	64.00	124.00
201- 300	48.00	52.00	76.00	96.00	192.00
301- 400	60.00	64.00	108.00	128.00	268.00
401- 500	84.00	88.00	140.00	172.00	340.00
501- 600	108.00	116.00	172.00	212.00	408.00
601- 800	124.00	128.00	192.00	244.00	488.00
801-1200	144.00	152.00	224.00	280.00	564.00
1201-1600	152.00	160.00	244.00	308.00	600.00
1601-2000		172.00	252.00	320.00	640.00
2001-2500		184.00	276.00	340.00	680.00
2501-3000		192.00	288.00	364.00	708.00
3001-4000		204.00	308.00	380.00	748.00
4001-5000		212.00	320.00	404.00	800.00
5001-6000		224.00	340.00	428.00	844.00

(2) A fee of $ 12.00 shall be charged for the following.
   a. Mobile home service connection in a mobile home park.
   b. Mobile home feeder where service is existing in a mobile home park.
   c. Each lot in a recreational vehicle park to which power is supplied.
   d. Each berth in a boat harbor or marina to which power is supplied.

(3) A fee of $15.00 shall be charged for each of the following.
   a. A temporary construction service for lighting and power of 20 KVA or less. The fee for a temporary construction service in excess of 20 KVA shall be 50% of the fee for a new service installation of like ampacity.
   b[.] Yard pole meter loops or similar isolated metering installations.
   c. Calculation of or checking heat calculations.
   d. Each unit of transient worker housing.

(4) The fee for a circuit extension installed for controls and motors for central vacuum systems, garage door openers, and heating plants such as gas, oil, and electrical furnaces is $10.00.

(5) The fee for installations, increases, and relocation[s] (altered) of an existing service or feeder is 50% of the fee for a new service of like ampacity, with a minimum fee of $20.00, plus $1.00 for each new circuit installed. The total fee shall be no greater than the fee for a new service of like ampacity.

(6) The fee for new circuits, circuit extensions, and circuit alteration where the service or feeder is not modified, shall be $ 20.00 for one to four circuits inspected at the same time on the same premises under a single label and $3.00 for each additional circuit. The total fee shall be no greater than the fee for a new service of like ampacity.

(7) The fee for sign and outline lighting circuits is $10.00 for one to four circuits inspected at the same time on the same premises under a single label and $2.00 for each additional circuit.

(8) The fee for each electric sign installed, other than portable indoor signs connected with an electrical cord, is $10.00.

(9) To calculate the fees, the following shall be classed as separate services:
   (a) Feeders that terminate in a separate building; and
   (b) Secondaries of transformers.

(10) The fee for the first feeder installation with new services is 25% of the fee for service installations of like ampacity with a minimum fee of $10.00 for each feeder.

(11) The fee for a service to an individual motor will be $ 25.00 per motor for a motor rating of 10 HP or less. The fee for each horse power in excess of 10 HP is 75 cents per HP. The maximum of $ 150.00, including an allowance of 5 KVA of auxiliary motor equipment.

The optional fee for a new service installation to an individual motor may be calculated in accordance with the fees in subsection (1).

(12) In addition to the service and feeder installation fees, the fee for each electrically driven irrigation machine is $ 25.00 plus $5.00 for each tower or drive motor.

(13) The fee for inspecting existing electrical facilities will be $25.00 for the first hour and $20.00 for each additional hour or fraction of an hour.

(14) The fee for a plan review request pursuant to WAC 296-46-140(1) is 25 percent of the job label fee as determined by WAC 296-46-495, plus a fee of $25.00. The fee for review of electrical plans voluntarily requested pursuant to WAC 296-46-140(4) is $30.00 per hour or fraction of an hour.

(15) A fee of $ 20.00 per hour or fraction of an hour shall be paid before approval of the installation if the following services are necessary:
   a. Trips to inspect when the label submitter has given notice to the inspector that the work is ready for inspection when it is not, or if the submitter has given an erroneous address.

b. More than one additional inspection per label to inspect corrections required by the inspector as a result of carelessness or neglect or for improperly responding to a corrective notice.

c. Each trip necessary to remove a red tag from a jobsite posted because unlicensed electricians were working on the jobsite.

d. [When] corrections have not been made in the prescribed time, unless an exception has been requested and granted.

(16) The fee for emergency, standby, and resource recovery generators up to 5 KW is $10.00. The fee for such generators over 5 KW is $10.00 plus $0.50 per KW up to a maximum fee of $120.00. The fee for a generator installation that constitutes the main source of power is that for the applicable services and feeders.

(17) A person or business that fails to submit a fee and obtain an electrical wiring permit for a completed electrical job before the department inspects the work must pay a double fee for the permit.

(18) The fee for each individual carnival concession to which power is supplied is $10.00.

[Statutory Authority: RCW 19.28.060 and 19.28.210. 82-18-036 (Order 82-29), § 296-46-910, filed 8/26/82. Statutory Authority: RCW 19.28.060. 81-06-037 (Order 81-5), § 296-46-910, filed 2/27/81, effective 4/1/81; 78-02-098 (Order 77-31), § 296-46-910, filed 1/31/78.]

Reviser's note: RCW 34.04.058 requires the use of underlining and deletion marks to indicate amendments to existing rules, and deems ineffectual changes not filed by the agency in this manner. The bracketed material in the above section does not appear to conform to the statutory requirement.

Chapter 296-48 WAC
MOBILE HOMES, COMMERCIAL COACHES AND RECREATIONAL VEHICLES

WAC

296-48-005 through 296-48-890 Repealed.

DISPOSITION OF SECTIONS FORMERLY CODIFIED IN THIS CHAPTER

296-48-005 Administrative—Authority for mobile home code. [Order 76-26, § 296-48-005, filed 8/23/76; Order 75-20, § 296-48-005, filed 7/16/75; Order 70-2, § 296-48-005, filed 4/27/70; Order 68-4, § 296-48-005, filed 5/31/68, effective 7/1/68.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48-010 Application and scope. [Order 76-26, § 296-48-010, filed 8/23/76; Order 75-40, § 296-48-010, filed 12/4/75; Order 75-20, § 296-48-010, filed 7/16/75; Order 70-10, § 296-48-010, filed 9/17/70, effective 1/1/71; Order 70-2, § 296-48-010, filed 4/27/70; Order 68-4, § 296-48-010, filed 5/31/68, effective 7/1/68.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48-020 Alteration of mobile homes. [Order 76-26, § 296-48-020, filed 8/23/76.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48-051 Definitions. [Order 76-26, § 296-48-051, filed 8/23/76; Order 75-20, § 296-48-051, filed 7/16/75.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48-600 Enforcement. [Order 76-26, § 296-48-600, filed 8/23/76; Order 75-20, § 296-48-600, filed 7/16/75; Order 70-10, § 296-48-600, filed 9/17/70, effective 1/1/71; Order 70-2, § 296-48-600, filed 4/27/70; Order 68-4, § 296-48-600, filed 5/31/68, effective 7/1/68.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48-602 State enforcement of federal rules and regulations. [Order 76-26, § 296-48-602, filed 8/23/76.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48-604 Limited application of remaining sections. [Order 76-26, § 296-48-604, filed 8/23/76.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48-605 Equipment and installations. [Order 75-20, § 296-48-605, filed 7/16/75; Order 70-10, § 296-48-605, filed 9/17/70, effective 1/1/71; Order 70-2, § 296-48-605, filed 4/27/70; Order 68-4, § 296-48-605, filed 5/31/68, effective 7/1/68.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48-610 Department disapproval of listed or labeled equipment and installations. [Order 75-20, § 296-48-610, filed 7/16/75; Order 68-4, § 296-48-610, filed 5/31/68, effective 7/1/68.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48-615 Approval of alternates and equivalents. [Order 75-20, § 296-48-615, filed 7/16/75; Order 70-10, § 296-48-615, filed 9/17/70, effective 1/1/71; Order 70-2, § 296-48-615, filed 4/27/70; Order 68-4, § 296-48-615, filed 5/31/68, effective 7/1/68.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48-620 Manufacturer's approval. [Order 75-20, § 296-48-620, filed 7/16/75; Order 68-4, § 296-48-620, filed 5/31/68, effective 7/1/68.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48-625 Required inspection. [Order 75-20, § 296-48-625, filed 7/16/75; Order 70-2, § 296-48-625, filed 4/27/70; Order 68-4, § 296-48-625, filed 5/31/68, effective 7/1/68.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48-630 Inspection approval. [Order 75-20, § 296-48-630, filed 7/16/75; Order 70-10, § 296-48-630, filed 9/17/70, effective 1/1/71; Order 70-2, § 296-48-630, filed 4/27/70; Order 68-4, § 296-48-630, filed 5/31/68, effective 7/1/68.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48-635 Notice of violations. [Order 75-20, § 296-48-635, filed 7/16/75; Order 68-4, § 296-48-635, filed 5/31/68, effective 7/1/68.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48-636 Complaint investigation. [Order 75-20, § 296-48-636, filed 7/16/75.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48-640 Action after requested inspection. [Order 68-4, § 296-48-640, filed 5/31/68, effective 7/1/68.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48-645 Field technical service. [Order 75-20, § 296-48-645, filed 7/16/75; Order 68-4, § 296-48-645, filed 5/31/68, effective 7/1/68.] Repealed by 82-09-053

(Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48-701 Application for structural system approval. [Order 75-20, § 296-48-701, filed 7/16/75; Order 70-10, § 296-48-701, filed 9/17/70, effective 1/1/71.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48-702 Application for electrical, mechanical and plumbing system approval. [Order 75-20, § 296-48-702, filed 7/16/75.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48-703 Application for model plan approval. [Order 75-20, § 296-48-703, filed 7/16/75.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48-704 Application for in-plant quality control manual approval. [Order 75-20, § 296-48-704, filed 7/16/75.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48-706 Calculations and test procedure. [Order 75-20, § 296-48-706, filed 7/16/75; Order 70-10, § 296-48-706, filed 9/17/70, effective 1/1/71.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48-710 Model manufactured in more than one location. [Order 75-20, § 296-48-710, filed 7/16/75; Order 68-4, § 296-48-710, filed 5/31/68, effective 7/1/68.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48-715 Out-of-state applicant. [Order 75-20, § 296-48-715, filed 7/16/75; Order 68-4, § 296-48-715, filed 5/31/68, effective 7/1/68.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48-720 Non-conforming application and plans. [Order 70-2, § 296-48-720, filed 4/27/70; Order 68-4, § 296-48-720, filed 5/31/68, effective 7/1/68.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48-725 Evidence of department's approval. [Order 75-20, § 296-48-725, filed 7/16/75; Order 68-4, § 296-48-725, filed 5/31/68, effective 7/1/68.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48-730 Plan approval expiration. [Order 75-20, § 296-48-730, filed 7/16/75; Order 71-11, § 296-48-730, filed 10/8/71; Order 70-2, § 296-48-730, filed 4/27/70; Order 68-4, § 296-48-730, filed 5/31/68; effective 7/1/68.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48-735 In-plant quality control. [Order 75-20, § 296-48-735, filed 7/16/75; Order 70-10, § 296-48-735, filed 9/17/70, effective 1/1/71; Order 68-4, § 296-48-735, filed 5/31/68, effective 7/1/68.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48-740 Changes to approved plans. [Order 75-20, § 296-48-740, filed 7/16/75; Order 70-10, § 296-48-740, filed 9/17/70, effective 1/1/71; Order 70-2, § 296-48-740, filed 4/27/70; Order 68-4, § 296-48-740, filed 5/31/68, effective 7/1/68.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48-745 Change of ownership. [Order 68-4, § 296-48-745, filed 5/31/68, effective 7/1/68.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48-750 Change of name or address. [Order 68-4, § 296-48-750, filed 5/31/68, effective 7/1/68.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48-755 Discontinuance of manufacture. [Order 68-4, § 296-48-755, filed 5/31/68, effective 7/1/68.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48-760 Vehicle identification. [Order 75-20, § 296-48-760, filed 7/16/75; Order 70-2, § 296-48-760, filed 4/27/70; Order 68-4, § 296-48-760, filed 5/31/68, effective 7/1/68.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48-761 Labels for exterior locations. [Order 75-20, § 296-48-761, filed 7/16/75.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48-765 Insignia required. [Order 75-20, § 296-48-765, filed 7/16/75; Order 68-4, § 296-48-765, filed 5/31/68, effective 7/1/68.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48-770 Insignia not required. [Order 75-20, § 296-48-770, filed 7/16/75; Order 68-4, § 296-48-770, filed 5/31/68, effective 7/1/68.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48-775 Application for insignia pursuant to plan approval. [Order 75-20, § 296-48-775, filed 7/16/75; Order 70-2, § 296-48-775, filed 4/27/70; Order 68-4, § 296-48-775, filed 5/31/68, effective 7/1/68.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48-776 Application for insignia pursuant to requested inspection. [Order 75-20, § 296-48-776, filed 7/16/75.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48-780 Alteration or conversion. [Order 75-20, § 296-48-780, filed 7/16/75; Order 70-10, § 296-48-780, filed 9/17/70, effective 1/1/71; Order 68-4 § 296-48-780, filed 5/31/68, effective 7/1/68.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48-781 Not applicable. [Order 75-20, § 296-48-781, filed 7/16/75; Order 68-4, § 296-48-781, filed 5/31/68, effective 7/1/68.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48-782 Application requirements. [Order 75-20, § 296-48-782, filed 7/16/75.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48-785 Denial of insignia. [Order 68-4, § 296-48-785, filed 5/31/68, effective 7/1/68.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48-790 Insignia removal. [Order 75-20, § 296-48-790, filed 7/16/75; Order 68-4, § 296-48-790, filed 5/31/68, effective 7/1/68.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48-795 Lost or damaged insignia. [Order 75-20, § 296-48-795, filed 7/16/75; Order 68-4, § 296-48-795, filed 5/31/68, effective 7/1/68.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48-800 Fees. [Order 77-5, § 296-48-800, filed 4/6/77; Order 76-26, § 296-48-800, filed 8/23/76; Order 75-20, § 296-48-800, filed 7/16/75; Order 70-10, § 296-48-800, filed 9/17/70, effective 1/1/71; Order 70-2, § 296-48-800, filed 4/27/70; Order 68-4, § 296-48-800, filed 5/31/68, effective 7/1/68.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48-825 Public hearing. [Order 68-4, § 296-48-825, filed 5/31/68, effective 7/1/68.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48-830 Aggrievance hearing request. [Order 68-4, § 296-48-830, filed 5/31/68, effective 7/1/68.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48-890 Appendix—ANSI A119.1—Copies. [Order 76-26, Appendix (codified as WAC 296-48-890), filed 8/23/76.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

WAC 296-48-005 through 296-48-890 Repealed. See Disposition Table at beginning of this chapter.

Chapter 296-48A WAC
STANDARDS FOR RECREATIONAL VEHICLES

WAC
296-48A-001 through 296-48A-990 Repealed.

DISPOSITION OF SECTIONS FORMERLY CODIFIED IN THIS CHAPTER

296-48A-001 Standards for recreational vehicles. [Order 75-21, § 296-48A-001, filed 7/16/75.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48A-200 Individual vents. [Order 75-21, § 296-48A-200, filed 7/16/75.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48A-400 Sizing and capacity of gas piping. [Order 75-21, § 296-48A-400, filed 7/16/75.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48A-405 Description of tables. [Order 75-21, § 296-48A-405, filed 7/16/75.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48A-410 Use of capacity tables. [Order 75-21, § 296-48A-410, filed 7/16/75.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48A-600 Low-voltage wiring materials. [Order 75-21, § 296-48A-600, filed 7/16/75.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48A-605 Power-supply assembly. [Order 75-21, § 296-48A-605, filed 7/16/75.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48A-610 Ground-fault circuit protection. [Order 75-21, § 296-48A-610, filed 7/16/75.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48A-615 Labeling at the electrical entrance. [Order 75-21, § 296-48A-615, filed 7/16/75.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48A-700 Administrative—Authority for recreational vehicle code. [Order 76-26, § 296-48A-700, filed 8/23/76.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48A-750 Conditions of reciprocity. [Order 76-26, § 296-48A-750, filed 8/23/76.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48A-755 Agreements with out-of-state jurisdictions. [Order 76-26, § 296-48A-755, filed 8/23/76.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48A-770 Definitions. [Order 76-26, § 296-48A-770, filed 8/23/76.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48A-780 Enforcement. [Order 76-26, § 296-48A-780, filed 8/23/76.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48A-800 Approvals, inspections, quality control, identification. [Order 76-26, § 296-48A-800, filed 8/23/76.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48A-990 Appendix. [Order 75-21, Appendix (codified as WAC 296-48A-990), filed 7/16/75.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

WAC 296-48A-001 through 296-48A-990 Repealed. See Disposition Table at beginning of this chapter.

Chapter 296-48B WAC
STANDARDS FOR COMMERCIAL COACHES

WAC
296-48B-001 through 296-48B-835 Repealed.

DISPOSITION OF SECTIONS FORMERLY CODIFIED IN THIS CHAPTER

296-48B-001 Administrative authority for commercial coach code. [Order 76-26, § 296-48B-001, filed 8/23/76.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-002 Administrative authority for commercial coach code—Enforcement. [Order 76-26, § 296-48B-002, filed 8/23/76.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-005 General. [Order 75-40, § 296-48B-005, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-006 Approvals, inspections, quality control, identification. [Order 76-26, § 296-48B-006, filed 8/23/76.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-009 Definitions incorporated by reference. [Order 76-26, § 296-48B-009, filed 8/23/76.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-010 Definitions. [Order 76-26, § 296-48B-010, filed 8/23/76; Order 75-40, § 296-48B-010, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-015 Minimum requirements. [Order 75-40, § 296-48B-015, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-020 Structural analysis. [Order 75-40, § 296-48B-020, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-025 Standards for equipment and installations. [Order 76-26, § 296-48B-025, filed 8/23/76; Order 75-40, § 296-48B-025, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-030 Structural design—Requirements. [Order 75-40, § 296-48B-030, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-032 New materials and methods. [Order 75-40, § 296-48B-032, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-035 Design dead loads. [Order 75-40, § 296-48B-035, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-040 Design live loads. [Order 76-26, § 296-48B-040, filed 8/23/76; Order 75-40, § 296-48B-040, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-050 Standard wind. [Order 75-40, § 296-48B-050, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-055 Roof loads. [Order 75-40, § 296-48B-055, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-060 Snow loads. [Order 75-40, § 296-48B-060, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-065 Posting design loads. [Order 75-40, § 296-48B-065, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-068 Design load deflection. [Order 75-40, § 296-48B-068, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-070 Fastening of structural systems. [Order 75-40, § 296-48B-070, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-075 Instructions. [Order 75-40, § 296-48B-075, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-080 Walls. [Order 75-40, § 296-48B-080, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-085 Drilling or notching of wood wall structural members. [Order 75-40, § 296-48B-085, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-090 Firestopping. [Order 76-26, § 296-48B-090, filed 8/23/76; Order 75-40, § 296-48B-090, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-095 Interior walls and partitions. [Order 75-40, § 296-48B-095, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-100 Floors. [Order 76-26, § 296-48B-100, filed 8/23/76; Order 75-40, § 296-48B-100, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-105 Drilling or notching of wood joist structural members. [Order 75-40, § 296-48B-105, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-115 Roof trusses. [Order 75-40, § 296-48B-115, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-120 Structural load test. [Order 75-40, § 296-48B-120, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-125 Roof coverings. [Order 76-26, § 296-48B-125, filed 8/23/76; Order 75-40, § 296-48B-125, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-140 Flame-spread limitations and combustibility. [Order 76-26, § 296-48B-140, filed 8/23/76; Order 75-40, § 296-48B-140, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-142 Kitchen cabinet protection. [Order 75-40, § 296-48B-142, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-143 Carpeting. [Order 75-40, § 296-48B-143, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-145 Undervehicle closure material. [Order 75-40, § 296-48B-145, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-150 Heat loss. [Order 75-40, § 296-48B-150, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-160 Bathroom. [Order 75-40, § 296-48B-160, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-165 Glass and glazed openings. [Order 75-40, § 296-48B-165, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-175 Fire warning equipment—Automatic smoke detectors. [Order 75-40, § 296-48B-175, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-177 Room and hallway sizes. [Order 76-26, § 296-48B-177, filed 8/23/76.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-178 Ceiling height. [Order 76-26, § 296-48B-178, filed 8/23/76.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-179 Light and ventilation. [Order 76-26, § 296-48B-179, filed 8/23/76.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-180 Exit facilities. [Order 76-26, § 296-48B-180, filed 8/23/76; Order 75-40, § 296-48B-180, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-185 Weather resistance. [Order 76-26, § 296-48B-185, filed 8/23/76.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-190 Windstorm protection. [Order 76-26, § 296-48B-190, filed 8/23/76; Order 75-40, § 296-48B-190, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-19001 Table—Ties required per side of single wide (1) Commercial Coach. [Order 76-26, Table (codified WAC 296-48B-19001), filed 8/23/76; Order 75-40, Table, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-19002 Table I—Appendix CC—Accepted engineering practice standards. [Order 75-40, Table I—Appendix CC (codified as WAC 296-48B-19002), filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-19003 Table II—Appendix CC—Glazing in hazardous locations. [Order 75-40, Table II—Appendix CC (codified as WAC 296-48B-19003), filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-19004 Table III—Appendix CC—Minimum uniformly distributed live loads. [Order 75-40, Table III—Appendix CC (codified as WAC 296-48B-19004), filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-19005 Table IV—Appendix CC—Concentrated live loads. [Order 75-40, Table IV—Appendix CC (codified as WAC 296-48B-19005), filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-193 Interior privacy. [Order 76-26, § 296-48B-193, filed 8/23/76.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-196 Interior passage. [Order 76-26, § 296-48B-196, filed 8/23/76.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-200 Electrical—General. [Order 75-40, § 296-48B-200, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-210 Definitions. [Order 75-40, § 296-48B-210, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-215 Low-voltage systems—Low-voltage circuits. [Order 75-40, § 296-48B-215, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-220 Wiring materials—Combination electrical systems. [Order 75-40, § 296-48B-220, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-225 Generator installations—Mounting. [Order 75-40, § 296-48B-225, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-230 Calculations—Branch circuit and feeder calculations. [Order 75-40, § 296-48B-230, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-235 Disconnecting means and branch-circuit protective equipment—General. [Order 75-40, § 296-48B-235, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-245 Power supply—Feeder assembly equipment. [Order 75-40, § 296-48B-245, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-250 Identification of feeder assembly connection. [Order 75-40, § 296-48B-250, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-255 Wiring methods—Wiring of expandable or multiple units. [Order 75-40, § 296-48B-255, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-260 Under-chassis wiring. [Order 75-40, § 296-48B-260, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-265 Rodent resistance. [Order 75-40, § 296-48B-265, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-270 Electrical equipment—Lighting fixtures. [Order 75-40, § 296-48B-270, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-275 Equipment mounting. [Order 75-40, § 296-48B-275, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-280 Outdoor outlets, fixtures, air cooling equipment, etc. [Order 75-40, § 296-48B-280, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-285 Grounding—General. [Order 75-40, § 296-48B-285, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-290 Switch and receptacle plates. [Order 75-40, § 296-48B-290, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-295 Testing—Dielectric strength test. [Order 75-40, § 296-48B-295, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-400 Mechanical—General. [Order 75-40, § 296-48B-400, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-405 Mechanical—Definitions. [Order 75-40, § 296-48B-405, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-410 LPG equipment and installations—Construction of containers. [Order 75-40, § 296-48B-410, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-415 Location of LP-Gas containers and systems. [Order 75-40, § 296-48B-415, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-420 LP-Gas container valves and accessories. [Order 75-40, § 296-48B-420, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-425 LP-Gas safety devices. [Order 75-40, § 296-48B-425, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-430 LP-Gas system enclosure and mounting. [Order 75-40, § 296-48B-430, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-435 LP-Gas system design and service line pressure. [Order 75-40, § 296-48B-435, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-440 Electrical equipment. [Order 75-40, § 296-48B-440, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-445 Gas piping systems—General. [Order 75-40, § 296-48B-445, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-450 Piping design. [Order 75-40, § 296-48B-450, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-455 Materials. [Order 75-40, § 296-48B-455, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-460 Expandable or multiple commercial coaches. [Order 75-40, § 296-48B-460, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-465 System sizing—Gas pipe sizing. [Order 75-40, § 296-48B-465, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-467 Sizing and capacity of gas piping. [Order 75-40, § 296-48B-467, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-468 Description of tables. [Order 75-40, § 296-48B-468, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-469 Use of capacity tables. [Order 75-40, § 296-48B-469, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-46901 Table H-2—Part I and Part II. [Order 75-40, Table H-2—Part I and Part II (codified as 296-48B-46901), filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-470 Joints and installation—Joints for gas pipe. [Order 75-40, § 296-48B-470, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-475 Tubing joints. [Order 75-40, § 296-48B-475, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-480 Concealed tubing. [Order 75-40, § 296-48B-480, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-485 Pipe-joint compound. [Order 75-40, § 296-48B-485, filed 12/4/75.] Repealed by 82-04-060 (Order 82-

4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-490 Concealed joints. [Order 75-40, § 296-48B-490, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-500 Hangers and supports. [Order 75-40, § 296-48B-500, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-505 Electrical ground. [Order 75-40, § 296-48B-505, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-510 Identification of gas supply connections. [Order 75-40, § 296-48B-510, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-515 Gas piping system openings. [Order 75-40, § 296-48B-515, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-520 Appliance connections. [Order 75-40, § 296-48B-520, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-525 Valves. [Order 75-40, § 296-48B-525, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-530 Testing for leakage—Before appliances are connected. [Order 75-40, § 296-48B-530, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-535 After appliances are connected. [Order 75-40, § 296-48B-535, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-540 Rodent resistance. [Order 75-40, § 296-48B-540, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-550 Oil piping systems—General. [Order 75-40, § 296-48B-550, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-555 Oil piping systems—Expandable or multiple commercial coaches. [Order 75-40, § 296-48B-555, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-560 Oil piping systems—Materials. [Order 75-40, § 296-48B-560, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-565 Oil piping systems—Size of oil piping. [Order 75-40, § 296-48B-565, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-570 Oil piping systems—Joints for oil piping. [Order 75-40, § 296-48B-570, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-575 Oil piping systems—Tubing joints. [Order 75-40, § 296-48B-575, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-580 Oil piping systems—Pipe-joint compound. [Order 75-40, § 296-48B-580, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-585 Oil piping systems—Couplings. [Order 75-40, § 296-48B-585, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-590 Oil piping systems—Grade of piping. [Order 75-40, § 296-48B-590, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-595 Oil piping systems—Strap hangers. [Order 75-40, § 296-48B-595, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-598 Oil piping systems—Testing for leakage. [Order 75-40, § 296-48B-598, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-600 Appliances—Heat-producing. [Order 75-40, § 296-48B-600, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-610 Appliances—Installation. [Order 75-40, § 296-48B-610, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-615 Appliances—Venting, ventilation and combustion air. [Order 75-40, § 296-48B-615, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-620 Appliances—Clearance-general. [Order 75-40, § 296-48B-620, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-675 Safety devices—Water heater relief valves. [Order 75-40, § 296-48B-675, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-680 Air ducts—Duct material for circulating air supply system. [Order 75-40, § 296-48B-680, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-685 Air ducts—Sizing of ducts. [Order 75-40, § 296-48B-685, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-690 Air ducts—Airtightness of supply duct systems. [Order 75-40, § 296-48B-690, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-695 Air ducts—Expandable or multiple commercial coach connections. [Order 75-40, § 296-48B-695, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-720 Air ducts—Return air systems. [Order 75-40, § 296-48B-720, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-725 Air ducts—Joints and seams. [Order 75-40, § 296-48B-725, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-730 Air ducts—Supports. [Order 75-40, § 296-48B-730, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-735 Air ducts—Registers or grills. [Order 75-40, § 296-48B-735, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-740 Air ducts—Duct and plenum insulation. [Order 75-40, § 296-48B-740, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-800 Plumbing—Definitions. [Order 75-40, § 296-48B-800, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-805 Plumbing—General. [Order 75-40, § 296-48B-805, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-810 Plumbing—Location of water-supply connections. [Order 75-40, § 296-48B-810, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-815 Plumbing—Tub and shower enclosures. [Order 75-40, § 296-48B-815, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-820 Drainage—Location of drain outlets. [Order 75-40, § 296-48B-820, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-825 Drainage—Cap or plug. [Order 75-40, § 296-48B-825, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-830 Drainage—Clearance from drain outlet. [Order 75-40, § 296-48B-830, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-835 Drainage—Drainage systems materials. [Order 75-40, § 296-48B-835, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

WAC 296-48B-001 through 296-48B-835 Repealed. See Disposition Table at beginning of this chapter.

Chapter 296-52 WAC
SAFETY STANDARDS FOR THE POSSESSION AND HANDLING OF EXPLOSIVES

WAC

296-52-020 Purpose.
296-52-025 Variance and procedure.
296-52-030 Definitions.
296-52-040 User's (blaster's) license.
296-52-043 Use of explosives and blasting agents.
296-52-050 Transportation.
296-52-090 Construction of magazines.
296-52-095 Storage of explosives.
296-52-150 Storage of blasting caps with other explosives prohibited.
296-52-165 Blasting agents.
296-52-167 Water gel (slurry) explosives and blasting agents.
296-52-390 Storage of ammonium nitrate.
296-52-9001 Appendix Figure 1—Application for user's (blaster's) license.
296-52-9002 Appendix Figure 2—Request for inspection.
296-52-9003 Appendix Figure 3—Application for license to manufacture explosives.
296-52-9005 Appendix Figure 5—Application for dealer's license.
296-52-9006 Appendix Figure 6—Application for license to purchase explosives.
296-52-9007 Appendix Figure 7—Dealer's record.

WAC 296-52-020 Purpose. It is the purpose of this code to implement the Washington State Explosives Act, chapter 70.74 RCW, as amended by chapter 72, Laws of 1970 2nd ex. sess. The Explosives Act shall be attached to this code, and both the act and the code shall be read and enforced jointly.

This code has been written by the division of industrial safety and health and promulgated by the department of labor and industries in accordance with RCW 70.74.020 (Explosives Act), RCW 49.16.050, 49.16.060, 49.16.070 and 49.16.080 (Labor Regulations).

Advance notice was mailed as required by statute and public notice given as provided in RCW 42.32.010, on February 25, 1970.

A public hearing was conducted on March 26, 1970, at Olympia.

A copy of this code was filed with the office of the code reviser on April 29, 1970, to become effective on May 29, 1970. [Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-52-020, filed 12/24/81; Order 70-4, § 296-52-020, filed 4/29/70.]

WAC 296-52-025 Variance and procedure. Realizing that conditions may exist in operations under which certain state standards will not have practical application, the director of the Department of Labor and Industries or his authorized representative may, pursuant to this section, RCW 49.17.080 and/or 49.17.090 and appropriate administrative rules of this state and the Department of Labor and Industries and upon receipt of application and after adequate investigation by the department, permit a variation from these requirements when other means of providing an equivalent measure of protection are afforded. Such variation granted shall be limited to the particular case or cases covered in the application for variance and may be revoked for cause. The permit for variance shall be conspicuously posted on the premises and shall remain posted during the time it is in effect. All requests for variances from safety and health standards included in this or any other chapter of Title 296 WAC, shall be made in writing to the director of the department of labor and industries at Olympia, Washington, or his duly authorized representative, the assistant director, division of industrial safety and health, department of labor and industries, Olympia, Washington. Variance application forms may be obtained from the department upon request. [Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-52-025, filed 12/24/81; Order 75-41, § 296-52-025, filed 12/19/75.]

WAC 296-52-030 Definitions. Definitions as used in this chapter, unless a different meaning is plainly required by the context:

(1) "Attend" shall mean the physical presence of an authorized person within the field of vision of explosives. The said attendant shall be awake, alert and not engaged in activities which may divert his attention so that in case of an emergency he can get to the explosives quickly and without interference, except for brief periods of necessary absence, during which absence simple theft of explosives is not ordinarily possible.

(2) "Authorized," "approved" or "approval" shall be held to mean authorized, approved, or approval by the department of labor and industries or other approving agency or individual as specified by the provisions of this chapter.

(3) "Blaster" shall be held to mean that qualified person in charge of and responsible for the loading and firing of a blast.

(4) "Blasting agent" shall be held to mean and include any material or mixture consisting of a fuel and oxidizer, intended for blasting, not otherwise classified as an explosive, and in which none of the ingredients are classified as an explosive, provided that the finished product, as mixed and packaged for use or shipment,

cannot be detonated when unconfined by means of a No. 8 test blasting cap.

(5) "Day box" shall denote a box which is not approved as a magazine for unattended storage of explosives. Such box may be used for storage of explosives during working hours on a job site, provided that it shall always be guarded against theft, particularly in inhabited areas, and shall either be attended, locked or secured against outright lifting, as the risk demands. Caps shall be safely separated from other explosives. Such day boxes shall be marked with the word "Explosives."

(6) "Dealer" shall be held to mean and include any person who purchases explosives or blasting agents for the sole purpose of resale, and not for use or consumption.

(7) "Department" shall denote the department of labor and industries.

(8) "Detonating cord" (fuse) shall mean a round, flexible cord containing a center core of high explosive.

(9) "Detonator" shall mean a blasting cap, an electric blasting cap or a delay electric blasting cap.

(10) "Director" shall denote the director of the department of labor and industries, or his designated representative.

(11) "Division" shall denote the division of industrial safety and health of the department.

(12) "Efficient artificial barricade" shall be held to mean an artificial mound or properly revetted wall of earth of a minimum thickness of not less than three feet or such other artificial barricade as approved by the department of labor and industries.

(13) "Explosive" or "explosives" whenever used in this chapter shall be held to mean and include any chemical compound or mechanical mixture that is commonly used or intended for the purpose of producing an explosion, that contains any oxidizing and combustible units, or other ingredients, in such proportions, quantities or packing, that an ignition by fire, by friction, by concussion, by percussion, or by detonation of any part of the compound or mixture may cause such a sudden generation of highly heated gases that the resultant gaseous pressures are capable of producing destructive effects on contiguous objects or of destroying life or limb. In addition, the term "explosives" shall include all material which is classified as class A, class B, and class C explosives by the federal Department of Transportation: *Provided*, That for the purposes of this chapter small arms ammunition, small arms ammunition primers, smokeless powder not exceeding fifty pounds, and black powder not exceeding five pounds shall not be defined as explosives: *Provided*, That such black powder is intended to be used solely for sporting, recreational, or cultural purposes in antique firearms. Classification of explosives shall include but not be limited to the following:

Note: Classification of explosives is described by the U.S. Department of Transportation as follows (see 49 CFR Chapter I):

(a) Class A explosives: (Possessing detonating hazard) dynamite, nitroglycerin, picric acid, lead azide, fulminate of mercury, black powder exceeding five pounds, blasting caps in quantities of 1001 or more, and detonating primers.

(b) Class B explosives: (Possessing flammable hazard) propellant explosives, including smokeless propellants exceeding fifty pounds.

(c) Class C explosives: (Including certain types of manufactured articles which contain class A or class B explosives, or both, as components but in restricted quantities) blasting caps in quantities of 1000 or less.

(14) "Explosive-actuated power devices" shall be held to mean any tool or special mechanized device which is actuated by explosives, but not to include propellant-actuated power devices.

(15) "Explosives manufacturing building" shall be held to mean and include any building or other structure (excepting magazines) containing explosives, in which the manufacture of explosives, or any processing involving explosives, is carried on, and any building where explosives are used as a component part or ingredient in the manufacture of any article or device.

(16) "Explosives manufacturing plant" shall be held to mean and include all lands, with the buildings situated thereon, used in connection with the manufacturing or processing of explosives or in which any process involving explosives is carried on, or the storage of explosives thereat, as well as any premises where explosives are used as a component part or ingredient in the manufacture of any article or device.

(17) "Factory building" shall denote the same as "manufacturing building."

(18) "Forbidden or not acceptable explosives" shall be held to mean and include explosives which are forbidden or not acceptable for transportation by common carriers by rail freight, rail express, highway, or water in accordance with the regulations of the federal Department of Transportation.

(19) "Fuel" shall be held to mean and include a substance which may react with the oxygen in the air or with the oxygen yielded by an oxidizer to produce combustion.

(20) "Handling" shall denote any one or more of manufacturing, buying, selling, transporting, storing or using of explosives.

(21) "Handloader" shall be held to mean and include any person who engages in the noncommercial assembling of small arms ammunition for his own use, specifically the operation of installing new primers, powder, and projectiles into cartridge cases.

(22) "Handloader components" means small arms ammunition, small arms ammunition primers, smokeless powder not exceeding fifty pounds, and black powder as used in muzzle loading firearms not exceeding five pounds.

(23) "Highway" shall be held to mean and include any public street, public alley, or public road.

(24) "Inhabited building" shall be held to mean and include only a building regularly occupied in whole or in part as a habitation for human beings, or any church,

schoolhouse, railroad station, store, or other building where people are accustomed to assemble, other than any building or structure occupied in connection with the manufacture, transportation, storage, or use of explosives.

(25) "Magazine" shall be held to mean and include any building or other structure, other than a factory building, used for the storage of explosives.

(26) "Motor vehicle" shall be held to mean and include any self-propelled automobile, truck, tractor, semi-trailer or full trailer, or other conveyance used for the transportation of freight.

(27) "Mudcap" shall be held to mean covering the required number of cartridges that have been laid on top of a boulder with a three or four inch layer of mud (free from rocks or other material which might constitute a missile hazard). Mudcapping is also commonly known as "bulldozing" and "dobying."

(28) "Natural barricade" shall be held to mean and include any natural hill, mound, wall, or barrier composed of earth or rock or other solid material of a minimum thickness of not less than three feet.

(29) "Oxidizer" shall be held to mean a substance that yields oxygen readily to stimulate the combustion of organic matter or other fuel.

(30) "Permanent magazines" shall denote magazines that are permanently fastened to a foundation and that are left unattended. The capacity of said permanent magazines shall not exceed the limits stated in RCW 70.74.040. Permanent magazines shall be approved and licensed.

(31) "Person" shall be held to mean and include any individual, firm, copartnership, corporation, company, association, joint stock association, and including any trustee, receiver, assignee, or personal representative thereof.

(32) "Person responsible," for an explosives magazine, shall mean the legal person who actually operates the magazine and who is responsible for the proper storage, protection and removal of the explosives. The responsible person may be the owner or the lessee or the authorized operator of the magazine.

(33) "Portable magazines" also called "field" magazines shall denote magazines that are designed to be unattended and that are not permanently fastened to a foundation. Said magazines shall be so constructed or secured that they can not be readily lifted and carried away by unauthorized persons. The capacity of said portable magazines shall be limited to the amount of explosives required for efficient operation. Portable magazines shall be approved and licensed.

(34) "Possess" shall denote in this code the physical possession of explosives in one's hand, vehicle, magazine or building.

(35) "Primer" shall be held to mean a cartridge or container of explosives into which a detonator or detonating cord is inserted or attached and whose purpose is to initiate the main explosive charge.

(36) "Propellant-actuated power device" shall be held to mean and include any tool or special mechanized device or gas generator system which is actuated by a propellant or which releases and directs work through a propellant charge.

(37) "Public conveyance" shall be held to mean and include any railroad car, streetcar, ferry, cab, bus, airplane, or other vehicle which is carrying passengers for hire.

(38) "Public utility transmission system" shall mean power transmission lines over 10 KV, telephone cables, or microwave transmission systems, or buried or exposed pipelines carrying water, natural gas, petroleum, or crude oil, or refined products and chemicals, whose services are regulated by the utilities and transportation commission, municipal, or other publicly owned systems.

(39) "Purchaser" shall be held to mean any person who buys, accepts, or receives any explosives or blasting agents.

(40) "Pyrotechnics" shall be held to mean and include any combustible or explosive compositions or manufactured articles designed and prepared for the purpose of producing audible or visible effects which are commonly referred to as fireworks.

(41) "Railroad" shall be held to mean and include any steam, electric, or other railroad which carries passengers for hire.

(42) "Railroad freight car" shall denote cars that are built for and loaded with explosives and operated in accordance with DOT rules.

(43) "Semiconductive hose" means a hose with an electrical resistance high enough to limit flow of stray electric currents to safe levels, yet not so high as to prevent drainage of static electric charges to ground; hose of not more than 2 megohms resistance over its entire length and of not less than 5,000 ohms per foot meets the requirement.

(44) "Shall" means that the rule establishes a minimum standard which is mandatory. The department welcomes better or higher standards than the minimums. If extenuating circumstances make even the minimum standard impractical, supporting evidence shall be submitted in writing to the department for review and granting of a variance in accordance with WAC 296-52-025.

(45) "Small arms ammunition" shall be held to mean and include any shotgun, rifle, pistol, or revolver cartridge, and cartridges for propellant-actuated power devices and industrial guns. Military-type ammunition containing explosive bursting charges, incendiary, tracer, spotting, or pyrotechnic projectiles is excluded from this definition.

(46) "Small arms ammunition primers" shall be held to mean small percussion-sensitive explosive charges encased in a cup, used to ignite propellant powder and shall include percussion caps as used in muzzle loaders.

(47) "Smokeless propellants" shall be held to mean and include solid chemicals or solid chemical mixtures in excess of fifty pounds which function by rapid combustion.

(48) "Special industrial explosive devices" means explosive-actuated power devices and propellant-actuated power devices.

(49) "Special industrial explosives materials" means shaped materials and sheet forms and various other extrusions, pellets, and packages of high explosives, which include dynamite, trinitrotoluene (TNT), pentaerythritol tetranitrate (PETN), hexahydro-1, 3, 5-trinitro-s-triazine (RDX), and other similar compounds used for high-energy-rate forming, expanding, and shaping in metal fabrication, and for dismemberment and quick reduction of scrap metal.

(50) "Sprung holes" shall mean to spring or chamber the bottom of the drilled hole to allow room for additional explosives as a bottom load.

(51) "Trailer" shall denote semi-trailers or full trailers as defined by DOT, that are built for and loaded with explosives and operated in accordance with DOT rules.

(52) "Unclassified explosives" shall be held to mean any two components which, when mixed become capable of detonation by a No. 6 test blasting cap.

(53) "User" shall be held to mean and include any natural person, manufacturer, or blaster who acquires, purchases, or uses explosives as an ultimate consumer or who supervises such use.

(54) "Water gels or slurry explosives" comprise a wide variety of materials used for blasting. They all contain substantial proportions of water and high proportions of ammonium nitrate, some of which is in solution in the water. Two broad classes of water gels are:

(a) Those which are sensitized by a material classed as an explosive, such as TNT or smokeless powder,

(b) Those which contain no ingredient classified as an explosive; these are sensitized with metals such as aluminum or with other fuels. Water gels may be premixed at an explosives plant or mixed at the site immediately before delivery into the bore hole.

(55) "DOT specification" are regulations of the department of transportation published in 49 CFR Chapter I. [Statutory Authority: RCW 49.17.040 and 49.17.050. 81-07-048 (Order 81-4), § 296-52-030, filed 3/17/81; Order 75-41, § 296-52-030, filed 12/19/75; Order 70-4, § 296-52-030, filed 4/29/70.]

WAC 296-52-040 User's (blaster's) license. RCW 70.74.020, applies.

(1) The application for a user's (blaster's) license to use, blast or dispose explosives and blasting agents shall be made by means of a form substantially similar to that shown in Fig. 1, of this code. (See Appendix)

Application forms may be obtained at any of the department district offices, or from explosives dealers.

A "hand loader" as defined in RCW 70.74.010, does not require a user's license.

An applicant shall submit to the department either a certification from another state; or a certification by a public agency, corporation or blaster's school; or a resume of successful blasting experience, properly witnessed. If said certifications are not satisfactory, the department may establish an examination board which shall prepare an examination procedure for certification.

The department will issue a user's license card which shall state the limitations imposed on the licensee and shall be presented by the user to authorized persons, upon request, together with valid personal identification.

The user's license shall be valid for one year.

Request for renewal application may be made at any of the department district offices, or from explosives dealers.

(2) The request for an inspection of compounds, mixtures or materials that may become explosive due to drying out or undergoing other physical changes within the definition of RCW 70.74.020, shall be made by any possessor of suspect compounds to the chief explosives inspector by means of a form similar to that shown in Fig. 2, of this code. (See Appendix)

(3) The safety rules on using, blasting or disposing explosives in specific industries are stated in chapters listed under WAC 296-52-010. [Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-52-040, filed 12/24/81; Order 70-4, § 296-52-040, filed 4/29/70.]

WAC 296-52-043 Use of explosives and blasting agents. (1) General provisions.

(a) While explosives are being handled or used, smoking, matches, or any other source of fire or flame shall not be allowed within 100 feet of the blast area. No person shall be allowed to handle explosives while under the influence of intoxicating liquors, narcotics, or other dangerous drugs. This rule does not apply to persons taking prescription drugs and/or narcotics as directed by a physician providing such use shall not endanger the worker or others.

(b) Original containers or Class II magazines shall be used for taking detonators and other explosives from storage magazines to the blasting area.

(c) When blasting is done in congested areas or in close proximity to a structure, railway, or highway or any other installation that may be damaged, the blast shall be covered before firing with a mat or material that is capable of preventing fragments from being thrown.

(d) Persons authorized to prepare explosive charges or conduct blasting operations shall use every reasonable precaution, including but not limited to warning signals, flags and barricades.

(e) Blasting operations shall be conducted during daylight hours whenever possible.

(f) Whenever blasting is being conducted in the vicinity of gas, electric, water, fire alarm, telephone, telegraph, and steam utilities, the user (blaster) shall notify the appropriate representatives of such utilities at least 24 hours in advance of blasting, specifying the location and intended item of such blasting. Verbal notice shall be confirmed with written notice.

(g) Due precautions shall be taken to prevent accidental discharge of electric blasting caps from current

induced by radar, radio transmitters, lightning, adjacent powerlines, dust storms, or other sources of extraneous electricity. These precautions shall include:

(i) The suspension of all blasting operations and removal of persons from the blasting area during the approach and progress of an electric storm.

(ii) The posting of signs, warning against the use of mobile radio transmitters, on all roads shall be in accordance with the applicable provisions of the American National Standards Institute D6.1–1971, Manual on Uniform Traffic Control Devices for Streets and Highways, as amended by Washington State Department of Highways Manual M24–01 (HT), (February 22, 1972).

(iii) Ensuring that mobile radio transmitters which are less than 100 feet away from electric blasting caps, when the caps are in other than original containers, shall be deenergized and effectively locked.

(iv) Compliance with the recommendations of The Institute of the Makers of Explosives (IME) with regard to blasting in the vicinity of radio transmitters as stipulated in Radio Frequency Energy—A Potential Hazard in the Use of Electric Blasting Caps, IME Publication No. 20, March 1971.

(v) When electric blasting caps are being used in blasting operations in the proximity of fixed radio transmitters, the following table of distances must be observed, unless it is determined by designated test procedures that there is not sufficient radio frequency energy present to create a hazard. The test procedure shall be to attach a No. 47 Radio Pilot Lamp in place of the cap in the blasting circuit progressively as the circuit is connected, starting with the initial hole. In the event the lamp glows, the length of the wires connecting the circuit shall be altered by adding or cutting off wire until the lamp does not glow. A radio frequency field strength meter may be used in lieu of the test lamp.

Electromagnetic radiation. Blasting operations or storage of electrical detonators shall be prohibited in vicinity of operating radio frequency (RF) transmitter stations except where the clearances given below can be observed.

Transmitter Power Except FM Mobile (Watts)	Minimum Distance (Feet)
5 – 25	100
25 – 50	150
50 – 100	220
100 – 250	350
250 – 500	450
500 – 1,000	650
1,000 – 2,500	1,000
2,500 – 5,000	1,500
5,000 – 10,000	2,200
10,000 – 25,000	3,500
25,000 – 50,000	5,000
50,000 –100,000	7,000

Transmitter Power FM Mobile (Watts)	Minimum Distance (Feet)
1 – 10	5
10 – 30	10
30 – 60	15
60 – 250	30

(vi) When necessary to perform blasting operations at distances less than those shown in table, detonating type fuse or other approved type systems shall be used.

(h) All loading and firing shall be directed and supervised by a licensed blaster thoroughly experienced in this field. The employer shall permit only licensed persons to prepare explosives at the blasting site.

(i) All explosives shall be accounted for at all times. Explosives not being used shall be kept in a locked magazine, unavailable to persons not authorized to handle them. The employer shall maintain an inventory and use record of all explosives. Appropriate authorities shall be notified of any loss, theft, or unauthorized entry into a magazine.

(j) No fire shall be fought where the fire is in imminent danger of contact with explosives. All employees shall be removed to a safe area and the fire area guarded against intruders.

(k) Electric detonators shall be shunted until wired into the blasting circuit.

(l) Explosives shall not be handled near open flames, uncontrolled sparks or open electric circuits.

(m) Delivery and issue of explosives shall only be made by and to authorized persons and into authorized magazines or approved temporary storage or handling area.

(n) All loading and firing shall be directed and supervised by licensed persons thoroughly experienced in this field.

(o) User (blaster) qualifications:

(i) A user (blaster) shall be able to understand given written and oral orders.

(ii) A user (blaster) shall be in good physical condition and not be addicted to narcotics, intoxicants, or similar types of drugs. This rule does not apply to persons taking prescription drugs and/or narcotics as directed by a physician providing such use shall not endanger the worker or others.

(iii) A user (blaster) shall be qualified by reason of training, knowledge, or experience, in the field of transporting, storing, handling, and use of explosives, and have a working knowledge of state and local laws and regulations which pertain to explosives.

(iv) User (blaster) shall be required to furnish satisfactory evidence of competency in handling explosives and performing in a safe manner the type of blasting that will be required.

(v) The user (blaster) shall be knowledgeable and competent in the use of each type of blasting method used.

(2) Storage at use sites.

(a) Empty boxes and paper and fiber packing materials which have previously contained high explosives shall not be used again for any purpose, but shall be destroyed by burning at an approved isolated location out of doors, and no person shall be nearer than 100 feet after the burning has started.

(b) Containers of explosives shall not be opened in any magazine or within 50 feet of any magazine. In opening kegs or wooden cases, no sparking metal tools shall be used; wooden wedges and either wood, fiber or rubber mallets shall be used. Nonsparking metallic slitters may be used for opening fiberboard cases.

(c) Should cartridges or packages of explosives show signs of discoloration or deterioration, the manufacturer or the department shall be notified. Such explosives must be carefully set aside and must not be used.

(3) Loading of explosives or blasting agents.

(a) Procedures that permit safe and efficient loading shall be established before loading is started.

(b) All drill holes shall be sufficiently large to admit freely the insertion of the cartridges of explosives.

(c) Tamping shall be done only with wood rods or with approved plastic tamping poles without exposed metal parts, but nonsparking metal connectors may be used for jointed poles. Violent tamping shall be avoided. The primer shall never be tamped.

(d) No holes shall be loaded except those to be fired in the next round of blasting. After loading, all remaining explosives and detonators shall be immediately returned to an authorized magazine.

(e) Drilling shall not be started until all remaining butts of old holes are examined for unexploded charges, and if any are found, they shall be refired before work proceeds.

(f) When a charge of explosives has been exploded in a bore hole to enlarge or "spring" it, an interval of at least two hours must be allowed to pass before an additional charge of explosives can be loaded into the hole.

Note: Where it is necessary to clear obstacles for the moving of equipment there may be an exception made to this rule provided the sprung hole is thoroughly wet down with water before it is loaded.

(g) No person shall be allowed to deepen drill holes which have contained explosives or blasting agents.

(h) No explosives or blasting agents shall be left unattended at the blast site, unless properly stored.

(i) Users (blasters) shall not load, store or use explosives closer than the length of the steel being used for drilling and in no event nearer than fifty feet of drilling operations.

(j) Machines and all tools not used for loading explosives into bore holes shall be removed from the immediate location of holes being loaded with explosives. Equipment shall not be operated within 50 feet of loaded holes except when equipment is needed to add burden, mats or tracking of drills out of the loading area.

(k) Powerlines and portable electric cables for equipment being used shall be kept a safe distance from explosives or blasting agents being loaded into drill holes. Cables in the proximity of the blast area shall be deenergized and locked out.

(l) Holes shall not be drilled where there is danger of intersecting a charged or misfired hole.

(m) No explosives for underground operations other than those in Fume Class 1, as set forth by the Institute of Makers of Explosives, shall be used; however, explosives complying with the requirements of Fume Class 2 and Fume Class 3 may be used if adequate ventilation has been provided.

(n) Warning signs, indicating a blast area, shall be maintained at all approaches to the blast area. The warning sign lettering shall not be less that 4 inches in height on a contrasting background.

(o) A bore hole shall never be sprung when it is adjacent to or near a hole which has been loaded.

(p) No loaded holes shall be left unattended.

(q) The user (blaster) shall keep an accurate, up-to-date record of explosives, blasting agents, and blasting supplies used in a blast and shall keep an accurate running inventory of all explosives and blasting agents stored on the operation.

(r) When loading blasting agents pneumatically over electric blasting caps, semiconductive delivery hose shall be used and the equipment shall be bonded and grounded.

(4) Initiation of explosive charges – electric blasting.

(a) Only electric blasting caps shall be used for blasting operations in congested districts, or on highways, or adjacent to highways open to traffic, except where sources of extraneous electricity make such use dangerous. Blasting cap leg wires shall be kept short-circuited (shunted) until they are connected into the circuit for firing.

(b) Before adopting any system of electrical firing, the user (blaster) shall conduct a thorough survey for extraneous currents, and all dangerous currents shall be eliminated before any holes are loaded.

(c) In any single blast using electric blasting caps, all caps shall be of the same manufacture.

(d) Electric blasting shall be carried out by using blasting circuits or power circuits in accordance with the electric blasting cap manufacturer's recommendations.

(e) The firing line shall be checked with an approved testing device at the terminals before being connected to the blasting machine or other power source.

(f) The circuit including all caps shall be tested with an approved testing device before being connected to the firing line.

(g) When firing a circuit of electric blasting caps, care shall be exercised to ensure that an adequate quantity of delivered current is available, in accordance with the manufacturer's recommendations.

(h) Connecting wires and lead wires shall be insulated single solid wires of sufficient current-carrying capacity, and shall not be less than twenty gauge (American Wire gauge) solid core insulated wire.

(i) Firing line or leading wires shall be solid single wires of sufficient current-carrying capacity, and shall be not less than fourteen gauge (American Wire gauge) solid core insulated wire. Bus wires – depends on the size

of the blast, fourteen gauge (American Wire gauge) copper is recommended.

(j) The ends of lead wires which are to be connected to a firing device shall be shorted by twisting them together or otherwise connecting them before they are connected to the leg wires or connecting wires, and they shall be kept in the possession of the person who is doing the loading until loading is completed and the leg wires attached. Lead wires shall not be attached to the firing device until the blaster is ready to fire the shot and must be attached by the user (blaster) themselves.

(k) The ends of the leg wires on electric detonators shall be shorted in a similar manner and not separated until all holes are loaded and the loader is ready to connect the leg wires to the connecting wires or lead wires.

(l) When firing electrically, the insulation on all firing lines shall be adequate and in good condition.

(m) A power circuit used for firing electric blasting caps shall not be grounded.

(n) In underground operations when firing from a power circuit, a safety switch shall be placed at intervals in the permanent firing line. This switch shall be made so it can be locked only in the "Off" position and shall be provided with a short–circuiting arrangement of the firing lines to the cap circuit.

(o) In underground operations there shall be a "lightning" gap of at least 5 feet in the firing system ahead of the main firing switch; that is, between this switch and the source of power. This gap shall be bridged by a flexible jumper cord just before firing the blast.

(p) When firing from a power circuit, the firing switch shall be locked in the open or "Off" position at all times, except when firing. It shall be so designed that the firing lines to the cap circuit are automatically short–circuited when the switch is in the "Off" position. Keys to this switch shall be entrusted only to the user (blaster).

(q) Blasting machines shall be in good condition and the efficiency of the machine shall be tested periodically to make certain that it can deliver power at its rated capacity.

(r) When firing with blasting machines, the connections shall be made as recommended by the manufacturer of the electric blasting caps used.

(s) The number of electric blasting caps connected to a blasting machine shall not be in excess of its rated capacity. Furthermore, in primary blasting, a series circuit shall contain no more caps than the limits recommended by the manufacturer of the electric blasting caps in use.

(t) The user (blaster) shall be in charge of the blasting machines, and no other person shall connect the leading wires to the machine.

(u) Users (blasters), when testing circuits to charged holes, shall use only blasting testers especially designed for this purpose.

(v) Whenever the possibility exists that a leading line or blasting wire might be thrown over a live powerline by the force of an explosion, care shall be taken to see that the total length of wires are kept too short to hit the lines, or that the wires are securely anchored to the ground. If neither of these requirements can be satisfied, a nonelectric system shall be used.

(w) In electrical firing, only the person making leading wire connections shall fire the shot. All connections shall be made from the bore hole back to the source of firing current, and the leading wires shall remain shorted and not be connected to the blasting machine or other source of current until the charge is to be fired.

(x) After firing an electric blast from a blasting machine, the leading wires shall be immediately disconnected from the machine and short–circuited.

(y) When electric blasting caps have been used, workers shall not return to misfired holes for at least thirty minutes.

(5) Use of safety fuse.

(a) A fuse that is deteriorated or damaged in any way shall not be used.

(b) The hanging of fuse on nails or other projections which will cause a sharp bend to be formed in the fuse is prohibited.

(c) Before capping safety fuse, a short length shall be cut from the end of the supply reel so as to assure a fresh cut end in each blasting cap.

(d) Only a cap crimper of approved design shall be used for attaching blasting caps to safety fuse. Crimpers shall be kept in good repair and accessible for use.

(e) No unused cap or short capped fuse shall be placed in any hole to be blasted; such unused detonators shall be removed from the working place and disposed of or properly stored.

(f) No fuse shall be capped, or primers made up, in any magazine or near any possible source of ignition.

(g) Capping of fuse and making of primers shall only be done in a place selected for this purpose and at least one hundred feet distant from any storage magazine.

(h) Fuse must be cut long enough to reach beyond the collar of the bore hole and in no case less than three feet. When shooting choker holes, not less than three feet of fuse shall be used.

(i) At least two persons shall be present when multiple cap and fuse blasting is done by hand lighting methods.

(j) Not more than 12 fuses shall be lighted by each blaster when hand lighting devices are used. However, when two or more safety fuses in a group are lighted as one by means of igniter cord, or other similar fuse–lighting devices, they may be considered as one fuse.

(k) The so–called "drop fuse" method of dropping or pushing a primer or any explosive with a lighted fuse attached is prohibited.

(l) Cap and fuse shall not be used for firing mudcap charges unless charges are separated sufficiently to prevent one charge from dislodging other shots in the blast.

(m) When blasting with safety fuses, consideration shall be given to the length and burning rate of the fuse. Sufficient time, with a margin of safety, shall always be provided for the blaster to reach a place of safety.

(n) The burning rate of the safety fuse in use at any time shall be measured, posted in conspicuous locations, and brought to the attention of all workers concerned with blasting. No fuse shall be used that burns faster

than one foot in forty seconds or slower than one foot in fifty–five seconds.

(o) For use in wet places the joint between the cap and fuse shall be waterproofed with a compound prepared for this purpose.

(p) In making up primers only nonsparking skewers shall be used for punching the hole in the cartridge to insert the capped fuse.

(q) Only sufficient primers for one day's use shall be made up at one time. They shall be stored in a box type magazine in which no other explosives are stored.

(r) Any loose cartridges of explosives, detonators, primers and capped fuse unused at the end of the shift shall be returned to their respective magazines and locked up.

(6) Use of detonating cord.

(a) Care shall be taken to select a detonating cord consistent with the type and physical condition of the bore hole and stemming and the type of explosives used.

(b) Detonating cord shall be handled and used with the same respect and care given other explosives.

(c) For quantity and distance purposes detonating fuse up to 60 grains per foot should be calculated as equivalent to 9 lbs. of high explosives per 1,000 feet. Heavier cord loads should be rated proportionately.

(d) If using a detonating type cord for blasting the double–trunk–line or loop systems shall be used.

(e) Trunk lines in multiple–row blasts shall make one or more complete loops, with crossties between loops at intervals of not over two hundred feet.

(f) All detonating cord knots shall be tight and all connections shall be kept at right angles to the trunk lines.

(g) The line of detonating cord extending out of a bore hole or from a charge shall be cut from the supply spool before loading the remainder of the bore hole or placing additional charges.

(h) Detonating cord shall be handled and used with care to avoid damaging or severing the cord during and after loading and hooking–up.

(i) Detonating cord connections shall be competent and positive in accordance with approved and recommended methods. Knot–type or other cord–to–cord connections shall be made only with detonating cord in which the explosive core is dry.

(j) All detonating cord trunklines and branchlines shall be free of loops, sharp kinks, or angles that direct the cord back toward the oncoming line of detonation.

(k) All detonating cord connections shall be inspected before firing the blast.

(l) When detonating cord millisecond–delay connectors or short–interval–delay electric blasting caps are used with detonating cord, the practice shall conform strictly to the manufacturer's recommendations.

(m) When connecting a blasting cap or an electric blasting cap to detonating cord, the cap shall be taped or otherwise attached securely along the side or the end of the detonating cord, with the end of the cap containing the explosive charge pointed in the direction in which the detonation is to proceed.

(n) Detonators for firing the trunkline shall not be brought to the loading area nor attached to the detonating cord until everything else is in readiness for the blast.

(7) Firing the blast.

(a) A code of blasting signals equivalent to Table T–1 shall be posted on one or more conspicuous places at the operation, and all employees shall be required to familiarize themselves with the code and conform to it. Danger signs shall be placed at suitable locations.

(b) All charges shall be covered with blasting mats before firing, where blasting may cause injury or damage by flying rock or debris.

(c) Before a blast is fired, a loud warning signal shall be given by the blaster in charge, who has made certain that all surplus explosives are in a safe place and all employees, vehicles, and equipment are at a safe distance, or under sufficient cover.

(d) Flagmen shall be safely stationed on highways which pass through the danger zone so as to stop traffic during blasting operations.

(e) It shall be the duty of the blaster to fix the time of blasting.

(f) Before firing an underground blast, warning shall be given, and all possible entries into the blasting area, and any entrances to any working place where a drift, raise, or other opening is about to hole through, shall be carefully guarded. The blaster shall make sure that all employees are out of the blast area before firing a blast.

TABLE T–1

WARNING SIGNAL	—	A 1–minute series of long blasts 5 minutes prior to blast signal.
BLAST SIGNAL	—	A series of short blasts 1 minute prior to the shot.
ALL CLEAR SIGNAL	—	A prolonged blast following the inspection of blast area.

(8) Inspection after blasting.

(a) Immediately after the blast has been fired, the firing line shall be disconnected from the blasting machine, or where power switches are used, they shall be locked open or in the off position.

(b) Sufficient time shall be allowed, for the smoke and fumes to leave the blasted area before returning to the shot. An inspection of the area and the surrounding rubble shall be made by the user (blaster) to determine if all charges have been exploded before employees are allowed to return to the operation, and in tunnels, after the muck pile has been wetted down.

(9) Misfires.

(a) If a misfire is found, the user (blaster) shall provide proper safeguards for excluding all employees from the danger zone.

(b) No other work shall be done except that necessary to remove the hazard of the misfire and only those employees necessary to do the work shall remain in the danger zone.

(c) No attempt shall be made to extract explosives from any charged or misfired hole; a new primer shall be put in and the hole reblasted. If refiring of the misfired hole presents a hazard, the explosives may be removed by washing out with water or, where the misfire is under water, blown out with air.

(d) If there are any misfires while using cap and fuse, all employees shall remain away from the charge for at least one hour. Misfires shall be handled under the direction of the person in charge of the blasting.

(e) When electric blasting caps have been used, workers shall not return to misfired holes for at least thirty minutes. All wires shall be carefully traced and a search made for unexploded charges.

(f) If explosives are suspected of burning in a hole, all persons in the endangered area shall move to a safe location and no one shall return to the hole until the danger has passed, but in no case within one hour.

(g) No drilling, digging, or picking shall be permitted until all missed holes have been detonated or the authorized representative has approved that work can proceed.

(10) Underwater blasting.

(a) A user (blaster) shall conduct all blasting operations.

(b) Loading tubes and casings of dissimilar metals shall not be used because of possible electric transient currents from galvanic action of the metals and water.

(c) Only water–resistant blasting caps and detonating cords shall be used for all underwater blasting. Loading shall be done through a nonsparking metal loading tube when tube is necessary.

(d) No blast shall be fired while any vessel under way is closer than 1,500 feet to the blasting area. Those on board vessels or craft moored or anchored within 1,500 feet shall be notified before a blast is fired.

(e) No blast shall be fired while any swimming or diving operations are in progress in the vicinity of the blasting area. If such operations are in progress, signals and arrangements shall be agreed upon to assure that no blast shall be fired while any persons are in the water.

(f) Blasting flags shall be displayed.

(g) The storage and handling of explosives aboard vessels used in underwater blasting operations shall be according to provisions outlined herein on handling and storing explosives.

(h) When more than one charge is placed under water, a float device shall be attached to an element of each charge in such manner that it will be released by the firing. Misfires shall be handled in accordance with the requirements of WAC 296–52–043(9).

(11) Blasting in excavation work in pressurized air locks.

(a) Detonators and explosives shall not be stored or kept in tunnels, shafts, or caissons. Detonators and explosives for each round shall be taken directly from the magazines to the blasting zone and immediately loaded. Detonators and explosives left over after loading a round shall be removed from the working chamber before the connecting wires are connected up.

(b) When detonators or explosives are brought into an air lock, no employee except the powderman, user (blaster), lock tender and the employees necessary for carrying, shall be permitted to enter the air lock. No material, supplies, or equipment shall be brought through with the explosives.

(c) Primers, detonators and explosives shall be taken separately into pressure working chambers.

(d) The user (blaster) or powderman shall be responsible for the receipt, unloading, storage, and on–site transportation of explosives and detonators.

(e) All metal pipes, rails, air locks, and steel tunnel lining shall be electrically bonded together and grounded at or near the portal or shaft, and such pipes and rails shall be cross–bonded together at not less than 1,000–foot intervals throughout the length of the tunnel. In addition, each air supply pipe shall be grounded at its delivery end.

(f) The explosives suitable for use in wet holes shall be water–resistant and shall be Fume Class 1, or other approved explosives.

(g) When tunnel excavation in rock face is approaching mixed face, and when tunnel excavation is in mixed face, blasting shall be performed with light charges and with light burden on each hole. Advance drilling shall be performed as tunnel excavation in rock face approaches mixed face, to determine the general nature and extent of rock cover and the remaining distance ahead to soft ground as excavation advances.

(12) Vibration and damage control. Blasting operations in or adjacent to cofferdams, piers, underwater structures, buildings, structures, or other facilities shall be carefully planned with full consideration for all forces and conditions involved.

(13) Black blasting powder shall not be used for blasting except when a desired result cannot be obtained with another type of explosive such as in quarrying certain types of dimension stone.

(14) In the use of black blasting powder:

(a) Containers shall not be opened in, or within fifty feet of any magazine; within any building in which a fuel–fired or exposed–element electric heater is in operation; where electrical or incandescent–particle sparks could result in powder ignition; or within fifty feet of any open flame.

(b) Granular powder shall be transferred from containers only by pouring.

(c) Spills of granular powder shall be cleaned up promptly with nonsparking equipment, contaminated powder shall be put into a container of water and its content disposed of promptly after the granules have disintegrated, or the spill area shall be flushed with a copious amount of water to completely disintegrate the granules.

(d) Containers of powder shall be kept securely closed at all times other than when the powder is being transferred from or into a container.

(e) Containers of powder transported by vehicles shall be in a wholly enclosed cargo space.

(f) Misfires shall be disposed of by:

(i) Washing the stemming and powder charge from the bore hole, and

(ii) Removal and disposal of the initiator as a damaged explosive.

(iii) Bore holes of shots that fire but fail to break, or fail to break promptly, shall not be recharged for at least twelve hours.

(15) No person shall store, handle, or transport explosives or blasting agents when such storage, handling, and transportation of explosives or blasting agents constitutes an undue hazard to life.

(16) It shall be unlawful for any person to abandon explosives or explosive substances. [Statutory Authority: RCW 49.17.040 and 49.17.050. 82-08-026 (Order 82-10), § 296-52-043, filed 3/30/82; 81-07-048 (Order 81-4), § 296-52-043, filed 3/17/81; Order 76-6, § 296-52-043, filed 3/1/76; Order 75-41, § 296-52-043, filed 12/19/75.]

WAC 296-52-050 Transportation. (1) The transportation of explosives by vehicle on public highways shall be administered by the United States Department of Transportation, CFR 49-1978, Parts 100 through 199, and the Washington state patrol under RCW 46-.48.170. The following sections cover the transportation of explosives on the job site.

(a) No employee shall be allowed to smoke, carry matches or any other flame-producing device, or carry any firearms or loaded cartridges while in or near a motor vehicle transporting explosives; or drive, load, or unload such vehicle in a careless or reckless manner.

(b) Explosives shall not be carried on any vehicle while vehicle is being used to transport workers other than driver and two persons.

(c) Explosives shall be transferred from the disabled vehicle to another, only when proper and qualified supervision is provided.

(2) Transportation vehicles. Vehicles used for transporting explosives shall be strong enough to carry the load without difficulty and be in good mechanical condition. If vehicles do not have a closed body, the body shall be covered with a flameproof and moisture-proof tarpaulin or other effective protection against moisture and sparks. All vehicles used for the transportation of explosives shall have tight floors and any exposed spark-producing metal on the inside of the body shall be covered with wood or other nonsparking materials to prevent contact with packages of explosives. Packages of explosives shall not be loaded above the sides of an open-body vehicle.

(3) Vehicles shall be placarded and displayed as specified by the United States Department of Transportation, CFR 49-1978, Parts 100 through 199.

(4) (a) Each motor vehicle used for transporting explosives shall be equipped with a minimum of two extinguishers, each having a rating of at least 10-BC.

(i) Only extinguishers listed or approved by Underwriters Laboratories, Inc., or the Factor Mutual Engineering Corp. shall be deemed suitable for use on explosives-carrying vehicles.

(ii) Extinguishers shall be filled and ready for immediate use and readily available. Extinguishers shall be examined daily when being used by a competent person.

(b) A motor vehicle used for transporting explosives shall be given the following inspection to determine that it is in proper condition for safe transportation of explosives:

(i) Fire extinguishers shall be filled and in working order.

(ii) All electrical wiring shall be completely protected and securely fastened to prevent short-circuiting.

(iii) Chassis, motor, pan, and underside of body shall be reasonably clean and free of excess oil and grease.

(iv) Fuel tank and feedline shall be secure and have no leaks.

(v) Brakes, lights, horn, windshield wipers, and steering apparatus shall function properly.

(vi) Tires shall be checked for proper inflation and defects.

(vii) The vehicle shall be in proper condition in every other respect and acceptable for handling explosives.

(5) Operation of transportation vehicles.

(a) Vehicles transporting explosives shall only be driven by and be in the charge of a driver who is not less than 21 years of age, physically fit, careful, capable, reliable, able to read and write the English language, and not addicted to the use, or under the influence of intoxicants, narcotics, or other dangerous drugs. This rule does not apply to persons taking prescription drugs and/or narcotics as directed by a physician providing such use shall not endanger the worker or others. They shall be familiar with the traffic regulations, state laws, and the provisions of this section.

(b) Except under emergency conditions, no vehicle transporting explosives shall be parked before reaching its destination, even though attended.

(c) Every motor vehicle transporting any quantity of Class A or Class B explosives shall, at all times, be attended by a driver or other attendant of the motor carrier. This attendant shall have been made aware of the class of the explosive material in the vehicle and of its inherent dangers, and shall have been instructed in the measures and procedures to be followed in order to protect the public from those dangers. He shall have been made familiar with the vehicle he is assigned, and shall be trained, supplied with the necessary means, and authorized to move the vehicle when required.

(i) For the purpose of this subdivision, a motor vehicle shall be deemed "attended" only when the driver or other attendant is physically on or in the vehicle, or has the vehicle within his field of vision and can reach it quickly and without any kind of interference; "attended" also means that the driver or attendant is awake, alert, and not engaged in other duties or activities which may divert his attention from the vehicle.

(ii) However, an explosive-laden vehicle may be left unattended if parked within a securely fenced or walled area properly barricaded with all gates or entrances locked where parking of such vehicle is otherwise permissible, or at a magazine site established solely for the purpose of storing explosives.

(d) No spark–producing metal, spark–producing tools, oils, matches, firearms, electric storage batteries, flammable substances, acids, oxidizing materials, or corrosive compounds shall be carried in the body of any motor truck and/or vehicle transporting explosives, unless the loading of such dangerous articles and the explosives comply with U.S. Department of Transportation regulations.

(e) Vehicles transporting explosives shall avoid congested areas and heavy traffic.

(f) Delivery shall only be made to authorized persons and into authorized magazines of authorized temporary storage or handling area.

(6) Transporting of explosives and blasting caps or electric blasting caps in the same vehicle. Blasting caps, blasting caps with safety fuse, blasting caps with metal clad mild detonating fuse and/or electric blasting caps may be transported in the same vehicle with other explosives, provided the following condition is complied with:

The top, lid or door, sides and bottom of each container must be of laminate construction consisting of A/C grade or better exterior plywood, solid hardwood, asbestos board or sheetrock and sheet metal. In order of arrangement, from inside to outside, the laminate must consist of the following with the minimum thickness of each lamination as indicated: 1/4–inch plywood, 1–inch solid hardwood, 1/2–inch plywood, 1/2–inch sheetrock or 1/4–inch asbestos board, and 22–gauge sheet metal constructed inside to outside in that order.

(7) When primers are made up at a central primer house for use in high speed tunneling, the following shall apply:

(a) Only enough primers shall be made up for one day's usage.

(b) The primers shall be placed in separate containers or bins, categorized by degree of delay in such a manner so as to prevent them from physical impact.

(c) Explosives carried in the same magazine shall be separated by 1/4–inch steel, covered on each side by four inches of hardwood planking, or equivalent.

(d) Only a state approved powder car or vehicle shall be used underground.

(e) The number of primers for one round will be removed from the state approved car or vehicle at the face or heading after the drilling has been completed and the holes readied for loading. After loading the charge, the powder car or vehicle will be withdrawn from the tunnel.

(f) Wires on electric caps shall be kept shunted until wired to the bus wires.

(g) The powder car or vehicle shall be inspected daily for lights, brakes and external damage to electrical circuitry. The electrical system shall be checked weekly to detect any failures that may constitute an electrical hazard and a written record of such inspection shall be kept on file for the duration of the job.

(h) Before diesel equipment is taken underground, written permission shall be obtained from the division of industrial safety and health or its duly authorized representative. A satisfactory test on the surface, to show that the exhaust gases do not exceed the maximum percentage of allowable limits.

(i) Air measurements shall be made at least weekly in the diesel engine working area and the measurements entered in the Underground Diesel Engine Record Book.

(8) When explosives are carried to the blasting site from the main storage magazines by the blaster or helper:

(a) Special insulated containers shall be used for this purpose, either boxes or bags, one container for explosives and one for detonators.

(b) Detonators or explosives shall never be carried in pockets of clothing. (RCW 70.74.020, 70.74.160, 70.74-.191, 70.74.320, 70.74.340 and 70.74.350 apply.) [Statutory Authority: RCW 49.17.040 and 49.17.050. 82–02–003 (Order 81–32), § 296–52–050, filed 12/24/81; 81–07–048 (Order 81–4), § 296–52–050, filed 3/17/81; Order 75–41, § 296–52–050, filed 12/19/75; Order 70–4, § 296–52–050, filed 4/29/70.]

WAC 296–52–090 Construction of magazines. (1) Construction of permanent storage facilities.

(a) Definition. A Class 1 storage facility shall be a permanent structure; a building, an igloo or army–type structure, a tunnel, or a dugout. It shall be bullet–resistant, fire–resistant, weather–resistant, theft–resistant, and well ventilated.

(b) Buildings. All building type storage facilities shall be constructed of masonry, wood, metal, or a combination of these materials and shall have no openings except for entrances and ventilation. Ground around such storage facilities shall slope away for drainage.

(c) Masonry wall construction. Masonry wall construction shall consist of brick, concrete, tile, cement block, or cinder block and shall be not less than 6 inches in thickness. Hollow masonry units used in construction shall have all hollow spaces filled with well tamped coarse dry sand or weak concrete (a mixture of one part cement and eight parts of sand with enough water to dampen the mixture while tamping in place). Interior wall shall be covered with a nonsparking material.

(d) Fabricated metal wall construction. Metal wall construction shall consist of sectional sheets of steel or aluminum not less than number 14 gauge, securely fastened to a metal framework. Such metal wall construction shall be either lined inside with brick, solid cement blocks, hardwood not less than 4 inches in thickness or material of equivalent strength, or shall have at least a 6 inch sand fill between interior and exterior walls. Interior walls shall be constructed of or covered with a nonsparking material.

(e) Wood frame wall construction. The exterior of outer wood walls shall be covered with iron or aluminum not less than number 26 gauge. An inner wall of nonsparking materials shall be constructed so as to provide a space of not less than 6 inches between the outer and inner walls, which space shall be filled with coarse dry sand or weak concrete.

(f) Floors. Floors shall be constructed of a nonsparking material and shall be strong enough to bear the weight of the maximum quantity to be stored.

(g) Foundations. Foundations shall be constructed of brick, concrete, cement block, stone, or wood posts. If piers or posts are used, in lieu of a continuous foundation, the space under the buildings shall be enclosed with metal.

(h) Roof.

(i) Except for buildings with fabricated metal roofs, the outer roof shall be covered with no less than number 26-gauge iron or aluminum fastened to a 7/8 inch sheathing.

(ii) Where it is possible for a bullet to be fired directly through the roof and into the storage facility at such an angle that the bullet would strike a point below the top of inner walls, storage facilities shall be protected by one of the following methods:

(A) A sand tray shall be located at the tops of inner walls covering the entire ceiling area, except that necessary for ventilation, lined with a layer of building paper, and filled with not less than 4 inches of coarse dry sand.

(B) A fabricated metal roof shall be constructed of 3/16 inch plate steel lined with 4 inches of hardwood or material of equivalent strength (For each additional 1/16 inch of plate steel, the hardwood or material of equivalent strength lining may be decreased one inch).

(i) Doors. All doors shall be constructed of 1/4 inch plate steel and lined with 2 inches of hardwood or material of equivalent strength. Hinges and hasps shall be attached to the doors by welding, riveting or bolting (nuts on inside of door). They shall be installed in such a manner that the hinges and hasps cannot be removed when the doors are closed and locked.

(j) Locks. Each door shall be equipped with two mortise locks; or with two padlocks fastened in separate hasps and staples; or with a combination of mortise lock and a padlock, or with a mortise lock that requires two keys to open; or a three-point lock. Locks shall be five-tumbler proof. All padlocks shall be protected with 1/4 inch steel caps constructed so as to prevent sawing or lever action on the locks or hasps.

(k) Ventilation. Except at doorways, a 2 inch air space shall be left around ceilings and the perimeter of floors. Foundation ventilators shall be not less than 4 by 6 inches. Vents in the foundation, roof, or gables shall be screened and offset.

(l) Exposed metal. No sparking metal construction shall be exposed below the top of walls in the interior of storage facilities, and all nails therein shall be blind-nailed or countersunk.

(m) Igloos, army-type structures, tunnels and dugouts. Storage facilities shall be constructed of reinforced concrete, masonry, metal or a combination of these materials. They shall have an earthmound covering of not less than 24 inches on the top, sides and rear. Interior walls and floors shall be covered with a nonsparking material. Storage facilities of this type shall also be constructed in conformity with the requirements of subsection (1), subdivisions (a), (b), (f), (i), (j), (k) and (l) of this section.

(2) Construction of portable (field) storage facilities.

(a) Definition. A Class 2 storage facility shall be a box, a trailer, a semitrailer or other mobile facility. It shall be bullet-resistant, fire-resistant, weather-resistant, theft-resistant, and well ventilated. Except as provided in subsection (3) of this section, hinges and hasps shall be attached to the covers or doors in the manner prescribed in subsection (1), subdivision (i) and the locking system shall be that prescribed in subsection (1) subdivision (j).

(b) Outdoor storage facilities. Outdoor storage facilities shall be at least one cubic yard in size and supported in such a manner so as to prevent direct contact with the ground. The sides, bottoms, tops and covers or doors shall be constructed of 1/4 inch steel and shall be lined with two inches of hardwood or material of equivalent strength. Edges of metal covers shall overlap sides at least one inch. The ground around such storage facilities shall slope away for drainage. When unattended, vehicular storage facilities shall have wheels removed or shall be otherwise effectively immobilized by kingpin locking devices or other methods approved by the division of industrial safety and health.

Note: The following alternatives may be used. (All steel and wood dimensions indicated are actual thicknesses. To meet the concrete block and brick dimensions indicated, the manufacturer's represented thicknesses may be used.)

(i) Exterior of 5/8-inch steel, lined with an interior of any type of nonsparking material.

(ii) Exterior of 1/2-inch steel, lined with an interior of not less than 3/8-inch plywood.

(iii) Exterior of 3/8-inch steel, lined with an interior of two inches of hardwood.

(iv) Exterior of 3/8-inch steel, lined with an interior of three inches of softwood of 2-1/4-inches of plywood.

(v) Exterior of 1/4-inch steel, lined with an interior of five inches of softwood or 5-1/4-inches of plywood.

(vi) Exterior of 3/16-inch steel, lined with an interior of four inches of hardwood.

(vii) Exterior of 3/16-inch steel, lined with an interior of seven inches of softwood or 6-3/4-inches of plywood.

(viii) Exterior of 3/16-inch steel, lined with an intermediate layer of three inches of hardwood and an interior lining of 3/4-inch plywood.

(ix) Exterior of 1/8-inch steel, lined with an interior of five inches of hardwood.

(x) Exterior of 1/8-inch steel, lined with an interior of nine inches of softwood.

(xi) Exterior of 1/8-inch steel, lined with an intermediate layer of four inches of hardwood and an interior lining of 3/4-inch plywood.

(xii) Exterior of any type of fire-resistant material which is structurally sound, lined with an intermediate layer of four inches solid concrete block or four inches solid brick or four inches of solid concrete, and an interior lining of 1/2-inch plywood placed securely against the masonry lining.

(xiii) Standard eight-inch concrete block with voids filled with well-tamped sand/cement mixture.

(xiv) Standard eight-inch solid brick.

(xv) Exterior of any type of fire-resistant material which is structurally sound, lined with an intermediate

six–inch space filled with well–tamped dry sand or well–tamped sand/cement mixture.

(xvi) Exterior of 1/8–inch steel, lined with a first intermediate layer of 3/4–inch plywood, a second intermediate layer of 3–5/8 inches well–tamped dry sand or sand/cement mixture and an interior lining of 3/4–inch plywood.

(xvii) Exterior of any type of fire–resistant material, lined with a first intermediate layer of 3/4–inch plywood, a second intermediate layer of 3–5/8–inch well–tamped dry sand or sand/cement mixture, a third intermediate layer of 3/4–inch plywood, and a fourth intermediate layer of two inches of hardwood or 14–gauge steel and an interior lining of 3/4–inch plywood.

(xviii) Eight–inch thick solid concrete.

(3) Class 3 storage for 1,000 or less blasting caps in a locked uninhabited building. Storage facilities for blasting caps in quantities of 1,000 or less shall have sides, bottoms, and covers constructed of number 12 gauge metal and lined with a nonsparking material. Hinges and hasps shall be attached thereto by welding. A single five–tumble proof lock shall be sufficient for locking purposes.

(4) Construction of blasting agent storage facilities.

(a) A Class 4 storage facility may be a building, an igloo, or army–type structure, a tunnel, a dugout, a box, a trailer, or a semi–trailer or other mobile facility and shall be fire–resistant, weather–resistant, theft–resistant, and ventilated. They shall be constructed of masonry, metal–covered wood, fabricated metal, or a combination of these materials. The walls and floors of such storage facilities shall be lined with a nonsparking material. The doors or covers shall be metal or solid wood covered with metal. The foundations, locks, lock protection, hinges, hasps, and interior shall be in conformity with the requirements of subsection (1), subdivisions (g), (i), (j), (k), and (l).

(b) Outdoor storage facilities. The ground around such storage facilities shall slope away for drainage. When unattended, vehicular storage facilities shall have wheels removed or otherwise effectively immobilized by kingpin locking devices or other methods approved by the division of industrial safety and health.

(5) Smoking and open flames.

Smoking, matches, open flames, and spark–producing devices shall not be permitted in, or within 50 feet of, any outdoor storage facility.

(6) Quantity and storage restrictions.

General. Explosive materials in excess of 300,000 pounds and blasting caps in excess of 20 million shall not be stored in one storage facility. Blasting caps shall not be stored with other explosive materials in the same storage facility.

(7) Construction of day box storage facilities.

(a) A temporary storage facility shall be a "day–box" or other portable magazine. It must be fire–resistant, weather–resistant, and theft–resistant. A magazine is to be constructed of not less than number 12–gauge (.1046 inches) steel, lined with at least either 1/2–inch plywood or 1/2–inch Masonite–type hardboard. Doors must overlap sides by at least one inch. Hinges and hasps are to be attached by welding, riveting or bolting (nuts on inside). One steel padlock (which need not be protected by a steel hood) having at least five tumblers and a case–hardened shackle of at least 3/8–inch diameter is sufficient for locking purposes. Explosive materials are not to be left unattended in magazines and must be removed to class 1 or 2 magazines for unattended storage.

(b) The ground around such storage facilities shall slope away for drainage.

(c) No explosive materials shall be left in such facilities if unattended. The explosive materials contained therein must be removed to licensed storage facilities for unattended storage.

(d) When used for temporary storage at a site for blasting operations, magazines shall be located away from neighboring inhabited buildings, railways, highways, and other magazines. A distance of at least one hundred and fifty feet shall be maintained between magazines and the work in progress when the quantity of explosives kept therein is in excess of 25 pounds, and at least 50 feet when the quantity of explosives is 25 pounds, or less.

(8) Cap day box.

(a) Temporary storage facilities for blasting caps in quantities of 100 or less shall have sides, bottoms and covers constructed of number 12 gauge metal and lined with a nonsparking material. Hinges and hasps shall be attached thereto by welding. A single five–tumbler proof lock shall be sufficient for locking purposes.

(b) No explosive materials shall be left in such facilities if unattended. The explosive materials contained therein must be removed to licensed storage facilities for unattended storage.

(9) Storage within magazines.

(a) Packages of explosives shall be laid flat with top side up. Black powder when stored in magazines with other explosives shall be stored separately. Black powder stored in kegs shall be stored on ends, bungs down, or on side, seams down. Corresponding grades and brands shall be stored together in such a manner that brands and grade marks show. All stocks shall be stored so as to be easily counted and checked. Packages of explosives shall be piled in a stable manner. When any kind of explosive is removed from a magazine for use, the oldest explosive of that particular kind shall always be taken first.

(b) Packages of explosives shall not be unpacked or repacked in a magazine nor within 50 feet of a magazine or in close proximity to other explosives. Tools used for opening packages of explosives shall be constructed of nonsparking materials, except that metal slitters may be used for opening fiberboard boxes. A wood wedge and a fiber, rubber, or wood mallet shall be used for opening or closing wood packages of explosives. Opened packages of explosives shall be securely closed before being returned to a magazine.

(c) Magazines shall not be used for the storage of any metal tools nor any commodity except explosives, but this restriction shall not apply to the storage of blasting agents and blasting supplies.

(d) Magazine floors shall be regularly swept, kept clean, dry, free of grit, paper, empty used packages, and rubbish. Brooms and other cleaning utensils shall not have any spark–producing metal parts. Sweepings from floors of magazines shall be properly disposed of. Magazine floors stained with nitroglycerin shall be cleaned according to instructions by the manufacturer.

(e) When any explosive has deteriorated to an extent that it is in an unstable or dangerous condition, or if nitroglycerin leaks from any explosives, then the person in possession of such explosive shall immediately proceed to destroy such explosive in accordance with the instructions of the manufacturer. Only experienced persons shall be allowed to do the work of destroying explosives.

(f) When magazines need inside repairs, all explosives shall be removed therefrom and the floors cleaned. In making outside repairs, if there is a possibility of causing sparks or fire the explosives shall be removed from the magazine. Explosives removed from a magazine under repair shall either be placed in another magazine or placed a safe distance from the magazine where they shall be properly guarded and protected until repairs have been completed, when they shall be returned to the magazine.

(g) Smoking, matches, open flames, spark–producing devices, and firearms (except firearms carried by guards) shall not be permitted inside of or within 50 feet of magazines. The land surrounding a magazine shall be kept clear of all combustible materials for a distance of at least 25 feet. Combustible materials shall not be stored within 50 feet of magazines.

(h) Magazines shall be in the charge of a competent person at all times who shall be at least 21 years of age, and who shall be held responsible for the enforcement of all safety precautions.

(i) Explosives recovered from blasting misfires shall be placed in a separate magazine until competent personnel has determined from the manufacturer the method of disposal. Caps recovered from blasting misfires shall not be reused. Such explosives and caps shall then be disposed of in the manner recommended by the manufacturer.

(10) Magazine heating systems requirements, NFPA Code No. 495, "Manufacture, Transportation, Storage and Use of Explosive Materials, 1973". The following will apply:

(a) Magazines requiring heat shall be heated by either hot water radiant heating within the magazine building; or air directed into the magazine building over either hot water or low pressure steam (15 psig) coils located outside the magazine building.

(b) The magazine heating systems shall meet the following requirements:

(i) The radiant heating coils within the building shall be installed in such a manner that the explosive materials or their containers cannot contact the coils and air is free to circulate between the coils and the explosive materials or their containers.

(ii) The heating ducts shall be installed in such a manner that the hot air discharge from the duct is not directed against the explosive materials or their containers.

(iii) The heating device used in connection with a magazine shall have controls which prevent the ambient building temperature from exceeding 130°F.

(iv) The electric fan or pump used in the heating system for a magazine shall be mounted outside and separate from the wall of the magazine and shall be grounded.

(v) The electric fan motor and the controls for electrical heating devices used in heating water or steam shall have overloads and disconnects, which comply with the National Electrical Code, (National Fire Protection Association, NFPA No. 70–1971). All electrical switch gear shall be located a minimum distance of 25 feet from the magazine.

(vi) The heating source for water or steam shall be separated from the magazine by a distance of not less than 25 feet when electrical and 50 feet when fuel–fired. The area between the heating unit and the magazine shall be cleared of all combustible materials.

(vii) The storage of explosive materials and their containers in the magazine shall allow uniform air circulation so temperature uniformity can be maintained throughout the explosive materials.

(11) Lighting. No lighting shall be placed or used in a storage facility of Class 1, 2, 3 or 4 except battery–activated safety lanterns.

(12) Underground storage.

(a) Explosives and related materials shall be stored in approved facilities required under the applicable provisions of WAC 296–61–280(7), (8), safety standard metal and nonmetallic mines, quarries, pits, and crushing operations.

(b) No explosives or blasting agents shall be permanently stored in any underground operation until the operation has been developed to the point where at least two modes of exit have been developed.

(c) Permanent underground storage magazines shall be at least 300 feet from any shaft, adit, or active underground working area.

(d) Permanent underground magazines containing detonators shall not be located closer than 50 feet to any magazine containing other explosives or blasting agents.

(e) Upon the approach of an electrical storm, unless a greater hazard would be created thereby, explosives at the adit or the top of any shaft leading to where persons are working shall be moved away from such location a distance equal to that required for inhabited buildings, as listed in the American table of distances for storage of explosive materials. [Statutory Authority: RCW 49-.17.040 and 49.17.050. 82–08–026 (Order 82–10), § 296–52–090, filed 3/30/82; 81–07–048 (Order 81–4), § 296–52–090, filed 3/17/81; Order 75–41, § 296–52–090, filed 12/19/75; Order 70–4, § 296–52–090, filed 4/29/70.]

WAC 296–52–095 Storage of explosives. General provisions. (1) All Class A, Class B, Class C explosives,

and special industrial explosives, and any newly developed and unclassified explosives, shall be kept in magazines which meet the requirements of this section as defined in RCW 70.74.030, 70.74.040, 70.74.050, 70-.74.061, 70.74.100 and the following shall apply.

Note: 70.74.297 Separate storage of components capable of detonation when mixed. Any two components which, when mixed, become capable of detonation by a number 6 cap must be stored in separate locked containers or in a licensed, approved magazine. [1972 1st ex.s. c 88 § 4.]

(2) Blasting caps, electric blasting caps, detonating primers and primed cartridges shall not be stored in the same magazine with other explosives.

(3) Ground around magazines shall slope away for drainage. The land surrounding magazines shall be kept clear of brush, dried grass, leaves, and other materials for a distance of at least 25 feet.

(4) Magazines as required by this chapter shall be of four classes as defined in WAC 296–52–090.

(5) All explosive manufacturing buildings and magazines in which explosives or blasting agents, except small arms ammunition and smokeless powder are had, kept, or stored, must be located at distances from inhabited buildings, railroads, highways, and public utility transmission systems in conformity with the following quantity and distance tables, and these tables shall be the basis on which applications for license for storage shall be made and license for storage issued, as provided in RCW 70.74.110 and 70.74.120. All distances prescribed in the following quantity and distance tables are unbarricaded, and, if there is an efficient artificial barricade or natural barricade between the explosives manufacturing building or magazine and another explosives manufacturing building or magazine, building, railroad, highway, or public utility transmission system, the distance prescribed in the following quantity and distance tables may be reduced by one–half. Blasting and electric blasting caps in strength through number 8 should be rated as one and one–half pounds of explosives per one thousand caps. Blasting and electric blasting caps of strength higher than number 8 should be computed on the combined weight of explosives.

(6) When two or more storage magazines are located on the same property, each magazine must comply with the minimum distances specified from inhabited buildings, railways, and highways, and in addition, they should be separated from each other by not less than the distances shown for "separation of magazines," except that the quantity of explosives contained in cap magazines shall govern in regard to the spacing of said cap magazines from magazines containing other explosives. If any two or more magazines are separated from each other by less than the specified "separation of magazines" distances, then such two or more magazines, as a group, must be considered as one magazine, and the total quantity of explosives stored in such group must be treated as if stored in a single magazine located on the site of any magazine of the group, and must comply with the minimum of distances specified from other magazines, inhabited buildings, railways and highways.

(7) Magazine locations and access roads shall be posted with signs reading "Explosives — Keep Off" — so placed that a bullet passing through any sign will not strike the magazine. [Statutory Authority: RCW 49.17-.040 and 49.17.050. 81–07–048 (Order 81–4), § 296–52–095, filed 3/17/81; Order 75–41, § 296–52–095, filed 12/19/75.]

WAC 296–52–150 Storage of blasting caps with other explosives prohibited. RCW 70.74.100, applies. [Statutory Authority: RCW 49.17.040 and 49.17.050. 82–02–003 (Order 81–32), § 296–52–150, filed 12/24/81; Order 70–4, § 296–52–150, filed 4/29/70.]

WAC 296–52–165 Blasting agents. (1) General. Unless otherwise set forth in this section, blasting agents, excluding water gels, shall be transported, stored, and used in the same manner as explosives. Water gels are covered in WAC 296–52–167.

(2) Fixed location mixing. (a) Buildings or other facilities used for mixing blasting agents shall be located, with respect to inhabited buildings, passenger railroads, and public highways, in accordance with Table H–21. In determining the distance separating highways, railroads, and inhabited buildings from potential explosions (as prescribed in Table H–21), the sum of all masses which may propagate (i.e., lie at distances less than prescribed in Table H–22) from either individual or combined donor masses are included. However, when the ammonium nitrate must be included, only 50 percent of its weight shall be used because of its reduced blast effects.

(b) Buildings used for the mixing of blasting agents shall conform to the requirements of this section.

(i) Buildings shall be of noncombustible construction or sheet metal on wood studs.

(ii) Floors in a mixing plant shall be of concrete or of other nonabsorbent materials.

(iii) All fuel oil storage facilities shall be separated from the mixing plant and located in such a manner that in case of tank rupture, the oil will drain away from the mixing plant building.

(iv) The building shall be well ventilated.

(v) Heating units which do not depend on combustion processes, when properly designed and located, may be used in the building. All direct sources of heat shall be located outside the mixing building.

(vi) All internal–combustion engines used for electric power generation shall be located outside the mixing plant building, or shall be properly ventilated and isolated by a firewall. The exhaust systems on all such engines shall be located so any spark emission cannot be a hazard to any materials in or adjacent to the plant.

(c) Equipment used for mixing blasting agents shall conform to the requirements of this subdivision.

(i) The design of the mixer shall minimize the possibility of frictional heating, compaction, and especially confinement. All bearings and drive assemblies shall be

mounted outside the mixer and protected against the accumulation of dust. All surfaces shall be accessible for cleaning.

(ii) Mixing and packaging equipment shall be constructed of materials compatible with the fuel–ammonium nitrate composition.

(iii) Suitable means shall be provided to prevent the flow of fuel oil to the mixer in case of fire. In gravity flow systems an automatic spring–loaded shutoff valve with fusible link shall be installed.

(d) The provisions of this subdivision shall be considered when determining blasting agent compositions.

(i) The sensitivity of the blasting agent shall be determined by means of a No. 8 test blasting cap at regular intervals and after every change in formulation.

(ii) Oxidizers of small particle size, such as crushed ammonium nitrate prills or fines, may be more sensitive than coarser products and shall, therefore, be handled with greater care.

(iii) No hydrocarbon liquid fuel with flashpoint lower than that of No. 2 diesel fuel oil 125°F. minimum shall be used.

(iv) Crude oil and crankcase oil shall not be used.

(v) Metal powders such as aluminum shall be kept dry and shall be stored in containers or bins which are moisture–resistant or weathertight. Solid fuels shall be used in such manner as to minimize dust explosion hazards.

(vi) Peroxides and chlorates shall not be used.

(e) All electrical switches, controls, motors, and lights located in the mixing room shall conform to the requirements in WAC 296–24–950 through 296–24–955; otherwise they shall be located outside the mixing room. The frame of the mixer and all other equipment that may be used shall be electrically bonded and be provided with a continuous path to the ground.

(f) Safety precautions at mixing plants shall include the requirements of this subdivision.

(i) Floors shall be constructed so as to eliminate floor drains and piping into which molten materials could flow and be confined in case of fire.

(ii) The floors and equipment of the mixing and packaging room shall be cleaned regularly and thoroughly to prevent accumulation of oxidizers or fuels and other sensitizers.

(iii) The entire mixing and packaging plant shall be cleaned regularly and thoroughly to prevent excessive accumulation of dust.

(iv) Smoking, matches, open flames, spark–producing devices, and firearms (except firearms carried by guards) shall not be permitted inside of or within 50 feet of any building or facility used for the mixing of blasting agents.

(v) The land surrounding the mixing plant shall be kept clear of brush, dried grass, leaves, and other materials for a distance of at least 25 feet.

(vi) Empty ammonium nitrate bags shall be disposed of daily in a safe manner.

(vii) No welding shall be permitted or open flames used in or around the mixing or storage area of the plant unless the equipment or area has been completely washed down and all oxidizer material removed.

(viii) Before welding or repairs to hollow shafts, all oxidizer material shall be removed from the outside and inside of the shaft and the shaft vented with a minimum one–half inch diameter opening.

(ix) Explosives shall not be permitted inside of or within 50 feet of any building or facility used for the mixing of blasting agents.

(3) Bulk delivery and mixing vehicles. (a) The provisions of this subsection shall apply to off–highway private operations as well as to all public highway movements.

(b) A bulk vehicle body for delivering and mixing blasting agents shall conform with the requirements of this subdivision (b).

(i) The body shall be constructed of noncombustible materials.

(ii) Vehicles used to transport bulk premixed blasting agents on public highways shall have closed bodies.

(iii) All moving parts of the mixing system shall be designed as to prevent a heat buildup. Shafts or axles which contact the product shall have outboard bearings with 1–inch minimum clearance between the bearings and the outside of the product container. Particular attention shall be given to the clearances on all moving parts.

(iv) A bulk delivery vehicle shall be strong enough to carry the load without difficulty and be in good mechanical condition.

(c) Operation of bulk delivery vehicles shall conform to the requirements of WAC 296–52–050(2)(b). These include the placarding requirements as specified by Department of Transportation.

(i) The operator shall be trained in the safe operation of the vehicle together with its mixing, conveying, and related equipment. The employer shall assure that the operator is familiar with the commodities being delivered and the general procedure for handling emergency situations.

(ii) The hauling of either blasting caps or other explosives but not both, shall be permitted on bulk trucks provided that a special wood or nonferrous–lined container is installed for the explosives. Such blasting caps or other explosives shall be in DOT–specified shipping containers: see 49 CFR Chapter I.

(iii) No person shall smoke, carry matches or any flame–producing device, or carry any firearms while in or about bulk vehicles effecting the mixing transfer or down–the–hole loading of blasting agents at or near the blasting site.

(iv) Caution shall be exercised in the movement of the vehicle in the blasting area to avoid driving the vehicle over or dragging hoses over firing lines, cap wires, or explosive materials. The employer shall assure that the driver, in moving the vehicle, has assistance of a second person to guide the driver's movements.

(v) No intransit mixing of materials shall be performed.

(d) Pneumatic loading from bulk delivery vehicles into blastholes primed with electric blasting caps or other static–sensitive systems shall conform to the requirements of this subdivision.

(i) A positive grounding device shall be used to prevent the accumulation of static electricity.

(ii) A discharge hose shall be used that has a resistance range that will prevent conducting stray currents, but that is conductive enough to bleed off static buildup.

(iii) A qualified person shall evaluate all systems to determine if they will adequately dissipate static under potential field conditions.

(e) Repairs to bulk delivery vehicles shall conform to the requirements of this section.

(i) No welding or open flames shall be used on or around any part of the delivery equipment unless it has been completely washed down and all oxidizer material removed.

(ii) Before welding or making repairs to hollow shafts, the shaft shall be thoroughly cleaned inside and out and vented with a minimum one–half–inch diameter opening.

(4) Bulk storage bins. (a) The bin, including supports, shall be constructed of compatible materials, waterproof, and adequately supported and braced to withstand the combination of all loads including impact forces arising from product movement within the bin and accidental vehicle contact with the support legs.

(b) The bin discharge gate shall be designed to provide a closure tight enough to prevent leakage of the stored product. Provision shall also be made so that the gate can be locked.

(c) Bin loading manways or access hatches shall be hinged or otherwise attached to the bin and be designed to permit locking.

(d) Any electrically driven conveyors for loading or unloading bins shall conform to the requirements of WAC 296–24–950 through 296–24–955. They shall be designed to minimize damage from corrosion.

(e) Bins containing blasting agent shall be located, with respect to inhabited buildings, passenger railroads, and public highways, in accordance with Table H–21 and separation from other blasting agent storage and explosives storage shall be in conformity with Table H–22.

(f) Bins containing ammonium nitrate shall be separated from blasting agent storage and explosives storage in conformity with Table H–22.

TABLE H–22
TABLE OF RECOMMENDED SEPARATION DISTANCES OF AMMONIUM NITRATE AND BLASTING AGENTS FROM EXPLOSIVES OR BLASTING AGENTS[1] [6]

Donor weight		Minimum separation distance of receptor when barricaded[2] (ft.)		Minimum thickness of artificial barricades[5] (in.)
Pounds over	Pounds not over	Ammonium nitrate[3]	Blasting agent[4]	
	100	3	11	12
100	300	4	14	12
300	600	5	18	12
600	1,000	6	22	12
1,000	1,600	7	25	12
1,600	2,000	8	29	12
2,000	3,000	9	32	15
3,000	4,000	10	36	15
4,000	6,000	11	40	15
6,000	8,000	12	43	20
8,000	10,000	13	47	20
10,000	12,000	14	50	20
12,000	16,000	15	54	25
16,000	20,000	16	58	25
20,000	25,000	18	65	25
25,000	30,000	19	68	30
30,000	35,000	20	72	30
35,000	40,000	21	76	30
40,000	45,000	22	79	35
45,000	50,000	23	83	35
50,000	55,000	24	86	35
55,000	60,000	25	90	35
60,000	70,000	26	94	40
70,000	80,000	28	101	40
80,000	90,000	30	108	40
90,000	100,000	32	115	40
100,000	120,000	34	122	50
120,000	140,000	37	133	50
140,000	160,000	40	144	50
160,000	180,000	44	158	50
180,000	200,000	48	173	50
200,000	220,000	52	187	60
220,000	250,000	56	202	60
250,000	275,000	60	216	60
275,000	300,000	64	230	60

Notes to Table of Recommended Separation Distances of Ammonium Nitrate and Blasting Agents from Explosives or Blasting Agents:

Note 1. These distances apply to the separation of stores only. Table H–21 shall be used in determining separation distances from inhabited buildings, passenger railways, and public highways.

Note 2. When the ammonium nitrate and/or blasting agent is not barricaded, the distances shown in the table shall be multiplied by six. These distances allow for the possibility of high velocity metal fragments from mixers, hoppers, truck bodies, sheet metal structures, metal containers, and the like which may enclose the "donor." Where storage is in bullet–resistant magazines recommended for explosives or where the storage is protected by a bullet–resistant wall, distances, and barricade thicknesses in excess of those prescribed in Table H–21 are not required.

Note 3. The distances in the table apply to ammonium nitrate that passes the insensitivity test prescribed in the definition of ammonium nitrate fertilizer promulgated by the National Plant Food Institute*; and ammonium nitrate failing to pass said test shall be stored at separation distances determined by competent persons. (*Definition and Test Procedures for

Ammonium Nitrate Fertilizer, National Plant Food Institute, November 1964.)

Note 4. These distances apply to nitro–carbo–nitrates and blasting agents which pass the insensitivity test prescribed in the U.S. Department of Transportation (DOT) regulations.

Note 5. Earth, or sand dikes, or enclosures filled with the prescribed minimum thickness of earth or sand are acceptable artificial barricades. Natural barricades, such as hills or timber of sufficient density that the surrounding exposures which require protection cannot be seen from the "donor" when the trees are bare of leaves, are also acceptable.

Note 6. When the ammonium nitrate must be counted in determining the distances to be maintained from inhabited buildings, passenger railways and public highways, it may be counted at one–half its actual weight because its blast effect is lower.

Note 7. Guide to use of table of recommended separation distances of ammonium nitrate and blasting agents from explosives or blasting agents.

(a) Sketch location of all potential donor and acceptor materials together with the maximum mass of material to be allowed in that vicinity. (Potential donors are high explosives, blasting agents, and combination of masses of detonating materials. Potential acceptors are high explosives, blasting agents, and ammonium nitrate.)

(b) Consider separately each donor mass in combination with each acceptor mass. If the masses are closer than table allowance (distances measured between nearest edges), the combination of masses becomes a new potential donor of weight equal to the total mass. When individual masses are considered as donors, distances to potential acceptors shall be measured between edges. When combined masses within propagating distance of each other are considered as a donor, the appropriate distance to the edge of potential acceptors shall be computed as a weighted distance from the combined masses:

(i) Calculation of weighted distance from combined masses:

Let M_2, M_3 .... M_n be donor masses to be combined.

M_1 is a potential acceptor mass.

D_{12} is distance from M_1 to M_2 (edge to edge).

D_{13} is distance from M_1 to M_3 (edge to edge), etc.

To find weighted distance [$D_{1(2,3\ldots n)}$ from combined masses to M_1, add the products of the individual masses and distances and divide the total by the sum of the masses thus:

$$D_{1(2,3,\ldots n)} = \frac{M_2xD_{12}+M_3xD_{13}\ldots+M_nxD_{1n}}{M_2+M_3\ldots+M_n}$$

Propagation is possible if either an individual donor mass is less than the tabulated distance from an acceptor or a combined mass is less than the weighted distance from an acceptor.

(c) In determining the distances separating highways, railroads, and inhabited buildings from potential explosions (as prescribed in Table H–21), the sum of all masses which may propagate (i.e., lie at distances less than prescribed in the Table) from either individual or combined donor masses are included. However, when the ammonium nitrate must be included, only 50 percent of its weight shall be used because of its reduced blast effects. In applying Table H–21 to distances from highways, railroads, and inhabited buildings, distances are measured from the nearest edge of potentially explodable material as prescribed in Table H–21, Note 5.

(d) When all or part of a potential acceptor comprises Explosives Class A as defined in DOT regulations, storage in bullet–resistant magazines is required. Safe distances to stores in bullet–resistant magazines may be obtained from the intermagazine distances prescribed in Table H–21.

(e) Barricades must not have line–of–sight openings between potential donors and acceptors which permit blast or missiles to move directly between masses.

(f) Good housekeeping practices shall be maintained around any bin containing ammonium nitrate or blasting agent. This includes keeping weeds and other combustible materials cleared within 25 feet of such bin. Accumulation of spilled product on the ground shall be prevented.

(5) Storage of blasting agents and supplies. (a) Blasting agents and oxidizers used for mixing of blasting agents shall be stored in the manner set forth in this subsection.

(i) Blasting agents or ammonium nitrate, when stored in conjunction with explosives, shall be stored in the manner set forth in WAC 296–52–090(1)(a) for explosives. The mass of blasting agents and one–half the mass of ammonium nitrate shall be included when computing the total quantity of explosives for determining distance requirements.

(ii) Blasting agents, when stored entirely separate from explosives, may be stored in the manner set forth in WAC 296–52–090(4)(a) or in one–story warehouses (without basements) which shall be:

(a) Noncombustible or fire resistive;

(b) Constructed so as to eliminate open floor drains and piping into which molten materials could flow and be confined in case of fire;

(c) Weather resistant;

(d) Well ventilated; and

(e) Equipped with a strong door kept securely locked except when open for business.

(iii) Semitrailer or full-trailer vans used for highway or onsite transportation of the blasting agents are satisfactory for temporarily storing these materials, provided they are located in accordance with Table H-21 with respect to inhabited buildings, passenger railways, and public highways and according to Table H-22 with respect to one another. Trailers shall be provided with substantial means for locking, and the trailer doors shall be kept locked, except during the time of placement and removal of stocks of blasting agents.

(b) Warehouses used for the storage of blasting agents separate from explosives shall be located as set forth in this subdivision.

(i) Warehouses used for the storage of blasting agents shall be located in accordance with the provisions of Table H-21 with respect to inhabited buildings, passenger railways, and public highways, and according to Table H-22 with respect to one another.

(ii) If both blasting agents and ammonium nitrate are handled or stored within the distance limitations prescribed in Table H-21, one-half the mass of the ammonium nitrate shall be added to the mass of the blasting agent when computing the total quality of explosives for determining the proper distance.

(c) Smoking, matches, open flames, spark producing devices, and firearms are prohibited inside of or within 50 feet of any warehouse used for the storage of blasting agents. Combustible materials shall not be stored within 50 feet of warehouses used for the storage of blasting agents.

(d) The interior of warehouses used for the storage of blasting agents shall be kept clean and free from debris and empty containers. Spilled materials shall be cleaned up promptly and safely removed. Combustible materials, flammable liquids, corrosive acids, chlorates, or nitrates shall not be stored in any warehouse used for blasting agents unless separated therefrom by a fire resistive separation of not less than 1 hour resistance. The provisions of this subdivision shall not prohibit the storage of blasting agents together with non-explosive blasting supplies.

(e) Piles of ammonium nitrate and warehouses containing ammonium nitrate shall be adequately separated from readily combustible fuels.

(f) Caked oxidizers, either in bags or in bulk, shall not be loosened by blasting.

(g) Every warehouse used for the storage of blasting agents shall be under the supervision of a competent person who shall be not less than 21 years of age.

(6) Transportation of packaged blasting agents. (a) When blasting agents are transported in the same vehicle with explosives, all of the requirements of WAC 296-52-050 shall be complied with.

(b) Vehicles transporting blasting agents shall only be driven by and in charge of a driver at least twenty-one years of age who is capable, careful, reliable, and in possession of a valid motor vehicle operator's license. Such a person shall also be familiar with the states vehicle and traffic laws.

(c) No matches, firearms, acids, or other corrosive liquids shall be carried in the bed or body of any vehicle containing blasting agents.

(d) No person shall be permitted to ride upon, drive, load, or unload a vehicle containing blasting agents while smoking or under the influence of intoxicants, narcotics, or other dangerous drugs.

(e) It is prohibited for any person to transport or carry any blasting agents upon any public vehicle carrying passengers for hire.

(f) Vehicles transporting blasting agents shall be in safe operating condition at all times.

(g) When offering blasting agents for transportation on public highways the packaging, marking, and labeling of containers of blasting agents shall comply with the requirements of DOT.

(h) Vehicles used for transporting blasting agents on public highways shall be placarded in accordance with DOT regulations.

(7) Use of blasting agents. Persons using blasting agents shall comply with all of the applicable provisions of WAC 296-52-043. [Statutory Authority: RCW 49-.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-52-165, filed 12/24/81; Order 76-6, § 296-52-165, filed 3/1/76; Order 75-41, § 296-52-165, filed 12/19/75.]

WAC 296-52-167 Water gel (slurry) explosives and blasting agents. (1) General provisions. Unless otherwise set forth in this section, water gels shall be transported, stored and used in the same manner as explosives or blasting agents in accordance with the classification of the product.

(2) Types and classifications. (a) Water gels containing a substance in itself classified as an explosive shall be classified as an explosive and manufactured, transported, stored, and used as specified for "explosives" in this section, except as noted in subdivision (d).

(b) Water gels containing no substance in itself classified as an explosive and which are cap-sensitive as defined in WAC 296-52-030 under blasting agent shall be classified as an explosive and manufactured, transported, stored and used as specified for "explosives" in this section.

(c) Water gels containing no substance in itself classified an an explosive and which are not cap-sensitive as defined in WAC 296-52-030 under blasting agent shall be classified as blasting agents and manufactured, transported, stored, and used as specified for "blasting agents" in this section.

(d) When tests on specific formulations of water gels result in department of transportation classification as a Class B explosive, bullet-resistant magazines are not required, see WAC 296-52-090(4)(a).

(3) Fixed location mixing. (a)(i) Buildings or other facilities used for mixing water gels shall be located with respect to inhabited buildings, passenger railroads and public highways, in accordance with Table H–21.

(ii) In determining the distances separating highways, railroads, and inhabited buildings from potential explosions (as prescribed in Table H–21), the sum of all masses that may propagate (i.e., lie at distances less than prescribed in Table H–22) from either individual or combined donor masses are included. However, when the ammonium nitrate must be included, only 50 percent of its weight shall be used because of its reduced blast effects.

(b) Buildings used for the mixing of water gels shall conform to the requirements of this subdivision.

(i) Buildings shall be of noncombustible construction or sheet metal on wood studs.

(ii) Floors in a mixing plant shall be of concrete or of other nonabsorbent materials.

(iii) Where fuel oil is used all fuel oil storage facilities shall be separated from the mixing plant and located in such a manner that in case of tank rupture, the oil will drain away from the mixing plant building.

(iv) The building shall be well ventilated. Heating units that do not depend on combustion processes, when properly designed and located, may be used in the building. All direct sources of heat shall be provided exclusively from units located outside of the mixing building.

(v) All internal–combustion engines used for electric power generation shall be located outside the mixing plant building, or shall be properly ventilated and isolated by a firewall. The exhaust systems on all such engines shall be located so any spark emission cannot be a hazard to any materials in or adjacent to the plant.

(c) Ingredients of water gels shall conform to the requirements of this subdivision.

(i) Ingredients in themselves classified as Class A or Class B explosives shall be stored in conformity with WAC 296–52–095.

(ii) Nitrate–water solutions may be stored in tank cars, tank trucks, or fixed tanks without quantity or distance limitations. Spills or leaks which may contaminate combustible materials shall be cleaned up immediately.

(iii) Metal powders such as aluminum shall be kept dry and shall be stored in containers or bins which are moisture–resistant or weathertight. Solid fuels shall be used in such manner as to minimize dust explosion hazards.

(iv) Ingredients shall not be stored with incompatible materials.

(v) Peroxides and chlorates shall not be used.

(d) Mixing equipment shall comply with the requirements of this subdivision.

(i) The design of the processing equipment, including mixing and conveying equipment, shall be compatible with the relative sensitivity of the materials being handled. Equipment shall be designed to minimize the possibility of frictional heating, compaction, overloading, and confinement.

(ii) Both equipment and handling procedures shall be designed to prevent the introduction of foreign objects or materials.

(iii) Mixers, pumps, valves, and related equipment shall be designed to permit regular and periodic flushing, cleaning, dismantling, and inspection.

(iv) All electrical equipment including wiring, switches, controls, motors, and lights, shall conform to the requirements of WAC 296–24–950 through 296–24–955.

(v) All electric motors and generators shall be provided with suitable overload protection devices. Electrical generators, motors, proportioning devices, and all other electrical enclosures shall be electrically bonded. The grounding conductor to all such electrical equipment shall be effectively bonded to the service–entrance ground connection and to all equipment ground connections in a manner so as to provide a continuous path to ground.

(e) Mixing facilities shall comply with the fire prevention requirements of this subdivision.

(i) The mixing, loading, and ingredient transfer areas where residues or spilled materials may accumulate shall be cleaned periodically. A cleaning and collection system for dangerous residues shall be provided.

(ii) A daily visual inspection shall be made of the mixing, conveying, and electrical equipment to establish that such equipment is in good operating condition. A program of systematic maintenance shall be conducted on regular schedule.

(iii) Heaters which are not dependent on the combustion process within the heating unit may be used within the confines of processing buildings, or compartments, if provided with temperature and safety controls and located away from combustible materials and the finished product.

(4) Bulk delivery and mixing vehicles. (a) The design of vehicles shall comply with the requirements of this subdivision.

(i) Vehicles used over public highways for the bulk transportation of water gels or of ingredients classified as dangerous commodities, shall meet the requirements of the Department of Transportation and shall meet the requirements of WAC 296–52–050 and 296–52–165 of this section.

(ii) When electric power is supplied by a self–contained motor generator located on the vehicle the generator shall be at a point separate from where the water gel is discharged.

(iii) The design of processing equipment and general requirements shall conform to subsection (3)(c) and (d).

(iv) A positive action parking brake which will set the wheel brakes on at least one axle shall be provided on vehicles when equipped with air brakes and shall be used during bulk delivery operations. Wheel chocks shall supplement parking brakes whenever conditions may require.

(b) Operation of bulk delivery and mixing vehicles shall comply with the requirements of this subdivision.

(i) The placarding requirements contained in DOT regulations apply to vehicles carrying water gel explosives or blasting agents.

(ii) The operator shall be trained in the safe operation of the vehicle together with its mixing, conveying, and related equipment. The operator shall be familiar with the commodities being delivered and the general procedure for handling emergency situations.

(iii) The hauling of either blasting caps or other explosives, but not both, shall be permitted on bulk trucks provided that a special wood or nonferrous-lined container is installed for the explosives. Such blasting caps or other explosives shall be in DOT-specified shipping containers; see 49 CFR Chapter I.

(iv) No person shall be allowed to smoke, carry matches or any flame-producing device, or carry any firearms while in or about bulk vehicles effecting the mixing, transfer, or down-the-hole loading of water gels at or near the blasting site.

(v) Caution shall be exercised in the movement of the vehicle in the blasting area to avoid driving the vehicle over or dragging hoses over firing lines, cap wires, or explosive materials. The employer shall furnish the driver the assistance of a second person to guide the driver's movements.

(vi) No intransit mixing of materials shall be performed.

(vii) The location chosen for water gel or ingredient transfer from a support vehicle into the bore hole loading vehicle shall be away from the blasthole site when the bore holes are loaded or in the process of being loaded. [Statutory Authority: RCW 49.17.040 and 49-.17.050. 82-02-003 (Order 81-32), § 296-52-167, filed 12/24/81; Order 75-41, § 296-52-167, filed 12/19/75.]

WAC 296-52-390 Storage of ammonium nitrate. (1) Scope and definitions. (a) Except as provided in subdivision (d) of this section applies to the storage of ammonium nitrate in the form of crystals, flakes, grains, or prills including fertilizer grade, dynamite grade, nitrous oxide grade, technical grade, and other mixtures containing 60 percent or more ammonium nitrate by weight but does not apply to blasting.

(b) This section does not apply to the transportation of ammonium nitrate.

(c) This section does not apply to storage under the jurisdiction of and in compliance with the regulations of the U.S. Coast Guard (see 46 CFR Parts 146-149).

(d) The storage of ammonium nitrate and ammonium nitrate mixtures that are more sensitive than allowed by the "Definition of Test Procedures for Ammonium Nitrate Fertilizer" is prohibited.

(e) Nothing in this section shall apply to the production of ammonium nitrate or to the storage of ammonium nitrate on the premises of the producing plant, provided that no distinct undue hazard to the public is created.

(f) The definition and test procedures for ammonium nitrate fertilizer are those found in the bulletin, "Definition and Test Procedures for Ammonium Nitrate Fertilizer," available from the National Plant Food Institute, 1700 K Street N.W., Washington, D.C. 20006. This definition limits the contents of organic materials, metals, sulfur, etc., in a product that may be classified ammonium nitrate fertilizer.

(g) The standards for ammonium nitrate (nitrous oxide grade) are those found in the "Specifications, Properties, and Recommendations for Packaging, Transportation, Storage, and Use of Ammonium Nitrate," available from the Compressed Gas Association, Inc., 500 Fifth Avenue, New York, NY 10036.

(2) General provisions. (a) This subsection applies to all persons storing, having, or keeping ammonium nitrate, and to the owner or lessee of any building, premises, or structure in which ammonium nitrate is stored in quantities of 1,000 pounds or more.

(b) Approval of large quantity storage shall be subject to due consideration of the fire and explosion hazards, including exposure to toxic vapors from burning or decomposing ammonium nitrate.

(c) Storage buildings shall not have basements unless the basements are open on at least one side. Storage buildings shall not be over one story in height.

(d) Storage buildings shall have adequate ventilation or be of a construction that will be self-ventilating in the event of fire.

(e) The wall on the exposed side of a storage building within 50 feet of a combustible building, forest, piles of combustible materials and similar exposure hazards shall be of fire-resistive construction. In lieu of the fire-resistive wall, other suitable means of exposure protection such as a free standing wall may be used. The roof coverings shall be class C or better, as defined in Roof Coverings, NFPA 203M-1970.

(f) All flooring in storage and handling areas, shall be of noncombustible material or protected against impregnation by ammonium nitrate and shall be without open drains, traps, tunnels, pits, or pockets into which any molten ammonium nitrate could flow and be confined in the event of fire.

(g) The continued use of an existing storage building or structure not in strict conformity with this section may be approved in cases where such continued use will not constitute a hazard to life or adjoining property.

(h) Buildings and structures shall be dry and free from water seepage through the roof, walls, and floors.

(3) Storage of ammonium nitrate in bags, drums, or other containers. (a) Bags and containers used for ammonium nitrate must comply with specifications and standards required for use in interstate commerce (see 49 CFR Chapter I).

(b) Containers used on the premises in the actual manufacturing or processing need not comply with provisions of (3)(a).

(c) Containers of ammonium nitrate shall not be accepted for storage when the temperature of the ammonium nitrate exceeds 130°F.

(d) Bags of ammonium nitrate shall not be stored within 30 inches of the storage building walls and partitions.

(e) The height of piles shall not exceed 20 feet. The width of piles shall not exceed 20 feet and the length 50

feet except that where the building is of noncombustible construction or is protected by automatic sprinklers the length of piles shall not be limited. In no case shall the ammonium nitrate be stacked closer than 36 inches below the roof or supporting and spreader beams overhead.

(f) Aisles shall be provided to separate piles by a clear space of not less than 3 feet in width. At least one service or main aisle in the storage area shall be not less than 4 feet in width.

(4) Storage of bulk ammonium nitrate. (a) Warehouses shall have adequate ventilation or be capable of adequate ventilation in case of fire.

(b) Unless constructed of noncombustible material or unless adequate facilities for fighting a roof fire are available, bulk storage structures shall not exceed a height of 40 feet.

(c) Bins shall be clean and free of materials which may contaminate ammonium nitrate.

(d) Due to the corrosive and reactive properties of ammonium nitrate, and to avoid contamination, galvanized iron, copper, lead, and zinc shall not be used in a bin construction unless suitably protected. Aluminum bins and wooden bins protected against impregnation by ammonium nitrate are permissible. The partitions dividing the ammonium nitrate storage from other products which would contaminate the ammonium nitrate shall be of tight construction.

(e) The ammonium nitrate storage bins or piles shall be clearly identified by signs reading "Ammonium Nitrate" with letters at least 2 inches high.

(f) Piles or bins shall be so sized and arranged that all material in the pile is moved out periodically in order to minimize possible caking of the stored ammonium nitrate.

(g) Height or depth of piles shall be limited by the pressure-setting tendency of the product. However, in no case shall the ammonium nitrate be piled higher at any point than 36 inches below the roof or supporting and spreader beams overhead.

(h) Ammonium nitrate shall not be accepted for storage when the temperature of the product exceeds 130°F.

(i) Dynamite, other explosives, and blasting agents shall not be used to break up or loosen caked ammonium nitrate.

(5) Contaminants. (a) Ammonium nitrate shall be in a separate building or shall be separated by approved type firewalls of not less than 1 hour fire-resistance rating from storage or organic chemicals, acids, or other corrosive materials, materials that may require blasting during processing or handling, compressed flammable gases, flammable and combustible materials or other contaminating substances, including but not limited to animal fats, baled cotton, baled rags, baled scrap paper, bleaching powder, burlap or cotton bags, caustic soda, coal, coke, charcoal, cork, camphor, excelsior, fibers of any kind, fish oils, fish meal, foam rubber, hay, lubricating oil, linseed oil, or other oxidizable or drying oils, naphthalene, oakum, oiled clothing, oiled paper, oiled textiles, paint, straw, sawdust, wood shavings, or vegetable oils. Walls referred to in this subdivision need extend only to the underside of the roof.

(b) In lieu of separation walls, ammonium nitrate may be separated from the materials referred to in item (a) of this subdivision by a space of at least 30 feet.

(c) Flammable liquids such as gasoline, kerosene, solvents, and light fuel oils shall not be stored on the premises except when such storage conforms to WAC 296-24-330, and when walls and sills or curbs are provided in accordance with items (a) or (b) of this subdivision.

(d) LP-Gas shall not be stored on the premises except when such storage conforms to WAC 296-24-475.

(e) Sulfur and finely divided metals shall not be stored in the same building with ammonium nitrate except when such storage conforms to chapter 296-52 WAC.

(f) Explosives and blasting agents shall not be stored in the same building with ammonium nitrate except on the premises of makers, distributors, and user-compounders of explosives or blasting agents.

(g) Where explosives or blasting agents are stored in separate buildings, other than on the premises of makers, distributors, and user-compounders of explosives or blasting agents, they shall be separated from the ammonium nitrate by the distances and/or barricades specified in Table H-22 of WAC 296-52-165, but by not less than 50 feet.

(h) Storage and/or operations on the premises of makers, distributors, and user-compounders of explosives or blasting agents shall be in conformity with chapter 296-52 WAC.

(6) General precautions. (a) Electrical installations shall conform to the requirements of chapter 296-46 WAC for ordinary locations. They shall be designed to minimize damage from corrosion.

(b) In areas where lightning storms are prevalent, lightning protection shall be provided. (See the Lightning Protection code, NFPA 78-1968.)

(c) Provisions shall be made to prevent unauthorized personnel from entering the ammonium nitrate storage area.

(7) Fire protection. (a) Not more than 2,500 (2270 tonnes) tons of bagged ammonium nitrate shall be stored in a building or structure not equipped with an automatic sprinkler system. Sprinkler systems shall be of the approved type and installed in accordance with WAC 296-24-607.

(b) Suitable fire control devices such as small hose or portable fire extinguishers shall be provided throughout the warehouse and in the loading and unloading areas. Suitable fire control devices shall comply with the requirements of WAC 296-24-592 and 296-24-602.

(c) Water supplies and fire hydrants shall be available in accordance with recognized good practices. [Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-52-390, filed 12/24/81; Order 76-6, § 296-52-390, filed 3/1/76; Order 75-41, § 296-52-390, filed 12/19/75; Order 70-4, § 296-52-390, filed 4/29/70.]

WAC 296-52-9001 Appendix Figure 1--Application for user's (blaster's) license.

Exp. No. 620 Appendix Figure-1

State of Washington
DEPARTMENT OF LABOR AND INDUSTRIES
Division of Industrial Safety and Health

APPLICATION FOR USER'S (BLASTER'S) LICENSE

Application for a User's (Blaster's) License for the sole purpose of using, blasting or disposing explosives and blasting agents, as defined in RCW 70.74.010 and 70-.74.020 (Explosives Act), and WAC 296-52-040 (Explosives Code).

A "hand loader" as defined in RCW 70.74.010, does not require a user's license.

THIS LICENSE IS VALID FOR ONE (1) YEAR AND SHALL BE RENEWED BY APPLICATION THE ANNUAL FEE IS THREE (3) DOLLARS AND MUST ACCOMPANY APPLICATION

Renewal: Yes _____ If yes, give user's license number _____

Renewal: No _____

1. Name of user: _____
   Birth Date: _____
2. Mailing address: _____
   Zip Code: _____ Phone: _____
3. Driver's License No.: _____
   State: _____ Citizen of _____
4. I have a user's (blaster's) certificate issued by: _____
   _____
   Limited to: _____
   _____ Valid to (date): _____

An applicant shall submit to the department either a certification from another state; or certification by a public agency, corporation or blaster's school; or a resume of successful blasting experience, properly witnessed. If said certification are not satisfactory, the department may establish an Examination Board which shall prepare an examination procedure for certification.

5. My experience record is as follows; (most recent experience first): _____

From Mo/Yr	To Mo/Yr	Type of explosives used	Type of blasting work done (Give details on separate sheet)
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

6. Present employer or self-employed: _____
   _____
   Address: _____

7. I want to do the following types of blasting. (Give details on separate sheet): _____
   _____
8. I will use the following types of explosives: _____
   _____
9. I will supervise persons using explosives who are not licensed to blast: Yes _____ No _____
10. I will supervise persons over 18 and under 21 years of age: Yes _____ No _____

PLEASE COMPLETE THE REVERSE SIDE

LI-447-16

11. Explosives must be used the same day purchased or be stored in a licensed, approved magazine complying with the requirements of the Quantity and Distance Table RCW 70.74.030). Storage of explosives otherwise is in violation of chapter 296-52 WAC and chapter 70.74 RCW and subjects the possessor to prosecution.

    WAC 296-62-150: Storage of blasting caps with other explosives prohibited.

    Blasting caps (detonators) must be stored in licensed, approved magazine.

12. APPLICANT SWEARS THAT THE FOLLOWING ARE TRUE:
    (a) I am a user who uses explosives as an ultimate consumer, or who supervises such use;
    (b) I am physically and mentally fit to handle explosives safely;
    (c) I am experienced in the use and disposal of the explosives within the limits stated in my license:
    (d) I will follow the rules of the Explosives Act and of the Safety Codes of the State of Washington;
    (e) I will not sell, barter, give or dispose explosives to anyone within the State of Washington, except to employees under my direct supervision;
    (f) I have not been convicted of a crime involving moral turpitude;
    (g) I am not disloyal to the United States;
    (h) I will not transfer my User's license to anyone else;
    (i) The statements made in this application are true; and,
    (j) I will advise the department when any of these facts change.

Applicant's signature: _____ Date: _____

The applicant is known to me personally, and the statements made by him are true, to the best of my knowledge.

Witness' Signature: _____ Date: _____
Title: _____ Phone: _____
Address: _____ Zip Code _____

Please make $3.00 check payable to Department of Labor and Industries and mail with application to:

Department of Labor & Industries
Division of Industrial Safety & Health
P.O. Box 207
Olympia, Washington 98504

or to any one of the department district offices.

APPLICANT—DO NOT WRITE BELOW THIS LINE

User's license granted: Yes _____ No _____
Class: _____ Grade _____
If not granted, department shall state reasons: _____
_____
Signature: _____ Title _____
License number issued _____
Date Issued _____

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-52-9001, filed 12/24/81; Order 75-41, Appendix Figure 1 (codified as WAC 296-52-9001), filed 12/19/75; Order 70-4, Appendix Figure 1, filed 4/29/70.]

WAC 296-52-9002 Appendix Figure 2--Request for inspection.

Appendix Figure-2

State of Washington
DEPARTMENT OF LABOR AND INDUSTRIES
Division of Industrial Safety and Health

REQUEST FOR INSPECTION

Request for inspection of compounds or materials that may become an explosive due to drying out or undergoing other physical changes within the definition of RCW 70.74.020 (Explosives Act), and WAC 296-52-040(2) (Explosives Code).

Name of applicant: _____
Individual: _____ Corporation: _____
Partnership: _____
Mailing address: _____
_____
Washington State explosives license (type): _____
_____
Number: _____ Expires (date) _____
Kinds of compounds handled: _____
_____
Condition of compounds: _____
_____
Place where compounds are kept: _____
_____
_____

Mail to:

Department of Labor & Industries
Division of Industrial Safety and Health
P.O. Box 207
Olympia, Washington 98501

APPLICANT – DO NOT WRITE BELOW THIS LINE

Explosives Inspector's Report

Action taken: _____
_____
_____
Observations and recommendations: _____
_____
_____
Inspector's signature: _____
Date: _____ At: _____

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-52-9002, filed 12/24/81; Order 70-4, Appendix Figure 2 (codified as WAC 296-52-9002), filed 4/29/70.]

WAC 296-52-9003 Appendix Figure 3--Application for license to manufacture explosives.

Appendix Figure-3

State of Washington
DEPARTMENT OF LABOR AND INDUSTRIES
Division of Industrial Safety and Health

APPLICATION FOR LICENSE TO MANUFACTURE EXPLOSIVES

We apply for a license to manufacture explosives and/or blasting agents listed below, in the State of Washington, within the terms of RCW 70.74.110 (Explosives Act), and WAC 296-52-160 (Explosives Code).

Applicant—Fill in the required information. Use additional sheets as needed:

1. Name of firm: _____
Corporation: _____ Partnership: _____
Or: _____
2. Mailing address: _____
3. Names of corporate officers or partners | Address | Title | Citizen of
_____
_____
_____
_____
_____
4. Kinds of explosives manufactured: _____
_____
5. Address of manufacturing plant: _____
_____
6. Reason for desiring to manufacture explosives: _____
_____

7. A plan of the proposed plant is attached, showing:

   (a) manufacturing building; (b) factory building; (c) storage magazines; (d) nearby railroads, highway, inhabited buildings and public utility transmission systems; (e) the distance between all of the above; (f) the maximum amounts and kinds of explosives expected in each building and magazine; and, (g) the nature of work carried on in each building and the natural and artificial barricades.

   A copy of this plan, approved by the department, shall be kept in the plant, open to inspection by the department.

8. We assert that:
   (a) We will abide by the Explosives Act and by the Safety Codes of the State of Washington;
   (b) We will not sell, barter, give or dispose explosives to any person within the State of Washington who does not have a license to purchase explosives;
   (c) We are experienced in the manufacture of the explosives listed on this application;
   (d) We have not been convicted of a crime involving moral turpitude;
   (e) We are not disloyal to the United States;
   (f) The statements made in this application are true to the best of our knowledge; and,
   (g) We will advise the Department of Labor and Industries when any of the above stated facts change.

Signed by authorized agent: _____
Title: _____ Date: _____
At: _____

APPLICANT – DO NOT WRITE BELOW THIS LINE

Explosives Inspector's Report

Plan approved: Yes _____ No _____

Comments: _____
_____
_____
_____
_____

Inspector's signature: _____
Date: _____ At: _____

This license shall continue in full force and effect until surrendered or canceled because of failure to comply with any of the conditions necessary for the granting of a license.

Direct all correspondence pertaining to this license to the following address:

Department of Labor and Industries
Division of Industrial Safety and Health
P.O. Box 207
Olympia, Washington 98501

In your correspondence, please refer to the following Manufacturer's License No. _____

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-52-9003, filed 12/24/81; Order 70-4, Appendix Figure 3 (codified as WAC 296-52-9003), filed 4/29/70.]

WAC 296-52-9005 Appendix Figure 5---Application for dealer's license.

Appendix Figure-5

State of Washington
DEPARTMENT OF LABOR AND INDUSTRIES
Division of Industrial Safety and Health

APPLICATION FOR DEALER'S LICENSE

We apply for a Dealer's or Distributor's License to buy explosives and/or blasting agents for the sole purpose of selling them within the terms of RCW 70.74.130 (Explosives Act), and WAC 296-52-190 (Explosives Code).

Renewal: Yes _____ No _____ Dealer's License No. _____

1. Name of firm: _____
   Corporation: _____ Partnership: _____
   Or: _____
2. Mailing address: _____
   _____
3. Names of corporate officers or partners | Address | Title | Citizen of

   _____
   _____
   _____
4. Kinds of explosives dealt in: _____
   _____
5. Ultimate use of explosives: _____
   _____
6. Location of magazine(s): _____
   _____
   License No. _____ Estimated amount of explosives bought per month (pounds): _____
7. We assert that:
   (a) We will abide by the Explosives Act and the Safety Codes of the State of Washington;
   (b) We will not sell, barter, give or dispose explosives to any person within the State of Washington who does not hold a valid license to purchase or use explosives;
   (c) We will send a monthly record of all explosives purchased and sold by us, not later than the tenth (10th) of the following month, to the department;
   (d) We are experienced in the buying and selling of explosives;

(e) We have not been convicted of a crime involving moral turpitude;
(f) We are not disloyal to the United States; and,
(g) The statements made above are true, and we will advise the department when any of the above stated facts change.

Signature of Dealer: _____
Title: _____ Date: _____
At: _____

APPLICANT – DO NOT WRITE BELOW THIS LINE

Explosives Inspector's Report

Dealer's license approved: Yes _____ No _____

If not approved, state reasons: _____
_____
_____
_____
_____

Inspector's signature: _____
Date: _____ At: _____

Send your request for renewal not later than (date): _____, to the following address:

Department of Labor & Industries
Division of Industrial Safety and Health
P.O. Box 207
Olympia, Washington 98501

In your correspondence, please refer to the following Dealer's License No. _____.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-52-9005, filed 12/24/81; Order 70-4, Appendix Figure 5 (codified as WAC 296-52-9005), filed 4/29/70.]

WAC 296-52-9006 Appendix Figure 6--Application for license to purchase explosives.

Exp. No. 625 Appendix Figure-6

State of Washington
DEPARTMENT OF LABOR AND INDUSTRIES
Division of Industrial Safety and Health

APPLICATION FOR LICENSE TO PURCHASE EXPLOSIVES

We apply for a license to purchase explosives under the terms of RCW 70.74.135 (Explosives Act), and WAC 296-52-220 (Explosives Code). No license is required for purchasing hand loading components.

THIS LICENSE IS VALID FOR ONE (1) YEAR AND SHALL BE RENEWED BY APPLICATION. THE ANNUAL FEE IS TWO (2) DOLLARS AND MUST ACCOMPANY APPLICATION.

Renewal: Yes _____ If yes, give purchaser's license number _____

Renewal: No _____

1. Name of purchaser: _____
Individual _____ Corporation _____
Partnership _____ Or _____
2. Birth Date (If Individual) _____ Citizen of _____
3. Mailing address: _____
_____ Zip Code _____ Phone _____
4. Names of corporate officers, partners or officials | Residence Address | Title | Citizen of

---

_____
_____
_____

5. Location where explosives are to be used: _____
_____
6. Kind of explosives to be purchased: _____
_____
_____
7. Reason for desiring to purchase explosives: _____
_____
8. Persons valid user's license number: _____
9. Name of person to be using explosives: _____
10. Explosives must be used the same day purchased or be stored in a licensed, approved magazine complying with the requirements of the Quantity and Distance Table (RCW 70.74.030). Storage of explosives otherwise is in violation of chapter 296-52 WAC and chapter 70.74 RCW and subjects the possessor to prosecution.

WAC 296-52-150: Storage of blasting caps with other explosives prohibited.

Blasting caps (detonators) must be stored in licensed, approved magazine.

11. APPLICANT SWEARS THAT THE FOLLOWING ARE TRUE:
(a) We wish to purchase the explosives for the purpose as stated in Number 7;
(b) We will not sell, barter, give or dispose explosives to anyone in the State of Washington except to authorized employees for ultimate use (blasting);

PLEASE COMPLETE THE REVERSE SIDE

LI-447-15

(c) We will follow the rules of the Explosives Act and the Safety Codes of the State of Washington;
(d) One or more of our officers or employees are experienced in the use of explosives;
(e) We have suitable facilities for explosives and will store unused explosives in an approved

magazine;
(f) We have not been convicted of a crime involving moral turpitude;
(g) We are not disloyal to the United States;
(h) The statements made are true;
(i) We will advise the department if any of the stated facts change;
(j) Explosives will be received for us only by persons who are authorized by us, and who have positive identification; and
(k) Individual or employee using explosives has a valid user's license issued by The Department of Labor and Industries, Explosives Section.

Signature of applicant or authorized agent:
---------- Title: ----------
Driver's License number (if individual): ----------
State: ---------- Date: ----------
The applicant is known to me personally, and the statements made are true to the best of my knowledge.

Signature of witness ----------
Date: ---------- Title: ----------
Phone: ----------
Address: ---------- Zip Code: -----

Please make $2.00 check payable to Department of Labor and Industries and mail with application to:

Department of Labor & Industries
Division of Industrial Safety & Health
P.O. Box 207
Olympia, Washington 98504

or to any one of the department district offices.

APPLICANT—DO NOT WRITE BELOW THIS LINE

Purchaser's license granted: Yes ----- No -----
If not granted, department shall state reasons: --------

Signature: ---------- Title: ----------

License Number Issued ----------
Date Issued ----------

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-52-9006, filed 12/24/81; Order 75-41, Appendix Figure 6 (codified as WAC 296-52-9006), filed 12/19/75; Order 70-4, Appendix Figure 6, filed 4/29/70.]

WAC 296-52-9007 Appendix Figure 7--Dealer's record.

Appendix Figure-7

State of Washington
DEPARTMENT OF LABOR AND INDUSTRIES
Division of Industrial Safety and Health

DEALER'S RECORD

We transmit our monthly Dealer's Record of all explosives, bought and sold, in accordance with RCW 70.74-.230 (Explosives Act), and WAC 296-52-270 (Explosives Code).

1. Name of firm: ----------
Individual ----- Corporation -----
Partnership ----- Or ----------

2. Mailing address: ----------
----

3. Record of explosives purchased:

Date	Name of Vendor	Dealer's License No.	Amount & Kind

(Use additional sheets, if necessary)

4. Record of explosives sold:

Date	Name of Purchaser	Purchaser's License No.	Receiver's Name	Amount & Kind
----------				

(Use additional sheets, if necessary)

Signature: ---------- Title: ----------
Date: ----------

Send this Dealer's Record not later than the tenth (10th) day of every month to:

Department of Labor & Industries
Division of Industrial Safety and Health
Chief Explosives Inspector
P.O. Box 207
Olympia, Washington 98501

In your correspondence, refer to Dealer's License No. ----------.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-52-9007, filed 12/24/81; Order 70-4, Appendix Figure 7 (codified as WAC 296-52-9007), filed 4/29/70.]

Chapter 296-54 WAC
SAFETY STANDARDS--LOGGING OPERATIONS

WAC
296-54-559 Yarding—Helicopters and helicopter cranes.
296-54-567 Motor truck log transportation—General requirements.

WAC 296-54-559 Yarding--Helicopters and helicopter cranes. (1) Helicopters and helicopter cranes shall comply with any applicable regulations of the Federal Aviation Administration.

magazine;
(f) We have not been convicted of a crime involving moral turpitude;
(g) We are not disloyal to the United States;
(h) The statements made are true;
(i) We will advise the department if any of the stated facts change;
(j) Explosives will be received for us only by persons who are authorized by us, and who have positive identification; and
(k) Individual or employee using explosives has a valid user's license issued by The Department of Labor and Industries, Explosives Section.

Signature of applicant or authorized agent:
---------- Title: ----------
Driver's License number (if individual): ----------
State: ---------- Date: ----------
The applicant is known to me personally, and the statements made are true to the best of my knowledge.

Signature of witness ----------
Date: ---------- Title: ----------
Phone: ----------
Address: ---------- Zip Code: -----

Please make $2.00 check payable to Department of Labor and Industries and mail with application to:

Department of Labor & Industries
Division of Industrial Safety & Health
P.O. Box 207
Olympia, Washington 98504

or to any one of the department district offices.

APPLICANT—DO NOT WRITE BELOW THIS LINE

Purchaser's license granted: Yes ----- No -----
If not granted, department shall state reasons: --------

Signature: ---------- Title: ----------

License Number Issued ----------
Date Issued ----------

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-52-9006, filed 12/24/81; Order 75-41, Appendix Figure 6 (codified as WAC 296-52-9006), filed 12/19/75; Order 70-4, Appendix Figure 6, filed 4/29/70.]

WAC 296-52-9007 Appendix Figure 7--Dealer's record.

Appendix Figure-7

State of Washington
DEPARTMENT OF LABOR AND INDUSTRIES
Division of Industrial Safety and Health

DEALER'S RECORD

We transmit our monthly Dealer's Record of all explosives, bought and sold, in accordance with RCW 70.74-.230 (Explosives Act), and WAC 296-52-270 (Explosives Code).

1. Name of firm: ----------
Individual ----- Corporation -----
Partnership ----- Or ----------

2. Mailing address: ----------
----

3. Record of explosives purchased:

Date	Name of Vendor	Dealer's License No.	Amount & Kind

(Use additional sheets, if necessary)

4. Record of explosives sold:

Date	Name of Purchaser	Purchaser's License No.	Receiver's Name	Amount & Kind
----------				

(Use additional sheets, if necessary)

Signature: ---------- Title: ----------
Date: ----------

Send this Dealer's Record not later than the tenth (10th) day of every month to:

Department of Labor & Industries
Division of Industrial Safety and Health
Chief Explosives Inspector
P.O. Box 207
Olympia, Washington 98501

In your correspondence, refer to Dealer's License No. ----------.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-52-9007, filed 12/24/81; Order 70-4, Appendix Figure 7 (codified as WAC 296-52-9007), filed 4/29/70.]

Chapter 296-54 WAC
SAFETY STANDARDS--LOGGING OPERATIONS

WAC
296-54-559 Yarding—Helicopters and helicopter cranes.
296-54-567 Motor truck log transportation—General requirements.

WAC 296-54-559 Yarding--Helicopters and helicopter cranes. (1) Helicopters and helicopter cranes shall comply with any applicable regulations of the Federal Aviation Administration.

(2) Prior to each day's operation, a briefing shall be conducted. This briefing shall set forth the plan of operation for the pilot and ground personnel.

(3) A take–off path from the log pickup point shall be established, and shall be made known to all workers in that area before the first turn of logs is moved.

(4) The helicopter flight path to and from the drop zone shall be designated and no equipment or personnel (other than flight personnel necessary to assist landing and take–off) will occupy these areas during helicopter arrival or departure.

(5) The approach to the landing shall be clear and long enough to prevent tree tops from being pulled into the landing.

(6) The helicopter shall not pass over an area in which cutters are working at a height which would cause the rotor wash to inhibit a cutter's ability to safely control a tree or dislodge limbs.

(7) Drop zones shall be twice the nominal length of logs to be landed.

(8) The drop zone shall be no less than one hundred twenty–five feet from the loading or decking area.

(9) Separate areas shall be designated for landing logs and fueling the helicopter(s).

(10) The yarding helicopter shall be equipped with a siren to warn workers of any hazardous situation.

(11) Workers shall remain in the clear as chokers are being delivered, and under no circumstances will workers move under the helicopter that is delivering the chokers or take hold of the chokers before they have been released by the helicopter.

(12) Log pickup shall be arranged in a manner that the hook up crew will not work on slopes below felled and bucked timber.

(13) If the load must be lightened, the hook shall be placed on the ground on the uphill side of the turn before the hooker approaches to release the excess logs.

(14) Landing crew shall be in the clear before logs are dropped.

(15) One end of all the logs in the turn shall be touching the ground and lowered to an angle of not more than 45° from the horizontal before the chokers are released.

(16) Logs shall be laid on the ground and the helicopter will be completely free of the choker(s) before workers approach the logs.

(17) If the load will not release from the hook, the load and the hook shall be on the ground before workers approach to release the hook manually.

(18) Loads shall be properly slung. Tag lines shall be of a length that will not permit their being drawn up into rotors. Pressed sleeve, swedged eyes, or equivalent means shall be used for all freely suspended loads to prevent hand splices from spinning open or cable clamps from loosening.

(19) All electrically operated cargo hooks shall have the electrical activating device so designed and installed as to prevent inadvertent operation. In addition, these cargo hooks shall be equipped with an emergency mechanical control for releasing the load. The hooks shall be tested prior to each day's operation to determine that the release functions properly, both electrically and mechanically.

(20)(a) Personal protective equipment for employees receiving the load shall consist of complete eye protection and hard hats secured by chinstraps, and high visibility vests or outer garments.

(b) Loose–fitting clothing likely to flap in the downwash, and thus be snagged on hoist line, shall not be worn.

(21) Every practical precaution shall be taken to provide for the protection of employees from flying objects in the rotor downwash. All loose gear within one hundred feet of the place of lifting of the load, depositing the load, and all other areas susceptible to rotor downwash shall be secured or removed.

(22) Good housekeeping shall be maintained in all helicopter loading and unloading areas.

(23) The helicopter operator shall be responsible for size, weight, and manner in which loads are connected to the helicopter. If, for any reason, the helicopter operator believes the lift cannot be made safely, the lift shall not be made.

(24) Employees shall not perform work under hovering craft except for that limited period of time necessary to guide, secure, hook and unhook loads. Regardless of whether the hooking or unhooking of a load takes place on the ground or other location in an elevated work position in structural members, a safe means of access and egress, to include an unprogrammed emergency escape route or routes, shall be provided for the employees hooking or unhooking loads.

(25) Static charge on the suspended load shall be dissipated with a grounding device before ground personnel touch the suspended load, or protective rubber gloves shall be worn by all ground personnel touching the suspended load.

(26) The weight of an external load shall not exceed the manufacturer's rating.

(27) Hoist wires or other gear, except for pulling lines or conductors that are allowed to "pay out" from a container or roll off a reel, shall not be attached to any fixed ground structure, or allowed to foul on any fixed structure.

(28) When visibility is reduced by dust or other conditions, ground personnel shall exercise special caution to keep clear of main and stabilizing rotors. Precautions shall also be taken by the employer to eliminate as far as practical reduced visibility.

(29) Signal systems between aircrew and ground personnel shall be understood and checked in advance of hoisting the load. This applies to either radio or hand signal systems. Hand signals shall be as shown in Figure 6.

(30) No unauthorized person shall be allowed to approach within fifty feet of the helicopter when the rotor blades are turning.

(31) Whenever approaching or leaving a helicopter with blades rotating, all employees shall remain in full view of the pilot and keep in a crouched position. Employees shall avoid the area from the cockpit or cabin

rearward unless authorized by the helicopter operator to work there.

(32) Sufficient ground personnel shall be provided, when required, for safe helicopter loading and unloading operations.

(33) There shall be constant reliable communication between the pilot, and a designated employee of the ground crew who acts as a signalperson during the period of loading and unloading. This signalperson shall be distinctly recognizable from other ground personnel.

(34) Open fires shall not be permitted in an area that could result in such fires being spread by the rotor downwash.

(35) Under no circumstances shall the refueling of any type helicopter with either aviation gasoline or Jet B (Turbine) type fuel be permitted while the engines are running.

(36) Helicopters using Jet A (Turbine–Kerosene) type fuel may be refueled with engines running provided the following criteria is met:

(a) No unauthorized persons shall be allowed within fifty feet of the refueling operation or fueling equipment.

(b) A minimum of one thirty–pound fire extinguisher, or a combination of same, good for class A, B and C fires, shall be provided within one hundred feet on the upwind side of the refueling operation.

(c) All fueling personnel shall be thoroughly trained in the refueling operation and in the use of the available fire extinguishing equipment they may be expected to utilize.

(d) There shall be no smoking, open flames, exposed flame heaters, flare pots or open flame lights within fifty feet of the refueling area or fueling equipment. All entrances to the refueling area shall be posted with "NO SMOKING" signs.

(e) Due to the numerous causes of static electricity, it shall be considered present at all times. Prior to starting refueling operations, the fueling equipment and the helicopter shall be grounded and the fueling nozzle shall be electrically bonded to the helicopter. The use of conductive hose shall not be accepted to accomplish this bonding. All grounding and bonding connections shall be electrically and mechanically firm, to clean unpainted metal parts.

(f) To control spills, fuel shall be pumped either by hand or power. Pouring or gravity flow shall not be permitted. Selfclosing nozzles or deadman controls shall be used and shall not be blocked open. Nozzles shall not be dragged along the ground.

(g) In case of a spill, the fueling operation shall be immediately stopped until such time as the person–in–charge determines that it is safe to resume the refueling operation.

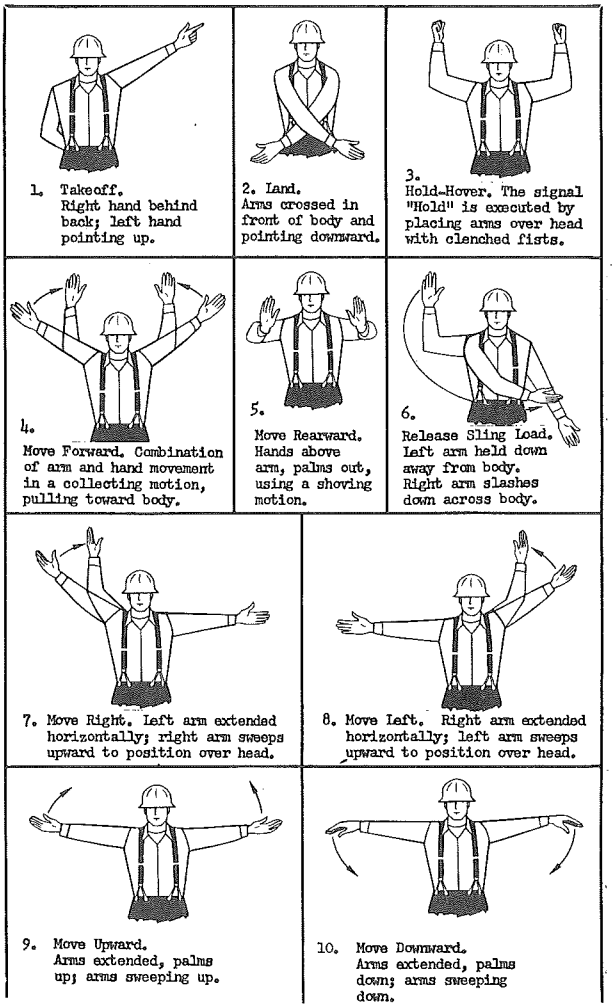
(h) When ambient temperatures have been in the 100 degree F. range for an extended period of time, all refueling of helicopters with the engines running shall be suspended until such time as conditions become suitable to resume refueling with the engines running.

(37) Helicopters with their engines stopped being refueled with aviation gasoline or Jet B (Turbine) type fuel, shall also comply with subsection (36) (a) through (g) of this section.

(38) Hook on persons in logging operations shall wear contrasting colored hard hats, with chinstraps, and high visibility vests or outer garments to enable the helicopter operator to readily identify their location.

(39) Riding the load or hook of a helicopter is prohibited except in the case of an emergency with the proper safety gear.

HELICOPTER HAND SIGNALS



NOTE: See Figures No. 7–A through 7–P, for Illustrations of Various Types of Cable Logging Systems.

See Figures No. 7–Q through 7–U, for Illustrations of Whistle Signals used on Various Cable Logging Systems.

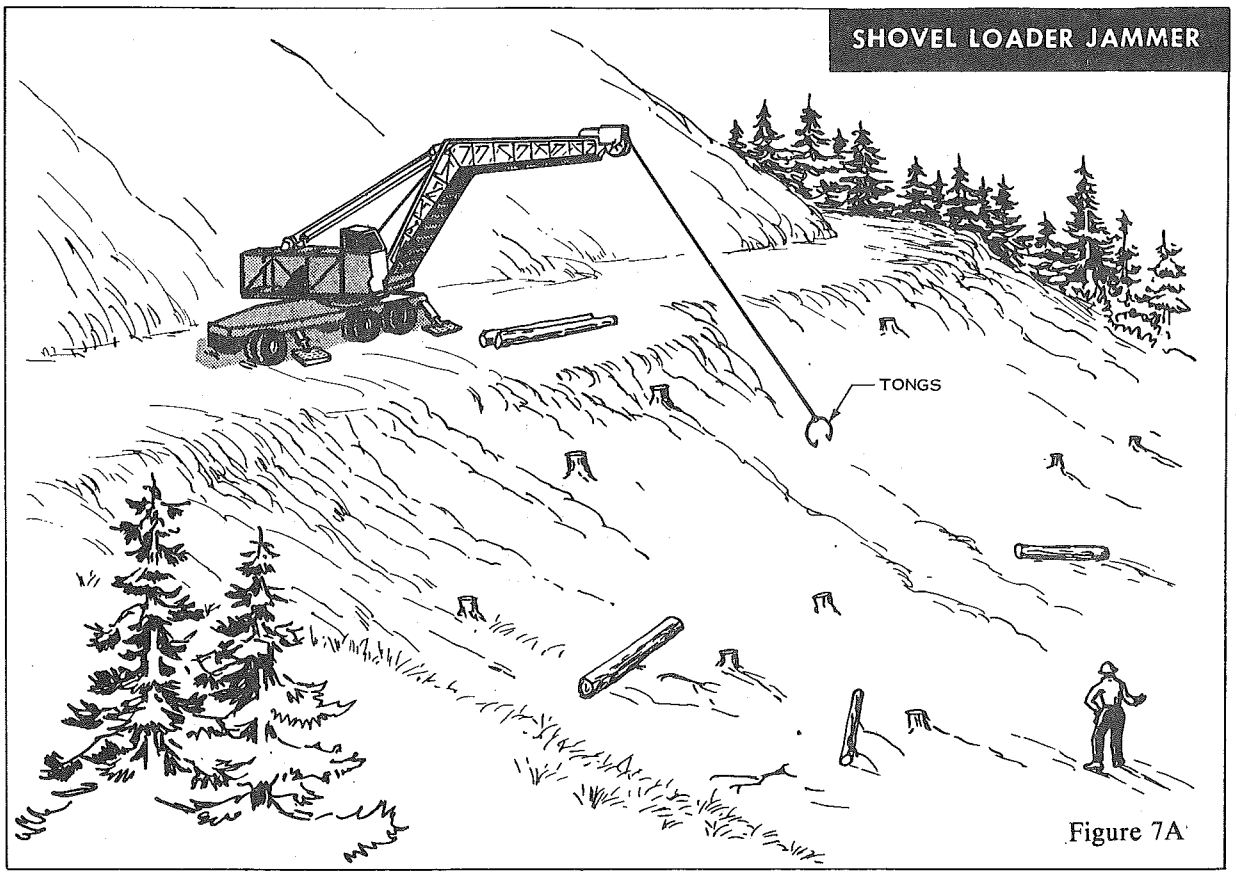


Figure 7A

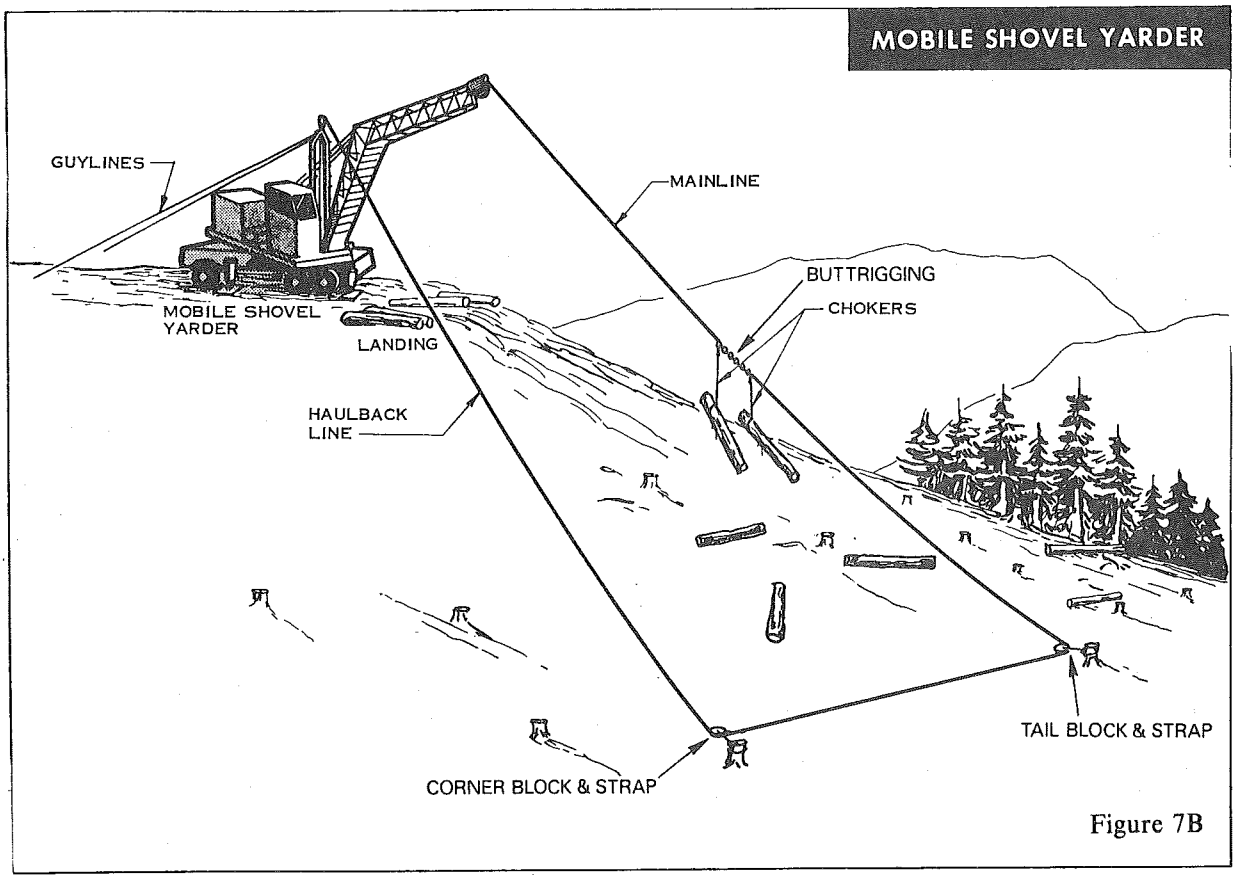


Figure 7B

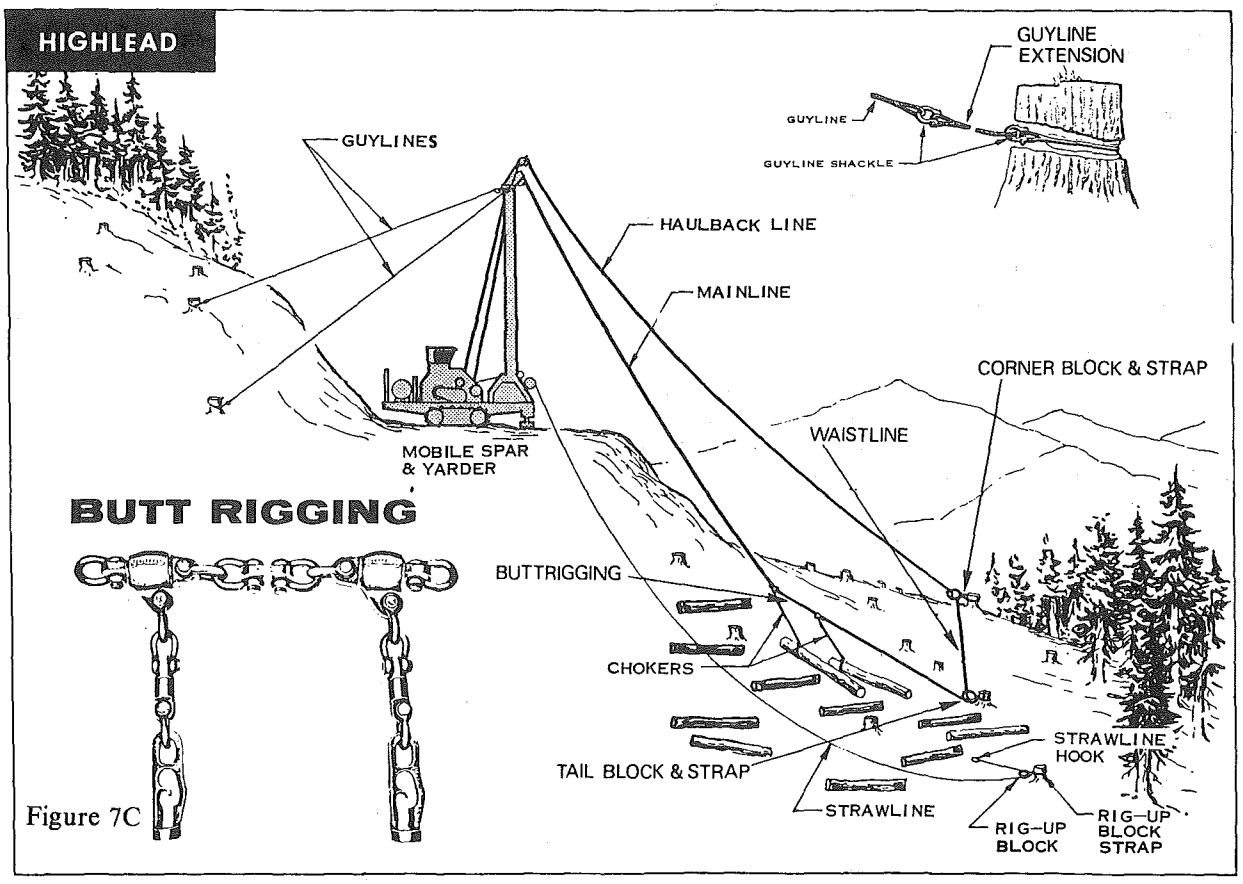


Figure 7C

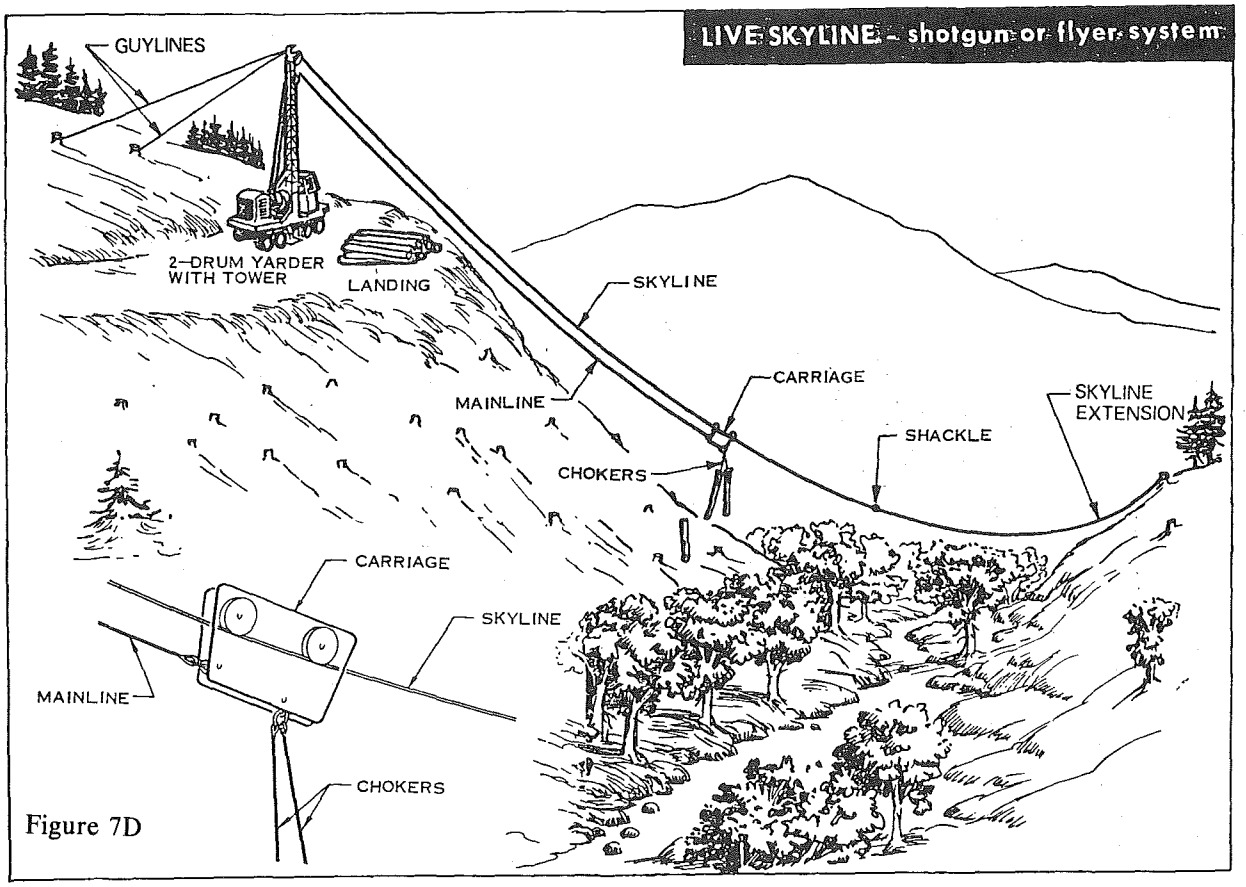


Figure 7D

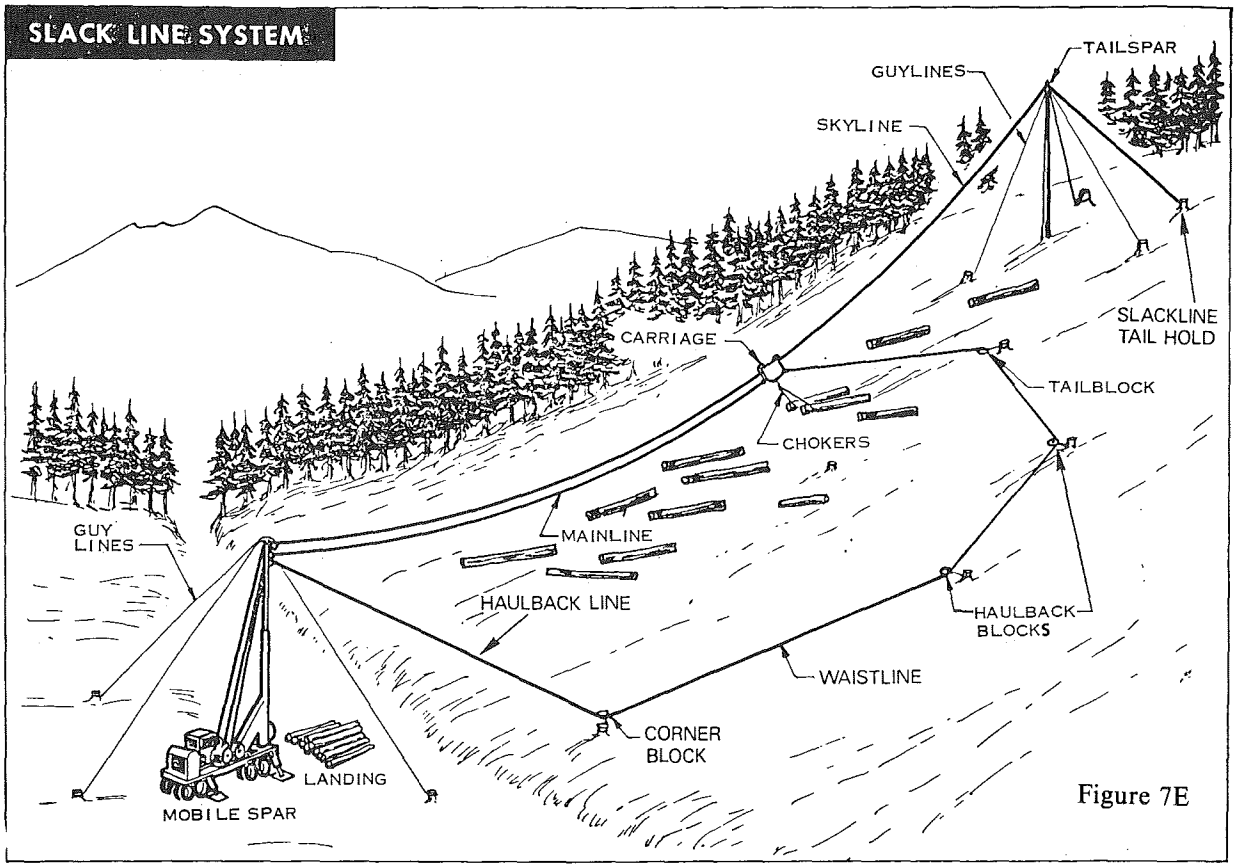
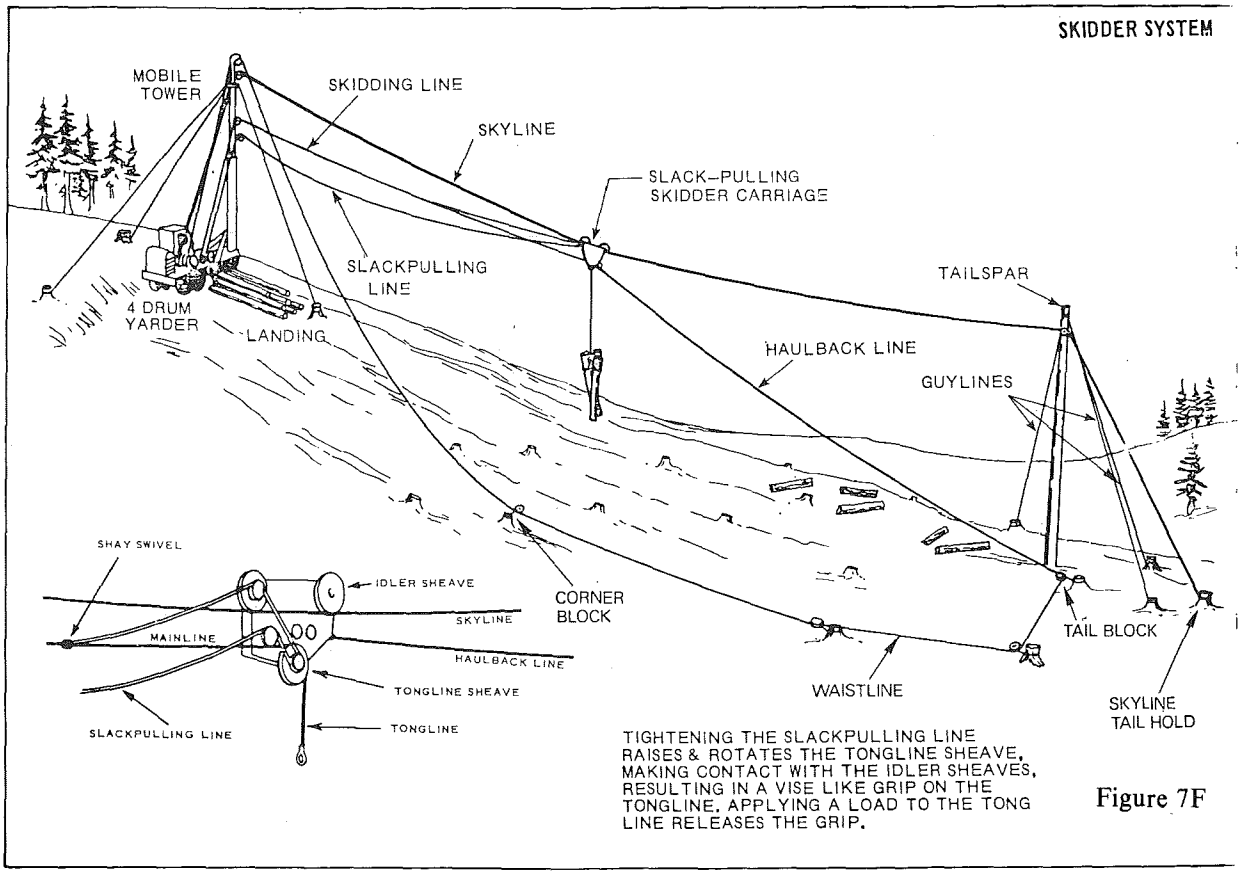


Figure 7E



TIGHTENING THE SLACKPULLING LINE RAISES & ROTATES THE TONGLINE SHEAVE, MAKING CONTACT WITH THE IDLER SHEAVES, RESULTING IN A VISE LIKE GRIP ON THE TONGLINE. APPLYING A LOAD TO THE TONG LINE RELEASES THE GRIP.

Figure 7F

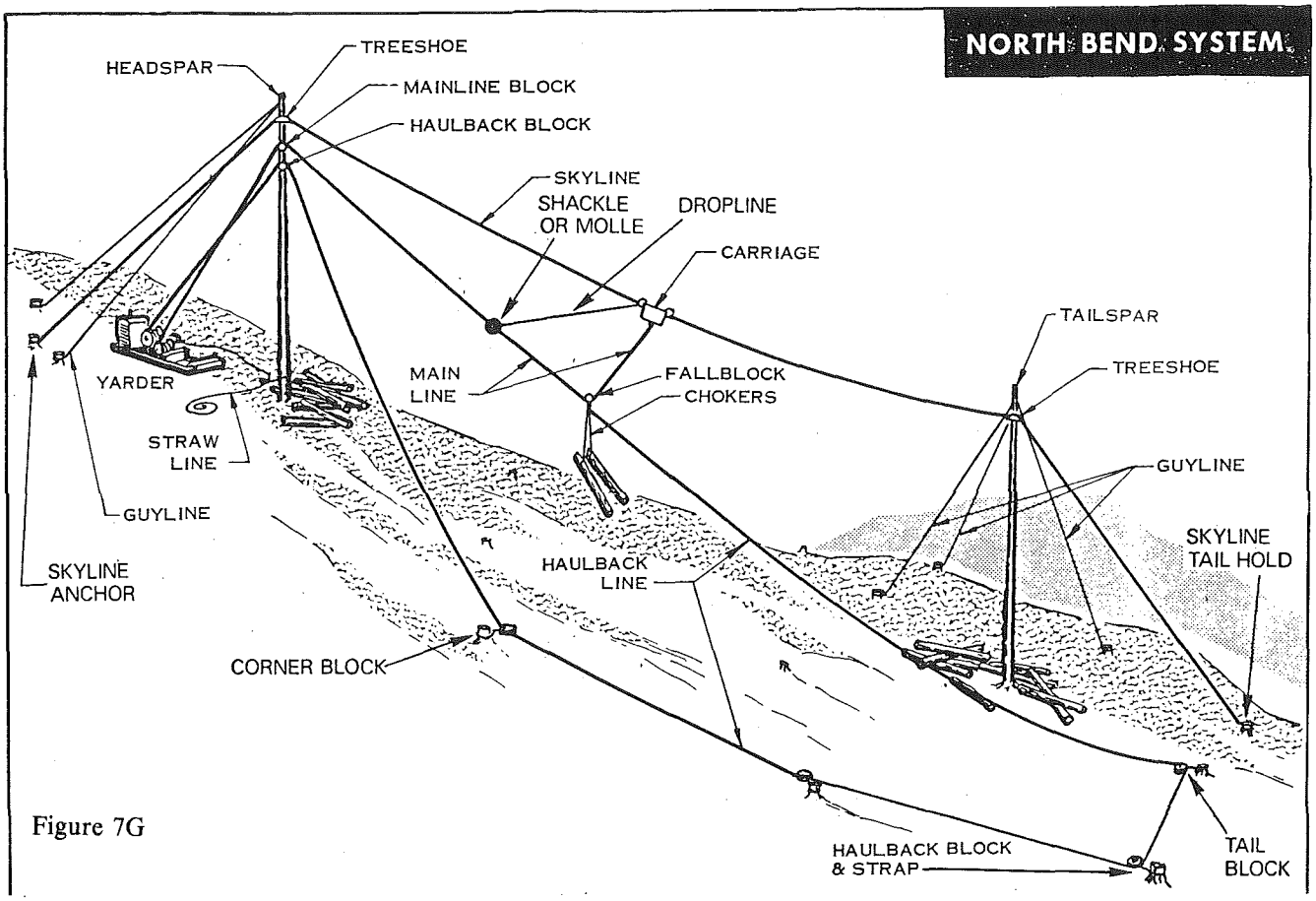


Figure 7G

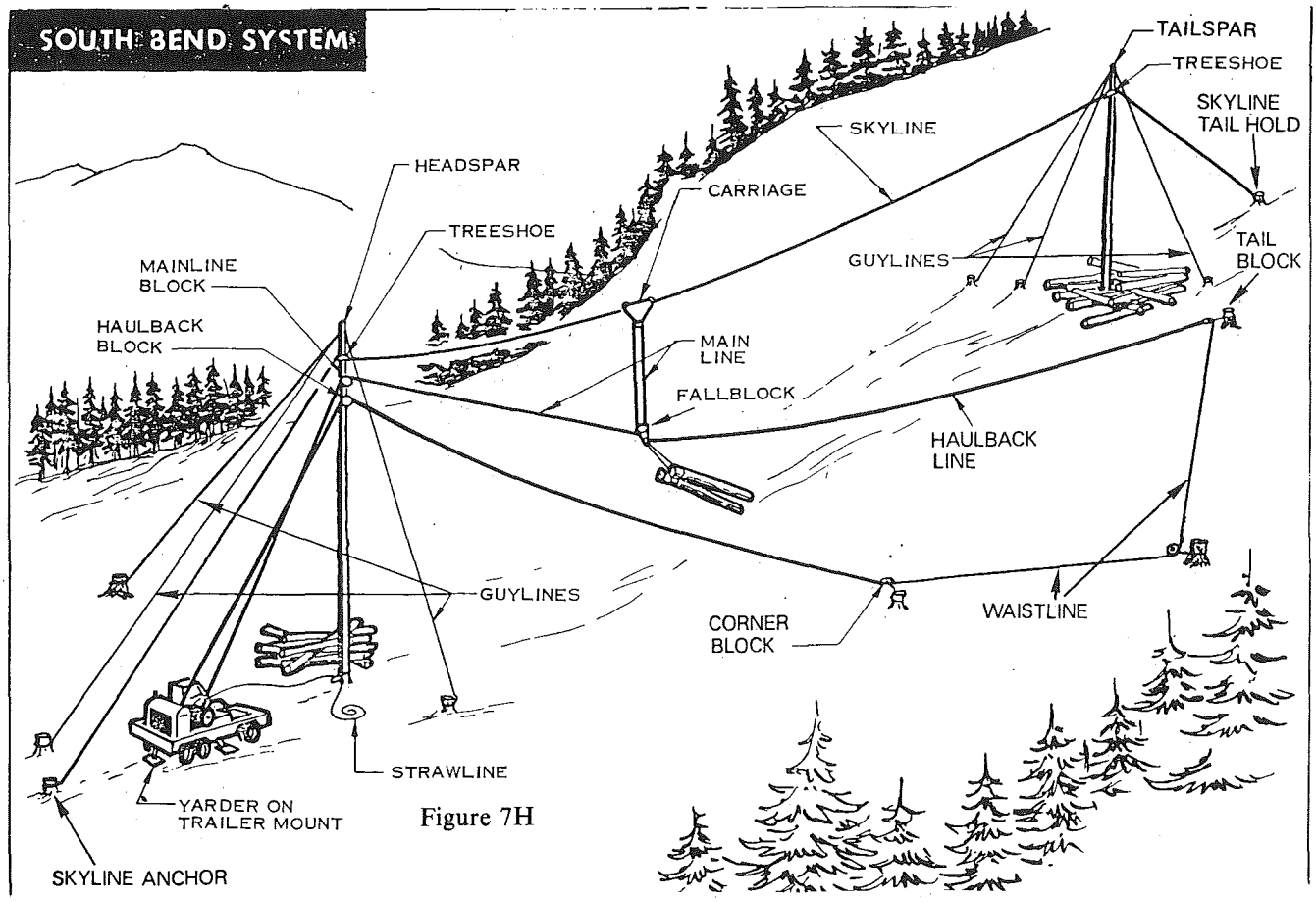


Figure 7H

STANDING SKYLINE -- RADIO CONTROLLED CARRIAGE

mobile tower

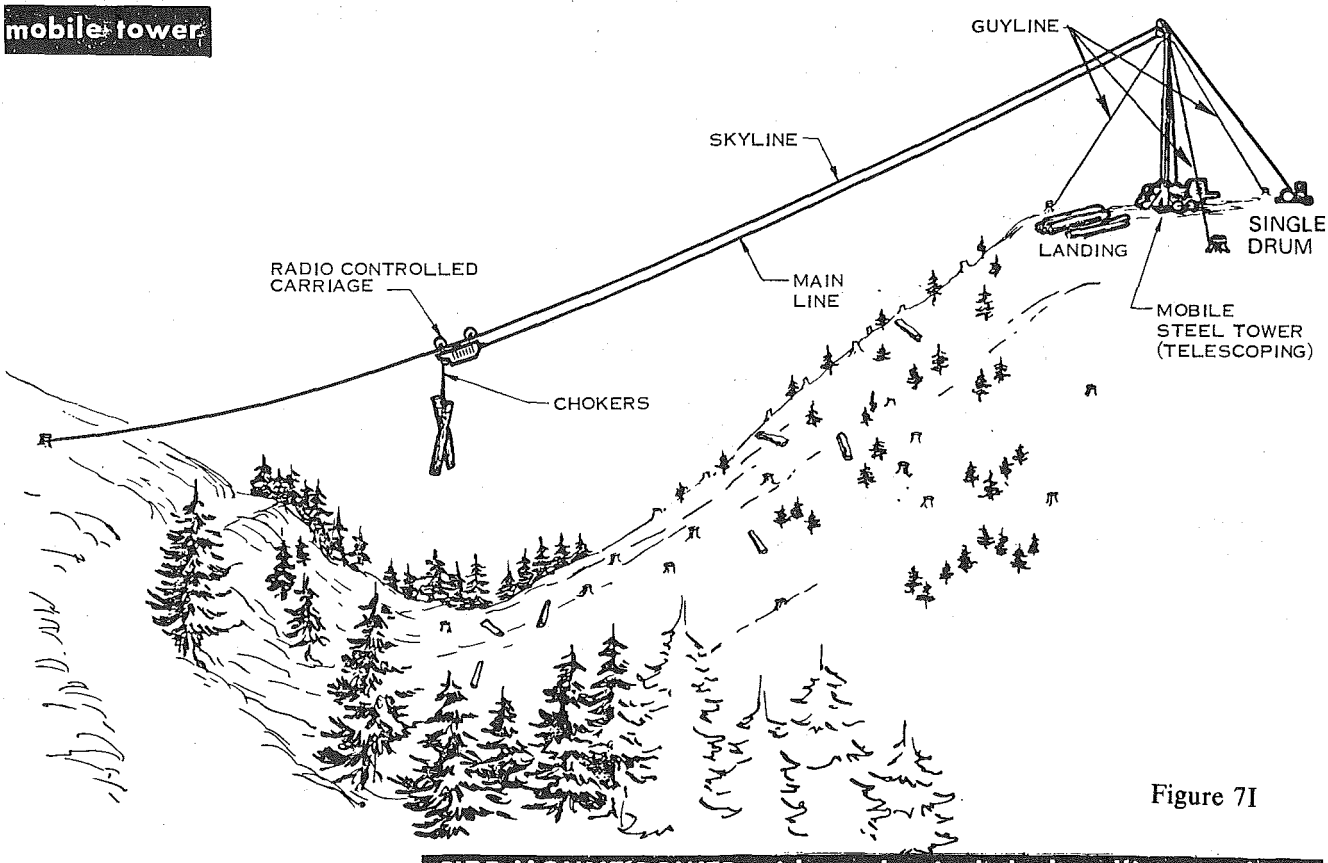


Figure 7I

SIDE MOUNT TOWER with mechanical slack pulling carriage

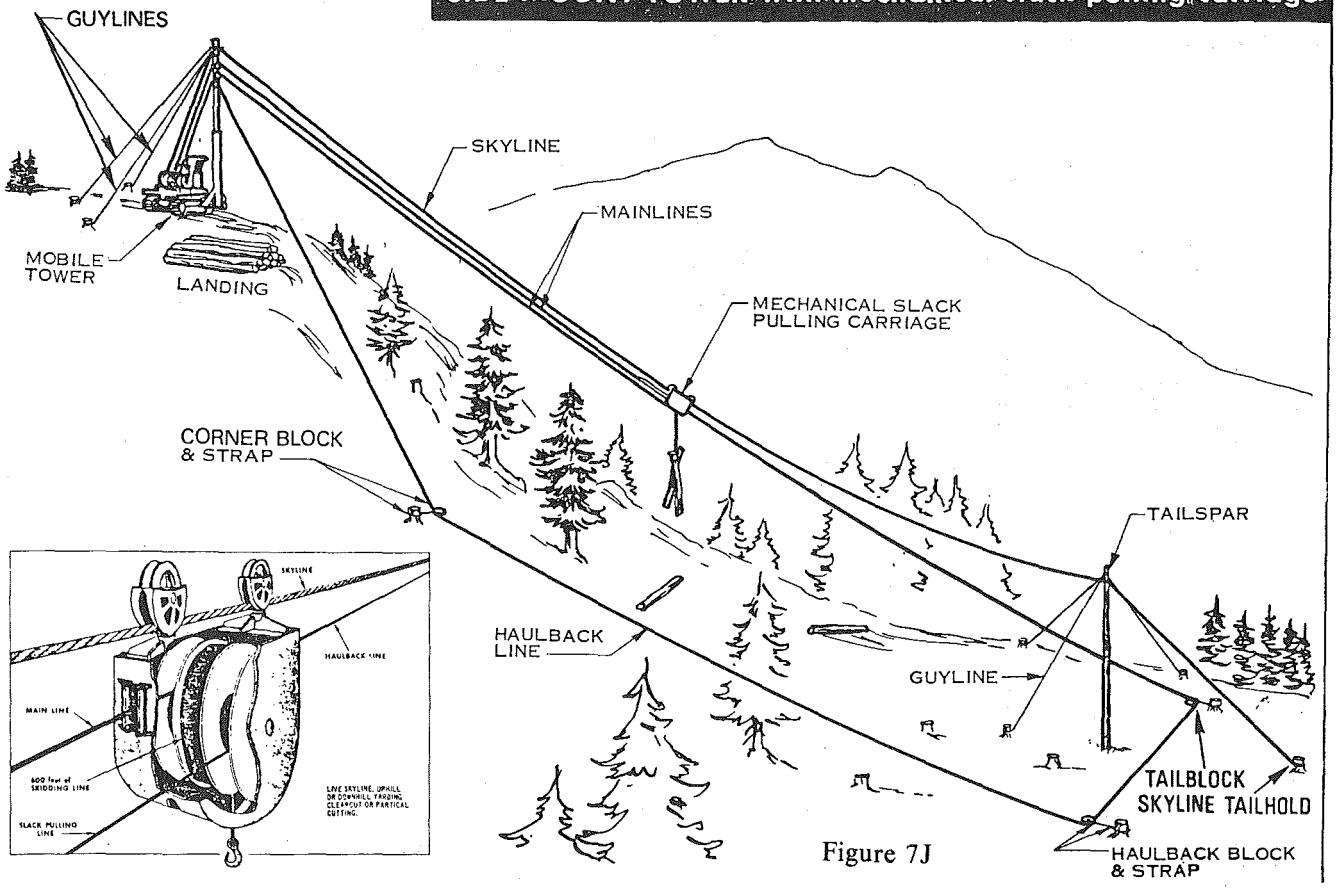


Figure 7J

PARTIAL CUTTING WITH RUNNING SKYLINE

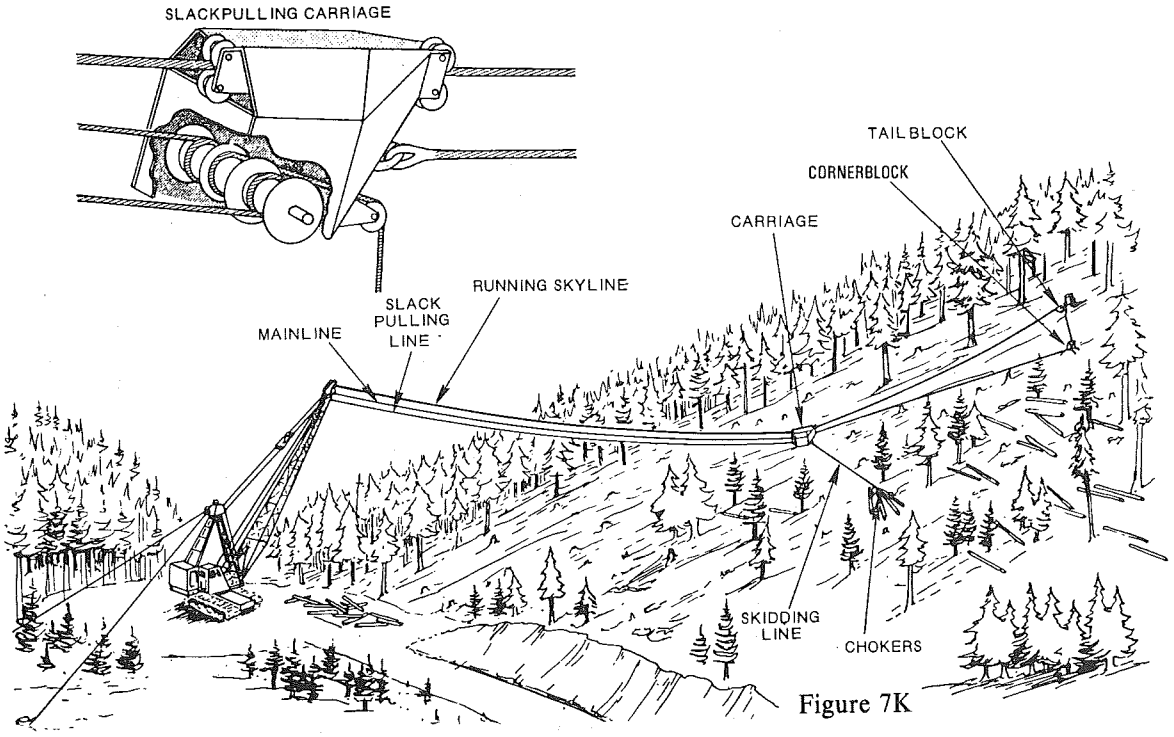


Figure 7K

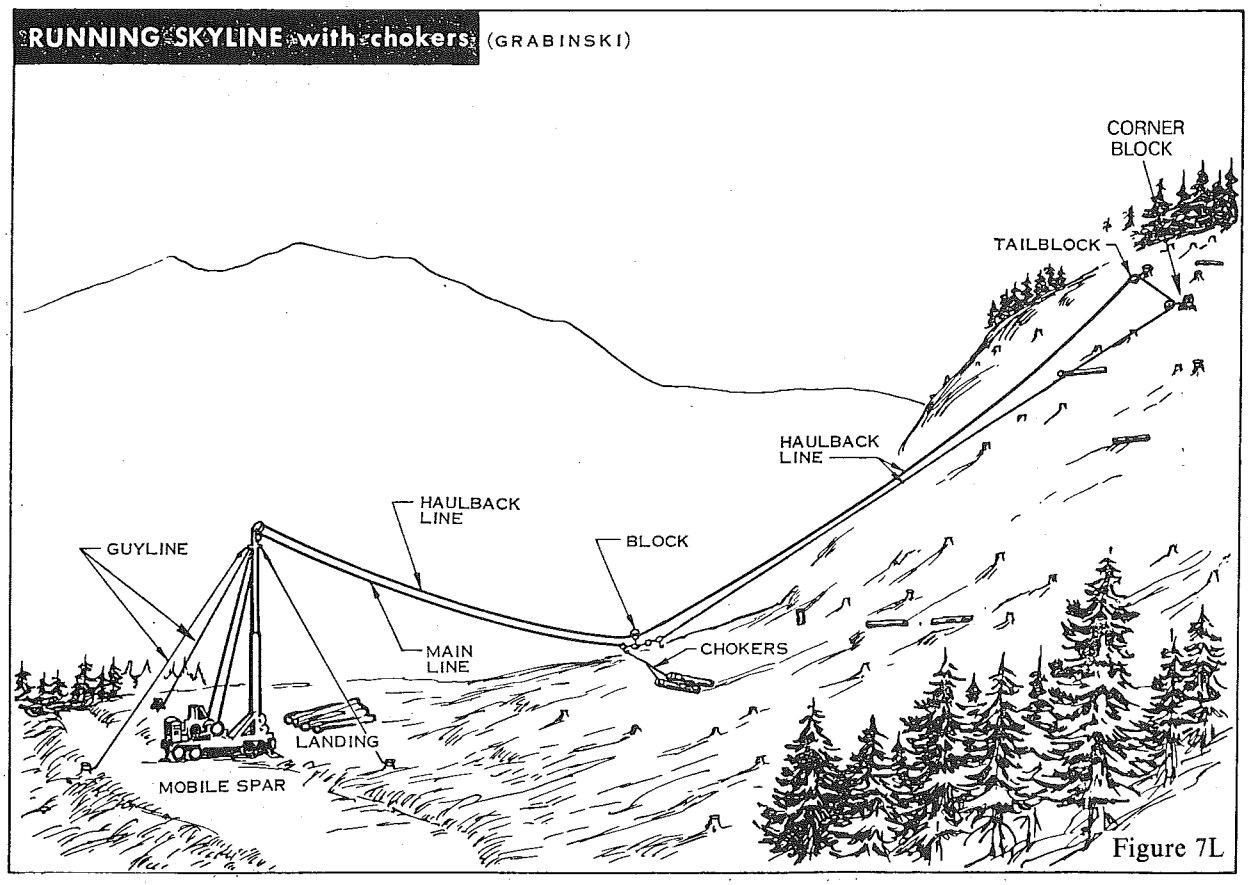


Figure 7L

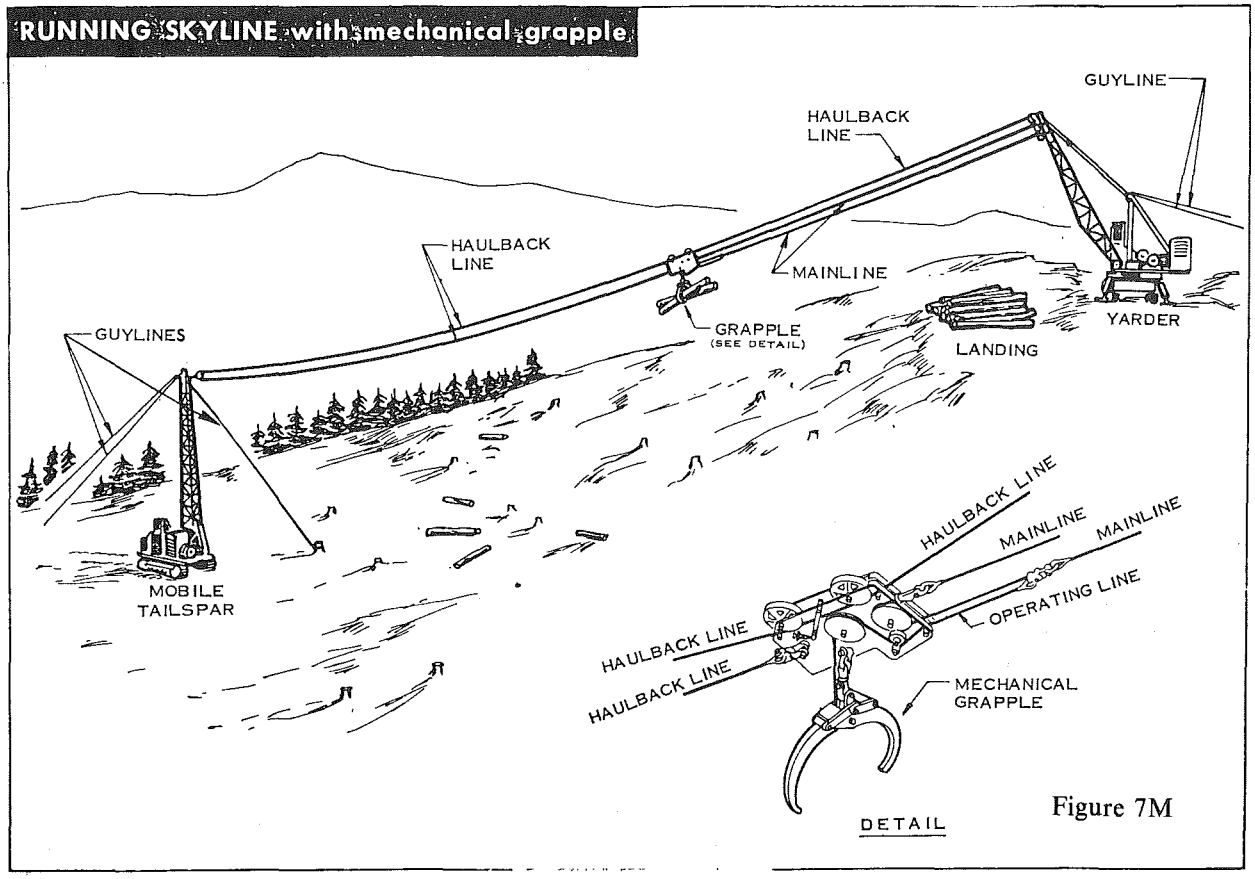


Figure 7M

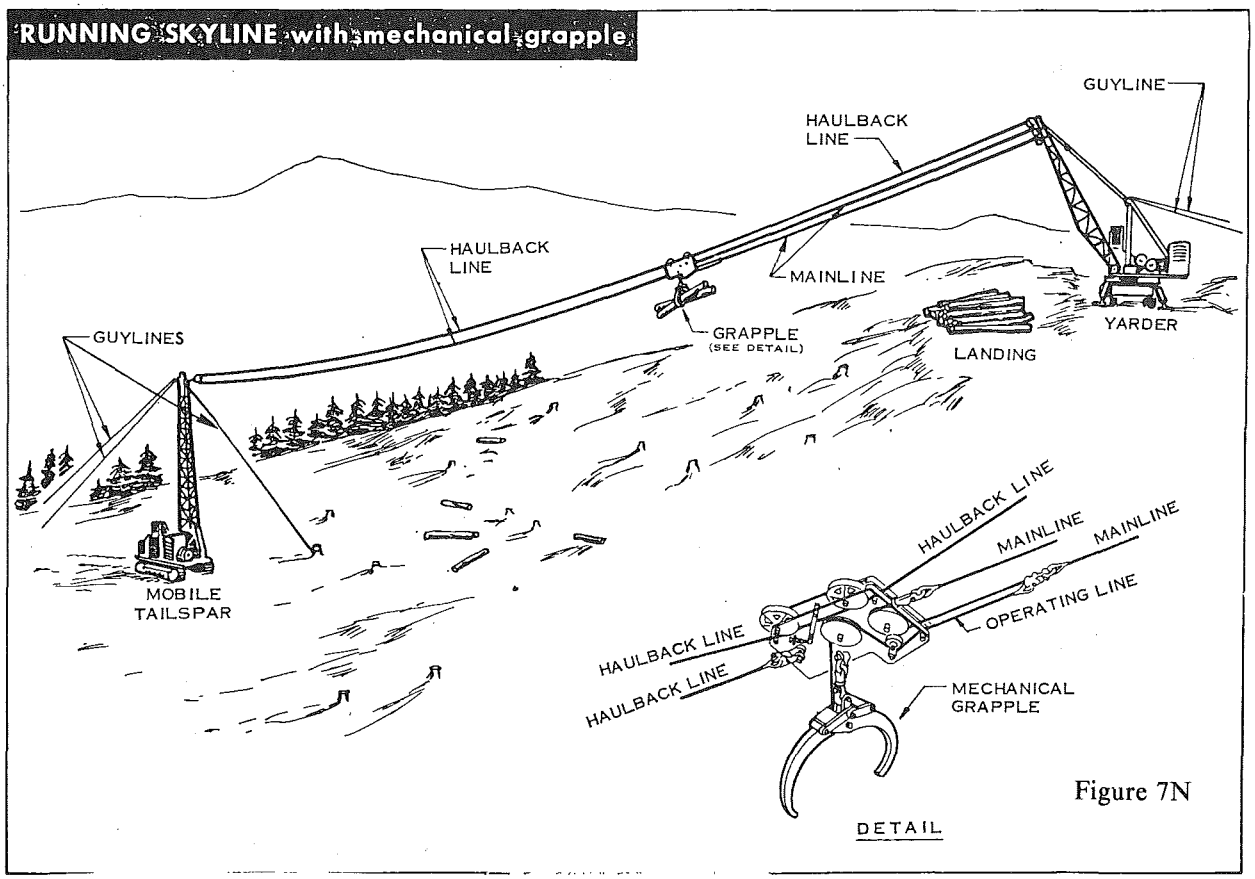


Figure 7N

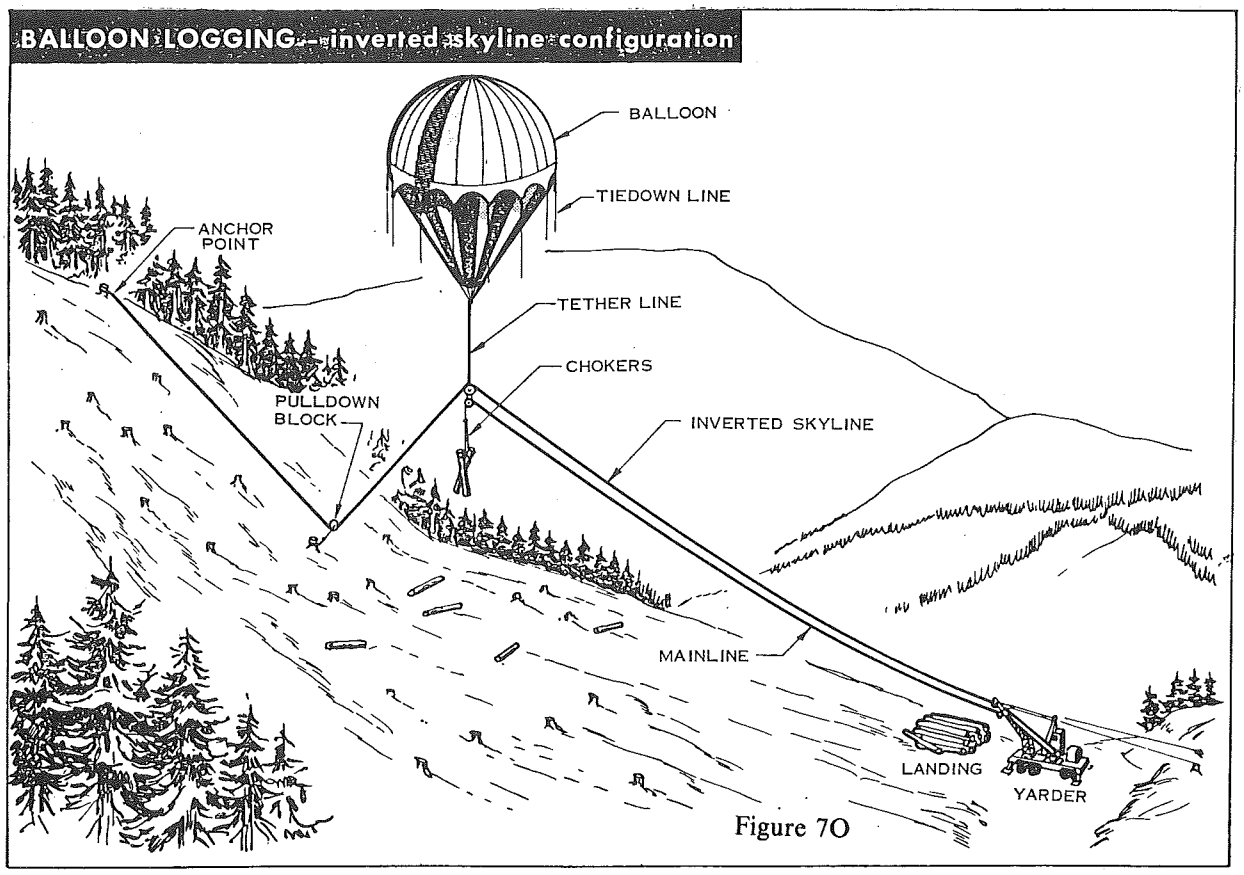


Figure 7O

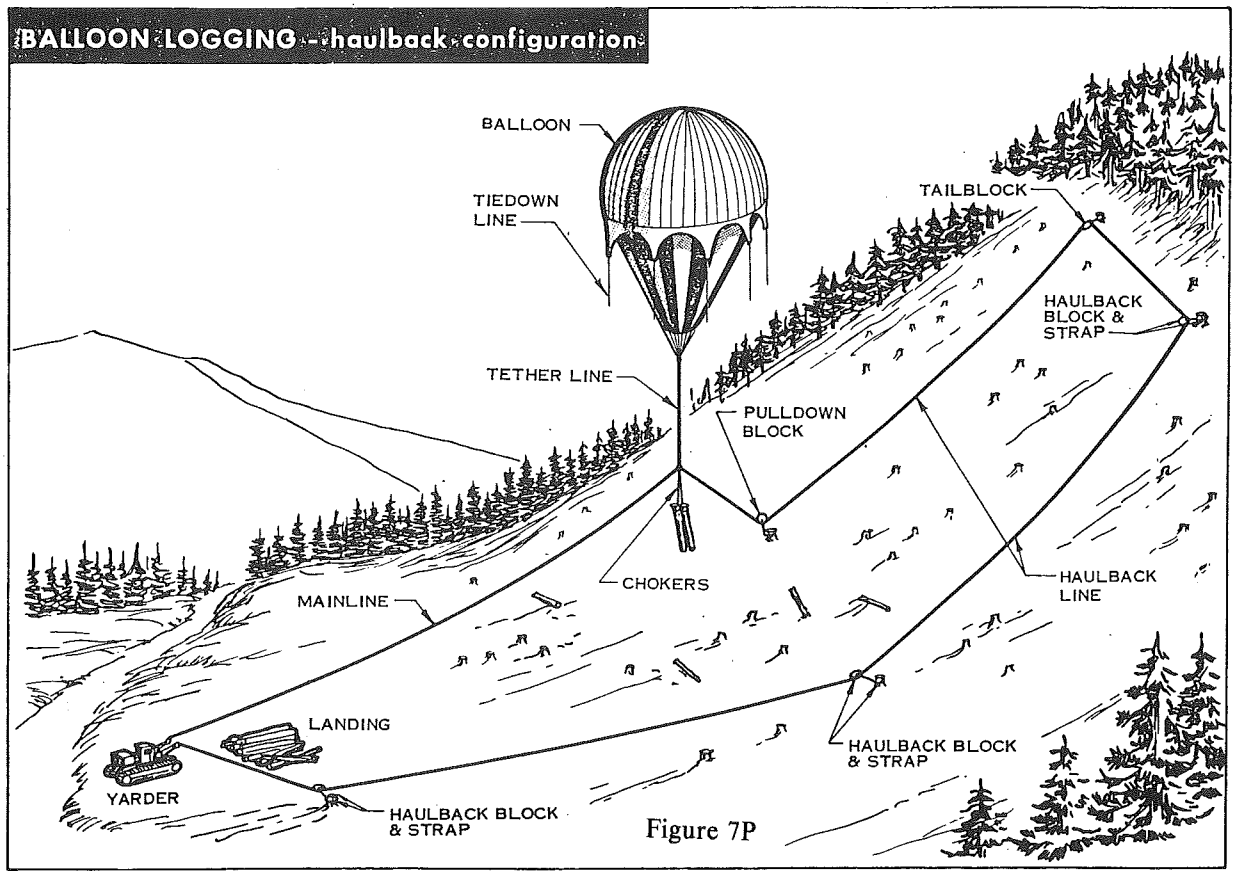


Figure 7P

HIGH LEAD LOGGING WHISTLE SIGNALS

— Means longer spacing between signals.

1 short	Stop all lines.
3 short—3 short	Ahead slow on mainline.
3 short	Ahead on mainline.
2 short	Ahead on haulback.
2 short—2 short	Ahead slow on haulback.
3 short—1 short	Ahead on strawline.
3 short—1 short—3 short	Ahead slow on strawline.
4 short or more	Slack mainline.
2 short—4 short	Slack haulback.
3 short—1 short—4 short	Slack strawline.
3 short—2 short	Standing tight line.
1 short—1 short	Tight line while lines are running, or break if running tight.
3 short	When rigging is in: strawline back on haulback.
3 short / plus "X" number of shorts	When rigging is in: Indicates number of sections of strawline back on rigging.
3 short—1 short—2 short	Strawline back on rigging.
1 short	When rigging is in: Chaser inspect and repair rigging.
2 short	When rigging is in: No chokers back.
2 short—1 short / plus "X" number of shorts	Number of chokers back.
2 short—4 short	When rigging is in: Slack haulback–hold all lines until 2 short blown.
3 medium	Hooker.
3 medium—4 short	Hooker and his crew.
5 long	Climber.
4 long	Foreman.
1 long—1 short	Start or stop work.
7 long—2 short	Man injured, call transportation and stretcher.
1 long—1 short repeated	Fire.
Grabinski System	
2 short—1 short	Slack mainline and haulback together.
2 long	Take off or put on rider block.

Figure 7-Q

SKIDDER WHISTLE SIGNALS

— Means longer spacing between signals.

1 short	Stops moving carriage–Stops or goes ahead on slack puller, as case may be, if carriage is stopped.
2 short	Go ahead on skidding line holding carriage.
1 short—2 short	Pick up skidding line, easy.
2 short—1 short	Shake up carriage to clear choker.
2 short—2 short	Ahead on receding line.
3 short	Ahead on carriage, holding at present level, using interlock.
3 short—3 short	Ahead easy on skidding line.
2 short—2 short—2 short	Slack skyline, cable down.
2 short—2 short—2 short —1 short	Pick up skyline, cable up.
2 short—2 short—4 short	Slack receding line.
2 short—4 short	Slack skidding line.
2 short—2 short—1 short	Tighten all lines.
1 short—4 short	Slack off slack puller.
1 short—2 short	Pick up slack puller when slack.
2 short—2 short / plus "X" number of shorts	When carriage is in: Number of chokers wanted.
2 short—2 short—1 long	Bull choker.
1 short	When carriage is in: Inspect butt rigging.
2 short—4 short / 1 short	For each additional ten feet of tong line.
1 long / plus "X" number of shorts	Number of coils of strawline wanted.
5 medium	Tail or second rigger.
5 medium—4 short	Tail or second rigger and his crew.
2 medium	Skidder head rigger.
3 medium—4 short	Hooker and his crew.
2 long	Ahead on transfer.
2 long—4 short	Slack transfer
1 short—3 short	Ahead on carriage with slack puller line.
1 long	Ahead on strawline.
1 long—4 short	Slack strawline.
1 long—3 short	Ahead easy on strawline.
5 long	Climber.
4 long	Foreman.
1 long—1 short	Start or stop work.
7 long—2 short	Man injured, call transportation and stretcher.
1 long—1 short repeated	Fire.

Figure 7-R

SLACKLINE WHISTLE SIGNALS

— Means longer spacing between signals.

2 short—2 short—2 short —1 short	First cable up when road has been changed and tail hold made fast.
2 short—2 short—2 short	Drop skyline.
1 short	Stop any moving line.

1 long	When logging, slack skyline.
2 short	Ahead on skyline.
1 long—2 short	Ahead easy on skyline.
3 short	Ahead on skidding line, holding haulback.
3 short—3 short	Ahead easy on skidding line with slack haulback.
4 short	Slack skidding line.
2 short—2 short / 2 short—2 short	Ahead easy on haulback with slack skidding line.
2 short—2 short	Ahead on haulback.
2 short—2 short—4 short	Slack haulback.
2 short / 3 short	Pick up skyline and skid.
2 short / 2 short—2 short	Pick up skyline and skin.
3 short—1 short	When carriage is in: Strawline back on haulback.
3 short—1 short—2 short	When carriage is in: Strawline back on carriage.
3 short—1 short	When strawline is out: Ahead on strawline.
3 short—2 short	Tight line.
3 short—1 short—4 short	Slack strawline.
3 short—1 short—3 short	Pull easy on strawline.
2 long	Ahead on transfer.
2 long—4 short	Slack transfer.
2 long—2 short—2 short	When carriage is in: Transfer back on carriage.
1 long / plus "X" number of shorts	When carriage is in: Number of coils.
2 short—2 short—1 short / plus "X" number of shorts	When carriage is in: Number of chokers.
1 short	When carriage is in: Inspect rigging, repair and send back.
2 short—2 short—4 short	When carriage is in: Slack haulback and hold all lines until 1 short is blown–then send back.
3 short—3 short	When carriage is in: Send back powder.
5 medium	Tail rigger.
5 medium—4 short	Tail rigger and his crew.
3 medium	Head hooker.
3 medium—4 short	Second hooker and his crew.
5 long	Climber.
4 long	Foreman.
1 long—1 short	Start or stop work.
7 long—2 short	Man injured, call transportation and stretcher.
1 long—1 short repeated	Fire.

Figure 7–S

RUNNING SKYLINE WHISTLE SIGNALS

— Means longer spacing between signals

1 short	Stop all moving lines
2 short	Skin carriage back
2 short—1 short	Slack haulback
2 short—2 short	Skin carriage easy
2 short—3 short	Standing tight line
1 short—2 short	Ahead on drop line
4 short	Slack drop line
1 short—4 short	Slack both mainlines
1 short—1 short	Stop drop line going up and move carriage forward
3 short	Move carriage forward
3 short—3 short	Move carriage forward easy
3 short—1 short	When strawline is out: Ahead on strawline
3 short—1 short—4 short	Slack strawline
3 short	When carriage is in: Strawline
3 short—X short	When carriage is in: Number sections
3 short—1 short—2 short	When carriage is in: Strawline back on carriage
2 short—X short	When carriage is in: Number of chokers
4 short	When carriage is in: Inspect rigging, repair and send back
1 short	When carriage is in: Hold all lines until 2 shorts, then send back
3 medium	Head hooker
3 medium—4 short	Hooker and his crew
4 long	Foreman
1 long—1 short	Start or stop work
7 long—2 short	Man injured; call transportation and stretcher
1 long—1 short (repeated)	Fire
3 short—1 long	Acknowledged by engineer to signify hazardous turn

Figure 7–T

TENSION SYSTEM SIGNALS

4	Release tension
1 short	Stop carriage and start unspooling tong line
1 short	Stop tong line
1 short	Resume unspooling tong line
1 short	Will stop any moving line or slack tong line when carriage is stopped
2 short—2 short	Go into interlock and go back

2 short—4 short	Slack haulback and let carriage down
After Turn is Set	
2 short	Go ahead on tong line
2 short—3 short	Go ahead easy on tong line
3 short	Go into interlock and take carriage to landing
3 short—3 short	Ahead on carriage easy
1 short—2 short	Increase tension on tong line when carriage is going in
short—1 short	Decrease tension on tong line when carriage is going in

Figure 7-U

[Statutory Authority: RCW 34.04.025, 49.17.040, and 49.17.050. 81-05-013 (Order 81-3), § 296-54-559, filed 2/10/81. Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240. 79-10-081 (Order 79-14), § 296-54-559, filed 9/21/79.]

WAC 296-54-567 Motor truck log transportation—General requirements. (1) Prior to use, the operator shall make a complete daily inspection of the truck and trailer with particular attention to steering apparatus, lights and reflectors, brake boosters, brake hoses and connections, reaches, and hitches (couplings). The brakes shall be tested before and after movement of the vehicle. The operator shall submit a written list of necessary repairs to a person designated by the employer.

(2) Any defective parts that would make the vehicle unsafe to operate, shall be replaced or repaired before the vehicle is placed in service.

(3) All motor vehicles operated on public roads shall comply with the rules of the regulatory body having jurisdiction. Motor vehicles used on roads not under the control of the state department of transportation, counties or cities shall be equipped with accessories necessary for a safe operation including operable head lamps and at least two tail lamps and brake lamps which shall emit a red light plainly visible from a distance of one thousand feet to the rear and shall also have two reflectors visible at night from three hundred fifty feet when directly in front of properly adjusted motor vehicle head lamps.

(4) Truck tires worn beyond a point of safety or not meeting the safety requirements of the jurisdiction having authority as to tread wear and tire conditions, shall not be used.

(5) The driver shall do everything reasonably possible to keep his truck under control at all times and shall not operate in excess of a speed at which he can stop the truck in one-half the distance between him and the range of unobstructed vision.

(6) The area between the truck frame members, extending from the cab rearward as far as necessary to provide a safe work area, shall be covered with suitable nonslip type material. Log trucks which have logs scaled at stations shall be provided with a platform on each side extending outward from the frame members at least eighteen inches, and shall be eighteen inches long or as near this dimension as the design of the truck will permit. The treading surface of the platforms shall be of nonslip type material and the platform shall be capable of safely supporting a five hundred pound load.

(7) To protect the operator of vehicles from loads, a substantial bulkhead shall be provided behind the cab which shall extend up to the height of the cab.

(8) If logs must be scaled or branded while the loading operation is being carried on, the loading operation shall cease while the scaling or branding is being done so that the scaler or person doing the branding is not subjected to any hazards created by the loading operation.

(9) When at the dump or reload or where logs are scaled or branded on the truck, the logs shall be scaled or branded before the binders are released.

(10) All vehicles, where vision of the operator in the direction of travel is impaired by the load or vehicle, shall be moved only on a signal from a worker who shall have a clear view in the direction in which the vehicle is to be moved.

(11) Where a bridge or other roadway structure is posted with a load limit sign, log truck drivers or operators of other heavy equipment are prohibited from driving a load in excess of the posted limit over such structure.

(12) Persons shall be allowed to ride only when in the cab of the log truck.

(13) All trucks shall keep to the right side of the road except where the road is plainly and adequately posted for left side travel.

(14) A method shall be provided to assure that the trailer will remain mounted on the truck while driving on highways or logging roads.

(15) When trucks are towed on any road, the person guiding the vehicle being towed shall, by prearranged signals, govern the speed of travel. The towing of vehicles shall be done at a reasonable speed and in a prudent manner. A tow cable or chain over fifteen feet in length shall have a white flag affixed at the approximate center, however, it is recommended that a rigid tow bar be used for this purpose.

(16) All air lines, air chambers and systems shall be free of leaks and be able to maintain air pressure on constant brake application with the motor shut-off for one minute, or air pressure does not drop more than 4 p.s.i. in one minute with the engine running at idling speed and the service brake applied.

(17) All rubber-tired motor vehicles shall be equipped with fenders. Mud flaps may be used in lieu of fenders whenever the motor vehicle is not designed for fenders.

(18) Seat belts and anchorages meeting the requirements of 49 CFR Part 571 (D.O.T. Federal Motor Vehicle Safety Standards) shall be installed and used in all motor vehicles.

(19) All trucks shall be equipped with doors with operable latches, or a safety bar or strap shall be provided in lieu of the door.

(20) All trucks shall be equipped with a means to protect the operator from inclement weather.

(21) Log trucks shall not approach a landing while there is danger from incoming logs.

(22) Log truck drivers shall stop their vehicle, dismount, check and tighten loose load wrappers and binders, either just before or immediately after leaving a private road to enter a public road. [Statutory Authority: RCW 34.04.025, 49.17.040, and 49.17.050. 81-05-013 (Order 81-3), § 296-54-567, filed 2/10/81. Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17-.240. 79-10-081 (Order 79-14), § 296-54-567, filed 9/21/79.]

Chapter 296-62 WAC
OCCUPATIONAL HEALTH STANDARDS--SAFETY STANDARDS FOR CARCINOGENS

WAC

296-62-052 Access to employee exposure and medical records.
296-62-05201 Purpose.
296-62-05203 Scope and application.
296-62-05205 Definitions applicable to this section.
296-62-05207 Preservation of records.
296-62-05209 Access to records.
296-62-05211 Trade secrets.
296-62-05213 Employee information.
296-62-05215 Transfer of records.
296-62-05217 Appendices.
296-62-05219 Effective date.
296-62-05221 Appendix A—Sample authorization letter for the release of employee medical record information to a designated representative.
296-62-05223 Appendix B—Availability of NIOSH Registry of Toxic Effects of Chemical Substances (RTECS).
296-62-071 Respiratory protection.
296-62-07101 Scope.
296-62-07103 Purpose.
296-62-07105 Definitions.
296-62-07107 Permissible practice.
296-62-07109 Minimal acceptable respirator program.
296-62-07111 Respirable air and oxygen for self-contained breathing apparatus and supplied air respirators.
296-62-07113 Selection of respirators.
296-62-07115 Use of respirators.
296-62-07117 Maintenance of respirators.
296-62-07119 Identification of air-purifying respirator canisters.
296-62-07121 Effective date.
296-62-07302 List of carcinogens.
296-62-07304 Definitions.
296-62-07306 Requirements for areas containing carcinogens listed in WAC 296-62-07302.
296-62-07310 Signs, information and training.
296-62-07312 Reports.
296-62-07329 Vinyl chloride.
296-62-07341 Acrylonitrile.
296-62-07345 1,2-Dibromo-3-chloropropane.
296-62-07347 Inorganic arsenic.
296-62-07349 Repealed.
296-62-07501 Airborne contaminants.
296-62-07515 Control of chemical agents.
296-62-07517 Asbestos.
296-62-07519 Thiram.
296-62-07521 Lead.
296-62-09003 Lighting and illumination.
296-62-09011 Occupational noise exposure.
296-62-09015 Hearing conservation.
296-62-09017 Definitions.
296-62-09019 Monitoring.
296-62-09021 Method of noise measurement.
296-62-09023 Calibration of monitoring equipment.
296-62-09025 Observation of monitoring.
296-62-09027 Audiometric testing program.
296-62-09029 Audiometric test requirements.
296-62-09031 Hearing protectors.
296-62-09033 Hearing protector attenuation.
296-62-09035 Training program.
296-62-09037 Access to information and training materials.
296-62-09039 Warning signs.
296-62-09041 Recordkeeping.
296-62-09043 Appendices.
296-62-09045 Effective dates.
296-62-09047 Appendix A: Audiometric measuring instruments.
296-62-09049 Appendix B: Audiometric test rooms.
296-62-09051 Appendix C: Acoustic calibration of audiometers.
296-62-09053 Appendix D: Methods for estimating the adequacy of hearing protector attenuation.
296-62-100 Oxygen deficient atmospheres.
296-62-11015 Abrasive blasting.
296-62-11019 Spray-finishing operations.
296-62-11021 Open surface tanks.
296-62-14507 Toxic atmospheres.
296-62-14515 Electrical hazards.
296-62-14525 Entry into confined space.
296-62-14531 Exposure to cotton dust in cotton gins.
296-62-14533 Cotton dust.
296-62-146 Appendices.
296-62-14601 Appendix A—Requirements for classification and respiratory use of workers exposed to cotton dust in gins.
296-62-14603 Appendix B-1—Respiratory questionnaire.
296-62-14605 Appendix C—Spirometry prediction tables for normal males and females.
296-62-14607 Appendix D—Pulmonary function standards for cotton dust standard.
296-62-20011 Respiratory protection.
296-62-20023 Recordkeeping.

DISPOSITION OF SECTIONS FORMERLY CODIFIED IN THIS CHAPTER

296-62-07349 Lead. [Statutory Authority: RCW 49.17.040, 49.17-.050 and 49.17.240. 81-18-029 (Order 81-21), § 296-62-07349, filed 8/27/81; 81-16-015 (Order 81-20), § 296-62-07349, filed 7/27/81; 80-11-009 (Order 80-16), § 296-62-07349, filed 8/8/80.] Decodified by 82-13-045 (Order 82-22), filed 6/11/82. Statutory Authority: RCW 49.17.040 and 49.17.050. Later promulgation, see WAC 296-62-07521.

WAC 296-62-052 Access to employee exposure and medical records. This standard establishes rights of access to the information by employees and designated representatives, while at the same time affording appropriate privacy and confidentiality protection. [Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81-18-029 (Order 81-21), § 296-62-052, filed 8/27/81.]

WAC 296-62-05201 Purpose. The purpose of this section is to provide employees and their designated representatives a right of access to relevant exposure and medical records, and to provide representatives of the director of labor and industries a right of access to these records. Access by employees, their representatives, and the director of labor and industries is necessary to yield both direct and indirect improvements in the detection, treatment and prevention of occupational disease. Each employer is responsible for assuring compliance with this section, but the activities involved in complying with the access to medical records provisions can be carried out,

on behalf of the employer, by the physician or other health care personnel in charge of employee medical records. Except as expressly provided, nothing in this section is intended to affect existing legal and ethical obligations concerning the maintenance and confidentiality of employee medical information, the duty to disclose information to a patient/employee or any other aspect of the medical–care relationship, or affect existing legal obligations concerning the protection of trade secret information. [Statutory Authority: RCW 49.17-.040, 49.17.050 and 49.17.240. 81–18–029 (Order 81–21), § 296–62–05201, filed 8/27/81.]

WAC 296–62–05203 Scope and application. (1) This section applies to every employer, except as provided in subsection (4) of this section, who makes, maintains, contracts for, or has access to employee exposure or medical records, or analyses thereof, pertaining to employees exposed to toxic substances or harmful physical agents.

(2) This section applies to all employee exposure and medical records, and analyses thereof, of employees exposed to toxic substances or harmful physical agents, whether or not the records are related to specific occupational safety and health standards.

(3) This section applies to all employee exposure and medical records, and analyses thereof, made or maintained in any manner, including on an in–house or contractual (e.g., fee–for–service) basis. Each employer shall assure that the preservation and access requirements of this section are complied with regardless of the manner in which records are made or maintained.

(4) This section does not apply to the agricultural operations covered by chapter 296–306 WAC. [Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81–18–029 (Order 81–21), § 296–62–05203, filed 8/27/81.]

WAC 296–62–05205 Definitions applicable to this section. (1) Access – the right and opportunity to examine and copy.

(2) Analysis using exposure or medical records – any compilation of data, or any research, statistical or other study based at least in part on information collected from individual employee exposure or medical records or information collected from health insurance claims records, provided that either the analysis has been reported to the employer or no further work is currently being done by the person responsible for preparing the analysis.

(3) Designated representative – any individual or organization to whom an employee gives written authorization to exercise a right of access. For the purposes of access to employee exposure records and analyses using exposure or medical records, a recognized or certified collective bargaining agent shall be treated automatically as a designated representative without regard to written employee authorization.

(4) Employee – a current employee, a former employee, or an employee being assigned or transferred to work where there will be exposure to toxic substances or harmful physical agents. In the case of a deceased or legally incapacitated employee, the employee's legal representative may directly exercise all the employee's rights under this section.

(5) Employee exposure record – a record containing any of the following kinds of information concerning employee exposure to toxic substances or harmful physical agents:

(a) Environmental (workplace) monitoring or measuring, including personal, area, grab, wipe, or other form of sampling, as well as related collection and analytical methodologies, calculations, and other background data relevant to interpretation of the results obtained;

(b) Biological monitoring results which directly assess the absorption of a substance or agent by body systems (e.g., the level of a chemical in the blood, urine, breath, hair, fingernails, etc.) but not including results which assess the biological effect of a substance or agent;

(c) Material safety data sheets; or

(d) In the absence of the above, any other record which reveals the identity (e.g., chemical, common or trade name) of a toxic substance or harmful physical agent.

(6)(a) Employee medical record – a record concerning the health status of an employee which is made or maintained by a physician, nurse, or other health care personnel, or technician, including:

(i) Medical and employment questionnaires or histories (including job description and occupational exposures);

(ii) The results of medical examinations (preemployment, pre–assignment, periodic, or episodic) and laboratory tests (including x–ray examinations and all biological monitoring);

(iii) Medical opinions, diagnoses, progress notes and recommendations;

(iv) Descriptions of treatments and prescriptions; and

(v) Employee medical complaints.

(b) Employee medical record does not include the following:

(i) Physical specimens (e.g., blood or urine samples) which are routinely discarded as a part of normal medical practice, and are not required to be maintained by other legal requirements;

(ii) Records concerning health insurance claims if maintained separately from the employer's medical program and its records, and not accessible to the employer by employee name or other direct personal identifier (e.g., social security number, payroll number, etc.); or

(iii) Records concerning voluntary employee assistance programs (alcohol, drug abuse, or personal counseling programs) if maintained separately from the employer's medical program and its records.

(7) Employer – a current employer, a former employer or a successor employer.

(8) Exposure or exposed – an employee is subjected to a toxic substance or harmful physical agent in the course of employment through any route of entry (inhalation, ingestion, skin contact or absorption, etc.), and includes past exposure and potential (e.g., accidental or possible)

exposure, but does not include situations where the employer can demonstrate that the toxic substance or harmful physical agent is not used, handled, stored, generated, or present in the workplace in any manner different from typical nonoccupational situations.

(9) Record – any item, collection, or grouping of information regardless of the form or process by which it is maintained (e.g., paper document, microfiche, microfilm, x–ray film, or automated data processing).

(10) Specific written consent – (a) A written authorization containing the following:

(i) The name and signature of the employee authorizing the release of medical information;

(ii) The date of the written authorization;

(iii) The name of the individual or organization that is authorized to release the medical information;

(iv) The name of the designated representative (individual or organization) that is authorized to receive the released information;

(v) A general description of the medical information that is authorized to be released;

(vi) A general description of the purpose for the release of the medical information; and

(vii) A date or condition upon which the written authorization will expire (if less than one year).

(b) A written authorization does not operate to authorize the release of medical information not in existence on the date of written authorization, unless this is expressly authorized, and does not operate for more than one year from the date of written authorization.

(c) A written authorization may be revoked in writing prospectively at any time.

(11) Toxic substance or harmful physical agent – any chemical substance, biological agent (bacteria, virus, fungus, etc.), or physical stress (noise, heat, cold, vibration, repetitive motion, ionizing and nonionizing radiation, hypo– or hyperbaric pressure, etc.) which:

(a) Is regulated by any WISHA law or rule due to a hazard to health;

(b) Is listed in the latest printed edition of the National Institute for Occupational Safety and Health (NIOSH) Registry of Toxic Effects of Chemical Substances (RTECS) (See Appendix B);

(c) Has yielded positive evidence of an acute or chronic health hazard in human, animal, or other biological testing conducted by, or known to, the employer; or

(d) Has a material safety data sheet available to the employer indicating that the material may pose a hazard to human health. [Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81–18–029 (Order 81–21), § 296–62–05205, filed 8/27/81.]

WAC 296–62–05207 Preservation of records. (1) Unless a specific occupational safety and health standard provides a different period of time, each employer shall assure the preservation and retention of records as follows:

(a) Employee medical records. Each employee medical record shall be preserved and maintained for at least the duration of employment plus thirty years, except that health insurance claims records maintained separately from the employer's medical program and its records need not be retained for any specified period;

(b) Employee exposure records. Each employee exposure record shall be preserved and maintained for at least thirty years, except that:

(i) Background data to environmental (workplace) monitoring or measuring, such as laboratory reports and worksheets, need only be retained for one year so long as the sampling results, the collection methodology (sampling plan), a description of the analytical and mathematical methods used, and a summary of other background data relevant to interpretation of the results obtained, are retained for at least thirty years; and

(ii) Material safety data sheets and WAC 296–62–05205(5) records concerning the identity of a substance or agent need not be retained for any specified period as long as some record of the identity (chemical name if known) of the substance or agent, where it was used, and when it was used is retained for at least thirty years; and

(c) Analyses using exposure or medical records. Each analysis using exposure or medical records shall be preserved and maintained for at least thirty years.

(2) Nothing in this section is intended to mandate the form, manner, or process by which an employer preserves a record so long as the information contained in the record is preserved and retrievable, except that x–ray films shall be preserved in their original state. [Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81–18–029 (Order 81–21), § 296–62–05207, filed 8/27/81.]

WAC 296–62–05209 Access to records. (1) General.

(a) Whenever an employee or designated representative requests access to a record, the employer shall assure that access is provided in a reasonable time, place and manner, but in no event later than fifteen days after the request for access is made.

(b) Whenever an employee or designated representative requests a copy of a record, the employer shall, within the period of time previously specified, assure that either:

(i) A copy of the record is provided without cost to the employee or representative;

(ii) The necessary mechanical copying facilities (e.g., photocopying) are made available without cost to the employee or representative for copying the record; or

(iii) The record is loaned to the employee or representative for a reasonable time to enable a copy to be made.

(c) Whenever a record has been previously provided without cost to an employee or designated representative, the employer may charge reasonable, nondiscriminatory administrative costs (i.e., search and copying expenses but not including overhead expenses) for a request by the employee or designated representative for additional copies of the record, except that:

(i) An employer shall not charge for an initial request for a copy of new information that has been added to a record which was previously provided; and

(ii) An employer shall not charge for an initial request by a recognized or certified collective bargaining agent for a copy of an employee exposure record or an analysis using exposure or medical records.

(d) Nothing in this section is intended to preclude employees and collective bargaining agents from collectively bargaining to obtain access to information in addition to that available under this section.

(2) Employee and designated representative access.

(a) Employee exposure records. Each employer shall, upon request, assure the access of each employee and designated representative to employee exposure records relevant to the employee. For the purpose of this section, exposure records relevant to the employee consist of:

(i) Records of the employee's past or present exposure to toxic substances or harmful physical agents;

(ii) Exposure records of other employees with past or present job duties or working conditions related to or similar to those of the employee;

(iii) Records containing exposure information concerning the employee's workplace or working conditions; and

(iv) Exposure records pertaining to workplaces or working conditions to which the employee is being assigned or transferred.

(b) Employee medical records.

(i) Each employer shall, upon request, assure the access of each employee to employee medical records of which the employee is the subject, except as provided in subdivision (2)(b)(iv) of this section.

(ii) Each employer shall, upon request, assure the access of each designated representative to the employee medical records of any employee who has given the designated representative specific written consent. Appendix A to this section contains a sample form which may be used to establish specific written consent for access to employee medical records.

(iii) Whenever access to employee medical records is requested, a physician representing the employer may recommend that the employee or designated representative:

(A) Consult with the physician for the purposes of reviewing and discussing the records requested;

(B) Accept a summary of material facts and opinions in lieu of the records requested; or

(C) Accept release of the requested records only to a physician or other designated representative.

(iv) Whenever an employee requests access to his or her employee medical records, and a physician representing the employer believes that direct employee access to information contained in the records regarding a specific diagnosis of a terminal illness or a psychiatric condition could be detrimental to the employee's health, the employer may inform the employee that access will only be provided to a designated representative of the employee having specific written consent, and deny the employee's request for direct access to this information only. Where a designated representative with specific written consent requests access to information so withheld, the employer shall assure the access of the designated representative to this information, even when it is known that the designated representative will give the information to the employee.

(v) Nothing in this section precludes a physician, nurse, or other responsible health care personnel maintaining employee medical records from deleting from requested medical records the identity of a family member, personal friend, or fellow employee who has provided confidential information concerning an employee's health status.

(c) Analyses using exposure or medical records.

(i) Each employer shall, upon request, assure the access of each employee and designated representative to each analysis using exposure or medical records concerning the employee's working conditions or workplace.

(ii) Whenever access is requested to an analysis which reports the contents of employee medical records by either direct identifier (name, address, social security number, payroll number, etc.) or by information which could reasonably be used under the circumstances indirectly to identify specific employees (exact age, height, weight, race, sex, date of initial employment, job title, etc.) the employer shall assure that personal identifiers are removed before access is provided. If the employer can demonstrate that removal of personal identifiers from an analysis is not feasible, access to the personally identifiable portions of the analysis need not be provided. [Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81-18-029 (Order 81-21), § 296-62-05209, filed 8/27/81.]

WAC 296-62-05211 Trade secrets. (1) Except as provided in subsection (2) of this section, nothing in this section precludes an employer from deleting from records requested by an employee or designated representative any trade secret data which discloses manufacturing processes, or discloses the percentage of a chemical substance in a mixture, as long as the employee or designated representative is notified that information has been deleted. Whenever deletion of trade secret information substantially impairs evaluation of the place where or the time when exposure to a toxic substance or harmful physical agent occurred, the employer shall provide alternative information which is sufficient to permit the employee to identify where and when exposure occurred.

(2) Notwithstanding any trade secret claims, whenever access to records is requested, the employer shall provide access to chemical or physical agent identities including chemical names, levels of exposure, and employee health status data contained in the requested records.

(3) Whenever trade secret information is provided to an employee or designated representative, the employer may require, as a condition of access, that the employee or designated representative agree in writing not to use the trade secret information for the purpose of commercial gain and not to permit misuse of the trade secret information by a competitor or potential competitor of

the employer. [Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81-18-029 (Order 81-21), § 296-62-05211, filed 8/27/81.]

WAC 296-62-05213 Employee information. (1) Upon an employee's first entering into employment, and at least annually thereafter, each employer shall inform employees exposed to toxic substances or harmful physical agents of the following:

(a) The existence, location and availability of any records covered by this section;

(b) The person responsible for maintaining and providing access to records; and

(c) Each employee's rights of access to these records.

(2) Each employer shall make readily available to employees a copy of this standard and its appendices, and shall distribute to employees any informational materials concerning this standard which are made available to the employer by the department of labor and industries, technical services. [Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81-18-029 (Order 81-21), § 296-62-05213, filed 8/27/81.]

WAC 296-62-05215 Transfer of records. (1) Whenever an employer is ceasing to do business, the employer shall transfer all records subject to this section to the successor employer. The successor employer shall receive and maintain these records.

(2) Whenever an employer is ceasing to do business and there is no successor employer to receive and maintain the records subject to this standard, the employer shall notify affected employees of their rights of access to records at least three months prior to the cessation of the employer's business.

(3) Whenever an employer either is ceasing to do business and there is no successor employer to receive and maintain the records, or intends to dispose of any records required to be preserved for at least thirty years, the employer shall:

(a) Transfer the records to the director of the department of labor and industries if so required by a specific occupational safety and health standard; or

(b) Notify the director of the department of labor and industries in writing of the impending disposal of records at least three months prior to the disposal of the records.

(4) Where an employer regularly disposes of records required to be preserved for at least thirty years, the employer may, with at least three months notice, notify the director of the department of labor and industries on an annual basis of the records intended to be disposed of in the coming year. [Statutory Authority: RCW 49.17-.040, 49.17.050 and 49.17.240. 81-18-029 (Order 81-21), § 296-62-05215, filed 8/27/81.]

WAC 296-62-05217 Appendices. The information contained in the appendices to this section is not intended, by itself, to create any additional obligations not otherwise imposed by this section nor detract from any existing obligation. Copies of these appendices can be obtained from the following address:

Department of Labor and Industries
Division of Industrial Safety & Health
Technical Services Section
P.O. Box 207
Olympia, Washington 98504

[Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81-18-029 (Order 81-21), § 296-62-05217, filed 8/27/81.]

WAC 296-62-05219 Effective date. WAC 296-62-052 through 296-62-05219 shall become effective thirty days after filing with the code reviser. All obligations of this section commence on the effective date except that the employer shall provide the information required under WAC 296-62-05213(1) to all current employees within sixty days after the effective date. [Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81-18-029 (Order 81-21), § 296-62-05219, filed 8/27/81.]

WAC 296-62-05221 Appendix A--Sample authorization letter for the release of employee medical record information to a designated representative.

I, _____(full name of worker/patient) hereby authorize _____(individual or organization holding the medical records) to release to _____(individual or organization authorized to receive the medical information), the following medical information from my personal medical records:

_____

_____

(Describe generally the information desired to be released.)

I give may permission for this medical information to be used for the following purpose:_____, but I do not give permission for any other use or re-disclosure of this information.

(NOTE: Several extra lines are provided below so that you can place additional restrictions on this authorization letter if you want to. You may, however, leave these lines blank. On the other hand, you may want to (1) specify a particular expiration date for this letter (if less than one year); (2) describe medical information to be created in the future that you intend to be covered by this authorization letter; or (3) describe portions of the medical information in your records which you do not intend to be released as a result of this letter.)

_____

_____

_____

Full name of Employee or Legal Representative

Signature of Employee or Legal Representative

Date of Signature

[Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81-18-029 (Order 81-21), § 296-62-05221, filed 8/27/81.]

WAC 296-62-05223 Appendix B--Availability of NIOSH Registry of Toxic Effects of Chemical Substances (RTECS). WAC 296-62-052 applies to all employee exposure and medical records, and analyses thereof, of employees exposed to toxic substances or harmful physical agents (WAC 296-62-05203). The term "toxic substance or harmful physical agent" is defined by WAC 296-62-05205(11) to encompass chemical substances, biological agents, and physical stresses for which there is evidence of harmful health effects. The standard uses the latest printed edition of the National Institute for Occupational Safety and Health (NIOSH) Registry of Toxic Effects of Chemical Substances (RTECS) as one of the chief sources of information as to whether evidence of harmful health effects exists. If a substance is listed in the latest printed RTECS, the standard applies to exposure and medical records (and analyses of these records) relevant to employees exposed to the substance.

It is appropriate to note that the final standard does not require that employers purchase a copy of RTECS, and many employers need not consult RTECS to ascertain whether their employee exposure or medical records are subject to the standard. Employers who do not currently have the latest printed edition of the NIOSH RTECS, however, may desire to obtain a copy. The RTECS is issued in an annual printed edition as mandated by section 20(a)(6) of the Occupational Safety and Health Act (29 U.S.C. 669(a)(6)). The 1979 edition is the most recent printed edition as of July 1, 1981.

The RTECS may be purchased from the Superintendent of Documents, U.S. Government Printing Office (GPO), Washington D.C. 20402 (202-783-3238). New editions are anticipated to be issued in the late summer of each year. Some employers may also desire to subscribe to the quarterly update to the RTECS which is published in a microfiche edition. An annual subscription to the quarterly microfiche may be purchased from the GPO (Order the "Microfiche Edition, Registry of Toxic Effects of Chemical Substances"). Both the printed edition and the microfiche edition of RTECS are available for review at many university and public libraries throughout the country. The latest RTECS editions may also be examined at any OSHA Regional or Area Office. [Statutory Authority: RCW 49.17.040, 49-.17.050 and 49.17.240. 81-18-029 (Order 81-21), § 296-62-05223, filed 8/27/81.]

WAC 296-62-071 Respiratory protection. This section contains the requirements to be followed when establishing a respiratory protection program. [Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81-16-016 (Order 81-19), § 296-62-071, filed 7/27/81.]

WAC 296-62-07101 Scope. This standard sets forth accepted practices when respiratory protection is used in controlling employee exposures to harmful air contaminants to comply with permissible exposure limits or to protect employees in oxygen-deficient atmospheres, or when respirators are utilized for emergency or rescue use. [Statutory Authority: RCW 49.17.040 and 49.17-.050. 82-08-026 (Order 82-10), § 296-62-07101, filed 3/30/82. Statutory Authority: RCW 49.17.040, 49.17-.050 and 49.17.240. 81-16-016 (Order 81-19), § 296-62-07101, filed 7/27/81.]

WAC 296-62-07103 Purpose. The purpose of this standard is to provide minimum performance requirements for the selection and use of respirators and the implementation of a respirator program. [Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81-16-016 (Order 81-19), § 296-62-07103, filed 7/27/81.]

WAC 296-62-07105 Definitions. (1) Abrasive-blasting respirator. See "respirator." A respirator designed to protect the wearer against inhalation of abrasive material and against impact and abrasion from rebounding abrasive material.

(2) Accepted. Reviewed and listed as satisfactory for a specified use by the director or his or her designee.

(3) Aerodynamic diameter. The diameter of a unit density sphere having the same settling velocity as the particle in question of whatever shape and density.

(4) Aerosol. A system consisting of particles, solid or liquid, suspended in air.

(5) Air-line respirator. See "respirator."

(6) Air-purifying respirator. See "respirator."

(7) Air-regulating valve. An adjustable valve used to regulate, but which cannot completely shut off the airflow to the facepiece, helmet, hood, or suit of an air-line respirator.

(8) Air-supply device. A hand- or motor-operated blower for the hose mask, or a compressor or other source of respirable air for the air-line respirator.

(9) Approved. Tested and listed as satisfactory by the Bureau of Mines (BM) of the U.S. Department of Interior, or jointly by the Mining Enforcement and Safety Administration (MESA) of the U.S. Department of Interior and the National Institute for Occupational Safety and Health (NIOSH) of the U.S. Department of Health and Human Services, or jointly by the Mine Safety and Health Administration (MSHA) of the U.S. Department of Labor and NIOSH under the provisions of Title 30, Code of Federal Regulations, Part 11.

(10) Bioassay. A determination of the concentration of a substance in a human body by an analysis of urine, feces, blood, bone, or tissue.

(11) Breathing tube. A tube through which air or oxygen flows to the facepiece, mouthpiece, helmet, hood, or suit.

(12) Canister (air–purifying). A container with a filter, sorbent, or catalyst, or any combination thereof, which removes specific contaminants from the air drawn through it.

(13) Canister (oxygen–generating). A container filled with a chemical which generates oxygen by chemical reaction.

(14) Carcinogen. A substance known to produce cancer in some individuals following a latent period (for example: Asbestos, Chromates, radioactive particulates).

(15) Cartridge (air–purifying). A small canister.

(16) Catalyst. In respirator use, a substance which converts a toxic gas (or vapor) into a less–toxic gas (or vapor).

(17) Ceiling concentration. The concentration of an airborne substance that shall not be exceeded.

(18) Chemical–cartridge respirator. See respirator.

(19) Confined space. See WAC 296–62–14501(1).

(20) Contaminant. A harmful, irritating, or nuisance material that is foreign to the normal atmosphere.

(21) Corrective lens. A lens ground to the wearer's individual corrective prescription to permit normal visual acuity.

(22) Demand. A type of self–contained breathing apparatus or type of air–line respirator which functions due to the negative pressure created by inhalation (i.e., air flow into the facepiece on "demand").

(23) Detachable coupling. A device which permits the respirator wearer, without using hand tools, to detach the air–supply line from that part of the respirator worn on the person.

(24) Dust. See WAC 296–62–07001(1).

(25) Emergency respirator use. Wearing a respirator when a hazardous atmosphere suddenly occurs that requires immediate use of a respirator either for escape from the hazardous atmosphere or for entry into the hazardous atmosphere.

(26) Exhalation valve. A device that allows exhaled air to leave a respirator and prevents outside air from entering through the valve.

(27) Eyepiece. A gas–tight, transparent window(s) in a full facepiece, helmet, hood, or suit, through which the wearer may see.

(28) Facepiece. That portion of a respirator that covers the wearer's nose and mouth in quarter–mask (above the chin) or half–mask (under the chin) facepiece or that covers the nose, mouth, and eyes in a full facepiece. It is designed to make a gas–tight or particle–tight fit with the face and includes the headbands, exhalation valve(s), and connections for an air–purifying device or respirable gas source, or both.

(29) Face shield. A device worn in front of the eyes and a portion of, or all of, the face, whose predominant function is protection of the eyes and the face.

(30) Fibrosis–producing dust. Dust which, when inhaled, deposited, and retained in the lungs, may produce findings of fibrotic growth that may cause pulmonary disease.

(31) Filter. A media component used in respirators to remove solid or liquid particles from the inspired air.

(32) Filter respirator. See respirator.

(33) Fog. A mist of sufficient concentration to perceptibly obscure vision.

(34) Full facepiece. See facepiece.

(35) Fume. See WAC 296–62–07001(2).

(36) Gas. An aeriform fluid which is in the gaseous state at ordinary temperature and pressure.

(37) Gas mask. See respirator.

(38) Goggle. A device, with contour–shaped eyecups with glass or plastic lenses, worn over eyes and held in place by a headband or other suitable means for the protection of the eyes and eye sockets.

(39) Half–mask facepiece. See facepiece.

(40) Hazardous atmosphere. Any atmosphere, either immediately or not immediately dangerous to life or health, which is oxygen deficient or which contains a toxic or disease–producing contaminant.

(41)Head harness. That part of a facepiece assembly which secures the facepiece to the wearer.

(42) Helmet. That portion of a respirator which shields the eyes, face, neck, and other parts of the head.

(43) High–efficiency filter. A filter which removes from air 99.97% or more of monodisperse dioctyl phthalate (DOP) particles having a mean particle diameter of 0.3 micrometer.

(44) Hood. That portion of a respirator which completely covers the head, neck, and portions of the shoulders.

(45) Hose mask. See respirator.

(46) Immediately dangerous to life or health (IDLH). Any atmosphere that poses an immediate hazard to life or produces immediate irreversible debilitating effects on health.

(47) Inhalation valve. A device that allows respirable air to enter a respirator and prevents exhaled air from leaving the respirator through the valve.

(48) Irrespirable. Unfit for breathing.

(49) Maximum use limit of filter, cartridge, or canister. The maximum concentration of a contaminant for which an air–purifying filter, cartridge, or canister is approved for use.

(50) Mist. See WAC 296–62–07001(4).

(51) Mouthpiece. That portion of a respirator which is held in the wearer's mouth and is connected to an air–purifying device or respirable gas source, or both. It is designed to make a gas–tight or particle–tight fit with the mouth.

(52) MPCa. Maximum permissible airborne concentration. These concentrations are set by the National Committee on Radiation Protection. They are recommended maximum average concentrations of radionuclides to which a worker may be exposed, assuming that he works 8 hours a day, 5 days a week, and 50 weeks a year.

(53) Negative pressure respirator. A respirator in which the air pressure inside the respiratory–inlet covering is positive during exhalation in relation to the air pressure of the outside atmosphere and negative during inhalation in relation to the air pressure of the outside atmosphere.

(54) Nonroutine respirator use. Wearing a respirator when carrying out a special task that occurs infrequently.

(55) Nose clamp. A device used with a respirator equipped with a mouthpiece that closes the nostrils of the wearer (sometimes called a nose clip).

(56) Not immediately dangerous to life or health. Any hazardous atmosphere which may produce physical discomfort immediately, chronic poisoning after repeated exposure, or acute adverse physiological symptoms after prolonged exposure.

(57) Odor threshhold limit. The lowest concentration of a contaminant in air that can be detected by the olfactory sense.

(58) Oxygen deficiency – immediately dangerous to life or health. An atmosphere which causes an oxygen partial pressure of 100 millimeters of mercury column or less in the freshly inspired air in the upper portion of the lungs which is saturated with water vapor.

(59) Oxygen deficiency – not immediately dangerous to life or health. An atmosphere having an oxygen concentration below the minimum legal requirement of 18.0% by volume for respirable air at sea–level conditions, but above that which is immediately dangerous to life or health.

(60) Particulate matter. A suspension of fine solid or liquid particles in air, such as: dust, fog, fume, mist, smoke, or spray. Particulate matter suspended in air is commonly known as an aerosol.

(61) Permissible exposure limit (PEL). The legally established time–weighted average (TWA) concentration or ceiling concentration of a contaminant that shall not be exceeded.

(62) Pneumoconiosis–producing dust. Dust which, when inhaled, deposited, and retained in the lungs, may produce signs, symptoms, and findings of pulmonary disease.

(63) Positive–pressure respirator. A respirator in which the air pressure inside the respiratory–inlet covering is positive in relation to the air pressure of the outside atmosphere during exhalation and inhalation.

(64) Powered air–purifying respirator. See respirator.

(65) Pressure demand. Similar to a demand type respirator but so designed to maintain positive pressure in the facepiece at all times.

(66) Protection factor. The ratio of the ambient concentration of an airborne substance to the concentration of the substance inside the respirator at the breathing zone of the wearer. The protection factor is a measure of the degree of protection provided by a respirator to the wearer. As used herein, a protection factor is synonymous with the fit factor assigned to a respirator facepiece by the use of qualitative and quantitative fitting tests.

(67) Rescue respirator use. Wearing a respirator for entry into a hazardous atmosphere to rescue a person(s) in the hazardous atmosphere.

(68) Resistance. Opposition to the flow of air, as through a canister, cartridge, particulate filter, orifice, valve, or hose.

(69) Respirable. Suitable for breathing.

(70) Respirator. A device designed to protect the wearer from the inhalation of harmful atmospheres.

(71) Respiratory–inlet covering. That portion of a respirator which connects the wearer's respiratory tract to an air–purifying device or respirable gas source, or both. It may be a facepiece, helmet, hood, suit, or mouthpiece/nose clamp.

(72) Routine respirator use. Wearing a respirator as a normal procedure when carrying out a regular and frequently repeated task.

(73) Sanitization. The removal of dirt and the inhibiting of the action of agents that cause infection or disease.

(74) Self–contained breathing apparatus. See respirator.

(75) Service life. The period of time that a respirator provides adequate protection to the wearer – for example, the period of time that an air–purifying device is effective for removing a harmful substance from inspired air.

(76) Smoke. A system which includes the products of combustion, pyrolysis, or chemical reaction of substances in the form of visible and invisible solid and liquid particles and gaseous products in air. Smoke is usually of sufficient concentration to perceptibly obscure vision.

(77) Sorbent. A material which is contained in cartridge or canister and which removes toxic gases and vapors from the inhaled air.

(78) Spray. A liquid, mechanically produced particle with sizes generally in the visible or macroscopic range.

(79) Supplied–air respirator. See respirator.

(80) Supplied–air suit. A suit that is impermeable to most particulate and gaseous contaminants and that is provided with an adequate supply of respirable air.

(81) Time–weighted average (TWA). The average concentration of a contaminant in air during a specific time period.

(82) Valve (air or oxygen). A device which controls the pressure, direction, or rate of flow of air or oxygen.

(83) Vapor. The gaseous state of a substance that is solid or liquid at ordinary temperature and pressure.

(84) Welding helmet. A device designed to provide protection for the eyes and face against intense radiant energy and molten metal splatter encountered in the welding and cutting of metals.

(85) Window indicator. A device on a cartridge or canister that visually denotes the service life of the cartridge or canister. [Statutory Authority: RCW 49.17-.040, 49.17.050 and 49.17.240. 81–16–016 (Order 81–19), § 296–62–07105, filed 7/27/81.]

WAC 296-62-07107 Permissible practice. (1) In the control of those occupational diseases caused by breathing air contaminated with harmful dusts, fumes, sprays, mists, fogs, smokes, vapors, gases, or other airborne contaminants, the primary objective shall be to prevent atmospheric contamination. When effective administrative or engineering controls are not feasible, or while they are being instituted or evaluated, appropriate respirators shall be used pursuant to the following requirements.

(2) Employer responsibility.

(a) Respirators shall be provided at no cost to an employee by the employer when such equipment is necessary to protect the health of the employee.

(b) The employer shall provide respirators which are applicable and suitable for the purpose intended.

(c) The employer shall be responsible for the establishment and maintenance of a respiratory protection program which shall minimally include the general requirements outlined in WAC 296-62-07109.

(3) Employee responsibility. The employee shall use the provided respiratory protection in accordance with instructions and training received. The employee shall notify a responsible person of any defect. [Statutory Authority: RCW 49.17.040 and 49.17.050. 82-03-023 (Order 82-1), § 296-62-07107, filed 1/15/82. Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81-16-016 (Order 81-19), § 296-62-07107, filed 7/27/81.]

WAC 296-62-07109 Minimal acceptable respirator program. (1) Standard operating procedures. Written standard operating procedures covering a complete respirator program shall be established and implemented in conformance with subsections (2) through (15) of this section. The employer shall, upon request, submit a copy of the written standard operating procedures to the director.

(2) Program administration. Responsibility and authority for the respirator program shall be assigned to a single person. This program administrator shall have sufficient knowledge of respiratory protection to properly supervise the respirator program.

(3) Physiological and psychological limitations for respirator wearers. The respirator program administrator or his or her designee, using guidelines established by a physician, shall determine whether or not a person may be assigned to a task requiring the use of a respirator. Persons with physical disabilities such as, but not limited to, respiratory impairments, or claustrophobia when wearing a respirator, shall not be assigned to tasks requiring the use of respirators unless it has been determined by a qualified physician that they are physically able to perform the work and use the equipment. All respirator user's medical status should be reviewed annually.

(4) Approved or accepted respirators shall be used. Any modification of an approved respirator that is not authorized by the approving agencies voids the approval.

(5) Respirator selection. Respirators shall be selected on the basis of the hazards to which the worker is exposed. (See WAC 296-62-07113)

(6) Training. Each worker required to wear a respirator shall be given training such that he or she is knowledgeable and proficient with respect to the respirator to be worn. Refresher training shall be given at least annually.

(7) Respirator fit. Each respirator wearer shall be fitted in accordance with WAC 296-62-07113. Each wearer of a respirator equipped with a facepiece shall check the seal of the respirator by appropriate means. This may be done by using procedures recommended by the respirator manufacturer.

(8) Facial hair, contact lenses, and eye and face protective devices. A negative pressure respirator, any self-contained breathing apparatus, or any respirator which is used in an atmosphere immediately dangerous to life or health (IDLH), equipped with a facepiece shall not be worn if facial hair comes between the sealing periphery of the facepiece and the face or if facial hair interferes with valve function. The wearer of a respirator shall not be allowed to wear contact lenses if the risk of eye damage is increased by their use. If a spectacle, goggle, face shield, or welding helmet must be worn with a facepiece, it shall be worn so as not to adversely affect the seal of the facepiece to the face. (See WAC 296-62-07115(3).)

(9) Issue of respirators. The proper type of respirator for each respiratory hazard shall be listed in the written standard operating procedures.

(10) Respirator inspection. The respirator shall be inspected by the wearer prior to each use to ensure that it is in proper working condition. Each respirator stored for emergency or rescue use shall be inspected at least once a month. (See WAC 296-62-07115 and 296-62-07117.)

(11) Monitoring respirator use. Supervisory personnel shall periodically monitor the use of respirators to ensure that they are worn properly. (See WAC 296-62-07115(7).)

(12) Evaluating respiratory hazard. Appropriate surveillance of work area conditions and degree of employee exposure or stress shall be maintained. (See WAC 296-62-07115(8).)

(13) Medical and bioassay surveillance. When appropriate, medical surveillance, including bioassay, shall be carried out to determine if respirator wearers are receiving adequate respiratory protection. A physician shall determine the requirements of the surveillance program.

(14) Respirator maintenance. Respirator maintenance shall be performed regularly. Maintenance shall be carried out on a schedule which ensures that each respirator wearer is provided with a respirator that is clean and in good operating condition. Maintenance shall include: (a) Washing, sanitizing, rinsing, and drying, (b) inspection for defects, (c) replacement of worn or deteriorated parts, (d) repair if necessary, and (e) storage to protect against dust, sunlight, excessive heat, extreme cold, excessive moisture, damaging chemicals, and physical damage. (See WAC 296-62-07117.)

(15) Respirator program evaluation. An appraisal of the effectiveness of the respirator program shall be carried out at least annually. Action shall be taken to correct defects found in the program. [Statutory Authority: RCW 49.17.040 and 49.17.050. 82-13-045 (Order 82-22), § 296-62-07109, filed 6/11/82; 82-03-023 (Order 82-1), § 296-62-07109, filed 1/15/82. Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81-16-016 (Order 81-19), § 296-62-07109, filed 7/27/81.]

WAC 296-62-07111 Respirable air and oxygen for self-contained breathing apparatus and supplied air respirators. Compressed gaseous air, compressed gaseous oxygen, liquid air, and liquid oxygen used for respiration shall be of high purity. Compressed gaseous or liquid oxygen shall meet the requirements of the United States Pharmacopeia for medical or breathing oxygen. Chemically generated oxygen shall meet the requirements of U.S. Department of Defense Military Specification MIL-E-83252 or Military Specification MIL-O-15633c. Compressed gaseous air shall meet at least the requirements of the specification for Type I – Grade D breathing air, and liquid air shall meet at least the requirements for Type II – Grade B breathing air as described in American National Standard Commodity Specification for Air, ANSI Z86.1-1973 (Compressed Gas Association Commodity Specification for Air, G-7.1, 1973).

(1) Compressed gaseous air may contain low concentrations of oil. If high-pressure oxygen passes through an oil- or grease-coated orifice, an explosion or fire may occur. Therefore, compressed gaseous oxygen shall not be used in supplied-air respirators or in open-circuit-type self-contained breathing apparatus that have previously used compressed air.

(2) Breathing air may be supplied to respirators from cylinders or air compressors. Cylinders shall be tested and maintained in accordance with applicable department of transportation specifications for shipping containers (Title 49, Code of Federal Regulations, Part 173, General Requirements for Shipments and Packagings, and Part 178, Shipping Container Specifications). A compressor shall be constructed and situated so as to avoid entry of contaminated air into the air-supply system and shall be equipped with a suitable in-line particulate filter followed by a bed of activated charcoal and, if necessary, a moisture adsorber to further assure breathing air quality. These filters should be placed before any receiver and after the discharge in the compressor. If an oil-lubricated compressor is used, it shall be equipped with a carbon monoxide alarm or an equally as effective alternative if approved by the department.

(a) If a carbon monoxide alarm is used, it shall be calibrated to activate at or below 20 parts per million carbon monoxide at least once per month. A calibration and maintenance log shall be kept and shall be available for review and copying by the director or his or her designee. The log shall identify the test method, date, time of test, results, and the name of the person performing the test. The log shall be retained for at least one year from the date of the test.

(b) If the use of an alarm at the compressor will not effectively provide warning to the respirator wearer of a carbon monoxide problem, a remote alarm or other means of warning the wearer shall be used.

(3) Breathing air couplings shall be incompatible with outlets for nonrespirable plant air or other gas systems to prevent inadvertent servicing of air-line respirators with nonrespirable gases.

(4) Breathing gas containers shall be marked in accordance with American National Standard Method of Marking Portable Compressed Gas Containers to Identify the Material Contained, ANSI Z48.1-1954 (R1971); Federal Specification BB-A-1034a, June 21, 1968, Air, Compressed for Breathing Purposes; or Interim Federal Specification GG-B-675d, September 23, 1976, Breathing Apparatus, Self-Contained. Further details on sources of compressed air and its safe use will be found in Compressed Gas Association Pamphlet G-7, 1976, Compressed Air for Human Respiration. [Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17-.240. 81-16-016 (Order 81-19), § 296-62-07111, filed 7/27/81.]

WAC 296-62-07113 Selection of respirators. (1) General considerations. Proper selection of respirators shall be made in accordance with the classification, capabilities, and limitations listed in Tables I through IV of this section. Additional guidance may be obtained by referring to American National Standard Practices for Respiratory Protection Z88.2 – 1980.

(2) Respirator protection factor (PF). Respirators shall be selected according to the characteristics of the hazards involved, the capabilities and limitations of the respirators, and the ability of each respirator wearer to obtain a satisfactory fit with a respirator. Taking into account the capabilities and limitations of respirators and the results of respirator-fitting tests, a table of respirator protection factors has been prepared (see Table V). A respirator protection factor is a measure of the degree of protection provided by a respirator to a wearer. Multiplying either (1) the permissible time-weighted average concentration or the permissible ceiling concentration, whichever is applicable, for a toxic substance, or (2) the maximum permissible airborne concentration for a radionuclide by a protection factor assigned to a respirator gives the maximum concentration of the hazardous substance in which the respirator can be used. Limitations of filters, cartridges, and canisters also shall be considered (see Table V).

(3) Respirator-fitting tests. A qualitative or quantitative respirator-fitting test shall be used to determine the ability of each individual respirator wearer to obtain a satisfactory fit with a negative-pressure respirator. The results of qualitative or quantitative respirator fitting-tests shall be used to select specific types, makes, and models of negative-pressure respirators for use by individual respirator wearers. A respirator-fitting test shall be carried out for each wearer of a negative-pressure respirator equipped with a facepiece. Respirator-fitting tests shall not be required for positive-pressure respirators or for mouthpiece respirators.

(a) Qualitative respirator-fitting test – A person wearing a respirator is exposed to an irritant smoke, an odorous vapor, or other suitable test agent. An air-purifying respirator must be equipped with an air-purifying element(s) which effectively removes the test agent from inspired air. If the respirator wearer is unable to detect penetration of the test agent into the respirator, the respirator wearer has achieved a satisfactory fit with the respirator.

(b) Quantitative respirator–fitting test – A person wears a respirator in a test atmosphere containing a test agent in the form of an aerosol, vapor, or gas. Instrumentation, which samples the test atmosphere and the air inside the respiratory–inlet covering of the respirator, is used to measure quantitatively the penetration of the test agent into the respiratory–inlet covering.

(c) When carrying out a qualitative or quantitative respirator–fitting test, the respirator wearer shall carry out a series of exercises which simulate work movements.

(d) When carrying out respirator–fitting tests, it shall be an acceptable procedure to make the following modifications to respirators provided that such modifications do not affect the seal of the respirators to wearers.

(i) When carrying out a qualitative or quantitative respirator–fitting test which uses an aerosol as the test agent, it shall be acceptable procedure to equip an air–purifying respirator with a high–efficiency filter.

(ii) When carrying out a qualitative or quantitative respirator–fitting test which uses a vapor or gas as the test agent, it shall be acceptable procedure to equip an air–purifying respirator with an appropriate cartridge or canister which removes the vapor or gas from air.

(iii) When carrying out a quantitative respirator–fitting test, it shall be acceptable procedure to attach a sampling probe to the respirator which is connected by flexible tubing to an instrument which measures the penetration of the test agent into the respirator.

(e) If a qualitative respirator–fitting test has been used in respirator selection, a person shall be allowed to use only the specific make(s) and model(s) of respirator(s) for which the person obtained a satisfactory fit, and the respirator protection factor listed under "qualitative test" in Table V shall apply. Under no circumstances shall a person be allowed to use any respirator for which the results of the qualitative respirator fitting test indicate that the person is unable to obtain a satisfactory fit.

(f) If a quantitative respirator–fitting test has been used in selecting a respirator, the test results shall be used to assign a respirator protection factor to each person for each specific make and model of respirator tested. The assigned respirator protection factor shall be applied when the person wears the specific respirator in a hazardous atmosphere, but it shall not exceed the respirator protection factor listed under "quantitative test" in Table V for the particular type of respirator.

(4) Respirator–fitting test records. Records of respirator–fitting tests shall be kept for at least the duration of employment. These records shall include the following information:

(a) Type of respirator–fitting test used;

(b) Specific make and model of respirator tested;

(c) Name of person tested;

(d) Name of test operator;

(e) Date of test;

(f) Results of respirator–fitting tests;

(i) Success or failure of person to obtain satisfactory fit if a qualitative respirator–fitting test was carried out.

(ii) Respirator protection factor based upon test results if a quantitative respirator–fitting test was carried out.

(5) Face dimensions and facepiece sizes. The wide range of face dimensions may require more than a single size of respirator facepiece to provide a proper fit to all respirator users. Therefore, respirator facepieces of more than one size should be available in any respirator–selection program involving respirators equipped with facepieces.

TABLE I

CLASSIFICATION OF RESPIRATORY HAZARDS ACCORDING TO THEIR BIOLOGICAL EFFECT

[Codification Note: The graphic presentation of this table has been varied slightly in order that it would fall within the printing specifications for the Washington Administrative Code. In the following table, the original table had columns relating to (1) "Oxygen Deficiency" which is now "Part 1," (2) "Gas and Vapor Contaminants" which is now "Part 2," (3) "Particulate Contaminants (Dust, fog, fume, mist, smoke, and spray)" which is now "Part 3," and "Part 4" is "Combinations of Gas, Vapor, and Particulate Contaminants" and is a combination of the columns in "Part 2," and "Part 3." These columns were all positioned side by side. In the new WAC format these are split up into four separate tables.]

TABLE I--PART 1

CLASSIFICATION OF RESPIRATORY HAZARDS ACCORDING TO THEIR BIOLOGICAL EFFECT

Oxygen Deficiency

Minimum legal requirements: 18.0% by volume for respirable air at sea–level conditions. (See Note 1.)

Occurrence: Confined or unventilated cellars, wells, mines, ship holds, tanks, burning buildings, and enclosures containing inert atmospheres:

Atmosphere oxygen content (percent by volume) versus expected conditions:

20.9% Oxygen content of normal air at sea–level conditions.

Oxygen Volume Percent At Sea Level	**Physiological Effects**
16% – 12%	Loss of peripheral vision, increased breathing volume, accelerated heartbeat, impaired attention and thinking, impaired coordination.
12% – 10%	Very faulty judgment, very poor muscular coordination, muscular exertion

	causes fatigue that may cause permanent heart damage, intermittent respiration.
10% – 6%	Nausea, vomiting, inability to perform vigorous movement, unconsciousness followed by death.
Less than 6%	Spasmatic breathing, convulsive movements, death in minutes.

TABLE I--PART 2

CLASSIFICATION OF RESPIRATORY HAZARDS ACCORDING TO THEIR BIOLOGICAL EFFECT

Gas and Vapor Contaminants

Asphyxiants: Interfere with utilization of oxygen in the body.

Simple asphyxiants: Physiologically inert substances that dilute oxygen in the air (for example: nitrogen, hydrogen, helium, methane). See Oxygen Deficiency, Column 1.

Chemical asphyxiants: Low concentrations interfere with supply or utilization of oxygen in the body (for example: Carbon monoxide, hydrogen cyanide, cyanogen, and nitriles).

Irritants: Corrosive in action. May cause irritation and inflammation of parts of the respiratory system (also skin and eyes) and pulmonary edema (for example: Ammonia hydrogen chloride, formaldehyde, sulfur dioxide, chlorine, ozone, nitrogen dioxide, phosgene, and arsenic trichloride).

Anesthetics: Cause loss of feeling and sensation with unconsciousness and death possible (for example: Nitrous oxide hydrocarbons, and ethers). Some anesthetics injure body organs (for example: Carbon tetrachloride (liver and kidneys), chloroform (liver and heart), benzene (bone marrow), and carbon disulfide (nervous system).

Sensitizers: Cause increased probability of physiological reactions (for example: Isocyanates, epoxy resin systems).

Systemic poisons: Damage organs and systems in the body (for example: Mercury (nervous system and various organs), phosphorus (bone), hydrogen sulfide (respiratory paralysis), and arsine (red blood cells and liver).

Carcinogens: Produce cancer in some individuals after a latent period (for example: Vinyl chloride, benzene).

TABLE I--PART 3

CLASSIFICATION OF RESPIRATORY HAZARDS ACCORDING TO THEIR BIOLOGICAL EFFECT

Particulate Contaminants (Dust, fog, fume, mist, smoke, and spray)

Relatively inert: May cause discomfort and minor irritation, but generally without injury at reasonable concentrations (for example: Marble, gypsum).

Pulmonary–fibrosis–producing: Produce nodulation and fibrosis in the lung, possibly leading to complications (for example: Quartz, asbestos).

Carcinogens: Produce cancer in some individuals after latent period (for example: Asbestos, chromates, radioactive particulates).

Chemical irritants: Produce irritation, inflamation, and ulceration in upper respiratory tract (for example: acidic mists, alkalies).

Systemic poisons: Produce pathologic reactions in various systems of the body (for example: Lead manganese, cadmium).

Allergy–producing: Produce reactions such as itching, sneezing, and asthmas (for example: Pollens, spices, and animal fur).

Febrile–reaction–producing: Produce chills followed by fever (for example: Fumes of zinc and copper).

TABLE I--PART 4

CLASSIFICATION OF RESPIRATORY HAZARDS ACCORDING TO THEIR BIOLOGICAL EFFECT

Combinations of Gas, Vapor, and Particulate Contaminants

Combinations of contaminants may occur simultaneously in the atmosphere. Contaminants may be entirely different substances (dusts and gases from blasting) or the particulate and vapor forms of the same substance. Synergistic effects (joint action of two or more agents that results in an effect which is greater than the sum of their individual effects) may occur. Such effects may require extraordinary protective measures.

Note 1: See definition in WAC 296–62–07105 "oxygen deficiency – not immediately dangerous to life or health" and "oxygen deficiency – immediately dangerous to life or health."

TABLE II

CLASSIFICATION OF RESPIRATORY HAZARDS ACCORDING TO THEIR PROPERTIES WHICH INFLUENCE RESPIRATOR SELECTION

[Codification Note: The graphic presentation of this table has been varied slightly in order that it would fall within the printing specifications for the Washington Administrative Code. In the following table, the original table had columns relating to (1) "Gas and Vapor Contaminants" which is now "Part 1," and (2) "Particulate Contaminants" which is now "Part 2." These columns were positioned side by side. In the new WAC format these are split up into two separate tables.]

TABLE II--PART 1

CLASSIFICATION OF RESPIRATORY HAZARDS ACCORDING TO THEIR PROPERTIES WHICH INFLUENCE RESPIRATOR SELECTION

Gas and Vapor Contaminants

Inert: Substances that do not react with other substances under most conditions, but create a respiratory hazard by displacing air and producing oxygen deficiency (for example: Helium, neon, argon).

Acidic: Substances that are acids or that react with water to produce an acid. In water, they produce positively charged hydrogen ions (H^{+1}) and a pH of less than 7. They taste sour, and many are corrosive to tissues (for example: Hydrogen chloride, sulfur dioxide, fluorine, nitrogen dioxide, acetic acid, carbon dioxide, hydrogen sulfide, and hydrogen cyanide).

Alkaline: Substances that are alkalies or that react with water to produce an alkali. In water, they result in the production of negatively charged hydroxyl ions (OH^{-1}) and a pH greater than 7. They taste bitter, and many are corrosive to tissues (for example: Ammonia, amines, phosphine, arsine, and stibine).

Organic: The compounds of carbon. Examples are saturated hydrocarbons (methane, ethane, butane), unsaturated hydrocarbons (ethylene, acetylene), alcohols (methyl ether, ethyl ether), aldehydes (formaldehyde), ketones (methyl ketone), organic acids (formic acid, acetic acid), halides (chloroform, carbon tetrachloride), amides (formamide, acetamide), nitriles (acetonitrile), isocyanates (toluene diisocyanate), amines (methylamine), epoxies (epoxyethane, propylene oxide), and aromatics (benzene, toluene, xylene).

Organometallic: Compounds in which metals are chemically bonded to organic groups (for example: Ethyl silicate, tetraethyl lead, and organic phosphate).

Hydrides: Compounds in which hydrogen is chemically bonded to metals and certain other elements (for example: Diborane and tetraborane).

TABLE II--PART 2

CLASSIFICATION OF RESPIRATORY HAZARDS ACCORDING TO THEIR PROPERTIES WHICH INFLUENCE RESPIRATOR SELECTION

Particulate Contaminants

Particles are produced by mechanical means by disintegration processes such as grinding, crushing, drilling, blasting, and spraying; or by physiochemical reactions such as combustion, vaporization, distillation, sublimation, calcination, and condensation. Particles are classified as follows:

Dust: A solid, mechanically produced particle with sizes varying from submicroscopic to visible or macroscopic.

Spray: A liquid, mechanically produced particle with sizes generally in the visible or macroscopic range.

Fume: A solid condensation particle of extremely small particle size, generally less than one micrometer in diameter.

Mist: A liquid condensation particle with sizes ranging from submicroscopic to visible or macroscopic.

Fog: A mist of sufficient concentration to perceptibly obscure vision.

Smoke: A system which includes the products of combustion, pyrolysis, or chemical reaction of substances in the form of visible and invisible solid and liquid particles and gaseous products in air. Smoke is usually of sufficient concentration to perceptibly obscure vision.

TABLE III

CLASSIFICATION AND DESCRIPTION OF RESPIRATORS BY MODE OF OPERATION

[Codification Note: The graphic presentation of this table has been varied slightly in order that it would fall within the printing specifications for the Washington Administrative Code. In the following table, the original table had columns relating to (1) "Atmosphere-Supplying Respirators" which is now "Part 1," and (2) "Air-Purifying Respirators" which is now "Part 2." These columns were positioned side by side. In the new WAC format these are split up into two separate tables.]

Table III--Part 1

Classification and Description of Respirators by Mode of Operation

Atmosphere-Supplying Respirators

A respirable atmosphere independent of the ambient air is supplied to the wearer.

Self-Contained Breathing Apparatus (SCBA)

A supply of air, oxygen, or oxygen-generating material is carried by the wearer. Normally equipped with full facepiece, but may be equipped with a quarter-mask facepiece, half-mask facepiece, helmet, hood, or mouthpiece and nose clamp.

(1) Closed-circuit SCBA (oxygen only, negative pressure[a] or positive pressure[b]).

(a) Compressed or liquid oxygen type. Equipped with a facepiece or mouth piece and nose clamp. High-pressure oxygen from a gas cylinder passes through a high-pressure reducting valve and, in some designs, through a low-pressure admission valve to a breathing bag or container. Liquid oxygen is converted to low-pressure gaseous oxygen and delivered to the breathing bag. The wearer inhales from the bag, through a corrugated tube connected to a mouthpiece or facepiece and a one-way check valve. Exhaled air passes through another check valve and tube into a container of carbon-dioxide removing chemical and reenters the breathing bag. Make-up oxygen enters the bag continuously or as the bag deflates sufficiently to actuate an admission valve. A pressure-relief system is provided, and a manual by-pass system and saliva trap may be provided depending upon the design.

(b) Oxygen-generating type. Equipped with a facepiece or mouthpiece and nose clamp. Water vapor in the exhaled breath reacts with chemical in the canister to release oxygen to the breathing bag. The wearer inhales from the bag through a corrugated tube and one-way check valve at the facepiece. Exhaled air passes through a second check valve/breathing tube assembly into the canister. The oxygen-release rate is governed by the volume of exhaled air. Carbon dioxide in the exhaled breath is removed by the canister fill.

(2) Open-circuit SCBA (compressed air, compressed oxygen, liquid air, liquid oxygen). A bypass system is provided in case of regulator failure except on escape-type units.

(a) Demand type[c]. Equipped with a facepiece or mouthpiece and nose clamp. The demand valve permits oxygen or air flow only during inhalation. Exhaled breath passes to ambient atmosphere through a valve(s) in the facepiece.

(b) Pressure-demand type[d]. Equipped with a facepiece only. Positive pressure is maintained in the facepiece. The apparatus may have provision for the wearer to select the demand or pressure-demand mode of operation, in which case the demand mode should be used only when donning or removing the apparatus.

Combination air-line respirators with auxiliary self-contained air supply include an air-line respirator with an auxiliary self-contained air supply. To escape from a hazardous atmosphere in the event the primary air supply fails to operate, the wearer switches to the auxiliary self-contained air supply. Devices approved for both entry into and escape from dangerous atmospheres have a low-pressure warning alarm and contain at least a 15-minute self-contained air supply.

Supplied-Air Respirators

(1) Hose mask
Equipped with a facepiece, breathing tube, rugged safety harness, and large-diameter heavy-duty nonkinking air-supply hose. The breathing tube and air-supply hose are securely attached to the harness. The facepiece is equipped with an exhalation valve. The harness has provision for attaching a safety line.

(a) Hose mask with blower. Air is supplied by a motor-driven or hand-operated blower. The wearer can continue to inhale through the hose if the blower fails. Up to 300 feet (91 meters) of hose length is permissible.

(b) Hose mask without blower. The wearer provides motivating force to pull air through the hose. The hose inlet is anchored and fitted with a funnel or like object covered with a fine mesh screen to prevent entrance of coarse particulate matter. Up to 75 feet (23 meters) of hose length is permissible.

(2) Air-line respirator
Respirable air is supplied through a small-diameter hose from a compressor or compressed air cylinder(s). The hose is attached to the wearer by a belt or other suitable means and can be detached rapidly in an emergency. A flow-control valve or orifice is provided to govern the rate of air flow to the wearer. Exhaled air passes to the ambient atmosphere through a valve(s) or opening(s) in the enclosure (facepiece, helmet, hood, or suit). Up to 300 feet (91 meters) of hose length is permissible.

(a) Continuous-flow class. Equipped with a facepiece, hood, helmet, or suit. At least 115 liters (four cubic feet) of air per minute to tight-fitting facepieces and 170 liters (six cubic feet) of air per minute to loose-fitting helmets, hoods, and suits is required. Air is supplied to a suit through a system of internal tubes to the head, trunk, and extremities through valves located in appropriate parts of the suit.

(b) Demand type[c]. Equipped with a facepiece only. The demand valve permits flow of

(c) Pressure-demand type[d]. Equipped with a facepiece only. A positive pressure is maintained in the facepiece.

TABLE III--PART 2

CLASSIFICATION AND DESCRIPTION OF RESPIRATORS BY MODE OF OPERATION

Air-Purifying Respirators

Ambient air, prior to being inhaled, is passed through a filter, cartridge, or canisters which removes particles, vapors, gases, or a combination of these contaminants. The breathing action of the wearer operates the nonpowered type of respirator. The powered type contains a blower – stationary or carried by the wearer – which passes ambient air through an air-purifying component and then supplies purified air to the respirator-inlet covering. The nonpowered type is equipped with a facepiece or mouthpiece and nose clamp. The powered type is equipped with a facepiece, helmet, hood, or suit.

Vapor-and Gas-Removing Respirators

Equipped with cartridge(s) or canister(s) to remove a single vapor or gas (for example: Chlorine gas), a single class of vapors or gases (for example: Organic vapors), or a combination of two or more classes of vapors or gases (for example: Organic vapors and acidic gases) from air.

Particulate-Removing Respirators

Equipped with filter(s) to remove a single type of particulate matter (for example: Dust) or a combination of two or more types of particulate matter (for example: Dust and fume) from air. Filter may be a replaceable part or a permanent part of the respirator. Filter may be of the single-use or the reusable type.

Combination Particulate-and Vapor-and Gas-Removing Respirators

Equipped with cartridge(s) or canister(s) to remove particulate matter, vapors, and gasses from air. The filter may be a permanent part or a replaceable part of a cartridge or canister.

Combination Atmosphere-Supplying and Air-Purifying Respirators

Provide the wearer with the option of using either of two different modes of operation: (1) An atmosphere-supplying respirator with an auxiliary air-purifying attachment which provides protection in the event the air supply fails or (2) an air-purifying respirator with an auxiliary self-contained air supply which is used when the atmosphere may exceed safe conditions for use of an air-purifying respirator.

[a] Device produces negative pressure in respiratory-inlet covering during inhalation.

[b] Device produces positive pressure in respiratory-inlet covering during both inhalation and exhalation.

[c] Equipped with a demand valve that is activated on initiation and permits the flow of breathing atmosphere to the facepiece. On exhalation, pressure in the facepiece becomes positive and the demand valve is deactivated.

[d] A positive pressure is maintained in the facepiece by a spring-loaded or balanced regulator and exhalation valve.

TABLE IV

CAPABILITIES AND LIMITATIONS OF RESPIRATORS

[Codification Note: The graphic presentation of this table has been varied slightly in order that it would fall within the printing specifications for the Washington Administrative Code. In the following table, the original table had columns relating to (1) "atmosphere supplying respirators" which is now "Part 1," and (2) "air-purifying respirators" which is now "Part 2." These columns were positioned side by side. In the new WAC format these are split up into two separate tables.]

TABLE IV--PART 1

CAPABILITIES AND LIMITATIONS OF RESPIRATORS

Atmosphere Supplying Respirators

(See WAC 296-62-07111 for specification on respirable atmospheres.)

Atmosphere-supplying respirators provide protection against oxygen deficiency and toxic atmospheres. The breathing atmosphere is independent of ambient atmospheric conditions.

General limitations: Except for some air-line suits, no protection is provided against skin irritation by materials such as ammonia and hydrogen chloride, or against sorption of materials such as hydrogen cyanide, tritium, or organic phosphate pesticides through the skin. Facepieces present special problems to individuals required to wear prescription lenses. Use of atmosphere-supplying respirators in atmospheres immediately dangerous to life or health is limited to specific devices under specified conditions (see Table V).

Self-Contained Breathing Apparatus (SCBA)

The wearer carries his own breathing atmosphere.

Limitations: The period over which the device will provide protection is limited by the amount of air oxygen in the apparatus, the ambient atmospheric pressure (service life of open-circuit devices is cut in half by a doubling of the atmospheric pressure), and the type of work being performed. Some SCBA devices have a short service life (less than 15 minutes) and are suitable only for escape (self-rescue) from an irrespirable atmosphere.

Chief limitations of SCBA devices are their weight or bulk, or both, limited service life, and the training required for their maintenance and safe use.

(1) Closed-circuit SCBA.

The closed-circuit operation conserves oxygen and permits longer service life at reduced weight. The negative-

pressure type produces a negative–pressure in the respiratory inlet covering during inhalation, and this may permit inward leakage of contaminants; whereas the positive–pressure type always maintains a positive pressure in the respiratory–inlet cover in and is less apt to permit inward leakage of contaminants.

(2) Open–circuit SCBA.

The demand type produces a negative pressure in the respiratory–inlet covering during inhalation, whereas the pressure–demand type maintains a positive pressure in the respiratory–inlet covering during inhalation and is less apt to permit inward leakage of contaminants.

Supplied–Air Respirators

The respirable air supply is not limited to the quantity the individual can carry, and the devices are lightweight and simple.

Limitations: Limited to use in atmospheres from which the wearer can escape unharmed without the aid of the respirator.

The wearer is restricted in movement by the hose and must return to a respirable atmosphere by retracing his route of entry. The hose is subject to being severed or pinched off.

(1) Hose mask.
The hose inlet or blower must be located and secured in a respirable atmosphere.

(a) Hose mask with blower.
If the blower fails, the unit still provides protection, although a negative pressure exists in the facepiece during inhalation.

(b) Hose mask without blower
Maximum hose length may restrict application of device.

(2) Air–line respirator (continuous flow, demand, and pressure–demand types).
The demand type produces a negative pressure in the facepiece on inhalation, whereas continuous–flow and pressure–demand types maintain a positive pressure in the respiratory–inlet covering and are less apt to permit inward leakage of contaminants.

Air–line suits may protect against atmospheres that irritate the skin or that may be absorbed through the unbroken skin.

Limitations: Air–line respirators provide no protection if the air supply fails. Some contaminants, such as tritium, may penetrate the material of an air–line suit and limit its effectiveness.

Other contaminants, such as fluorine, may react chemically with the material of an air–line suit and damage it.

Combination Airline Respirators with Auxiliary SC Air Supply

The auxiliary self–contained air supply on this type of device allows the wearer to escape from a dangerous atmosphere. This device with auxiliary self–contained air supply is approved for escape and may be used for entry when it contains at least a 15–minute auxiliary self–contained air supply. (See Table V.)

TABLE IV--PART 2

CAPABILITIES AND LIMITATIONS OF RESPIRATORS

Air–Purifying Respirators

General limitations: Air–purifying respirators do not protect against oxygen–deficient atmospheres not against skin irritations by, or sorption through the skin of, airborne contaminants.

The maximum contaminant concentration against which an air–purifying respirator will protect is determined by the design efficiency and capacity of the cartridge, canister, or filter and the facepiece–to–face seal on the user. For gases and vapors, the maximum concentration for which the air–purifying element is designed is specified by the manufacturer or is listed on labels of cartridges and canisters.

Nonpowered air–purifying respirators will not provide the maximum design protection specified unless the facepiece or mouthpiece/nose clamp is carefully fitted to the wearer's face to prevent inward leakage (see WAC 296–62–07115(4)). The time period over which protection is provided is dependent on canister, cartridge, or filter type; concentration of contaminant; humidity levels in the ambient atmosphere; and the wearer's respiratory rate.

The proper type of canister, cartridge, or filter must be selected for the particular atmosphere and conditions. Nonpowered air–purifying respirators may cause discomfort due to a noticeable resistance to inhalation. This problem is minimized in powered respirators. Respirator facepieces present special problems to individuals required to wear prescription lenses. These devices do have the advantage of being small, light, and simple in operation.

Use of air–purifying respirators in atmospheres immediately dangerous to life or health is limited to specific devices under specified conditions (see Table V).

Vapor and Gas–Removing Respirators

Limitations: No protection is provided against particulate contaminants. A rise in canister or cartridge temperature indicates that a gas or vapor is being removed from the inspired air.

An uncomfortably high temperature indicates a high concentration of gas or vapor and requires an immediate return to fresh air.

Use shall be avoided in atmospheres where the contaminant(s) lacks sufficient warning properties (that is: Odor, taste, or irritation at a concentration in air at or above the permissible exposure limit). Vapor–and

gas–removing respirators are not approved for contaminants that lack adequate warning properties.

Not for use in atmospheres immediately dangerous to life or health unless the device is powered–type respirator with escape provisions (see Table V).

(1) Full facepiece respirator.
Provides protection against eye irritation in addition to respiratory protection.

(2) Quarter–mask and half–mask facepiece respirator.
A fabric covering (facelet) available from some manufacturers shall not be used.

(3) Mouthpiece Respirator.
Shall be used only for escape applications. Mouth breathing prevents detection of contaminant by odor. Nose clamp must be securely in place to prevent nasal breathing.

A small lightweight device that can be donned quickly.

Particulate–Removing Respirators

Limitations: Protection against nonvolatile particles only. No protection against gases and vapors.

Not for use in atmospheres immediately dangerous to life or health unless the device is a powered–type respirator with escape provisions (see Table V).

(1) Full facepiece respirator. Provides protection against eye irritation in addition to respiratory protection.

(2) Quarter–mask and half–mask facepiece respirator. A fabric covering (face–let) available from some manufacturers shall not be used unless approved for use with respirator.

(3) Mouthpiece respirator. Shall be used only for escape applications. Mouth breathing prevents detection of contaminant by odor. Nose clamp must be securely in place to prevent nasal breathing.

A small, lightweight device that can be donned quickly.

Combination Particulate and Vapor and Gas–Removing Respirators

The advantages and disadvantages of the component sections of the combination respirator as described above apply.

Combination Atmosphere–Supplying and Air–Purifying Respirators

The advantages and disadvantages expressed above, of the mode of operation being used will govern. The mode with the greater limitations (air–purifying mode) will mainly determine the overall capabilities and limitations of the respirator, since the wearer may for some reason fail to change the mode of operation even though conditions would require such a change.

TABLE V
RESPIRATOR PROTECTION FACTORS[a]

[Codification Note: The graphic presentation of this table has been varied slightly in order that it would fall within the printing specifications for the Washington Administrative Code. In the following table, the original table had columns relating to (1) "type of respirator" which is now "Part 1," and (2) "respirator protection factor" which is now "Part 2." These columns were positioned side by side. In the new WAC format these are split up into two separate tables.]

TABLE V--PART 1
RESPIRATOR PROTECTION FACTORS[a]

Type of Respirator	Permitted for Use in Oxygen–Deficient Atmosphere	Permitted for Use in Immediately–Dangerous Life–or–Health Atmosphere[f]
Particulate–filter, quarter–mask or half–mask facepiece[b,c]	No	No
Vapor–or gas–removing, quarter–mask or half–mask facepiece[c]	No	No
Combination particulate–filter and vapor– or gas–removing, quarter–mask or half–mask face–piece[b,c]	No	No
Particulate–filter, full facepiece[b]	No	No

TABLE V--PART 1
RESPIRATOR PROTECTION FACTORS[a]

Type of Respirator	Permitted for Use in Oxygen-Deficient Atmosphere	Permitted for Use in Immediately-Dangerous Life-or-Health Atmosphere[f]
Vapor- or gas-removing, full facepiece	No	No
Combination particulate-filter and vapor- or gas-removing, full facepiece[b]	No	No
Powered particulate-filter, any respiratory-inlet covering[b,c,d]	No	No (yes, if escape provisions are provided[d])
Powered vapor- or gas-removing, any respiratory-inlet covering[c,d]	No	No (yes, if escape provisions are provided[d])
Powered combination particulate-filter and vapor- or gas-removing, any respiratory-inlet covering[b,c,d]	No	No (yes, if escape provisions are provided[d])
Air-line, demand quarter-mask or half-mask facepiece, with or without escape provisions[c,e]	Yes[f]	No
Air-line, demand full facepiece, with or without escape provisions[e]	Yes[f]	No
Air-line, continuous flow or pressure-demand type, any facepiece, without escape provisions[c]	Yes[f]	No
Air-line, continuous flow or pressure-demand type, any facepiece, with escape provisions[c,e] plus[h].	Yes[g]	Yes
Air-line, continuous flow, helmet, hood, or suit, without escape provisions	Yes[f]	No
Air-line, continuous flow, helmet, hood, or suit, with escape provisions[e]	Yes[g]	Yes
Hose mask, with or without blower, full facepiece	Yes[f]	No
Self-contained breathing apparatus, demand-type open-circuit or negative-pressure-type closed-circuit, quarter-mask or half-mask facepiece[c]	Yes[f]	No
Self-contained breathing apparatus, demand-type open-circuit or negative-pressure-type closed-circuit, full facepiece or mouthpiece/nose clamp[c]	Yes[f] (Yes[g], if respirator is used for mine rescue and mine recovery operations.)	No (Yes, if respirator is used for mine rescue and mine recovery operations.)

TABLE V--PART 1
RESPIRATOR PROTECTION FACTORS[a]

Type of Respirator	Permitted for Use in Oxygen-Deficient Atmosphere	Permitted for Use in Immediately-Dangerous Life-or-Health Atmosphere[f]
Self-contained breathing apparatus, pressure-demand type open-circuit or positive-pressure type closed-circuit, quarter-mask or half-mask facepiece, full facepiece, or mouthpiece/nose clamp[c]	Yes[g]	Yes
Combination respirators not listed.	The type and mode of operation having the lowest respirator protection factor shall be applied to the combination respirator.	

TABLE V--PART 2

RESPIRATOR PROTECTION FACTORS[a]

Qualitative Test	Quantitative Test
10	As measured on each person with maximum of 100.
10, or maximum use limit of cartridge or canister for vapor or gas, whichever is less.	As measured on each person with maximum of 100, or maximum use limit of cartridge or canister for vapor or gas[i,j,] whichever is less.
10, or maximum use limit of cartridge or canister for vapor or gas, whichever is less.	As measured on each person with maximum of 100, or maximum use limit of cartridge or canister for vapor or gas[i,j,] whichever is less.
100	As measured on each person with maximum of 100 if dust, fume or mist filter is used, or maximum of 1,000 if high-efficiency filter is used.
100, or maximum use limit of cartridge or canister for vapor or gas, whichever is less.	As measured on each person with maximum of 1000, or maximum use limit of cartridge or canister for vapor or gas[i,j,] whichever is less.
100, or maximum use limit of cartridge or canister for vapor or gas, whichever is less.	As measured on each person with maximum of 100 of dust, fume, or mist filter is used and maximum of 1,000 if high-efficiency filter is used, or maximum use limit of cartridge or canister for vapor or gas[i,j,] whichever is less.
N/A	N/A
No tests are required due to positive-pressure operation of respirator. The maximum protection factor is 100 if dust, fume, or mist filter is used and 3000 if high-efficiency filter is used.	
N/A	N/A
No tests are required due to positive-pressure operation of respirator. The maximum protection factor is 3000 or maximum use limit of cartridge or canister for vapor or gas[i,j,] whichever is less.	

TABLE V--PART 2

RESPIRATOR PROTECTION FACTORS[a]

Qualitative Test	Quantitative Test
N/A	N/A
No tests are required due to positive-pressure operation of respirator. The maximum protection factor is 100 if dust, fume, or mist filter is used and 3000 high-efficiency filter is used. or maximum use limit of cartridge or canister for vapor or gas[i,j], whichever is less.	
10	As measured on each person, but limited to the use of the respirator in concentrations of contaminants below the immediately-dangerous-to-life-or-health (IDLH) values.
100	As measured on each person, but limited to the use of the respirators in concentrations of contaminants below the immediately-dangerous-to-life-or-health (IDLH) values.
N/A	N/A
No tests are required due to positive-pressure operation of respirator. The protection factor provided by the respirator is limited to the use of the respirator in concentrations of contaminants below the immediately-dangerous-to-life-or health (IDLH) values.	
N/A	N/A
No tests are required due to positive-pressure operation of respirator. The maximum protection factor is 10,000 plus[h].	
N/A	N/A
No tests are required due to positive-pressure operation of respirator. The protection factor provided by the respirator is limited to the use of the respirator in concentrations of contaminants below the immediately-dangerous-to-life-or-health (IDLH) values.	
N/A	N/A
No tests are required due to positive-pressure operation of respirator. The maximum protection factor is 10,000 plus[h].	
10	As measured on each person, but limited to the use of the respirator concentrations of contaminants below the immediately-dangerous-to-life-or-health (IDLH) values.
10	As measured on each person, but limited to the use of the respirator concentrations of contaminants below the immediately-dangerous-to-life-or-health (IDLH) values.
100	As measured on each person, but limited to the use of the respirator in concentrations of contaminants below the immediately-dangerous-to-life-or-health (IDLH) values, except when the respirator is used for mine rescue and mine recovery operations.
N/A	N/A
	No tests are required due to positive-pressure operation of respirator. The maximum protection factor is 10,000 plus[h].

N/A means not applicable since a respirator-fitting test is not carried out.

[a] A respirator protection factor is a measure of the degree of protection provided by a respirator to a respirator wearer. Multiplying the permissible time-weighted average concentration or the permissible ceiling concentration, whichever is applicable, for a toxic substance, or the maximum permissible airborne concentration for a radionuclide, by a protection factor assigned to a respirator gives the maximum concentration of the hazardous substance for which the respirator can be used. Limitations of filters, cartridges, and canisters used in air-purifying respirators shall be considered in determining protection factors.

[b] When the respirator is used for protection against airborne particulate matter having a permissible time-weighted average concentration less than 0.05 milligram particulate matter per cubic meter of air or less than 2 million particles per cubic foot of air, or for protection against airborne radionuclide particulate matter, the respirator shall be equipped with a high-efficiency filter(s).

[c] If the air contaminant causes eye irritation, the wearer of a respirator equipped with a quarter-mask or half-mask facepiece or mouthpiece and nose clamp shall be permitted to use a protective goggle or to use a respirator equipped with a full facepiece.

[d] If the powered air-purifying respirator is equipped with a facepiece, the escape provision means that the wearer is able to breathe through the filter, cartridge, or canister and through the pump. If the powered air-purifying respirator is equipped with a helmet, hood, or suit, the escape provision shall be an auxiliary self-contained supply of respirable air.

[e] The escape provision shall be an auxiliary self-contained supply of respirable air.

[f] For definition of "oxygen deficiency – not immediately dangerous to life or health" see WAC 296-62-07105.

[g] For definition of "oxygen deficiency – immediately dangerous to life or health" see WAC 296-62-07105.

[h] The protection factor measurement exceeds the limit of sensitivity of the test apparatus. Therefore, the respirator has been classified for use in atmospheres having unknown concentrations of contaminants.

[i] The service life of a vapor-or-gas-removing cartridge or canister depends on the specific vapor or gas, the concentration of the vapor or gas in air, the temperature and humidity of the air, the type and quantity of the sorbent in the cartridge or canister, and the activity of the respirator wearer. Cartridges and canisters may provide only very short service lives for certain vapors and gases. Vapor/gas service life testing is recommended to ensure that cartridges and canisters provide adequate service lives. Reference should be made to published reports which give vapor/gas life data for cartridges and canisters.

[j] Vapor-and gas-removing respirators are not approved for contaminants that lack adequate warning properties of odor, irritation, or taste at concentrations in air at or above the permissible exposure limits.

Note: Respirator protection factors for air-purifying-type respirators equipped with a mouthpiece/nose clamp form of respiratory-inlet covering are not given, since such respirators are approved only for escape purposes.

[Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81-16-016 (Order 81-19), § 296-62-07113, filed 7/27/81.]

WAC 296-62-07115 Use of respirators. (1) Standard operating procedures. Written standard operating procedures shall cover a complete respirator program and shall include information necessary for the proper use of respirators, including training of respirator wearers, respirator sealing tests, issuance of respirators, inspection of respirators prior to use, monitoring respirator use, monitoring respiratory hazard, and planning for routine, nonroutine, emergency, and rescue uses of respirators.

(a) The written standard operating procedures shall include plans necessary to ensure the safe routine use and nonroutine use of respirators. Emergency and rescue uses of respirators shall be anticipated, and the written standard operating procedures shall include plans necessary to ensure the safe emergency and rescue uses of respirators. Persons who wear respirators routinely, who wear respirators nonroutinely, and who may be required to wear respirators for emergency and rescue work shall be given adequate information concerning plans covering these respirator uses to ensure the safe use of respirators.

(b) Standard operating procedures for emergency and rescue use of respirators. It is recognized that it is not possible to foresee every emergency and rescue use of respirators for every kind of operation. Nevertheless, a wide variety of possible conditions requiring the emergency or rescue use of respirators can be envisioned and an adequate emergency and rescue respirator-response capability can be achieved through a serious effort to anticipate the worst possible consequences of particular malfunctions or mishaps.

The written standard operating procedures governing the emergency and rescue uses of respirators shall be developed in the following manner:

(i) An analysis of the emergency and rescue uses of respirators that may occur in each operation shall be made by careful consideration of materials, equipment, processes, and personnel involved. Such an analysis shall be reviewed by the person who is thoroughly familiar with the particular operation. Consideration shall be given to past occurrences requiring emergency or rescue uses of respirators as well as conditions which resulted in such respirator applications. The possible consequences of equipment or power failures, uncontrolled chemical reactions, fire, explosion, or human error shall be given consideration. All potential hazards which may result in emergency or rescue use of respirators shall be listed.

(ii) Based upon the analysis, appropriate types of respirators shall be selected, an adequate number shall be provided for each area where they may be needed for emergency or rescue use, and these respirators shall be maintained and stored so that they are readily accessible and operational when needed.

(iii) In areas where the wearer, with failure of the respirator, could be overcome by a toxic or oxygen-deficient atmosphere, at least one additional man shall be present. Communications (visual, voice, or signal line) shall be maintained between both or all individuals present. Planning shall be such that one individual will be unaffected by any likely incident and have the proper rescue equipment to be able to assist the other(s) in case of emergency.

(iv) When self-contained breathing apparatus or airline respirators with an escape provision are used in atmospheres immediately dangerous to life or health, standby workers must be present at the nearest fresh air base with suitable rescue equipment.

(v) Persons using air line respirators in atmospheres immediately hazardous to life or health shall be equipped with safety harnesses and safety lines for lifting or removing persons from hazardous atmospheres or other and equivalent provisions for the rescue of persons

from hazardous atmospheres shall be used. A standby worker or workers with suitable self-contained breathing apparatus shall be at the nearest fresh air base for emergency rescue.

(2) Training. The supervisor, the person issuing respirators, and the respirator wearers shall be given adequate training by a qualified person(s) to ensure the proper use of respirators. Written records shall be kept of the names of the persons trained and the dates when training occurred.

(a) Training of supervisor. A supervisor – that is, a person who has the responsibility of overseeing the work activities of one or more persons who must wear respirators – shall be given adequate training to ensure the proper use of respirators.

(b) Training of person issuing respirators. A person assigned the task of issuing respirators to persons who must wear respirators for protection against harmful atmospheres shall be given adequate training to ensure that the correct respirator is issued for each application in accordance with written standard operating procedures.

(c) Training of respirator wearer. To ensure the proper and safe use of a respirator, the minimum training of each respirator wearer shall include the following elements:

(i) The reasons for the need of respiratory protection.

(ii) The nature, extent, and effects of respiratory hazards to which the person may be exposed.

(iii) An explanation of why engineering controls are not being applied or are not adequate and of what effort is being made to reduce or eliminate the need for respirators.

(iv) An explanation of why a particular type of respirator has been selected for a specific respiratory hazard.

(v) An explanation of the operation, and the capabilities and limitations, of the respirator selected.

(vi) Instruction in inspecting, donning, checking the fit of, and wearing the respirator.

(vii) An opportunity for each respirator wearer to handle the respirator, learn how to don and wear it properly, check its seals, wear it in a safe atmosphere, and wear it in a test atmosphere.

(viii) An explanation of how maintenance and storage of the respirator is carried out.

(ix) Instructions in how to recognize and cope with emergency situations.

(x) Instructions as needed for special respirator use.

(xi) Regulations concerning respirator use.

(A) Wearing instructions and training. Wearing instructions and training, including practice demonstrations, shall be given to each respirator wearer and shall cover:

(aa) Donning, wearing, and removing the respirator.

(bb) Adjusting the respirator so that its respiratory-inlet covering is properly fitted on the wearer and so that the respirator causes a minimum of discomfort to the wearer.

(cc) Allowing the respirator wearer to wear the respirator in a safe atmosphere for an adequate period of time to ensure that the wearer is familiar with the operational characteristics of the respirator.

(dd) Providing the respirator wearer an opportunity to wear the respirator in a test atmosphere to demonstrate that the respirator provides protection to the wearer. A test atmosphere is any atmosphere in which the wearer can carry out activities simulating work movements and respirator leakage or respirator malfunction can be detected by the wearer.

(B) Retraining. Each respirator wearer shall be retrained as necessary to assure effective respirator use. Refresher training shall be given at least annually and shall include the provisions of WAC 296-62-07115(2)(c)(vii) through (2)(c)(xi)(cc).

(3) Respirator sealing problems. Respirators shall not be worn when conditions prevent a seal of the respirator to the wearer.

(a) A person who has hair (stubble, mustache, sideburns, beard, low hairline, bangs) which passes between the face and the sealing surface of the facepiece of the respirator shall not be permitted to wear such a respirator.

(b) A person who has hair (mustache, beard) which interferes with the function of a respirator valve(s) shall not be permitted to wear the respirator.

(c) A spectacle which has temple bars or straps which pass between the sealing surface of a respirator full facepiece and the wearer's face shall not be used.

(d) A head covering which passes between the sealing surface of a respirator facepiece and the wearer's face shall not be used.

(e) The wearing of a spectacle, a goggle, a faceshield, a welding helmet, or other eye and face protective device which interferes with the seal of a respirator to the wearer shall not be allowed.

(f) If scars, hollow temples, excessively protruding cheekbones, deep creases in facial skin, the absence of teeth or dentures, or unusual facial configurations prevent a seal of a respirator facepiece to a wearer's face, the person shall not be permitted to wear the respirator.

(g) If missing teeth or dentures prevent a seal of a respirator mouthpiece in a person's mouth, the person shall not be allowed to wear a respirator equipped with a mouthpiece.

(h) If a person has a nose of a shape or size which prevents the closing of the nose by the nose clamp of a mouthpiece/nose-clamp type of respirator, the person shall not be permitted to wear this type of respirator.

(4) Respirator sealing tests. To ensure proper protection, the wearer of a respirator equipped with a facepiece shall check the seal of the facepiece prior to each entry into a hazardous atmosphere. This may be done using procedures recommended by respirator manufacturers or by approved field tests.

(5) Issuance of respirators. The proper respirator shall be specified for each application and shall be listed in the written standard operating procedures. If a respirator is marked for the worker to whom it is assigned or for other identification purposes, the markings shall not affect the respirator performance in any way.

(6) Respirator inspection prior to use. Each person issued a respirator for routine, nonroutine, emergency, or rescue use shall inspect the respirator prior to its use to ensure that it is in good operating condition.

(7) Monitoring respirator use. The use of respirators on a routine or nonroutine basis shall be monitored to ensure that the correct respirators are being used, that the respirators are being worn properly and that the respirators being used are in good working condition.

(8) Evaluation of respiratory hazard during use. The level of the respiratory hazard in the workplace to which a person wearing a respirator is exposed shall be evaluated periodically.

(9) Leaving a hazardous area. A respirator wearer shall be permitted to leave the hazardous area for any respirator-related cause. Reasons which may cause a respirator wearer to leave a hazardous area include, but are not limited to, the following:

(a) Failure of the respirator to provide adequate protection.

(b) Malfunction of the respirator.

(c) Detection of leakage of air contaminant into the respirator.

(d) Increase in resistance of respirator to breathing.

(e) Severe discomfort in wearing the respirator.

(f) Illness of respirator wearer, including: Sensation of dizziness, nausea, weakness, breathing difficulty, coughing, sneezing, vomiting, fever, and chills. [Statutory Authority: RCW 49.17.040 and 49.17.050. 82-08-026 (Order 82-10), § 296-62-07115, filed 3/30/82. Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17-.240. 81-16-016 (Order 81-19), § 296-62-07115, filed 7/27/81.]

WAC 296-62-07117 Maintenance of respirators. (1) General. A program for the maintenance of respirators shall be adjusted to the type of plant, working conditions, hazards involved, and shall include the following:

(a) Cleaning and sanitizing.

(b) Inspection for defects.

(c) Repair.

(d) Storage.

Each respirator shall be properly maintained to retain its original shape and effectiveness.

(2) Cleaning and sanitizing. Each respirator shall be cleaned and sanitized to ensure that the respirator wearer is provided with a clean and sanitized respirator at all times. A respirator issued for other than continuous personal use by a particular worker, such as with routine, nonroutine, emergency, or rescue use, shall be cleaned and sanitized after each use.

(3) Inspection. Each respirator shall be inspected routinely before and after use. A respirator shall be inspected by the user immediately prior to each use to ensure that it is in proper working condition.

(a) After cleaning and sanitizing, each respirator shall be inspected to determine if it is in proper working condition, if it needs replacement of parts or repairs, or if it should be discarded. Each respirator stored for emergency or rescue use shall be inspected at least monthly. Respirator inspection shall include a check for tightness of connections; for the condition of the respiratory-inlet covering, head harness, valves, connecting tubes, harness assemblies, filters, cartridges, canisters, end-of-service-life indicator, and shelf life date(s); and for the proper function of regulators, alarms, and other warning systems.

(b) Each rubber or other elastomeric part shall be inspected for pliability and signs of deterioration. Each air and oxygen cylinder shall be inspected to ensure that it is fully charged according to the manufacturer's instructions.

(c) A record of inspection dates, findings, and remedial actions shall be kept for each respirator maintained for emergency or rescue use.

(4) Part replacement and repair. Replacement of parts or repairs shall be done only by persons trained in proper respirator assembly and correction of possible respirator malfunctions and defects. Replacement parts shall be only those designed for the specific respirator being repaired. Reducing or admission valves, regulators, and alarms shall be returned to the manufacturer or to a trained technician for repair or adjustment. Instrumentation for valve, regulator, and alarm adjustments and tests must be approved by the valve, regulator, or alarm manufacturer.

(5) Storage. Respirators shall be stored in a manner that will protect them against dust, sunlight, heat, extreme cold, excessive moisture, or damaging chemicals. Respirators shall be stored to prevent distortion of rubber or other elastomeric parts. Respirators shall not be stored in such places as lockers and tool boxes unless they are protected from contamination, distortion, and damage. Emergency and rescue-use respirators that are placed in work areas shall be quickly accessible at all times, and the storage cabinet or container in which they are stored shall be clearly marked. [Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81-16-016 (Order 81-19), § 296-62-07117, filed 7/27/81.]

WAC 296-62-07119 Identification of air-purifying respirator canisters. (1) The primary means of identifying a gas mask canister shall be by means of properly worded labels. The secondary means of identifying a gas mask canister shall be by a color code.

(2) Employers or their representative who issue or use gas masks falling within the scope of this section shall see that all gas mask canisters purchased or used by them are properly labeled and colored in accordance with these requirements before they are placed in service and that the labels and colors are properly maintained at all times thereafter until the canisters have completely served their purpose.

(3) On each canister shall appear in bold letters the following:

(a) Canister for

(Name for atmospheric contaminant)
or
Type N Gas Mask Canister

(b) In addition, essentially the following wording shall appear beneath the appropriate phrase on the canister label: "For respiratory protection in atmospheres containing not more than _____ percent by volume of _____

(Name of atmospheric contaminant)

(c) All of the markings specified above should be placed on the most conspicuous surface or surfaces of the canister.

(4) Canisters having a special high–efficiency filter for protection against radionuclides and other highly toxic particulates shall be labeled with a statement of the type and degree of protection afforded by the filter. The label shall be affixed to the neck end of, or to the gray stripe which is around and near the top of, the canister. The degree of protection shall be marked as the percent of penetration of the canister by a 0.3 – micron–diameter dioctyl phthalate (DOP) smoke at a flow rate of 85 liters per minute.

(5) Each canister shall have a label warning that gas masks should be used only in atmospheres containing sufficient oxygen to support life (at least 16 percent by volume), since gas mask canisters are only designed to neutralize or remove contaminants from the air.

(6) Each gas mask canister shall be painted a distinctive color or combination of colors indicated in Table I. All colors used shall be such that they are clearly identifiable by the user and clearly distinguishable from one another. The color coating used shall offer a high degree of resistance to chipping, scaling, peeling, blistering, fading, and the effects of the ordinary atmospheres to which they may be exposed under normal conditions of storage and use. Appropriately colored pressure sensitive tape may be used for the stripes.

TABLE I

Atmospheric Contaminants to be Protected Against	Colors Assigned*
Acid gases	White.
Hydrocyanic acid gas	White with 1/2 – inch green stripe completely around the canister near the bottom.
Chlorine gas	White with 1/2 – inch yellow stripe completely around the canister near the bottom.
Organic vapors	Black.
Ammonia gas	Green.
Acid gases and ammonia gas	Green with 1/2 – inch white stripe completely around the canister near the bottom.
Carbon monoxide	Blue.
Acid gases and organic vapors	Yellow.
Hydrocyanic acid gas and chloropicrin vapor	Yellow with 1/2 – inch blue stripe completely around the canister near the bottom.
Acid gases, organic vapors, and ammonia gases	Brown.
Radioactive materials, excepting tritium and noble gases	Purple (Magenta).
Particulates (dusts, fumes, mists, fogs, or smokes) in combination with any of the above cases or vapors	Canister color for contaminant, as designated above, with 1/2 – inch gray stripe completely around the canister near the top.
All of the above atmospheric contaminants	Red with 1/2 – inch gray stripe completely around the canister near the top.

*Gray shall not be assigned as the main color for a canister designed to remove acids or vapors.

NOTE: Orange shall be used as a complete body, or stripe color to represent gases not included in this table. The user will need to refer to the canister label to determine the degree of protection the canister will afford.

[Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81–16–016 (Order 81–19), § 296–62–07119, filed 7/27/81.]

WAC 296–62–07121 Effective date. This standard shall become effective thirty days after filing with the code reviser. [Statutory Authority: RCW 49.17.040, 49-.17.050 and 49.17.240. 81–16–016 (Order 81–19), § 296–62–07121, filed 7/27/81.]

WAC 296–62–07302 List of carcinogens. (1) The following substances are deemed to be carcinogens for the purposes of WAC 296–62–073 through 296–62–07316.

(2) Any reference to carcinogens in WAC 296–62–07304 through 296–62–07316 shall mean only those carcinogens listed in WAC 296–62–07302.

(a) 4–Nitrobiphenyl – Chemical Abstracts Registry Number 92933.

(b) Alpha–Naphthylamine – Chemical Abstracts Registry Number 134327.

(c) 4,4' Methylene bis – Chemical Abstract Service Registry Number 101144.

(d) Methyl chloromethyl ether – Chemical Abstracts Service Registry Number 107302.

(e) 3,3'–Dichlorobenzidine (and its salts) – Chemical Abstracts Service Registry Number 91941.

(f) Bis–Chloromethyl ether – Chemical Abstracts Service Registry Number 542881.

(g) Beta–Naphthylamine – Chemical Abstracts Service Registry Number 91598.

(h) Benzidine – Chemical Abstracts Service Registry Number 92875.

(i) 4-Aminodiphenyl - Chemical Abstracts Service Registry Number 92671.

(j) Ethyleneimine - Chemical Abstracts Service Registry Number 151564.

(k) Beta-Propiolactone - Chemical Abstracts Service Registry Number 57578.

(l) 2-Acetylaminofluorene - Chemical Abstracts Service Registry Number 53963.

(m) 4-Dimethylaminoazobenzene - Chemical Abstract Service Registry Number 60117.

(n) N-Nitrosodimethylamine - Chemical Abstracts Service Registry Number 62759. [Statutory Authority: RCW 49.17.040 and 49.17.050. 82-13-045 (Order 82-22), § 296-62-07302, filed 6/11/82; 81-07-048 (Order 81-4), § 296-62-07302, filed 3/17/81. Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, chapters 42.30 and 43.22 RCW. 80-17-014 (Order 80-20), § 296-62-07302, filed 11/13/80.]

WAC 296-62-07304 Definitions. (1) The definitions set forth in this section apply throughout WAC 296-62-073 through 296-62-07316.

(2) This section shall not apply to solid or liquid mixtures containing less than 0.1 percent by weight or volume of the carcinogens listed in WAC 296-62-07302.

(a) Absolute filter - is one capable of retaining 99.97 percent of a mono disperse aerosol of 0.3 micron size particles.

(b) Authorized employee - an employee whose duties require him to be in the regulated area and who has been specifically assigned to those duties by the employer.

(c) Clean change room - a room where employees put on clean clothing and/or protective equipment in an environment free of carcinogens listed in WAC 296-62-07302. The clean change room shall be contiguous to and have an entry from a shower room, when the shower room facilities are otherwise required in this section.

(d) Closed system - an operation involving carcinogens listed in WAC 296-62-07302 where containment prevents the release of carcinogens into regulated areas, or the external environment.

(e) Decontamination - the inactivation of a carcinogen listed in WAC 296-62-07302 or its safe disposal.

(f) Disposal - the safe removal of a carcinogen listed in WAC 296-62-07302 from the work environment.

(g) Emergency - an unforeseen circumstance or set of circumstances resulting in the release of a carcinogen which may result in exposure to or contact with any carcinogen listed in WAC 296-62-07302.

(h) External environment - any environment external to regulated and nonregulated areas.

(i) Isolated system - a fully enclosed structure other than the vessel of containment of a listed carcinogen which is impervious to the passage of listed carcinogens and which would prevent the entry of carcinogens into regulated areas, nonregulated areas, or the external environment, should leakage or spillage from the vessel of containment occur.

(j) Laboratory-type hood - a device enclosed on three sides and the top and bottom, designed and maintained so as to draw air inward at an average linear face velocity of 150 feet per minute with a minimum of 125 feet per minute, designed, constructed and maintained such that an operation involving a listed carcinogen within the hood does not require the insertion of any portion of any employees' body other than his hands and arms.

(k) Nonregulated area - any area under the control of the employer where entry and exit is neither restricted nor controlled.

(l) Open-vessel system - an operation involving listed carcinogens in an open vessel, which is not in an isolated system, a laboratory-type hood, nor in any other system affording equivalent protection against the entry of carcinogens into regulated areas, nonregulated areas, or the external environment.

(m) Protective clothing - clothing designed to protect an employee against contact with or exposure to listed carcinogens.

(n) Regulated area - an area where entry and exit is restricted and controlled. [Statutory Authority: RCW 49.17.040 and 49.17.050. 81-07-048 (Order 81-4), § 296-62-07304, filed 3/17/81. Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, chapters 42.30 and 43.22 RCW. 80-17-014 (Order 80-20), § 296-62-07304, filed 11/13/80.]

WAC 296-62-07306 Requirements for areas containing carcinogens listed in WAC 296-62-07302. (1) A regulated area shall be established by an employer where listed carcinogens are manufactured, processed, used, re-packaged, released, handled or stored.

(2) All such areas shall be controlled in accordance with the requirements for the following category or categories describing the operation involved:

(a) Isolated systems. Employees working with carcinogens within an isolated system such as a "glove box" shall wash their hands and arms upon completion of the assigned task and before engaging in other activities not associated with the isolated system.

(b) Closed system operation. Within regulated areas where carcinogens are stored in sealed containers, or contained in a closed system including piping systems with any sample ports or openings closed while carcinogens are contained within:

(i) Access shall be restricted to authorized employees only;

(ii) Employees shall be required to wash hands, forearms, face and neck upon each exit from the regulated areas, close to the point of exit and before engaging in other activities.

(c) Open vessel system operations. Open vessel system operations as defined in WAC 296-62-07304(2)(l) are prohibited.

(d) Transfer from a closed system. Charging or discharging point operations, or otherwise opening a closed system. In operations involving "laboratory-type hoods," or in locations where a carcinogen is contained in an otherwise "closed system," but is transferred, charged, or discharged into other normally closed containers, the provisions of this section shall apply.

(i) Access shall be restricted to authorized employees only;

(ii) Each operation shall be provided with continuous local exhaust ventilation so that air movement is always from ordinary work areas to the operation. Exhaust air shall not be discharged to regulated areas, nonregulated areas or the external environment unless decontaminated. Clean makeup air shall be introduced in sufficient volume to maintain the correct operation of the local exhaust system.

(iii) Employees shall be provided with, and required to wear, clean, full body protective clothing (smocks, coveralls, or long-sleeved shirt and pants), shoe covers and gloves prior to entering the regulated area.

(iv) Employees engaged in a carcinogen handling operation shall be provided with and required to wear and use a half-face, filter-type respirator for dusts, mists, and fumes, in accordance with chapter 296-62 WAC, of the general safety and health standards. A respirator affording higher levels of protection may be substituted.

(v) Prior to each exit from a regulated area, employees shall be required to remove and leave protective clothing and equipment at the point of exit and at the last exit of the day, to place used clothing and equipment in impervious containers at the point of exit for purposes of decontamination or disposal. The contents of such impervious containers shall be identified, as required under WAC 296-62-07310(2), (3) and (4).

(vi) Employees shall be required to wash hands, forearms, face and neck on each exit from the regulated area, close to the point of exit, and before engaging in other activities.

(vii) Employees shall be required to shower after the last exit of the day.

(viii) Drinking fountains are prohibited in the regulated area.

(e) Maintenance and decontamination activities. In clean up of leaks or spills, maintenance or repair operations on contaminated systems or equipment, or any operations involving work in an area where direct contact with carcinogens could result, each authorized employee entering the area shall:

(i) Be provided with and required to wear, clean, impervious garments, including gloves, boots and continuous-air supplied hood in accordance with chapter 296-24 WAC, the general safety and health standards;

(ii) Be decontaminated before removing the protective garments and hood;

(iii) Be required to shower upon removing the protective garments and hood.

(f) Laboratory activities. The requirements of this subdivision shall apply to research and quality control activities involving the use of carcinogens listed in WAC 296-62-07302.

(i) Mechanical pipetting aids shall be used for all pipetting procedures.

(ii) Experiments, procedures and equipment which could produce aerosols shall be confined to laboratory-type hoods or glove boxes.

(iii) Surfaces on which carcinogens are handled shall be protected from contamination.

(iv) Contaminated wastes and animal carcasses shall be collected in impervious containers which are closed and decontaminated prior to removal from the work area. Such wastes and carcasses shall be incinerated in such a manner that no carcinogenic products are released.

(v) All other forms of listed carcinogens shall be inactivated prior to disposal.

(vi) Laboratory vacuum systems shall be protected with high efficiency scrubbers or with disposable absolute filters.

(vii) Employees engaged in animal support activities shall be:

(A) Provided with, and required to wear, a complete protective clothing change, clean each day, including coveralls or pants and shirt, foot covers, head covers, gloves, and appropriate respiratory protective equipment or devices; and

(B) Prior to each exit from a regulated area, employees shall be required to remove and leave protective clothing and equipment at the point of exit and at the last exit of the day, to place used clothing and equipment in impervious containers at the point of exit for purposes of decontamination or disposal. The contents of such impervious containers shall be identified as required under WAC 296-62-07310(2), (3) and (4).

(C) Required to wash hands, forearms, face and neck upon each exit from the regulated area close to the point of exit, and before engaging in other activities; and

(D) Required to shower after the last exit of the day.

(viii) Employees, other than those engaged only in animal support activities, each day shall be:

(A) Provided with and required to wear a clean change of appropriate laboratory clothing, such as a solid front gown, surgical scrub suit, or fully buttoned laboratory coat.

(B) Prior to each exit from a regulated area, employees shall be required to remove and leave protective clothing and equipment at the point of exit and at the last exit of the day, to place used clothing and equipment in impervious containers at the point of exit for purposes of decontamination or disposal. The contents of such impervious containers shall be identified as required under WAC 296-62-07310(2), (3) and (4).

(C) Required to wash hands, forearms, face and neck upon each exit from the regulated area close to the point of exit, and before engaging in other activities.

(ix) Air pressure in laboratory areas and animal rooms where carcinogens are handled and bioassay studies are performed shall be negative in relation to the pressure in surrounding areas. Exhaust air shall not be discharged to regulated areas, nonregulated areas or the external environment unless decontaminated.

(x) There shall be no connection between regulated areas and any other areas through the ventilation system.

(xi) A current inventory of the carcinogens shall be maintained.

(xii) Ventilated apparatus such as laboratory-type hoods, shall be tested at least semi-annually or immediately after ventilation modification or maintenance operations, by personnel fully qualified to certify correct containment and operation. [Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81-16-015 (Order 81-20), § 296-62-07306, filed 7/27/81. Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, chapters 42.30 and 43.22 RCW. 80-17-014 (Order 80-20), § 296-62-07306, filed 11/13/80.]

WAC 296-62-07310 Signs, information and training. (1) Signs. (a) Entrances to regulated areas shall be posted with signs bearing the legend:

CANCER-SUSPECT AGENT

AUTHORIZED PERSONNEL ONLY

(b) Entrances to regulated areas containing operations covered in WAC 296-62-07306(2)(e) shall be posted with signs bearing the legend:

CANCER-SUSPECT AGENT EXPOSED IN THIS AREA

IMPERVIOUS SUIT INCLUDING GLOVES, BOOTS, AND AIR-SUPPLIED HOOD REQUIRED AT ALL TIMES

AUTHORIZED PERSONNEL ONLY

(c) Appropriate signs and instructions shall be posted at the entrance to, and exit from, regulated areas, informing employees of the procedures that must be followed in entering and leaving a regulated area.

(2) Container contents, identification. (a) Containers of carcinogens named in WAC 296-62-07302 and containers required in WAC 296-62-07306(2)(d)(v) and 296-62-07306(2)(f)(vii)(B) and 296-62-07306(2)(f)(viii)(B) which are accessible only to, and handled only by authorized employees, or by other employees training in accordance with WAC 296-62-07310(5), may have contents identification limited to a generic or proprietary name, or other proprietary identification of the carcinogen and percent.

(b) Containers of carcinogens and containers required under WAC 296-62-07306(2)(d)(v) and 296-62-07306(2)(f)(vii)(B) and 296-62-07306(2)(f)(viii)(B) which are accessible to, or handled by employees other than authorized employees or employees trained in accordance with WAC 296-62-07310(5) shall have contents identification which includes the full chemical name and Chemical Abstracts Service Registry number as listed in WAC 296-62-07302.

(c) Containers shall have the warning words "CANCER-SUSPECT AGENT" displayed immediately under or adjacent to the contents identification.

(d) Containers which have carcinogenic contents with corrosive or irritating properties shall have label statements warning of such hazards, noting, if appropriate, particularly sensitive or affected portions of the body.

(3) Lettering. Lettering on signs and instructions required by WAC 296-62-07310(1) shall be a minimum letter height of two inches. Labels on containers required under this section shall not be less than one-half the size of the largest lettering on the package, and not less than eight point type in any instance: Provided, that no such required lettering need be more than one inch in height.

(4) Prohibited statements. No statements shall appear on or near any required sign, label, or instruction which contradicts or detracts from the effect of any required warning, information or instruction.

(5) Training and indoctrination. (a) Each employee prior to being authorized to enter a regulated area, shall receive a training and indoctrination program including, but not necessarily limited to:

(i) The nature of the carcinogenic hazards of listed carcinogens, including local and systemic toxicity;

(ii) The specific nature of the operation involving carcinogens which could result in exposure;

(iii) The purpose for and application of the medical surveillance program, including, as appropriate, methods of self-examination;

(iv) The purpose for and application of decontamination practices and purposes;

(v) The purpose for and significance of emergency practices and procedures;

(vi) The employee's specific role in emergency procedures;

(vii) Specific information to aid the employee in recognition and evaluation of conditions and situations which may result in the release of listed carcinogens;

(viii) The purpose for an application of specific first-aid procedures and practices.

(b) A review of this section at the employee's first training and indoctrination program and annually thereafter.

(c) Specific emergency procedures shall be prescribed, and posted, and employees, shall be familiarized with their terms, and rehearsed in their application.

(d) All materials relating to the program shall be provided upon request to the director. [Statutory Authority: RCW 49.17.040 and 49.17.050. 81-07-048 (Order 81-4), § 296-62-07310, filed 3/17/81. Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, chapters 42.30 and 43.22 RCW. 80-17-014 (Order 80-20), § 296-62-07310, filed 11/13/80.]

WAC 296-62-07312 Reports. (1) Operations. Not later than October 30, 1974, the information required in WAC 296-62-07312(1)(a), (b), (c) and (d) of this section shall be reported in writing to the industrial hygiene section, division of industrial safety and health. Any changes in such information shall be similarly reported in writing within 15 calendar days of such change.

(a) A brief description and in plant location of the area(s) regulated and the address of each regulated area;

(b) The name(s) and other identifying information as to the presence of listed carcinogens in each regulated area;

(c) The number of employees in each regulated area, during normal operations including maintenance activities; and

(d) The manner in which a carcinogen is present in each regulated area; e.g., whether it is manufactured,

processed, used, repackaged, released, stored, or otherwise handled.

(2) Incidents. Incidents which result in the release of a listed carcinogen into any area where employees may be potentially exposed shall be reported in accordance with this subsection.

(a) A report of the occurrence of the incident and the facts obtainable at that time including a report on any medical treatment of affected employees shall be made within 24 hours to the industrial hygiene section, division of industrial safety and health.

(b) A written report shall be filed with the industrial hygiene section, division of industrial safety and health, within 15 calendar days thereafter and shall include:

(i) A specification of the amount of material released, the amount of time involved, and an explanation of the procedure used in determining this figure;

(ii) A description of the area involved, and the extent of known and possible employee exposure and area contamination;

(iii) A report of any medical treatment of affected employees, and any medical surveillance program implemented; and

(iv) An analysis of the circumstances of the incident, and measures taken or to be taken, with specific completion dates, to avoid further similar releases.

CARCINOGEN STANDARD REPORT

Company: _____ Prepared By: _____
Plant Address: _____ Title: _____
Date: _____

Compound and Other Identifying Information	Description of Inplant Location of Regulated Area*	Number of Employees in Each Regulated Area* Normally Maintenance	Manner** In Which Compound is Present in Each Regulated Area*

* See WAC 296-62-07308 for definition of "Regulated area."

** Indicated whether manufactured, processed, used, repackaged, released, stored, or if otherwise handled (describe).

[Statutory Authority: RCW 49.17.040 and 49.17.050. 81-07-048 (Order 81-4), § 296-62-07312, filed 3/17/81. Statutory Authority: RCW 49.17.040, 49.17-.050, 49.17.240, chapters 42.30 and 43.22 RCW. 80-17-014 (Order 80-20), § 296-62-07312, filed 11/13/80.]

WAC 296-62-07329 Vinyl chloride. (1) Scope and application.

(a) This section includes requirements for the control of employee exposure to vinyl chloride (chloroethene), Chemical Abstracts Service Registry No. 75014.

(b) This section applies to the manufacture, reaction, packaging, repackaging, storage, handling or use of vinyl chloride or polyvinyl chloride, but does not apply to the handling or use of fabricated products made of polyvinyl chloride.

(c) This section applies to the transportation of vinyl chloride or polyvinyl chloride except to the extent that the department of transportation may regulate the hazards covered by this section.

(2) Definitions.

(a) "Action level" means a concentration of vinyl chloride of 0.5 ppm averaged over an 8-hour work day.

(b) "Authorized person" means any person specifically authorized by the employer whose duties require him to enter a regulated area or any person entering such an area as a designated representative of employees for the purpose of exercising an opportunity to observe monitoring and measuring procedures.

(c) "Director" means chief, industrial hygiene section, department of labor and industries.

(d) "Emergency" means any occurrence such as, but not limited to, equipment failure, or operation of a relief device which is likely to, or does, result in massive release of vinyl chloride.

(e) "Fabricated product" means a product made wholly or partly from polyvinyl chloride, and which does not require further processing at temperatures, and for times, sufficient to cause mass melting of the polyvinyl chloride resulting in the release of vinyl chloride.

(f) "Hazardous operation" means any operation, procedure, or activity where a release of either vinyl chloride liquid or gas might be expected as a consequence of the operation or because of an accident in the operation, which would result in an employee exposure in excess of the permissible exposure limit.

(g) "Polyvinyl chloride" means polyvinyl chloride homopolymer or copolymer before such is converted to a fabricated product.

(h) "Vinyl chloride" means vinyl chloride monomer.

(3) Permissible exposure limit.

(a) No employee may be exposed to vinyl chloride at concentrations greater than 1 ppm averaged over any 8-hour period, and

(b) No employee may be exposed to vinyl chloride at concentrations greater than 5 ppm averaged over any period not exceeding 15 minutes.

(c) No employee may be exposed to vinyl chloride by direct contact with liquid vinyl chloride.

(4) Monitoring.

(a) A program of initial monitoring and measurement shall be undertaken in each establishment to determine if there is any employee exposed, without regard to the use of respirators, in excess of the action level.

(b) Where a determination conducted under paragraph (4)(a) of this section shows any employee exposures without regard to the use of respirators, in excess of the action level, a program for determining exposures for each such employee shall be established. Such a program:

(i) Shall be repeated at least monthly where any employee is exposed, without regard to the use of respirators, in excess of the permissible exposure limit.

(ii) Shall be repeated not less than quarterly where any employee is exposed, without regard to the use of respirators, in excess of the action level.

(iii) May be discontinued for any employee only when at least two consecutive monitoring determinations, made not less than 5 working days apart, show exposures for that employee at or below the action level.

(c) Whenever there has been a production, process or control change which may result in an increase in the release of vinyl chloride, or the employer has any other reason to suspect that any employee may be exposed in excess of the action level, a determination of employee exposure under subsection (4)(a) of this section shall be performed.

(d) The method of monitoring and measurement shall have an accuracy (with a confidence level of 95 percent) of not less than plus or minus 50 percent from 0.25 through 0.5 ppm, plus or minus 35 percent from over 0.5 ppm through 1.0 ppm, plus or minus 25 percent over 1.0 ppm, (methods meeting these accuracy requirements are available from the director).

(e) Employees or their designated representatives shall be afforded reasonable opportunity to observe the monitoring and measuring required by this subdivision.

(5) Regulated area.

(a) A regulated area shall be established where:

(i) Vinyl chloride or polyvinyl chloride is manufactured, reacted, repackaged, stored, handled or used; and

(ii) Vinyl chloride concentrations are in excess of the permissible exposure limit.

(b) Access to regulated areas shall be limited to authorized persons.

(6) Methods of compliance. Employee exposures to vinyl chloride shall be controlled to at or below the permissible exposure limit provided in subsection (3) of this section by engineering, work practice, and personal protective controls as follows:

(a) Feasible engineering and work practice controls shall immediately be used to reduce exposures to at or below the permissible exposure limit.

(b) Wherever feasible engineering and work practice controls which can be instituted immediately are not sufficient to reduce exposures to at or below the permissible exposure limit, they shall nonetheless be used to reduce exposures to the lowest practicable level, and shall be supplemented by respiratory protection in accordance with subsection (6) of this section. A program shall be established and implemented to reduce exposures to at or below the permissible exposure limit, or to the greatest extent feasible, solely by means of engineering and work practice controls, as soon as feasible.

(c) Written plans for such a program shall be developed and furnished upon request for examination and copying to the director. Such plans shall be updated at least every six months.

(7) Respiratory protection. Where respiratory protection is required under this section:

(a) The employer shall provide a respirator which meets the requirements of this subdivision and shall assure that the employee uses such respirator, except that until December 31, 1975, wearing of respirators shall be at the discretion of each employee for exposures not in excess of 25 ppm, measured over any 15-minute period. Until December 31, 1975, each employee who chooses not to wear an appropriate respirator shall be informed at least quarterly of the hazards of vinyl chloride and the purpose, proper use, and limitations of respiratory devices.

(b) Respirators shall be selected from among those jointly approved by the Mining Enforcement and Safety Administration, Department of the Interior, and the National Institute for Occupational Safety and Health under the provisions of 30 CFR Part 11.

(c) A respiratory protection program meeting the requirements of chapter 296-62 WAC shall be established and maintained.

(d) Selection of respirators for vinyl chloride shall be as follows:

Atmospheric concentration of Vinyl Chloride	Required Apparatus
(i) Unknown, or above 3,600 ppm	Open-circuit, self-contained breathing apparatus, pressure demand type, with full facepiece.
(ii) Not over 3,600 ppm	(A) Combination type C supplied air respirator, pressure demand type, with full or half facepiece, and auxiliary self-contained air supply; or (B) Combination type C, supplied air respirator continuous flow type, with full or half facepiece, and auxiliary self-contained air supply.
(iii) Not over 1,000 ppm	Type C, supplied air respirator, continuous flow type, with full or half facepiece, helmet or hood.
(iv) Not over 100 ppm	(A) Combination type C supplied air respirator demand type, with full facepiece, and auxiliary self-contained air supply; or (B) Open-circuit self-contained breathing apparatus with full facepiece, in demand mode; or (C) Type C supplied air respirator, demand type, with full facepiece.
(v) Not over 25 ppm	(A) A powered air-purifying respirator with hood, helmet, full or half facepiece, and a canister which provides a service life of at least 4 hours for concentrations of vinyl chloride up to 25 ppm, or (B) Gas mask, front or back-mounted canister which provides a service life of at least 4=p hours for concentrations of vinyl chloride up to 25 ppm.
(vi) Not over 10 ppm	(A) Combination type C supplied-air respirator, demand type, with half facepiece, and auxiliary self-contained air supply; or

Atmospheric concentration of Vinyl Chloride	Required Apparatus
	(B) Type C supplied-air respirator, demand type, with half facepiece; or (C) Any chemical cartridge respirator with an organic vapor cartridge which provides a service life of at least 1 hour for concentrations of vinyl chloride up to 10 ppm.

(e)(i) Entry into unknown concentrations or concentrations greater than 36,000 ppm (lower explosive limit) may be made only for purposes of life rescue; and

(ii) Entry into concentrations of less than 36,000 ppm, but greater than 3,600 ppm may be made only for purposes of life rescue, firefighting, or securing equipment so as to prevent a greater hazard from release of vinyl chloride.

(f) Where air-purifying respirators are used:

(i) Air-purifying canisters or cartridges shall be replaced prior to the expiration of their service life or the end of the shift in which they are first used, whichever occurs first, and

(ii) A continuous monitoring and alarm system shall be provided where concentrations of vinyl chloride could reasonably exceed the allowable concentrations for the devices in use. Such system shall be used to alert employees when vinyl chloride concentrations exceed the allowable concentrations for the devices in use.

(g) Apparatus prescribed for higher concentrations may be used for any lower concentration.

(8) Hazardous operations.

(a) Employees engaged in hazardous operations, including entry of vessels to clean polyvinyl chloride residue from vessel walls, shall be provided and required to wear and use;

(i) Respiratory protection in accordance with subsections (3) and (6) of this section; and

(ii) Protective garments to prevent skin contact with liquid vinyl chloride or with polyvinyl chloride residue from vessel walls. The protective garments shall be selected for the operation and its possible exposure conditions.

(b) Protective garments shall be provided clean and dry for each use.

(i) Emergency situations. A written operational plan for emergency situations shall be developed for each facility storing, handling, or otherwise using vinyl chloride as a liquid or compressed gas. Appropriate portions of the plan shall be implemented in the event of an emergency. The plan shall specifically provide that:

(A) Employees engaged in hazardous operations or correcting situations of existing hazardous releases shall be equipped as required in subsection (8) of this section;

(B) Other employees not so equipped shall evacuate the area and not return until conditions are controlled by the methods required in subsection (6) of this section and the emergency is abated.

(9) Training. Each employee engaged in vinyl chloride or polyvinyl chloride operations shall be provided training in a program relating to the hazards of vinyl chloride and precautions for its safe use.

(a) The program shall include:

(i) The nature of the health hazard from chronic exposure to vinyl chloride including specifically the carcinogenic hazard;

(ii) The specific nature of operations which could result in exposure to vinyl chloride in excess of the permissible limit and necessary protective steps;

(iii) The purpose for, proper use, and limitations of respiratory protective devices;

(iv) The fire hazard and acute toxicity of vinyl chloride, and the necessary protective steps;

(v) The purpose for and a description of the monitoring program;

(vi) The purpose for and a description of, the medical surveillance program;

(vii) Emergency procedures:

(A) Specific information to aid the employee in recognition of conditions which may result in the release of vinyl chloride; and

(B) A review of this standard at the employee's first training and indoctrination program, and annually thereafter.

(b) All materials relating to the program shall be provided upon request to the director.

(10) Medical surveillance. A program of medical surveillance shall be instituted for each employee exposed, without regard to the use of respirators, to vinyl chloride in excess of the action level. The program shall provide each such employee with an opportunity for examinations and tests in accordance with this subsection. All medical examinations and procedures shall be performed by or under the supervision of a licensed physician and shall be provided without cost to the employee.

(a) At the time of initial assignment, or upon institution of medical surveillance;

(i) A general physical examination shall be performed with specific attention to detecting enlargement of liver, spleen or kidneys, or dysfunction in these organs, and for abnormalities in skin, connective tissues and the pulmonary system (See Appendix A).

(ii) A medical history shall be taken, including the following topics:

(A) Alcohol intake,

(B) Past history of hepatitis,

(C) Work history and past exposure to potential hepatotoxic agents, including drugs and chemicals,

(D) Past history of blood transfusions, and

(E) Past history of hospitalizations.

(iii) A serum specimen shall be obtained and determinations made of:

(A) Total bilirubin,

(B) Alkaline phosphatase,

(C) Serum glutamic oxalacetic transaminase (SGOT),

(D) Serum glutamic pyruvic transaminase (SGPT), and

(E) Gamma glustamyl transpeptidase.

(b) Examinations provided in accordance with this subdivision shall be performed at least:

(i) Every 6 months for each employee who has been employed in vinyl chloride or polyvinyl chloride manufacturing for 10 years or longer; and

(ii) Annually for all other employees.

(c) Each employee exposed to an emergency shall be afforded appropriate medical surveillance.

(d) A statement of each employee's suitability for continued exposure to vinyl chloride including use of protective equipment and respirators, shall be obtained from the examining physician promptly after any examination. A copy of the physician's statement shall be provided each employee.

(e) If any employee's health would be materially impaired by continued exposure, such employee shall be withdrawn from possible contact with vinyl chloride.

(f) Laboratory analyses for all biological specimens included in medical examinations shall be performed in laboratories licensed under 42 CFR Part 74.

(g) If the examining physician determines that alternative medical examinations to those required by subsection (10)(a) of this section will provide at least equal assurance of detecting medical conditions pertinent to the exposure to vinyl chloride, the employer may accept such alternative examinations as meeting the requirements of subsection (10)(a) of this section, if the employer obtains a statement from the examining physician setting forth the alternative examinations and the rationale for substitution. This statement shall be available upon request for examination and copying to authorized representatives of the director.

(11) Signs and labels.

(a) Entrances to regulated areas shall be posted with legible signs bearing the legend:

CANCER–SUSPECT AGENT AREA
AUTHORIZED PERSONNEL ONLY

(b) Areas containing hazardous operations or where an emergency currently exists shall be posted with legible signs bearing the legend:

CANCER–SUSPECT AGENT IN THIS AREA
PROTECTIVE EQUIPMENT REQUIRED
AUTHORIZED PERSONNEL ONLY

(c) Containers of polyvinyl chloride resin waste from reactors or other waste contaminated with vinyl chloride shall be legibly labeled:

CONTAMINATED WITH VINYL CHLORIDE
CANCER–SUSPECT AGENT

(d) Containers of polyvinyl chloride shall be legibly labeled:

POLYVINYL CHLORIDE (OR TRADE NAME)
CONTAINS VINYL
CHLORIDE VINYL CHLORIDE IS A CANCER–
SUSPECT AGENT

(e) Containers of vinyl chloride shall be legibly labeled either:

VINYL CHLORIDE EXTREMELY FLAMMABLE
GAS UNDER PRESSURE CANCER–SUSPECT
AGENT (or)

(f) In accordance with 49 CFR Part 173, Subpart H, with the additional legends:

CANCER–SUSPECT AGENT

applied near the label or placard.

(g) No statement shall appear on or near any required sign, label or instruction which contradicts or detracts from the effect of any required warning, information or instruction.

(12) Records.

(a) All records maintained in accordance with this section shall include the name and social security number of each employee where relevant.

(b) Records of required monitoring and measuring and medical records shall be provided upon request to employees, designated representatives, and the assistant director in accordance with WAC 296–62–05201 through 296–62–05209; and WAC 296–62–05213 through 296–62–05217. These records shall be provided upon request to the director. Authorized personnel rosters shall also be provided upon request to the assistant director.

(i) Monitoring and measuring records shall:

(A) State the date of such monitoring and measuring and the concentrations determined and identify the instruments and methods used;

(B) Include any additional information necessary to determine individual employee exposures where such exposures are determined by means other than individual monitoring of employees; and

(C) Be maintained for not less than 30 years.

(ii) Medical records shall be maintained for the duration of the employment of each employee plus 20 years, or 30 years, whichever is longer.

(c) In the event that the employer ceases to do business and there is no successor to receive and retain his records for the prescribed period, these records shall be transmitted by registered mail to the director, and each employee individually notified in writing of this transfer. The employer shall also comply with any additional requirements set forth in WAC 296–62–05215.

(d) Employees or their designated representatives shall be provided access to examine and copy records of required monitoring and measuring.

(e) Former employees shall be provided access to examine and copy required monitoring and measuring records reflecting their own exposures.

(f) Upon written request of any employee, a copy of the medical record of that employee shall be furnished to any physician designated by the employee.

(13) Reports.

(a) Not later than 1 month after the establishment of a regulated area, the following information shall be reported to the director. Any changes to such information shall be reported within 15 days.

(i) The address and location of each establishment which has one or more regulated areas; and

(ii) The number of employees in each regulated area during normal operations, including maintenance.

(b) Emergencies and the facts obtainable at that time, shall be reported within 24 hours to the director. Upon request of the director, the employer shall submit additional information in writing relevant to the nature and extent of employee exposures and measures taken to prevent future emergencies of similar nature.

(c) Within 10 working days following any monitoring and measuring which discloses that any employee has been exposed, without regard to the use of respirators, in excess of the permissible exposure limit, each such employee shall be notified in writing of the results of the exposure measurement and the steps being taken to reduce the exposure to within the permissible exposure limit.

(i) Effective January 1, 1975, the provisions set forth in WAC 296-62-07329 shall apply.

APPENDIX A SUPPLEMENTARY MEDICAL INFORMATION

When required tests under paragraph (10)(a) of this section show abnormalities, the tests should be repeated as soon as practicable, preferably within 3 to 4 weeks. If tests remain abnormal, consideration should be given to withdrawal of the employee from contact with vinyl chloride, while a more comprehensive examination is made.

Additional tests which may be useful:

(A) For kidney dysfunction: Urine examination for albumin, red blood cells, and exfoliative abnormal cells.

(B) Pulmonary system: Forced vital capacity, forced expiratory volume at 1 second, and chest roentgenogram (posterior-anterior, 14 x 17 inches).

(C) Additional serum tests: Lactic acid dehydrogenase, lactic acid dehydrogenase isoenzyme, protein determination, and protein electrophoresis.

(D) For a more comprehensive examination on repeated abnormal serum tests: Hepatitis B antigen, and liver scanning. [Statutory Authority: RCW 49.17.040 and 49.17.050. 82-13-045 (Order 82-22), § 296-62-07329, filed 6/11/82. Statutory Authority: RCW 49.17-.040, 49.17.050 and 49.17.240. 81-18-029 (Order 81-21), § 296-62-07329, filed 8/27/81; 81-16-015 (Order 81-20), § 296-62-07329, filed 7/27/81; Order 75-41, § 296-62-07329, filed 12/19/75.]

WAC 296-62-07341 Acrylonitrile. (1) Scope and application.

(a) This section applies to all occupational exposure to acrylonitrile (AN), Chemical Abstracts Service Registry No. 000107131, except as provided in subsection (1)(b) and (c) of this section.

(b) This section does not apply to exposures which result solely from the processing, use, and handling of the following materials:

(i) ABS resins, SAN resins, nitrile barrier resins, solid nitrile elastomers, and acrylic and modacrylic fibers, when these listed materials are in the form of finished polymers, and products fabricated from such finished polymers;

(ii) Materials made from and/or containing AN for which objective data is reasonably relied upon to demonstrate that the material is not capable of releasing AN in airborne concentrations in excess of 1 ppm as an eight-hour time-weighted average, under the expected conditions of processing, use, and handling which will cause the greatest possible release; and

(iii) Solid materials made from and/or containing AN which will not be heated above 170° F during handling, use, or processing.

(c) An employer relying upon exemption under (1)(b)(ii) shall maintain records of the objective data supporting that exemption, and of the basis of the employer's reliance on the data as provided in subsection (17) of this section.

(2) Definitions, as applicable to this section:

(a) "Acrylonitrile" or "AN" – acrylonitrile monomer, chemical formula CH2=CHCN.

(b) "Action level" – a concentration of AN of 1 ppm as an eight-hour time-weighted average.

(c) "Authorized person" – any person specifically authorized by the employer whose duties require the person to enter a regulated area, or any person entering such an area as a designated representative of employees for the purpose of exercising the opportunity to observe monitoring procedures under subsection (18) of this section.

(d) "Director" – the director of labor and industries, or his authorized representative.

(e) "Emergency" – any occurrence such as, but not limited to, equipment failure, rupture of containers, or failure of control equipment, which is likely to, or does, result in unexpected exposure to AN in excess of the ceiling limit.

(f) "Polyacrylonitrile" or "PAN" – polyacrylonitrile homopolymers or copolymers, except for materials as exempted under subsection (1)(b) of this section.

(3) Permissible exposure limits.

(a) Inhalation. (i) Time-weighted average limit (TWA). The employer shall assure that no employee is exposed to an airborne concentration of acrylonitrile in excess of two parts acrylonitrile per million parts of air (2 ppm), as an eight-hour time-weighted average.

(ii) Ceiling limit. The employer shall assure that no employee is exposed to an airborne concentration of acrylonitrile in excess of (10) ppm as averaged over any fifteen-minute period during the working day.

(b) Dermal and eye exposure. The employer shall assure that no employee is exposed to skin contact or eye contact with liquid AN or PAN.

(4) Notification of use and emergencies.

(a) Use. Within ten days of the effective date of this standard, or within fifteen days following the introduction of AN into the workplace, every employer shall report, unless he has done so pursuant to the emergency temporary standard, the following information to the director for each such workplace:

(i) The address and location of each workplace in which AN is present;

(ii) A brief description of each process of operation which may result in employee exposure to AN;

(iii) The number of employees engaged in each process or operation who may be exposed to AN and an estimate of the frequency and degree of exposure that occurs; and

(iv) A brief description of the employer's safety and health program as it relates to limitation of employee exposure to AN. Whenever there has been a significant change in the information required by this subsection, the employer shall promptly amend such information previously provided to the director.

(b) Emergencies and remedial action. Emergencies, and the facts obtainable at that time, shall be reported within 24 hours of the initial occurrence to the director. Upon request of the director, the employer shall submit additional information in writing relevant to the nature and extent of employee exposures and measures taken to prevent future emergencies of a similar nature.

(5) Exposure monitoring.

(a) General. (i) Determinations of airborne exposure levels shall be made from air samples that are representative of each employee's exposure to AN over an eight–hour period.

(ii) For the purposes of this section, employee exposure is that which would occur if the employee were not using a respirator.

(b) Initial monitoring. Each employer who has a place of employment in which AN is present shall monitor each such workplace and work operation to accurately determine the airborne concentrations of AN to which employees may be exposed. Such monitoring may be done on a representative basis, provided that the employer can demonstrate that the determinations are representative of employee exposures.

(c) Frequency. (i) If the monitoring required by this section reveals employee exposure to be below the action level, the employer may discontinue monitoring for that employee.

(ii) If the monitoring required by this section reveals employee exposure to be at or above the action level but below the permissible exposure limits, the employer shall repeat such monitoring for each such employee at least quarterly.

(iii) If the monitoring required by this section reveals employee exposure to be in excess of the permissible exposure limits, the employer shall repeat these determinations for each such employee at least monthly. The employer shall continue these monthly measurements until at least two consecutive measurements, taken at least seven days apart, are below the permissible exposure limits, and thereafter the employer shall monitor at least quarterly.

(d) Additional monitoring. Whenever there has been a production, process, control or personnel change which may result in new or additional exposure to AN, or whenever the employer has any other reason to suspect a change which may result in new or additional exposures to AN, additional monitoring which complies with this subsection shall be conducted.

(e) Employee notification. (i) Within five working days after the receipt of monitoring results, the employer shall notify each employee in writing of the results which represent that employee's exposure.

(ii) Whenever the results indicate that the representative employee exposure exceeds the permissible exposure limits, the employer shall include in the written notice a statement that the permissible exposure limits were exceeded and a description of the corrective action being taken to reduce exposure to or below the permissible exposure limits.

(f) Accuracy of measurement. The method of measurement of employee exposures shall be accurate, to a confidence level of 95 percent, to within plus or minus 25 percent for concentrations of AN at or above the permissible exposure limits, and plus or minus 35 percent for concentrations of AN between the action level and the permissible exposure limits.

(g) Weekly survey of operations involving liquid AN. In addition to monitoring of employee exposures to AN as otherwise required by this subsection, the employer shall survey areas of operations involving liquid AN at least weekly to detect points where AN liquid or vapor are being released into the workplace. The survey shall employ an infra–red gas analyzer calibrated for AN, a multipoint gas chromatographic monitor, or comparable system for detection of AN. A listing of levels detected and areas of AN release, as determined from the survey, shall be posted prominently in the workplace, and shall remain posted until the next survey is completed.

(6) Regulated areas.

(a) The employer shall establish regulated areas where AN concentrations are in excess of the permissible exposure limits.

(b) Regulated areas shall be demarcated and segregated from the rest of the workplace, in any manner that minimizes the number of persons who will be exposed to AN.

(c) Access to regulated areas shall be limited to authorized persons or to persons otherwise authorized by the act or regulations issued pursuant thereto.

(d) The employer shall assure that in the regulated area, food or beverages are not present or consumed, smoking products are not present or used, and cosmetics are not applied, (except that these activities may be conducted in the lunchrooms, change rooms and showers required under subsections (13)(a)–(13)(c) of this section.

(7) Methods of compliance.

(a) Engineering and work practice controls. (i) The employer shall institute engineering or work practice controls to reduce and maintain employee exposures to AN, to or below the permissible exposure limits, except to the extent that the employer establishes that such controls are not feasible.

(ii) Wherever the engineering and work practice controls which can be instituted are not sufficient to reduce employee exposures to or below the permissible exposure limits, the employer shall nonetheless use them to reduce exposures to the lowest levels achievable by these controls and shall supplement them by the use of respiratory

protection which complies with the requirements of subsection (8) of this section.

(b) Compliance program. (i) The employer shall establish and implement a written program to reduce employee exposures to or below the permissible exposure limits solely by means of engineering and work practice controls, as required by subsection (7)(a) of this section.

(ii) Written plans for these compliance programs shall include at least the following:

(A) A description of each operation or process resulting in employee exposure to AN above the permissible exposure limits;

(B) Engineering plans and other studies used to determine the controls for each process;

(C) A report of the technology considered in meeting the permissible exposure limits;

(D) A detailed schedule for the implementation of engineering or work practice controls; and

(E) Other relevant information.

(iii) Written plans for such a program shall be submitted upon request to the director, and shall be available at the worksite for examination and copying by the director, or any affected employee or representative.

(iv) The plans required by this subsection shall be revised and updated at least every six months to reflect the current status of the program.

(8) Respiratory protection.

(a) General. The employer shall assure that respirators are used where required pursuant to this section to reduce employee exposure to within the permissible exposure limits and in emergencies. Compliance with the permissible exposure limits may not be achieved by the use of respirators except:

(i) During the time period necessary to install or implement feasible engineering and work practice controls; or

(ii) In work operations such as maintenance and repair activities in which the employer establishes that engineering and work practice controls are not feasible; or

(iii) In work situations where feasible engineering and work practice controls are not yet sufficient to reduce exposure to or below the permissible exposure limits; or

(iv) In emergencies.

(b) Respirator selection. (i) Where respiratory protection is required under this section, the employer shall select and provide at no cost to the employee, the appropriate type of respirator from Table I and shall assure that the employee wears the respirator provided.

TABLE I

RESPIRATORY PROTECTION FOR ACRYLONITRILE (AN)

Concentration of AN or Condition of Use	Respirator Type
(a) Less than or equal to 10 x permissible exposure limits.	(1) Any chemical cartridge respirator with organic vapor cartridge(s) and half-mask; or (2) Any supplied air respirator with half-mask.
(b) Less than or equal to 50 x permissible exposure limits.	(1) Any organic vapor gas mask; or (2) Any supplied air respirator with full facepiece; or (3) Any self-contained breathing apparatus with full facepiece.
(c) Less than or equal to 2,000 x permissible exposure limits.	(1) Supplied air respirator in positive pressure mode with full facepiece, helmet, hood, or suit.
(d) Less than or equal to 10,000 x permissible exposure limits.	(1) Supplied air respirator and auxiliary self-contained full facepiece in positive pressure mode; or (2) Open circuit self-contained breathing apparatus with full facepiece in positive pressure mode.
(e) Emergency entry into unknown concentration of fire-fighting.	(1) Any self-contained breathing apparatus with full facepiece in positive pressure mode.
(f) Escape.	(1) Any organic vapor gas mask; or (2) Any self-contained breathing apparatus with full facepiece.

(ii) The employer shall select respirators from those approved for use with AN by the National Institute for Occupational Safety and Health under the provisions of WAC 296-62-071.

(c) Respirator program. (i) The employer shall institute a respiratory protection program in accordance with WAC 296-62-071.

(ii) Where air-purifying respirators (chemical cartridge or canister-type gas mask) are used, the air-purifying canister or cartridge(s) shall be replaced prior to the expiration of their service life or at the beginning of each shift, whichever occurs first. A label shall be attached to the cartridge or canister to indicate the date and time at which it is first installed on the respirator.

(iii) The employer shall allow each employee who uses a filter respirator (cartridge or canister) to change the filter elements whenever an increase in breathing resistance is detected and shall maintain an adequate supply of the filter elements necessary for this purpose.

(iv) Employees who wear respirators shall be allowed to wash their faces and respirator facepieces to prevent potential skin irritation associated with respirator use.

(9) Emergency situations.

(a) Written plans. (i) A written plan for emergency situations shall be developed for each workplace where AN is present. Appropriate portions of the plan shall be implemented in the event of an emergency.

(ii) The plan shall specifically provide that employees engaged in correcting emergency conditions shall be

equipped as required in subsection (8) of this section until the emergency is abated.

(b) Alerting employees. (i) Alarms. Where there is the possibility of employee exposure to AN in excess of the ceiling limit due to the occurrence of an emergency, a general alarm shall be installed and maintained to promptly alert employees of such occurrences.

(ii) Evacuation. Employees not engaged in correcting the emergency shall be restricted from the area and shall not be permitted to return until the emergency is abated.

(10) Protective clothing and equipment.

(a) Provision and use. Where eye or skin contact with liquid AN or PAN may occur, the employer shall provide at no cost to the employee, and assure that employees wear, appropriate protective clothing or other equipment in accordance with WAC 296-24-07501 and 296-24-07801 to protect any area of the body which may come in contact with liquid AN or PAN.

(b) Cleaning and replacement. (i) The employer shall clean, launder, maintain, or replace protective clothing and equipment required by this subsection, as needed to maintain their effectiveness. In addition, the employer shall provide clean protective clothing and equipment at least weekly to each affected employee.

(ii) The employer shall assure that the employee removes all protective clothing and equipment at the completion of a work shift and that an employee whose protective clothing becomes wet with liquid AN or PAN removes that clothing promptly to avoid skin contact with the liquid AN or PAN. Protective clothing shall be removed only in change rooms as required by subsection (14)(a) of this section.

(iii) The employer shall assure that AN- or PAN-contaminated protective clothing and equipment is placed and stored in closable containers which prevent dispersion of the AN or PAN outside the container.

(iv) The employer shall assure that no employee removes AN- or PAN-contaminated protective equipment or clothing from the change room, except for those employees authorized to do so for the purpose of laundering, maintenance, or disposal.

(v) The employer shall inform any person who launders or cleans AN-or PAN-contaminated protective clothing or equipment of the potentially harmful effects of exposure to AN.

(vi) The employer shall assure that containers of contaminated protective clothing and equipment which are to be removed from the workplace for any reason are labeled in accordance with subsection (16)(c)(ii) of this section, and that such labels remain affixed when such containers leave the employer's workplace.

(11) Housekeeping.

(a) Surfaces. (i) All surfaces shall be maintained free of accumulations of liquid AN and of PAN.

(ii) Dry sweeping and the use of compressed air for the cleaning of floors and other surfaces where liquid AN and PAN are found is prohibited.

(iii) Where vacuuming methods are selected, either portable units or a permanent system may be used.

(A) If a portable unit is selected, the exhaust shall be attached to the general workplace exhaust ventilation system or collected within the vacuum unit, equipped with high efficiency filters or other appropriate means of contaminant removal, so that AN is not reintroduced into the workplace air; and

(B) Portable vacuum units used to collect AN may not be used for other cleaning purposes and shall be labeled as prescribed by subsection (16)(c)(ii) of this section.

(iv) Cleaning of floors and other contaminated surfaces may not be performed by washing down with a hose, unless a fine spray has first been laid down.

(b) Liquids. Where AN is present in a liquid form, or as a resultant vapor, all containers or vessels containing AN shall be enclosed to the maximum extent feasible and tightly covered when not in use, with adequate provision made to avoid any resulting potential explosion hazard.

(12) Waste disposal. AN and PAN waste, scrap, debris, bags, containers or equipment, shall be disposed of in sealed bags or other closed containers which prevent dispersion of AN outside the container, and labeled as prescribed in subsection (16)(c)(ii) of this section.

(13) Hygiene facilities and practices. Where employees are exposed to airborne concentrations of AN above the permissible exposure limits, or where employees are required to wear protective clothing or equipment pursuant to subsection (11) of this section, or where otherwise found to be appropriate, the facilities required by WAC 296-24-12009 shall be provided by the employer for the use of those employees, and the employer shall assure that the employees use the facilities provided. In addition, the following facilities or requirements are mandated.

(a) Change rooms. The employer shall provide clean change rooms in accordance with WAC 296-24-12011.

(b) Showers. (i) The employer shall provide shower facilities in accordance with WAC 296-24-12009(3).

(ii) In addition, the employer shall also assure that employees exposed to liquid AN and PAN shower at the end of the work shift.

(c) Lunchrooms. (i) Whenever food or beverages are consumed in the workplace, the employer shall provide lunchroom facilities which have a temperature controlled, positive pressure, filtered air supply, and which are readily accessible to employees exposed to AN above the permissible exposure limits.

(ii) In addition, the employer shall also assure that employees exposed to AN above the permissible exposure limits wash their hands and face prior to eating.

(14) Medical surveillance.

(a) General. (i) The employer shall institute a program of medical surveillance for each employee who is or will be exposed to AN above the action level. The employer shall provide each such employee with an opportunity for medical examinations and tests in accordance with this subsection.

(ii) The employer shall assure that all medical examinations and procedures are performed by or under the supervision of a licensed physician, and shall be provided without cost to the employee.

(b) Initial examinations. At the time of initial assignment, or upon institution of the medical surveillance program, the employer shall provide each affected employee an opportunity for a medical examination, including at least the following elements:

(i) A work history and medical history with special attention to skin, respiratory, and gastrointestinal systems, and those non-specific symptoms, such as headache, nausea, vomiting, dizziness, weakness, or other central nervous system dysfunctions that may be associated with acute or chronic exposure to AN.

(ii) A physical examination giving particular attention to central nervous system, gastrointestinal system, respiratory system, skin and thyroid.

(iii) A 14" x 17" posteroanterior chest x-ray.

(iv) Further tests of the intestinal tract, including fecal occult blood and proctosigmoidoscopy, on all workers 40 years of age or older, and to any other affected employees for whom, in the opinion of the physician, such testing would be appropriate.

(c) Periodic examinations. (i) The employer shall provide examinations specified in this subsection at least annually for all employees specified in subsection (14)(a) of this section.

(ii) If an employee has not had the examinations prescribed in subsection (14)(b) of this section within six months of termination of employment, the employer shall make such examination available to the employee upon such termination.

(d) Additional examinations. If the employee for any reason develops signs or symptoms commonly associated with exposure to AN, the employer shall provide appropriate examination and emergency medical treatment.

(e) Information provided to the physician. The employer shall provide the following information to the examining physician:

(i) A copy of this standard and its appendices;

(ii) A description of the affected employee's duties as they relate to the employee's exposure;

(iii) The employee's representative exposure level;

(iv) The employee's anticipated or estimated exposure level (for preplacement examinations or in cases of exposure due to an emergency);

(v) A description of any personal protective equipment used or to be used; and

(vi) Information from previous medical examinations of the affected employee, which is not otherwise available to the examining physician.

(f) Physician's written opinion. (i) The employer shall obtain a written opinion from the examining physician which shall include:

(A) The results of the medical tests performed;

(B) The physician's opinion as to whether the employee has any detected medical condition which would place the employee at an increased risk of material impairment of the employee's health from exposure to AN;

(C) Any recommended limitations upon the employee's exposure to AN or upon the use of protective clothing and equipment such as respirators; and

(D) A statement that the employee has been informed by the physician of the results of the medical examination and any medical conditions which require further examination or treatment.

(ii) The employer shall instruct the physician not to reveal in the written opinion specific findings or diagnoses unrelated to occupational exposure to AN.

(iii) The employer shall provide a copy of the written opinion to the affected employee.

(15) Employee information and training.

(a) Training program. (i) The employer shall institute a training program for all employees where there is occupational exposure to AN and shall assure their participation in the training program.

(ii) The training program shall be provided at the time of initial assignment, or upon institution of the training program, and at least annually thereafter, and the employer shall assure that each employee is informed of the following:

(A) The information contained in Appendices A, B and C*[1];

(B) The quantity, location, manner of use, release or storage of AN and the specific nature of operations which could result in exposure to AN, as well as any necessary protective steps;

(C) The purpose, proper use, and limitations of respirators;

(D) The purpose and a description of the medical surveillance program required by subsection (14) of this section;

(E) The emergency procedures developed, as required by subsection (9) of this section; and

(F) The engineering and work practice controls, their function and the employee's relationship thereto; and

(G) A review of this standard.

(b) Access to training materials. (i) The employer shall make a copy of this standard and its appendices readily available to all affected employees.

(ii) The employer shall provide, upon request, all materials relating to the employee information and training program to the director.

(16) Signs and labels.

(a) General. (i) The employer may use labels or signs required by other statutes, regulations, or ordinances in addition to, or in combination with, signs and labels required by this subsection.

(ii) The employer shall assure that no statement appears on or near any sign or label, required by this subsection, which contradicts or detracts from such effects of the required sign or label.

(b) Signs. (i) The employer shall post signs to clearly indicate all workplaces where AN concentrations exceed the permissible exposure limits. The signs shall bear the following legend:

DANGER
ACRYLONITRILE (AN)
CANCER HAZARD
AUTHORIZED PERSONNEL ONLY
RESPIRATORS REQUIRED

(ii) The employer shall assure that signs required by this subsection are illuminated and cleaned as necessary so that the legend is readily visible.

(c) Labels. (i) The employer shall assure that precautionary labels are affixed to all containers of AN, and to containers of PAN and products fabricated from PAN, except for those materials for which objective data is provided as to the conditions specified in subsection (1)(b) of this section. The employer shall assure that the labels remain affixed when the AN or PAN are sold, distributed or otherwise leave the employer's workplace.

(ii) The employer shall assure that the precautionary labels required by this subsection are readily visible and legible. The labels shall bear the following legend:

DANGER
CONTAINS ACRYLONITRILE (AN)
CANCER HAZARD

(17) Recordkeeping.

(a) Objective data for exempted operations. (i) Where the processing, use, and handling of products fabricated from PAN are exempted pursuant to subsection (1)(b) of this section, the employer shall establish and maintain an accurate record of objective data reasonably relied upon in support of the exemption.

(ii) This record shall include the following information:

(A) The relevant condition in subsection (1)(b) upon which exemption is based;

(B) The source of the objective data;

(C) The results of testing and analysis of the material being processed;

(D) A description of the operation exempted; and

(E) Other data relevant to the operations, materials, and processing covered by the exemption.

(iii) The employer shall maintain this record for the duration of the employer's reliance upon such objective data.

(b) Exposure monitoring. (i) The employer shall establish and maintain an accurate record of all monitoring required by subsection (5) of this section.

(ii) This record shall include:

(A) The dates, number, duration, and results of each of the samples taken, including a description of the sampling procedure used to determine representative employee exposure;

(B) A description of the sampling and analytical methods used;

(C) Type of respiratory protective devices worn, if any; and

(D) Name, social security number and job classification of the employee monitored and of all other employees whose exposure the measurement is intended to represent.

(iii) The employer shall maintain this record for at least 40 years or the duration of employment plus 20 years, whichever is longer.

(c) Medical surveillance. (i) The employer shall establish and maintain an accurate record for each employee subject to medical surveillance as required by subsection (14) of this section.

(ii) This record shall include:

(A) A copy of the physicians' written opinions;

(B) Any employee medical complaints related to exposure to AN;

(C) A copy of the information provided to the physician as required by subsection (14)(f) of this section; and

(D) A copy of the employee's work history.

(iii) The employer shall assure that this record be maintained for at least forty years or for the duration of employment plus twenty years, whichever is longer.

(d) Availability. (i) The employer shall assure that all records required to be maintained by this section be made available upon request to the director for examination and copying.

(ii) Records required by subdivisions (a) through (c) of this subsection shall be provided upon request to employees, designated representatives, and the assistant director in accordance with WAC 296-62-05201 through 296-62-05209 and 296-62-05213 through 296-62-05217. Records required by subdivision (a) of this section shall be provided in the same manner as exposure monitoring records.

(iii) The employer shall assure that employee medical records required to be maintained by this section, be made available, upon request, for examination and copying, to the affected employee or former employee, or to a physician designated by the affected employee, former employee, or designated representative.

(e) Transfer of records. (i) Whenever the employer ceases to do business, the successor employer shall receive and retain all records required to be maintained by this section.

(ii) Whenever the employer ceases to do business and there is no successor employer to receive and retain the records for the prescribed period, these records shall be transmitted to the director.

(iii) At the expiration of the retention period for the records required to be maintained pursuant to this section, the employer shall transmit these records to the director.

(iv) The employer shall also comply with any additional requirements involving transfer of records set forth in WAC 296-62-05215.

(18) Observation of monitoring.

(a) Employee observation. The employer shall provide affected employees, or their designated representatives, an opportunity to observe any monitoring of employee exposure to AN conducted pursuant to subsection (5) of this section.

(b) Observation procedures. (i) Whenever observation of the monitoring of employee exposure to AN requires entry into an area where the use of protective clothing or equipment is required, the employer shall provide the observer with personal protective clothing or equipment required to be worn by employees working in the area, assure the use of such clothing and equipment, and require the observer to comply with all other applicable safety and health procedures.

(ii) Without interfering with the monitoring, observers shall be entitled:

(A) To receive an explanation of the measurement procedures;

(B) To observe all steps related to the measurement of airborne concentrations of AN performed at the place of exposure; and

(C) To record the results obtained.

(19) Effective date. This standard will become effective 30 days after it is filed with the code reviser.

*(1) Appendices printed in addition to this section, and information contained therein is not intended, by itself, to create any additional obligations not otherwise imposed or to detract from any existing obligations. Appendices are available from:

The Technical Services Section
Division of Industrial Safety and Health
P.O. Box 207
Olympia, WA 98504 (206) 753-6381

[Statutory Authority: RCW 49.17.040, 49.17.050, and 49.17.240. 81-18-029 (Order 81-21), § 296-62-07341, filed 8/27/81; 81-16-015 (Order 81-20), § 296-62-07341, filed 7/27/81; 80-11-010 (Order 80-14), § 296-62-07341, filed 8/8/80. Statutory Authority: RCW 49-.17.040, 49.17.050, 49.17.240, chapters 42.30, and 43.22 RCW. 78-07-052 (Order 78-10), § 296-62-07341, filed 6/28/78.]

WAC 296-62-07345 1,2-Dibromo-3-chloropropane. (1) Scope and application. This section applies to all occupational exposures to 1,2-dibromo-3-chloropropane (DBCP), Chemical Abstracts Service Registry Number 96-12-8, except that this section does not apply to exposure to DBCP which results solely from the application and use of DBCP as a pesticide.

(2) Definitions applicable to this section:

(a) "Authorized person" - any person specifically authorized by the employer and whose duties require the person to be present in areas where DBCP is present; and any person entering this area as a designated representative of employees exercising an opportunity to observe employee exposure monitoring.

(b) "DBCP" - 1,2-dibromo-3-chloropropane.

(c) "Director" - the director of labor and industries, or his authorized representative.

(3) Permissible exposure limits.

(a) Inhalation. (i) Time-weighted average limit (TWA). The employer shall assure that no employee is exposed to an airborne concentration in excess of 1 part DBCP per billion part of air (ppb) as an eight-hour time-weighted average.

(ii) Ceiling limit. The employer shall assure that no employee is exposed to an airborne concentration in excess of 50 parts DBCP per billion parts of air (ppb) as averaged over any 15 minutes during the working day.

(b) Dermal and eye exposure. The employer shall assure that no employee is exposed to eye or skin contact with DBCP.

(4) Notification of use. Within ten days of the effective date of this section or within ten days following the introduction of DBCP into the workplace, every employer who has a workplace where DBCP is present shall report the following information to the director for each such workplace:

(a) The address and location of each workplace in which DBCP is present;

(b) A brief description of each process or operation which may result in employee exposure to DBCP;

(c) The number of employees engaged in each process or operation who may be exposed to DBCP and an estimate of the frequency and degree of exposure that occurs;

(d) A brief description of the employer's safety and health program as it relates to limitation of employee exposure to DBCP.

(5) Exposure monitoring.

(a) General. Determinations of airborne exposure levels shall be made from air samples that are representative of each employee's exposure to DBCP over an eight-hour period. (For the purposes of this section, employee exposure is that exposure which would occur if the employee were not using a respirator.)

(b) Initial. Each employer who has a place of employment in which DBCP is present shall monitor, within thirty days of the effective date of this section, each workplace and work operation to accurately determine the airborne concentrations of DBCP to which employees may be exposed.

(c) Frequency. (i) If the monitoring required by this section reveals employee exposures to be below the permissible exposure limits, the employer shall repeat these determinations at least quarterly.

(ii) If the monitoring required by this section reveals employee exposure to be in excess of the permissible exposure limits, the employer shall repeat these determinations for each such employee at least monthly. The employer shall continue these monthly determinations until at least two consecutive measurements, taken at least seven days apart, are below the permissible exposure limit, thereafter the employer shall monitor at least quarterly.

(d) Additional. Whenever there has been a production process, control or personnel change which may result in any new or additional exposure to DBCP, or whenever the employer has any other reason to suspect a change which may result in new or additional exposure to DBCP, additional monitoring which complies with subsection (5) shall be conducted.

(e) Employee notification. (i) Within five working days after the receipt of monitoring results, the employer shall notify each employee in writing of results which represent the employee's exposure.

(ii) Whenever the results indicate that employee exposure exceeds the permissible exposure limit, the employer shall include in the written notice a statement that the permissible exposure limit was exceeded and a description of the corrective action being taken to reduce exposure to or below the permissible exposure limits.

(f) Accuracy of measurement. The method of measurement shall be accurate, to a confidence level of 95 percent, to within plus or minus 25 percent for concentrations of DBCP at or above the permissible exposure limits.

(6) Methods of compliance. The employer shall control employee exposures to airborne concentrations of

DBCP to within the permissible exposure limit, and shall protect against employee exposure to eye or skin contact with DBCP by engineering controls, work practices and personal protective equipment.

(a) Engineering controls. The employer shall develop and implement, as soon as possible, feasible engineering controls to reduce the airborne concentrations of DBCP to within the permissible exposure limits.

(b) Work practices. The employer shall examine each work area in which DBCP is present and shall institute, as soon as possible, work practices to reduce employee exposure to DBCP. The work practices shall be described in writing and shall include, among other things, the following mandatory work practices:

(i) Limiting access to work areas where DBCP is present to authorized personnel only;

(ii) Prohibiting smoking and the consumption of food and beverages in work areas where DBCP is present; and

(iii) Establishing good maintenance and housekeeping practices including the prompt cleanup of spills, repair of leaks, and the practices required in subsection (9) of this section.

(c) Respiratory protection. Where engineering and work practice controls are not sufficient to reduce employee exposures to airborne concentrations of DBCP to within the permissible exposure limits, the employer shall provide at no cost to the employee, and assure that employees wear respirators in accordance with subsection (7) of this section.

(d) Engineering and work practice control plan. (i) Within ninety days of the effective date of this section, the employer shall develop a written plan describing proposed means to reduce employee exposures to DBCP to the lowest feasible level solely by means of engineering and work practice controls.

(ii) Written plans required under subsection (6)(d) shall be submitted upon request to the director, and shall be available at the worksite for examination and copying by the director, and any affected employee or designated representative of employees.

(7) Respirators.

(a) Required use. The employer shall assure that respirators are used where required under this section to reduce employee exposure to within the permissible exposure limits, and in emergencies.

(b) Respirator selection. (i) Where respirators are used to reduce employee exposures to within the permissible exposure limit and in emergencies, the employer shall select and provide, at no cost to the employee, the appropriate respirator from Table I and shall assure that the employee wears the respirator provided.

(ii) The employer shall select respirators from among those approved by the National Institute for Occupational Safety and Health (NIOSH) under the provisions of WAC 296-62-071.

TABLE I

RESPIRATORY PROTECTION FOR DBCP

Concentration not greater than:	RESPIRATORY PROTECTION
100 ppb:	Any chemical cartridge respirator with pesticide cartridge(s). Any supplied-air respirator. Any self-contained cartridge breathing apparatus.
500 ppb:	A chemical cartridge respirator with full facepiece and pesticide cartridge(s). A gas mask with full facepiece and pesticide canister. Any supplied-air respirator with full facepiece, helmet or hood. Any self-contained breathing apparatus with full facepiece.
5,000 ppb:	A Type C supplied-air respirator operated in pressure-demand or other positive pressure or continuous flow mode.
20,000 ppb:	A Type C supplied-air respirator with full facepiece operated in pressure-demand or other positive pressure mode, or with full facepiece, hood or helmet operated in continuous flow mode.
Greater than 20,000 ppb or entry and escape from unknown concentrations:	A combination respirator which includes a Type C supplied-air respirator with full facepiece operated in pressure-demand or other positive pressure or continuous flow mode and an auxiliary self-contained breathing apparatus operated in pressure-demand or positive pressure mode. A self-contained breathing apparatus with full facepiece operated in pressure-demand or other positive pressure mode.
Firefighting:	A self-contained breathing apparatus with full facepiece operated in pressure-demand or other positive pressure mode.

(c) Respirator program. (i) The employer shall institute a respiratory protection program in accordance with WAC 296-62-071.

(ii) Where air-purifying respirators (chemical cartridge or gas mask) are used, the air-purifying canister or cartridge(s) shall be replaced prior to the expiration of their service life or the beginning of each shift, whichever occurs first.

(iii) Employees who wear respirators shall be allowed to wash their face and respirator facepiece to prevent potential skin irritation associated with respirator use.

(8) Protective clothing and equipment.

(a) Provision and use. Where eye or skin contact with liquid or solid DBCP may occur, employers shall provide at no cost to the employee, and assure that employees wear impermeable protective clothing and equipment in accordance with WAC 296-24-07501 and 296-24-07801 to protect the area of the body which may come in contact with DBCP.

(b) Cleaning and replacement. (i) The employer shall clean, launder, maintain, or replace protective clothing and equipment required by this subsection to maintain their effectiveness. In addition, the employer shall provide clean protective clothing and equipment at least daily to each affected employee.

(ii) The employer shall assure that the employee removes all protective clothing and equipment at the completion of a workshift.

(iii) The employer shall assure that DBCP-contaminated protective work clothing and equipment is placed and stored in closed containers which prevent dispersion of DBCP outside the container.

(iv) The employer shall inform any person who launders or cleans DBCP-contaminated protective clothing or equipment of the potentially harmful effects of exposure to DBCP.

(v) The employer shall assure that the containers of contaminated protective clothing and equipment which are to be removed from the workplace for any reason are labeled in accordance with subsection (13)(c) of this section.

(vi) The employer shall prohibit the removal of DBCP from protective clothing and equipment by blowing or shaking.

(9) Housekeeping.

(a) Surfaces. (i) All surfaces shall be maintained free of accumulations of DBCP.

(ii) Dry sweeping and the use of air for the cleaning of floors and other surfaces where DBCP dust or liquids are found is prohibited.

(iii) Where vacuuming methods are selected, either portable units or a permanent system may be used.

(A) If a portable unit is selected, the exhaust shall be attached to the general workplace exhaust ventilation system or collected within the vacuum unit, equipped with high efficiency filters or other appropriate means of contaminant removal, so that DBCP is not reintroduced into the workplace air; and

(B) Portable vacuum units used to collect DBCP may not be used for other cleaning purposes and shall be labeled as prescribed by subsection (13)(c) of this section.

(iv) Cleaning of floors and other contaminated surfaces may not be performed by washing down with a hose, unless a fine spray has first been laid down.

(b) Liquids. Where DBCP is present in a liquid form, or as a resultant vapor, all containers or vessels containing DBCP shall be enclosed to the maximum extent feasible and tightly covered when not in use.

(c) Waste disposal. DBCP waste, scrap, debris, bags, containers or equipment, shall be disposed in sealed bags or other closed containers which prevent dispersion of DBCP outside the container.

(10) Hygiene facilities and practices. Hygiene facilities shall be provided and practices implemented in accordance with the requirements of WAC 296-24-12009.

(11) Medical surveillance.

(a) General. The employer shall institute a program of medical surveillance for each employee who is or will be exposed, without regard to the use of respirators, to DBCP. The employer shall provide each such employee with an opportunity for medical examinations and tests in accordance with this subsection. All medical examinations and procedures shall be performed by or under the supervision of a licensed physician, and shall be provided without cost to the employee.

(b) Frequency and content. Within 30 days of the effective date of this section or time of initial assignment, and whenever exposure to DBCP, the employer shall provide a medical examination including at least the following:

(i) A complete medical and occupational history with emphasis on reproductive history.

(ii) A complete physical examination with emphasis on the genito-urinary tract, testicle size, and body habitus including the following tests:

(A) Sperm count;

(B) Complete urinalysis (U/A);

(C) Complete blood count; and

(D) Thyroid profile.

(iii) A serum specimen shall be obtained and the following determinations made:

(A) Serum multiphasic analysis (SMA 12);

(B) Serum testosterone;

(C) Serum follicle stimulating hormone (FSH);

(D) Serum luteinizing hormone (LH).

(c) Information provided to the physician. The employer shall provide the following information to the examining physician:

(i) A copy of this standard and its appendices;

(ii) A description of the affected employee's duties as they relate to the employee's exposure;

(iii) The level of DBCP to which the employee is exposed; and

(iv) A description of any personal protective equipment used or to be used.

(d) Physician's written opinion. (i) The employer shall obtain a written opinion from the examining physician which shall include:

(A) The results of the medical tests performed;

(B) The physician's opinion as to whether the employee has any detected medical condition which would place the employee at an increased risk of material impairment of health from exposure to DBCP;

(C) Any recommended limitations upon the employee's exposure to DBCP or upon the use of protective clothing and equipment such as respirators; and

(D) A statement that the employee was informed by the physician of the results of the medical examination,

and any medical conditions which require further examination or treatment.

(ii) The employer shall instruct the physician not to reveal in the written opinion specific findings or diagnoses unrelated to occupational exposure to DBCP.

(iii) The employer shall provide a copy of the written opinion to the affected employee.

(12) Employee information and training.

(a) Training program. (i) Within thirty days of the effective date of this standard, the employer shall institute a training program for all employees who may be exposed to DBCP and shall assure their participation in such training program.

(ii) The employer shall assure that each employee is informed of the following:

(A) The information contained in Appendices A, B and C*(1);

(B) The quantity, location, manner of use, release or storage of DBCP and the specific nature of operations which could result in exposure to DBCP as well as any necessary protective steps;

(C) The purpose, proper use, and limitations of respirators;

(D) The purpose and description of the medical surveillance program required by subsection (11) of this section; and

(E) A review of this standard.

(b) Access to training materials. (i) The employer shall make a copy of this standard and its appendices readily available to all affected employees.

(ii) The employer shall provide, upon request, all materials relating to the employee information and training program to the director.

(13) Signs and labels.

(a) General. (i) The employer may use labels or signs required by other statutes, regulations, or ordinances in addition to or in combination with, signs and labels required by this subsection.

(ii) The employer shall assure that no statement appears on or near any sign or label required by this subsection which contradicts or detracts from the required sign or label.

(b) Signs. (i) The employer shall post signs to clearly indicate all work areas where DBCP may be present. These signs shall bear the legend:

DANGER

1,2–Dibromo–3–chloropropane

(Insert appropriate trade or common names)

CANCER HAZARD

AUTHORIZED PERSONNEL ONLY

(ii) Where airborne concentrations of DBCP exceed the permissible exposure limits, the signs shall bear the additional legend:

RESPIRATOR REQUIRED

(c) Labels. (i) The employer shall assure that precautionary labels are affixed to all containers of DBCP and of products containing DBCP, and that the labels remain affixed when the DBCP or products containing DBCP are sold, distributed, or otherwise leave the employer's workplace. Where DBCP or products containing DBCP are sold, distributed or otherwise leave the employer's workplace bearing appropriate labels required by EPA under the regulations in 40 CFR Part 162, the labels required by this subsection need not be affixed.

(ii) The employer shall assure that the precautionary labels required by this subsection are readily visible and legible. The labels shall bear the following legend:

DANGER

1,2–Dibromo–3–chloropropane

CANCER HAZARD

(14) Recordkeeping.

(a) Exposure monitoring. (i) The employer shall establish and maintain an accurate record of all monitoring required by subsection (5) of this section.

(ii) This record shall include:

(A) The dates, number, duration and results of each of the samples taken, including a description of the sampling procedure used to determine representative employee exposure;

(B) A description of the sampling and analytical methods used;

(C) Type of respiratory worn, if any; and

(D) Name, social security number, and job classification of the employee monitored and of all other employees whose exposure the measurement is intended to represent.

(iii) The employer shall maintain this record for the effective period of this standard.

(b) Medical surveillance. (i) The employer shall establish and maintain an accurate record for each employee subject to medical surveillance required by subsection (11) of this section.

(ii) This record shall include:

(A) A copy of the physician's written opinion.

(B) Any employee medical complaints related to exposure to DBCP;

(C) A copy of the information provided the physician as required by subsection (11)(c) of this section; and

(D) A copy of the employee's work history.

(iii) The employer shall assure that this record be maintained for the effective period of this standard.

(c) Availability. (i) The employer shall assure that all records required to be maintained by this section be made available upon request to the director for examination and copying.

(ii) Employee exposure monitoring records and employee medical records required by this subsection shall be provided upon request to employees' designated representatives and the assistant director in accordance with WAC 296–62–05201 through 296–62–05209; and 296–62–05213 through 296–62–05217.

(d) Transfer of records. (i) If the employer ceases to do business, the successor employer shall receive and retain all records required to be maintained by this section for the prescribed period.

(ii) If the employer ceases to do business and there is no successor employer to receive and retain the records for the prescribed period, the employer shall transmit these records by mail to the director.

(iii) At the expiration of the retention period for the records required to be maintained under this section, the employer shall transmit these records by mail to the director.

(iv) The employer shall also comply with any additional requirements involving transfer of records set forth in WAC 296-62-05215.

(15) Observation of monitoring.

(a) Employee observation. The employer shall provide affected employees, or their designated representatives, an opportunity to observe any monitoring of employee exposure to DBCP conducted under subsection (5) of this section.

(b) Observation procedures. (i) Whenever observation of the measuring or monitoring of employee exposure to DBCP requires entry into an area where the use of protective clothing or equipment is required, the employer shall provide the observer with personal protective clothing or equipment required to be worn by employees working in the area, assure the use of such clothing and equipment, and require the observer to comply with all other applicable safety and health procedures.

(ii) Without interfering with the monitoring or measurement, observers shall be entitled to:

(A) Receive an explanation of the measurement procedures;

(B) Observe all steps related to the measurement of airborne concentrations of DBCP performed at the place of exposure; and

(C) Record the results obtained.

(16) Effective date. This standard will become effective 30 days after it is filed with the code reviser.

*(1) Appendices printed in addition to this section, and information contained therein is not intended, by itself, to create any additional obligations not otherwise imposed or to detract from any existing obligations. Appendices are available from:

The Technical Services Section
Division of Industrial Safety and Health
P.O. Box 207
Olympia, WA 98504 (206) 753-6381

[Statutory Authority: RCW 49.17.040, 49.17.050, and 49.17.240. 81-18-029 (Order 81-21), § 296-62-07345, filed 8/27/81; 81-16-015 (Order 81-20), § 296-62-07345, filed 7/27/81; 80-11-010 (Order 80-14), § 296-62-07345, filed 8/8/80. Statutory Authority: RCW 49-.17.040, 49.17.050, and 49.17.240, chapters 42.30, and 43.22 RCW. 78-07-052 (Order 78-10), § 296-62-07345, filed 6/28/78.]

WAC 296-62-07347 Inorganic arsenic. (1) Scope and application. This section applies to all occupational exposures to inorganic arsenic except that this section does not apply to employee exposures in agriculture or resulting from pesticide application, the treatment of wood with preservatives or the utilization of arsenically preserved wood.

(2) Definitions.

(a) "Action level" – a concentration of inorganic arsenic of 5 micrograms per cubic meter of air (5 $\mu g/m^3$) averaged over any eight-hour period.

(b) "Authorized person" – any person specifically authorized by the employer whose duties require the person to enter a regulated area, or any person entering such an area as a designated representative of employees for the purpose of exercising the right to observe monitoring and measuring procedures under subsection (5) of this section.

(c) "Director" – the director of the department of labor and industries, or his designated representative.

(d) "Inorganic arsenic" – copper aceto-arsenite and all inorganic compounds containing arsenic except arsine, measured as arsenic (As).

(3) Permissible exposure limit. The employer shall assure that no employee is exposed to inorganic arsenic at concentrations greater than 10 micrograms per cubic meter of air (10 $\mu g/m^3$), averaged over any eight-hour period.

(4) Notification of use.

(a) By October 1, 1978, or within sixty days after the introduction of inorganic arsenic into the workplace, every employer who is required to establish a regulated area in his workplaces shall report in writing to the department of labor and industries for each such workplace:

(i) The address of each such workplace;

(ii) The approximate number of employees who will be working in regulated areas; and

(iii) A brief summary of the operations creating the exposure and the actions which the employer intends to take to reduce exposures.

(b) Whenever there has been a significant change in the information required by subsection (4)(a) of this section, the employer shall report the changes in writing within sixty days to the department of labor and industries.

(5) Exposure monitoring.

(a) General. (i) Determinations of airborne exposure levels shall be made from air samples that are representative of each employee's exposure to inorganic arsenic over an eight-hour period.

(ii) For the purposes of this section, employee exposure is that exposure which would occur if the employee were not using a respirator.

(iii) The employer shall collect full shift (for at least seven continuous hours) personal samples including at least one sample for each shift for each job classification in each work area.

(b) Initial monitoring. Each employer who has a workplace or work operation covered by this standard shall monitor each such workplace and work operation to accurately determine the airborne concentration of inorganic arsenic to which employees may be exposed.

(c) Frequency. (i) If the initial monitoring reveals employee exposure to be below the action level the measurements need not be repeated except as otherwise provided in subsection (5)(d) of this section.

(ii) If the initial monitoring, required by this section, or subsequent monitoring reveals employee exposure to

be above the permissible exposure limit, the employer shall repeat monitoring at least quarterly.

(iii) If the initial monitoring, required by this section, or subsequent monitoring reveals employee exposure to be above the action level and below the permissible exposure limit the employee shall repeat monitoring at least every six months.

(iv) The employer shall continue monitoring at the required frequency until at least two consecutive measurements, taken at least seven days apart, are below the action level at which time the employer may discontinue monitoring for that employee until such time as any of the events in subsection (5)(d) of this section occur.

(d) Additional monitoring. Whenever there has been a production, process, control or personal change which may result in new or additional exposure to inorganic arsenic, or whenever the employer has any other reason to suspect a change which may result in new or additional exposures to inorganic arsenic, additional monitoring which complies with subsection (5) of this section shall be conducted.

(e) Employee notification. (i) Within five working days after the receipt of monitoring results, the employer shall notify each employee in writing of the results which represent that employee's exposures.

(ii) Whenever the results indicate that the representative employee exposure exceeds the permissible exposure limit, the employer shall include in the written notice a statement that the permissible exposure limit was exceeded and a description of the corrective action taken to reduce exposure to or below the permissible exposure limit.

(f) Accuracy of measurement. (i) The employer shall use a method of monitoring and measurement which has an accuracy (with a confidence level of 95 percent) of not less than plus or minus 25 percent for concentrations of inorganic arsenic greater than or equal to 10 $\mu g/m^3$.

(ii) The employer shall use a method of monitoring and measurement which has an accuracy (with confidence level of 95 percent) of not less than plus or minus 35 percent for concentrations of inorganic arsenic greater than 5 $\mu g/m^3$ but less than 10 $\mu g/m^3$.

(6) Regulated area.

(a) Establishment. The employer shall establish regulated areas where worker exposures to inorganic arsenic, without regard to the use of respirators, are in excess of the permissible limit.

(b) Demarcation. Regulated areas shall be demarcated and segregated from the rest of the workplace in any manner that minimizes the number of persons who will be exposed to inorganic arsenic.

(c) Access. Access to regulated areas shall be limited to authorized persons or to persons otherwise authorized by the Act or regulations issued pursuant thereto to enter such areas.

(d) Provision of respirators. All persons entering a regulated area shall be supplied with a respirator, selected in accordance with subsection (8)(b) of this section.

(e) Prohibited activities. The employer shall assure that in regulated areas, food or beverages are not consumed, smoking products, chewing tobacco and gum are not used and cosmetics are not applied, except that these activities may be conducted in the lunchrooms, change rooms and showers required under subsection (12) of this section. Drinking water may be consumed in the regulated area.

(7) Methods of compliance.

(a) Controls. (i) The employer shall institute at the earliest possible time but not later than December 31, 1979, engineering and work practice controls to reduce exposures to or below the permissible exposure limit, except to the extent that the employer can establish that such controls are not feasible.

(ii) Where engineering and work practice controls are not sufficient to reduce exposures to or below the permissible exposure limit, they shall nonetheless be used to reduce exposures to the lowest levels achievable by these controls and shall be supplemented by the use of respirators in accordance with subsection (8) of this section and other necessary personal protective equipment. Employee rotation is not required as a control strategy before respiratory protection is instituted.

(b) Compliance program. (i) The employer shall establish and implement a written program to reduce exposures to or below the permissible exposure limit by means of engineering and work practice controls.

(ii) Written plans for these compliance programs shall include at least the following:

(A) A description of each operation in which inorganic arsenic is emitted; e.g., machinery used, material processed, controls in place, crew size, operating procedures and maintenance practices;

(B) Engineering plans and studies used to determine methods selected for controlling exposure to inorganic arsenic;

(C) A report of the technology considered in meeting the permissible exposure limit;

(D) Monitoring data;

(E) A detailed schedule for implementation of the engineering controls and work practices that cannot be implemented immediately and for the adaption and implementation of any additional engineering and work practices necessary to meet the permissible exposure limit;

(F) Whenever the employer will not achieve the permissible exposure limit with engineering controls and work practices by December 31, 1979, the employer shall include in the compliance plan an analysis of the effectiveness of the various controls, shall install engineering controls and institute work practices on the quickest schedule feasible, and shall include in the compliance plan and implement a program to minimize the discomfort and maximize the effectiveness of respirator use; and

(G) Other relevant information.

(iii) Written plans for such a program shall be submitted upon request to the director, and shall be available at the worksite for examination and copying by the

director, any affected employee or authorized employee representatives.

(iv) The plans required by this subsection shall be revised and updated at least every six months to reflect the current status of the program.

(8) Respiratory protection.

(a) General. The employer shall assure that respirators are used where required under this section to reduce employee exposures to below the permissible exposure limit and in emergencies. Respirators shall be used in the following circumstances:

(i) During the time period necessary to install or implement feasible engineering or work practice controls;

(ii) In work operations such as maintenance and repair activities in which the employer establishes that engineering and work practice controls are not feasible;

(iii) In work situations in which engineering controls and supplemental work practice controls are not yet sufficient to reduce exposures to or below the permissible exposure limit; or

(iv) In emergencies.

(b) Respirator selection. (i) Where respirators are required under this section the employer shall select, provide at no cost to the employee and assure the use of the appropriate respirator or combination of respirators from Table I for inorganic arsenic compounds without significant vapor pressure, or Table II for inorganic arsenic compounds which have significant vapor pressure.

(ii) Where employee exposures exceed the permissible exposure limit for inorganic arsenic and also exceed the relevant limit for particular gasses such as sulfur dioxide, any air purifying respirator supplied to the employee as permitted by this standard must have a combination high efficiency filter with an appropriate gas sorbent. (See footnote in Table I)

TABLE I

RESPIRATORY PROTECTION FOR INORGANIC ARSENIC PARTICULATE EXCEPT FOR THOSE WITH SIGNIFICANT VAPOR PRESSURE

Concentration of Inorganic Arsenic (as As) or Condition of Use.	Required Respirator
(i) Unknown or greater or lesser than 20,000 $\mu g/m^3$ (20 mg/m^3) or firefighting.	(A) Any full facepiece self–contained breathing apparatus operated in positive pressure mode.
(ii) Not greater than 20,000 $\mu g/m^3$ (20 mg/m^3)	(A) Supplied air respirator with full facepiece, hood, or helmet or suit and operated in positive pressure mode.
(iii) Not greater than 10,000 $\mu g/m^3$ (10 mg/m^3)	(A) Powered air–purifying respirators in all inlet face coverings with high–efficiency filters. [1] (B) Half–mask supplied air respirators operated in positive pressure mode.
(iv) Not greater than 500 $\mu g/m^3$	(A) Full facepiece air–purifying respirator equipped with high–efficiency filter.[1] (B) Any full facepiece supplied air respirator. (C) Any full facepiece self–contained breathing apparatus.
(v) Not greater than 100 $\mu g/m^3$	(A) Half–mask air–purifying respirator equipped with high–efficiency filter. [1] (B) Any half–mask supplied air respirator.

[1]High–efficiency filter–99.97 pct efficiency against 0.3 micrometer monodisperse diethyl–hexyl phthalate (DOP) particles.

TABLE II

RESPIRATORY PROTECTION FOR INORGANIC ARSENICALS (SUCH AS ARSENIC TRICHLORIDE[2] AND ARSENIC PHOSPHIDE) WITH SIGNIFICANT VAPOR PRESSURE

Concentration of Inorganic Arsenic (as As) or Condition of Use	Required Respirator
(i) Unknown or greater or lesser than 20,000 $\mu g/m^3$(20 mg/m^3) or firefighting.	(A) Any full facepiece contained breathing apparatus operated in positive pressure mode.
(ii) Not greater than 20,000 $\mu g/m^3$(20 mg/m^3)	(A) Supplied air respirator with full facepiece hood, or helmet or suit and operated in positive pressure mode.
(iii) Not greater than 10,000 $\mu g/m^3$(10 mg/m^3)	(A) Half–mask[2] supplied air respirator operated in positive pressure mode.
(iv) Not greater than 500 $\mu g/m^3$	(A) Front or back mounted gas mask equipped with high–efficiency filter[1] and acid gas canister. (B) Any full facepiece supplied air respirator. (C) Any full facepiece self–contained breathing apparatus.
(v) Not greater than 100 $\mu g/m^3$	(A) Half–mask [2] air–purifying respirator equipped with high–efficiency filter [1] and acid gas cartridge. (B) Any half–mask supplied air respirator.

[1]High efficiency filter–99.97 pct efficiency against 0.3 micrometer monodisperse diethyl–hexyl phthalate (DOP) particles.

[2]Half–mask respirators shall not be used for protection against arsenic trichloride, as it is rapidly absorbed through the skin.

(iii) The employer shall select respirators from among those approved for protection against dust, fume, and mist by the National Institute for Occupational Safety and Health (NIOSH) under the provisions of 30 CFR Part 11.

(c) Respirator usage. (i) The employer shall assure that the respirator issued to the employee exhibits minimum facepiece leakage and that the respirator is fitted properly.

(ii) The employer shall perform qualitative fit tests at the time of initial fitting and at least semi-annually thereafter for each employee wearing respirators, where quantitative fit tests are not required.

(iii) Employers with more than twenty employees wearing respirators shall perform a quantitative face fit test at the time of initial fitting and at least semi-annually thereafter for each employee wearing negative pressure respirators. The test shall be used to select facepieces that provide the required protection as prescribed in Table I or II.

(iv) If an employee has demonstrated difficulty in breathing during the fitting test or during use, he or she shall be examined by a physician trained in pulmonary medicine to determine whether the employee can wear a respirator while performing the required duty.

(d) Respirator program. (i) The employer shall institute a respiratory protection program in accordance with WAC 296-62-071.

(ii) The employer shall permit each employee who uses a filter respirator to change the filter elements whenever an increase in breathing resistance is detected and shall maintain an adequate supply of filter elements for this purpose.

(iii) Employees who wear respirators shall be permitted to leave work areas to wash their face and respirator facepiece to prevent skin irritation associated with respirator use.

(e) Commencement of respirator use. (i) The employer's obligation to provide respirators commences on August 1, 1978, for employees exposed over 500 $\mu g/m^3$ of inorganic arsenic, as soon as possible but not later than October 1, 1978, for employees exposed to over 50 $\mu g/m^3$ of inorganic arsenic, and as soon as possible but not later than December 1, 1978, for employees exposed between 10 and 50 $\mu g/m^3$ of inorganic arsenic.

(ii) Employees with exposures below 50 $\mu g/m^3$ of inorganic arsenic may choose not to wear respirators until December 31, 1979.

(iii) After December 1, 1978, any employee required to wear air purifying respirators may choose, and if so chosen the employer must provide, if it will give proper protection, a powered air purifying respirator and in addition if necessary a combination dust and acid gas respirator for times where exposures to gases are over the relevant exposure limits.

(9) Reserved.

(10) Protective work clothing and equipment.

(a) Provision and use. Where the possibility of skin or eye irritation from inorganic arsenic exists, and for all workers working in regulated areas, the employer shall provide at no cost to the employee and assure that employees use appropriate and clean protective work clothing and equipment such as, but not limited to:

(i) Coveralls or similar full-body work clothing;

(ii) Gloves, and shoes or coverlets;

(iii) Face shields or vented goggles when necessary to prevent eye irritation, which comply with the requirements of WAC 296-24-07801(1) - (6).

(iv) Impervious clothing for employees subject to exposure to arsenic trichloride.

(b) Cleaning and replacement. (i) The employer shall provide the protective clothing required in subsection (10)(a) of this section in a freshly laundered and dry condition at least weekly, and daily if the employee works in areas where exposures are over 100 $\mu g/m^3$ of inorganic arsenic or in areas where more frequent washing is needed to prevent skin irritation.

(ii) The employer shall clean, launder, or dispose of protective clothing required by subsection (10)(a) of this section.

(iii) The employer shall repair or replace the protective clothing and equipment as needed to maintain their effectiveness.

(iv) The employer shall assure that all protective clothing is removed at the completion of a work shift only in change rooms prescribed in subsection (13)(a) of this section.

(v) The employer shall assure that contaminated protective clothing which is to be cleaned, laundered, or disposed of, is placed in a closed container in the change-room which prevents dispersion of inorganic arsenic outside the container.

(vi) The employer shall inform in writing any person who cleans or launders clothing required by this section, of the potentially harmful affects including the carcinogenic effects of exposure to inorganic arsenic.

(vii) The employer shall assure that the containers of contaminated protective clothing and equipment in the workplace or which are to be removed from the workplace are labeled as follows:

Caution: Clothing contaminated with inorganic arsenic; do not remove dust by blowing or shaking. Dispose of inorganic arsenic contaminated wash water in accordance with applicable local, state, or Federal regulations.

(viii) The employer shall prohibit the removal of inorganic arsenic from protective clothing or equipment by blowing or shaking.

(11) Housekeeping.

(a) Surfaces. All surfaces shall be maintained as free as practicable of accumulations of inorganic arsenic.

(b) Cleaning floors. Floors and other accessible surfaces contaminated with inorganic arsenic may not be cleaned by the use of compressed air, and shoveling and brushing may be used only where vacuuming or other relevant methods have been tried and found not to be effective.

(c) Vacuuming. Where vacuuming methods are selected, the vacuums shall be used and emptied in a manner to minimize the reentry of inorganic arsenic into the workplace.

(d) Housekeeping plan. A written housekeeping and maintenance plan shall be kept which shall list appropriate frequencies for carrying out housekeeping operations, and for cleaning and maintaining dust collection

equipment. The plan shall be available for inspection by the director.

(e) Maintenance of equipment. Periodic cleaning of dust collection and ventilation equipment and checks of their effectiveness shall be carried out to maintain the effectiveness of the system and a notation kept of the last check of effectiveness and cleaning or maintenance.

(12) Reserved.

(13) Hygiene facilities and practices.

(a) Change rooms. The employer shall provide for employees working in regulated areas or subject to the possibility of skin or eye irritation from inorganic arsenic, clean change rooms equipped with storage facilities for street clothes and separate storage facilities for protective clothing and equipment in accordance with WAC 296-24-12011.

(b) Showers. (i) The employer shall assure that employees working in regulated areas or subject to the possibility of skin or eye irritation from inorganic arsenic shower at the end of the work shift.

(ii) The employer shall provide shower facilities in accordance with WAC 296-24-12009(3).

(c) Lunchrooms. (i) The employer shall provide for employees working in regulated areas, lunchroom facilities which have a temperature controlled, positive pressure, filtered air supply, and which are readily accessible to employees working in regulated areas.

(ii) The employer shall assure that employees working in the regulated area or subject to the possibility of skin or eye irritation from exposure to inorganic arsenic wash their hands and face prior to eating.

(d) Lavatories. The employer shall provide lavatory facilities which comply with WAC 296-24-12009(1) and (2).

(e) Vacuuming clothes. The employer shall provide facilities for employees working in areas where exposure, without regard to the use of respirators, exceeds 100 $\mu g/m^3$ to vacuum their protective clothing and clean or change shoes worn in such areas before entering change rooms, lunchrooms or shower rooms required by subsection (10) of this section and shall assure that such employees use such facilities.

(f) Avoidance of skin irritation. The employer shall assure that no employee is exposed to skin or eye contact with arsenic trichloride, or to skin or eye contact with liquid or particulate inorganic arsenic which is likely to cause skin or eye irritation.

(14) Medical surveillance.

(a) General. (i) Employees covered. The employer shall institute a medical surveillance program for the following employees:

(A) All employees who are or will be exposed above the action level, without regard to the use of respirators, at least thirty days per year; and

(B) All employees who have been exposed above the action level, without regard to respirator use, for thirty days or more per year for a total of ten years or more of combined employment with the employer or predecessor employers prior to or after the effective date of this standard. The determination of exposures prior to the effective date of this standard shall be based upon prior exposure records, comparison with the first measurements taken after the effective date of this standard, or comparison with records of exposures in areas with similar processes, extent of engineering controls utilized and materials used by that employer.

(ii) Examination by physician. The employer shall assure that all medical examinations and procedures are performed by or under the supervision of a licensed physician, and shall be provided without cost to the employee, without loss of pay and at a reasonable time and place.

(b) Initial examinations. By December 1, 1978, for employees initially covered by the medical provisions of this section, or thereafter at the time of initial assignment to an area where the employee is likely to be exposed over the action level at least thirty days per year, the employer shall provide each affected employee an opportunity for a medical examination, including at least the following elements:

(i) A work history and a medical history which shall include a smoking history and the presence and degree of respiratory symptoms such as breathlessness, cough, sputum production and wheezing.

(ii) A medical examination which shall include at least the following:

(A) A 14" by 17" posterior-anterior chest x-ray and International Labor Office UICC/Cincinnati (ILO U/C) rating;

(B) A nasal and skin examination;

(C) A sputum cytology examination; and

(D) Other examinations which the physician believes appropriate because of the employees exposure to inorganic arsenic or because of required respirator use.

(c) Periodic examinations. (i) The employer shall provide the examinations specified in subsections (14)(b)(i) and (14)(b)(ii)(A), (B) and (D) of this section at least annually for covered employees who are under forty-five years of age with fewer than ten years of exposure over the action level without regard to respirator use.

(ii) The employer shall provide the examinations specified in subsections (14)(b)(i) and (ii) of this section at least semi-annually for other covered employees.

(iii) Whenever a covered employee has not taken the examinations specified in subsection (14)(b)(i) and (ii) of this section within six months preceding the termination of employment, the employer shall provide such examinations to the employee upon termination of employment.

(d) Additional examinations. If the employee for any reason develops signs or symptoms commonly associated with exposure to inorganic arsenic the employer shall provide an appropriate examination and emergency medical treatment.

(e) Information provided to the physician. The employer shall provide the following information to the examining physician:

(i) A copy of this standard and its appendices;

(ii) A description of the affected employee's duties as they relate to the employee's exposure;

(iii) The employee's representative exposure level or anticipated exposure level;

(iv) A description of any personal protective equipment used or to be used; and

(v) Information from previous medical examinations of the affected employee which is not readily available to the examining physician.

(f) Physician's written opinion. (i) The employer shall obtain a written opinion from the examining physician which shall include:

(A) The results of the medical examination and tests performed;

(B) The physician's opinion as to whether the employee has any detected medical conditions which would place the employee at increased risk of material impairment of the employee's health from exposure to inorganic arsenic;

(C) Any recommended limitations upon the employee's exposure to inorganic arsenic or upon the use of protective clothing or equipment such as respirators; and

(D) A statement that the employee has been informed by the physician of the results of the medical examination and any medical conditions which require further explanation or treatment.

(ii) The employer shall instruct the physician not to reveal in the written opinion specific findings or diagnoses unrelated to occupational exposure.

(iii) The employer shall provide a copy of the written opinion to the affected employee.

(15) Employee information and training.

(a) Training program. (i) The employer shall institute a training program for all employees who are subject to exposure to inorganic arsenic above the action level without regard to respirator use, or for whom there is the possibility of skin or eye irritation from inorganic arsenic. The employer shall assure that those employees participate in the training program.

(ii) The training program shall be provided by October 1, 1978 for employees covered by this provision, at the time of initial assignment for those subsequently covered by this provision, and shall be repeated at least quarterly for employees who have optional use of respirators and at least annually for other covered employees thereafter, and the employer shall assure that each employee is informed of the following:

(A) The information contained in Appendix A;

(B) The quantity, location, manner of use, storage, sources of exposure, and the specific nature of operations which could result in exposure to inorganic arsenic as well as any necessary protective steps;

(C) The purpose, proper use, and limitation of respirators;

(D) The purpose and a description of medical surveillance program as required by subsection (14) of this section;

(E) The engineering controls and work practices associated with the employee's job assignment; and

(F) A review of this standard.

(b) Access to training materials. (i) The employer shall make readily available to all affected employees a copy of this standard and its appendices.

(ii) The employer shall provide, upon request, all materials relating to the employee information and training program to the director.

(16) Signs and labels.

(a) General. (i) The employer may use labels or signs required by other statutes, regulations, or ordinances in addition to, or in combination with, signs and labels required by this subsection.

(ii) The employer shall assure that no statement appears on or near any sign or label required by this subsection which contradicts or detracts from the meaning of the required sign or label.

(b) Signs. (i) The employer shall post signs demarcating regulated areas bearing the legend:

DANGER

INORGANIC ARSENIC

CANCER HAZARD

AUTHORIZED PERSONNEL ONLY

NO SMOKING OR EATING

RESPIRATOR REQUIRED

(ii) The employer shall assure that signs required by this subsection are illuminated and cleaned as necessary so that the legend is readily visible.

(c) Labels. The employer shall apply precautionary labels to all shipping and storage containers of inorganic arsenic, and to all products containing inorganic arsenic except when the inorganic arsenic in the product is bound in such a manner so as to make unlikely the possibility of airborne exposure to inorganic arsenic. (Possible examples of products not requiring labels are semiconductors, light emitting diodes and glass.) The label shall bear the following legend:

DANGER

CONTAINS INORGANIC ARSENIC

CANCER HAZARD

HARMFUL IF INHALED OR SWALLOWED

USE ONLY WITH ADEQUATE VENTILATION OR RESPIRATORY PROTECTION

(17) Recordkeeping.

(a) Exposure monitoring. (i) The employer shall establish and maintain an accurate record of all monitoring required by subsection (5) of this section.

(ii) This record shall include:

(A) The date(s), number, duration location, and results of each of the samples taken, including a description of the sampling procedure used to determine representative employee exposure where applicable;

(B) A description of the sampling and analytical methods used and evidence of their accuracy;

(C) The type of respiratory protective devices worn, if any;

(D) Name, social security number, and job classification of the employees monitored and of all other employees whose exposure the measurement is intended to represent; and

(E) The environmental variables that could affect the measurement of the employee's exposure.

(iii) The employer shall maintain these monitoring records for at least forty years or for the duration of employment plus twenty years, whichever is longer.

(b) Medical surveillance. (i) The employer shall establish and maintain an accurate record for each employee subject to medical surveillance as required by subsection (14) of this section.

(ii) This record shall include:

(A) The name, social security number, and description of duties of the employee;

(B) A copy of the physician's written opinions;

(C) Results of any exposure monitoring done for that employee and the representative exposure levels supplied to the physician; and

(D) Any employee medical complaints related to exposure to inorganic arsenic.

(iii) The employer shall in addition keep, or assure that the examining physician keeps, the following medical records:

(A) A copy of the medical examination results including medical and work history required under subsection (14) of this section;

(B) A description of the laboratory procedures and a copy of any standards or guidelines used to interpret the test results or references to that information;

(C) The initial x-ray;

(D) The x-rays for the most recent five years;

(E) Any x-rays with a demonstrated abnormality and all subsequent x-rays;

(F) The initial cytologic examination slide and written description;

(G) The cytologic examination slide and written description for the most recent five years; and

(H) Any cytologic examination slides with demonstrated atypia, if such atypia persists for three years, and all subsequent slides and written descriptions.

(iv) The employer shall maintain or assure that the physician maintains those medical records for at least forty years, or for the duration of employment, plus twenty years, whichever is longer.

(c) Availability. (i) The employer shall make available upon request all records required to be maintained by subsection (17) of this section to the director for examination and copying.

(ii) Records required by this subsection shall be provided upon request to employees, designated representatives, and the assistant director in accordance with WAC 296-62-05201 through 296-62-05209 and 296-62-05213 through 296-62-05217.

(iii) The employer shall make available upon request an employee's medical records and exposure records representative of that employee's exposure required to be maintained by subsection (17) of this section to the affected employee or former employee or to a physician designated by the affected employee or former employee.

(d) Transfer of records. (i) Whenever the employer ceases to do business, the successor employer shall receive and retain all records required to be maintained by this section.

(ii) Whenever the employer ceases to do business and there is no successor employer to receive and retain the records required to be maintained by this section for the prescribed period, these records shall be transmitted to the director.

(iii) At the expiration of the retention period for the records required to be maintained by this section, the employer shall notify the director at least three months prior to the disposal of such records and shall transmit those records to the director if he requests them within that period.

(iv) The employer shall also comply with any additional requirements involving transfer of records set forth in WAC 296-62-05215.

(18) Observation of monitoring.

(a) Employee observation. The employer shall provide affected employees or their designated representatives an opportunity to observe any monitoring of employee exposure to inorganic arsenic conducted pursuant to subsection (5) of this section.

(b) Observation procedures. (i) Whenever observation of the monitoring of employee exposure to inorganic arsenic requires entry into an area where the use of respirators, protective clothing, or equipment is required, the employer shall provide the observer with and assure the use of such respirators, clothing, and such equipment, and shall require the observer to comply with all other applicable safety and health procedures.

(ii) Without interfering with the monitoring, observers shall be entitled to;

(A) Receive an explanation of the measurement procedures;

(B) Observe all steps related to the monitoring of inorganic arsenic performed at the place of exposure; and

(C) Record the results obtained or receive copies of the results when returned by the laboratory.

(19) Effective date. This standard shall become effective thirty days after filing with the code reviser.

(20) Appendices. The information contained in the appendices to this section is not intended by itself, to create any additional obligations not otherwise imposed by this standard nor detract from any existing obligation.

(21) Startup dates.

(a) General. The startup dates of requirements of this standard shall be the effective date of this standard unless another startup date is provided for, either in other subsections of this section or in this subsection.

(b) Monitoring. Initial monitoring shall be commenced by August 1, 1978, and shall be completed by September 15, 1978.

(c) Regulated areas. Regulated areas required to be established as a result of initial monitoring shall be set up as soon as possible after the results of that monitoring is known and no later than October 1, 1978.

(d) Compliance program. The written program required by subsection (7)(b) as a result of initial monitoring shall be made available for inspection and copying as soon as possible and no later than December 1, 1978.

(e) Hygiene and lunchroom facilities. Construction plans for change-rooms, showers, lavatories, and lunchroom facilities shall be completed no later than December 1, 1978, and these facilities shall be constructed and in use no later than July 1, 1979. However, if as part of the compliance plan it is predicted by an independent engineering firm that engineering controls and work practices will reduce exposures below the permissible exposure limit by December 31, 1979, for affected employees, then such facilities need not be completed until one year after the engineering controls are completed or December 31, 1980, whichever is earlier, if such controls have not in fact succeeded in reducing exposure to below the permissible exposure limit.

(f) Summary of startup dates set forth elsewhere in this standard.

STARTUP DATES

August 1, 1978 - Respirator use over 500 $\mu g/m^3$.

AS SOON AS POSSIBLE BUT NO LATER THAN

September 15, 1978 - Completion of initial monitoring.

October 1, 1978 - Complete establishment of regulated areas. Respirator use for employees exposed above 50 $\mu g/m^3$. Completion of initial training. Notification of use.

December 1, 1978 - Respirator use over 10 $\mu g/m^3$. Completion of initial medical. Completion of compliance plan. Optional use of powered air-purifying respirators.

July 1, 1979 - Completion of lunch rooms and hygiene facilities.

December 31, 1979 - Completion of engineering controls.

All other requirements of the standard have as their startup date August 1, 1978.

[Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81-18-029 (Order 81-21), § 296-62-07347, filed 8/27/81; 81-16-015 (Order 81-20), § 296-62-07347, filed 7/27/81; 79-08-115 (Order 79-9), § 296-62-07347, filed 7/31/79; 79-02-037 (Order 79-1), § 296-62-07347, filed 1/23/79.]

WAC 296-62-07349 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-62-07501 Airborne contaminants. (1) Permissible exposure limits (PELs) refer to airborne concentrations of substances without regard to the use of respiratory protection and represent conditions under which it is believed that nearly all workers may be repeatedly exposed day after day without adverse effect. Because of wide variation in individual susceptibility, however, a small percentage of workers may experience discomfort from some substances at concentrations at or below the permissible limit, a smaller percentage may be affected more seriously by aggravation of a pre-existing condition or by development of an occupational illness.

(2) Permissible exposure limits refer to time-weighted concentrations for an 8-hour workday within a 40-hour workweek.

The time-weighted average exposure for an 8-hour work shift shall be computed as follows:

$$E = \frac{C_a T_a + C_b T_b + \ldots + C_n T_n}{8}$$

where:

E is the equivalent exposure for the working shift.

C is the concentration during any period of time T where the concentration remains constant.

T is the duration in hours of the exposure at the concentration C.

The value of E shall not exceed the eight-hour time-weighted average limit in Tables 1, 2 or 3 (see WAC 296-62-07515), for the material involved.

(3) Methods of compliance:

(a) To achieve compliance with these standards, the employer shall determine and implement feasible administrative or engineering controls.

(b) When administrative or engineering controls are not feasible to achieve full compliance, they shall nonetheless be used to reduce exposures to the lowest levels achievable by these controls.

(c) Any control equipment or technical measure utilized for the purpose of complying with WAC 296-62-07501(3) must be approved for each particular use by a competent industrial hygienist or other technically qualified person.

(d) Upon request, the employer shall prepare and submit a written compliance plan to the director. This plan must include a description of the manner in which compliance will be achieved with respect to cited violations of WAC 296-62-07501(3), and shall include proposed abatement methods, anticipated completion dates, and provision for progress reports to be sent to the department.

(4) An employee's exposure to any substance in Tables 1 and 3 (see WAC 296-62-07515), the name of which is not preceded by a "C," shall not exceed the excursion level limit which is computed by multiplying the appropriate factor below times eight-hour time-weighted average for the substance in the applicable table.

PEL > 0-1	(ppm or mg/M^3),	Excursion Factor = 3
PEL > 1-10	(ppm or mg/M^3),	Excursion Factor = 2
PEL > 10-100	(ppm or mg/M^3),	Excursion Factor = 1.5
PEL > 100-1000	(ppm or mg/M^3),	Excursion Factor = 1.25
PEL > 1000	(ppm or mg/M^3),	Excursion Factor = 1

(5) Permissible limits are based on the best available information from industrial experience, from experimental human and animal studies, and, when possible, from a combination of the three. The basis on which the values are established may differ from substance to substance; protection against impairment of health may be a guiding factor for some, whereas reasonable freedom

from irritation, narcosis, nuisance or other forms of stress may form the basis for others.

(6) The limits based on physical irritation shall be considered no less binding than those based on physical impairment. There is increasing evidence that physical irritation may initiate, promote or accelerate physical impairment through interaction with other chemical or biologic agents.

(7) In spite of the fact that serious injury is not believed likely as a result of exposure to the permissible limit concentrations, the best practice is to maintain concentrations of all atmospheric contaminants as low as is practical.

(8) These limits are intended for use in the practice of industrial hygiene and should be interpreted and applied only by a technically qualified person. [Statutory Authority: RCW 49.17.040 and 49.17.050. 82-03-023 (Order 82-1), § 296-62-07501, filed 1/15/82. Statutory Authority: RCW 49.17.040, 49.17.050, and 49.17.240. 81-16-015 (Order 81-20), § 296-62-07501, filed 7/27/81; 80-11-010 (Order 80-14), § 296-62-07501, filed 8/8/80; Order 73-3, § 296-62-07501, filed 5/7/73.]

WAC 296-62-07515 Control of chemical agents. Chemical agents shall be controlled in such a manner that the workers exposure shall not exceed the applicable limits in WAC 296-62-075 through 296-62-07515.

TABLE 1

PERMISSIBLE EXPOSURE LIMITS (PEL)

	Substance	ppm (See note a)	mg/M^3 (See note b)
	Abate	—	10
	Acetaldehyde	200	360
	Acetic acid	10	25
	Acetic anhydride	5	20
	Acetone	1,000	2,400
	Acetonitrile	40	70
	Acetylene	Simple	Asphyxiant
	Acetylene dichloride, see 1,2-Dichloroethylene		
	Acetylene tetrabromide	1	14
	Acrolein	0.1	0.25
	Acrylamide—Skin	—	0.3
	Aldrin—Skin	—	0.25
	Allyl alcohol—Skin	2	3
	Allyl chloride	1	5
C	Allyl glycidyl ether (AGE)	10	45
	Allyl propyl disulfide	2	12
	Alundum (Al_2O_3)	—	10
	2-Aminoethanol, see Ethanolamine	—	—
	2-Aminopyridine	0.5	2
	Ammonia	50	35
	Ammonium chloride, fume	—	10
	Ammonium sulfamate (Ammate)	—	10
	n-Amyl acetate	100	525
	sec-Amyl acetate	125	650
	Aniline—Skin	5	19
	Anisidine (o, p-isomers)—Skin	—	0.5
	Antimony & Compounds (as Sb)	—	0.5

TABLE 1

PERMISSIBLE EXPOSURE LIMITS (PEL)

	Substance	ppm (See note a)	mg/M^3 (See note b)
	ANTU (alpha Naphthyl thiourea)	—	0.3
	Argon	Simple	Asphyxiant
	Arsenic & Compounds (as As) which are exempt from WAC 296-62-07347	—	0.5
	Arsine	0.05	0.2
	Asphalt (petroleum) fumes	—	5
	Azinphos methyl—Skin	—	0.2
	Barium (soluble compounds)	—	0.5
	p-Benzoquione, see Quinone		
	Benzoyl peroxide	—	5
	Benzyl chloride	1	5
	Biphenyl, see Diphenyl		
	Boron oxide	—	10
	Boron tribromide	1	10
C	Boron trifluoride	1	3
	Bromine	0.1	0.7
	Bromine pentafluoride	0.1	0.7
	Bromoform—Skin	0.5	5.0
	Butadiene (1,3-butadiene)	1,000	2,200
	Butanethiol, see Butyl mercaptan		
	2-Butanone	200	590
	2-Butoxy ethanol (Butyl Cellosolve)—Skin	50	240
	Butyl acetate (n-butyl acetate)	150	710
	sec-Butyl acetate	200	950
	tert-Butyl acetate	200	950
	Butyl alcohol	100	300
	sec-Butyl alcohol	150	450
	tert-Butyl alcohol	100	300
C	Butylamine—Skin	5	15
C	tert-Butyl chromate (as CrO_3)—Skin	—	0.1
	n-Butyl glycidyl ether (BGE)	50	270
	Butyl mercaptan	0.5	1.5
	p-tert-Butyl-toluene	10	60
C	Cadmium oxide fume (as Cd)	—	0.1
	Calcium carbonate	—	10
	Calcium arsenate See WAC 296-62-07347		
	Calcium oxide	—	5
	Camphor (synthetic)	2	12
	Carbaryl (Sevin[R])	—	5
	Carbon black	—	3.5
	Carbon dioxide	5,000	9,000
	Carbon monoxide	50	55
	Cellulose (paper fiber)	—	10
	Chlordane—Skin	—	0.5
	Chlorinated camphene-Skin	—	0.5
	Chlorinated diphenyl oxide	—	0.5
C	Chlorine	1	3
	Chlorine dioxide	0.1	0.3
C	Chlorine tri-fluoride	0.1	0.4
C	Chloroacetaldehyde	1	3
	α-Chloroacetophenone (Phenacylchloride)	0.05	0.03
	Chlorobenzene (Monochlorobenzene)	75	350
	o-Chlorobenzylidene malononitrile (OCBM)-Skin	0.05	0.4
	Chlorobromomethane	200	1,050
	2-Chloro-1,3-butadiene, see Chloroprene		

TABLE 1

PERMISSIBLE EXPOSURE LIMITS (PEL)

Substance	ppm (See note a)	mg/M^3 (See note b)
Chlorodiphenyl (42% Chlorine)—Skin	—	1
Chlorodiphenyl (54% Chlorine)—Skin	—	0.5
1–Chloro,2,3–epoxy propane, see Epichlorhydrin		
2–Chloroethanol, see Ethylene chlorohydrin		
Chloroform (Trichloromethane)	50	240
1–Chloro–1–nitropropane	20	100
Chloropicrin	0.1	0.7
Chloroprene (2–chloro–1,3–butadiene)—Skin	25	90
Chromium, sol. chromic, chromous salts as Cr.	—	0.5
Chromium Metal & insol. salts		1
Coal tar pitch volatiles (benzene soluble fraction anthracene, BaP, phenanthrene, acridine, chrysene, pyrene)		0.2
Cobalt, metal fume & dust	—	0.1
Copper fume	—	0.1
Dusts and Mists	—	1.0
Corundum (Al_2O_3)	—	10
Cotton Dust (raw)	—	1
Crag[R] herbicide	—	10
Cresol (all isomers)—Skin	5	22
Crotonaldehyde	2	6
Cumene—Skin	50	245
Cyanide (as CN)—Skin	—	5
Cyanogen	10	—
Cyclohexane	300	1,050
Cyclohexanol	50	200
Cyclohexanone	50	200
Cyclohexene	300	1,015
Cyclopentadiene	75	200
2,4–D	—	10
DDT	—	1
DDVP, see Dichlorvos	—	—
Decaborane—Skin	0.05	0.3
Demeton[R]—Skin	—	0.1
Diacetone alcohol (4–hydroxy–4–methyl–2–pentanone)	50	240
1,2–Diaminoethane, see Ethylenediamine	—	—
Diazinon–skin	—	0.1
Diazomethane	0.2	0.4
Diborane	0.1	0.1
Dibrom[R]	—	3
2–N Dibutylamino–ethanol–Skin	2	14
Dibutyl phosphate	1	5
Dibutylphthalate	—	5
C Dichloroacetylene	0.1	0.4
C o–Dichlorobenzene	50	300
p–Dichlorobenzene	75	450
Dichlorodifluoromethane	1,000	4,950
1,3–Dichloro–5,5–dimethyl hydantoin	—	0.2
1,1–Dichloroethane	100	400
1,2–Dichloro–ethylene	200	790
C Dichloroethyl ether—Skin	15	90
Dichloromethane, see Methylene–chloride	—	—
Dichloromonofluoro–methane	1,000	4,200

TABLE 1

PERMISSIBLE EXPOSURE LIMITS (PEL)

Substance	ppm (See note a)	mg/M^3 (See note b)
C 1,1–Dichloro–1–nitroethane	10	60
1,2–Dichloropropane, see Propylene–dichloride		
Dichlorotetra–fluoroethane	1,000	7,000
Dichlorvos (DDVP)–Skin	—	1
Dieldrin—Skin	—	0.25
Diethylamine	25	75
Diethylamino ethanol—Skin	10	50
C Diethylene triamine—Skin	1	4
Diethylether, see Ethyl ether		
Difluorodibromomethane	100	860
C Diglycidyl ether (DGE)	0.5	2.8
Dihydroxybenzene, see Hydroquinone		
Diisobutyl ketone	50	290
Diisopropylamine—Skin	5	20
Dimethoxymethane, see Methylal		
Dimethyl acetamide—Skin	10	35
Dimethylamine	10	18
Dimethylaminobenzene, see Xylidene		
Dimethylaniline (N–Dimethylaniline)—Skin	5	25
Dimethylbenzene, see Xylene		
Dimethyl,1,2–dibromo–2,2–dichloroethyl phosphate, see DiBrom		
Dimethylformamide—Skin	10	30
2,6–Dimethylheptanone, see Diisobutyl ketone		
1,1–Dimethylhydrazine—Skin	0.5	1
Dimethylphthalate	—	5
Dimethylsulfate—Skin	1	5
Dinitrobenzene (all isomers)—Skin	—	1
Dinitro–o–cresol—Skin	—	0.2
Dinitrotoluene—Skin	—	1.5
Dioxane (Diethylene dioxide)—Skin	100	360
Diphenyl	0.2	1
Diphenyl amine	—	10
Diphenylmethane diisocyanate (see Methylene bisphenyl isocyanate (MDI))		
Dipropylene glycol methyl ether—Skin	100	600
Di–sec,octyl phthalate (Di–2–ethylhexyl–phthalate)	—	5
Emery	—	10
Endosulfan (Thiodan[R])–skin	—	0.1
Endrin—Skin	—	0.1
Epichlorhydrin—Skin	5	19
EPN—Skin	—	0.5
1,2–Epoxypropane, see Propylene–oxide		
2,3–Epoxy–1–propanol, see Glycidol		
Ethane	Simple	Asphyxiant
Ethanethiol, see Ethylmercaptan		
Ethanolamine	3	6
2–Ethoxyethanol—Skin	200	740
2–Ethoxyethylacetate (Cellosolve acetate)—Skin	100	540
Ethyl acetate	400	1,400

TABLE 1

PERMISSIBLE EXPOSURE LIMITS (PEL)

	Substance	ppm (See note a)	mg/M^3 (See note b)
	Ethyl acrylate—Skin	25	100
	Ethyl alcohol (ethanol)	1,000	1,900
	Ethylamine	10	18
	Ethyl sec-amyl ketone (5-methyl-3-heptanone)	25	130
	Ethyl benzene	100	435
	Ethyl bromide	200	890
	Ethyl butyl ketone (3-Heptanone)	50	230
	Ethyl chloride	1,000	2,600
	Ethyl ether	400	1,200
	Ethyl formate	100	300
	Ethyl mercaptan	0.5	1
	Ethyl silicate	100	850
	Ethylene	Simple	Asphyxiant
	Ethylene chlorohydrin—Skin	5	16
	Ethylenediamine	10	25
C	Ethylene glycol dinitrate and/or Nitroglycerin—Skin	0.2 (See note d)	—
	Ethylene glycol monomethyl ether acetate (Methyl cellosolve acetate)—Skin	25	120
	Ethylene imine—Skin	0.5	1
	Ethylene oxide	50	90
	Ethylidine chloride, see 1,1-Dichloroethane		
	n-Ethylmorpholine—Skin	20	94
	Ferbam	—	15
	Ferrovanadium dust	—	1
	Fluoride as dust	—	2.5
	Fluorine	0.1	0.2
	Fluorotrichloromethane	1,000	5,600
C	Formaldehyde	2	3
	Formic acid	5	9
	Furfuryl-Skin	5	20
	Furfuryl alcohol	50	200
	Glass, fibrous or dust (See note e)	—	10
	Glycerin mist	—	10
	Glycidol (2,3-Epoxy-1-propanol)	50	150
	Glycol monoethyl ether, see 2-Ethoxyethanol		
	Graphite (Synthetic)	—	10
	Guthion[R], see Azinphosmethyl		
	Gypsum	—	10
	Hafnium	—	0.5
	Helium	Simple	Asphyxiant
	Heptachlor—Skin	—	0.5
	Heptane (n-heptane)	500	2,000
	Hexachloroethane—Skin	1	10
	Hexachloronaphthalene—Skin	—	0.2
	Hexane (n-hexane)	500	1,800
	2-Hexanone	100	410
	Hexone (Methyl isobutyl ketone)	100	410
	156 sec-Hexyl acetate	50	300
	Hydrazine—Skin	1	1.3
	Hydrogen	Simple	Asphyxiant
	Hydrogen bromide	3	10
C	Hydrogen chloride	5	7
	Hydrogen cyanide—Skin	10	11
	Hydrogen fluoride	3	2
	Hydrogen peroxide	1	1.4
	Hydrogen selenide	0.05	0.2

TABLE 1

PERMISSIBLE EXPOSURE LIMITS (PEL)

	Substance	ppm (See note a)	mg/M^3 (See note b)
	Hydroquinone	—	2
	Indene	10	45
	Indium and compounds, as In	—	0.1
C	Iodine	0.1	1
	Iron oxide fume	—	10
	Iron pentacarbonyl	0.01	0.08
	Iron salts, soluble, as Fe	—	1
	Isoamyl acetate	100	525
	Isoamyl alcohol	100	360
	Isobutyl acetate	150	700
	Isobutyl alcohol	100	300
	Isophorone	10	55
	Isopropyl acetate	250	950
	Isopropyl alcohol	400	980
	Isopropylamine	5	12
	Isopropylether	250	1,050
	Isopropyl glycidyl ether (IGE)	50	240
	Kaolin	—	10
	Ketene	0.5	0.9
	Lead and its inorganic compounds which are exempt from WAC 296-62-07521	—	0.2
	Lead arsenate -See WAC 296-62-07347	—	0.15
	Limestone	—	10
	Lindane	—	0.5
	Lithium hydride	—	0.025
	L.P.G. (Liquified petroleum gas)	1,000	1,800
	Magnesite	—	10
	Magnesium oxide fume	—	10
	Malathion—Skin	—	10
	Maleic anhydride	0.25	1
C	Manganese and compounds, as Mn	—	5
	Marble	—	10
	Mesityl oxide	25	100
	Methane	Simple	Asphyxiant
	Methanethiol, see Methyl mercaptan		
	Methoxychlor	—	10
	2-Methoxyethanol-skin (Methyl cellosolve)	25	80
	Methyl acetate	200	610
	Methyl acetylene (propyne)	1,000	1,650
	Methyl acetylene-propadiene mixture (MAPP)	1,000	1,800
	Methyl acrylate—Skin	10	35
	Methylal (dimethoxy-methane)	1,000	3,100
	Methyl alcohol (methanol)	200	260
	Methylamine	10	12
	Methyl amyl alcohol, see Methyl isobutyl carbinol		
	Methyl 2-cyano-acrylate	2	8
	Methyl isoamyl ketone	100	475
	Methyl (n-amyl) ketone (2-Heptanone)	100	465
	Methyl bromide—Skin	15	60
	Methyl butyl ketone, see 2-Hexanone		
	Methyl cellosolve-skin, see 2-Methoxyethanol	—	—
	Methyl cellosolve acetate-Skin, see Ethylene glycol monomethyl ether acetate	—	—

TABLE 1

PERMISSIBLE EXPOSURE LIMITS (PEL)

	Substance	ppm (See note a)	mg/M^3 (See note b)
	Methyl chloride	100	210
	Methyl chloroform	350	1,900
	Methylcyclohexane	500	2,000
	Methylcyclohexanol	100	470
	o–Methylcyclo–hexanone—Skin	100	460
	Methylcyclopentadienyl manganese tricarbonyl (as Mn)—skin	0.1	0.2
	Methyl demeton–skin	—	0.5
	Methyl ethyl ketone (MEK), see 2–Butanone		
	Methyl formate	100	250
	Methyl iodide—Skin	5	28
	Methyl isobutyl carbinol—Skin	25	100
	Methyl isobutyl ketone, see Hexone		
	Methyl isocyanate—Skin	0.02	0.05
	Methyl mercaptan	0.5	1
	Methyl methacrylate	100	410
	Methyl parathion–skin	—	0.2
	Methyl propyl ketone, see 2–Pentanone		
C	Methyl silicate	5	30
C	α–Methyl styrene	100	480
C	Methylene bisphenyl isocyanate (MDI)	0.02	0.2
	Molybdenum (soluble compounds)	—	5
	(insoluble compounds)	—	10
	Monomethyl aniline—Skin	2	9
C	Monomethyl hydrazine—Skin	0.2	0.35
	Morpholine—Skin	20	70
	Naphtha (coal tar)	100	400
	Naphthalene	10	50
	Neon	Simple	Asphyxiant
	Nickel carbonyl	0.001	0.007 (See note a)
	Nickel, metal and soluble compounds, as Ni	—	1
	Nicotine—Skin	—	0.5
	Nitric acid	2	5
	Nitric oxide	25	30
	p–Nitroaniline—Skin	1	6
	Nitrobenzene—Skin	1	5
	p–Nitrochlorobenzene—Skin	—	1
	Nitroethane	100	310
	Nitrogen	Simple	Asphyxiant
C	Nitrogen dioxide	5	9
	Nitrogen trifluoride	10	29
C	Nitroglycerin—Skin	0.2	2
	Nitromethane	100	250
	1–Nitropropane	25	90
	2–Nitropropane	25	90
	Nitrotoluene—Skin	5	30
	Nitrotrichloromethane, see Chloropicrin		
	Nitrous Oxide	Simple	Asphyxiant
	Octachloronaphthalene—Skin	—	0.1
	Octane	400	1,900
	Oil mist, particulate	—	5 (See note f)
	Osmium tetroxide	—	0.002
	Oxalic acid	—	1
	Oxygen difluoride	0.05	0.1
	Ozone	0.1	0.2
	Paraquat—Skin	—	0.5

TABLE 1

PERMISSIBLE EXPOSURE LIMITS (PEL)

Substance	ppm (See note a)	mg/M^3 (See note b)
Parathion—Skin	—	0.1
Pentaborane	0.005	0.01
Pentachloronaphthalene—Skin	—	0.5
Pentachlorophenol—Skin	—	0.5
Pentaerythritol	—	10
Pentane	500	1,500
2–Pentanone	200	700
Perchloromethyl mercaptan	0.1	0.8
Perchloryl fluoride	3	14
Phenol—Skin	5	19
p–Phenylene diamine—Skin	—	0.1
Phenyl ether (vapor)	1	7
Phenyl ether–Diphenyl mixture (vapor)	1	7
Phenylethylene, see Styrene		
Phenyl glycidyl ether (PGE)	10	60
Phenylhydrazine—Skin	5	22
Phenothiazine–skin	—	5
Phosdrin (Mevinphos[R])—Skin	—	0.1
Phosgene (carbonyl chloride)	0.1	0.4
Phosphine	0.3	0.4
Phosphoric acid	—	1
Phosphorus (yellow)	—	0.1
Phosphorus pentachloride	—	1
Phosphorus pentasulfide	—	1
Phosphorus trichloride	0.5	3
Phthalic anhydride	2	12
Picric acid—Skin	—	0.1
Pival[R] (2–Pivalyl–1,3–indandione)	—	0.1
Plaster of Paris	—	10
Platinum (Soluble Salts) as Pt	—	0.002
Polychlorobiphenyls, see Chlorodiphenyls		
Propane	Simple	Asphyxiant
Propargyl alcohol—Skin	1	—
n–Propyl acetate	200	840
Propyl alcohol	200	500
n–Propyl nitrate	25	110
Propylene dichloride (1,2–Dichloropropane)	75	350
Propylene glycol monomethyl ether	100	360
Propylene imine—Skin	2	5
Propylene oxide	100	240
Propyne, see Methylacetylene		
Pyrethrum	—	5
Pyridine	5	15
Quinone	0.1	0.4
RDX—Skin	—	1.5
Rhodium, Metal fume and dusts, as Rh	—	0.1
Soluble salts	—	0.001
Ronnel	—	10
Rosin Core Solder, pyrolysis products (as formaldehyde)	—	0.1
Rotenone (commercial)	—	5
Rouge	—	10
Selenium compounds (as Se)	—	0.2
Selenium hexafluoride	0.05	0.4
Silicon Carbide	—	10
Silver, metal and soluble compounds	—	0.01

TABLE 1

PERMISSIBLE EXPOSURE LIMITS (PEL)

	Substance	ppm (See note a)	mg/M^3 (See note b)
	Sodium fluoroacetate (1080)—Skin	—	0.05
	Sodium hydroxide	—	2
	Starch	—	10
	Stibine	0.1	0.5
	Stoddard solvent	200	1,150
	Strychnine	—	0.15
	Sucrose	—	10
	Sulfur dioxide	5	13
	Sulfur hexafluoride	1,000	6,000
	Sulfuric acid	—	1
	Sulfur monochloride	1	6
	Sulfur pentafluoride	0.025	0.25
	Sulfuryl fluoride	5	20
	Systox, see Demeton[R]	—	—
	2,4,5 T	—	10
	Tantalum	—	5
	TEDP—Skin	—	0.2
	Tellurium	—	0.1
	Tellurium hexafluoride	0.02	0.2
	TEPP—Skin	—	0.05
C	Terphenyls	1	9
	1,1,1,2–Tetrachloro–2,2–difluoroethane	500	4,170
	1,1,2,2–Tetrachloro–1,2–difluoroethane	500	4,170
	1,1,2,2–Tetrachloroethane—Skin	5	35
	Tetrachloromethane, see Carbon tetrachloride		
	Tetrachloronaphthalene—Skin	—	2
	Tetraethyl lead (as Pb)—Skin	—	0.100 (See note h)
	Tetrahydrofuran	200	590
	Tetramethyl lead (as Pb)—Skin	—	0.150 (See note h)
	Tetramethyl succinonitrile—Skin	0.5	3
	Tetranitromethane	1	8
	Tetryl (2,4,6–trinitrophenyl–methylnitramine)—Skin	—	1.5
	Thallium (soluble compounds)—Skin (as Tl)	—	0.1
	Thiram[R]	—	5
	Tin (inorganic compounds, except SnH_4 and SnO_2) as Sn	—	2
	Tin (organic compounds)–skin (as Sn)	—	0.1
	Tin oxide	—	10
	Titanium dioxide	—	10
C	Toluene–2,4–diisocyanate	0.02	0.14
	o–Toluidine—Skin	5	22
	Toxaphene, see Chlorinated camphene		
	Tributyl phosphate	—	5
	1,1,1–Trichloroethane, see Methyl chloroform		
	1,1,2–Trichloroethane—Skin	10	45
	Trichloromethane, see Chloroform		
	Trichloronaphthalene—Skin	—	5
	1,2,3–Trichloropropane	50	300
	1,1,2–Trichloro 1,2,2–trifluoroethane	1,000	7,600
	Triethylamine	25	100

TABLE 1

PERMISSIBLE EXPOSURE LIMITS (PEL)

Substance	ppm (See note a)	mg/M^3 (See note b)
Trifluoromono–bromomethane	1,000	6,100
Trimethyl benzene	25	120
2,4,6–Trinitrophenol, see Picric acid		
2,4,6–Trinitrophenyl–methylnitramine, see Tetryl		
Trinitrotoluene—Skin	—	1.5
Triorthocresyl phosphate	—	0.1
Triphenyl phosphate	—	3
Tungsten & Compounds, as W		
Soluble	—	1
Insoluble	—	5
Turpentine	100	560
Uranium (natural) sol. & insol. compounds as U	—	0.2
Vanadium (V_2O_5), as V		
Dust	—	0.5
Vinyl acetate	10	30
Vinyl bromide	250	1,100
Vinyl toluene	100	480
Warfarin	—	0.1
Xylene (xylol)	100	435
Xylidine—Skin	5	25
Yttrium	—	1
Zinc chloride fume	—	1
Zinc oxide fume	—	5
Zirconium compounds (as Zr)	—	5

a) Parts of vapor or gas per million parts of contaminated air by volume at 25°C and 760 mm. Hg. pressure.

b) Approximate milligrams of substance per cubic meter of air.

d) An atmospheric concentration of not more than 0.02 ppm, or personal protection may be necessary to avoid headache.

e) <5–7 μm in diameter.

f) As sampled by method that does not collect vapor.

g) According to analytically determined composition.

h) For control of general room air, biologic monitoring is essential for personnel control.

+ TABLE 2

(See note [a])

Material	8–hour time weighted average	Acceptable ceiling concentration	Acceptable maximum peak above the acceptable ceiling concentration for an 8 hour shift.	
			Concentration	Maximum duration
Benzene (Z37.4–1969)	10 ppm	25 ppm	50 ppm	10 minutes.
Beryllium and beryllium compounds (Z37.29–1970)	2 μg/M^3	5 μg/M^3	25 μg/M^3	30 minutes.
Cadmium dust (Z37.5–1970)	0.2 mg/M^3	0.6 mg/M^3		
Carbon disulfide (Z37.3–1968)	20 ppm	30 ppm	100 ppm	30 minutes.
Carbon Tetrachloride (Z37.17–1967)	10 ppm	25 ppm	200 ppm	5 minutes in any 4 hours.
Ethylene dibromide (Z37.31–1970)	20 ppm	30 ppm	50 ppm	5 minutes.
Ethylene dichloride (Z37.21–1969)	50 ppm	100 ppm	200 ppm	5 minutes in any 3 hours.

+ TABLE 2
(See note [a])

Material	8-hour time weighted average	Acceptable ceiling concentration	Acceptable maximum peak above the acceptable ceiling concentration for an 8 hour shift.	
			Concentration	Maximum duration
Methylene Chloride (Z37.23-1969)	500 ppm	1,000 ppm	2,000 ppm	5 minutes in any 2 hours.
Organo (alkyl) mercury (Z37.30-1969)	0.01 mg/M^3	0.04 mg/M^3		
Styrene (Z37.15-1969)	100 ppm	200 ppm	600 ppm	5 minutes in any 3 hours.
Trichloroethylene (Z37.19-1967)	100 ppm	200 ppm	300 ppm	5 minutes in any 2 hours.
Tetrachloroethylene (Z37.22-1967)	100 ppm	200 ppm	300 ppm	5 minutes in any 3 hours.
Toluene (Z37.12-1967)	200 ppm	300 ppm	500 ppm	10 minutes.
Hydrogen sulfide (Z37.2-1966)	10 ppm	20 ppm	50 ppm	10 minutes once only if no measurable exposure occurs.
Mercury (Z37.8-1971)	0.05 mg/M^3	0.1 mg/M^3		
Chromic acid and chromates (Z37.7-1973)	0.1 mg/M^3	0.3 mg/M^3		

NOTE: [a] **Acceptable ceiling concentrations.** An employee's exposure to a material listed in table 2 shall not exceed at any time during an 8-hour shift the acceptable ceiling concentration limit given for the material in the table, except for a time period, and up to a concentration not exceeding the maximum duration and concentration allowed in the column under "acceptable maximum peak above the acceptable ceiling concentration for an 8-hour shift."

Example. During an 8-hour work shift, an employee may be exposed to a concentration of Benzene above 25 ppm (but never above 50 ppm) only for a maximum period of 10 minutes. Such exposure must be compensated by exposures to concentrations less than 10 ppm so that the cumulative exposure for the entire 8-hour work shift does not exceed a weighted average of 10 ppm.

+TABLE 3
PARTICULATES

Substance	Mppcf (See note e)	mg/M^3
Silica:		
Crystalline: (See note f)		
Quartz (respirable)		10mg/M^{3}m
		%SiO_2+2
Quartz (total dust)		30mg/M^3
		%SiO_2+3
Cristobalite: Use 1/2 the value calculated from the mass formulae for quartz.		
Tridymite: Use 1/2 the value calculated from the formulae for quartz.		
Amorphous, including natural diatomaceous earth	20	80mg/M^3
		%SiO_2
Silicates (less than 1% crystalline silica):		
Mica	20	
Soapstone	20	
Talc	20	
Portland cement	50	
Graphite (natural)	15	
Coal dust (respirable fraction less than 5% SiO_2)		2.4mg/M^3
		or
For more than 5% SiO_2		10mg/M^3
		%SiO_2+2
Inert or Nuisance Dust:		
Respirable fraction		5mg/M^3
Total dust		10mg/M^3
Total Particulates (less than 1% SiO_2)		10mg/M^3
Respirable fraction		5mg/M^3

Note: Conversion factors—
mppcf X 35.3 = million particles per cubic meter
= particles per c.c.

e Millions of particles per cubic foot of air, based on impinger samples counted by light-field techniques.

f The percentage of crystalline silica in the formula is the amount determined from airborne samples, except in those instances in which other methods have been shown to be applicable.

m Both concentration and percent quartz for the application of this limit are to be determined from the fraction passing a size-selector with the following characteristics:

Aerodynamic diameter (unit density sphere)	Percent passing selector
2	90
2.5	75
3.5	50
5.0	25
10	0

The measurements under this note refer to the use of an AEC instrument. If the respirable fraction of coal dust is determined with a MRE the figure corresponding to that of a 2.4 mg/M^3 in the table for coal dust is 4.5 mg/M^3.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-13-045 (Order 82-22), § 296-62-07515, filed 6/11/82. Statutory Authority: RCW 49.17.040, 49.17-.050, and 49.17.240. 81-16-015 (Order 81-20), § 296-62-07515, filed 7/27/81; 80-11-010 (Order 80-14), § 296-62-07515, filed 8/8/80. Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240. 79-08-115 (Order 79-9), § 296-62-07515, filed 7/31/79; Order 73-3, § 296-62-07515, filed 5/7/73.]

WAC 296-62-07517 Asbestos. (1) Definitions. For the purpose of this section, (a) "Asbestos" means chrysotile, amosite, crocidolite, tremolite, anthophyllite, and actinolite.

(b) "Asbestos fibers" means asbestos fibers longer than 5 micrometers.

(2) Permissible exposure to airborne concentrations of asbestos fibers. (a) The 8-hour time-weighted average airborne concentrations of asbestos fibers to which any employee may be exposed shall not exceed two fibers,

longer than 5 micrometers, per cubic centimeter of air, as determined by the method prescribed in (5) of this section.

(b) Ceiling concentration. No employee shall be exposed at any time to airborne concentrations of asbestos fibers in excess of 10 fibers, longer than 5 micrometers, per cubic centimeter of air, as determined by the method prescribed in (5) of this section.

(3) Methods of compliance. (a) Engineering methods. (i) Engineering controls. Engineering controls, such as, but not limited to, isolation, enclosure, exhaust ventilation, and dust collection, shall be used to meet the exposure limits prescribed in (2) of this section.

(ii) Local exhaust ventilation. Local exhaust ventilation and dust collection systems shall be designed, constructed, installed, and maintained in accordance with the American National Standard Fundamentals Governing the Design and Operation of Local Exhaust Systems, ANSI Z9.2–1971, which is incorporated by reference herein.

(iii) Particular tools. All hand–operated and power–operated tools which may produce or release asbestos fibers in excess of the exposure limits prescribed in (2) of this section, such as, but not limited to, saws, scorers, abrasive wheels, and drills, shall be provided with local exhaust ventilation systems in accordance with (3)(a)(ii) of this section.

(b) Work practices. (i) Wet methods. Insofar as practicable, asbestos shall be handled, mixed, applied, removed, cut, scored, or otherwise worked in a wet state sufficient to prevent the emission of airborne fibers in excess of the exposure limits prescribed in (2) of this section, unless the usefulness of the product would be diminished thereby.

(ii) Particular products and operations. No asbestos cement, mortar, coating, grout, plaster, or similar material containing asbestos shall be removed from bags, cartons, or other containers in which they are shipped, without being either wetted, or enclosed, or ventilated so as to prevent effectively the release of airborne asbestos fibers in excess of the limits prescribed in (2) of this section.

(iii) Spraying, demolition, or removal. Employees engaged in the spraying of asbestos, the removal, or demolition of pipes, structures, or equipment covered or insulated with asbestos, and in the removal or demolition of asbestos insulation or coverings shall be provided with respiratory equipment in accordance with (4)(b)(iii) of this section and with special clothing in accordance with (4)(c) of this section.

(4) Personal protective equipment. (a) Compliance with the exposure limits prescribed by (2) of this section may not be achieved by the use of respirators or shift rotation of employees except:

(i) During the time period necessary to install the engineering controls and to institute the work practices required by (3) of this section.

(ii) In work situations in which the methods prescribed in (3) of this section are either technically not feasible or feasible to an extent insufficient to reduce the airborne concentrations of asbestos fibers below the limits prescribed by (2) of this section; or

(iii) In emergencies.

(iv) Where both respirators and personnel rotation are allowed by (4)(a)(i), (ii), or (iii) of this section, and both are practicable, personnel rotation shall be preferred and used.

(b) Where a respirator is permitted by (4)(a)(i), (ii), or (iii) of this section, it shall comply with the applicable provisions of WAC 296–62–071.

(i) Air purifying respirators. A reusable or single use air purifying respirator, or a respirator described in (4)(b)(ii) or (iii) of this section shall be used to reduce the concentrations of airborne asbestos fibers in the respirator below the exposure limits prescribed in (2) of this section, when the ceiling or the 8–hour time–weighted average airborne concentrations of asbestos fibers are reasonably expected to exceed no more than 10 times those limits.

(ii) Powered air purifying respirators. A full facepiece powered air purifying respirator, or a powered air purifying respirator, or a respirator described in (4)(b)(iii) of this section, shall be used to reduce the concentrations of airborne asbestos fibers in the respirator below the exposure limits prescribed in (2) of this section, when the ceiling or the 8–hour time–weighted average concentrations of asbestos fibers are reasonably expected to exceed 10 times, but not 100 times, those limits.

(iii) Type "C" supplied–air respirators, continuous flow or pressure–demand class. A type "C" continuous flow or pressure–demand, supplied–air respirator shall be used to reduce the concentrations of airborne asbestos fibers in the respirator below the exposure limits prescribed in (2) of this section, when the ceiling or the 8–hour time–weighted average airborne concentrations of asbestos fibers are reasonably expected to exceed 100 times those limits.

(iv) Establishment of a respirator program. (A) The employer shall establish a respirator program in accordance with the requirements of chapter 296–62 WAC.

(B) No employee shall be assigned to tasks requiring the use of respirators if, based upon his most recent examination, an examining physician determines that the employee will be unable to function normally wearing a respirator, or that the safety or health of the employee or other employees will be impaired by his use of a respirator. Such employee shall be rotated to another job or given the opportunity to transfer to a different position whose duties he is able to perform with the same employer, in the same geographical area and with the same seniority, status, and rate of pay he had just prior to such transfer, if such a different position is available.

(c) Special clothing: The employer shall provide, and require the use of, special clothing, such as coveralls or similar whole body clothing, head coverings, gloves, and foot coverings for any employee exposed to airborne concentrations of asbestos fibers, which exceed the ceiling level prescribed in (2)(b) of this section.

(d) Change rooms: (i) At any fixed place of employment exposed to airborne concentrations of asbestos fibers in excess of the exposure limits prescribed in (2) of

this section, the employer shall provide change rooms for employees working regularly at the place.

(ii) Clothes lockers: The employer shall provide two separate lockers or containers for each employee, so separated or isolated as to prevent contamination of the employee's street clothes from his work clothes.

(iii) Laundering: (A) Laundering of asbestos contaminated clothing shall be done so as to prevent the release of airborne asbestos fibers in excess of the exposure limits prescribed in (2) of this section.

(B) Any employer who gives asbestos-contaminated clothing to another person for laundering shall inform such person of the requirement in (4)(d) of this section to effectively prevent the release of airborne asbestos fibers in excess of the exposure limits prescribed in (2) of this section.

(C) Contaminated clothing shall be transported in sealed impermeable bags, or other closed, impermeable containers, and labeled in accordance with (7)(b) of this section.

(5) Method of measurement. All determinations of airborne concentrations of asbestos fibers shall be made by the membrane filter method at 400-450 X (magnification) (4 millimeter objective) with phase contrast illumination.

(6) Monitoring. (a) Initial determinations. Every employer shall cause every place of employment where asbestos fibers are released to be monitored in such a way as to determine whether every employee's exposure to asbestos fibers is below the limits prescribed in (2) of this section. If the limits are exceeded, the employer shall immediately undertake a compliance program in accordance with (3) of this section.

(b) Personal monitoring. (i) Samples shall be collected from within the breathing zone of the employees, on membrane filters of 0.8 micrometer porosity mounted in an open-face filter holder. Samples shall be taken for the determination of the 8-hour time-weighted average airborne concentrations and of the ceiling concentrations of asbestos fibers.

(ii) Sampling frequency and patterns. After the initial determinations required by (6)(a) of this section, samples shall be of such frequency and pattern as to represent with reasonable accuracy the levels of exposure of employees. In no case shall the sampling be done at intervals greater than 6 months for employees whose exposure to asbestos may reasonably be foreseen to exceed the limits prescribed by (2) of this section.

(c) Environmental monitoring. (i) Samples shall be collected from areas of a work environment which are representative of the airborne concentrations of asbestos fibers which may reach the breathing zone of employees. Samples shall be collected on a membrane filter of 0.8 micrometer porosity mounted in an open-face filter holder. Samples shall be taken for the determination of the 8-hour time-weighted average airborne concentrations and of the ceiling concentrations of asbestos fibers.

(ii) Sampling frequency and patterns. After the initial determinations required by (6)(a) of this section, samples shall be of such frequency and pattern as to represent with reasonable accuracy the levels of exposure of the employees. In no case shall sampling be at intervals greater than 6 months for employees whose exposures to asbestos may reasonably be foreseen to exceed the exposure limits prescribed in (2) of this section.

(d) Employee observation of monitoring. Affected employees, or their representatives, shall be given a reasonable opportunity to observe any monitoring required by this paragraph and shall have access to the records thereof.

(7) Caution signs and labels. (a) Caution signs. (i) Posting. Caution signs shall be provided and displayed at each location where airborne concentrations of asbestos fibers are reasonably expected to be released or where airborne concentrations of asbestos fibers may be in excess of the exposure limits prescribed in (2) of this section. Signs shall be posted at such a distance from such a location so that an employee may read the signs and take necessary protective steps before entering the area marked by the signs. Signs shall be posted at all approaches to areas containing airborne asbestos fibers.

(ii) Sign specifications. The warning signs required by (7)(a)(i) of this section shall conform to the requirements of 20" X 14" vertical format signs specified in WAC 296-24-14007(4) and to this subsection. The signs shall display the following legend in the lower panel, with letter sizes and styles of a visibility at least equal to that specified in this subdivision.

Legend	Notation
Asbestos	1" Sans Serif, Gothic or Block.
Dust Hazard	3/4" Sans Serif, Gothic or Block.
Avoid Breathing Dust	1/4" Gothic.
Wear Assigned Protective Equipment	1/4" Gothic.
Do Not Remain In Area Unless Your Work Requires It	1/4" Gothic.
Breathing Asbestos Dust May Be Hazardous To Your Health	14 point Gothic.

Spacing between lines shall be at least equal to the height of the upper of any two lines.

(b) Caution labels. (i) Labeling. Caution labels shall be affixed to all raw materials, mixtures, scrap, waste, debris, and other products containing asbestos fibers, or to their containers, except that no label is required where asbestos fibers have been modified by a bonding agent, coating, binder, or other material so that during any reasonably foreseeable use, handling, storage, disposal, processing, or transportation, no airborne concentrations of asbestos fibers will be released.

(ii) Label specifications. The caution labels required by (7)(b)(i) of this section shall be printed in letters of sufficient size and contrast as to be readily visible and legible. The label shall state:

CAUTION

Contains Asbestos Fibers

Avoid Creating Dust

Breathing Asbestos Dust May Cause

Serious Bodily Harm

(8) Housekeeping. (a) Cleaning. All external surfaces in any place of employment shall be maintained free of accumulations of asbestos fibers.

(b) Waste disposal. Asbestos waste, scrap, debris, bags, containers, equipment, and asbestos-contaminated clothing, consigned for disposal, shall be collected and disposed of in sealed impermeable bags, or other closed, impermeable containers.

(c) Deterioration. Friable asbestos or friable asbestos containing material which has become damaged or deteriorated shall be contained, treated, or replaced.

(9) Recordkeeping. (a) Exposure records. Every employer shall maintain records of any personal or environmental monitoring required by (6) of this section. Records shall be maintained for a period of at least 20 years and shall be made available upon request to the Director of the Department of Labor and Industries.

(b) Access. Employee exposure records required by this subsection shall be provided upon request to employees, designated representatives, and the assistant director in accordance with WAC 296-62-05201 through 296-62-05209 and 296-62-05213 through 296-62-05217.

(c) Employee notification. Any employee found to have been exposed at any time to airborne concentrations of asbestos fibers in excess of the limits prescribed in (2) of this section shall be notified in writing of the exposure as soon as practicable but not later than 5 days of the finding. The employee shall also be timely notified of the corrective action being taken.

(10) Medical examinations. (a) General. The employer shall provide or make available at his cost, medical examinations relative to exposure to asbestos required by this section.

(b) Preplacement. The employer shall provide or make available to each of his employees, within 30 calendar days following his first employment in an occupation exposed to airborne concentrations of asbestos fibers, a comprehensive medical examination, which shall include, as a minimum, a chest roentgenogram (posterior-anterior 14 x 17 inches), a history to elicit symptomatology of respiratory disease, and pulmonary function tests to include forced vital capacity (FVC) and forced expiratory volume at 1 second ($FEV_{1.0}$).

(c) Annual examinations. Every employer shall provide or make available on an annual basis, comprehensive medical examinations to each of his employees engaged in occupations exposed to airborne concentrations of asbestos fibers. Such annual examination shall include, as a minimum, a chest roentgenogram (posterior-anterior 14 x 17 inches), a history to elicit symptomatology of respiratory disease, and pulmonary function tests to include forced vital capacity (FVC) and forced expiratory volume at 1 second ($FEV_{1.0}$).

(d) Termination of employment. The employer shall provide, or make available, within 30 calendar days before or after the termination of employment of any employee engaged in an occupation exposed to airborne concentrations of asbestos fibers, a comprehensive medical examination which shall include, as a minimum, a chest roentgenogram (posterior-anterior 14 x 17 inches), a history to elicit symptomatology of respiratory disease, and pulmonary function tests to include forced vital capacity (FVC) and forced expiratory volume at 1 second ($FEV_{1.0}$).

(e) Recent examinations. No medical examination is required of any employee, if adequate records show that the employee has been examined in accordance with this subsection within the past 1-year period.

(f) Medical records. (i) Maintenance. Employers of employees examined pursuant to this subsection shall cause to be maintained complete and accurate records of all such medical examinations. Records shall be retained by employers for at least 20 years.

(ii) Access. Records of the medical examinations required by this subsection shall be provided upon request to employees, designated representative and the assistant director in accordance with WAC 296-62-05201 through 296-62-05209 and 296-62-05213 through 296-62-05217. These records shall also be provided upon request to the director of the department of labor and industries. Any physician who conducts a medical examination required by this subsection shall furnish to the employer of the examined employee all the information specifically required by this subsection, and any other medical information related to occupational exposure to asbestos fibers. [Statutory Authority: RCW 49-.17.040, 49.17.050, and 49.17.240. 81-18-029 (Order 81-21), § 296-62-07517, filed 8/27/81; 81-16-015 (Order 81-20), § 296-62-07517, filed 7/27/81; 80-11-010 (Order 80-14), § 296-62-07517, filed 8/8/80; Order 77-12, § 296-62-07517, filed 7/11/77; Order 73-3, § 296-62-07517, filed 5/7/73.]

WAC 296-62-07519 Thiram. (1) Scope and application. This section applies to occupational exposure to thiram (tetramethylthiuram disulfide), in addition to those requirements listed in WAC 296-62-07515. Nothing in this section shall preclude the application of other appropriate standards and regulations to minimize worker exposure to thiram.

(2) Definitions. The following definitions are applicable to this section:

(a) Clean – the absence of dirt or materials which may be harmful to a worker's health.

(b) Large seedlings – those seedlings of such size, either by length or breadth, that it is difficult to avoid contact of the thiram treated plant with the mouth or face during planting operations.

(3) General requirements.

(a) Workers should not be allowed to work more than five days in any seven day period with or around the application of thiram or thiram treated seedlings.

(b) Washing and worker hygiene.

(i) Workers shall wash their hands prior to eating or smoking at the close of work.

(ii) Warm (at least 85°F, 29.4°C) wash water and single use hand wiping materials shall be provided for washing.

(iii) The warm water and hand wiping materials shall be at fixed work locations or at the planting unit.

(iv) Where warm water is not available within 15 minutes travel time, non-alcoholic based waterless hand cleaner shall be provided.

(v) Every planter or nursery worker shall be advised to bathe or shower daily.

(vi) The inside of worker carrying vehicles shall be washed or vacuumed and wiped down at least weekly during the period of thiram use.

(c) Personal protective measures.

(i) Clothing shall be worn by workers to reduce skin contact with thiram to the legs, arms and torso.

(ii) For those workers who have thiram skin irritations, exposed areas of the body shall be protected by a suitable barrier cream.

(iii) Clothing worn by workers shall be washed or changed at least every other day.

(iv) Only impervious gloves may be worn by workers.

(v) Workers hands should be clean of thiram before placing them into gloves.

(vi) Thiram applicators shall be provided with and use respiratory protection in accordance with WAC 296-62-071, disposable coveralls or rubber slickers or other impervious clothing, rubberized boots, head covers and rubberized gloves.

(vii) Nursery workers, other than applicators, who are likely to be exposed to thiram shall be provided with and use disposable coveralls or rubber slickers or other impervious clothing, impervious footwear and gloves, and head covers in accordance with WAC 296-24-075, unless showers have been provided and are used.

(viii) Eye protection according to WAC 296-24-078, shall be provided and worn by workers who may be exposed to splashes of thiram during spraying, plug bundling, belt line grading and plugging or other operations.

(ix) Item (viii) of this subdivision need not be complied with where pressurized emergency eye wash fountains are within 10 seconds travel time of the work location. (Approved respirator - See WAC 296-62-071.)

(x) A dust mask shall be worn, when planting large seedlings, to avoid mouth and face contact with the thiram treated plant unless equally effective measures or planting practices have been established.

(d) Food handling.

(i) Food snacks, beverages, smoking materials, or any other item which is consumed shall not be stored or consumed in the packing area of the nursery.

(ii) Worker carrying vehicles shall have a clean area for carrying lunches.

(iii) The clean area of the vehicle shall be elevated from the floor and not used to carry other than food or other consumable items.

(iv) The carrying of lunches, food or other consumable items in tree planting bags is prohibited.

(v) Care shall be taken to insure that worker exposure to thiram spray, including downwind driftings, is minimized or eliminated.

(vi) When bags that contained thiram or thiram treated seedlings are burned, prevent worker exposure to the smoke.

(e) Thiram use and handling.

(i) Thiram treated seedlings shall be allowed to dry or stabilize prior to packing.

(ii) Seedlings shall be kept moist during packing and whenever possible during planting operations.

(iii) Floors, where thiram is used, shall not be dry swept but instead vacuumed, washed or otherwise cleaned at least daily.

(iv) Silica chips used to cover thiram treated seedling plugs shall be removed at the nursery.

(f) Training.

(i) Each worker engaged in operations where exposure to thiram may occur shall be provided training on the hazards of thiram, as well as the necessary precautions for its safe use and handling.

(ii) The training shall include instruction in:

(A) The nature of the health hazard(s) from exposure to thiram including specifically the potential for alcohol intolerance, drug interaction, and skin irritation;

(B) The specific nature of operations which could result in exposure to thiram and the necessary protective steps;

(C) The purpose for, proper use, and limitations of protective devices including respirators and clothing;

(D) The necessity for and requirements of good personal hygiene; and

(E) A review of the thiram rules at the worker's first training and indoctrination, and annually thereafter.

(4) Effective date. This standard shall become effective 30 days after being filed with the code reviser. [Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81-16-016 (Order 81-19), § 296-62-07519, filed 7/27/81.]

WAC 296-62-07521 Lead. (1) Scope and application.

(a) This section applies to all occupational exposure to lead, except as provided in subdivision (1)(b).

(b) This section does not apply to the construction industry or to agricultural operations covered by chapter 296-306 WAC.

(2) Definitions as applicable to this part.

(a) "Action level" - employee exposure, without regard to the use of respirators, to an airborne concentration of lead of thirty micrograms per cubic meter of air (30 $\mu g/m^3$) averaged over an eight-hour period.

(b) "Director" - the director of the department of labor and industries.

(c) "Lead" - metallic lead, all inorganic lead compounds, and organic lead soaps. Excluded from this definition are all other organic lead compounds.

(3) Permissible exposure limit (PEL).

(a) The employer shall assure that no employee is exposed to lead at concentrations greater than fifty micrograms per cubic meter of air (50 $\mu g/m^3$) averaged over an eight-hour period.

(b) If an employee is exposed to lead for more than eight hours in any work day, the permissible exposure limit, as a time weighted average (TWA) for that day, shall be reduced according to the following formula:

Maximum permissible limit (in $\mu g/m^3$) = 400 ÷ hours worked in the day.

(c) When respirators are used to supplement engineering and work practice controls to comply with the PEL and all the requirements of subsection (6) have been met, employee exposure, for the purpose of determining whether the employer has complied with the PEL, may be considered to be at the level provided by the protection factor of the respirator for those periods the respirator is worn. Those periods may be averaged with exposure levels during periods when respirators are not worn to determine the employee's daily TWA exposure.

(4) Exposure monitoring.

(a) General.

(i) For the purposes of subsection (4), employee exposure is that exposure which would occur if the employee were not using a respirator.

(ii) With the exception of monitoring under subdivision (4)(c), the employer shall collect full shift (for at least seven continuous hours) personal samples including at least one sample for each shift for each job classification in each work area.

(iii) Full shift personal samples shall be representative of the monitored employee's regular, daily exposure to lead.

(b) Initial determination. Each employer who has a workplace or work operation covered by this standard shall determine if any employee may be exposed to lead at or above the action level.

(c) Basis of initial determination.

(i) The employer shall monitor employee exposures and shall base initial determinations on the employee exposure monitoring results and any of the following, relevant considerations:

(A) Any information, observations, or calculations which would indicate employee exposure to lead;

(B) Any previous measurements of airborne lead; and

(C) Any employee complaints of symptoms which may be attributable to exposure to lead.

(ii) Monitoring for the initial determination may be limited to a representative sample of the exposed employees who the employer reasonably believes are exposed to the greatest airborne concentrations of lead in the workplace.

(iii) Measurements of airborne lead made in the preceding twelve months may be used to satisfy the requirement to monitor under item (4)(c)(i) if the sampling and analytical methods used meet the accuracy and confidence levels of subdivision (4)(i) of this section.

(d) Positive initial determination and initial monitoring.

(i) Where a determination conducted under subdivision (4)(b) and (4)(c) of this section shows the possibility of any employee exposure at or above the action level, the employer shall conduct monitoring which is representative of the exposure for each employee in the workplace who is exposed to lead.

(ii) Measurements of airborne lead made in the preceding twelve months may be used to satisfy this requirement if the sampling and analytical methods used meet the accuracy and confidence levels of subdivision (4)(i) of this section.

(e) Negative initial determination. Where a determination, conducted under subdivisions (4)(b) and (4)(c) of this section is made that no employee is exposed to airborne concentrations of lead at or above the action level, the employer shall make a written record of such determination. The record shall include at least the information specified in subdivision (4)(c) of this section and shall also include the date of determination, location within the worksite, and the name and social security number of each employee monitored.

(f) Frequency.

(i) If the initial monitoring reveals employee exposure to be below the action level the measurements need not be repeated except as otherwise provided in subdivision (4)(g) of this section.

(ii) If the initial determination or subsequent monitoring reveals employee exposure to be at or above the action level but below the permissible exposure limit the employer shall repeat monitoring in accordance with this subsection at least every six months. The employer shall continue monitoring at the required frequency until at least two consecutive measurements, taken at least seven days apart, are below the action level at which time the employer may discontinue monitoring for that employee except as otherwise provided in subdivision (4)(g) of this section.

(iii) If the initial monitoring reveals that employee exposure is above the permissible exposure limit the employer shall repeat monitoring quarterly. The employer shall continue monitoring at the required frequency until at least two consecutive measurements, taken at least seven days apart, are below the PEL but at or above the action level at which time the employer shall repeat monitoring for that employee at the frequency specified in item (4)(f)(ii), except as otherwise provided in subdivision (4)(g) of this section.

(g) Additional monitoring. Whenever there has been a production, process, control or personnel change which may result in new or additional exposure to lead, or whenever the employer has any other reason to suspect a change which may result in new or additional exposures to lead, additional monitoring in accordance with this subsection shall be conducted.

(h) Employee notification.

(i) Within five working days after the receipt of monitoring results, the employer shall notify each employee in writing of the results which represent that employee's exposure.

(ii) Whenever the results indicate that the representative employee exposure, without regard to respirators, exceeds the permissible exposure limit, the employer shall include in the written notice a statement that the permissible exposure limit was exceeded and a description of the corrective action taken or to be taken to reduce exposure to or below the permissible exposure limit.

(i) Accuracy of measurement. The employer shall use a method of monitoring and analysis which has an accuracy (to a confidence level of ninety-five percent) of not less than plus or minus twenty percent for airborne concentrations of lead equal to or greater than 30 $\mu g/m^3$.

(5) Methods of compliance.

(a) Engineering and work practice controls.

(i) Where any employee is exposed to lead above the permissible exposure limit for more than thirty days per year, the employer shall implement engineering and work practice controls (including administrative controls) to reduce and maintain employee exposure to lead in accordance with the implementation schedule in Table I below, except to the extent that the employer can demonstrate that such controls are not feasible. Wherever the engineering and work practice controls which can be instituted are not sufficient to reduce employee exposure to or below the permissible exposure limit, the employer shall nonetheless use them to reduce exposures to the lowest feasible level and shall supplement them by the use of respiratory protection which complies with the requirements of subsection (6) of this section.

(ii) Where any employee is exposed to lead above the permissible exposure limit, but for thirty days or less per year, the employer shall implement engineering controls to reduce exposures to 200 $\mu g/m^3$, but thereafter may implement any combination of engineering, work practice (including administrative controls), and respiratory controls to reduce and maintain employee exposure to lead to or below 50 $\mu g/m^3$.

TABLE I

IMPLEMENTATION SCHEDULE

Industry[1]	Compliance Dates[2] 200 $\mu g/m^3$	100 $\mu g/m^3$	50 $\mu g/m^3$
Primary lead production	([3])	3	10
Secondary lead production ...	([3])	3	5
Lead–acid battery manufacturing	([3])	2	5
Automobile manufacture/ solder grinding	([3])	N/A	7
Electronics, gray iron foundries, ink manufacture, paints and coatings manufacture, wall paper manufacture, can manufacture, and printing	([3])	N/A	1
Lead pigment manufacture, nonferrous foundries, leaded steel manufacture, lead chemical manufacture, shipbuilding and ship repair, battery breaking in the collection and processing of scrap (excluding collection and processing of scrap which is part of a secondary smelting operation), secondary lead smelting of copper, and lead casting	([3])	N/A	N/A
All other industries	([3])	N/A	2 1/2

[1] Includes ancillary activities located on the same worksite.

[2] Expressed as the number of years from the effective date by which compliance with the given airborne exposure level, as an eight–hour TWA, must be achieved.

[3] On effective date. This continues an obligation from WAC 296–62–07515 Table 1 which had been in effect since 1973.

(b) Respiratory protection. Where engineering and work practice controls do not reduce employee exposure to or below the 50 $\mu g/m^3$ permissible exposure limit, the employer shall supplement these controls with respirators in accordance with subsection (6).

(c) Compliance program.

(i) Each employer shall establish and implement a written compliance program to reduce exposures to or below the permissible exposure limit, and interim levels if applicable, solely by means of engineering and work practice controls in accordance with the implementation schedule in subdivision (5)(a).

(ii) Written plans for these compliance programs shall include at least the following:

(A) A description of each operation in which lead is emitted; e.g., machinery used, material processed, controls in place, crew size, employee job responsibilities, operating procedures and maintenance practices;

(B) A description of the specific means that will be employed to achieve compliance, including engineering plans and studies used to determine methods selected for controlling exposure to lead;

(C) A report of the technology considered in meeting the permissible exposure limit;

(D) Air monitoring data which documents the source of lead emissions;

(E) A detailed schedule for implementation of the program, including documentation such as copies of purchase orders for equipment, construction contracts, etc.;

(F) A work practice program which includes items required under subsections (7), (8) and (9) of this regulation;

(G) An administrative control schedule required by subdivision (5)(f), if applicable; and

(H) Other relevant information.

(iii) Written programs shall be submitted upon request to the director, and shall be available at the worksite for examination and copying by the director, any affected employee or authorized employee representatives.

(iv) Written programs shall be revised and updated at least every six months to reflect the current status of the program.

(d) Bypass of interim level. Where an employer's compliance plan provides for a reduction of employee exposures to or below the PEL solely by means of engineering and work practice controls in accordance with the implementation schedule in Table I, and the employer has determined that compliance with the 100 $\mu g/m^3$ interim level would divert resources to the extent that it clearly precludes compliance, otherwise attainable, with the PEL by the required time, the employer may proceed with the plan to comply with the PEL in lieu of compliance with the interim level if:

(i) The compliance plan clearly documents the basis of the determination;

(ii) The employer takes all feasible steps to provide maximum protection for employees until the PEL is met; and

(iii) The employer notifies the director in writing within ten working days of the completion or revision of the compliance plan reflecting the determination.

(e) Mechanical ventilation.

(i) When ventilation is used to control exposure, measurements which demonstrate the effectiveness of the system in controlling exposure, such as capture velocity, duct velocity, or static pressure shall be made at least every three months. Measurements of the system's effectiveness in controlling exposure shall be made within five days of any change in production, process, or control which might result in a change in employee exposure to lead.

(ii) Recirculation of air. If air from exhaust ventilation is recirculated into the workplace, the employer shall assure that (A) the system has a high efficiency filter with reliable back-up filter; and (B) controls to monitor the concentration of lead in the return air and to bypass the recirculation system automatically if it fails are installed, operating, and maintained.

(f) Administrative controls. If administrative controls are used as a means of reducing employees TWA exposure to lead, the employer shall establish and implement a job rotation schedule which includes:

(i) Name or identification number of each affected employee;

(ii) Duration and exposure levels at each job or work station where each affected employee is located; and

(iii) Any other information which may be useful in assessing the reliability of administrative controls to reduce exposure to lead.

(6) Respiratory protection.

(a) General. Where the use of respirators is required under this section, the employer shall provide, at no cost to the employee, and assure the use of respirators which comply with the requirements of this subsection. Respirators shall be used in the following circumstances:

(i) During the time period necessary to install or implement engineering or work practice controls, except that after the dates for compliance with the interim levels in Table I, no employer shall require an employee to wear a negative pressure respirator longer than 4.4 hours per day;

(ii) In work situations in which engineering and work practice controls are not sufficient to reduce exposures to or below the permissible exposure limit; and

(iii) Whenever an employee requests a respirator.

(b) Respirator selection.

(i) Where respirators are required under this section the employer shall select the appropriate respirator or combination of respirators from Table II.

TABLE II

RESPIRATORY PROTECTION FOR LEAD AEROSOLS

Airborne Concentration of Lead or Condition of Use	Required Respirator[1]
Not in excess of 0.5 mg/m^3 (10X PEL).	Half-mask, air-purifying respirator equipped with high efficiency filters.[2,3]
Not in excess of 2.5 mg/m^3 (50X PEL).	Full facepiece, air-purifying respirator with high efficiency filters.[3]
Not in excess of 50 mg/m^3 (1000X PEL).	(1) Any powered, air-purifying respirator with high efficiency filters[3]; or (2) Half-mask supplied air respirator operated in positive-pressure mode.[2]
Not in excess of 100 mg/m^3 (2000X PEL).	Supplied-air respirators with full facepiece, hood, helmet, or suit, operated in positive pressure mode.
Greater than 100 mg/m^3, unknown concentration or fire fighting.	Full facepiece, self-contained breathing apparatus operated in positive-pressure mode.

[1] Respirators specified for high concentrations can be used at lower concentrations of lead.

[2] Full facepiece is required if the lead aerosols cause eye or skin irritation at the use concentrations.

[3] A high efficiency particulate filter means 99.97 percent efficient against 0.3 micron size particles.

(ii) The employer shall provide a powered, air-purifying respirator in lieu of the respirator specified, in Table II whenever:

(A) An employee chooses to use this type of respirator; and

(B) This respirator will provide adequate protection to the employee.

(iii) The employer shall select respirators from among those approved for protection against lead dust, fume, and mist by the Mine Safety and Health Administration and the National Institute for Occupational Safety and Health (NIOSH) under the provisions of 30 CFR Part 11.

(c) Respirator usage.

(i) The employer shall assure that the respirator issued to the employee exhibits minimum facepiece leakage and that the respirator is fitted properly.

(ii) Employers shall perform quantitative face fit tests at the time of initial fitting and at least semiannually thereafter for each employee wearing negative pressure respirators. The test shall be used to select facepieces that provide the required protection as prescribed in Table II.

(iii) If an employee exhibits difficulty in breathing during the fitting test or during use, the employer shall make available to the employee an examination in accordance with subitem (10)(c)(i)(C) of this section to determine whether the employee can wear a respirator while performing the required duty.

(d) Respirator program.

(i) The employer shall institute a respiratory protection program in accordance with WAC 296-62-071.

(ii) The employer shall permit each employee who uses a filter respirator to change the filter elements whenever an increase in breathing resistance is detected and shall maintain an adequate supply of filter elements for this purpose.

(iii) Employees who wear respirators shall be permitted to leave work areas to wash their face and respirator facepiece whenever necessary to prevent skin irritation associated with respirator use.

(7) Protective work clothing and equipment.

(a) Provision and use. If an employee is exposed to lead above the PEL, without regard to the use of respirators or where the possibility of skin or eye irritation exists, the employer shall provide at no cost to the employee and assure that the employee uses appropriate protective work clothing and equipment such as, but not limited to:

(i) Coveralls or similar full-body work clothing;

(ii) Gloves, hats, and shoes or disposable shoe coverlets; and

(iii) Face shields, vented goggles, or other appropriate protective equipment which complies with WAC 296-24-078.

(b) Cleaning and replacement.

(i) The employer shall provide the protective clothing required in subdivision (7)(a) of this section in a clean and dry condition at least weekly, and daily to employees whose exposure levels without regard to a respirator are over 200 $\mu g/m^3$ of lead as an eight-hour TWA.

(ii) The employer shall provide for the cleaning, laundering, or disposal of protective clothing and equipment required by subdivision (7)(a) of this section.

(iii) The employer shall repair or replace required protective clothing and equipment as needed to maintain their effectiveness.

(iv) The employer shall assure that all protective clothing is removed at the completion of a work shift only in change rooms provided for that purpose as prescribed in subdivision (9)(b) of this section.

(v) The employer shall assure that contaminated protective clothing which is to be cleaned, laundered, or disposed of, is placed in a closed container in the change-room which prevents dispersion of lead outside the container.

(vi) The employer shall inform in writing any person who cleans or launders protective clothing or equipment of the potentially harmful effects of exposure to lead.

(vii) The employer shall assure that the containers of contaminated protective clothing and equipment required by subdivision (7)(b)(v) are labeled as follows:

CAUTION: CLOTHING CONTAMINATED WITH LEAD. DO NOT REMOVE DUST BY BLOWING OR SHAKING. DISPOSE OF LEAD CONTAMINATED WASH WATER IN ACCORDANCE WITH APPLICABLE LOCAL, STATE, OR FEDERAL REGULATIONS.

(viii) The employer shall prohibit the removal of lead from protective clothing or equipment by blowing, shaking, or any other means which disperses lead into the air.

(8) Housekeeping.

(a) Surfaces. All surfaces shall be maintained as free as practicable of accumulations of lead.

(b) Cleaning floors.

(i) Floors and other surfaces where lead accumulates may not be cleaned by the use of compressed air.

(ii) Shoveling, dry or wet sweeping, and brushing may be used only where vacuuming or other equally effective methods have been tried and found not to be effective.

(c) Vacuuming, Where vacuuming methods are selected, the vacuums shall be used and emptied in a manner which minimizes the reentry of lead into the workplace.

(9) Hygiene facilities and practices.

(a) The employer shall assure that in areas where employees are exposed to lead above the PEL, without regard to the use of respirators, food or beverage is not present or consumed, tobacco products are not present or used, and cosmetics are not applied, except in change rooms, lunchrooms, and showers required under subdivision (9)(b) through (9)(d) of this section.

(b) Change rooms.

(i) The employer shall provide clean change rooms for employees who work in areas where their airborne exposure to lead is above the PEL, without regard to the use of respirators.

(ii) The employer shall assure that change rooms are equipped with separate storage facilities for protective work clothing and equipment and for street clothes which prevent cross-contamination.

(c) Showers.

(i) The employer shall assure that employees who work in areas where their airborne exposure to lead is above the PEL, without regard to the use of respirators, shower at the end of the work shift.

(ii) The employer shall provide shower facilities in accordance with WAC 296-24-12009.

(iii) The employer shall assure that employees who are required to shower pursuant to item (9)(c)(i) do not leave the workplace wearing any clothing or equipment worn during the work shift.

(d) Lunchrooms.

(i) The employer shall provide lunchroom facilities for employees who work in areas where their airborne exposure to lead is above the PEL, without regard to the use of respirators.

(ii) The employer shall assure that lunchroom facilities have a temperature controlled, positive pressure, filtered air supply, and are readily accessible to employees.

(iii) The employer shall assure that employees who work in areas where their airborne exposure to lead is above the PEL without regard to the use of a respirator wash their hands and face prior to eating, drinking, smoking or applying cosmetics.

(iv) The employer shall assure that employees do not enter lunchroom facilities with protective work clothing or equipment unless surface lead dust has been removed by vacuuming, downdraft booth, or other cleaning method.

(e) Lavatories. The employer shall provide an adequate number of lavatory facilities which comply with WAC 296-24-12009(1) and (2).

(10) Medical surveillance.

(a) General.

(i) The employer shall institute a medical surveillance program for all employees who are or may be exposed above the action level for more than thirty days per year.

(ii) The employer shall assure that all medical examinations and procedures are performed by or under the supervision of a licensed physician.

(iii) The employer shall provide the required medical surveillance including multiple physician review under

item (10)(c)(iii) without cost to employees and at a reasonable time and place.

(b) Biological monitoring.

(i) Blood lead and ZPP level sampling and analysis. The employer shall make available biological monitoring in the form of blood sampling and analysis for lead and zinc protoporphyrin levels to each employee covered under item (10)(a)(i) of this section on the following schedule:

(A) At least every six months to each employee covered under item (10)(a)(i) of this section;

(B) At least every two months for each employee whose last blood sampling and analysis indicated a blood lead level at or above 40 μg/100 g of whole blood. This frequency shall continue until two consecutive blood samples and analyses indicate a blood lead level below 40 μg/100 g of whole blood; and

(C) At least monthly during the removal period of each employee removed from exposure to lead due to an elevated blood lead level.

(ii) Follow-up blood sampling tests. Whenever the results of a blood lead level test indicate that an employee's blood lead level exceeds the numerical criterion for medical removal under item (11)(a)(i), the employer shall provide a second (follow-up) blood sampling test within two weeks after the employer receives the results of the first blood sampling test.

(iii) Accuracy of blood lead level sampling and analysis. Blood lead level sampling and analysis provided pursuant the this section shall have an accuracy (to a confidence level of ninety-five percent) within plus or minus fifteen percent or 6 μg/100 ml, whichever is greater, and shall be conducted by a laboratory licensed by the Center for Disease Control (CDC), United States Department of Health, Education and Welfare or which has received a satisfactory grade in blood lead proficiency testing from CDC in the prior twelve months.

(iv) Employee notification. Within five working days after the receipt of biological monitoring results, the employer shall notify in writing each employee whose blood lead level exceeds 40 μg/100 g: (A) of that employee's blood lead level and (B) that the standard requires temporary medical removal with medical removal protection benefits when an employee's blood lead level exceeds the numerical criterion for medical removal under item (11)(a)(i) of this section.

(c) Medical examinations and consultations.

(i) Frequency. The employer shall make available medical examinations and consultations to each employee covered under item (10)(a)(i) of this section on the following schedule:

(A) At least annually for each employee for whom a blood sampling test conducted at any time during the preceding twelve months indicated a blood lead level at or above 40 μg/100 g;

(B) Prior to assignment for each employee being assigned for the first time to an area in which airborne concentrations of lead are at or above the action level;

(C) As soon as possible, upon notification by an employee either that the employee has developed signs or symptoms commonly associated with lead intoxication, that the employee desires medical advice concerning the effects of current or past exposure to lead on the employee's ability to procreate a healthy child, or that the employee has demonstrated difficulty in breathing during a respirator fitting test or during use; and

(D) As medically appropriate for each employee either removed from exposure to lead due to a risk of sustaining material impairment to health, or otherwise limited pursuant to a final medical determination.

(ii) Content. Medical examinations made available pursuant to subitems (10)(c)(i)(A) through (B) of this section shall include the following elements:

(A) A detailed work history and a medical history, with particular attention to past lead exposure (occupational and nonoccupational), personal habits (smoking, hygiene), and past gastrointestinal, hematologic, renal, cardiovascular, reproductive and neurological problems;

(B) A thorough physical examination, with particular attention to teeth, gums, hematologic, gastrointestinal, renal, cardiovascular, and neurological systems. Pulmonary status should be evaluated if respiratory protection will be used;

(C) A blood pressure measurement;

(D) A blood sample and analysis which determines:

(aa) Blood lead level;

(bb) Hemoglobin and hematocrit determinations, red cell indices, and examination of peripheral smear morphology;

(cc) Zinc protoporphyrin;

(dd) Blood urea nitrogen; and

(ee) Serum creatinine;

(E) A routine urinalysis with microscopic examination; and

(F) Any laboratory or other test which the examining physician deems necessary by sound medical practice.

The content of medical examinations made available pursuant to subitems (10)(c)(i)(C) through (D) of this section shall be determined by an examining physician and, if requested by an employee, shall include pregnancy testing or laboratory evaluation of male fertility.

(iii) Multiple physician review mechanism.

(A) If the employer selects the initial physician who conducts any medical examination or consultation provided to an employee under this section, the employee may designate a second physician:

(aa) To review any findings, determinations or recommendations of the initial physician; and

(bb) To conduct such examinations, consultations, and laboratory tests as the second physician deems necessary to facilitate this review.

(B) The employer shall promptly notify an employee of the right to seek a second medical opinion after each occasion that an initial physician conducts a medical examination or consultation pursuant to this section. The employer may condition its participation in, and payment for, the multiple physician review mechanism upon the employee doing the following within fifteen days after receipt of the foregoing notification, or receipt of the initial physician's written opinion, whichever is later:

(aa) The employee informing the employer that he or she intends to seek a second medical opinion, and

(bb) The employee initiating steps to make an appointment with a second physician.

(C) If the findings, determinations or recommendations of the second physician differ from those of the initial physician, then the employer and the employee shall assure that efforts are made for the two physicians to resolve any disagreement.

(D) If the two physicians have been unable to quickly resolve their disagreement, then the employer and the employee through their respective physicians shall designate a third physician:

(aa) To review any findings, determinations or recommendations of the prior physicians; and

(bb) To conduct such examinations, consultations, laboratory tests and discussions with the prior physicians as the third physician deems necessary to resolve the disagreement of the prior physicians.

(E) The employer shall act consistent with the findings, determinations and recommendations of the third physician, unless the employer and the employee reach an agreement which is otherwise consistent with the recommendations of at least one of the three physicians.

(iv) Information provided to examining and consulting physicians.

(A) The employer shall provide an initial physician conducting a medical examination or consultation under this section with the following information:

(aa) A copy of this regulation for lead including all appendices;

(bb) A description of the affected employee's duties as they relate to the employee's exposure;

(cc) The employee's exposure level or anticipated exposure level to lead and to any other toxic substance (if applicable);

(dd) A description of any personal protective equipment used or to be used;

(ee) Prior blood lead determinations; and

(ff) All prior written medical opinions concerning the employee in the employer's possession or control.

(B) The employer shall provide the foregoing information to a second or third physician conducting a medical examination or consultation under this section upon request either by the second or third physician, or by the employee.

(v) Written medical opinions.

(A) The employer shall obtain and furnish the employee with a copy of a written medical opinion from each examining or consulting physician which contains the following information:

(aa) The physician's opinion as to whether the employee has any detected medical condition which would place the employee at increased risk of material impairment of the employee's health from exposure to lead;

(bb) Any recommended special protective measures to be provided to the employee, or limitations to be placed upon the employee's exposure to lead;

(cc) Any recommended limitation upon the employee's use of respirators, including a determination of whether the employee can wear a powered air purifying respirator if a physician determines that the employee cannot wear a negative pressure respirator; and

(dd) The results of the blood lead determinations.

(B) The employer shall instruct each examining and consulting physician to:

(aa) Not reveal either in the written opinion, or in any other means of communication with the employer, findings, including laboratory results, or diagnoses unrelated to an employee's occupational exposure to lead; and

(bb) Advise the employee of any medical condition, occupational or nonoccupational, which dictates further medical examination or treatment.

(vi) Alternate physician determination mechanisms. The employer and an employee or authorized employee representative may agree upon the use of any expeditious alternate physician determination mechanism in lieu of the multiple physician review mechanism provided by this subsection so long as the alternate mechanism otherwise satisfies the requirements contained in this subsection.

(d) Chelation.

(i) The employer shall assure that any person whom he retains, employs, supervises or controls does not engage in prophylactic chelation of any employee at any time.

(ii) If therapeutic or diagnostic chelation is to be performed by any person in item (10)(d)(i), the employer shall assure that it be done under the supervision of a licensed physician in a clinical setting with thorough and appropriate medical monitoring and that the employee is notified in writing prior to its occurrence.

(11) Medical removal protection.

(a) Temporary medical removal and return of an employee.

(i) Temporary removal due to elevated blood lead levels.

(A) First year of the standard. During the first year following the effective date of the standard, the employer shall remove an employee from work having a daily eight hour TWA exposure to lead at or above 100 $\mu g/m^3$ on each occasion that a periodic and a follow-up blood sampling test conducted pursuant to this section indicate that the employee's blood lead level is at or above 80 $\mu g/100$ g of whole blood;

(B) Second year of the standard. During the second year following the effective date of the standard, the employer shall remove an employee from work having a daily eight hour TWA exposure to lead at or above 50 $\mu g/m^3$ on each occasion that a periodic and a follow-up blood sampling test conducted pursuant to this section indicate that the employee's blood lead level is at or above 70 $\mu g/100$ g of whole blood;

(C) Third year of the standard, and thereafter. Beginning with the third year following the effective date of the standard, the employer shall remove an employee from work having an exposure to lead at or above the action level on each occasion that a periodic and a follow-up blood sampling test conducted pursuant to this section indicate that the employee's blood lead level is at or above 60 $\mu g/100$ g of whole blood; and

(D) Fifth year of the standard, and thereafter. Beginning with the fifth year following the effective date of the standard, the employer shall remove an employee

from work having an exposure to lead at or above the action level on each occasion that the average of the last three blood sampling tests conducted pursuant to this section (or the average of all blood sampling tests conducted over the previous six months, whichever is longer) indicates that the employee's blood lead level is at or above 50 μg/100 g of whole blood; provided, however, that an employee need not be removed if the last blood sampling test indicates a blood lead level at or below 40 μg/100 g of whole blood.

(ii) Temporary removal due to a final medical determination.

(A) The employer shall remove an employee from work having an exposure to lead at or above the action level on each occasion that a final medical determination results in a medical finding, determination, or opinion that the employee has a detected medical condition which places the employee at increased risk of material impairment to health from exposure to lead.

(B) For the purposes of this section, the phrase "final medical determination" shall mean the outcome of the multiple physician review mechanism or alternate medical determination mechanism used pursuant to the medical surveillance provisions of this section.

(C) Where a final medical determination results in any recommended special protective measures for an employee, or limitations on an employee's exposure to lead, the employer shall implement and act consistent with the recommendation.

(iii) Return of the employee to former job status.

(A) The employer shall return an employee to his or her former job status:

(aa) For an employee removed due to a blood lead level at or above 80 μg/100 g, when two consecutive blood sampling tests indicate that the employee's blood lead level is at or below 60 μg/100 g of whole blood;

(bb) For an employee removed due to a blood lead level at or above 70 μg/100 g, when two consecutive blood sampling tests indicate that the employee's blood lead level is at or below 50 μg/100 g of whole blood;

(cc) For an employee removed due to a blood lead level at or above 60 μg/100 g, or due to an average blood lead level at or above 50 μg/100 g, when two consecutive blood sampling tests indicate that the employee's blood lead level is at or below 40 μg/100 g of whole blood;

(dd) For an employee removed due to a final medical determination, when a subsequent final medical determination results in a medical finding, determination, or opinion that the employee no longer has a detected medical condition which places the employee at increased risk of material impairment to health from exposure to lead.

(B) For the purposes of this section, the requirement that an employer return an employee to his or her former job status is not intended to expand upon or restrict any rights an employee has or would have had, absent temporary medical removal, to a specific job classification or position under the terms of a collective bargaining agreement.

(iv) Removal of other employee special protective measure or limitations. The employer shall remove any limitations placed on an employee or end any special protective measures provided to an employee pursuant to a final medical determination when a subsequent final medical determination indicates that the limitations or special protective measures are no longer necessary.

(v) Employer options pending a final medical determination. Where the multiple physician review mechanism, or alternate medical determination mechanism used pursuant to the medical surveillance provisions of this section, has not yet resulted in a final medical determination with respect to an employee, the employer shall act as follows:

(A) Removal. The employer may remove the employee from exposure to lead, provide special protective measures to the employee, or place limitations upon the employee, consistent with the medical findings, determinations, or recommendations of any of the physicians who have reviewed the employee's health status.

(B) Return. The employer may return the employee to his or her former job status, end any special protective measures provided to the employee, and remove any limitations placed upon the employee, consistent with the medical findings, determinations, or recommendations of any of the physicians who have reviewed the employee's health status, with two exceptions. If:

(aa) The initial removal, special protection, or limitation of the employee resulted from a final medical determination which differed from the findings, determinations, or recommendations of the initial physician; or

(bb) The employee has been on removal status for the preceding eighteen months due to an elevated blood lead level, then the employer shall await a final medical determination.

(b) Medical removal protection benefits.

(i) Provision of medical removal protection benefits. The employer shall provide to an employee up to eighteen months of medical removal protection benefits on each occasion that an employee is removed from exposure to lead or otherwise limited pursuant to this section.

(ii) Definition of medical removal protection benefits. For the purposes of this section, the requirement that an employer provide medical removal protection benefits means that the employer shall maintain the earnings, seniority and other employment rights and benefits of an employee as though the employee had not been removed from normal exposure to lead or otherwise limited.

(iii) Follow-up medical surveillance during the period of employee removal or limitation. During the period of time that an employee is removed from normal exposure to lead or otherwise limited, the employer may condition the provision of medical removal protection benefits upon the employee's participation in follow-up medical surveillance made available pursuant to this section.

(iv) Workers' compensation claims. If a removed employee files a claim for workers' compensation payments for a lead-related disability, then the employer shall continue to provide medical removal protection benefits pending disposition of the claim. To the extent that an

award is made to the employee for earnings lost during the period of removal, the employer's medical removal protection obligation shall be reduced by such amount. The employer shall receive no credit for workers' compensation payments received by the employee for treatment related expenses.

(v) Other credits. The employer's obligation to provide medical removal protection benefits to a removed employee shall be reduced to the extent that the employee receives compensation for earnings lost during the period of removal either from a publicly or employer-funded compensation program, or receives income from employment with another employer made possible by virtue of the employee's removal.

(vi) Employees whose blood lead levels do not adequately decline within eighteen months of removal. The employer shall take the following measures with respect to any employee removed from exposure to lead due to an elevated blood lead level whose blood lead level has not declined within the past eighteen months of removal so that the employee has been returned to his or her former job status:

(A) The employer shall make available to the employee a medical examination pursuant to this section to obtain a final medical determination with respect to the employee;

(B) The employer shall assure that the final medical determination obtained indicates whether or not the employee may be returned to his or her former job status, and if not, what steps should be taken to protect the employee's health;

(C) Where the final medical determination has not yet been obtained, or once obtained indicates that the employee may not yet be returned to his or her former job status, the employer shall continue to provide medical removal protection benefits to the employee until either the employee is returned to former job status, or a final medical determination is made that the employee is incapable of ever safely returning to his or her former job status.

(D) Where the employer acts pursuant to a final medical determination which permits the return of the employee to his or her former job status despite what would otherwise be an unacceptable blood lead level, later questions concerning removing the employee again shall be decided by a final medical determination. The employer need not automatically remove such an employee pursuant to the blood lead level removal criteria provided by this section.

(vii) Voluntary removal or restriction of an employee. Where an employer, although not required by this section to do so, removes an employee from exposure to lead or otherwise places limitations on an employee due to the effects of lead exposure on the employee's medical condition, the employer shall provide medical removal protection benefits to the employee equal to that required by item (11)(b)(i) of this section.

(12) Employee information and training.

(a) Training program.

(i) Each employer who has a workplace in which there is a potential exposure to airborne lead at any level shall inform employees of the content of Appendices A and B of this regulation.

(ii) The employer shall institute a training program for and assure the participation of all employees who are subject to exposure to lead at or above the action level or for whom the possibility of skin or eye irritation exists.

(iii) The employer shall provide initial training by one hundred eighty days from the effective date for those employees covered by item (12)(a)(ii) on the standard's effective date and prior to the time of initial job assignment for those employees subsequently covered by this subsection.

(iv) The training program shall be repeated at least annually for each employee.

(v) The employer shall assure that each employee is informed of the following:

(A) The content of this standard and its appendices;

(B) The specific nature of the operations which could result in exposure to lead above the action level;

(C) The purpose, proper selection, fitting, use, and limitations of respirators;

(D) The purpose and a description of the medical surveillance program, and the medical removal protection program including information concerning the adverse health effects associated with excessive exposure to lead (with particular attention to the adverse reproductive effects on both males and females);

(E) The engineering controls and work practices associated with the employee's job assignment;

(F) The contents of any compliance plan in effect; and

(G) Instructions to employees that chelating agents should not routinely be used to remove lead from their bodies and should not be used at all except under the direction of a licensed physician.

(b) Access to information and training materials.

(i) The employer shall make readily available to all affected employees a copy of this standard and its appendices.

(ii) The employer shall provide, upon request, all materials relating to the employee information and training program to the director.

(iii) In addition to the information required by item (12)(a)(v), the employer shall include as part of the training program, and shall distribute to employees, any materials pertaining to the Occupational Safety and Health Act, the regulations issued pursuant to the act, and this lead standard, which are made available to the employer by the director.

(13) Signs.

(a) General.

(i) The employer may use signs required by other statutes, regulations or ordinances in addition to, or in combination with, signs required by this subsection.

(ii) The employer shall assure that no statement appears on or near any sign required by this subsection which contradicts or detracts from the meaning of the required sign.

(b) Signs.

(i) The employer shall post the following warning signs in each work area where the PEL is exceeded:

WARNING
LEAD WORK AREA
POISON
NO SMOKING OR EATING

(ii) The employer shall assure that signs required by this subsection are illuminated and cleaned as necessary so that the legend is readily visible.

(14) Recordkeeping.

(a) Exposure monitoring.

(i) The employer shall establish and maintain an accurate record of all monitoring required in subsection (4) of this section.

(ii) This record shall include:

(A) The date(s), number, duration, location and results of each of the samples taken, including a description of the sampling procedure used to determine representative employee exposure where applicable;

(B) A description of the sampling and analytical methods used and evidence of their accuracy;

(C) The type of respiratory protective devices worn, if any;

(D) Name, social security number, and job classification of the employee monitored and of all other employees whose exposure the measurement is intended to represent; and

(E) the environmental variables that could affect the measurement of employee exposure.

(iii) The employer shall maintain these monitoring records for at least forty years or for the duration of employment plus twenty years, whichever is longer.

(b) Medical surveillance.

(i) The employer shall establish and maintain an accurate record for each employee subject to medical surveillance as required by subsection (10) of this section.

(ii) This record shall include:

(A) The name, social security number, and description of the duties of the employee;

(B) A copy of the physician's written opinions;

(C) Results of any airborne exposure monitoring done for that employee and the representative exposure levels supplied to the physician; and

(D) Any employee medical complaints related to exposure to lead.

(iii) the employer shall keep, or assure that the examining physician keeps, the following medical records:

(A) A copy of the medical examination results including medical and work history required under subsection (10) of this section;

(B) A description of the laboratory procedures and a copy of any standards or guidelines used to interpret the test results or references to that information; and

(C) A copy of the results of biological monitoring.

(iv) The employer shall maintain or assure that the physician maintains those medical records for at least forty years, or for the duration of employment plus twenty years, whichever is longer.

(c) Medical removals.

(i) The employer shall establish and maintain an accurate record for each employee removed from current exposure to lead pursuant to subsection (11) of this section.

(ii) Each record shall include:

(A) The name and social security number of the employee;

(B) The date on each occasion that the employee was removed from current exposure to lead as well as the corresponding date on which the employee was returned to his or her former job status;

(C) A brief explanation of how each removal was or is being accomplished; and

(D) A statement with respect to each removal indicating whether or not the reason for the removal was an elevated blood lead level.

(iii) The employer shall maintain each medical removal record for at least the duration of an employee's employment.

(d) Availability.

(i) The employer shall make available upon request all records required to be maintained by subsection (14) of this section to the director for examination and copying.

(ii) Environmental monitoring, medical removal, and medical records required by this subsection shall be provided upon request to employees, designated representatives, and the assistant director in accordance with WAC 296-62-05201 through 296-62-05209 and 296-62-05213 through 296-62-05217. Medical removal records shall be provided in the same manner as environmental monitoring records.

(iii) Upon request, the employer shall make an employee's medical records required to be maintained by this section available to the affected employee or former employee or to a physician or other individual designated by such affected employee or former employees for examination and copying.

(e) Transfer of records.

(i) Whenever the employer ceases to do business, the successor employer shall receive and retain all records required to be maintained by subsection (14) of this section.

(ii) Whenever the employer ceases to do business and there is no successor employer to receive and retain the records required to be maintained by this section for the prescribed period, these records shall be transmitted to the director.

(iii) At the expiration of the retention period for the records required to be maintained by this section, the employer shall notify the director at least three months prior to the disposal of such records and shall transmit those records to the director if requested within the period.

(iv) The employer shall also comply with any additional requirements involving transfer of records set forth in WAC 296-62-05215.

(15) Observation of monitoring.

(a) Employee observation. The employer shall provide affected employees or their designated representatives an opportunity to observe any monitoring of employee exposure to lead conducted pursuant to subsection (4) of this section.

(b) Observation procedures.

(i) Whenever observation of the monitoring of employee exposure to lead requires entry into an area

where the use of respirators, protective clothing or equipment is required, the employer shall provide the observer with and assure the use of such respirators, clothing and such equipment, and shall require the observer to comply with all other applicable safety and health procedures.

(ii) Without interfering with the monitoring, observers shall be entitled to:

(A) Receive an explanation of the measurement procedures;

(B) Observe all steps related to the monitoring of lead performed at the place of exposure; and

(C) Record the results obtained or receive copies of the results when returned by the laboratory.

(16) Effective date. This standard shall become effective thirty days after filing with the code reviser.

(17) Appendices. The information contained in the appendices to this section is not intended by itself, to create any additional obligations not otherwise imposed by this standard nor detract from any existing obligation. Appendices are available from:

The Technical Services Section
Division of Industrial Safety and Health
P.O. Box 207
Olympia, WA 98504 (206)753-6381

(18) Startup dates. All obligations of this standard commence on the effective date except as follows:

(a) The initial determination under subdivision (4)(b) shall be made as soon as possible but no later than thirty days from the effective date.

(b) Initial monitoring under subdivision (4)(d) shall be completed as soon as possible but no later than ninety days from the effective date.

(c) Initial biological monitoring and medical examinations under subsection (10) shall be completed as soon as possible but no later than one hundred eighty days from the effective date. Priority for biological monitoring and medical examinations shall be given to employees whom the employer believes to be at greatest risk from continued exposure.

(d) Initial training and education shall be completed as soon as possible but no later than one hundred eighty days from the effective date.

(e) Hygiene and lunchroom facilities under subsection (9) shall be in operation as soon as possible but no later than one year from the effective year.

(f) Respiratory protection required by subsection (6) shall be provided as soon as possible but no later than the following schedule:

(i) Employees whose eight-hour TWA exposure exceeds 200 $\mu g/m^3$ - on the effective date.

(ii) Employees whose eight-hour TWA exposure exceeds the PEL but is less than 200 $\mu g/m^3$ - one hundred fifty days from the effective date.

(iii) Powered, air-purifying respirators provided under (6)(b)(ii) - two hundred ten days from the effective date.

(iv) Quantitative fit testing required under item (6)(c)(ii) - one year from effective date. Qualitative fit testing is required in the interim.

(g) Written compliance plans required by subdivision (5)(c) shall be completed and available for inspection and copying as soon as possible but no later than the following schedule:

(i) Employers for whom compliance with the PEL or interim level is required within one year from the effective date - six months from the effective date.

(ii) Employers in secondary smelting and refining, lead storage battery manufacturing, lead pigment manufacturing and nonferrous foundry industries - one year from the effective date.

(iii) Employers in primary smelting and refining industry - one year from the effective date from the interim level; five years from the effective date for PEL.

(iv) Plans for construction of hygiene facilities, if required - six months from the effective date.

(h) The permissible exposure limit in subsection (3) shall become effective one hundred fifty days from the effective date. [Statutory Authority: RCW 49.17.040 and 49.17.050. 82-13-045 (Order 82-22), § 296-62-07521, filed 6/11/82. Formerly WAC 296-62-07349.]

WAC 296-62-09003 Lighting and illumination. (1) Lighting which is adequately adjusted to provide a margin of safety in production and inspection tasks shall be provided and maintained. The minimum level of task lighting in all shops shall be an average of 10 foot candles measured 30 inches above the floor.

(2) If general lighting is not provided throughout the work place, the employer shall provide illumination which is adequately adjusted to provide visibility of nearby objects which might be potential hazards or to see to operate emergency control equipment. The minimum level of nontask lighting in all shops shall be an average of 3 foot candles measured 30 inches above the floor.

NOTE: This section establishes minimal levels of illumination for safety purposes only. Guidelines pertaining to optimal levels of lighting and illumination may be found in Practice for Industrial Lighting, ANSI/IES RP7-1979. The minimum levels specified in subsections (1) and (2) of this section represent averages with the lowest level in an area to be no less than fifty percent of the indicated value.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-13-045 (Order 82-22), § 296-62-09003, filed 6/11/82; Order 76-6, § 296-62-09003, filed 3/1/76; Order 73-3, § 296-62-09003, filed 5/7/73.]

WAC 296-62-09011 Occupational noise exposure. (1) Workers shall be protected against the effects of exposure to noise which exceeds the permissible noise exposure shown in Table 7 of this section.

(2) Permissible exposure limits. These permissible exposure limits refer to sound pressure levels that represent conditions under which it is believed that nearly all workers may be repeatedly exposed without adverse effect on their ability to hear and understand normal

speech. The medical profession has defined hearing impairment as an average hearing threshold level in excess of 25 decibels (ANSI S3.6–1969(R1973)) at 500, 1000, 2000 and 3000 Hz, and the limits which are given have been established to prevent a hearing loss in excess of this value. These values shall be used as a standard in the control of noise exposure.

TABLE 7
Permissible Noise Exposures

Duration per day Hours	Sound Level dBA
16	85
8	90
6	92
4	95
3	97
2	100
1–1/2	102
1	105
3/4	107
1/2	110
1/4	115*

*Ceiling Value: No exposure in excess of 115 dBA.

(3) Continuous or intermittent. The sound level shall be measured with a sound level meter, conforming as a minimum to the requirements of the American National Standards Institute ANSI S1.4 1971 (R1976), Type 2, and set to an A–weighted slow meter response or with an audiodosimeter of equivalent accuracy and precision. The unit of measurement shall be decibels Re 20 micropascals A–weighted. Duration of exposure shall not *exceed that shown in Table 7.*

These values apply to total time of exposure per working day regardless of whether this is one continuous exposure or a number of short–term exposures but does not apply to impact or impulsive type of noises.

(4) Intermittent exposure. When the daily noise exposure is composed of two or more periods of noise exposure of different levels, their combined effect shall be considered, rather than the individual effect of each. If the sum of the following fractions:

$$\frac{C_1}{T_1} + \frac{C_2}{T_2} + \ldots + \frac{C_n}{T_n}$$

exceeds unity, then, the mixed exposure shall be considered to exceed the permissible exposure limits, C_1 indicates the total time of exposure at a specified noise level, and T_1 indicates the total time of exposure permitted at that level. Noise exposures shall be established according to the criteria of Table 7.

(5) Impulsive or impact noise. Impulsive or impact noise shall be those variations in noise levels which involve maxima at intervals greater than one second. Where the intervals are less than (1) second, it shall be considered continuous. All impact and impulsive noise measurements should be made on the C–weighting network of a sound level meter in conjunction with an impact noise analyzer or oscilloscope. Exposure to impulsive or impact noise should not exceed 140 decibels peak sound pressure level (ceiling value).

(6) Methods of compliance. (a) When employees are subjected to sound levels exceeding those listed in Table 7, feasible administrative or engineering controls shall be utilized.

(b) Upon request, the employer shall prepare and submit a written compliance plan to the director. This plan must include a description of the manner in which compliance will be achieved with respect to cited violations of WAC 296–62–09011(6)(a) and shall include proposed abatement methods, anticipated completion dates, and provision for progress reports to the director.

(7) Hearing protection.

(a) Personal hearing protective equipment shall be provided at no cost to the employee and shall be used whenever the sound levels prescribed in subsections (3), (4), or (5) of this section are exceeded.

(b) The employer shall assure that personal protective equipment is worn by each affected employee. [Statutory Authority: RCW 49.17.040 and 49.17.050. 82–03–023 (Order 82–1), § 296–62–09011, filed 1/15/82. Statutory Authority: RCW 49.17.040, 49.17.050, and 49.17.240. 81–16–016 (Order 81–19), § 296–62–09011, filed 7/27/81; 80–11–010 (Order 80–14), § 296–62–09011, filed 8/8/80; Order 73–3, § 296–62–09011, filed 5/7/73.]

WAC 296–62–09015 Hearing conservation. The employer shall administer a continuing effective hearing conservation program, as described in WAC 296–62–09015 through 296–62–09053 whenever employee noise exposures equal or exceed an 8–hour time–weighted average (TWA) sound level of 85 decibels (dB) measured on the A–scale slow response or, equivalently, a noise dose of fifty percent. For purposes of the hearing conservation program, employee noise exposures shall be computed without regard to any attenuation provided by the use of personal protective equipment. [Statutory Authority: RCW 49.17.040 and 49.17.050. 82–03–023 (Order 82–1), § 296–62–09015, filed 1/15/82.]

WAC 296–62–09017 Definitions. These definitions apply to the following terms as used in WAC 296–62–09015 through 296–62–09053.

(1) Audiogram – A chart, graph, or table resulting from an audiometric test showing an individual's hearing threshold levels as a function of frequency.

(2) Audiologist – A professional, specializing in the study and rehabilitation of hearing, who is certified by the American Speech, Hearing, and Language Association or licensed by a state board of examiners.

(3) Baseline audiogram – The audiogram against which future audiograms are compared.

(4) Crest factor – Absolute value of the ratio of the peak value and the root–mean–square value measured over a specified time interval where both values are measured in reference to the arithmetic mean value of the wave.

(5) Criterion sound level – A sound level of 90 decibels.

(6) Decibel (dB) – Unit of measurement of sound level.

(7) Hertz (Hz) – Unit of measurement of frequency, numerically equal to cycles per second.

(8) Medical pathology – A disorder or disease. For purposes of this regulation, a condition or disease affecting the ear, which should be treated by a physician specialist.

(9) Noise dose – The ratio, expressed as a percentage, of (1) the time integral, over a stated time or event, of the 0.6 power of the measured SLOW exponential time–averaged, squared A–weighted sound pressure and (2) the product of the criterion duration (8 hours) and the 0.6 power of the squared sound pressure corresponding to the criterion sound level (90 dB).

(10) Noise dosimeter – An instrument that integrates a function of sound pressure over a period of time in such a manner that it directly indicates a noise dose.

(11) Otolaryngologist – A physician specializing in diagnosis and treatment of disorders of the ear, nose and throat.

(12) Representative exposure – Measurements of an employee's noise dose or 8–hour time–weighted average sound level that the employer deems to be representative of the exposure of other employees in the workplace.

(13) Significant threshold shift – A hearing level change, relative to the baseline audiogram, of 20 db or more at 500, 1000, 2000, 3000, 4000, or 6000 Hz, either ear.

(14) Sound level – Ten times the common logarithm of the ratio of the the square of the measured A–weighted sound pressure to the square of the standard reference pressure of 20 micropascals. Unit: decibels (dB). For use with this regulation, SLOW time response, in accordance with ANSI S1.4–1971 (R1976), is required.

(15) Sound level meter – An instrument for the measurement of sound level.

(16) Time–weighted average sound level – That sound level, which if constant over an 8–hour exposure, would result in the same noise dose as if measured. [Statutory Authority: RCW 49.17.040 and 49.17.050. 82–03–023 (Order 82–1), § 296–62–09017, filed 1/15/82.]

WAC 296–62–09019 Monitoring. When reasonable information indicates that any employee's exposure may equal or exceed an 8–hour time–weighted average of 85 dBA, the employer shall obtain individual or representative exposure measurements for all employees who may be exposed at or above that level.

Note: Whenever an employer complies with the requirements of WAC 296–62–09015 through 296–62–09053, the monitoring requirements of this section shall be waived. [Statutory Authority: RCW 49.17.040 and 49.17.050. 82–03–023 (Order 82–1), § 296–62–09019, filed 1/15/82.]

WAC 296–62–09021 Method of noise measurement. (1) Noise dosimeters which comply, as a minimum, with the provisions of subdivision (1)(a) of this section or sound level meters which comply, as a minimum, with the provisions of subdivision (1)(b) of this section shall be used whenever employee exposures are evaluated for the purpose of complying with WAC 296–62–09015 through 296–62–09053.

(a) Dosimeters. Dosimeters shall meet the Class 2A–90/85–5 requirements of the American National Standard Specification for Personal Noise Dosimeters, S1.25–1978.

(b) Sound level meters. Sound level meters shall meet the Type 2 requirements of the American National Standard Specification for Sound Level Meters, S1.4–1971 (R1976).

(2) All continuous, intermittent, and impulsive sound levels measured in accordance with subsection (1) of this section shall be integrated into the exposure computation. [Statutory Authority: RCW 49.17.040 and 49.17.050. 82–03–023 (Order 82–1), § 296–62–09021, filed 1/15/82.]

WAC 296–62–09023 Calibration of monitoring equipment. Dosimeters and sound level meters used to monitor employee noise exposure shall be calibrated before and after each day's use. [Statutory Authority: RCW 49.17.040 and 49.17.050. 82–03–023 (Order 82–1), § 296–62–09023, filed 1/15/82.]

WAC 296–62–09025 Observation of monitoring. The employer shall provide affected employees or their representatives with an opportunity to observe any measurements of employee noise exposure which are conducted pursuant to WAC 296–62–09019. [Statutory Authority: RCW 49.17.040 and 49.17.050. 82–03–023 (Order 82–1), § 296–62–09025, filed 1/15/82.]

WAC 296–62–09027 Audiometric testing program. (1) The employer shall establish and maintain a mandatory audiometric testing program as provided in this section for all employees whose exposures equal or exceed an 8–hour time–weighted average of 85 dBA.

(2) The program shall be provided at no cost to employees.

(3) Audiometric tests shall be performed by a licensed or certified audiologist, otolaryngologist, or other qualified physician, or by a technician who is certified by the Council of Accreditation in Occupational Hearing Conservation or who has satisfactorily demonstrated competence in administering audiometric examinations, obtaining valid audiograms, and properly using, maintaining and calibrating audiometers. A technician who performs audiometric tests must be responsible to an audiologist, otolaryngologist or other qualified physician.

(4) All audiograms obtained pursuant to this section shall meet the requirements of WAC 296–62–09047, Appendix A: Audiometric measuring instruments.

(5) Baseline audiogram.

(a) Prior to or within 180 days after an employee's first exposure to noise at or above a time–weighted average of 85 dBA, the employer shall establish for each employee so exposed a valid baseline audiogram against which subsequent audiograms can be compared.

(b) Testing to establish a baseline audiogram shall be preceded by at least 14 hours without exposure to workplace noise.

NOTE: This may be accomplished by use of hearing protectors; however, the employer should notify employees of the need to avoid high levels of non-occupational noise exposure during this 14-hour period.

(6) Annual audiogram.

(a) At least annually after obtaining the baseline audiogram, the employer shall obtain a new audiogram for each employee exposed at or above a time-weighted average of 85 dBA.

(b) Annual audiometric testing may be conducted at any time during the workshift.

(7) Evaluation of audiogram.

(a) Each employee's annual audiogram shall be compared to that employee's baseline audiogram to determine if the audiogram is valid and if a significant threshold shift has occurred.

(b) An audiologist, otolaryngologist or other qualified physician shall review audiograms which indicate a significant threshold shift to determine whether there is need for further evaluation. The employer shall provide to the person performing this evaluation the following information:

(i) A copy of the requirements for hearing conservation as set forth in WAC 296-62-09015 through 296-62-09053;

(ii) The baseline audiogram and most recent audiogram of the employee to be evaluated;

(iii) Measurements of background sound pressure levels in the audiometric test room as required in WAC 296-62-09049, Appendix B: Audiometric Test Rooms; and

(iv) Records of audiometer calibrations required by WAC 296-62-09029(5).

(8) Follow-up procedures. If a comparison of the annual audiogram to the baseline audiogram indicates a significant threshold shift, the employer shall ensure that the following steps are taken:

(a) Employees not using hearing protectors shall be fitted with hearing protectors, trained in their use and care, and required to use them.

(b) Employees already using hearing protectors shall be refitted and retrained in the use of hearing protectors and provided with hearing protectors offering greater attenuation if necessary.

(c) Inform the employee in writing, within 21 days of the determination, of the existence of a significant threshold shift;

(d) Refer the employee, at no cost to the employee, for a clinical audiological evaluation or an otological examination, as appropriate, if additional testing is necessary or if the employer suspects that a medical pathology of the ear (as defined in WAC 296-62-09017) is caused or aggravated by the wearing of hearing protectors; and

(e) Inform the employee of the need for an otological examination if a medical pathology of the ear which is unrelated to the use of hearing protectors is suspected.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-03-023 (Order 82-1), § 296-62-09027, filed 1/15/82.]

WAC 296-62-09029 Audiometric test requirements. (1) Audiometric tests shall be pure tone, air conduction, hearing threshold examinations, with test frequencies including as a minimum 500, 1000, 2000, 3000, 4000, and 6000 Hz. Tests at each frequency shall be taken separately for each ear.

(2) Audiometric tests shall be conducted with equipment that meets the specifications of, and is maintained and used in accordance with, American National Standard Specification for Audiometers, S3.6-1969(R1973).

(3) Pulsed-tone and self-recording audiometers, if used, shall meet the requirements specified in WAC 296-62-09047, Appendix A: Audiometric Measuring Instruments.

(4) Audiometric examinations shall be administered in a room meeting the requirements listed in WAC 296-62-09049, Appendix B: Audiometric Test Rooms.

(5) Audiometer calibration.

(a) The functional operation of the audiometer shall be checked before each day's use by testing a person with known, stable hearing thresholds, and by listening to the audiometer's output to make sure that the output is free from distorted or unwanted sounds. Deviations of 10dB or greater shall require an acoustic calibration.

(b) Audiometer calibration shall be checked acoustically at least annually in accordance with WAC 296-62-09051, Appendix C: Acoustic Calibration of Audiometers. Test frequencies below 500 Hz and above 6000 Hz may be omitted from this check. Deviations of 15dB or greater necessitate an exhaustive calibration.

(c) An exhaustive calibration shall be performed at least every two years in accordance with sections 4.1.2; 4.1.3; 4.1.4.3; 4.4.1; 4.4.2; 4.4.3; and 4.5 of the American National Standard Specification for Audiometers, S3.6-1969(R1973). Test frequencies below 500 Hz and above 6000 Hz may be omitted from the calibration. [Statutory Authority: RCW 49.17.040 and 49.17.050. 82-03-023 (Order 82-1), § 296-62-09029, filed 1/15/82.]

WAC 296-62-09031 Hearing protectors. (1) Employers shall make hearing protectors available to all employees exposed to a time-weighted average of 85 dBA or greater at no cost to the employees. Hearing protectors shall be replaced as necessary.

(2) Employers shall ensure that hearing protectors are worn by all employees:

(a) Who are exposed to a time-weighted average of 85 dBA or greater and who have experienced a permanent significant threshold shift; or

(b) Who are required by WAC 296-62-09011 (7)(a) to wear personal protective equipment.

(3) Employees shall be given the opportunity to select their hearing protectors from a variety of suitable hearing protectors provided by the employer.

(4) The employer shall provide training in the use and care of all hearing protectors provided to employees.

(5) The employer shall ensure proper initial fitting and supervise the correct use of all hearing protectors. [Statutory Authority: RCW 49.17.040 and 49.17.050. 82-13-045 (Order 82-22), § 296-62-09031, filed 6/11/82; 82-03-023 (Order 82-1), § 296-62-09031, filed 1/15/82.]

WAC 296-62-09033 Hearing protector attenuation. (1) The employer shall evaluate hearing protector attenuation for the specific noise environments in which the protector will be used by one of the methods described in WAC 296-62-09053, Appendix D: Methods for estimating the adequacy of hearing protector attenuation, or by other methods if approved by the director.

(2) Hearing protectors must attenuate employee exposure at least to a time-weighted average of 90 dBA as required by WAC 296-62-09011 (7)(a).

(3) For employees who have experienced a significant threshold shift, hearing protectors must attenuate employee exposures to a time-weighted average of 85 dBA or below.

(4) The adequacy of hearing protector attenuation shall be re-evaluated whenever employee noise exposures increase to the extent that the hearing protectors provided may no longer provide adequate attenuation. The employer shall provide more effective hearing protectors where necessary. [Statutory Authority: RCW 49.17.040 and 49.17.050. 82-13-045 (Order 82-22), § 296-62-09033, filed 6/11/82; 82-03-023 (Order 82-1), § 296-62-09033, filed 1/15/82.]

WAC 296-62-09035 Training program. (1) The employer shall institute a training program for all employees who are exposed to noise at or above a TWA of 85 dBA, and shall ensure employee participation in such program.

(2) The training program shall be repeated annually for each employee included in the hearing conservation program. Information provided in the training program shall be updated to be consistent with changes in protective equipment and work processes.

(3) The employer shall ensure that each employee is informed of the following:

(a) The effects of noise on hearing;

(b) The purpose of hearing protectors, the advantages, disadvantages, and attenuation of various types, and instructions on selection, fitting, use, and care; and

(c) The purpose of audiometric testing, and an explanation of the test procedures.

(d) The right to access to records as specified in WAC 296-62-09041(5). [Statutory Authority: RCW 49.17.040 and 49.17.050. 82-03-023 (Order 82-1), § 296-62-09035, filed 1/15/82.]

WAC 296-62-09037 Access to information and training materials. (1) The employer shall make available to affected employees or their representatives copies of this standard and shall also post a copy in the workplace.

(2) The employer shall provide to affected employees any informational materials pertaining to this standard that are supplied to the employer by the director.

(3) The employer shall provide, upon request, all materials related to the employer's training and education program pertaining to this standard to the director. [Statutory Authority: RCW 49.17.040 and 49.17.050. 82-03-023 (Order 82-1), § 296-62-09037, filed 1/15/82.]

WAC 296-62-09039 Warning signs. (1) Signs shall be posted at entrances to or on the periphery of all well defined work areas in which employees may be exposed at or above 115dBA.

(2) Warning signs shall clearly indicate that the area is a high noise area and that hearing protectors shall be required. [Statutory Authority: RCW 49.17.040 and 49-.17.050. 82-03-023 (Order 82-1), § 296-62-09039, filed 1/15/82.]

WAC 296-62-09041 Recordkeeping. (1) Exposure measurements. The employer shall maintain an accurate record of all employee exposure measurements required by this section.

(2) Audiometric tests.

(a) The employer shall retain all employee audiograms obtained pursuant to WAC 296-62-09027.

(b) This record shall include:

(i) Name and job classification of the employee;

(ii) Date of the audiogram;

(iii) The examiner's name; and

(iv) Date of the last acoustic or exhaustive calibration of the audiometer.

(3) Audiometric test rooms. The employer shall maintain accurate records of the measurements of the background sound pressure levels in audiometric test rooms.

(4) Record retention. The employer shall retain records required in this section for at least the following periods:

(a) Noise exposure measurement records shall be retained for two years.

(b) Audiometric test records shall be retained for the duration of the affected employee's employment.

(5) Access to records. All records required by this section shall be provided upon request to employees, former employees, representatives designated by the individual employee, and the director. The provisions of WAC 296-62-05201 through 296-62-05209 and 296-62-05213 through 296-62-05217 apply to access to records under this section.

(6) Transfer of records. If the employer ceases to do business, the employer shall transfer to the successor employer all records required to be maintained by this section, and the successor employer shall retain them for the remainder of the period prescribed in WAC 296-62-09041(5). [Statutory Authority: RCW 49.17.040 and 49.17.050. 82-03-023 (Order 82-1), § 296-62-09041, filed 1/15/82.]

WAC 296-62-09043 Appendices. WAC 296-62-09047, 296-62-09049, 296-62-09051, and 296-62-09053. Appendices A, B, C, and D are incorporated as part of this section and the contents of these appendices are mandatory. [Statutory Authority: RCW 49.17.040 and 49.17.050. 82-03-023 (Order 82-1), § 296-62-09043, filed 1/15/82.]

WAC 296-62-09045 Effective dates. (1) WAC 296-62-09015 through 296-62-09053 shall become effective 60 days after filing with the code reviser, unless otherwise noted below.

(2) Monitoring conducted pursuant to WAC 296-62-09019 shall be completed no later than 180 days from the effective date of the standard.

(3) Baseline audiograms required by WAC 296-62-09027 shall be completed no later than December 31, 1982. [Statutory Authority: RCW 49.17.040 and 49.17-.050. 82-03-023 (Order 82-1), § 296-62-09045, filed 1/15/82.]

WAC 296-62-09047 Appendix A: Audiometric measuring instruments. (1) In the event that pulsed-tone audiometers are used, they shall have a tone on-time of at least 200 milliseconds.

(2) Self-recording audiometers shall comply with the following requirements:

(a) The chart upon which the audiogram is traced shall have lines at positions corresponding to all multiples of 10 dB hearing level within the intensity range spanned by the audiometer. The lines shall be equally spaced and shall be separated by at least 1/4 inch. Additional increments are optional. The audiogram pen tracings shall not exceed 2 dB in width.

(b) It shall be possible to set the stylus manually at the 10-dB increment lines for calibration purposes.

(c) The slewing rate for the audiometer attenuator shall not be more than 6 dB/sec except that an initial slewing rate greater than 6 dB/sec is permitted at the beginning of each new test frequency, but only until the second subject response.

(d) The audiometer shall remain at each required test frequency for 30 seconds (±3 seconds). The audiogram shall be clearly marked at each change of frequency and the actual frequency change of the audiometer shall not deviate from the frequency boundaries marked on the audiogram by more than ±3 seconds.

(e) It must be possible at each test frequency to place a horizontal line segment parallel to the time axis on the audiogram, such that the audiometric tracing crosses the line segment at least six times at the test frequency. At each test frequency the threshold shall be the average of the midpoints of the tracing excursions. [Statutory Authority: RCW 49.17.040 and 49.17.050. 82-03-023 (Order 82-1), § 296-62-09047, filed 1/15/82.]

WAC 296-62-09049 Appendix B: Audiometric test rooms. Rooms used for audiometric testing shall not have background sound pressure levels exceeding those in Table B-1 when measured by equipment conforming at least to the Type 2 requirements of American National Standard Specification for Sound Level Meters, S1.4-1971 (R1976), and to the Class II requirements of American National Standard Specification for Octave, Half-Octave, and Third-Octave Band Filter Sets, S1.11-1971 (R1976).

TABLE B-1 - Maximum Allowable Octave-Band Sound Pressure Levels for Audiometric Test Rooms.

Octave-band center frequency (Hz) ...	500	1000	2000	4000	8000
Sound pressure level (dB).....	40	40	47	57	62

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-03-023 (Order 82-1), § 296-62-09049, filed 1/15/82.]

WAC 296-62-09051 Appendix C: Acoustic calibration of audiometers. Audiometer calibration shall be checked acoustically, at least annually, according to the procedures described in this Appendix. The equipment necessary to perform these measurements is a sound level meter, octave-band filter set, and a National Bureau of Standards 9A coupler. In making these measurements, the accuracy of the calibrating equipment shall be sufficient to determine that the audiometer is within the tolerance permitted by American National Standard Specifications for Audiometers, S3.6-1969(R1973).

(1) Sound pressure output check.

(a) Place the earphone coupler over the microphone of the sound level meter and place the earphone on the coupler.

(b) Set the audiometer's hearing threshold level (HTL) dial to 70 dB.

(c) Measure the sound pressure level of the tones at each test frequency from 500 Hz through 6000 Hz for each earphone.

(d) At each frequency the readout on the sound level meter should correspond to the levels in Table C-1 or Table C-2, as appropriate, for the type of earphone, in the column entitled "sound level meter reading."

(2) Linearity check.

(a) With the earphone in place, set the frequency to 1000 Hz and the HTL dial on the audiometer to 70 dB.

(b) Measure the sound levels in the coupler at each 10dB decrement from 70 dB to 10 dB, noting the sound level meter reading at each setting.

(c) For each 10dB decrement on the audiometer the sound level meter should indicate a corresponding 10 dB decrease.

(d) This measurement may be made electrically with a voltmeter connected to the earphone terminals.

(3) Tolerances.

When any of the measured sound levels deviate from the levels in Table C-1 or Table C-2 by ±3 dB at any test frequency between 500 and 3000 Hz, 4 dB at 4000 Hz, or 5 dB at 6000 Hz, an exhaustive calibration is

TABLE B-1 – Maximum Allowable Octave-Band Sound Pressure Levels for Audiometric Test Rooms.

advised. An exhaustive calibration is required if the deviations are greater than 10 dB at any test frequency.

Table C-1 – Reference Threshold Levels for Telephonics – TDH-39 Earphones

Frequency, Hz	Reference threshold level for TDH-39 earphones, dB	Sound level meter reading, dB
500	11.5	81.5
1000	7	77
2000	9	79
3000	10	80
4000	9.5	79.5
6000	15.5	85.5

TABLE C-2 – Reference Threshold Levels for Telephonics – TDH-49 Earphones

Frequency, Hz	Reference threshold level for TDH-49 earphones, dB	Sound level meter reading, dB
500	13.5	83.5
1000	7.5	77.5
2000	11	81.0
3000	9.5	79.5
4000	10.5	80.5
6000	13.5	83.5

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-13-045 (Order 82-22), § 296-62-09051, filed 6/11/82; 82-03-023 (Order 82-1), § 296-62-09051, filed 1/15/82.]

WAC 296-62-09053 Appendix D: Methods for estimating the adequacy of hearing protector attenuation. (1) For employees who have experienced a significant threshold shift, hearing protector attenuation must be sufficient to reduce employee exposure to a TWA of 85 dBA.

(2) The most convenient method is the Noise Reduction Rating (NRR) developed by the Environmental Protection Agency (EPA). According to EPA regulation, the NRR must be shown on the hearing protector package. The NRR is then related to an individual worker's noise environment in order to assess the adequacy of the attenuation of a given hearing protector. This appendix describes two methods of using the NRR to determine whether a particular hearing protector provides adequate protection within a given exposure environment. Selection between the two procedures is dependent upon the employer's noise measuring instruments.

(3) When using the NRR to assess hearing protector adequacy, one of the following methods must be used:

(a) When using a dosimeter that is capable of making A-weighted measurements:

(i) Convert the A-weighted dose to TWA.

(ii) Subtract 7 dB from the NRR.

(iii) Subtract the remainder from the A-weighted TWA to obtain the estimated A-weighted TWA under the ear protector.

(b) When using a sound level meter set to the A-weighting network:

(i) Obtain the employee's A-weighted TWA.

(ii) Subtract 7 dB from the NRR, and subtract the remainder from the A-weighted TWA to obtain the estimated A-weighted TWA under the ear protector. [Statutory Authority: RCW 49.17.040 and 49.17.050. 82-03-023 (Order 82-1), § 296-62-09053, filed 1/15/82.]

WAC 296-62-100 Oxygen deficient atmospheres. (1) Definition. A lack of sufficient oxygen is deemed to exist if the atmosphere at sea level has less than 18% oxygen by volume or has a partial pressure of oxygen of 135 millimeters of mercury (mm. Hg) or less. This may deviate when working at higher elevations and should be determined for an individual location. Factors such as acclimatization, physical conditions of the persons involved, etc., must be considered for such circumstances and conditions.

(2) Entering areas with possible oxygen deficient atmospheres. Workmen entering any area where a lack of sufficient oxygen is probable shall be supplied with and shall use approved equipment (for specific requirements see applicable provisions of chapter 296-62 WAC) capable of providing safe respirable air, or prior to entry and at all times when workmen are in such areas a sufficient supply of safe, respirable air shall be provided. All workers so exposed shall be under constant observation. If the oxygen content is unknown or may change during occupation, tests shall be required prior to and during occupation of questionable areas. [Statutory Authority: RCW 49.17.040, 49.17.050, and 49.17.240. 81-16-015 (Order 81-20), § 296-62-100, filed 7/27/81; Order 73-3, § 296-62-100, filed 5/7/73; Order 70-8, § 296-62-100, filed 7/31/70, effective 9/1/70; Rule 10.010, effective 8/1/63.]

WAC 296-62-11015 Abrasive blasting. (1) Definitions.

(a) "Abrasive" means a solid substance used in an abrasive blasting operation.

(b) "Abrasive-blasting respirator" means a continuous flow air-line respirator constructed so that it will cover the wearer's head, neck, and shoulders to protect him from rebounding abrasive.

(c) "Blast cleaning barrel" means a complete enclosure which rotates on an axis, or which has an internal moving tread to tumble the parts, in order to expose various surfaces of the parts to the action of an automatic blast spray.

(d) "Blast cleaning room" means a complete enclosure in which blasting operations are performed and where the operator works inside of the room to operate the blasting nozzle and direct the flow of the abrasive material.

(e) "Blasting cabinet" means an enclosure where the operator stands outside and operates the blasting nozzle through an opening or openings in the enclosure.

(f) "Clean air" means air of such purity that it will not cause harm or discomfort to an individual if it is inhaled for extended periods of time.

(g) "Dust collector" means a device or combination of devices for separating dust from the air handled by an exhaust ventilation system.

(h) "Exhaust ventilation system" means a system for removing contaminated air from a space, comprising two or more of the following elements (i) enclosure or hood, (ii) duct work, (iii) dust collecting equipment, (iv) exhauster, and (v) discharge stack.

(i) "Particulate-filter respirator" means an air purifying respirator, commonly referred to as a dust or a fume respirator, which removes most of the dust or fume from the air passing through the device.

(j) "Respirable dust" means airborne dust in sizes capable of passing through the upper respiratory system to reach the lower lung passages.

(k) "Rotary blast cleaning table" means an enclosure where the pieces to be cleaned are positioned on a rotating table and are passed automatically through a series of blast sprays.

(l) "Abrasive blasting" means the forcible application of an abrasive to a surface by pneumatic pressure, hydraulic pressure, or centrifugal force.

(2) Dust hazards from abrasive blasting.

(a) Abrasives and the surface coatings on the materials blasted are shattered and pulverized during blasting operations and the dust formed will contain particles of respirable size. The composition and toxicity of the dust from these sources shall be considered in making an evaluation of the potential health hazards.

(b) The concentration of respirable dust or fume in the breathing zone of the abrasive-blasting operator or any other worker shall be kept below the levels specified in WAC 296-62-075 through 296-62-07515.

(c) Organic abrasives which are combustible shall be used only in automatic systems. Where flammable or explosive dust mixtures may be present, the construction of the equipment, including the exhaust system and all electric wiring shall conform to the requirements of American National Standard Installation of Blower and Exhaust Systems for Dust, Stock, and Vapor Removal or Conveying, Z33.1-1961 (NFPA 91-1961), and American National Standard Electrical Code, C1-1968 (NFPA 70-1968). The blast nozzle shall be bonded and grounded to prevent the build-up of static charges. Where flammable or explosive dust mixtures may be present, the abrasive blasting enclosure, the ducts, and the dust collector shall be constructed with loose panels or explosion venting areas, located on sides away from any occupied area, to provide for pressure relief in case of explosion, following the principles set forth in the National Fire Protection Association Explosion Venting Guide, NFPA 68-1954.

(3) Blast-cleaning enclosures.

(a) Blast-cleaning enclosures shall be exhaust ventilated in such a way that a continuous inward flow of air will be maintained at all openings in the enclosure, during the blasting operation.

(i) All air inlets and access openings shall be baffled or so arranged that by the combination of inward air flow and baffling the escape of abrasive or dust particles into an adjacent work area will be minimized and visible spurts of dust will not be observed.

(ii) The rate of exhaust shall be sufficient to provide prompt clearance of the dust-laden air within the enclosure after the cessation of blasting.

(iii) Before the enclosure is opened, the blast shall be turned off and the exhaust system shall be run for a sufficient period of time to remove the dusty air within the enclosure.

(iv) Safety glass protected by screening shall be used in observation windows, where hard deep-cutting abrasives are used.

(v) Slit abrasive-resistant baffles shall be installed in multiple sets at all small access openings where dust might escape, and shall be inspected regularly and replaced when needed.

(A) Doors shall be flanged and tight when closed.

(B) Doors on blast-cleaning rooms shall be operable from both inside and outside, except that where there is a small operator access door, the large work access door may be closed or opened from the outside only.

(4) Exhaust ventilation systems.

(a) The construction, installation, inspection, and maintenance of exhaust systems shall conform to the principles and requirements set forth in American National Standard Fundamentals Governing the Design and Operation of Local Exhaust Systems, Z9.2-1960, and ANSI Z33.1-1961.

(i) When dust leaks are noted, repairs shall be made as soon as possible.

(ii) The static pressure drop at the exhaust ducts leading from the equipment shall be checked when the installation is completed and periodically thereafter to assure continued satisfactory operation. Whenever an appreciable change in the pressure drop indicates a partial blockage, the system shall be cleaned and returned to normal operating condition.

(b) In installations where the abrasive is recirculated, the exhaust ventilation system for the blasting enclosure shall not be relied upon for the removal of fines from the spent abrasive instead of an abrasive separator. An abrasive separator shall be provided for the purpose.

(c) The air exhausted from blast-cleaning equipment shall be discharged through dust collecting equipment. Dust collectors shall be set up so that the accumulated

dust can be emptied and removed without contaminating other working areas.

(5) Personal protective equipment. See applicable provisions of chapters 296–24 and 296–62 WAC.

(a) Abrasive–blasting respirators shall be worn by all abrasive–blasting operators:

(i) When working inside of blast–cleaning rooms, or

(ii) When using silica sand in manual blasting operations where the nozzle and blast are not physically separated from the operator in an exhaust ventilated enclosure, or

(iii) Where concentrations of toxic dust dispersed by the abrasive–blasting may exceed the limits set in WAC 296–62–075 through 296–62–07515 and the nozzle and blast are not physically separated from the operator in an exhaust–ventilated enclosure.

(b) Particulate filter respirators, commonly referred to as dust–filter respirators, properly fitted, may be used for short, intermittent, or occasional dust exposures such as cleanup, dumping of dust collectors, or unloading shipments of sand at a receiving point, when it is not feasible to control the dust by enclosure, exhaust ventilation, or other means. Respirators used shall be approved for protection against the specific type of dust encountered.

(i) Dust–filter respirators may be used to protect the operator of outside abrasive–blasting operations where nonsilica abrasives are used on materials having low toxicities.

(ii) Dust–filter respirators shall not be used for continuous protection where silica sand is used as the blasting abrasive, or toxic materials are blasted.

(c) A respiratory protection program as defined and described in applicable provisions of chapters 296–24 and 296–62 WAC, shall be established wherever it is necessary to use respiratory protective equipment.

(d) Refer to applicable provisions of chapter 296–24 WAC for operators personal protective equipment.

(6) Operational procedures and general safety. Dust shall not be permitted to accumulate on the floor or on ledges outside of an abrasive–blasting enclosure, and dust spills shall be cleaned up promptly. Aisles and walkways shall be kept clear of steel shot or similar abrasive which may create a slipping hazard.

(7) Scope. This paragraph applies to all operations where an abrasive is forcibly applied to a surface by pneumatic or hydraulic pressure, or by centrifugal force. It does not apply to steam blasting, or steam cleaning, or hydraulic cleaning methods where work is done without the aid of abrasives. [Statutory Authority: RCW 49.17-.040, 49.17.050, and 49.17.240. 81–16–015 (Order 81–20), § 296–62–11015, filed 7/27/81; 80–11–010 (Order 80–14), § 296–62–11015, filed 8/8/80; Order 73–3, § 296–62–11015, filed 5/7/73.]

WAC 296–62–11019 Spray–finishing operations. (1) Definitions. (a) "Spray–finishing operations" means employment of methods wherein organic or inorganic materials are utilized in dispersed form from deposit on surfaces to be coated, treated or cleaned. Such methods of deposit may involve either automatic, manual, or electrostatic deposition but do not include metal spraying or metallizing, dipping, flow coating, roller coating, tumbling, centrifuging, or spray washing and degreasing as conducted in self–contained washing and degreasing machines or systems.

(b) "Spray booth" spray booths are defined and described in WAC 296–24–370 through 296–24–37007. (See sections 103, 104, and 105 of the Standard for Spray Finishing Using Flammable and Combustible Materials, NFPA No. 33–1969.)

(c) "Spray room" means a room in which spray–finishing operations not conducted in a spray booth are performed separately from other areas.

(d) "Minimum maintained velocity" means the velocity of air movement which must be maintained in order to meet minimum specified requirements for health and safety.

(2) Location and application. Spray booths or spray rooms are to be used to enclose or confine all operations. Spray–finishing operations shall be located as provided in sections 201 through 206 of the Standard for Spray Finishing Using Flammable and Combustible Materials, NFPA No. 33–1969.

(3) Design and construction of spray booths.

(a) Spray booths shall be designed and constructed in accordance with WAC 296–24–370 through 296–24–37007 (see sections 301–304 and 306–310 of the Standard for Spray Finishing Using Flammable and Combustible Materials, NFPA No. 33–1969), for general construction specifications.

Note: For a more detailed discussion of fundamentals relating to this subject, see ANSI Z9.2–1960.

(i) Lights, motors, electrical equipment and other sources of ignition shall conform to the requirements of WAC 296–24–370. (See section 310 and chapter 4 of the Standard for Spray Finishing Using Flammable and Combustible Materials, NFPA No. 33–1969.)

(ii) In no case shall combustible material be used in the construction of a spray booth and supply or exhaust duct connected to it.

(b) Unobstructed walkways shall not be less than 6 1/2 feet high and shall be maintained clear of obstruction from any work location in the booth to a booth exit or open booth front. In booths where the open front is the only exit, such exits shall be not less than 3 feet wide. In booths having multiple exits, such exits shall not be less than 2 feet wide, provided that the maximum distance from the work location to the exit is 25 feet or less. Where booth exits are provided with doors, such doors shall open outward from the booth.

(c) Baffles, distribution plates, and dry–type overspray collectors shall conform to the requirements of WAC 296–24–370. (See sections 304 and 305 of the Standard for Spray Finishing Using Flammable and Combustible Materials, NFPA No. 33–1969.)

(i) Overspray filters shall be installed and maintained in accordance with the requirements of WAC 296–24–370, (See section 305 of the Standard for Spray Finishing Using Flammable and Combustible Materials,

NFPA No. 33–1969), and shall only be in a location easily accessible for inspection, cleaning, or replacement.

(ii) Where effective means, independent of the overspray filters are installed which will result in design air distribution across the booth cross section, it is permissible to operate the booth without the filters in place.

(d)(i) For wet or water–wash spray booths, the water–chamber enclosure, within which intimate contact of contaminated air and cleaning water or other cleaning medium is maintained, if made of steel, shall be 18 gauge or heavier and adequately protected against corrosion.

(ii) Chambers may include scrubber spray nozzles, headers, troughs, or other devices. Chambers shall be provided with adequate means for creating and maintaining scrubbing action for removal of particulate matter from the exhaust air stream.

(e) Collecting tanks shall be of welded steel construction or other suitable noncombustible material. If pits are used as collecting tanks, they shall be concrete, masonry, or other material having similar properties.

(i) Tanks shall be provided with weirs, skimmer plates, or screens to prevent sludge and floating paint from entering the pump suction box. Means for automatically maintaining the proper water level shall also be provided. Fresh water inlets shall not be submerged. They shall terminate at least one pipe diameter above the safety overflow level of the tank.

(ii) Tanks shall be so constructed as to discourage accumulation of hazardous deposits.

(f) Pump manifolds, risers, and headers shall be adequately sized to insure sufficient water flow to provide efficient operation of the water chamber.

(4) Design and construction of spray rooms.

(a) Spray rooms, including floors, shall be constructed of masonry, concrete, or other noncombustible material.

(b) Spray rooms shall have noncombustible fire doors and shutters.

(c) Spray rooms shall be adequately ventilated so that the atmosphere in the breathing zone of the operator shall be maintained in accordance with the requirements of (6)(b) of this section.

(d) Spray rooms used for production spray–finishing operations shall conform to the requirements of spray booths.

(5) Ventilation.

(a) Ventilation shall be provided in accordance with provisions of WAC 296–24–370, (See chapter 5 of the Standard for Spray Finishing Using Flammable or Combustible Materials, NFPA No. 33–1969), and in accordance with the following:

(i) Where a fan plenum is used to equalize or control the distribution of exhaust air movement through the booth, it shall be of sufficient strength or rigidity to withstand the differential air pressure or other superficially imposed loads for which the equipment is designed and also to facilitate cleaning. Construction specifications shall be at least equivalent to those of (5)(c) of this section.

(ii) All fan ratings shall be in accordance with Air Moving and Conditioning Association Standard Test Code for Testing Air Moving Devices, Bulletin 210, April 1962.

(b) Inlet or supply ductwork used to transport makeup air to spray booths or surrounding areas shall be constructed of noncombustible materials.

(i) If negative pressure exists within inlet ductwork, all seams and joints shall be sealed if there is a possibility of infiltration of harmful quantities of noxious gases, fumes, or mists from areas through which ductwork passes.

(ii) Inlet ductwork shall be sized in accordance with volume flow requirements and provide design air requirements at the spray booth.

(iii) Inlet ductwork shall be so supported throughout its length to sustain at least its own weight plus any negative pressure which is exerted upon it under normal operating conditions.

(c) Ducts shall be so constructed as to provide structural strength and stability at least equivalent to sheet steel of not less than the following thickness:

DIAMETER OR GREATER DIMENSION	(U.S. gauge)
Up to 8 inches inclusive	No. 24
Over 8 inches to 18 inches inclusive	No. 22
Over 18 inches to 30 inches inclusive	No. 20
Over 30 inches	No. 18

(i) Exhaust ductwork shall be adequately supported throughout its length to sustain its weight plus any normal accumulation in interior during normal operating conditions and any negative pressure exerted upon it.

(ii) Exhaust ductwork shall be sized in accordance with good design practice which shall include consideration of fan capacity, length of duct, number of turns and elbows, variation in size, volume, and character of materials being exhausted. See American National Standard Z9.2–1960 for further details and explanation concerning elements of design.

(iii) Longitudinal joints in sheet steel ductwork shall be either lock–seamed, riveted, or welded. For other than steel construction, equivalent securing of joints shall be provided.

(iv) Circumferential joints in ductwork shall be substantially fastened together and lapped in the direction of airflow. At least every fourth joint shall be provided with connecting flanges, bolted together or of equivalent fastening security.

(v) Inspection or clean–out doors shall be provided for every 9 to 12 feet of running length for ducts up to 12 inches in diameter, but the distance between clean–out doors may be greater for larger pipes. (See 8.3.21 of American National Standard Z9.1–1960.) A clean–out door or doors shall be provided for servicing the fan, and where necessary, a drain shall be provided.

(vi) Where ductwork passes through a combustible roof or wall, the roof or wall shall be protected at the point of penetration by open space or fire–resistive material between the duct and the roof or wall. When ducts

pass through fire-walls, they shall be provided with automatic fire dampers on both sides of the wall, except that three-eighth-inch steel plates may be used in lieu of automatic fire dampers for ducts not exceeding 18 inches in diameter.

(vii) Ductwork used for ventilating any process covered in this standard shall not be connected to ducts ventilating any other process or any chimney or flue used for conveying any products of combustion.

(6) Velocity and air flow requirements.

(a) Except where a spray booth has an adequate air replacement system, the velocity of air into all openings of a spray booth shall be not less than that specified in Table 14 for the operating conditions specified. An adequate air replacement system is one which introduces replacement air upstream or above the object being sprayed and is so designed that the velocity of air in the booth cross section is not less than that specified in Table 14 when measured upstream or above the object being sprayed.

TABLE 14
MINIMUM MAINTAINED VELOCITIES INTO SPRAY BOOTHS

Operating conditions for object completely inside booth	Crossdraft f.p.m.	Airflow Velocities, f.p.m.	
		Design	Range
Electostatic and automatic airless operation contained in booth without operator.	Negligible	50 large booth	50–75
		100 small booth	75–125
Air-operated guns, manual or automatic	Up to 50	100 large booth	75–125
		150 small booth	125–175
Air-operated guns, manual or automatic	Up to 100	150 large booth	125–175
		200 small booth	150–250

NOTES:

(1) Attention is invited to the fact that the effectiveness of the spray booth is dependent upon the relationship of the depth of the booth to its height and width.

(2) Crossdrafts can be eliminated through proper design and such design should be sought. Crossdrafts in excess of 100 fpm (feet per minute) should not be permitted.

(3) Excessive air pressures result in loss of both efficiency and material waste in addition to creating a backlash that may carry overspray and fumes into adjacent work areas.

(4) Booths should be designed with velocity shown in the column headed "Design." However, booths operating with velocities shown in the column headed "Range" are in compliance with this standard.

(b) In addition to the requirements in (6)(a) of this section the total air volume exhausted through a spray booth shall be such as to dilute solvent vapor to at least 25 percent of the lower explosive limit of the solvent being sprayed. An example of the method of calculating this volume is given below.

Example: To determine the lower explosive limits of the most common solvents used in spray finishing, see Table 15. Column 1 gives the number of cubic feet of vapor per gallon of solvent and column 2 gives the lower explosive limit (LEL) in percentage by volume of air. Note that the quantity of solvent will be diminished by the quantity of solids and nonflammable contained in the finish.

To determine the volume of air in cubic feet necessary to dilute the vapor from 1 gallon of solvent to 25 percent of the lower explosive limit, apply the following formula:

$$\text{Dilution volume required per gallon of solvent} = \frac{4\,(100-\text{LEL})\,(\text{cubic feet of vapor per gallon})}{\text{LEL}}$$

Using toluene as the solvent.

(1) LEL of toluene from Table 15, column 2, is 1.4 percent.

(2) Cubic feet of vapor per gallon from Table 15, column 1, is 30.4 cubic feet per gallon.

(3) Dilution volume required =

$$\frac{4\,(100-1.4)\,30.4}{1.4} = 8{,}564 \text{ cubic feet.}$$

(4) To convert to cubic feet per minute of required ventilation, multiply the dilution volume required per gallon of solvent by the number of gallons of solvent evaporated per minute.

TABLE 15
LOWER EXPLOSIVE LIMIT OF SOME COMMONLY USED SOLVENTS

Solvent	Cubic feet of vapor per gallon of liquid at 70°F.	Lower explosive limit in percent by volume of air at 70°F.
	Column 1	Column 2
Acetone	44.0	2.6
Amyl Acetate (iso)	21.6	1.0[1]
Amyl Alcohol (n)	29.6	1.2
Amyl Alcohol (iso)	29.6	1.2
Benzene	36.8	1.4[1]
Butyl Acetate (n)	24.8	1.7
Butyl Alcohol (n)	35.2	1.4
Butyl Cellosolve	24.8	1.1
Cellosolve	33.6	1.8
Cellosolve Acetate	23.2	1.7
Cyclohexanone	31.2	1.1[1]
1,1 Dichloroethylene	42.4	5.6
1,2 Dichloroethylene	42.4	9.7
Ethyl Acetate	32.8	2.5
Ethyl Alcohol	55.2	4.3
Ethyl Lactate	28.0	1.5[1]
Methyl Acetate	40.0	3.1
Methyl Alcohol	80.8	7.3
Methyl Cellosolve	40.8	2.5
Methyl Ethyl Ketone	36.0	1.8

TABLE 15
LOWER EXPLOSIVE LIMIT OF SOME COMMONLY USED SOLVENTS

Solvent	Cubic feet of vapor per gallon of liquid at 70°F.	Lower explosive limit in percent by volume of air at 70°F.
	Column 1	Column 2
Methyl n–Propyl Ketone	30.4	1.5
Naphtha (VM&P) (76° Naphtha)	22.4	0.9
Naphtha (100° Flash) Safety Solvent–Stoddard Solvent	23.2	1.1
Propyl Acetate (n)	27.2	2.0
Propyl Acetate (iso)	28.0	1.8
Propyl Alcohol (n)	44.8	2.1
Propyl Alcohol (iso)	44.0	2.0
Toluene	30.4	1.4
Turpentine	20.8	0.8
Xylene (o)	26.4	1.0

[1]At 212°F.

(c)(i) When an operator must position himself in a booth downstream of the object being sprayed, an air supplied respirator or other type of respirator listed in the applicable provisions of chapter 296–62 WAC for the material being sprayed should be used by the operator.

(ii) Where downdraft booths are provided with doors, such doors shall be closed when spray painting.

(7) Make–up air.

(a) Clean fresh air, free of contamination from adjacent industrial exhaust systems, chimneys, stacks, or vents, shall be supplied to a spray booth or room in quantities equal to the volume of air exhausted through the spray booth.

(b) Where a spray booth or room receives make–up air through self–closing doors, dampers, or louvers, they shall be fully open at all times when the booth or room is in use for spraying. The velocity of air through such doors, dampers, or louvers shall not exceed 200 feet per minute. If the fan characteristics are such that the required air flow through the booth will be provided, higher velocities through the doors, dampers, or louvers may be used.

(c)(i) Where the air supply to a spray booth or room is filtered, the fan static pressure shall be calculated on the assumption that the filters are dirty to the extent that they require cleaning or replacement.

(ii) The rating of filters shall be governed by test data supplied by the manufacturer of the filter. A pressure gauge shall be installed to show the pressure drop across the filters. This gauge shall be marked to show the pressure drop at which the filters require cleaning or replacement. Filters shall be replaced or cleaned whenever the pressure drop across them becomes excessive or whenever the air flow through the face of the booth falls below that specified in Table 14.

(d)(i) Means of heating make–up air to any spray booth or room, before or at the time spraying is normally performed, shall be provided in all places where the outdoor temperature may be expected to remain below 55°F. for appreciable periods of time during the operation of the booth except where adequate and safe means of radiant heating for all operating personnel affected is provided. The replacement air during the heating seasons shall be maintained at not less than 65°F. at the point of entry into the spray booth or spray room. When otherwise unheated make–up air would be at a temperature of more than 10°F. below room temperature, its temperature shall be regulated as provided in section 3.6 of ANSI Z9.2–1960.

(ii) As an alternative to an air replacement system complying with the preceding section, general heating of the building in which the spray room or booth is located may be employed provided that all occupied parts of the building are maintained at not less than 65°F. when the exhaust system is in operation or the general heating system supplemented by other sources of heat may be employed to meet this requirement.

(iii) No means of heating make–up air shall be located in a spray booth.

(iv) Where make–up air is heated by coal or oil, the products of combustion shall not be allowed to mix with the make–up air, and the products of combustion shall be conducted outside the building through a flue terminating at a point remote from all points where make–up air enters the building.

(v) Where make–up air is heated by gas, and the products of combustion are not mixed with the make–up air but are conducted through an independent flue to a point outside the building remote from all points where make–up air enters the building, it is not necessary to comply with (7)(d)(vi) of this section.

(vi) Where make–up air to any manually operated spray booth or room is heated by gas and the products of combustion are allowed to mix with the supply air, the following precautions must be taken:

(A) The gas must have a distinctive and strong enough odor to warn workmen in a spray booth or room of its presence if in an unburned state in the make–up air.

(B) The maximum rate of gas supply to the make–up air heater burners must not exceed that which would yield in excess of 200 p.p.m. (parts per million) of carbon monoxide or 2,000 p.p.m. of total combustible gases in the mixture if the unburned gas upon the occurrence of flame failure were mixed with all of the makeup air supplied.

(C) A fan must be provided to deliver the mixture of heated air and products of combustion from the plenum chamber housing the gas burners to the spray booth or room.

(8) Scope. Spray booths or spray rooms are to be used to enclose or confine all spray finishing operations covered by this paragraph. This paragraph does not apply to the spraying of the exteriors of buildings, fixed tanks, or similar structures, nor to small portable spraying apparatus not used repeatedly in the same location. [Statutory Authority: RCW 49.17.040, 49.17.050, and 49.17.240. 81-16-015 (Order 81-20), § 296-62-11019, filed 7/27/81; Order 73-3, § 296-62-11019, filed 5/7/73.]

WAC 296-62-11021 Open surface tanks. (1) General.

(a) This section applies to all operations involving the immersion of materials in liquids, or in the vapors of such liquids, for the purpose of cleaning or altering the surface or adding to or imparting a finish thereto or changing the character of the materials, and their subsequent removal from the liquid or vapor, draining, and drying. These operations include washing, electroplating, anodizing, pickling, quenching, dyeing, dipping, tanning, dressing, bleaching, degreasing, alkaline cleaning, stripping, rinsing, digesting, and other similar operations.

(b) Except where specific construction specifications are prescribed in this section, hoods, ducts, elbows, fans, blowers, and all other exhaust system parts, components, and supports thereof shall be so constructed as to meet conditions of service and to facilitate maintenance and shall conform in construction to the specifications contained in American National Standard Fundamentals Governing the Design and Operation of Local Exhaust Systems, Z9.2-1960.

(2) Classification of open-surface tank operations.

(a) Open-surface tank operations shall be classified into 16 classes, numbered A-1 to D-4, inclusive.

(b) Determination of class. Class is determined by two factors, hazard potential designated by a letter from A to D, inclusive, and rate of gas, vapor, or mist evolution designated by a number from 1 to 4, inclusive (for example, B.3).

(c) Hazard potential is an index, on a scale of from A to D, inclusive, of the severity of the hazard associated with the substance contained in the tank because of the toxic, flammable, or explosive nature of the vapor, gas, or mist produced therefrom. The toxic hazard is determined from the concentration, measured in parts by volume of a gas or vapor, per million parts by volume of contaminated air (ppm), or in milligrams of mist per cubic meter of air (mg/m^3), below which ill effects are unlikely to occur to the exposed worker. The concentrations shall be those in WAC 296-62-075 through 296-62-07515.

(d) The relative fire or explosion hazard is measured in degrees Fahrenheit in terms of the closed-cup flash point of the substance in the tank. Detailed information on the prevention of fire hazards in dip tanks may be found in Dip Tanks Containing Flammable or Combustible Liquids, NFPA No. 34-1966, National Fire Protection Association. Where the tank contains a mixture of liquids, other than organic solvents, whose effects are additive, the hygienic standard of the most toxic component (for example, the one having the lowest ppm or mg/m^3) shall be used, except where such substance constitutes an insignificantly small fraction of the mixture. For mixtures of organic solvents, their combined effect, rather than that of either individually, shall determine the hazard potential. In the absence of information to the contrary, the effects shall be considered as additive. If the sum of the ratios of the airborne concentration of that contaminant exceeds unity, the toxic concentration shall be considered to have been exceeded. (See Note A of (2)(e) of this section.)

(e) Hazard potential shall be determined from Table 16, with the value indicating greater hazard being used. When the hazardous material may be either a vapor with a permissible exposure limit in ppm or a mist with a TLV in mg/m^3, the TLV indicating the greater hazard shall be used (for example, A takes precedence over B or C; B over C; C over D).

Note A:

$$\frac{c_1}{PEL} + \frac{c_2}{PEL} + \frac{c_3}{PEL} + \ldots + \frac{c_N}{PEL} > 1$$

where:

c = Concentration measured at the operation in ppm.

TABLE 16
DETERMINATION OF HAZARD POTENTIAL

Hazard potential	Toxicity Group: Gas or vapor (ppm)	Mist (mg/m^3)	Flash point (in degrees F.)
A.....	0 - 10	0 - 0.1	....
B.....	11 - 100	0.11 - 1.0	Under 100
C.....	101 - 500	1.1 - 10	100-200
D.....	Over 500	Over 10	Over 200

(f) Rate of gas, vapor, or mist evolution is a numerical index, on a scale of from 1 to 4, inclusive, both of the relative capacity of the tank to produce gas, vapor, or mist and of the relative energy with which it is projected or carried upwards from the tank. Rate is evaluated in terms of;

(i) The temperature of the liquid in the tank in degrees Fahrenheit;

(ii) The number of degrees Fahrenheit that this temperature is below the boiling point of the liquid in degrees Fahrenheit;

(iii) The relative evaporation of the liquid in still air at room temperature in an arbitrary scale—fast, medium, slow, or nil; and

(iv) The extent that the tank gases or produces mist in an arbitrary scale—high, medium, low, and nil. (See Table 17, Note 2.) Gassing depends upon electrochemical or mechanical processes, the effects of which have to be individually evaluated for each installation (See Table 17, Note 3).

(g) Rate of evolution shall be determined from Table 17. When evaporation and gassing yield different rates, the lowest numerical value shall be used.

TABLE 17
DETERMINATION OF RATE OF GAS, VAPOR, OR MIST EVOLUTION[1]

Rate	Liquid temperature, °F	Degrees below boiling point	evaporation[2]	Relative Gassing[3]
1	Over 200	0–20	Fast	High
2	150–200	21–50	Medium	Medium
3	94–149	51–100	Slow	Low
4	Under 94	Over 100	Nil	Nil

Note 1. In certain classes of equipment, specifically vapor degreasers, an internal condenser or vapor level thermostat is used to prevent the vapor from leaving the tank during normal operations. In such cases, rate of vapor evolution from the tank into the workroom is not dependent upon the factors listed in the table, but rather upon abnormalities of operating procedure, such as carry out of vapors from excessively fast action, dragout of liquid by entrainment in parts, contamination of solvent by water and other materials, or improper heat balance. When operating procedure is excellent, effective rate of evolution may be taken as 4. When operating procedures are average, the effective rate of evolution may be taken as 3. When operation is poor, a rate of 2 or 1 is indicated, depending upon observed conditions.

Note 2. Relative evaporation rate is determined according to the methods described by A. K. Doolittle in Industrial and Engineering Chemistry, vol. 27, p. 1169, (3) where time for 100— percent evaporation is as follows: Fast: 0–3 hours; Medium: 3–12 hours; Slow: 12–50 hours; Nil: more than 50 hours.

Note 3. Gassing means the formation by chemical or electrochemical action of minute bubbles of gas under the surface of the liquid in the tank and is generally limited to aqueous solutions.

(3) Ventilation. Where ventilation is used to control potential exposures to workers as defined in (2)(c) of this section, it shall be adequate to reduce the concentration of the air contaminant to the degree that a hazard to the worker does not exist. Methods of ventilation are discussed in American National Standard Fundamentals Governing the Design and Operation of Local Exhaust Systems, Z9.2–1960.

(4) Control requirements.

(a) Control velocities shall conform to Table 18 in all cases where the flow of air past the breathing or working zone of the operator and into the hoods is undisturbed by local environmental conditions, such as open windows, wall fans, unit heaters, or moving machinery.

(b) All tanks exhausted by means of hoods which;

(i) Project over the entire tank;

(ii) Are fixed in position in such a location that the head of the workman, in all his normal operating positions while working at the tank, is in front of all hood openings; and

(iii) Are completely enclosed on at least two sides, shall be considered to be exhausted through an enclosing hood.

(iv) The quantity of air in cubic feet per minute necessary to be exhausted through an enclosing hood shall be not less than the product of the control velocity times the net area of all openings in the enclosure through which air can flow into the hood.

TABLE 18
CONTROL VELOCITIES IN FEET PER MINUTE (F.P.M.) FOR UNDISTURBED LOCATIONS

Class (See Subparagraph (2) and Tables 16 and 17)	Enclosing hood (See Subparagraph (4)(ii))		Lateral exhaust[1] (See Subparagraph (4)(iii))	Canopy hood[2] (See Subparagraph (4)(iv))	
	One open side	Two open sides		Three open sides	Four open sides
A–1 and A–2	100	150	150	Do not use	Do not use
A–3 (Note [2]), B–1, B–2, and C–1	75	100	100	125	175
B–3, C–2, and D–1 (Note [3])	65	90	75	100	150
A–4 (Note [2]), C–3, and D–2 (Note [3])	50	75	50	75	125
B–4, C–4, D–3 (Note [3]), and D–4	General room ventilation required.				

[1]See Table 19 for computation of ventilation rate.

[2]Do not use canopy hood for Hazard Potential A processes.

[3]Where complete control of hot water is desired, design as next highest class.

(c) All tanks exhausted by means of hoods which do not project over the entire tank, and in which the direction of air movement into the hood or hoods is substantially horizontal, shall be considered to be laterally exhausted. The quantity of air in cubic feet per minute necessary to be laterally exhausted per square foot of tank area in order to maintain the required control velocity shall be determined from Table 19 for all variations in ratio of tank width (W) to tank length (L). The total quantity of air in cubic feet per minute required to be exhausted per tank shall be not less than the product of the area of tank surface times the cubic feet per minute per square foot of tank area, determined from Table 19.

(i) For lateral exhaust hoods over 42 inches wide, or where it is desirable to reduce the amount of air removed from the workroom, air supply slots or orifices shall be provided along the side or the center of the tank

opposite from the exhaust slots. The design of such systems shall meet the following criteria:

(A) The supply air volume plus the entrained air shall not exceed 50 percent of the exhaust volume.

(B) The velocity of the supply airstream as it reaches the effective control area of the exhaust slot shall be less than the effective velocity over the exhaust slot area.

(C) The vertical height of the receiving exhaust hood, including any baffle, shall not be less than one-quarter the width of the tank.

(D) The supply airstream shall not be allowed to impinge on obstructions between it and the exhaust slot in such a manner as to significantly interfere with the performance of the exhaust hood.

TABLE 19
MINIMUM VENTILATION RATE IN CUBIC FEET OF AIR PER MINUTE PER SQUARE FOOT OF TANK AREA FOR LATERAL EXHAUST

Required minimum control velocity, f.p.m. (from Table	C.f.m. per sq. ft. to maintain required minimum velocities at following ratios (tank width (W)/tank length (L)).[1] [3]				
	0.0–0.09	0.1–0.24	0.25–0.49	0.5–0.99	1.0–2.0
Hood along one side or two parallel sides of tank when one hood is against a wall or baffle.[2] Also for a manifold along tank centerline.[3]					
50	50	60	75	90	100
75	75	90	110	130	150
100	100	125	150	175	200
150	150	190	225	260	300
Hood along one side or two parallel sides of free standing tank not against wall or baffle.					
50	75	90	100	110	125
75	110	130	150	170	190
100	150	175	200	225	250
150	225	260	300	340	375

[1]It is not practicable to ventilate across the long dimension of a tank whose ratio W/L exceeds 2.0.

It is understandable to do so when W/L exceeds 1.0. For circular tanks with lateral exhaust along up the circumference use W/L = 1.0 for over one-half the circumference use W/L = 0.5.

[2]Baffle is a vertical plate the same length as the tank, and with the top of the plate as high as the tank is wide. If the exhaust hood is on the side of a tank against a building wall or close to it, it is perfectly baffled.

[3]Use W/L as tank width in computing when manifold is along centerline, or when hoods are used on two parallel sides of a tank.

Tank Width (W) means the effective width over which the hood must pull air to operate (for example, where the hood face is not back from the edge of the tank, this set back must be added in measuring tank width). The surface area of tanks can frequently be reduced and better control obtained (particularly on conveyorized systems) by using covers extending from the upper edges of the slots toward the center of the tank.

(E) Since most failure of push-pull systems result from excessive supply air volumes and pressures, methods of measuring and adjusting the supply air shall be provided. When satisfactory control has been achieved, the adjustable features of the hood shall be fixed so that they will not be altered.

(d) All tanks exhausted by means of hoods which project over the entire tank, and which do not conform to the definition of enclosing hoods, shall be considered to be overhead canopy hoods. The quantity of air in cubic feet per minute necessary to be exhausted through a canopy hood shall be not less than the product of the control velocity times the net area of all openings between the bottom edges of the hood and the top edges of the tank.

(e) The rate of vapor evolution (including steam or products of combustion) from the process shall be estimated. If the rate of vapor evolution is equal to or greater than 10 percent of the calculated exhaust volume required, the exhaust volume shall be increased in equal amount.

(5) Spray cleaning and degreasing. Wherever spraying or other mechanical means are used to disperse a liquid above an open-surface tank, control must be provided for the airborne spray. Such operations shall be enclosed as completely as possible. The inward air velocity into the enclosure shall be sufficient to prevent the discharge of spray into the workroom. Mechanical baffles may be used to help prevent the discharge of spray. Spray painting operations are covered in WAC 296-62-11019.

(6) Control means other than ventilation. Tank covers, foams, beads, chips, or other materials floating on the tank surface so as to confine gases, mists, or vapors to the area under the cover or to the foam, bead, or chip layer; or surface tension depressive agents added to the liquid in the tank to minimize mist formation, or any combination thereof, may all be used as gas, mist, or vapor control means for open-surface tank operations, provided that they effectively reduce the concentrations of hazardous materials in the vicinity of the worker below the limits set in accordance with (2) of this section.

(7) System design.

(a) The equipment for exhausting air shall have sufficient capacity to produce the flow of air required in each of the hoods and openings of the system.

(b) The capacity required in (7)(a) of this section shall be obtained when the airflow producing equipment is operating against the following pressure losses, the sum of which is the static pressure:

(i) Entrance losses into the hood.

(ii) Resistance to airflow in branch pipe including bends and transformations.

(iii) Entrance loss into the main pipe.

(iv) Resistance to airflow in main pipe including bends and transformations.

(v) Resistance of mechanical equipment; that is, filters, washers, condensers, absorbers, etc., plus their entrance and exit losses.

(vi) Resistance in outlet duct and discharge stack.

(c) Two or more operations shall not be connected to the same exhaust system where either one or the combination of the substances removed may constitute a fire, explosion, or chemical reaction hazard in the duct system. Traps or other devices shall be provided to insure

that condensate in ducts does not drain back into any tank.

(d) The exhaust system, consisting of hoods, ducts, air mover, and discharge outlet shall be designed in accordance with American National Standard Fundamentals Governing the Design and Operation of Local Exhaust Systems, Z9.2–1960, or the manual, Industrial Ventilation, published by the American Conference of Governmental Industrial Hygienists. Airflow and pressure loss data provided by the manufacturer of any air cleaning device shall be included in the design calculations.

(8) Operation.

(a) The required airflow shall be maintained at all times during which gas, mist, or vapor is emitted from the tank, and at all times the tank, the draining, or the drying area is in operation or use. When the system is first installed, the airflow from each hood shall be measured by means of a pitot traverse in the exhaust duct and corrective action taken if the flow is less than that required. When the proper flow is obtained, the hood static pressure shall be measured and recorded. At intervals of not more than 3 months operation, or after a prolonged shutdown period, the hoods and duct system shall be inspected for evidence of corrosion or damage. In any case where the airflow is found to be less than required, it shall be increased to the required value. (Information on airflow and static pressure measurement and calculations may be found in American National Standard Fundamentals Governing the Design and Operation of Local Exhaust Systems, Z9.2–1960, or in the manual, Industrial Ventilation, published by the American Conference of Governmental Industrial Hygienists.)

(b) The exhaust system shall discharge to the outer air in such a manner that the possibility of its effluent entering any building is at a minimum. Recirculation shall only be through a device for contaminant removal which will prevent the creation of a health hazard in the room or area to which the air is recirculated.

(c) A volume of outside air in the range of 90 percent to 110 percent of the exhaust volume shall be provided to each room having exhaust hoods. The outside air supply shall enter the workroom in such a manner as not to be detrimental to any exhaust hood. The airflow of the makeup air system shall be measured on installation. Periodically, thereafter, the airflow should be remeasured, and corrective action shall be taken when the airflow is below that required. The makeup air shall be uncontaminated.

(9) Personal protection.

(a) All employees working in and around open surface tank operations must be instructed as to the hazards of their respective jobs, and in the personal protection and first aid procedures applicable to these hazards.

(b) All persons required to work in such a manner that their feet may become wet shall be provided with rubber or other impervious boots or shoes, rubbers, or wooden–soled shoes sufficient to keep feet dry.

(c) All persons required to handle work wet with a liquid other than water shall be provided with gloves impervious to such a liquid and of a length sufficient to prevent entrance of liquid into the tops of the gloves. The interior of gloves shall be kept free from corrosive or irritating contaminants.

(d) All persons required to work in such a manner that their clothing may become wet shall be provided with such aprons, coats, jackets, sleeves, or other garments made of rubber, or of other materials impervious to liquids other than water, as are required to keep their clothing dry. Aprons shall extend well below the top of boots to prevent liquid splashing into the boots. Provision of dry, clean, cotton clothing along with rubber shoes or short boots and an apron impervious to liquids other than water shall be considered a satisfactory substitute where small parts are cleaned, plated, or acid dipped in open tanks and rapid work is required.

(e) Whenever there is a danger of splashing, for example, when additions are made manually to the tanks, or when acids and chemicals are removed from the tanks, the employees so engaged shall be required to wear either tight–fitting chemical goggles or an effective face shield. (See WAC 296–24–078.)

(f) When, during emergencies as described in (11)(e) of this section, workers must be in areas where concentrations of air contaminants are greater than the limit set by (2)(c) of this section, or oxygen concentrations are less than 18 percent, they shall be required to wear respirators adequate to reduce their exposure to a level below these limits, or to provide adequate oxygen. Such respirators shall also be provided in marked, quickly accessible storage compartments built for the purpose, when there exists the possibility of accidental release of hazardous concentrations of air contaminants. Respirators shall meet the applicable provisions of chapter 296–62 WAC and shall be selected by a competent industrial hygienist or other technically qualified source. Respirators shall be used in accordance with the applicable provisions of chapter 296–62 WAC, and persons who may require them shall be trained in their use.

(g) Near each tank containing a liquid which may burn, irritate, or otherwise be harmful to the skin if splashed upon the worker's body, there shall be a supply of clean cold water. The water pipe (carrying a pressure not exceeding 25 pounds) shall be provided with a quick opening valve and at least 48 inches of hose not smaller than three–fourths inch, so that no time may be lost in washing off liquids from the skin or clothing. Alternatively, deluge showers and eye flushes shall be provided in cases where harmful chemicals may be splashed on parts of the body.

(h) Operators with sores, burns, or other skin lesions requiring medical treatment shall not be allowed to work at their regular operations until so authorized by a physician. Any small skin abrasions, cuts, rash, or open sores which are found or reported shall be treated by a properly designated person so that chance of exposures to the chemicals are removed. Workers exposed to chromic acids shall have a periodic examination made of the nostrils and other parts of the body, to detect incipient ulceration.

(i) Sufficient washing facilities, including soap, individual towels, and hot water, shall be provided for all persons required to use or handle any liquids which may

burn, irritate, or otherwise be harmful to the skin, on the basis of at least one basin (or its equivalent) with a hot water faucet for every 10 employees. (See WAC 296-24-12009.)

(j) Locker space or equivalent clothing storage facilities shall be provided to prevent contamination of street clothing.

(k) First aid facilities specific to the hazards of the operations conducted shall be readily available.

(10) Special precautions for cyanide. Dikes or other arrangements shall be provided to prevent the possibility of intermixing of cyanide and acid in the event of tank rupture.

(11) Inspection, maintenance, and installation.

(a) Floors and platforms around tanks shall be prevented from becoming slippery both by original type of construction and by frequent flushing. They shall be firm, sound, and of the design and construction to minimize the possibility of tripping.

(b) Before cleaning the interior of any tank, the contents shall be drained off, and the cleanout doors shall be opened where provided. All pockets in tanks or pits, where it is possible for hazardous vapors to collect, shall be ventilated and cleared of such vapors.

(c) Tanks which have been drained to permit employees to enter for the purposes of cleaning, inspection, or maintenance may contain atmospheres which are hazardous to life or health, through the presence of flammable or toxic air contaminants, or through the absence of sufficient oxygen. Before employees shall be permitted to enter any such tank, appropriate tests of the atmosphere shall be made to determine if the limits set by (2)(c) of this section are exceeded, or if the oxygen concentration is less than 18 percent.

(d) If the tests made in accordance with (11)(c) of this section indicate that the atmosphere in the tank is unsafe, before any employee is permitted to enter the tank, the tank shall be ventilated until the hazardous atmosphere is removed, and ventilation shall be continued so as to prevent the occurrence of a hazardous atmosphere as long as an employee is in the tank.

(e) If, in emergencies, such as rescue work, it is necessary to enter a tank which may contain a hazardous atmosphere, suitable respirators, such as self-contained breathing apparatus; hose mask with blower, if there is a possibility of oxygen deficiency; or a gas mask, selected and operated in accordance with (9)(f) of this section, shall be used. If a contaminant in the tank can cause dermatitis, or be absorbed through the skin, the employee entering the tank shall also wear protective clothing. At least one trained standby employee, with suitable respirator, shall be present in the nearest uncontaminated area. The standby employee must be able to communicate with the employee in the tank and be well able to haul him out of the tank with a lifeline if necessary.

(f) Maintenance work requiring welding or open flame, where toxic metal fumes such as cadmium, chromium, or lead may be evolved, shall be done only with sufficient local exhaust ventilation to prevent the creation of a health hazard, or be done with respirators selected and used in accordance with (9)(f) of this section. Welding, or the use of open flames near any solvent cleaning equipment shall be permitted only after such equipment has first been thoroughly cleared of solvents and vapors.

(12) Vapor degreasing tanks.

(a) In any vapor degreasing tank equipped with a condenser and vapor level thermostat, the condenser or thermostat shall keep the level of vapors below the top edge of the tank by a distance at least equal to one-half the tank width, or at least 36 inches, whichever is shorter.

(b) Where gas is used as a fuel for heating vapor degreasing tanks, the combustion chamber shall be of tight construction, except for such openings as the exhaust flue, and those that are necessary for supplying air for combustion. Flues shall be of corrosion-resistant construction and shall extend to the outer air. If mechanical exhaust is used on this flue, a draft diverter shall be used. Special precautions must be taken to prevent solvent fumes from entering the combustion air of this or any other heater when chlorinated or fluorinated hydrocarbon solvents (for example, trichloroethylene; Freon) are used.

(c) Heating elements shall be so designed and maintained that their surface temperature will not cause the solvent or mixture to decompose, break down, or be converted into an excessive quantity of vapor.

(d) Tanks or machines of more than 4 square feet of vapor area, used for solvent cleaning or vapor degreasing, shall be equipped with suitable cleanout or sludge doors located near the bottom of each tank or still. These doors shall be so designed and gasketed that there will be no leakage of solvent when they are closed.

(13) Scope.

(a) This paragraph applies to all operations involving the immersion of materials in liquids, or in the vapors of such liquids, for the purpose of cleaning or altering their surfaces, or adding or imparting a finish thereto, or changing the character of the materials, and their subsequent removal from the liquids or vapors, draining, and drying. Such operations include washing, electroplating, anodizing, pickling, quenching, dyeing, dipping, tanning, dressing, bleaching, degreasing, alkaline cleaning, stripping, rinsing, digesting, and other similar operations, but do not include molten materials handling operations, or surface coating operations.

(b) "Molten materials handling operations" means all operations, other than welding, burning, and soldering operations, involving the use, melting, smelting, or pouring of metals, alloys, salts, or other similar substances in the molten state. Such operations also include heat treating baths, descaling baths, die casting stereotyping, galvanizing, tinning, and similar operations.

(c) "Surface coating operations" means all operations involving the application of protective, decorative, adhesive, or strengthening coating or impregnation to one or more surfaces, or into the interstices of any object or material, by means of spraying, spreading, flowing, brushing, roll coating, pouring, cementing, or similar

means; and any subsequent draining or drying operations, excluding open-tank operations. [Statutory Authority: RCW 49.17.040, 49.17.050, and 49.17.240. 81-16-015 (Order 81-20), § 296-62-11021, filed 7/27/81; 80-11-010 (Order 80-14), § 296-62-11021, filed 8/8/80; Order 73-3, § 296-62-11021, filed 5/7/73.]

WAC 296-62-14507 Toxic atmospheres. (1) Atmospheres where contamination is below permissible exposure limits as defined in chapter 296-62 WAC may be entered without respiratory protection.

(2) Atmospheres where contamination is above the permissible exposure limits but below values immediately hazardous to life or health may be entered when respiratory protective equipment as defined in the applicable provisions of chapter 296-62 WAC is properly worn.

(3) Atmospheres immediately hazardous to life may be entered only in the event of emergency and then only when employees are protected by equipment approved for such exposures.

(4) Atmospheres where the toxicity is not known shall require full protection.

(5) Entry into spaces which contain or could contain corrosive chemicals or chemicals which are toxic through skin absorption shall require equipment to prevent skin and/or eye contact. [Statutory Authority: RCW 49.17-.040, 49.17.050, and 49.17.240. 81-16-015 (Order 81-20), § 296-62-14507, filed 7/27/81; 80-11-010 (Order 80-14), § 296-62-14507, filed 8/8/80; Order 73-3, § 296-62-14507, filed 5/7/73.]

WAC 296-62-14515 Electrical hazards. (1) Electrical circuits in the confined area which may present a hazard shall be disconnected, locked out and tagged in accordance with WAC 296-62-14513(1)(a). All temporary lights shall be protected against damage and cords shall be heavy duty and kept clear of working spaces and walkways. Only low voltage, battery operated, or ground fault protected equipment shall be used on water-slides of boilers or when electrically conductive liquids are involved.

(2) Electric supply circuits, lighting, portable tools, and other equipment used where potentially hazardous concentrations of flammable vapors, gases or dusts are present or may develop shall conform to the current National Electric Code requirements.

(3) Portable electric tools shall be grounded or isolation transformers, ground fault interrupters or double insulated tools shall be required. [Statutory Authority: RCW 49.17.040 and 49.17.050. 82-13-045 (Order 82-22), § 296-62-14515, filed 6/11/82; Order 73-3, § 296-62-14515, filed 5/7/73.]

WAC 296-62-14525 Entry into confined space. After initial cleaning, vapor freeing, and evaluation of the atmosphere, the confined space may be entered to complete cleaning, repair or other work.

(1) Respiratory protective equipment shall be used when indicated.

(2) An observer capable of maintaining communication at all times shall be located outside the confined space. He shall have respiratory protection available when indicated.

(3) If the possibility of a highly toxic or flammable atmosphere, or oxygen deficiency exists or can develop, workers shall wear safety harness with lifeline attached and a means of rescue shall be provided.

(4) Fire extinguishing equipment shall be immediately available when indicated.

(5) Ventilation shall be maintained at all times when employees are in confined spaces except when the atmosphere has been purposely inerted to provide safer working conditions. All work shall stop and the area shall be evacuated if ventilation fails.

(6) All tools and equipment shall be available as required.

(7) Emergency lighting shall be available as required.

(8) The area shall be evacuated if any indication of ill effects such as dizziness, irritation or excessive odors are noted. [Statutory Authority: RCW 49.17.040 and 49-.17.050. 82-03-023 (Order 82-1), § 296-62-14525, filed 1/15/82; Order 73-3, § 296-62-14525, filed 5/7/73.]

WAC 296-62-14531 Exposure to cotton dust in cotton gins. (1) Scope and application. This section applies to the control of employee exposure to cotton dust in cotton gins.

(2) Definitions. For the purposes of this section:

(a) "Blow down" - the cleaning of equipment and surface with compressed air.

(b) "Cotton dust" - dust present in the air during the handling or processing of cotton which may contain a mixture of many substances including ground-up plant matter, fiber, bacteria, fungi, soil, pesticides, noncotton plant matter and other contaminants which may have accumulated with the cotton during the growing, harvesting and subsequent processing or storage periods.

(c) "Director" - The director of department of labor and industries, or his designated representative.

(3) Work practices. Each employer shall immediately establish and implement a written program of work practices, which shall minimize cotton dust exposure for each specific job. Where applicable, the following work practices shall be included in the written work practices program:

(a) General. (i) All surfaces shall be maintained as free as practicable of accumulations of cotton dust.

(ii) The employer shall inspect, clean, maintain and repair, all engineering control equipment, production equipment and ventilation systems including power sources, ducts, and filtration units of the equipment, and at a minimum, tape or cover leaks in valves, flashing, elbows, and bands on air lines.

(iii) Cotton and cotton waste shall be stacked, sorted, baled, dumped, removed or otherwise handled by mechanical means except where the employer can show that it is infeasible to do so. Where infeasible, the method used for handling cotton and cotton waste shall

be the method which most effectively reduces exposure to the lowest level feasible.

(b) Specific. (i) Floors and other accessible surfaces contaminated with cotton dust may not be cleaned by the use of compressed air.

(ii) Cleaning of clothing with compressed air is prohibited.

(iii) Floor sweeping shall be performed by a vacuum or with methods designed to minimize dispersal of dust.

(iv) Compressed air "blow–down" cleaning shall be prohibited, except where alternative means are not feasible. Where compressed air "blow–down" is done, respirators shall be worn by the employees performing the "blow–down," and employees in the area whose presence is not required to perform the "blow–down" shall be required to leave the area during this cleaning operation.

(c) Work practice plan. A written work place plan shall be kept which shall list appropriate schedules for carrying out housekeeping operations, and for cleaning and maintaining dust collection equipment. The plan shall be made available for inspection by the director.

(4) Use of respirators.

(a) General. Where the use of respirators is required under this section, the employer shall provide, at no cost to the employee, and assure the use of respirators which comply with the requirements of this subsection.

(b) Use of respirators. Respirators shall be used in the following circumstances:

(i) By workers identified by medical surveillance under subitem (5)(f)(i)(D) of this subsection; or

(ii) During operations such as maintenance and repair activities in which work practice controls are not feasible; or

(iii) In operations specified under subitem (3)(b)(iv) of this subsection.

(c) Availability upon request. Respirators shall be made available upon request, to any employee exposed to cotton dust.

(d) Respirator selection. (i) Where respirators are required under this section, the employer shall select, provide and assure the use of any respirator tested and approved for protection against dust by the National Institute Of Occupational Safety and Health (NIOSH) under the provisions of 30 CFR Part 11.

(ii) Where respirators are required by this subsection, the employer shall provide either any NIOSH approved respirator or at the option of each affected worker, a NIOSH approved powered air purifying respirator with a high efficiency filter.

(e) Respirator program. The employer shall institute a respirator program in accordance with WAC 296–62–071.

(f) Respirator usage. (i) The employer shall assure that the respirator used by each employee exhibits minimum facepiece leakage and that the respirator is fitted properly.

(ii) The employer shall allow each employee who uses a filter respirator to change the filter elements whenever an increase in breathing resistance is detected by the employee, and shall maintain an adequate supply of filter elements for this purpose.

(iii) The employer shall allow employees who wear respirators to wash their faces and respirator facepieces to prevent skin irritation associated with respirator use.

(5) Medical surveillance.

(a) General. (i) Each employer who has an operating gin in which cotton dust is present shall institute a program of medical surveillance for all employees exposed to cotton dust.

(ii) The employer shall assure that all medical examinations and procedures are performed by or under the supervision of a licensed physician, and are provided without cost to the employee.

(iii) Persons other than licensed physicians, who administer the pulmonary function testing required by this section, shall complete a NIOSH approved training course in spirometry.

(b) Initial examinations. For each ginning season, at the time of initial assignment, the employer shall provide each employee who is or may be exposed to cotton dust, with an opportunity for medical surveillance that shall include:

(i) A medical history;

(ii) The standardized questionnaire in Appendix B; and

(iii) A pulmonary function measurement, including a determination of forced vital capacity (FVC) and forced expiratory volume in 1 second (FEV_1), and the percentage that the measured values of FEV and FVC differ from the predicted values, using the standard tables in Appendix C. The predicted FEV, and FVC for blacks shall be multiplied by 0.85 to adjust for racial differences.

(iv) Based upon the questionnaire results, each employee shall be graded according to Schilling's byssinosis classification system.

(c) Mid–season retest. The determinations required under subsection (5)(b) of this section shall be made again for each employee after at least 14 days of employment and before the termination of employment for the season. The determinations shall be made following at least 24 hours or one working day after previous exposure to cotton dust. The pulmonary function tests shall be repeated during the shift, no sooner than four and no more than 10 hours after the beginning of the work shift; and, in any event, no more than one hour after cessation of exposure.

(d) Periodic examinations. (i) The employer shall provide the medical surveillance under this subsection (5) annually.

(ii) A comparison shall be made between the current examination results and those of previous examinations and a determination made by the physician as to whether there has been a significant change.

(iii) An employee whose FEV_1 is less than 60 percent of the predicted value shall be referred to a physician for a detailed pulmonary examination.

(e) Information provided to the physician. The employer shall provide the following information to the examining physician:

(i) A copy of this regulation and its appendices;

(ii) A description of the affected employee's duties as they relate to the employee's exposure;

(iii) A description of any personal protective equipment used or to be used; and

(iv) Information from previous medical examinations of the affected employee which is not readily available to the examining physician.

(f) Physician's written opinion. (i) The employer shall obtain and furnish the employee with a copy of the written opinion from the examining physician containing the following:

(A) The results of the medical examination and tests, including any determinations made under subitem (5)(d)(ii) of this section.

(B) The physician's opinion as to whether the employee has any detected medical conditions which would place the employee at increased risk of material impairment of the employee's health from exposure to cotton dust;

(C) The physician's recommended limitations upon the employee's exposure to cotton dust or upon the employee's use of respirators;

(D) The physician's recommendations for the employee's use of a respirator where dust effects could be suppressed by respirator use;

(E) A statement that the employee has been informed by the physician of the results of the medical examination and any medical conditions which require further examination or treatment.

(ii) The written opinion obtained by the employer shall not reveal specific findings or diagnosis unrelated to occupational exposure.

(g) Spanish speaking employees. An employer whose workforce consists of a significant percentage of Spanish speaking workers who cannot communicate effectively in English, shall provide bilingual administration of the medical surveillance requirements, including use of the Spanish questionnaire provided in Appendix B.

(h) Nonduplication of medical surveillance. (i) During any one ginning season, an employer is not required to provide medical surveillance as described in subsection (5) of this section for any employee who can demonstrate that both the background medical surveillance and the mid-season retest required by subsection (5) of this section were administered during that ginning season while in the employment of another gin employer.

(ii) If an employee can demonstrate that the background medical surveillance has been administered but not the mid-season retest, the employer shall provide the mid-season medical retest of subdivision (5)(c) of this section, and comply with provisions of subdivision (5)(d)-(5)(f) of this section. Where the employer is administering only the mid-season retest, the employer shall provide the mid-season retest after at least 14 days of employment in his gin and before termination of employment for the season.

(iii) For purposes of this section, where the employer does not administer any medical surveillance, the employer shall be satisfied that an employee has undergone the medical surveillance required under subdivisions (5)(a) to (5)(c) of this section upon receipt of written notification from the employer who administered the test, or upon receipt by the physician supervising the program, of a copy of the results of medical surveillance.

(6) Employee education and training.

(a) Training program. (i) Each employer who operates an active gin shall institute a training program for all his employees, prior to initial assignment, and shall assure that each employee is informed of the following:

(A) The specific nature of the operations which could result in exposure to cotton dust;

(B) The measures, including work practices, required by subsection (3) of this section, necessary to protect the employee from excess exposures;

(C) The purpose, proper use and limitations of respirators required by subsection (4) of this section;

(D) The purpose for and a description of the medical surveillance program required by subsection (5) of this section; and other information which will aid exposed employees in understanding the hazards of cotton dust exposure; and

(E) The contents of this standard and its appendices.

(b) Access to training materials. (i) Each employer shall post a copy of this section with its appendices in a public location at the workplace, and shall, upon request, make copies available to employees.

(ii) The employer shall provide all materials relating to the employee training and information program to the director upon request.

(iii) An employer whose workforce consists of a significant percentage of Spanish speaking employees who cannot communicate effectively in English shall provide bilingual administration of the provisions of this section.

(iv) In addition to the information required by subdivision (6)(a), the employer shall include as part of his training program and distribute to employees any materials pertaining to the Washington Industrial Safety and Health Act, the regulations issued pursuant to that act, and to this cotton dust standard which are made available by the director.

(7) Signs.

(a) The employer shall post the following warning sign in each work area where there is potential exposure to cotton dust:

WARNING:

COTTON DUST WORK AREA
MAY CAUSE ACUTE OR DELAYED
LUNG INJURY (BYSSINOSIS)

(b) An employer whose workforce consists of a significant percentage of Spanish-speaking employees who cannot communicate effectively in English shall provide bilingual versions of the sign required by subdivision (7)(a) of this section.

(8) Recordkeeping.

(a) Medical surveillance. (i) The employer shall establish and maintain an accurate medical record for each employee subject to medical surveillance required by subsection (5) of this section.

(ii) The record shall include:

(A) The name, social security number and description of the duties of the employee;

(B) A copy of the medical surveillance results including the medical history, questionnaire responses, results of all tests and the physician's recommendation;

(C) A copy of the physician's written opinion;

(D) Any employee medical complaints related to exposure to cotton dust;

(E) The type of protective devices worn, and length of time worn;

(F) A copy of this standard and its appendices, except that the employer may keep one copy of the standard and its appendices for all employees: provided that he references the standard in the medical surveillance records of each employee.

(iii) The employer shall maintain this record for at least 10 years.

(b) Availability. (i) The employer shall make available upon request all records required to be maintained by subsection (8) of this section to the director for examination and copying.

(ii) Employee medical records shall be provided upon request to employees, designated representatives, and the assistant director in accordance with WAC 296-62-05201 through 296-62-05209 and 296-62-05213 through 296-62-05217.

(c) Transfer of records. (i) Whenever the employer ceases to do business, the successor employer shall receive and retain all records required to be maintained by subsection (8) of this section.

(ii) Whenever the employer ceases to do business, and there is no successor employer to receive and retain the records for the prescribed period, these records shall be transmitted to the director.

(iii) At the expiration of the retention period for the records required to be maintained by this section, the employer shall notify the director at least three months prior to the disposal of such records and shall transmit those records to the director if he requests them within that period.

(iv) The employer shall also comply with any additional requirements involving transfer of records set forth in WAC 296-62-05215.

(9) Effective date. This standard shall become effective 30 days after it is filed with the code reviser.

(10) Appendices. Appendices to this section are found in the Federal Register, Vol. 43, No. 122, dated 6-23-78, and the corrections in Vol. 43, No. 153, dated 8-8-78; the contents of these appendices are mandatory. Appendices are available from:

The Technical Services Section
Division of Industrial Safety and Health
P.O. Box 207
Olympia, WA 98504 (206) 753-6381

[Statutory Authority: RCW 49.17.040, 49.17.050, and 49.17.240. 81-18-029 (Order 81-21), § 296-62-14531, filed 8/27/81; 81-16-015 (Order 81-20), § 296-62-14531, filed 7/27/81; 80-11-010 (Order 80-14), § 296-62-14531, filed 8/8/80. Statutory Authority: RCW 49-.17.040, 49.17.150 and 49.17.240. 79-02-037 (Order 79-1), § 296-62-14531, filed 1/23/79.]

WAC 296-62-14533 Cotton dust. (1) Scope and application.

(a) This section applies to the control of employee exposure to cotton dust in all workplaces, except as provided in subsection (1)(b) of this section.

(b) This section does not apply to:

(i) The harvesting of cotton;

(ii) The ginning of cotton (exposure to cotton dust in cotton ginning is covered by WAC 296-62-14531);

(iii) Maritime operations are covered by chapters 296-56 and 296-304 WAC;

(iv) The handling or processing of woven or knitted materials; and

(v) The handling or processing of washed cotton.

(c) This section provides mandatory requirements for the control of employee exposure to cotton dust. The mandatory nature of these requirements is not intended, however, to discourage or inhibit the development of different, equally effective means of providing the required protection. The variance and procedure section, WAC 296-24-010, provides a mechanism for employers to obtain variances from the provisions of this section where the employer has developed alternative procedures which are "as safe and healthful as" those required by this section. As implemented by the procedural regulations in WAC 296-24-010, the variance provisions permit the flexibility which contributes to efficient compliance with the standard. To aid in the expeditious processing of variance applications, the procedures allow, where appropriate, for the grant of interim orders pending a decision on the merits of the variance as well as for the consideration of variances applicable to groups of employers. We encourage interested employers to utilize the variance provisions where equally safe and healthful protective means are available.

(2) Definitions applicable to this section:

(a) "Blow down" - the cleaning of equipment and surfaces with compressed air.

(b) "Cotton dust" - dust present in the air during the handling or processing of cotton, which may contain a mixture of many substances including ground-up plant matter, fiber, bacteria, fungi, soil, pesticides, noncotton plant matter and other contaminants which may have accumulated with the cotton during the growing, harvesting and subsequent processing or storage periods. Any dust present during the handling and processing of cotton through the weaving or knitting of fabrics, and dust present in other operations or manufacturing processes using new or waste cotton fibers or cotton fiber byproducts from textile mills are considered cotton dust.

(c) "Director" - the director of labor and industries or his authorized representative.

(d) "Lint-free respirable cotton dust" - particles of cotton dust of approximately 15 microns or less aerodynamic equivalent diameter.

(e) "Vertical elutriator cotton dust sampler" - a dust sampler which has a particle size cut-off at approximately 15 microns aerodynamic equivalent diameter when operating at the flow rate of 7.4 ± 0.2 liters per minute.

(f) "Yarn manufacturing" – all textile mill operations from opening to, but not including, slashing and weaving.

(g) "Washed cotton" – cotton which has been thoroughly washed in hot water and is known in the cotton textile trade as purified or dyed. Washed cotton does not include steamed, autoclaved cotton or cotton washed solely in solvents.

(3) Permissible exposure limits.

(a) The employer shall assure that no employee who is exposed to cotton dust in yarn manufacturing is exposed to airborne concentrations of lint–free respirable cotton dust greater than 200 $\mu g/m^3$ mean concentration, averaged over an eight–hour period, as measured by a vertical elutriator or a method of equivalent accuracy and precision.

(b) The employer shall assure than no employee who is exposed to cotton dust in the textile processes known as slashing and weaving is exposed to airborne concentrations of lint–free respirable cotton dust greater than 750 $\mu g/m^3$ mean concentration, averaged over an eight–hour period, as measured by a vertical elutriator or a method of equivalent accuracy and precision.

(c) The employer shall assure that no employee who is exposed to cotton dust (except for exposures in yarn manufacturing and slashing and weaving covered by subsection (3)(a) and (b) of this section is exposed to airborne concentrations of lint–free respirable cotton dust greater than 500 $\mu g/m^3$ mean concentration, averaged over an eight–hour period, as measured by a vertical elutriator or a method of equivalent accuracy and precision.

(4) Exposure monitoring and measurement.

(a) General. (i) For the purposes of this section, employee exposure is that exposure which would occur if the employee were not using a respirator.

(ii) The sampling device to be used shall be either the vertical elutriator cotton dust sampler or a method of equivalent accuracy and precision.

(iii) If an alternative to the vertical elutriator cotton dust sampler is used, the employer shall establish equivalency by demonstrating that the alternative sampling devices:

(A) Collect respirable particulates in the same range as the vertical elutriator (approximately 15 microns);

(B) Replicate exposure data in side–by–side field comparisons; and

(C) Are equivalent within an accuracy and precision range of plus or minus twenty–five percent for ninety–five percent of the samples over the range of 0.5 to 2 times the permissible exposure limit.

(b) Initial monitoring. Each employer who has a place of employment in which cotton dust is present, shall conduct monitoring by obtaining measurements which are representative of the exposure of all employees to airborne concentrations of lint–free respirable cotton dust over an eight–hour period. The sampling program shall include at least one determination during each shift for each work area.

(c) Periodic monitoring. (i) The employer shall repeat the measurements required by subsection (4)(b) of this section at least every six months.

(ii) Whenever there has been a production, process, or control change which may result in new or additional exposure to cotton dust, or whenever the employer has any other reason to suspect an increase in employee exposure, the employer shall repeat the monitoring and measurements required by subsection (4)(b) of this section for those employees affected by the change or increase.

(d) Employee notification. (i) Within five working days after the receipt of monitoring results, the employer shall notify each employee in writing of the exposure measurements which represent that employee's exposure.

(ii) Whenever the results indicate that the employee's exposure exceeds the applicable permissible exposure limit specified in subsection (3) of this section, the employer shall include in the written notice a statement that the permissible exposure limit was exceeded and a description of the corrective action taken to reduce exposure below the permissible exposure limit.

(5) Methods of compliance.

(a) Engineering and work practice controls. The employer shall institute engineering and work practice controls to reduce and maintain employee exposure to cotton dust at or below the permissible exposure limit specified in subsection (3) of this section, except to the extent that the employer establishes that such controls are not feasible.

(b) Whenever feasible engineering and work practice controls are not sufficient to reduce employee exposure to or below the permissible exposure limit, the employer shall nonetheless institute these controls to immediately reduce exposure to the lowest feasible level, and shall supplement these controls with the use of respirators which shall comply with the provisions of subsection (6) of this section.

(c) Compliance program. (i) Each employer shall establish and implement a written program sufficient to reduce exposures to or below the permissible exposure limit solely by means of engineering controls and work practices as required by subsection (5)(a) of this section.

(ii) The written program shall include at least the following:

(A) A description of each operation or process resulting in employee exposure to cotton dust;

(B) Engineering plans and other studies used to determine the controls for each process;

(C) A report of the technology considered in meeting the permissible exposure limit;

(D) Monitoring data obtained in accordance with subsection (4) of this section;

(E) A detailed schedule for development and implementation of engineering and work practice controls, including exposure levels projected to be achieved by such controls;

(F) Work practice program; and

(G) Other relevant information.

(iii) The employer's schedule as set forth in the compliance program, shall project completion no later than March 27, 1984.

(iv) The employer shall complete the steps set forth in his program by the dates in the schedule.

(v) Written programs shall be submitted, upon request, to the director, and shall be available at the worksite for examination and copying by the director, and any affected employee or their designated representatives.

(vi) The written programs required under subsection (5)(c) of this section shall be revised and updated at least every six months to reflect the current status of the program and current exposure levels.

(d) Mechanical ventilation. When mechanical ventilation is used to control exposure, measurements which demonstrate the effectiveness of the system to control exposure, such as capture velocity, duct velocity, or static pressure shall be made at least every six months. Measurements of the system's effectiveness to control exposures shall also be made within five days of any change in production, process or control which may result in any increase in airborne concentrations of cotton dust.

(6) Use of respirators.

(a) General. Where the use of respirators is required under this section, the employer shall provide, at no cost to the employee, and assure the use of respirators which comply with the requirements of this subsection (6). Respirators shall be used in the following circumstances:

(i) During the time periods necessary to install or implement feasible engineering controls and work practice controls;

(ii) During maintenance and repair activities in which engineering and work practice controls are not feasible;

(iii) In work situations where feasible engineering and work practice controls are not yet sufficient to reduce exposure to or below the permissible exposure limit;

(iv) In operations specified under subsection (7)(a) of this section; and

(v) Whenever an employee requests a respirator.

(b) Respirator selection. (i) Where respirators are required under this section, the employer shall select the appropriate respirator from Table I and shall assure that the employee uses the respirator provided.

TABLE I

Cotton dust concentration	Required respirator
Not greater than—	
(a) 5 x the applicable permissible exposure limit.	1. Any dust respirator, including single use.
(b) 10 x the applicable permissible exposure limit.	1. Any dust respirator, except single use or quarter mask; or 2. Any supplied air respirator; or 3. Any self-contained breathing apparatus.
(c) 100 x the applicable permissible exposure limit.	1. High efficiency particulate filter respirator with a full facepiece; or 2. Any supplied air respirator with full facepiece, helmet or hood; or 3. Any self-contained breathing apparatus with full facepiece.
(d) Greater than 100 x the applicable permissible exposure limit.	1. A powered air-purifying respirator with high efficiency particulate filter; or 2. A self-contained breathing apparatus with a full facepiece operated in pressure demand or other positive pressure mode; or 3. A type "C" supplied air respirator operated in pressure demand or other positive pressure mode; or 4. A combination respirator which includes a type "C" supplied-air respirator with a full facepiece operated in pressure or continuous-flow mode and an auxiliary self-contained breathing apparatus operated in pressure demand or other positive pressure mode

(ii) The employer shall select respirators from those tested and approved for protection against dust by the National Institute for Occupational Safety and Health (NIOSH) under the provisions of 30 CFR Part 11.

(iii) Whenever respirators are required by this section for concentrations not greater than 5 x the applicable permissible exposure limit, the employer shall provide and permit the employee to use, at the employee's option, single use dust respirator in preference to any respirator specified in paragraph (a) of Table I.

(iv) Whenever respirators are required by this section for concentrations not greater than 100 x the applicable permissible exposure limit, the employer shall, upon the request of the employee, provide a powered air purifying respirator with a high efficiency particulate filter in lieu of the respirator specified in paragraphs (a), (b), or (c) of Table I.

(v) Whenever a physician determines that an employee is unable to wear any form of respirator, including a power air purifying respirator, the employee shall be given the opportunity to transfer to another position which is available or which later becomes available having a dust level at or below the PEL. The employer shall assure that an employee who is transferred due to an inability to wear a respirator suffers no loss of earnings or other employment rights or benefits as a result of the transfer.

(vi) Until September 27, 1980, the employer shall provide any dust respirator, including single use, to all employees exposed to cotton dust, unless the employer has conducted the monitoring required by subsection (4)(b) of this section or otherwise has monitored employee exposure. As soon as monitoring has been conducted, the employer shall select the appropriate respirator from Table I.

(c) Respirator program. The employer shall institute a respirator program in accordance with WAC 296-62-071.

(d) Respirator usage. (i) The employer shall assure that the respirator used by each employee exhibits minimum facepiece leakage and that the respirator is fitted properly.

(ii) The employer shall allow each employee who uses a filter respirator, to change the filter elements whenever an increase in breathing resistance is detected by the employee. The employer shall maintain an adequate supply of filter elements for this purpose.

(iii) The employer shall allow employees who wear respirators to wash their faces and respirator facepieces to prevent skin irritation associated with respirator use.

(7) Work practices. Each employer shall, regardless of the level of employee exposure, immediately establish and implement a written program of work practices, which shall minimize cotton dust exposure for each specific job. Where applicable, the following work practices shall be included in the work practices program:

(a) Compressed air "blow down" cleaning shall be prohibited, where alternative means are feasible. Where compressed air "blow down" is done, respirators shall be worn by the employees performing the "blow down," and employees in the area whose presence is not required to perform the "blow down" shall be required to leave the area during this cleaning operation.

(b) Cleaning of clothing or floors with compressed air shall be prohibited.

(c) Floor sweeping shall be performed with a vacuum or with methods designed to minimize dispersal of dust.

(d) Cotton and cotton waste shall be stacked, sorted, baled, dumped, removed or otherwise handled by mechanical means, except where the employer can how that it is infeasible to do so. Where infeasible, the method used for handling cotton and cotton waste shall be the method which reduces exposure to the lowest level feasible.

(e) The employer shall inspect, clean, maintain, and repair, all engineering control equipment and ventilation systems including power sources, ducts, and filtration units of the equipment.

(8) Medical surveillance.

(a) General. (i) Each employer who has a place of employment in which cotton dust is present shall institute a program of medical surveillance for all employees exposed to cotton dust.

(ii) The employer shall assure that all medical examinations and procedures are performed by or under the supervision of a licensed physician and are provided without cost to the employee.

(iii) Persons other than licensed physicians, who administer the pulmonary function testing required by this section shall complete a NIOSH approved training course in spirometry.

(b) Initial examinations. The employer shall provide each employee who is or may be exposed to cotton dust with an opportunity for medical surveillance. For new employees this examination shall be provided prior to initial assignment. The medical surveillance shall include at least the following:

(i) A medical history;

(ii) The standardized questionnaire contained in WAC 296-62-14537; and

(iii) A pulmonary function measurement, including a determination of forced vital capacity (FVC) and forced expiratory volume in one second (FEV_1), and the percentage that the measured values of FEV and FVC differ from the predicted values, using the standard tables in WAC 296-62-14539. The predicted FEV_1 and FVC for blacks shall be multiplied by 0.85 to adjust for racial differences.

These determinations shall be made for each employee before the employee enters the workplace on the first day of the work week, following at least thirty-five hours after previous exposure to cotton dust. The tests shall be repeated during the shift, no sooner than four and no more than ten hours after the beginning of the work shift, and, in any event, no more than one hour after cessation of exposure.

(iv) Based upon the questionnaire results, each employee shall be graded according to Schilling's byssinosis classification system.

(c) Periodic examinations. (i) The employer shall provide annual medical surveillance for all employees exposed to cotton dust which shall include at least an update of the medical history and standardized questionnaire (the abbreviated questionnaire, App. B-III) and the pulmonary function measurements in subsection (8)(b) of this section.

(ii) Medical surveillance as required in subsection (8)(c)(i) of this section shall be provided every six months for all employees in the following categories:

(A) An FEV_1 of greater than eighty percent of the predicted value, but with an FEV_1 decrement of five percent or 200 ml. on a first working day;

(B) An FEV_1 of less than eighty percent of the predicted value; or

(C) Where, in the opinion of the physician, any significant change in questionnaire findings, pulmonary function results, or other diagnostic tests has occurred.

(iii) An employee whose FEV_1 is less than sixty percent of the predicted value shall be referred to a physician for a detailed pulmonary examination.

(iv) A comparison shall be made between the current examination results and those of previous examinations and a determination made by the physician as to whether there has been a significant change.

(d) Information provided to the physician. The employer shall provide the following information to the examining physician:

(i) A copy of this regulation and its appendices;

(ii) A description of the affected employee's duties as they relate to the employee's exposure;

(iii) The employee's exposure level or anticipated exposure level;

(iv) A description of any personal protective equipment used or to be used; and

(v) Information from previous medical examinations of the affected employee which is not readily available to the examining physician.

(e) Physician's written opinion. (i) The employer shall obtain and furnish the employee with a copy of a written

opinion from the examining physician containing the following:

(A) The results of the medical examination and tests;

(B) The physician's opinion as to whether the employee has any detected medical conditions which would place the employee at increased risk of material impairment of the employee's health from exposure to cotton dust;

(C) The physician's recommended limitations upon the employee's exposure to cotton dust or upon the employee's use of respirators including a determination of whether an employee can wear a negative pressure respirator, and where the employee cannot, a determination of the employee's ability to wear a powered air purifying respirator; and

(D) A statement that the employee has been informed by the physician of the results of the medical examination and any medical conditions which require further examination or treatment.

(ii) The written opinion obtained by the employer shall not reveal specific findings or diagnoses unrelated to occupational exposure.

(9) Employee education and training.

(a) Training program.

(i) The employer shall provide a training program for all employees in all workplaces where cotton dust is present, and shall assure that each employee in these workplaces is informed of the following:

(A) The specific nature of the operations which could result in exposure to cotton dust at or above the permissible exposure limit;

(B) The measures, including work practices required by subsection (7) of this section, necessary to protect the employee from exposures in excess of the permissible exposure limit;

(C) The purpose, proper use and limitations of respirators required by subsection (6) of this section;

(D) The purpose for and a description of the medical surveillance program required by subsection (8) of this section and other information which will aid exposed employees in understanding the hazards of cotton dust exposure; and

(E) The contents of this standard and its appendices.

(ii) The training program shall be provided prior to initial assignment and shall be repeated at least annually.

(b) Access to training materials. (i) Each employer shall post a copy of this section with its appendices in a public location at the workplace, and shall, upon request, make copies available to employees.

(ii) The employer shall provide all materials relating to the employee training and information program to the director upon request.

(iii) In addition to the information required by subsection (9)(a) of this section, the employer shall include as part of the training program, and shall distribute to employees, any materials, pertaining to the Washington Industrial Safety and Health Act, the regulations issued pursuant to that act, and this cotton dust standard, which are made available to the employer by the director.

(10) Signs. The employer shall post the following warning sign in each work area where the permissible exposure limit for cotton dust is exceeded:

WARNING

COTTON DUST WORK AREA

May Cause Acute or Delayed Lung Injury

(Byssinosis)

RESPIRATORS REQUIRED IN THIS AREA

(11) Recordkeeping.

(a) Exposure measurements. (i) The employer shall establish and maintain an accurate record of all measurements required by subsection (4) of this section.

(ii) The record shall include:

(A) A log containing the items listed in WAC 296-62-14535(4)(a), and the dates, number, duration, and results of each of the samples taken, including a description of the procedure used to determine representative employee exposures;

(B) The type of protective devices worn, if any, and length of time worn; and

(C) The names, social security number, job classifications, and exposure levels of employees whose exposure the measurement is intended to represent.

(iii) The employer shall maintain this record for at least twenty years.

(b) Medical surveillance. (i) The employer shall establish and maintain an accurate medical record for each employee subject to medical surveillance required by subsection (8) of this section.

(ii) The record shall include:

(A) The name and social security number and description of the duties of the employee;

(B) A copy of the medical examination results including the medical history, questionnaire responses, results of all tests, and the physician's recommendation;

(C) A copy of the physician's written opinion;

(D) Any employee medical complaints related to exposure to cotton dust;

(E) A copy of this standard and its appendices, except that the employer may keep one copy of the standard and the appendices for all employees, provided that he references the standard and appendices in the medical surveillance record of each employee; and

(F) A copy of the information provided to the physician as required by subsection (8)(d) of this section.

(iii) The employer shall maintain this record for at least twenty years.

(c) Availability. (i) The employer shall make all records required to be maintained by subsection (11) of this section available to the director for examination and copying.

(ii) Employee exposure measurement records and employee medical records required by this subsection shall be provided upon request to employees, designated representatives, and the assistant director in accordance with WAC 296-62-05201 through 296-62-05209 and 296-62-05213 through 296-62-05217.

(d) Transfer of records. (i) Whenever the employer ceases to do business, the successor employer shall receive and retain all records required to be maintained by subsection (11) of this section.

(ii) Whenever the employer ceases to do business, and there is no successor employer to receive and retain the records for the prescribed period, these records shall be transmitted to the director.

(iii) At the expiration of the retention period for the records required to be maintained by this section, the employer shall notify the director at least three months prior to the disposal of such records and shall transmit those records to the director if he requests them within that period.

(iv) The employer shall also comply with any additional requirements involving transfer of records set forth in WAC 296-62-05215.

(12) Observation of monitoring.

(a) The employer shall provide affected employees or their designated representatives an opportunity to observe any measuring or monitoring of employee exposure to cotton dust conducted pursuant to subsection (4) of this section.

(b) Whenever observation of the measuring or monitoring of employee exposure to cotton dust requires entry into an area where the use of personal protective equipment is required, the employer shall provide the observer with and assure the use of such equipment and shall require the observer to comply with all other applicable safety and health procedures.

(c) Without interfering with the measurement, observers shall be entitled to:

(i) An explanation of the measurement procedures;

(ii) An opportunity to observe all steps related to the measurement of airborne concentrations of cotton dust performed at the place of exposure; and

(iii) An opportunity to record the results obtained.

(13) Effective date.

(a) General. This emergency rule is effective upon filing with the code reviser, except as otherwise provided below.

(b) Startup dates. (i) Initial monitoring. The initial monitoring required by subsection (4)(b) of this section shall be completed as soon as possible but no later than September 27, 1980.

(ii) Methods of compliance; engineering and work practice controls. Engineering and work practice controls required by subsection (5) of this section shall be implemented no later than March 27, 1984.

(iii) Compliance program. The compliance program required by subsection (5)(c) of this section shall be established no later than March 27, 1981.

(iv) Respirators. The respirators required by subsection (6) of this section shall be provided no later than April 27, 1980. Until September 27, 1980, the provisions of subsection (6)(b)(vi) of this section apply.

(v) Work practices. The work practices required by subsection (7) of this section shall be implemented no later than June 27, 1980.

(vi) Medical surveillance. The initial medical surveillance required by subsection (8) of this section shall be completed no later than March 27, 1981.

(vii) Employee education and training. The initial education and training required by subsection (9) of this section shall be completed as soon as possible but no later than June 27, 1980.

(14) Appendices.

(a) Appendix B, WAC 296-62-14537, Appendix C, WAC 296-62-14539 and Appendix D, WAC 296-62-14541 are incorporated as part of this chapter and the contents of these appendices are mandatory.

(b) Appendix A, WAC 296-62-14535 contains information which is not intended to create any additional obligations not otherwise imposed or to detract from any existing obligations. [Statutory Authority: RCW 49.17-.040 and 49.17.050. 82-03-023 (Order 82-1), § 296-62-14533, filed 1/15/82. Statutory Authority: 49.17-.040, 49.17.050, and 49.17.240. 81-16-015 (Order 81-20), § 296-62-14533, filed 7/27/81. Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, chapters 42-.30 and 43.22 RCW. 80-17-014 (Order 80-20), § 296-62-14533, filed 11/13/80.]

WAC 296-62-146 Appendices. Contains appendices to chapter 296-62 WAC, for air contaminants, etc., that are not found immediately following their respective sections. [Statutory Authority: RCW 49.17.040, 49.17-.050 and 49.17.240. 81-18-029 (Order 81-21), § 296-62-146, filed 8/27/81.]

WAC 296-62-14601 Appendix A--Requirements for classification and respiratory use of workers exposed to cotton dust in gins.

APPENDIX A—REQUIREMENTS FOR CLASSIFICATION AND RESPIRATORY USE OF WORKERS EXPOSED TO COTTON DUST IN GINS

Functional severity	FEV 1 (percent of predicted)	FEV 1 (percent)
F0	Greater than 80 (no evidence of chronic ventilatory impairment).	(a)–4 to 0; or more. (b)–9 to –5 or more. (c)–10 or more.
F1	60–79 (evidence of slight to moderate irreversible impairment of ventilatory capacity).	(a)–4 to 0; or more. (b)–5 or more.
F2	Less than 60 (evidence of moderate to severe irreversible impairment of ventilatory capacity).	.....

Note: These recommendations are generally accepted criteria for classification and management of

workers exposed to cotton dust. Since medical removal provisions are not included in the standard, WISHA believes them to constitute equally useful criteria for the physician to use in determining whether a gin worker is suffering any degree of functional severity which calls for respiratory protection.

Although these criteria are advisory, a worker who falls in the F2 category of functional severity shall be sent to a pulmonary physician according to WAC 296-62-14531(5)(d)(iii). [Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81-18-029 (Order 81-21), § 296-62-14601, filed 8/27/81.]

WAC 296-62-14603 Appendix B-1--Respiratory questionnaire.

APPENDIX B-1

Respiratory Questionnaire

Nontextile Workers for the Cotton Industry

Indentification No. Interviewer Code

Location Date of Interview

A. IDENTIFICATION

1. NAME (Last) (First) (Middle Initial)

3. PHONE NUMBER AREA CODE ( ) NO.

4. SOCIAL SECURITY # (optional see below)

2. CURRENT ADDRESS (Number, Street, or Rural Route, City or Town, County, State, Zip Code)

5. BIRTHDATE (Mo., Day, Yr.)

6. AGE LAST BIRTHDAY

7. SEX

1 ☐ Male 2 ☐ Female

8. ETHNIC GROUP OR ANCESTRY

1. ☐ White, not of Hispanic Origin
2. ☐ Black, not of Hispanic Origin
3. ☐ Hispanic
4. ☐ American Indian or Alaskan Native
5. ☐ Asian or Pacific Islander
6. ☐ Other: _____

9. STANDING HEIGHT _____ (cm)

10. WEIGHT _____

11. WORK SHIFT

1st ☐ 2nd ☐ 3rd ☐

12. PRESENT WORK AREA

Please indicate primary assigned work area and percent of time spent at that site. If at other locations, please indicate and note percent of time for each.

PRIMARY WORK AREA	
SPECIFIC JOB	

13. APPROPRIATE INDUSTRY

1 ☐ Garnetting 3 ☐ Cotton Warehouse 5 ☐ Cotton Classification

2 ☐ Cottonseed Oil Mill 4 ☐ Utilization 6 ☐ Cotton Ginning

(Furnishing your Social Security number is voluntary. Your refusal to provide this number will not affect any right, benefit, or privilege to which you would be entitled if you did provide your Social Security number. Your Social Security number is being requested since it will permit use in future determinations in statistical research studies.)

B. OCCUPATIONAL HISTORY TABLE

Complete the following table showing the entire work history of the individual from present to initial employment. Sporadic, part-time periods of employment, each of no significant duration, should be grouped if possible.

INDUSTRY AND LOCATION	TENURE OF EMPLOYMENT		SPECIFIC OCCUPATION	AVERAGE NO. DAYS WORKED PER WEEK	HAZARDOUS HEALTH EXPOSURE ASSOCIATED WITH WORK		
	FROM 19__	TO 19__			YES	NO	IF YES, DESCRIBE

C. SYMPTOMS

Use actual wording of each question. Put X in appropriate square after each question. When in doubt record "No".

COUGH

1. Do you usually cough first thing in the morning? (on getting up)* (Count a cough with first smoke or on "first going out of doors". Exclude clearing throat or a single cough.) 1 ☐ Yes 2 ☐ No

2. Do you usually cough during the day or at night? (Ignore an occasional cough.) 1 ☐ Yes 2 ☐ No

If YES to either question 1 or 2:

3. Do you cough like this on most days for as much as three months a year? 1 ☐ Yes 2 ☐ No 9 ☐ NA

4. Do you cough on any particular day of the week? 1 ☐ Yes 2 ☐ No

If YES:

5. Which day? Mon. Tue. Wed. Thur. Fri. Sat. Sun. _____

PHLEGM

6. Do you usually bring up any phlegm from your chest first thing in the morning? (on getting up)* (Count phlegm with the first smoke or on "first going out of doors." Exclude phlegm from the nose. Count swallowed phlegm.) 1 ☐ Yes 2 ☐ No

7. Do you usually bring up any phlegm from your chest during the day or at night? (Accept twice or more.) 1 ☐ Yes 2 ☐ No

If YES to either question 6 or 7:

8. Do you bring up phlegm like this on most days for as much as three months each year? 1 ☐ Yes 2 ☐ No

If YES to question 3 or 8:

9. How long have you had this phlegm? (cough) (Write in number of years)
   (1) ☐ 2 years or less
   (2) ☐ More than 2 years - 9 years
   (3) ☐ 10-19 years
   (4) ☐ 20+ years

*These words are for subjects who work at night

CHEST ILLNESS

10. In the past three years, have you had a period of (increased) cough and phlegm lasting for 3 weeks or more?
(1) ☐ No
(2) ☐ Yes, only one period
(3) ☐ Yes, two or more periods

For subjects who usually have phlegm:

11. During the past 3 years have you had any chest illness which has kept you off work, indoors at home or in bed? (For as long as one week, flu?) 1 ☐ Yes 2 ☐ No

If YES to 11:

12. Did you bring up (more) phelgm than usual in any of these illnesses? 1 ☐ Yes 2 ☐ No

If YES to 12: During the past three years have you had:

13. Only one such illness with increased phelgm? 1 ☐ Yes 2 ☐ No

14. More than one such illness: 1 ☐ Yes 2 ☐ No

Br. Brade _____

TIGHTNESS

15. Does your chest ever feel tight or your breathing become difficult? 1 ☐ Yes 2 ☐ No

16. Is your chest tight or your breathing difficult on any particular day of the week? (after a week or 10 days away from the mill) 1 ☐ Yes 2 ☐ No

17. If YES, Which day? Mon. (1) Tues. (2) Wed. (3) Thur. (4) Fri. (5) Sat. (6) Sun (7)
(1) Sometimes (2) Always

18. If YES Monday: At what time on Monday does your chest feel tight or your breathing difficult?
☐ Before entering mill
☐ After entering mill

(ASK ONLY IF NO TO QUESTION 15)

19. In the past, has your chest ever been tight or your breathing difficult on any particular day of the week? 1 ☐ Yes 2 ☐ No

20. If YES, Which day? Mon. (1) Tues. (2) Wed. (3) Thur. (4) Fri. (5) Sat. (6) Sun. (7)
(1) Sometimes (2) Always

BREATHLESSNESS

21. If disabled from walking by any condition other than heart or lung disease put "X" in the space and leave questions (22-30) unasked. ☐

22. Are you ever troubled by shortness of breath, when hurrying on the level or walking up a slight hill? 1 ☐ Yes 2 ☐ No

If NO, grade is 1. If YES, proceed to next question

23. Do you get short of breath walking with other people at an ordinary pace on the level? 1 ☐ Yes 2 ☐ No

If NO, grade is 2. If YES, proceed to next question

24. Do you have to stop for breath when walking at your own pace on the level? 1 ☐ Yes 2 ☐ No

If NO, grade is 3. If YES, proceed to next question

25. Are you short of breath on washing or dressing? 1 ☐ Yes 2 ☐ No

If NO, grade is 4. If YES, grade is 5.

26. Dyspnea Grd. _____

ON MONDAYS:

27. Are you ever troubled by shortness of breath, when hurrying on the level or walking up a slight hill? 1 ☐ Yes 2 ☐ No

If NO, grade is 1. If YES, proceed to next question

28. Do you get short of breath walking with other people at an ordinary pace on the level? 1 ☐ Yes 2 ☐ No

If NO, grade is 2, If YES, proceed to next question

29. Do you have to stop for breath when walking at your own pace on the level? 1 ☐ Yes 2 ☐ No

If NO, grade is 3. If YES, proceed to next question

30. Are you short of breath on washing or dressing? 1 ☐ Yes 2 ☐ No

If NO, grade is 4. If YES, grade is 5

31. B. Grd. _____

OTHER ILLNESSES AND ALLERGY HISTORY

32. Do you have a heart condition for which you are under a doctor's care? 1 ☐ Yes 2 ☐ No

OTHER ILLNESSES AND ALLERGY HISTORY CONTINUED:

33. Have you ever had asthma? 1 ☐ Yes 2 ☐ No

If yes, did it begin: (1) Before age 30 ☐

(2) After age 30 ☐

34. If yes before 30: did you have asthma before ever going to work in a textile mill? 1 ☐ Yes 2 ☐ No

35. Have you ever had hay fever or other allergies (other than above)? 1 ☐ Yes 2 ☐ No

TOBACCO SMOKING

36. Do you smoke? 1 ☐ Yes 2 ☐ No
Record Yes if regular smoker up to one month ago. (Cigarettes, cigar or pipe)

If NO to (33).

37. Have you ever smoked? (Cigarettes, cigars, pipe. Record NO if subject has never smoked as much as one cigarette a day, or 1 oz. of tobacco a month, for as long as one year.) 1 ☐ Yes 2 ☐ No

If Yes to (33) or (34); what have you smoked for how many years? (Write in specific number of years in the appropriate square)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Years	(<5)	(5-9)	(10-14)	(15-19)	(20-24)	(25-29)	(30-34)	(35-39)	(>40)
38. Cigarettes									
39. Pipe									
40. Cigars									

41. If cigarettes, how many packs per day? Write in number of cigarettes _____

☐ Less than 1/2 pack
☐ 1/2 pack, but less than 1 pack
☐ 1 pack, but less than 1 1/2 packs
☐ 1-1/2 packs or more

42. Number of pack years: _____

43. If an ex-smoker (cigarettes, cigar or pipe), how long since you stopped? (Write in number of years.) _____

☐ 0-1 year
☐ 1-4 years
☐ 5-9 years
☐ 10+ years

OCCUPATIONAL HISTORY

Have you ever worked in:

44. A foundry? (As long as one year) 1 ☐ Yes 2 ☐ No

45. Stone or mineral mining, quarrying or processing? (As long as one year) 1 ☐ Yes 2 ☐ No

46. Asbestos milling or processing? (Ever) 1 ☐ Yes 2 ☐ No

47. Cotton or cotton blend mill? (For controls only) 1 ☐ Yes 2 ☐ No

48. Other dusts, fumes or smoke? If yes, specify. 1 ☐ Yes 2 ☐ No

Type of exposure _____

Length of exposure _____

APPENDIX B-II

CUESTIONARIO RESPIRATORIO PARA TRABAJADORES QUE NO SEAN DE TEXTIL DE LA INDUSTRIA ALGODONERA

Numero de identificación _____ Clave del entrevistador _____

Localidad _____ Fecha de entrevista _____

A. IDENTIFICACION

1. NOMBRE (Apellido) (Nombre de pila)

2. DIRECCION ACTUAL (Numero, Calle, Ciudad o Pueblo, Condado, Estado, Zona Postal)

3. Num. de telefono Area ( )

4. * Num. de Seguro Social

5. Fecha de Nacimiento Mes/Dia/Año

6. Edad

7. SEXO
1 ☐ Varón 2 ☐ Hembra

8. RAZA
1. ☐ Blanco, no de origen hispano
2. ☐ Negro, no de origen hispano
3. ☐ Hispano
4. ☐ Indio Americano o Nativo de Alaska
5. ☐ Asiatico o de Islas pacificas
6. ☐ Otro _____

9. ALTURA MEDIDA _____ (cm)

10. PESO MEDIDO _____

11. TURNO DE TRABAJO
1 ☐ 2 ☐ 3 ☐

12. SITIO DE TRABAJO ACTUAL
Indique el sitio de trabajo asignado y el porcentaje de tiempo que pasa en ese lugar. Si trabaja en otros sitios, por favor indique esos lugares y el porcentaje de tiempo que pasa en cada uno.

SITIO DE TRABAJO PRIMARIO	
TRABAJO ESPECIFICO	

13. INDUSTRIA APROPIADA
1 ☐ Desperdicios de maquina garnet
2 ☐ Fabrica de aceite de semilla de algodón
3 ☐ Almacen de algodón
4 ☐ Utilización
5 ☐ Clasificacion de algodón
6 ☐ Desmotador

* Proveer su número de seguro social es voluntario. El rehuso de proveer este número no afecta ningun derecho, beneficio, o privilegio al cual ud. podría tener derecho. Su número de seguro social ha sido requerido desde que este permite el uso de determinaciones en el futuro en la busqueda de estudios estaticales.

Registro Federal, Vol. 43, No. 122, Viernes 23 de juino de 1978.

B. TABLA DE HISTORIA LABORAL

Llene la siguiente tabla indicando la historia laboral del individuo desde que lo primero empleó hasta el presente. Períodos de empleo aislados ó de tiempo parcial deben ser agrupados si es posible.

INDUSTRIA Y LOCAL	Tiempo de empleo		TRABAJO ESPECIFICO	Promedio de # de dias trab.por sem.	RIESGO DE SALUD POR CONTACTO ASOCIADO CON EL TRABAJO		
	Desde 19__	Hasta 19__			SI	NO	Si se contesta "SI" explíquese

C. Síntomas

Empléense las palabras exactas de cada pregunta. Póngase una "X" en la casilla que sigue cada pregunta. En case do duda, póngase "No." Donde no hay casilla, póngase un círculo alrededor de la repuesta apropiada.

LA TOS

1. ¿Tose Ud. ordinamente al leventarse por la mañana? (Tenga en eventa la flema arrancada al fumos o al salar de la casa por primera vez. No tenga en eventa los mucos nasales).

1. ☐ Sí 2. ☐ No

2. ¿Tose Ud. ordinariamente de día ó de noche?

1. ☐ Sí 2. ☐ No

Si se contesta "Sí" a las preguntas 1 ó 2, pregúntese:

3. ¿Tose asi la mayoría de los dias por un periodo de por lo menos 3 meses durante el pasado año?

1. ☐ Sí 2. ☐ No

4. ¿Tose Ud. mas de lo ordinario algun día en particular de la semana?

1. ☐ Sí 2. ☐ No

Si contesta "Si"; pregúntese:

5. ¿Que día? Lun. Mar. Mier. Jue. Vie. Sab. Dom.

LA FLEMA

6. ¿Se arranca Ud. flema ó catarro del pecho al levantarse? (Tenga en cuenta la flema arrancada al fumar or al salir de la casa por primera vez. No tenga en cuenta los mucos nasales. Tenga en cuenta la flema que se traga).

1. ☐ Sí 2. ☐ No

7. ¿Se arranca Ud. flema ó catarro del pecho ordinariamente de día ó de noche? (Nótense solo 2 veces o mas)

1. ☐ Sí 2. ☐ No

8. Arroja ud. flemas así la mayor parte de días tanto como tres meses al año?

1. ☐ Sí 2. ☐ No

Si se contesta "Sí" a las preguntas 3 ó 8, pregúntese:

¿Cuantos años hace que se arranca flema ó catarro o tose frecuentemente?
(Responda en numeros de años)

(1) ☐ 2 años ó menos
(2) ☐ mas de 2 años - 9 años
(3) ☐ 10-19 años
(4) ☐ 20 años ó mas

ENFERMEDADES PULMONARIAS

10. ¿Durante los tres pasados años, ha pasado algún periodo de tos* y flemas que duró 3 semanas o más?
*Sujetos que ordinariamente se arrancan flemas

☐ No
☐ Sí, un solo periodo
☐ Sí, dos periodos o mas

11. ¿Ha tenido Ud. durante los 3 años pasados alguna enfermedad del pecho que le haya impedido a trabajar o obligado a permanecer en casa ó en cama por tanto como una semana? (por ejemplo, ¿la gripe?)

☐ Sí ☐ No

Si se contesta "Sí" a la pregunta 11, pregúntese:

12. ¿Se arrancó Ud. más flemas que lo general durante alguno de estos ataques?

☐ Sí ☐ No

Si se contesta "Sí" a 12, pregúntese:

13. ¿Ha tenido durante los tres años pasados:

Solo un tal ataque con aumento de flemas?

☐ Sí ☐ No

14. Más de uno? ☐ Sí ☐ No

Br. Grade _____

LA OPRESION DEL PECHO

15. ¿Ha tenido Ud. alguna vez opresión en el pecho ó dificultadad en respirar?

☐Sí ☐No

16. ¿Se le oprime el pecho ó se le hace dificil respirar algún día en la semana en particular? (despues de una semana ó 10 días de ausencia de la planta)

☐Sí ☐No

17. Si se contesta "Sí," ¿Que dia?

Lun. Mar. Mier. Jue. Vie. Sab. Dom. Siempre A veces

18. Si se contesta "Sí" para los lunes, pregúntese: ¿A que hora del lunes siente opresión en el pecho o dificultad en respirar?

a.☐Antes de entrar en la desmotadora

b.☐Despues de entrar en la desmotadora

c.☐Despues de salir de la desmotadora

(Preguntese solo si se contesta "No" a la 15)

19. ¿En el pasado, se le ha oprimido el pecho o hecho dificil respirar algún día de la semana en particular?

☐Sí ☐No

20. Si se contesta "Sí" ¿Que día?

Lun. Mar. Mier. Jue. Vier. Sab. Dom. Siempre A veces

EL DESALIENTO (La Dispnea)

21. Si se inhabilita de caminar a causa de cualquier condición que no sea enfermedad del corazon o de los pulmones, ponga una "X" y ignore las preguntas 22-30.

22. ¿Lo aflige un desaliento al caminar aprisa en terreno llano ó al subir una pequeña cuesta?

☐Sí ☐No

(Si "No", el grado es 1. Si es "Sí", siga a la proxima pregunta)

23. ¿Lo aflige un desaliento al caminar con otros de su propia edad a su paso ordinario en terreno llano?

☐Sí ☐No

(Si "No" el grado es 2. Si es "Sí", prosiga)

24. ¿Tiene que detenerse porque se ahoga al caminar a paso ordinario en terreno llano?

☐Sí ☐No

(Si "No" el grado es 3. Si es "Sí", prosiga)

25. ¿Se desalienta al lavarse ó vestirse?

☐Sí ☐No

(Si "No", el grado es 4. Si es "Sí", el grado es 5.)

26. Dyspnea Grd. _____

LOS LUNES: EL PRIMER DIA DE VUELTA AL TRABAJO DESPUES DE SUS DIAS LIBRES

27. ¿Lo aflige un desaliento al caminar aprisa en terreno llano ó al subir una pequeña cuesta?

☐Sí ☐No

(Si "No", el grado es 1. Si es "Sí", siga a la proxima pregunta)

28. ¿Lo aflige un desaliento al caminar con otros de su propria edad a su paso ordinario en terreno llano?

☐Sí ☐No

(Si "No", el grado es 2. Si es "Sí", prosiga)

29. ¿Tiene que detenerse porque se ahoga al caminar a paso ordinario en terreno llano?

☐Sí ☐No

(Si "No", el grado es 3. Si es "Sí", prosiga)

30. ¿Se desalienta al lavarse o vestirse?

☐ Sí ☐ No

(Si "No", el grado es 4. Si es "Sí", el grado es 5.

31. Br. Grd. _____

OTRAS ENFERMEDADES

32. ¿Tiene Ud. una condición del corazon que requiere los servicios de un medico?

☐ Sí ☐ No

33. ¿Ha tenido alguna vez asma?

☐ Sí ☐ No

Si se contesta "Sí", a la 33, pregúntese si empezó: _____ Antes de los 30 años

_____ Despues do los 30 años

34. Si se contesta "Antes de los 30 años"; ¿Tenia Ud. asma antes de trabajar en una desmotadora de algondón?

☐ Sí ☐ No

35. ¿Ha tenido alguna vez otras alergias (ademas de las de arriba)?

☐ Sí ☐ No

CONSUMO DE TABACO

36. ¿Fuma Ud. actualmente? Indique "Sí" si fumaba regularmente hasta hace un mes (Cigarrillos, puros, o pipa)

☐ Sí ☐ No

Si contesta "No" a la (33), preguntese:

37. ¿Ha fumado Ud. alguna vez? (Cigarillos, puros, ó pipa. Indique "No" si el sujeto nunca ha fumado ni un cigarillo diario o una onza de tobaco al mes, por un año)

☐ Si ☐ No

Si se contesta "Sí" a la (33) o (34); ¿que ha fumado Ud. y por cuantos años? (Indique el numero especifico de años en la casilla apropiada)

Años	(<5)	(5-9)	(10-14)	(15-19)	(20-24)	(25-29)	(30-34)	(35-39)	(>40)
38. Cigarillos									
39. Pipa									
40. Puros									

41. ¿Si fuma cigarrillos, cuantas cajetillas fuma diarias? Indique en numero de cigarrillos:

☐ menos de 1/2 cajetilla

☐ 1/2 cajetilla, pero menos de 1

☐ 1 cajetilla, pero menos de 1 1/2

☐ 1 1/2 cajetillas ó más

42. Numero de cajetillas por año _____

43. Si ha dejado de fumar (cigarrillos, pipas ó puros), cuanto tiempo hace que lo dejo. (Indique en numero de años)

☐ 0 - 1 año

☐ 1 - 4 años

☐ 5 - 9 años

☐ 10 años o mas

HISTORIA LABORAL

¿Ha trabajado Ud. alguna vez en:

44. Una fundación (por tanto como un año)? ☐ Sí ☐ No

45. La minería ó elaboración de piedras ó metales (por tanto como un año)? ☐ Sí ☐ No

46. En una planta de asbesto? (alguna vez) ☐ Sí ☐ No

47. En una fabrica de algodón ó de mezclado de algodón ☐ Sí ☐ No

48. En proximidad de otros polvos, emanaciones o humos? Si se contesta "Sí", especifíquese: ☐ Sí ☐ No

Clase de contacto _____

Duración de contacto _____

[Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81-18-029 (Order 81-21), § 296-62-14603, filed 8/27/81.]

TABLE 1. PREDICTED FVC FOR MALES (KNUDSON, ET AL: AM REV RESPIR DIS. 1976, 113, 587.)

HT \ AGE	17	19	21	23	25	27	29	31	33	35	37	39	41	43	45	47	49	51	53	55	57	59	61	63	65
60.0	3.44	3.59	3.75	3.91	3.72	3.66	3.61	3.55	3.49	3.43	3.37	3.32	3.26	3.20	3.14	3.08	3.03	2.97	2.91	2.85	2.79	2.74	2.68	2.62	2.56
60.5	3.50	3.66	3.81	3.97	3.80	3.75	3.69	3.63	3.57	3.51	3.46	3.40	3.34	3.28	3.22	3.17	3.11	3.05	2.99	2.93	2.88	2.82	2.76	2.70	2.64
61.0	3.56	3.72	3.88	4.03	3.89	3.83	3.77	3.71	3.66	3.60	3.54	3.48	3.42	3.37	3.31	3.25	3.19	3.13	3.08	3.02	2.96	2.90	2.84	2.79	2.73
61.5	3.63	3.78	3.94	4.10	3.97	3.91	3.85	3.80	3.74	3.68	3.62	3.56	3.51	3.45	3.39	3.33	3.27	3.22	3.16	3.10	3.04	2.98	2.93	2.87	2.81
62.0	3.69	3.85	4.00	4.16	4.05	3.99	3.94	3.88	3.82	3.76	3.70	3.65	3.59	3.53	3.47	3.41	3.36	3.30	3.24	3.18	3.12	3.07	3.01	2.95	2.89
62.5	3.76	3.91	4.07	4.22	4.13	4.08	4.02	3.96	3.90	3.84	3.79	3.73	3.67	3.61	3.55	3.50	3.44	3.38	3.32	3.26	3.21	3.15	3.09	3.03	2.97
63.0	3.82	3.97	4.13	4.29	4.22	4.16	4.10	4.04	3.99	3.93	3.87	3.81	3.75	3.70	3.64	3.58	3.52	3.46	3.41	3.35	3.29	3.23	3.17	3.12	3.06
63.5	3.88	4.04	4.19	4.35	4.30	4.24	4.18	4.13	4.07	4.01	3.95	3.89	3.84	3.78	3.72	3.66	3.60	3.55	3.49	3.43	3.37	3.31	3.26	3.20	3.14
64.0	3.95	4.10	4.26	4.41	4.38	4.32	4.27	4.21	4.15	4.09	4.03	3.98	3.92	3.86	3.80	3.74	3.69	3.63	3.57	3.51	3.45	3.40	3.34	3.28	3.22
64.5	4.01	4.17	4.32	4.48	4.46	4.41	4.35	4.29	4.23	4.17	4.12	4.06	4.00	3.94	3.88	3.83	3.77	3.71	3.65	3.59	3.54	3.48	3.42	3.36	3.30
65.0	4.07	4.23	4.39	4.54	4.55	4.49	4.43	4.37	4.32	4.25	4.20	4.14	4.08	4.03	3.97	3.91	3.85	3.79	3.74	3.68	3.62	3.56	3.50	3.45	3.39
65.5	4.14	4.29	4.45	4.60	4.63	4.57	4.51	4.46	4.40	4.34	4.30	4.22	4.17	4.11	4.05	3.99	3.93	3.88	3.82	3.76	3.70	3.64	3.59	3.53	3.47
66.0	4.20	4.36	4.51	4.67	4.71	4.65	4.60	4.54	4.48	4.42	4.36	4.31	4.25	4.19	4.13	4.07	4.02	3.96	3.90	3.84	3.78	3.73	3.67	3.61	3.55
66.5	4.26	4.42	4.58	4.73	4.80	4.74	4.68	4.62	4.56	4.51	4.45	4.39	4.33	4.27	4.22	4.16	4.10	4.04	3.98	3.93	3.87	3.81	3.75	3.69	3.64
67.0	4.33	4.48	4.64	4.80	4.88	4.82	4.76	4.70	4.65	4.59	4.53	4.47	4.41	4.36	4.30	4.24	4.18	4.12	4.07	4.01	3.95	3.89	3.83	3.78	3.72
67.5	4.39	4.55	4.70	4.86	4.96	4.90	4.84	4.79	4.73	4.67	4.61	4.55	4.50	4.44	4.38	4.32	4.26	4.21	4.15	4.09	4.03	3.97	3.92	3.86	3.80
68.0	4.45	4.61	4.77	4.92	5.04	4.98	4.93	4.87	4.81	4.75	4.69	4.64	4.58	4.52	4.46	4.40	4.35	4.29	4.23	4.17	4.11	4.06	4.00	3.94	3.88
68.5	4.52	4.67	4.83	4.99	5.13	5.07	5.01	4.95	4.89	4.84	4.78	4.72	4.66	4.60	4.55	4.49	4.43	4.37	4.31	4.26	4.20	4.14	4.08	4.02	3.97
69.0	4.58	4.74	4.89	5.05	5.21	5.15	5.09	5.03	4.98	4.92	4.86	4.80	4.74	4.69	4.63	4.57	4.51	4.45	4.40	4.34	4.28	4.22	4.16	4.11	4.05
69.5	4.64	4.80	4.96	5.11	5.29	5.23	5.17	5.12	5.06	5.00	4.94	4.88	4.83	4.77	4.71	4.65	4.59	4.54	4.48	4.42	4.36	4.30	4.25	4.19	4.13
70.0	4.71	4.86	5.02	5.18	5.37	5.32	5.26	5.20	5.14	5.08	5.02	4.97	4.91	4.85	4.79	4.74	4.68	4.62	4.56	4.50	4.44	4.39	4.33	4.27	4.21
70.5	4.77	4.93	5.08	5.24	5.46	5.40	5.34	5.28	5.22	5.17	5.11	5.05	4.99	4.93	4.88	4.82	4.76	4.70	4.64	4.59	4.53	4.47	4.41	4.35	4.30
71.0	4.83	4.99	5.15	5.30	5.54	5.48	5.42	5.36	5.31	5.25	5.19	5.13	5.07	5.02	4.96	4.90	4.84	4.78	4.73	4.67	4.61	4.55	4.49	4.44	4.38
71.5	4.90	5.05	5.21	5.37	5.62	5.56	5.50	5.45	5.39	5.33	5.27	5.21	5.16	5.10	5.04	4.98	4.92	4.87	4.81	4.75	4.69	4.64	4.58	4.52	4.46
72.0	4.96	5.12	5.27	5.43	5.70	5.65	5.59	5.53	5.47	5.41	5.36	5.30	5.24	5.18	5.12	5.07	5.01	4.95	4.89	4.83	4.78	4.72	4.66	4.60	4.54
72.5	5.03	5.18	5.34	5.49	5.79	5.73	5.67	5.61	5.55	5.50	5.44	5.38	5.32	5.26	5.21	5.15	5.09	5.03	4.97	4.92	4.86	4.80	4.74	4.68	4.63
73.0	5.09	5.24	5.40	5.56	5.87	5.81	5.75	5.69	5.64	5.58	5.52	5.46	5.40	5.35	5.29	5.23	5.17	5.11	5.06	5.00	4.94	4.88	4.82	4.77	4.71
73.5	5.15	5.31	5.46	5.62	5.93	5.89	5.83	5.78	5.72	5.66	5.60	5.54	5.49	5.43	5.37	5.31	5.25	5.20	5.14	5.08	5.02	4.96	4.91	4.85	4.79
74.0	5.22	5.37	5.53	5.68	6.03	5.98	5.92	5.86	5.80	5.74	5.69	5.63	5.57	5.51	5.45	5.40	5.34	5.28	5.22	5.16	5.11	5.05	4.99	4.93	4.87
74.5	5.28	5.44	5.59	5.75	6.12	6.06	6.00	5.94	5.88	5.83	5.77	5.71	5.65	5.59	5.54	5.48	5.42	5.36	5.30	5.25	5.19	5.13	5.07	5.01	4.96
75.0	5.34	5.50	5.65	5.81	6.20	6.14	6.08	6.02	5.97	5.91	5.85	5.79	5.73	5.68	5.62	5.56	5.50	5.44	5.39	5.33	5.27	5.21	5.15	5.10	5.04
75.5	5.41	5.56	5.72	5.87	6.28	6.22	6.17	6.11	6.05	5.99	5.93	5.88	5.82	5.76	5.70	5.64	5.59	5.53	5.47	5.41	5.35	5.30	5.24	5.18	5.12
76.0	5.47	5.63	5.78	5.94	6.36	6.31	6.25	6.19	6.13	6.07	6.02	5.96	5.90	5.84	5.78	5.73	5.67	5.61	5.55	5.49	5.44	5.38	5.32	5.26	5.20
76.5	5.53	5.69	5.85	6.00	6.45	6.39	6.33	6.27	6.21	6.16	6.10	6.04	5.98	5.92	5.87	5.81	5.75	5.69	5.63	5.58	5.52	5.46	5.40	5.34	5.29
77.0	5.60	5.75	5.91	6.06	6.53	6.47	6.41	6.35	6.30	6.24	6.18	6.12	6.06	6.01	5.95	5.89	5.83	5.77	5.72	5.66	5.60	5.54	5.48	5.43	5.37
77.5	5.66	5.82	5.97	6.13	6.61	6.55	6.50	6.44	6.38	6.32	6.26	6.21	6.15	6.09	6.03	5.97	5.92	5.86	5.80	5.74	5.68	5.63	5.57	5.51	5.45
78.0	5.72	5.88	6.04	6.19	6.69	6.64	6.58	6.52	6.46	6.40	6.35	6.29	6.23	6.17	6.11	6.06	6.00	5.94	5.88	5.82	5.77	5.71	5.65	5.59	5.53
78.5	5.79	5.94	6.10	6.26	6.78	6.72	6.66	6.60	6.54	6.49	6.43	6.37	6.31	6.25	6.20	6.14	6.08	6.02	5.96	5.91	5.85	5.79	5.73	5.67	5.62
79.0	5.85	6.01	6.16	6.32	6.86	6.80	6.74	6.68	6.63	6.57	6.51	6.45	6.39	6.34	6.28	6.22	6.16	6.10	6.05	5.99	5.93	5.87	5.81	5.76	5.70
79.5	5.91	6.07	6.23	6.38	6.94	6.88	6.83	6.77	6.71	6.65	6.59	6.54	6.48	6.42	6.36	6.30	6.25	6.19	6.13	6.07	6.01	5.96	5.90	5.84	5.78
80.0	5.98	6.13	6.29	6.45	7.02	6.97	6.91	6.85	6.79	6.73	6.68	6.62	6.56	6.50	6.44	6.39	6.33	6.27	6.21	6.15	6.10	6.04	5.98	5.92	5.86
80.5	6.04	6.20	6.35	6.51	7.11	7.05	6.99	6.93	6.87	6.82	6.76	6.70	6.64	6.58	6.53	6.47	6.41	6.35	6.29	6.24	6.18	6.12	6.06	6.00	5.95
81.0	6.10	6.26	6.42	6.57	7.19	7.13	7.07	7.02	6.96	6.90	6.84	6.78	6.73	6.67	6.61	6.55	6.49	6.44	6.38	6.32	6.26	6.20	6.15	6.09	6.03
81.5	6.17	6.32	6.48	6.64	7.27	7.21	7.16	7.10	7.04	6.98	6.92	6.87	6.81	6.75	6.69	6.63	6.58	6.52	6.46	6.40	6.34	6.29	6.23	6.17	6.11
82.0	6.23	6.39	6.54	6.70	7.35	7.30	7.24	7.18	7.12	7.06	7.01	6.95	6.89	6.83	6.77	6.72	6.66	6.60	6.54	6.48	6.43	6.37	6.31	6.25	6.19
82.5	6.30	6.45	6.61	6.76	7.44	7.38	7.32	7.26	7.20	7.15	7.09	7.03	6.97	6.91	6.86	6.80	6.74	6.68	6.62	6.57	6.51	6.45	6.39	6.33	6.28
83.0	6.36	6.51	6.67	6.83	7.52	7.46	7.40	7.35	7.29	7.23	7.17	7.11	7.06	7.00	6.94	6.88	6.82	6.77	6.71	6.65	6.59	6.53	6.48	6.42	6.36
83.5	6.42	6.58	6.73	6.89	7.60	7.54	7.49	7.43	7.37	7.31	7.25	7.20	7.14	7.08	7.02	6.96	6.91	6.85	6.79	6.73	6.67	6.62	6.56	6.50	6.44
84.0	6.49	6.64	6.80	6.95	7.68	7.63	7.57	7.51	7.45	7.39	7.34	7.28	7.22	7.16	7.10	7.05	6.99	6.93	6.87	6.81	6.76	6.70	6.64	6.58	6.52
84.5	6.55	6.71	6.86	7.02	7.77	7.71	7.65	7.59	7.53	7.48	7.42	7.36	7.30	7.24	7.19	7.13	7.07	7.01	6.95	6.90	6.84	6.78	6.72	6.66	6.61
85.0	6.61	6.77	6.92	7.08	7.85	7.79	7.73	7.68	7.62	7.56	7.50	7.44	7.39	7.33	7.27	7.21	7.15	7.10	7.04	6.98	6.92	6.86	6.81	6.75	6.69

TABLE 2. PREDICTED FEV1 FOR MALES (KNUDSON, ET AL: AM REV RESPIR DIS. 1976, 113, 587.)

HT \ AGE	17	19	21	23	25	27	29	31	33	35	37	39	41	43	45	47	49	51	53	55	57	59	61	63	65
60.0	2.97	3.06	3.15	3.24	3.05	2.99	2.94	2.88	2.83	2.78	2.72	2.67	2.61	2.56	2.51	2.45	2.40	2.34	2.29	2.24	2.18	2.13	2.07	2.02	1.97
60.5	3.03	3.12	3.21	3.30	3.11	3.06	3.00	2.95	2.90	2.84	2.79	2.73	2.68	2.63	2.57	2.52	2.46	2.41	2.36	2.30	2.25	2.19	2.14	2.09	2.03
61.0	3.08	3.17	3.26	3.35	3.18	3.12	3.07	3.02	2.96	2.91	2.85	2.80	2.75	2.69	2.64	2.58	2.53	2.48	2.42	2.37	2.31	2.26	2.21	2.15	2.10
61.5	3.14	3.23	3.32	3.41	3.24	3.19	3.14	3.08	3.03	2.97	2.92	2.87	2.81	2.76	2.70	2.65	2.60	2.54	2.49	2.43	2.38	2.33	2.27	2.22	2.16
62.0	3.20	3.29	3.38	3.47	3.31	3.26	3.20	3.15	3.09	3.04	2.99	2.93	2.88	2.82	2.77	2.72	2.66	2.61	2.55	2.50	2.45	2.39	2.34	2.28	2.23
62.5	3.26	3.35	3.44	3.53	3.38	3.32	3.27	3.22	3.16	3.11	3.05	3.00	2.95	2.89	2.84	2.78	2.73	2.68	2.62	2.57	2.51	2.46	2.41	2.35	2.30
63.0	3.32	3.41	3.50	3.59	3.44	3.39	3.34	3.28	3.23	3.17	3.12	3.07	3.01	2.96	2.90	2.85	2.80	2.74	2.69	2.63	2.58	2.53	2.47	2.42	2.36
63.5	3.38	3.47	3.56	3.65	3.51	3.46	3.40	3.35	3.29	3.24	3.19	3.13	3.08	3.02	2.97	2.92	2.86	2.81	2.75	2.70	2.65	2.59	2.54	2.48	2.43
64.0	3.43	3.52	3.61	3.70	3.58	3.52	3.47	3.41	3.36	3.31	3.25	3.20	3.14	3.09	3.04	2.98	2.93	2.87	2.82	2.77	2.71	2.66	2.60	2.55	2.50
64.5	3.49	3.58	3.67	3.76	3.64	3.59	3.53	3.48	3.43	3.37	3.32	3.26	3.21	3.16	3.10	3.05	2.99	2.94	2.89	2.83	2.78	2.72	2.67	2.62	2.56
65.0	3.55	3.64	3.73	3.82	3.71	3.65	3.60	3.55	3.49	3.44	3.38	3.33	3.28	3.22	3.17	3.11	3.06	3.01	2.95	2.90	2.84	2.79	2.74	2.68	2.63
65.5	3.61	3.70	3.79	3.88	3.77	3.72	3.67	3.61	3.56	3.50	3.45	3.40	3.34	3.29	3.23	3.18	3.13	3.07	3.02	2.96	2.91	2.86	2.80	2.75	2.69
66.0	3.67	3.76	3.85	3.94	3.84	3.79	3.73	3.68	3.62	3.57	3.52	3.46	3.41	3.35	3.30	3.25	3.19	3.14	3.08	3.03	2.98	2.92	2.87	2.81	2.76
66.5	3.73	3.82	3.91	4.00	3.91	3.85	3.80	3.74	3.69	3.64	3.58	3.53	3.47	3.42	3.37	3.31	3.26	3.20	3.15	3.10	3.04	2.99	2.93	2.88	2.83
67.0	3.79	3.88	3.97	4.06	3.97	3.92	3.86	3.81	3.76	3.70	3.65	3.59	3.54	3.49	3.43	3.38	3.32	3.27	3.22	3.16	3.11	3.05	3.00	2.95	2.89
67.5	3.84	3.93	4.02	4.11	4.04	3.98	3.93	3.88	3.82	3.77	3.71	3.66	3.61	3.55	3.50	3.44	3.39	3.34	3.28	3.23	3.17	3.12	3.07	3.01	2.96
68.0	3.90	3.99	4.08	4.17	4.10	4.05	4.00	3.94	3.89	3.83	3.78	3.73	3.67	3.62	3.56	3.51	3.46	3.40	3.35	3.29	3.24	3.19	3.13	3.08	3.02
68.5	3.96	4.05	4.14	4.23	4.17	4.12	4.06	4.01	3.95	3.90	3.85	3.79	3.74	3.68	3.63	3.58	3.52	3.47	3.41	3.36	3.31	3.25	3.20	3.14	3.09
69.0	4.02	4.11	4.20	4.29	4.24	4.18	4.13	4.07	4.02	3.97	3.91	3.86	3.80	3.75	3.70	3.64	3.59	3.53	3.48	3.43	3.37	3.32	3.26	3.21	3.16
69.5	4.08	4.17	4.26	4.35	4.30	4.25	4.19	4.14	4.09	4.03	3.98	3.92	3.87	3.82	3.76	3.71	3.65	3.60	3.55	3.49	3.44	3.38	3.33	3.28	3.22
70.0	4.14	4.23	4.32	4.41	4.37	4.31	4.26	4.21	4.15	4.10	4.04	3.99	3.94	3.88	3.83	3.77	3.72	3.67	3.61	3.56	3.50	3.45	3.40	3.34	3.29
70.5	4.19	4.28	4.37	4.46	4.43	4.38	4.33	4.27	4.22	4.16	4.11	4.06	4.00	3.95	3.89	3.84	3.79	3.73	3.68	3.62	3.57	3.52	3.46	3.41	3.35
71.0	4.25	4.34	4.43	4.52	4.50	4.45	4.39	4.34	4.28	4.23	4.18	4.12	4.07	4.01	3.96	3.91	3.85	3.80	3.74	3.69	3.64	3.58	3.53	3.47	3.42
71.5	4.31	4.40	4.49	4.58	4.57	4.51	4.46	4.40	4.35	4.30	4.24	4.19	4.13	4.08	4.03	3.97	3.92	3.86	3.81	3.76	3.70	3.65	3.59	3.54	3.49
72.0	4.37	4.46	4.55	4.64	4.63	4.58	4.52	4.47	4.42	4.36	4.31	4.25	4.20	4.15	4.09	4.04	3.98	3.93	3.88	3.82	3.77	3.71	3.66	3.61	3.55
72.5	4.43	4.52	4.61	4.70	4.70	4.64	4.59	4.54	4.48	4.43	4.37	4.32	4.27	4.21	4.16	4.10	4.05	4.00	3.94	3.89	3.83	3.78	3.73	3.67	3.62
73.0	4.49	4.58	4.67	4.76	4.76	4.71	4.66	4.60	4.55	4.49	4.44	4.39	4.33	4.28	4.22	4.17	4.12	4.06	4.01	3.95	3.90	3.85	3.79	3.74	3.68
73.5	4.54	4.63	4.72	4.81	4.83	4.78	4.72	4.67	4.61	4.56	4.51	4.45	4.40	4.34	4.29	4.24	4.18	4.13	4.07	4.02	3.97	3.91	3.86	3.80	3.75
74.0	4.60	4.69	4.78	4.87	4.90	4.84	4.79	4.73	4.68	4.63	4.57	4.52	4.46	4.41	4.36	4.30	4.25	4.19	4.14	4.09	4.03	3.98	3.92	3.87	3.82
74.5	4.66	4.75	4.84	4.93	4.96	4.91	4.85	4.80	4.75	4.69	4.64	4.58	4.53	4.48	4.42	4.37	4.31	4.26	4.21	4.15	4.10	4.04	3.99	3.94	3.88
75.0	4.72	4.81	4.90	4.99	5.03	4.97	4.92	4.87	4.81	4.76	4.70	4.65	4.60	4.54	4.49	4.43	4.38	4.33	4.27	4.22	4.16	4.11	4.06	4.00	3.95
75.5	4.78	4.87	4.96	5.05	5.09	5.04	4.99	4.93	4.88	4.82	4.77	4.72	4.66	4.61	4.55	4.50	4.45	4.39	4.34	4.28	4.23	4.18	4.12	4.07	4.01
76.0	4.84	4.93	5.02	5.11	5.16	5.11	5.05	5.00	4.94	4.89	4.84	4.78	4.73	4.67	4.62	4.57	4.51	4.46	4.40	4.35	4.30	4.24	4.19	4.13	4.08
76.5	4.90	4.99	5.08	5.17	5.23	5.17	5.12	5.06	5.01	4.96	4.90	4.85	4.79	4.74	4.69	4.63	4.58	4.52	4.47	4.42	4.36	4.31	4.25	4.20	4.15
77.0	4.95	5.04	5.13	5.22	5.29	5.24	5.18	5.13	5.08	5.02	4.97	4.91	4.86	4.81	4.75	4.70	4.64	4.59	4.54	4.48	4.43	4.37	4.32	4.27	4.21
77.5	5.01	5.10	5.19	5.28	5.36	5.30	5.25	5.20	5.14	5.09	5.03	4.98	4.93	4.87	4.82	4.76	4.71	4.66	4.60	4.55	4.49	4.44	4.39	4.33	4.28
78.0	5.07	5.16	5.25	5.34	5.42	5.37	5.32	5.26	5.21	5.15	5.10	5.05	4.99	4.94	4.88	4.83	4.78	4.72	4.67	4.61	4.56	4.51	4.45	4.40	4.34
78.5	5.13	5.22	5.31	5.40	5.49	5.44	5.38	5.33	5.27	5.22	5.17	5.11	5.06	5.00	4.95	4.90	4.84	4.79	4.73	4.68	4.63	4.57	4.52	4.46	4.41
79.0	5.19	5.28	5.37	5.46	5.56	5.50	5.45	5.39	5.34	5.29	5.23	5.18	5.12	5.07	5.02	4.96	4.91	4.85	4.80	4.75	4.69	4.64	4.58	4.53	4.48
79.5	5.25	5.34	5.43	5.52	5.62	5.57	5.51	5.46	5.41	5.35	5.30	5.24	5.19	5.14	5.08	5.03	4.97	4.92	4.87	4.81	4.76	4.70	4.65	4.60	4.54
80.0	5.30	5.39	5.48	5.57	5.69	5.63	5.58	5.53	5.47	5.42	5.36	5.31	5.26	5.20	5.15	5.09	5.04	4.99	4.93	4.88	4.82	4.77	4.72	4.66	4.61
80.5	5.36	5.45	5.54	5.63	5.75	5.70	5.65	5.59	5.54	5.48	5.43	5.38	5.32	5.27	5.21	5.16	5.11	5.05	5.00	4.94	4.89	4.84	4.78	4.73	4.67
81.0	5.42	5.51	5.60	5.69	5.82	5.77	5.71	5.66	5.60	5.55	5.50	5.44	5.39	5.33	5.28	5.23	5.17	5.12	5.06	5.01	4.96	4.90	4.85	4.79	4.74
81.5	5.48	5.57	5.66	5.75	5.89	5.83	5.78	5.72	5.67	5.62	5.56	5.51	5.45	5.40	5.35	5.29	5.24	5.18	5.13	5.08	5.02	4.97	4.91	4.86	4.81
82.0	5.54	5.63	5.72	5.81	5.95	5.90	5.84	5.79	5.74	5.68	5.63	5.57	5.52	5.47	5.41	5.36	5.30	5.25	5.20	5.14	5.09	5.03	4.98	4.93	4.87
82.5	5.60	5.69	5.78	5.87	6.02	5.96	5.91	5.86	5.80	5.75	5.69	5.64	5.59	5.53	5.48	5.42	5.37	5.32	5.26	5.21	5.15	5.10	5.05	4.99	4.94
83.0	5.65	5.74	5.83	5.92	6.08	6.03	5.98	5.92	5.87	5.81	5.76	5.71	5.65	5.60	5.54	5.49	5.44	5.38	5.33	5.27	5.22	5.17	5.11	5.06	5.00
83.5	5.71	5.80	5.89	5.98	6.15	6.10	6.04	5.99	5.93	5.88	5.83	5.77	5.72	5.66	5.61	5.56	5.50	5.45	5.39	5.34	5.29	5.23	5.18	5.12	5.07
84.0	5.77	5.86	5.95	6.04	6.22	6.16	6.11	6.05	6.00	5.95	5.89	5.84	5.78	5.73	5.68	5.62	5.57	5.51	5.46	5.41	5.35	5.30	5.24	5.19	5.14
84.5	5.83	5.92	6.01	6.10	6.28	6.23	6.17	6.12	6.07	6.01	5.96	5.90	5.85	5.80	5.74	5.69	5.63	5.58	5.53	5.47	5.42	5.36	5.31	5.26	5.20
85.0	5.89	5.98	6.07	6.16	6.35	6.29	6.24	6.19	6.13	6.08	6.02	5.97	5.92	5.86	5.81	5.75	5.70	5.65	5.59	5.54	5.48	5.43	5.38	5.32	5.27

TABLE 3. PREDICTED FVC FOR FEMALES (KNUDSON, ET AL: AM REV RESPIR DIS, 1976, 113, 587.)

HT \ AGE	17	19	21	23	25	27	29	31	33	35	37	39	41	43	45	47	49	51	53	55	57	59	61	63	65
52.0	2.45	2.64	2.65	2.61	2.56	2.52	2.47	2.43	2.39	2.34	2.30	2.25	2.21	2.17	2.12	2.08	2.03	1.99	1.95	1.90	1.86	1.81	1.77	1.73	1.68
52.5	2.50	2.68	2.70	2.65	2.61	2.57	2.52	2.48	2.43	2.39	2.35	2.30	2.26	2.21	2.17	2.13	2.08	2.04	1.99	1.95	1.91	1.86	1.82	1.77	1.73
53.0	2.54	2.72	2.74	2.70	2.66	2.61	2.57	2.52	2.48	2.44	2.39	2.35	2.30	2.26	2.22	2.17	2.13	2.08	2.04	2.00	1.95	1.91	1.86	1.82	1.78
53.5	2.58	2.76	2.79	2.75	2.70	2.66	2.62	2.57	2.53	2.48	2.44	2.40	2.35	2.31	2.26	2.22	2.18	2.13	2.09	2.04	2.00	1.96	1.91	1.87	1.82
54.0	2.62	2.81	2.84	2.79	2.75	2.71	2.66	2.62	2.57	2.53	2.49	2.44	2.40	2.35	2.31	2.27	2.22	2.18	2.13	2.09	2.05	2.00	1.96	1.91	1.87
54.5	2.66	2.85	2.89	2.84	2.80	2.75	2.71	2.67	2.62	2.58	2.53	2.49	2.45	2.40	2.36	2.31	2.27	2.23	2.18	2.14	2.09	2.05	2.01	1.96	1.92
55.0	2.71	2.89	2.93	2.89	2.84	2.80	2.76	2.71	2.67	2.62	2.58	2.54	2.49	2.45	2.40	2.36	2.32	2.27	2.23	2.18	2.14	2.10	2.05	2.01	1.96
55.5	2.75	2.93	2.98	2.94	2.89	2.85	2.80	2.76	2.72	2.67	2.63	2.58	2.54	2.50	2.45	2.41	2.36	2.32	2.28	2.23	2.19	2.14	2.10	2.06	2.01
56.0	2.79	2.97	3.03	2.98	2.94	2.89	2.85	2.81	2.76	2.72	2.67	2.63	2.59	2.54	2.50	2.45	2.41	2.37	2.32	2.28	2.23	2.19	2.15	2.10	2.06
56.5	2.83	3.01	3.07	3.03	2.99	2.94	2.90	2.85	2.81	2.77	2.72	2.68	2.63	2.59	2.55	2.50	2.46	2.41	2.37	2.33	2.28	2.24	2.19	2.15	2.11
57.0	2.87	3.06	3.12	3.08	3.03	2.99	2.94	2.90	2.86	2.81	2.77	2.72	2.68	2.64	2.59	2.55	2.50	2.46	2.42	2.37	2.33	2.28	2.24	2.20	2.15
57.5	2.91	3.10	3.17	3.12	3.08	3.04	2.99	2.95	2.90	2.86	2.82	2.77	2.73	2.68	2.64	2.60	2.55	2.51	2.46	2.42	2.38	2.33	2.29	2.24	2.20
58.0	2.96	3.14	3.21	3.17	3.13	3.08	3.04	2.99	2.95	2.91	2.86	2.82	2.77	2.73	2.69	2.64	2.60	2.55	2.51	2.47	2.42	2.38	2.33	2.29	2.25
58.5	3.00	3.18	3.26	3.22	3.17	3.13	3.09	3.04	3.00	2.95	2.91	2.87	2.82	2.78	2.73	2.69	2.65	2.60	2.56	2.51	2.47	2.43	2.38	2.34	2.29
59.0	3.04	3.22	3.31	3.26	3.22	3.18	3.13	3.09	3.04	3.00	2.96	2.91	2.87	2.82	2.78	2.74	2.69	2.65	2.60	2.56	2.52	2.47	2.43	2.38	2.34
59.5	3.08	3.27	3.36	3.31	3.27	3.22	3.18	3.14	3.09	3.05	3.00	2.96	2.92	2.87	2.83	2.78	2.74	2.70	2.65	2.61	2.56	2.52	2.48	2.43	2.39
60.0	3.12	3.31	3.40	3.36	3.31	3.27	3.23	3.18	3.14	3.09	3.05	3.01	2.96	2.92	2.87	2.83	2.79	2.74	2.70	2.65	2.61	2.57	2.52	2.48	2.43
60.5	3.17	3.35	3.45	3.41	3.36	3.32	3.27	3.23	3.19	3.14	3.10	3.05	3.01	2.97	2.92	2.88	2.83	2.79	2.75	2.70	2.66	2.61	2.57	2.53	2.49
61.0	3.21	3.39	3.50	3.45	3.41	3.36	3.32	3.28	3.23	3.19	3.14	3.10	3.06	3.01	2.97	2.92	2.88	2.84	2.79	2.75	2.70	2.66	2.62	2.57	2.53
61.5	3.25	3.43	3.54	3.50	3.46	3.41	3.37	3.32	3.28	3.24	3.19	3.15	3.10	3.06	3.02	2.97	2.93	2.88	2.84	2.80	2.75	2.71	2.66	2.62	2.58
62.0	3.29	3.48	3.59	3.55	3.50	3.46	3.41	3.37	3.33	3.28	3.24	3.19	3.15	3.11	3.06	3.02	2.97	2.93	2.89	2.84	2.80	2.75	2.71	2.67	2.62
62.5	3.33	3.52	3.64	3.59	3.55	3.51	3.46	3.42	3.37	3.33	3.29	3.24	3.20	3.15	3.11	3.07	3.02	2.98	2.93	2.89	2.85	2.80	2.76	2.71	2.67
63.0	3.38	3.56	3.68	3.64	3.60	3.55	3.51	3.46	3.42	3.38	3.33	3.29	3.24	3.20	3.16	3.11	3.07	3.02	2.98	2.94	2.89	2.85	2.80	2.76	2.72
63.5	3.42	3.60	3.73	3.69	3.64	3.60	3.56	3.51	3.47	3.42	3.38	3.34	3.29	3.25	3.20	3.16	3.12	3.07	3.03	2.98	2.94	2.90	2.85	2.81	2.76
64.0	3.46	3.64	3.78	3.73	3.69	3.65	3.60	3.56	3.51	3.47	3.43	3.38	3.34	3.29	3.25	3.21	3.16	3.12	3.07	3.03	2.99	2.94	2.90	2.85	2.81
64.5	3.50	3.69	3.83	3.78	3.74	3.69	3.65	3.61	3.56	3.52	3.47	3.43	3.39	3.34	3.30	3.25	3.21	3.17	3.12	3.08	3.03	2.99	2.95	2.90	2.86
65.0	3.54	3.73	3.87	3.83	3.78	3.74	3.70	3.65	3.61	3.56	3.52	3.48	3.43	3.39	3.34	3.30	3.26	3.21	3.17	3.12	3.08	3.04	2.99	2.95	2.90
65.5	3.59	3.77	3.92	3.88	3.83	3.79	3.74	3.70	3.66	3.61	3.57	3.52	3.48	3.44	3.39	3.35	3.30	3.26	3.22	3.17	3.13	3.08	3.04	3.00	2.95
66.0	3.63	3.81	3.97	3.92	3.88	3.83	3.79	3.75	3.70	3.66	3.61	3.57	3.53	3.48	3.44	3.39	3.35	3.31	3.26	3.22	3.17	3.13	3.09	3.04	3.00
66.5	3.67	3.85	4.01	3.97	3.93	3.88	3.84	3.79	3.75	3.71	3.66	3.62	3.57	3.53	3.49	3.44	3.40	3.35	3.31	3.27	3.22	3.18	3.13	3.09	3.05
67.0	3.71	3.89	4.06	4.02	3.97	3.93	3.88	3.84	3.80	3.75	3.71	3.66	3.62	3.58	3.53	3.49	3.44	3.40	3.36	3.31	3.27	3.22	3.18	3.14	3.09
67.5	3.75	3.94	4.11	4.06	4.02	3.98	3.93	3.89	3.84	3.80	3.76	3.71	3.67	3.62	3.58	3.54	3.49	3.45	3.40	3.36	3.32	3.27	3.23	3.18	3.14
68.0	3.79	3.98	4.15	4.11	4.07	4.02	3.98	3.93	3.89	3.85	3.80	3.76	3.71	3.67	3.63	3.58	3.54	3.49	3.45	3.41	3.36	3.32	3.27	3.23	3.19
68.5	3.84	4.02	4.20	4.16	4.11	4.07	4.03	3.98	3.94	3.89	3.85	3.81	3.76	3.72	3.67	3.63	3.59	3.54	3.50	3.45	3.41	3.37	3.32	3.28	3.23
69.0	3.88	4.06	4.25	4.20	4.16	4.12	4.07	4.03	3.98	3.94	3.90	3.85	3.81	3.76	3.72	3.68	3.63	3.59	3.54	3.50	3.46	3.41	3.37	3.32	3.28
69.5	3.92	4.10	4.30	4.25	4.21	4.16	4.12	4.08	4.03	3.99	3.94	3.90	3.86	3.81	3.77	3.72	3.68	3.64	3.59	3.55	3.50	3.46	3.42	3.37	3.33
70.0	3.96	4.15	4.34	4.30	4.25	4.21	4.17	4.12	4.08	4.03	3.99	3.95	3.90	3.86	3.81	3.77	3.73	3.68	3.64	3.59	3.55	3.51	3.46	3.42	3.37
70.5	4.00	4.19	4.39	4.35	4.30	4.26	4.21	4.17	4.13	4.08	4.04	3.99	3.95	3.91	3.86	3.82	3.77	3.73	3.69	3.64	3.60	3.55	3.51	3.47	3.42
71.0	4.05	4.23	4.44	4.39	4.35	4.30	4.26	4.22	4.17	4.13	4.08	4.04	4.00	3.95	3.91	3.86	3.82	3.78	3.73	3.69	3.64	3.60	3.56	3.51	3.47
71.5	4.09	4.27	4.48	4.44	4.40	4.35	4.31	4.26	4.22	4.18	4.13	4.09	4.04	4.00	3.96	3.91	3.87	3.82	3.78	3.74	3.69	3.65	3.60	3.56	3.52
72.0	4.13	4.31	4.53	4.49	4.44	4.40	4.35	4.31	4.27	4.22	4.18	4.13	4.09	4.05	4.00	3.96	3.91	3.87	3.83	3.78	3.74	3.69	3.65	3.61	3.56
72.5	4.17	4.36	4.58	4.53	4.49	4.45	4.40	4.36	4.31	4.27	4.23	4.18	4.14	4.09	4.05	4.01	3.96	3.92	3.87	3.83	3.79	3.74	3.70	3.65	3.61
73.0	4.21	4.40	4.62	4.58	4.54	4.49	4.45	4.40	4.36	4.32	4.27	4.23	4.18	4.14	4.10	4.05	4.01	3.96	3.92	3.88	3.83	3.79	3.74	3.70	3.66
73.5	4.26	4.44	4.67	4.63	4.58	4.54	4.50	4.45	4.41	4.36	4.32	4.28	4.23	4.19	4.14	4.10	4.06	4.01	3.97	3.92	3.88	3.84	3.79	3.75	3.70
74.0	4.30	4.48	4.72	4.67	4.63	4.59	4.54	4.50	4.45	4.41	4.37	4.32	4.28	4.23	4.19	4.15	4.10	4.06	4.01	3.97	3.93	3.88	3.84	3.79	3.75
74.5	4.34	4.52	4.77	4.72	4.68	4.63	4.59	4.55	4.50	4.46	4.41	4.37	4.33	4.28	4.24	4.19	4.15	4.11	4.06	4.02	3.97	3.93	3.89	3.84	3.80
75.0	4.38	4.57	4.81	4.77	4.72	4.68	4.64	4.59	4.55	4.50	4.46	4.42	4.37	4.33	4.28	4.24	4.20	4.15	4.11	4.06	4.02	3.98	3.93	3.89	3.84
75.5	4.42	4.61	4.86	4.82	4.77	4.73	4.68	4.64	4.60	4.55	4.51	4.46	4.42	4.38	4.33	4.29	4.24	4.20	4.16	4.11	4.07	4.02	3.98	3.94	3.89
76.0	4.47	4.65	4.91	4.86	4.82	4.77	4.73	4.69	4.64	4.60	4.55	4.51	4.47	4.42	4.38	4.33	4.29	4.25	4.20	4.16	4.11	4.07	4.03	3.98	3.94
76.5	4.51	4.69	4.95	4.91	4.87	4.82	4.78	4.73	4.69	4.65	4.60	4.56	4.51	4.47	4.43	4.38	4.34	4.29	4.25	4.21	4.16	4.12	4.07	4.03	3.99
77.0	4.55	4.73	5.00	4.96	4.91	4.87	4.82	4.78	4.74	4.69	4.65	4.60	4.56	4.52	4.47	4.43	4.38	4.34	4.30	4.25	4.21	4.16	4.12	4.08	4.03

TABLE 4. PREDICTED FEV1 FOR FEMALES (KNUDSON, ET AL: AM REV RESPIR DIS. 1976. 113. 587.)

HT	AGE 17	19	21	23	25	27	29	31	33	35	37	39	41	43	45	47	49	51	53	55	57	59	61	63	65
52.0	2.31	2.48	2.33	2.29	2.25	2.21	2.16	2.12	2.08	2.04	2.00	1.95	1.91	1.87	1.83	1.79	1.74	1.70	1.66	1.62	1.58	1.53	1.49	1.45	1.41
52.5	2.34	2.51	2.37	2.32	2.28	2.24	2.20	2.16	2.11	2.07	2.03	1.99	1.95	1.90	1.86	1.82	1.78	1.74	1.69	1.65	1.61	1.57	1.53	1.48	1.44
53.0	2.38	2.55	2.40	2.36	2.32	2.27	2.23	2.19	2.15	2.11	2.06	2.02	1.98	1.94	1.90	1.85	1.81	1.77	1.73	1.69	1.64	1.60	1.56	1.52	1.48
53.5	2.41	2.58	2.43	2.39	2.35	2.31	2.27	2.22	2.18	2.14	2.10	2.06	2.01	1.97	1.93	1.89	1.85	1.80	1.76	1.72	1.68	1.64	1.59	1.55	1.51
54.0	2.45	2.62	2.47	2.43	2.38	2.34	2.30	2.26	2.22	2.17	2.13	2.09	2.05	2.01	1.96	1.92	1.88	1.84	1.80	1.75	1.71	1.67	1.63	1.59	1.54
54.5	2.48	2.65	2.50	2.46	2.42	2.38	2.33	2.29	2.25	2.21	2.17	2.12	2.08	2.04	2.00	1.96	1.91	1.87	1.83	1.79	1.75	1.70	1.66	1.62	1.58
55.0	2.51	2.68	2.54	2.49	2.45	2.41	2.37	2.33	2.28	2.24	2.20	2.16	2.12	2.07	2.03	1.99	1.95	1.91	1.86	1.82	1.78	1.74	1.70	1.65	1.61
55.5	2.55	2.72	2.57	2.53	2.49	2.45	2.40	2.36	2.32	2.28	2.24	2.19	2.15	2.11	2.07	2.03	1.98	1.94	1.90	1.86	1.82	1.77	1.73	1.69	1.65
56.0	2.58	2.75	2.61	2.56	2.52	2.48	2.44	2.40	2.35	2.31	2.27	2.23	2.19	2.14	2.10	2.06	2.02	1.98	1.93	1.89	1.85	1.81	1.77	1.72	1.68
56.5	2.62	2.79	2.64	2.60	2.56	2.51	2.47	2.43	2.39	2.35	2.30	2.26	2.22	2.18	2.14	2.09	2.05	2.01	1.97	1.93	1.88	1.84	1.80	1.76	1.72
57.0	2.65	2.82	2.67	2.63	2.59	2.55	2.51	2.46	2.42	2.38	2.34	2.30	2.25	2.21	2.17	2.13	2.09	2.04	2.00	1.96	1.92	1.88	1.83	1.79	1.75
57.5	2.69	2.86	2.71	2.67	2.62	2.58	2.54	2.50	2.46	2.41	2.37	2.33	2.29	2.25	2.20	2.16	2.12	2.08	2.04	1.99	1.95	1.91	1.87	1.83	1.78
58.0	2.72	2.89	2.74	2.70	2.66	2.62	2.57	2.53	2.49	2.45	2.41	2.36	2.32	2.28	2.24	2.20	2.15	2.11	2.07	2.03	1.99	1.94	1.90	1.86	1.82
58.5	2.75	2.92	2.78	2.73	2.69	2.65	2.61	2.57	2.52	2.48	2.44	2.40	2.36	2.31	2.27	2.23	2.19	2.15	2.10	2.06	2.02	1.98	1.94	1.89	1.85
59.0	2.79	2.96	2.81	2.77	2.73	2.69	2.64	2.60	2.56	2.52	2.48	2.43	2.39	2.35	2.31	2.27	2.22	2.18	2.14	2.10	2.06	2.01	1.97	1.93	1.89
59.5	2.82	2.99	2.85	2.80	2.76	2.72	2.68	2.64	2.59	2.55	2.51	2.47	2.43	2.38	2.34	2.30	2.26	2.22	2.17	2.13	2.09	2.05	2.01	1.96	1.92
60.0	2.86	3.03	2.88	2.84	2.80	2.75	2.71	2.67	2.63	2.59	2.54	2.50	2.46	2.42	2.38	2.33	2.29	2.25	2.21	2.17	2.12	2.08	2.04	2.00	1.96
60.5	2.89	3.06	2.91	2.87	2.83	2.79	2.75	2.70	2.66	2.62	2.58	2.54	2.49	2.45	2.41	2.37	2.33	2.28	2.24	2.20	2.16	2.12	2.07	2.03	1.99
61.0	2.93	3.10	2.95	2.91	2.86	2.82	2.78	2.74	2.70	2.65	2.61	2.57	2.53	2.49	2.44	2.40	2.36	2.32	2.28	2.23	2.19	2.15	2.11	2.07	2.02
61.5	2.96	3.13	2.98	2.94	2.90	2.86	2.81	2.77	2.73	2.69	2.65	2.60	2.56	2.52	2.48	2.44	2.39	2.35	2.31	2.27	2.23	2.18	2.14	2.10	2.06
62.0	2.99	3.16	3.02	2.97	2.93	2.89	2.85	2.81	2.76	2.72	2.68	2.64	2.60	2.55	2.51	2.47	2.43	2.39	2.34	2.30	2.26	2.22	2.18	2.13	2.09
62.5	3.03	3.20	3.05	3.01	2.97	2.93	2.88	2.84	2.80	2.76	2.72	2.67	2.63	2.59	2.55	2.51	2.46	2.42	2.38	2.34	2.30	2.25	2.21	2.17	2.13
63.0	3.06	3.23	3.09	3.04	3.00	2.96	2.92	2.88	2.83	2.79	2.75	2.71	2.67	2.62	2.58	2.54	2.50	2.46	2.41	2.37	2.33	2.29	2.25	2.20	2.16
63.5	3.10	3.27	3.12	3.08	3.04	2.99	2.95	2.91	2.87	2.83	2.78	2.74	2.70	2.66	2.62	2.57	2.53	2.49	2.45	2.41	2.36	2.32	2.28	2.24	2.20
64.0	3.13	3.30	3.15	3.11	3.07	3.03	2.99	2.94	2.90	2.86	2.82	2.78	2.73	2.69	2.65	2.61	2.57	2.52	2.48	2.44	2.40	2.36	2.31	2.27	2.23
64.5	3.17	3.34	3.19	3.15	3.10	3.06	3.02	2.98	2.94	2.89	2.85	2.81	2.77	2.73	2.68	2.64	2.60	2.56	2.52	2.47	2.43	2.39	2.35	2.31	2.26
65.0	3.20	3.37	3.22	3.18	3.14	3.10	3.05	3.01	2.97	2.93	2.89	2.84	2.80	2.76	2.72	2.68	2.63	2.59	2.55	2.51	2.47	2.42	2.38	2.34	2.30
65.5	3.23	3.40	3.26	3.21	3.17	3.13	3.09	3.05	3.00	2.96	2.92	2.88	2.84	2.79	2.75	2.71	2.67	2.63	2.58	2.54	2.50	2.46	2.42	2.37	2.33
66.0	3.27	3.44	3.29	3.25	3.21	3.17	3.12	3.08	3.04	3.00	2.96	2.91	2.87	2.83	2.79	2.75	2.70	2.66	2.62	2.58	2.54	2.49	2.45	2.41	2.37
66.5	3.30	3.47	3.33	3.28	3.24	3.20	3.16	3.12	3.07	3.03	2.99	2.95	2.91	2.86	2.82	2.78	2.74	2.70	2.65	2.61	2.57	2.53	2.49	2.44	2.40
67.0	3.34	3.51	3.36	3.32	3.28	3.23	3.19	3.15	3.11	3.07	3.02	2.98	2.94	2.90	2.86	2.81	2.77	2.73	2.69	2.65	2.60	2.56	2.52	2.48	2.44
67.5	3.37	3.54	3.39	3.35	3.31	3.27	3.23	3.18	3.14	3.10	3.06	3.02	2.97	2.93	2.89	2.85	2.81	2.76	2.72	2.68	2.64	2.60	2.55	2.51	2.47
68.0	3.41	3.58	3.43	3.39	3.34	3.30	3.26	3.22	3.18	3.13	3.09	3.05	3.01	2.97	2.92	2.88	2.84	2.80	2.76	2.71	2.67	2.63	2.59	2.55	2.50
68.5	3.44	3.61	3.46	3.42	3.38	3.34	3.29	3.25	3.21	3.17	3.13	3.08	3.04	3.00	2.96	2.92	2.87	2.83	2.79	2.75	2.71	2.66	2.62	2.58	2.54
69.0	3.47	3.64	3.50	3.46	3.41	3.37	3.33	3.29	3.25	3.20	3.16	3.12	3.08	3.04	2.99	2.95	2.91	2.87	2.83	2.78	2.74	2.70	2.66	2.62	2.57
69.5	3.51	3.68	3.53	3.49	3.45	3.41	3.36	3.32	3.28	3.24	3.20	3.15	3.11	3.07	3.03	2.99	2.94	2.90	2.86	2.82	2.78	2.73	2.69	2.65	2.61
70.0	3.54	3.71	3.57	3.52	3.48	3.44	3.40	3.36	3.31	3.27	3.23	3.19	3.15	3.10	3.06	3.02	2.98	2.94	2.89	2.85	2.81	2.77	2.73	2.68	2.64
70.5	3.58	3.75	3.60	3.56	3.52	3.47	3.43	3.39	3.35	3.31	3.26	3.22	3.18	3.14	3.10	3.05	3.01	2.97	2.93	2.89	2.84	2.80	2.76	2.72	2.68
71.0	3.61	3.78	3.63	3.59	3.55	3.51	3.47	3.42	3.38	3.34	3.30	3.26	3.21	3.17	3.13	3.09	3.05	3.00	2.96	2.92	2.88	2.84	2.79	2.75	2.71
71.5	3.65	3.82	3.67	3.63	3.58	3.54	3.50	3.46	3.42	3.37	3.33	3.29	3.25	3.21	3.16	3.12	3.08	3.04	3.00	2.95	2.91	2.87	2.83	2.79	2.74
72.0	3.68	3.85	3.70	3.66	3.62	3.58	3.53	3.49	3.45	3.41	3.37	3.32	3.28	3.24	3.20	3.16	3.11	3.07	3.03	2.99	2.95	2.90	2.86	2.82	2.78
72.5	3.71	3.88	3.74	3.70	3.65	3.61	3.57	3.53	3.49	3.44	3.40	3.36	3.32	3.28	3.23	3.19	3.15	3.11	3.07	3.02	2.98	2.94	2.90	2.86	2.81
73.0	3.75	3.92	3.77	3.73	3.69	3.65	3.60	3.56	3.52	3.48	3.44	3.39	3.35	3.31	3.27	3.23	3.18	3.14	3.10	3.06	3.02	2.97	2.93	2.89	2.85
73.5	3.78	3.95	3.81	3.76	3.72	3.68	3.64	3.60	3.55	3.51	3.47	3.43	3.39	3.34	3.30	3.26	3.22	3.18	3.13	3.09	3.05	3.01	2.97	2.92	2.88
74.0	3.82	3.99	3.84	3.80	3.76	3.71	3.67	3.63	3.59	3.55	3.50	3.46	3.42	3.38	3.34	3.29	3.25	3.21	3.17	3.13	3.08	3.04	3.00	2.96	2.92
74.5	3.85	4.02	3.87	3.83	3.79	3.75	3.71	3.66	3.62	3.58	3.54	3.50	3.45	3.41	3.37	3.33	3.29	3.24	3.20	3.16	3.12	3.08	3.03	2.99	2.95
75.0	3.89	4.06	3.91	3.87	3.82	3.78	3.74	3.70	3.66	3.61	3.57	3.53	3.49	3.45	3.40	3.36	3.32	3.28	3.24	3.19	3.15	3.11	3.07	3.03	2.98
75.5	3.92	4.09	3.94	3.90	3.86	3.82	3.77	3.73	3.69	3.65	3.61	3.56	3.52	3.48	3.44	3.40	3.35	3.31	3.27	3.23	3.19	3.14	3.10	3.06	3.02
76.0	3.95	4.12	3.98	3.94	3.89	3.85	3.81	3.77	3.73	3.68	3.64	3.60	3.56	3.52	3.47	3.43	3.39	3.35	3.31	3.26	3.22	3.18	3.14	3.10	3.05
76.5	3.99	4.16	4.01	3.97	3.93	3.89	3.84	3.80	3.76	3.72	3.68	3.63	3.59	3.55	3.51	3.47	3.42	3.38	3.34	3.30	3.26	3.21	3.17	3.13	3.09
77.0	4.02	4.19	4.05	4.00	3.96	3.92	3.88	3.84	3.79	3.75	3.71	3.67	3.63	3.58	3.54	3.50	3.46	3.42	3.37	3.33	3.29	3.25	3.21	3.16	3.12

[Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81-18-029 (Order 81-21), § 296-62-14605, filed 8/27/81.]

WAC 296-62-14607 Appendix D--Pulmonary function standards for cotton dust standard. The spirometric measurements of pulmonary function shall conform to the following minimum standards, and these standards are not intended to preclude additional testing or alternate methods which can be determined to be superior.

(1) APPARATUS

(a) The instrument shall be accurate to within ± 50 milliliters or within ± 3 percent of reading, whichever is greater.

(b) The instrument should be capable of measuring vital capacity from 0 to 7 liters BTPS.

(c) The instrument shall have a low inertia and offer low resistance to airflow such that the resistance to airflow at 12 liters per second must be less than 1.5 cm. H_2O/liter/sec.

(d) The zero time point for the purpose of timing the FEV_1 shall be determined by extrapolating the steepest portion of the volume time curve back to the maximal inspiration volume (1, 2, 3, 4) or by an equivalent method.

(e) Instruments incorporating measurements of airflow to determine volume shall conform to the same volume accuracy stated in (a) of this subsection when presented with flow rates from at least 0 to 12 liters per second.

(f) The instrument or user of the instrument must have means of correcting volumes to a body temperature saturated with water vapor (BTPS) under conditions of varying ambient spirometer temperatures and barometric pressures.

(g) The instrument used shall provide a tracing or display of either flow versus volume or volume versus time during the entire forced expiration. A tracing or display is necessary to determine whether the patient has performed the test properly. The tracing must be stored and available for recall and must be of sufficient size that hand measurements may be made within requirement of paragraph (a) of this subsection. If a paper record is made it must have a paper speed of at least 2 cm/sec and a volume sensitivity of at least 10.0 mm of chart per liter of volume.

(h) The instrument shall be capable of accumulating for a minimum of ten seconds and shall not stop accumulating volume before (i) the volume change for a 0.5 second interval is less than 25 milliliters or (ii) the flow is less than 50 milliliters per second for a 0.5 second interval.

(i) The forced vital capacity (FVC) and forced inspiratory volume in 1 second ($FEV^{1.0}$) measurements shall comply with the accuracy requirements stated in paragraph (a) of this subsection. That is, they should be accurately measured to within ± 50 ml or within ± 3 percent of reading, whichever is greater.

(j) The instrument must be capable of being calibrated in the field with respect to the FEV_1 and FVC. This calibration of the FEV_1 and FVC may be either directly or indirectly through volume and time base measurements. The volume calibration source should provide a volume displacement of at least 2 liters and should be accurate to within ± 30 milliliters.

(2) TECHNIQUE FOR MEASUREMENT OF FORCED VITAL CAPACITY MANEUVER.

(a) Use of a nose clip is recommended but not required. The procedures shall be explained in simple terms to the patient who shall be instructed to loosen any tight clothing and stand in front of the apparatus. The subject may sit, but care should be taken on repeat testing that same position be used and, if possible, the same spirometer. Particular attention shall be given to insure that the chin is slightly elevated with the neck slightly extended. The patient shall be instructed to make a full inspiration from a normal breathing pattern and then blow into the apparatus, without interruption, as hard, fast, and completely as possible. At least three forced expirations shall be carried out. During the maneuvers, the patient shall be observed for compliance with instructions. The expirations shall be checked visually for reproducibility from flow-volume or volume-time tracings or displays. The following efforts shall be judged unacceptable when the patient:

(i) has not reached full inspiration preceding the forced expiration,

(ii) has not used maximal effort during the entire forced expiration,

(iii) has not continued the expiration for at least 5 seconds or until an obvious plateau in the volume time curve has occurred,

(iv) has coughed or closed his glottis,

(v) has an obstructed mouthpiece or a leak around the mouthpiece (obstruction due to tongue being placed in front of mouthpiece, false teeth falling in front of mouthpiece, etc.),

(vi) has an unsatisfactory start of expiration, one characterized by excessive hesitation (or false starts), and therefore not allowing back extrapolation of time 0 (extrapolated volume on the volume time tracing must be less than 10 percent of the FVC),

(vii) has an excessive variability between the three acceptable curves. The variation between the two largest FVC's and FEV_1's of the three satisfactory tracings should not exceed 10 percent or ± 100 milliliters, whichever is greater.

(b) Periodic and routine recalibration of the instrument or method for recording FVC and $FEV_{1.0}$ should be performed using a syringe or other volume source of at least 2 liters.

(3) INTERPRETATION OF SPIROGRAM.

(a) The first step in evaluating a spirogram should be to determine whether or not the patient has performed the test properly or as described in subsection (2) of this section. From the three satisfactory tracings, the forced vital capacity (FVC) and forced expiratory volume in 1 second ($FEV_{1.0}$) shall be measured and recorded. The largest observed FVC and largest observed $FEV_{1.0}$ shall be used in the analysis regardless of the curve(s) on which they occur.

(b) The following guidelines are recommended by NIOSH for the evaluation and management of workers

exposed to cotton dust. It is important to note that employees who show reductions in FEV_1/FVC ratio below .75 or drops in Monday FEV_1 of 5 percent or greater on their initial screening exam, should be reevaluated within a month of the first exam. Those who show consistent decrease in lung function, as shown on the following table, should be managed as recommended.

(4) QUALIFICATIONS OF PERSONNEL ADMINISTERING THE TEST.

Technicians who perform pulmonary function testing should have the basic knowledge required to produce meaningful results. Training consisting of approximately 16 hours of formal instruction should cover the following areas.

(a) Basic physiology of the forced vital capacity maneuver and the determinants of airflow limitation with emphasis on the relation to reproducibility of results.

(b) Instrumentation requirements including calibration procedures, sources of error and their correction.

(c) Performance of the testing including subject coaching, recognition of improperly performed maneuvers and corrective actions.

(d) Data quality with emphasis on reproducibility.

(e) Actual use of the equipment under supervised conditions.

(f) Measurement of tracings and calculations of results. [Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81-18-029 (Order 81-21), § 296-62-14607, filed 8/27/81.]

WAC 296-62-20011 Respiratory protection. (1) General.

(a) Where respiratory protection is required under this section, the employer shall provide and assure the use of respirators which comply with the requirements of this section. Compliance with the permissible limit exposure may not be achieved by the use of respirators except:

(i) During the time period necessary to install or implement feasible engineering and work practice controls; or

(ii) In work operations such as maintenance and repair activity in which engineering and work practice controls are technologically not feasible; or

(iii) In work situations where feasible engineering and work practice controls are not yet sufficient to reduce exposure to or below the permissible exposure limit; or

(iv) In emergencies.

(b) Notwithstanding any other requirement of this section, until January 20, 1978, the wearing of respirators shall be at the discretion of each employee where the employee is not in the vicinity of visible emissions.

(2) Selection.

(a) Where respirators are required under this section, the employer shall select, provide and assure the use of the appropriate respirator or combination of respirators from Table I below.

TABLE I

RESPIRATORY PROTECTION FOR COKE OVEN EMISSIONS

Airborne concentration of coke oven emissions	Required respirator
(i) Any concentration.	(A) A Type C supplied air respirator operated in pressure demand or other positive pressure or continuous flow mode; or (B) A powered air-purifying particulate filter respirator for dust, mist, and fume; or (C) A powered air-purifying particulate filter respirator combination chemical cartridge and particulate filter respirator for coke oven emissions.
(ii) Concentrations not greater than 1500 $\mu g/m^3$.	(A) Any particulate filter respirator for dust, mist and fume, except single-use respirator; or (B) Any particulate filter respirator or combination chemical cartridge and particulate filter respirator for coke oven emissions; or (C) Any respirator listed in subsection (2)(a)(i) of this section.

(b) Not later than January 20, 1978, whenever respirators are required by this section for concentrations not greater than 1500 $\mu g/m^3$, the employer shall provide, at the option of each affected employee, either a particulate filter respirator as provided in subsection (2)(a)(ii) of this section, or a powered air purifying respirator as provided in subsection (2)(a)(i) of this section.

(c) The employer shall select respirators from among those approved for protection against dust, fume, and mist by the National Institute for Occupational Safety and Health (NIOSH) under the provisions of 30 CFR Part 11, except that not later than January 20, 1979, the employer shall select respirators from among those approved by NIOSH for protection against coke oven emissions.

(3) Respirator program. The employer shall institute a respiratory protection program in accordance with WAC 296-62-071.

(4) Respirator usage.

(a) The employer shall assure that the respirator issued to the employee exhibits minimum facepiece leakage and that the respirator is fitted properly. The employer shall perform quantitative fit tests annually for each employee who uses a nonpowered, particulate filter respirator.

(b) The employer shall allow each employee who uses a filter respirator to change the filter elements whenever an increase in breathing resistance is detected and shall maintain an adequate supply of filter elements for this purpose.

(c) The employer shall allow employees who wear respirators to wash their face and respirator facepiece to prevent skin irritation associated with respirator use. [Statutory Authority: 49.17.040, 49.17.050, and 49.17-.240. 81-16-015 (Order 81-20), § 296-62-20011, filed 7/27/81; Order 77-14, § 296-62-20011, filed 7/25/77.]

WAC 296-62-20023 Recordkeeping. (1) Exposure measurements. The employer shall establish and maintain an accurate record of all measurements taken to monitor employee exposure to coke oven emissions required in WAC 296-62-20007.

(a) This record shall include:

(i) Name, social security number, and job classification of the employees monitored;

(ii) The date(s), number, duration and results of each of the samples taken, including a description of the sampling procedure used to determine representative employee exposure where applicable;

(iii) The type of respiratory protective devices worn, if any;

(iv) A description of the sampling and analytical methods used and evidence of their accuracy; and

(v) The environment variables that could affect the measurement of employee exposure.

(b) The employer shall maintain this record for at least 40 years or for the duration of employment plus 20 years, whichever is longer.

(2) Medical surveillance. The employer shall establish and maintain an accurate record for each employee subject to medical surveillance as required by WAC 296-62-20017.

(a) The record shall include:

(i) The name, social security number, and description of duties of the employee;

(ii) A copy of the physician's written opinion;

(iii) The signed statement of any refusal to take a medical examination under WAC 296-62-20017; and

(iv) Any employee medical complaints related to exposure to coke oven emissions.

(b) The employer shall keep, or assure that the examining physician keeps, the following medical records:

(i) A copy of the medical examination results including medical and work history required under WAC 296-62-20017;

(ii) A description of the laboratory procedures used and a copy of any standards or guidelines used to interpret the test results;

(iii) The initial x-ray;

(iv) The x-rays for the most recent 5 years;

(v) Any x-ray with a demonstrated abnormality and all subsequent x-rays;

(vi) The initial cytologic examination slide and written description;

(vii) The cytologic examination slide and written description for the most recent 10 years; and

(viii) Any cytologic examination slides with demonstrated atypia, if such atypia persists for 3 years, and all subsequent slides and written descriptions.

(c) The employer shall maintain medical records required under subsection (2) of this section for at least 40 years, or for the duration of employment plus 20 years, whichever is longer.

(3) Availability. (a) The employer shall make available upon request all records required to be maintained by this section to the director for examination and copying.

(b) Employee exposure measurement records and employee medical records required by this subsection shall be provided upon request to employees, designated representatives, and the assistant director in accordance with WAC 296-62-05201 through 296-62-05209 and 296-62-05213 through 296-62-05217.

(c) The employer shall make available upon request employee medical records required to be maintained by subsection (2) of this section to a physician designated by the affected employee or former employee.

(4) Transfer of records. (a) Whenever the employer ceases to do business, the successor employer shall receive and retain all records required to be maintained by this section.

(b) Whenever the employer ceases to do business and there is no successor employer to receive and retain the records for the prescribed period, these records shall be transmitted by registered mail to the director.

(c) At the expiration of the retention period for the records required to be maintained under subsections (1) and (2) of this section, the employer shall transmit these records by registered mail to the director or shall continue to retain such records.

(d) The employer shall also comply with any additional requirements involving transfer of records set forth in WAC 296-62-05215. [Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81-18-029 (Order 81-21), § 296-62-20023, filed 8/27/81; Order 77-14, § 296-62-20023, filed 7/25/77.]

Chapter 296-78 WAC
SAFETY STANDARDS FOR SAWMILLS AND WOODWORKING OPERATIONS

WAC

296-78-005 Repealed.
296-78-007 Repealed.
296-78-030 Repealed.
296-78-035 Repealed.
296-78-040 Repealed.
296-78-045 Repealed.
296-78-170 Repealed.
296-78-180 Repealed.
296-78-185 Repealed.
296-78-190 Repealed.
296-78-195 Repealed.
296-78-200 Repealed.
296-78-205 Repealed.
296-78-210 Repealed.
296-78-215 Repealed.
296-78-220 Repealed.
296-78-225 Repealed.
296-78-230 Repealed.
296-78-235 Repealed.
296-78-240 Repealed.
296-78-245 Repealed.
296-78-250 Repealed.
296-78-255 Repealed.
296-78-260 Repealed.

296-78-265 Repealed.
296-78-270 Repealed.
296-78-275 Repealed.
296-78-280 Repealed.
296-78-285 Repealed.
296-78-290 Repealed.
296-78-295 Repealed.
296-78-300 Repealed.
296-78-305 Repealed.
296-78-315 Repealed.
296-78-320 Repealed.
296-78-325 Repealed.
296-78-330 Repealed.
296-78-335 Repealed.
296-78-340 Repealed.
296-78-345 Repealed.
296-78-350 Repealed.
296-78-355 Repealed.
296-78-360 Repealed.
296-78-365 Repealed.
296-78-375 Repealed.
296-78-380 Repealed.
296-78-385 Repealed.
296-78-390 Repealed.
296-78-395 Repealed.
296-78-400 Repealed.
296-78-405 Repealed.
296-78-410 Repealed.
296-78-415 Repealed.
296-78-420 Repealed.
296-78-425 Repealed.
296-78-430 Repealed.
296-78-450 Repealed.
296-78-500 Forward.
296-78-505 Definitions applicable to this chapter.
296-78-510 Education and first-aid standards.
296-78-515 Management's responsibility.
296-78-520 Employee's responsibility.
296-78-525 Accident prevention programs.
296-78-530 Safety and health committee plan.
296-78-535 Safety bulletin board.
296-78-540 First-aid training and certification.
296-78-545 First-aid kit.
296-78-550 First-aid station.
296-78-555 First-aid room.
296-78-560 Safe place standards.
296-78-565 Log dumps and ponds—Headmills.
296-78-56501 Log dumps and ponds.
296-78-56503 Log hauls.
296-78-56505 Boats and mechanical devices on waters.
296-78-56507 Log decks.
296-78-56509 Mechanical barkers.
296-78-56511 Head rigs and feed works.
296-78-56513 Log carriages.
296-78-570 Band saws—Saws.
296-78-575 Circular saws.
296-78-580 Edgers.
296-78-585 Equalizer saws.
296-78-590 Gang saws and re-saws.
296-78-595 Jump saws.
296-78-600 Trimmer and slasher saws.
296-78-605 Swing saws.
296-78-610 Circular saws, speeds, repairs.
296-78-615 Saw filing and grinding rooms and equipment.
296-78-620 Miscellaneous woodworking machines—Planers, stickers, molders, matchers.
296-78-625 Planers (stave and headings).
296-78-630 Stave croziers.
296-78-635 Jointers.
296-78-640 Jointers (stave and heading).
296-78-645 Wood shapers.
296-78-650 Boring and mortising machines.
296-78-655 Tenoning machines.
296-78-660 Lathe (pail and barrel).
296-78-665 Sanding machines.
296-78-670 Glue machines.
296-78-675 Lathe mills.
296-78-680 Veneer and plywood plants—Peeling and barking.
296-78-685 Veneer lathe.
296-78-690 Veneer slicer and cutter.
296-78-695 Veneer clipper.
296-78-700 Veneer wringer (swede).
296-78-705 The shake and shingle industry.
296-78-70501 Definitions—Terms, general.
296-78-70503 Shake and shingle machinery—General.
296-78-70505 Shake machinery.
296-78-70507 Upright shingle machine.
296-78-70509 Related shake and shingle sawing machinery.
296-78-70511 Safety rules.
296-78-710 Construction and isolated equipment.
296-78-71001 General.
296-78-71003 Floor openings.
296-78-71005 Floors, docks, platforms and runways.
296-78-71007 Footwalks and passageways.
296-78-71009 Stairways and ladders.
296-78-71011 Egress and exit.
296-78-71013 Cableways.
296-78-71015 Tanks and chemicals.
296-78-71017 Dry kilns.
296-78-71019 Exhaust systems.
296-78-71021 Spray painting.
296-78-71023 Lighting.
296-78-71025 Gas piping and appliances.
296-78-715 Mechanical, steam and electrical equipment.
296-78-71501 General provisions.
296-78-71503 Lock out—Tag out.
296-78-71505 Mechanical power transmission apparatus.
296-78-720 Boiler and pressure vessels.
296-78-725 Nonionizing radiation.
296-78-730 Electrical service and equipment.
296-78-735 Elevators, moving walks.
296-78-740 Transportation—Lumber handling equipment—Cranes—Construction.
296-78-745 Electrical equipment.
296-78-750 Chains, wire rope, cables and fiber rope.
296-78-755 Natural and synthetic fiber rope slings.
296-78-760 Synthetic web slings.
296-78-765 Floor operated cranes.
296-78-770 Operators.
296-78-775 Signalpersons.
296-78-780 Repairpersons.
296-78-785 Construction requirements.
296-78-790 Crane platforms and footwalks.
296-78-795 Crane cages.
296-78-800 Crane rail stops, bumpers and fenders.
296-78-805 Crawler locomotive and truck cranes.
296-78-810 Chain and electric hoists.
296-78-815 Monorail hoists.
296-78-820 Air hoists.
296-78-825 Jib, pillar, and portable floor cranes, crabs, and winches.
296-78-830 Standard crane hand signals—Illustrations.
296-78-835 Vehicles.
296-78-840 Loading, piling, storage and conveying.
296-78-84001 Loading, piling, storage and conveying—General.
296-78-84003 Conveyors.
296-78-84005 Dry kilns.
296-78-84007 Chippers and logs.
296-78-84009 Bins and bunkers.
296-78-84011 Burners.

DISPOSITION OF SECTIONS FORMERLY CODIFIED IN THIS CHAPTER

296-78-005 Foreword. [Order 76-7, § 296-78-005, filed 3/1/76; Order 74-28, § 296-78-005, filed 5/7/74; Foreward, effective 6/1/51, filed 3/23/60.] Repealed by 81-18-029 (Order 81-21), filed 8/27/81. Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240.

296-78-007 Definitions applicable to this chapter. [Order 74-28, § 296-78-007, filed 5/7/74.] Repealed by 81-18-029 (Order 81-21), filed 8/27/81. Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240.

296-78-030 Construction and isolated equipment. [Order 77-12, § 296-78-030, filed 7/11/77; Order 76-7, § 296-78-030, filed 3/1/76; Order 74-28, § 296-78-030, filed 5/7/74; Rules C-1 through C-61, effective 6/1/51, filed 3/23/60.] Repealed by 81-18-029 (Order 81-21), filed 8/27/81. Statutory Authority: RCW 49.17-.040, 49.17.050 and 49.17.240.

296-78-035 Mechanical, steam and electrical equipment—General provisions. [Order 74-28, § 296-78-035, filed 5/7/74; Rules D-1 through D-19, effective 6/1/51, filed 3/23/60.] Repealed by 81-18-029 (Order 81-21), filed 8/27/81. Statutory Authority: RCW 49.17-.040, 49.17.050 and 49.17.240.

296-78-040 Boiler and pressure vessels. [Order 74-28, § 296-78-040, filed 5/7/74; Rule D-20, effective 6/1/51, filed 3/23/60.] Repealed by 81-18-029 (Order 81-21), filed 8/27/81. Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240.

296-78-045 Electrical service and equipment. [Order 74-28, § 296-78-045, filed 5/7/74; Rule D-21, effective 6/1/51, filed 3/23/60.] Repealed by 81-18-029 (Order 81-21), filed 8/27/81. Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240.

296-78-170 Elevators, moving walks and other lifting devices. [Order 76-29, § 296-78-170, filed 9/30/76; Order 74-28, § 296-78-170, filed 5/7/74; Rule D-54, effective 6/1/51, filed 3/23/60.] Repealed by 81-18-029 (Order 81-21), filed 8/27/81. Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240.

296-78-180 Transportation—Lumber handling equipment—Cranes—Construction. [Order 74-28, § 296-78-180, filed 5/7/74; Rule E-1, effective 6/1/51, filed 3/23/60.] Repealed by 81-18-029 (Order 81-21), filed 8/27/81. Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240.

296-78-185 Electrical equipment. [Order 74-28, § 296-78-185, filed 5/7/74; Rule E-2, effective 6/1/51, filed 3/23/60.] Repealed by 81-18-029 (Order 81-21), filed 8/27/81. Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240.

296-78-190 Chains, wire rope, cables and fiber rope. [Order 74-28, § 296-78-190, filed 5/7/74; Rule E-3, effective 6/1/51, filed 3/23/60.] Repealed by 81-18-029 (Order 81-21), filed 8/27/81. Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240.

296-78-195 Floor operated cranes. [Order 74-28, § 296-78-195, filed 5/7/74; Rule E-4, effective 6/1/51, filed 3/23/60.] Repealed by 81-18-029 (Order 81-21), filed 8/27/81. Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240.

296-78-200 Operators. [Order 77-12, § 296-78-200, filed 7/11/77; Order 74-28, § 296-78-200, filed 5/7/74; Rule E-5, effective 6/1/51, filed 3/23/60.] Repealed by 81-18-029 (Order 81-21), filed 8/27/81. Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240.

296-78-205 Signalmen. [Order 74-28, § 296-78-205, filed 5/7/74; Rule E-6, effective 6/1/51, filed 3/23/60.] Repealed by 81-18-029 (Order 81-21), filed 8/27/81. Statutory Authority: RCW 49.17.040, 49-.17.050 and 49.17.240.

296-78-210 Repairmen. [Order 74-28, § 296-78-210, filed 5/7/74; Rule E-7, effective 6/1/51, filed 3/23/60.] Repealed by 81-18-029 (Order 81-21), filed 8/27/81. Statutory Authority: RCW 49.17.040, 49-.17.050 and 49.17.240.

296-78-215 Construction requirements. [Order 74-28, § 296-78-215, filed 5/7/74; Rule E-8, effective 6/1/51, filed 3/23/60.] Repealed by 81-18-029 (Order 81-21), filed 8/27/81. Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240.

296-78-220 Crane platforms and footwalks. [Order 74-28, § 296-78-220, filed 5/7/74; Rule E-9, effective 6/1/51, filed 3/23/60.] Repealed by 81-18-029 (Order 81-21), filed 8/27/81. Statutory Authority: RCW 49.17-.040, 49.17.050 and 49.17.240.

296-78-225 Crane cages. [Order 74-28, § 296-78-225, filed 5/7/74; Rule E-10, effective 6/1/51, filed 3/23/60.] Repealed by 81-18-029 (Order 81-21), filed 8/27/81. Statutory Authority: RCW 49.17.040, 49-.17.050 and 49.17.240.

296-78-230 Crane rail stops, bumpers and fenders. [Order 74-28, § 296-78-230, filed 5/7/74; Rule E-11, effective 6/1/51, filed 3/23/60.] Repealed by 81-18-029 (Order 81-21), filed 8/27/81. Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240.

296-78-235 Crawler locomotive and truck cranes. [Order 74-28, § 296-78-235, filed 5/7/74; Rule E-12, effective 6/1/51, filed 3/23/60.] Repealed by 81-18-029 (Order 81-21), filed 8/27/81. Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240.

296-78-240 Construction, operation and maintenance—Chain and electric hoists. [Order 74-28, § 296-78-240, filed 5/7/74; Rule E-13, effective 6/1/51, filed 3/23/60.] Repealed by 81-18-029 (Order 81-21), filed 8/27/81. Statutory Authority: RCW 49.17.040, 49-.17.050 and 49.17.240.

296-78-245 Monorail hoists. [Order 74-28, § 296-78-245, filed 5/7/74; Rule E-14, effective 6/1/51, filed 3/23/60.] Repealed by 81-18-029 (Order 81-21), filed 8/27/81. Statutory Authority: RCW 49.17.040, 49-.17.050 and 49.17.240.

296-78-250 Air hoists. [Order 74-28, § 296-78-250, filed 5/7/74; Rule E-15, effective 6/1/51, filed 3/23/60.] Repealed by 81-18-029 (Order 81-21), filed 8/27/81. Statutory Authority: RCW 49.17.040, 49-.17.050 and 49.17.240.

296-78-255 Jib, pillar, and portable floor cranes, crabs, and winches. [Order 74-28, § 296-78-255, filed 5/7/74; Rule E-16, effective 6/1/51, filed 3/23/60.] Repealed by 81-18-029 (Order 81-21), filed 8/27/81. Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240.

296-78-260 Standard crane hand signals—Illustration. [Order 74-28, § 296-78-260, filed 5/7/74; Rule E-17, effective 6/1/51, filed 3/23/60.] Repealed by 81-18-029 (Order 81-21), filed 8/27/81. Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240.

296-78-265 Vehicles. [Order 77-12, § 296-78-265, filed 7/11/77; Order 74-28, § 296-78-265, filed 5/7/74; Rules E-18 through E-39, effective 6/1/51, filed 3/23/60.] Repealed by 81-18-029 (Order 81-21), filed 8/27/81. Statutory Authority: RCW 49.17.040, 49-.17.050 and 49.17.240.

296-78-270 Loading, piling, storage and conveying. [Order 76-7, § 296-78-270, filed 3/1/76; Order 74-28, § 296-78-270, filed 5/7/74; Rules F-1 through F-43, effective 6/1/51, filed 3/23/60.] Repealed by 81-18-029 (Order 81-21), filed 8/27/81. Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240.

296-78-275 Log dumps and ponds—Headmills. [Order 76-7, § 296-78-275, filed 3/1/76; Order 74-28, § 296-78-275, filed 5/7/74; Rules G-1 through G-50, effective 6/1/51, filed 3/23/60.] Repealed by 81-18-029 (Order 81-21), filed 8/27/81. Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240.

296-78-280 Band saws—Saws. [Order 76-7, § 296-78-280, filed 3/1/76; Order 74-28, § 296-78-280, filed 5/7/74; Rule H-1, effective 6/1/51, filed 3/23/60.] Repealed by 81-18-029 (Order 81-21), filed 8/27/81. Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240.

296-78-285 Circular saws. [Order 74-28, § 296-78-285, filed 5/7/74; Rule H-2, effective 6/1/51, filed 3/23/60.] Repealed by 81-18-029 (Order 81-21), filed 8/27/81. Statutory Authority: RCW 49.17.040, 49-.17.050 and 49.17.240.

296-78-290 Edgers. [Order 77-12, § 296-78-290, filed 7/11/77; Order 76-7, § 296-78-290, filed 3/1/76; Order 74-28, § 296-78-290, filed 5/7/74; Rules H-3A through H-3J, effective 6/1/51, filed 3/23/60.] Repealed by

81-18-029 (Order 81-21), filed 8/27/81. Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240.

296-78-295 Equalizer saws. [Order 74-28, § 296-78-295, filed 5/7/74; Rule H-4, effective 6/1/51, filed 3/23/60.] Repealed by 81-18-029 (Order 81-21), filed 8/27/81. Statutory Authority: RCW 49.17.040, 49-.17.050 and 49.17.240.

296-78-300 Gang saws and re-saws. [Order 74-28, § 296-78-300, filed 5/7/74; Rule H-5, effective 6/1/51, filed 3/23/60.] Repealed by 81-18-029 (Order 81-21), filed 8/27/81. Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240.

296-78-305 Jump saws. [Order 74-28, § 296-78-305, filed 5/7/74; Rule H-6, effective 6/1/51, filed 3/23/60.] Repealed by 81-18-029 (Order 81-21), filed 8/27/81. Statutory Authority: RCW 49.17.040, 49-.17.050 and 49.17.240.

296-78-315 Trimmer and slasher saws. [Order 74-28, § 296-78-315, filed 5/7/74; Rule H-8, effective 6/1/51, filed 3/23/60.] Repealed by 81-18-029 (Order 81-21), filed 8/27/81. Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240.

296-78-320 Barrel stave saws. [Order 74-28, § 296-78-320, filed 5/5/74; Rule H-9, effective 6/1/51, filed 3/23/60.] Repealed by 81-18-029 (Order 81-21), filed 8/27/81. Statutory Authority: RCW 49.17.040, 49-.17.050 and 49.17.240.

296-78-325 Swing saws. [Order 74-28, § 296-78-325, filed 5/7/74; Rule H-10, effective 6/1/51, filed 3/23/60.] Repealed by 81-18-029 (Order 81-21), filed 8/27/81. Statutory Authority: RCW 49.17.040, 49-.17.050 and 49.17.240.

296-78-330 Table saws. [Order 74-28, § 296-78-330, filed 5/7/74; Rule H-11, effective 6/1/51, filed 3/23/60.] Repealed by 81-18-029 (Order 81-21), filed 8/27/81. Statutory Authority: RCW 49.17.040, 49-.17.050 and 49.17.240.

296-78-335 Circular saws, speeds, repairs. [Order 74-28, § 296-78-335, filed 5/7/74; Rule H-12, effective 6/1/51, filed 3/23/60.] Repealed by 81-18-029 (Order 81-21), filed 8/27/81. Statutory Authority: RCW 49.17-.040, 49.17.050 and 49.17.240.

296-78-340 Saw filing and grinding rooms and equipment. [Order 74-28, § 296-78-340, filed 5/7/74; Rule H-13, effective 6/1/51, filed 3/23/60.] Repealed by 81-18-029 (Order 81-21), filed 8/27/81. Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240.

296-78-345 Miscellaneous woodworking machines—Planers, stickers, molders, matchers. [Order 74-28, § 296-78-345, filed 5/7/74; Rule I-1, effective 6/1/51, filed 3/23/60.] Repealed by 81-18-029 (Order 81-21), filed 8/27/81. Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240.

296-78-350 Planers (stave and heading). [Order 74-28, § 296-78-350, filed 5/7/74; Rule I-2, effective 6/1/51, filed 3/23/60.] Repealed by 81-18-029 (Order 81-21), filed 8/27/81. Statutory Authority: RCW 49.17-.040, 49.17.050 and 49.17.240.

296-78-355 Stave croziers. [Order 74-28, § 296-78-355, filed 5/7/74; Rule I-3, effective 6/1/51, filed 3/23/60.] Repealed by 81-18-029 (Order 81-21), filed 8/27/81. Statutory Authority: RCW 49.17.040, 49-.17.050 and 49.17.240.

296-78-360 Jointers. [Order 74-28, § 296-78-360, filed 5/7/74; Rule I-4, effective 6/1/51, filed 3/23/60.] Repealed by 81-18-029 (Order 81-21), filed 8/27/81. Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240.

296-78-365 Jointers (stave and heading). [Order 74-28, § 296-78-365, filed 5/7/74; Rule I-5, effective 6/1/51, filed 3/23/60.] Repealed by 81-18-029 (Order 81-21), filed 8/27/81. Statutory Authority: RCW 49.17-.040, 49.17.050 and 49.17.240.

296-78-375 Wood shapers. [Order 74-28, § 296-78-375, filed 5/7/74; Rule I-7, effective 6/1/51, filed 3/23/60.] Repealed by 81-18-029 (Order 81-21), filed 8/27/81. Statutory Authority: RCW 49.17.040, 49-.17.050 and 49.17.240.

296-78-380 Boring and mortising machines. [Order 74-28, § 296-78-380, filed 5/7/74; Rule I-8, effective 6/1/51, filed 3/23/60.] Repealed by 81-18-029 (Order 81-21), filed 8/27/81. Statutory Authority: RCW 49.17-.040, 49.17.050 and 49.17.240.

296-78-385 Tenoning machines. [Order 74-28, § 296-78-385, filed 5/7/74; Rule I-9, effective 6/1/51, filed 3/23/60.] Repealed by 81-18-029 (Order 81-21), filed 8/27/81. Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240.

296-78-390 Lathe (pail and barrel). [Order 74-28, § 296-78-390, filed 5/7/74; Rule I-10, effective 6/1/51, filed 3/23/60.] Repealed by 81-18-029 (Order 81-21), filed 8/27/81. Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240.

296-78-395 Sanding machines. [Order 74-28, § 296-78-395, filed 5/7/74; Rule I-11, effective 6/1/51, filed 3/23/60.] Repealed by 81-18-029 (Order 81-21), filed 8/27/81. Statutory Authority: RCW 49.17.040, 49-.17.050 and 49.17.240.

296-78-400 Glue machines. [Order 74-28, § 296-78-400, filed 5/7/74; Rule I-12, effective 6/1/51, filed 3/23/60.] Repealed by 81-18-029 (Order 81-21), filed 8/27/81. Statutory Authority: RCW 49.17.040, 49-.17.050 and 49.17.240.

296-78-405 Lath mills. [Order 74-28, § 296-78-405, filed 5/7/74; Rule J-1, effective 6/1/51, filed 3/23/60.] Repealed by 81-18-029 (Order 81-21), filed 8/27/81. Statutory Authority: RCW 49.17.040, 49-.17.050 and 49.17.240.

296-78-410 Veneer and plywood plants—Peeling and barking. [Order 74-28, § 296-78-410, filed 5/7/74; Rule K-1, effective 6/1/51, filed 3/23/60.] Repealed by 81-18-029 (Order 81-21), filed 8/27/81. Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240.

296-78-415 Veneer lathe. [Order 74-28, § 296-78-415, filed 5/7/74; Rules K-2 through K-4, effective 6/1/51, filed 3/23/60.] Repealed by 81-18-029 (Order 81-21), filed 8/27/81. Statutory Authority: RCW 49.17-.040, 49.17.050 and 49.17.240.

296-78-420 Veneer slicer and cutter. [Order 74-28, § 296-78-420, filed 5/7/74; Rule K-5, effective 6/1/51, filed 3/23/60.] Repealed by 81-18-029 (Order 81-21), filed 8/27/81. Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240.

296-78-425 Veneer clipper. [Order 74-28, § 296-78-425, filed 5/7/74; Rule K-6, effective 6/1/51, filed 3/23/60.] Repealed by 81-18-029 (Order 81-21), filed 8/27/81. Statutory Authority: RCW 49.17.040, 49-.17.050 and 49.17.240.

296-78-430 Veneer wringer (swede). [Order 74-28, § 296-78-430, filed 5/7/74; Rule K-7, effective 6/1/51, filed 3/23/60.] Repealed by 81-18-029 (Order 81-21), filed 8/27/81. Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240.

296-78-450 The shake and shingle industry. [Order 76-7, § 296-78-450, filed 3/1/76; Order 74-28, § 296-78-450, filed 5/7/74.] Repealed by 81-18-029 (Order 81-21), filed 8/27/81. Statutory Authority: RCW 49.17-.040, 49.17.050 and 49.17.240.

WAC 296-78-005 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-78-007 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-78-030 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-78-035 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-78-040 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-78-045 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-78-170 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-78-180 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-78-185 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-78-190 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-78-195 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-78-200 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-78-205 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-78-210 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-78-215 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-78-220 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-78-225 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-78-230 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-78-235 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-78-240 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-78-245 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-78-250 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-78-255 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-78-260 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-78-265 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-78-270 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-78-275 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-78-280 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-78-285 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-78-290 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-78-295 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-78-300 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-78-305 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-78-315 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-78-320 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-78-325 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-78-330 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-78-335 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-78-340 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-78-345 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-78-350 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-78-355 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-78-360 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-78-365 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-78-375 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-78-380 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-78-385 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-78-390 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-78-395 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-78-400 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-78-405 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-78-410 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-78-415 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-78-420 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-78-425 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-78-430 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-78-450 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-78-500 Forward. (1) General requirements. The chapter 296-78 WAC shall apply to and include safety requirements for all installations where the primary manufacturing of wood building products takes place. The installations may be a permanent fixed establishment or a portable operation. These operations shall include but are not limited to log and lumber handling, sawing, trimming and planing, plywood or veneer manufacturing, canting operations, waste or residual handling, operation of dry kilns, finishing, shipping, storage, yard and yard equipment, and for power tools and affiliated equipment used in connection with such operation. WAC 296-78-450 shall apply to shake and shingle manufacturing. The provisions of WAC 296-78-500 through 296-78-84011 are also applicable in shake and shingle manufacturing except in instances of conflict with the requirements of WAC 296-78-705. (Rev. 1-28-76).

(2) This standard shall augment the Washington state general safety and health standards, general occupational health standards, electrical workers safety rules, and any other standards which are applicable to all industries governed by chapter 80, Laws of 1973, Washington Industrial Safety and Health Act. In the event of any conflict between any portion of this chapter and any portion of any of the general application standards, the provisions of this chapter 296-78 WAC, shall apply.

(3) In exceptional cases where compliance with specific provisions of this chapter can only be accomplished to the serious detriment and disadvantage of an operation, variance from the requirement may be permitted by the director of the department of labor and industries after receipt of application for variance which meets the requirements of WAC 296-24-010, General Safety and Health Standards.

(4) No safety program will run itself. To be successful, the wholehearted interest of the employees' group (labor unions) and management must not only be behind the program, but the fact must also be readily apparent to all. [Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81-18-029 (Order 81-21), § 296-78-500, filed 8/27/81.]

WAC 296-78-505 Definitions applicable to this chapter. (1) "A-frame" means a structure made of two independent columns fastened together at the top and separated at the bottom for stability.

(2) "Annealing" heating then cooling to soften and render less brittle.

(3) "Binder" a hinged lever assembly used to connect the ends of a wrapper to tighten the wrapper around the load of logs or materials.

(4) "Boom" logs or timbers fastened together end to end and used to contain floating logs. The term includes enclosed logs.

(5) "Brow log" a log placed parallel to a roadway at a landing or dump to protect vehicles while loading or unloading.

(6) "Bunk" a cross support for a load.

(7) "Cant" a log slabbed on one or more sides.

(8) "Carriage" (log carriage) a framework mounted on wheels which runs on tracts or in grooves in a direction parallel to the face of the saw, and which contains apparatus to hold a log securely and advance it toward the saw.

(9) "Carrier" an industrial truck so designed and constructed that it straddles the load to be transported with mechanisms to pick up the load and support it during transportation.

(10) "Chipper" a machine which cuts material into chips.

(11) "Chock," "bunk block," and "cheese block" a wedge that prevents logs or loads from moving.

(12) "Cold deck" a pile of logs stored for future removal.

(13) "Crotch lines" two short lines attached to a hoisting line by a ring or shackle, the lower ends being attached to loading hooks.

(14) "Dog" (carriage dog) a steel tooth or assembly of steel teeth, one or more of which are attached to each carriage knee to hold log firmly in place on carriage.

(15) "Drag saw" a power-driven, reciprocating cross-cut saw mounted on suitable frame and used for bucking logs.

(16) "Head block" that part of a carriage which holds the log and upon which it rests. It generally consists of base, knee, taper set, and mechanism.

(17) "Head rig" a combination of head saw and log carriage used for the initial breakdown of logs into timbers, cants, and boards.

(18) "Hog" a machine for cutting or grinding slabs and other coarse residue from the mill.

(19) "Husk" a head saw framework on a circular mill.

(20) "Industrial truck" a mobile, power-driven vehicle used to carry, push or pull material. It is designed for "in-plant" or "on-site" use rather than highway use.

(21) "Kiln tender" the operator of a kiln.

(22) "Lift truck" an industrial truck used for lateral transportation and equipped with a power-operated lifting device, usually in the form of forks, for piling or unpiling lumber units or packages.

(23) "Live rolls" cylinders of wood or metal mounted on horizontal axes and rotated by power, which are used to convey slabs, lumber, and other wood products.

(24) "Loading boom" any structure projecting from a pivot point and intended to be used for lifting and guiding loads for the purpose of loading or unloading.

(25) "Log" a portion of a tree, usually a minimum of twelve feet in length, capable of being further processed into a variety of wood products.

(26) "Log deck" a platform in the sawmill on which the logs remain until needed for sawing.

(27) "Log haul" a conveyor for transferring logs to mill.

(28) "Lumber dimensions" the nominal size of surfaced lumber, unless otherwise stated.

(29) "Lumber hauling truck" an industrial truck, other than a lift truck or a carrier, used for the transport of lumber.

(30) "Package" a unit of lumber.

(31) "Peavy" a stout wooden handle fitted with a spike and hook and used for rolling logs.

(32) "Peeler block" a portion of a tree usually bucked in two foot intervals plus trim, to be peeled in a lathe or sliced in a slicer into veneer for further processing into plywood.

(33) "Pike pole" a long pole whose end is shod with a sharp pointed spike.

(34) "Pitman rod" connecting rod.

(35) "Resaw" band, circular, or sash gang saws used to break down slabs, cants, or flitches into lumber.

(36) "Running line" any moving rope as distinguished from a stationary rope such as a guyline.

(37) "Safety factor" a calculated reduction factor which may be applied to laboratory test values to obtain safe working stresses for wooden beams and other mechanical members; ratio of breaking load to safe load.

(38) "Saw guide" a device for steadying a circular or bandsaw.

(39) "Setwork" a mechanism on a sawmill carriage which enables an operator to move the log into position for another cut.

(40) "Sorting gaps" the areas on a log pond enclosed by boom sticks into which logs are sorted.

(41) "Spreader wheel" a metal wheel that separates the board from the log in back of circular saws to prevent binding.

(42) "Splitter" a knife-type, nonrotating spreader.

(43) "Sticker" a strip of wood or other material used to separate layers of lumber.

(44) "Stiff boom" the anchored, stationary boom sticks which are tied together and on which boom persons work.

(45) "Swifter" is a tying of boom sticks together to prevent them from spreading while being towed.

(46) "Telltale" a device used to serve as a warning for overhead objects.

(47) "Top saw" the upper of two circular saws on a head rig, both being on the same husk.

(48) "Tramway" a way for trams, usually consisting of parallel tracks laid on wooden beams.

(49) "Trestle" a braced framework of timbers, piles or steelwork for carrying a road or railroad over a depression.

(50) "Wrapper" a chain, strap or wire rope assembly used to contain a load of logs or materials. [Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81-18-029 (Order 81-21), § 296-78-505, filed 8/27/81.]

WAC 296-78-510 Education and first-aid standards. It shall be the duty of every employer to comply with such standards and systems of education for safety as shall be, from time to time, prescribed for such employer by the director of labor and industries through the division of industrial safety and health or by statute. [Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81-18-029 (Order 81-21), § 296-78-510, filed 8/27/81.]

WAC 296-78-515 Management's responsibility. (1) It shall be the responsibility of management to establish and supervise:

(a) A safe and healthful working environment.

(b) An accident prevention program as required by these standards.

(c) Training programs to improve the skill and competency of all employees in the field of occupational safety and health. Such training shall include the on-the-job instructions on the safe use of powered materials handling equipment, machine tool operations, use of toxic materials and operation of utility systems prior to assignments to jobs involving such exposures.

(2) Management shall not assign mechanics, millwrights, or other persons to work on equipment by themselves when there is a probability that the person could fall from elevated work locations or equipment or that a person could be pinned down by heavy parts or equipment so that they could not call for or obtain assistance if the need arises.

Note: This subsection does not apply to operators of motor vehicles, watchmen or certain other jobs which, by their nature, are singular employee assignments. However, a definite procedure for checking the welfare of all employees during their working hours shall be instituted and all employees so advised.

(3) After the emergency actions following accidents that cause serious injuries that have immediate symptoms, a preliminary investigation of the cause of the accident shall be conducted. The investigation shall be conducted by a person designated by the employer, the immediate supervisor of the injured employee, witnesses, employee representative if available and any other person with the special expertise required to evaluate the facts relating to the cause of the accident. The findings of the investigation shall be documented by the employer for reference at any following formal investigation.

(4) Reporting of fatality or multiple hospitalization accidents.

(a) Within twenty-four hours after the occurrence of an employment accident which results in an immediate or probable fatality(s) or which results in the hospitalization of two or more employees, the employer of any employee so injured or killed shall report the accident, either orally or in writing, to the nearest office of the department. The reporting may be by telephone or telegraph. The reporting shall relate the circumstances of the accident, the number of fatalities, and the extent of any injuries. The director may require such additional reports, in writing or otherwise, as he deems necessary, concerning the accident.

(b) Equipment involved in an accident resulting in an immediate or probable fatality, shall not be moved, until a representative of the Division of Industrial Safety and Health investigates the accident and releases such equipment, except where removal is essential to prevent further accident. Where necessary to remove the victim, such equipment may be moved only to the extent of making possible such removal.

(c) Upon arrival of Division of Industrial Safety and Health investigator, employer shall assign to assist the investigator, the immediate supervisor and all employees who were witnesses to the accident, or whoever the investigator deems necessary to complete his investigation.

(5) A system for maintaining records of occupational injuries and illnesses as prescribed by chapter 296-27 WAC.

Note: Recordable cases include:
(1) Every occupational death.
(2) Every industrial illness.
(3) Every occupational injury that involves one of the following:
(a) Unconsciousness.
(b) Inability to perform all phases of regular job.
(c) Inability to work full time on regular job.
(d) Temporary assignment to another job.
(e) Medical treatment beyond first-aid.

All employers with eleven or more employees shall record occupational injury and illness information on forms OSHA 101 – Supplementary Record Occupational Injuries and Illnesses and OSHA 200 – Log and Summary. Forms other than OSHA 101 may be substituted for the Supplementary Record of Occupational Injuries and Illnesses if they contain the same items. [Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81-18-029 (Order 81-21), § 296-78-515, filed 8/27/81.]

WAC 296-78-520 Employee's responsibility. (1) Employees shall coordinate and cooperate with all other employees in an attempt to eliminate accidents.

(2) Employees shall study and observe all safe practices governing their work.

(3) Employees should offer safety suggestions, wherein such suggestions may contribute to a safer work environment.

(4) Employees shall apply the principles of accident prevention in their daily work and shall use proper safety devices and protective equipment as required by their employment or employer.

(5) Employees shall properly care for all personal protective equipment.

(6) Employees shall make a prompt report to their immediate supervisor, of each industrial injury or occupational illness, regardless of the degree of severity.

(7) Employees shall not wear torn or loose clothing while working around machinery. [Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81-18-029 (Order 81-21), § 296-78-520, filed 8/27/81.]

WAC 296-78-525 Accident prevention programs. Each employer shall develop a formal accident-prevention program, tailored to the needs of the particular plant or operation and to the type of hazards involved. The division may be contacted for assistance in developing appropriate programs.

(1) The following are the minimal program elements for all employers:

(a) A safety orientation program describing the employer's safety program and including:

(i) How and when to report injuries, including instruction as to the location of first-aid facilities.

(ii) How to report unsafe conditions and practices.

(iii) The use and care of required personal protective equipment.

(iv) The proper actions to take in event of emergencies including the routes of exiting from areas during emergencies.

(v) Identification of the hazardous gases, chemicals or materials involved along with the instructions on the safe use and emergency action following accidental exposure.

(vi) A description of the employers total safety program.

(vii) An on-the-job review of the practices necessary to perform the initial job assignments in a safe manner.

(b) A designated safety and health committee consisting of management and employee representatives with the employee representatives being elected or appointed by fellow employees.

(2) Each accident-prevention program shall be outlined in written format. [Statutory Authority: RCW 49-.17.040, 49.17.050 and 49.17.240. 81-18-029 (Order 81-21), § 296-78-525, filed 8/27/81.]

WAC 296-78-530 Safety and health committee plan. (1) All employers of eleven or more employees,

shall have a designated safety committee composed of employer and employee elected members.

(a) The terms of employee-elected members shall be a maximum of one year. Should a vacancy occur on the committee, a new member shall be elected prior to the next scheduled meeting.

(b) The number of employer-selected members shall not exceed the number of employee-elected members.

(2) The safety committee shall have an elected chairperson.

(3) The safety committee shall be responsible for determining the frequency of committee meetings.

Note: If the committee vote on the frequency of safety meetings is stalemated, the division's regional safety educational representative may be consulted for recommendations.

(a) The committee shall be responsible for determining the date, hour and location of the meetings.

(b) The length of each meeting shall not exceed one hour except by majority vote of the committee.

(4) Minutes of each committee meeting shall be prepared and filed for a period of at least one year and shall be made available for review by noncompliance personnel of the division of industrial safety and health.

(5) Safety and health committee meetings shall address the following:

(a) A review of the safety and health inspection reports to assist in correction of identified unsafe conditions or practices.

(b) An evaluation of the accident investigations conducted since the last meeting to determine if the cause of the unsafe acts or unsafe conditions involved was properly identified and corrected.

(c) An evaluation of the accident or illness prevention program with the discussion of recommendation for improvement where indicated.

(d) The attendance shall be documented.

(e) The subject(s) discussed shall be documented.

(6) All employers of ten or less employees and employers of eleven or more employees where the employees are segregated on different shifts or in widely dispersed locations in crews of ten or less employees, may elect to have foreman-crew meetings in lieu of a safety and health committee plan provided:

(a) Foreman-crew safety meetings be held at least once a month, however, if conditions require, weekly or semimonthly meetings shall be held to discuss safety problems as they arise.

(b) All items under subsection (5) of this section shall be covered. [Statutory Authority: RCW 49.17.040, 49-.17.050 and 49.17.240. 81-18-029 (Order 81-21), § 296-78-530, filed 8/27/81.]

WAC 296-78-535 Safety bulletin board. There shall be installed and maintained in every fixed establishment, a safety bulletin board sufficient in size to display and post safety bulletins, newsletters, posters, accident statistics and other safety educational material. It is recommended that safety bulletin boards be painted green and white. [Statutory Authority: RCW 49.17.040, 49-.17.050 and 49.17.240. 81-18-029 (Order 81-21), § 296-78-535, filed 8/27/81.]

WAC 296-78-540 First-aid training and certification. The purpose of this section is to assure that all employees of this state can be afforded quick, and effective first-aid attention in the event that an injury occurs on the job. The means of achieving this purpose is to assure the presence of personnel trained in first-aid procedures at or near those places where employees are working. Compliance with the provisions of this section may require the presence of more than one first-aid trained person.

(1) In addition to RCW 51.36.030, every employer shall comply with the department's requirements for first-aid training and certification.

(2) There shall be present or available at all times, a person or persons holding a valid certificate of first-aid training. (A valid first-aid certificate is one which is less than three years old.)

(3) Compliance with the requirements of subsection (2) of this section may be achieved as follows:

(a) All foremen, supervisors, or persons in direct charge of crews working in physically dispersed operations, shall have a valid first-aid certificate: *Provided*, That if the duties or work of the foreman, supervisor or person in direct charge of a crew, is absent from the crew, another person holding a valid first-aid certificate shall be present. For the purpose of this section, a crew shall mean a group of two or more employees working at a work site separate and remote from the main office or fixed work place (such as occurs in construction, logging, etc.). In emergencies, foremen will be permitted to work up to thirty days without having the required certificate, providing an employee in the crew or another foreman in the immediate work area has the necessary certificate.

(b) In fixed establishments, all foremen, supervisors, or persons in direct charge if a group or groups of employees shall have a valid first-aid certificate: *Provided*, That in fixed establishments where the foreman, supervisor, or person in charge has duties which require his absence from the work site of the group, another person holding a valid first-aid certificate shall be present or available to the groups. Foremen, supervisors or persons in direct charge of a group or groups of employees will be permitted to work up to thirty days without having the required certificate, providing an employee in the crew or another foreman in the immediate work area has the necessary certificate.

(c) In fixed establishments organized into distinct departments or equivalent organizational units such as department stores, large company offices, etc., a person or persons holding a valid first-aid certificate shall be present or available at all times employees are working within that department or organizational unit.

(d) In small businesses, offices or similar types of fixed workplaces, compliance may be achieved by having a number of such small businesses, offices, etc., combined into a single unit for the purpose of assuring the

continued presence or availability of a person or persons holding a valid first–aid training certificate. A plan for combining a number of small businesses, etc., into such a group shall be submitted to the division of industrial safety and health, safety education section, for approval. That section is also available to assist employers who wish to develop such a plan. Criteria for approval by the division shall include:

(i) The businesses within the group must not be widely dispersed;

(ii) The name(s) of the person or persons holding the first–aid certificate, their usual places of work, their work phone numbers, and other appropriate information shall be posted in each establishment which is a member of the group, in a place which can reasonably be expected to give notice to employees of that establishment;

(iii) First–aid kits shall be available and maintained as required by WAC 296–24–065.

(e) Valid certification shall be achieved by passing a course of first–aid instruction and participation in practical application of the following subject matter:

Bleeding control and bandaging.
Practical methods of artificial respiration including mouth to mouth to nose resuscitation.
Closed chest heart massage.
Poisons.
Shock, unconsciousness, stroke.
Burns, scalds.
Sunstroke, heat exhaustion.
Frostbite, freezing, hypothermia.
Strains, sprains, hernias.
Fractures, dislocations.
Proper transportation of the injured.
Bites, stings.
Subjects covering specific health hazards likely to be encountered by co–workers of first–aid students enrolled in the course.

(4) Industrial first–aid course instructors will, upon request, be furnished by the division of industrial safety and health, department of labor and industries, either directly or through a program with the community colleges or vocational education.

(5) Employers of employees working in fixed establishments, meeting the following criteria, are exempt from the requirements of this section: *Provided*

(a) They can submit written evidence to the department upon request, that the worksite of their employees is within a two minute time frame of response by an aid car, medic unit or established ambulance service with first–aid trained attendants.

(b) There is a back–up aid car, medic unit or established ambulance service within the two minute response time; or that a first–aid trained person with readily available transportation is on the site of the posted emergency phone number for immediate dispatch in the event the primary unit is not available.

(c) There are no traffic impediments, such as draw bridges, railroad tracks, etc., along the normal route of travel of the aid car, medic unit or established ambulance service that would delay arrival beyond the required two minute time frame.

(d) Emergency telephone numbers are posted on all first–aid kits and at all telephones on the worksite.

(e) The above services are available or exist at all times when more than one employee is on the worksite.

Note: A construction site that will be of more than six months duration, such as a large building, shall be considered a fixed establishment for the purposes of this section. Doctor's offices and clinics are not to be considered as alternates due to the fact that very often doctor's schedules require them to be away from their offices.

[Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81–18–029 (Order 81–21), § 296–78–540, filed 8/27/81.]

WAC 296–78–545 First–aid kit. (1) All employers who employ men and women covered by the Industrial Safety and Health Act shall furnish first–aid kits as required by the division of industrial safety and health, department of labor and industries, (RCW 51.36.030).

(2) First–aid supplies shall be readily accessible when required.

(3) In the absence of readily accessible first–aid supplies such as first–aid kits, first–aid stations, first–aid rooms or their equivalent, all crew trucks, power shovels, cranes, locomotives, loaders, dozers, logging trucks, speeders, freight trucks and similar equipment shall be equipped with not less than a ten package first–aid kit.

(4) All crew vehicles used for transporting workers shall be equipped with not less than a ten package first–aid kit. When more than five employees are being transported on any one trip, the kit shall be increased in size to comply with a 16, 24, or 36–package kit depending upon the number of personnel normally being transported.

(5) At least one first–aid kit shall be available on construction jobs, line crews, and other transient or short duration jobs. The size and quantity of first–aid kits, required to be located at any site, shall be determined by the number of personnel normally dependent upon each kit as outlined in the following table:

NUMBER OF PERSONNEL NORMALLY ASSIGNED TO WORKSITE	MINIMUM FIRST AID SUPPLIES REQUIRED AT WORKSITE
1 – 50 persons	First Aid Kit
1 – 5	10 package kit
6 – 15	16 package kit
16 – 30	24 package kit
31 – 50	36 package kit
51 – 200 persons	First Aid Station
51 – 75	One 36 and one 10 package kit
76 – 100	One 36 and one 16 package kit
101 – 150	One 36 and one 24 package kit
151 – 200	Two 36 package kits
Over 200 Persons	First Aid Room Refer to WAC 296–24–070

(6) Employers shall establish a procedure to assure that first-aid kits and required contents are maintained in a serviceable condition.

(7) First-aid kits shall contain at least the following items:

10 Package Kit

1 Pkg. Adhesive bandages, 1" (16 per pkg.)
1 Pkg. Bandage compress, 4" (1 per pkg.)
1 Pkg. Scissors* and tweezers (1 each per pkg.)
1 Pkg. Triangular bandage, 40" (1 per pkg.)
1 Pkg. Antiseptic soap or pads (3 per pkg.)
5 Pkgs. of consulting physician's choice**

16 Package Kit

1 Pkg. Absorbent gauze, 24" x 72" (1 per pkg.)
1 Pkg. Adhesive bandages, 1" (16 per pkg.)
2 Pkgs. Bandage compresses, 4" (1 per pkg.)
1 Pkg. Eye dressing (1 per pkg.)
1 Pkg. Scissors* and tweezers (1 each per pkg.)
2 Pkgs. Triangular bandages, 40" (1 per pkg.)
1 Pkg. Antiseptic soap or pads (3 per pkg.)
7 Pkgs. of consulting physician's choice**

24 Package Kit

2 Pkgs. Absorbent gauze, 24" x 72" (1 per pkg.)
2 Pkgs. Adhesive bandages, 1" (16 per pkg.)
2 Pkgs. Bandage compresses, 4" (1 per pkg.)
1 Pkg. Eye dressing (1 per pkg.)
1 Pkg. Scissors* and tweezers (1 each per pkg.)
6 Pkgs. Triangular bandages (1 per pkg.)
1 Pkg. Antiseptic soap or pads (3 per pkg.)
9 Pkgs. of consulting physician's choice**

36 Package Kit

4 Pkgs. Absorbent gauze, 24" x 72" (1 per pkg.)
2 Pkgs. Adhesive bandages, 1" (16 per pkg.)
5 Pkgs. Bandage compresses, 4" (1 per pkg.)
2 Pkgs. Eye dressing (1 per pkg.)
1 Pkg. Scissors* and tweezers (1 each per pkg.)
8 Pkgs. Triangular bandages, 40" (1 per pkg.)
1 Pkg. Antiseptic soap or pads (3 per pkg.)
13 Pkgs. of consulting physician's choice**

*Scissors shall be capable of cutting 2 layers of 15 oz. cotton cloth or its equivalent.

**First-aid kits shall be maintained at the ten, sixteen, twenty-four or thirty-six package level. In the event the consulting physician chooses not to recommend items, the Department of Labor and Industries shall be contacted for recommended items to complete the kit.

(8) Where the eyes or body of any person may be exposed to injurious chemicals and/or materials, suitable facilities for quick drenching or flushing of the eyes and body shall be provided, within the work area, for immediate emergency use.

(9) When practical, a poster shall be fastened and maintained either on or in the cover of each first-aid kit and at or near all phones plainly stating, the phone numbers of available doctors, hospitals, and ambulance services within the district of the worksite.

(10) When required by the department, in addition to the first-aid kit which must be kept on the equipment or at the place of work, there shall be available within the closest practicable distance from the operations (not to exceed one-half mile) the following items:

1 set of arm and leg splints.
2 all wool blankets or blankets equal in strength and fire resistant (properly protected and marked).
1 stretcher.

[Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81-18-029 (Order 81-21), § 296-78-545, filed 8/27/81.]

WAC 296-78-550 First-aid station. (1) First-aid stations shall be located as close as practicable to the highest concentration of personnel.

(2) First-aid stations shall be well marked and available to personnel during all working hours.

(3) One person holding a valid first-aid certificate shall be responsible for the proper use and maintenance of the first-aid station.

(4) First-aid stations shall be equipped with a minimum of two first-aid kits, the size of which shall be dependent upon the number of personnel normally employed at the worksite. One first-aid kit may be a permanent wall-mounted kit, but in all cases the station shall be equipped with at least one portable first-aid kit.

(5) When required by the department, the station shall be equipped with two wool blankets and a stretcher in addition to first-aid kits.

(6) A roster, denoting the telephone numbers and addresses of doctors, hospitals and ambulance services available to the worksite, shall be posted at each first-aid station. [Statutory Authority: RCW 49.17.040, 49-.17.050 and 49.17.240. 81-18-029 (Order 81-21), § 296-78-550, filed 8/27/81.]

WAC 296-78-555 First-aid room. (1) Every fixed establishment employing more than two hundred persons shall have a first-aid room plainly designated as such, located as close as possible to the heaviest concentrated work area.

(2) The first-aid room shall be well lighted and ventilated, kept clean and orderly, provided with hot and cold running water, and maintained in a fully-equipped condition.

(3) The first-aid room shall be manned and maintained by:

(a) A licensed physician; or

(b) A licensed or registered nurse; or

(c) An employee who:

(i) Holds a valid advanced first-aid certificate as recognized by the department,

(ii) works in the vicinity of the first-aid room, and

(iii) does not perform other work of the nature that is likely to affect adversely her/his ability to administer first-aid.

(4) First-aid rooms shall be equipped with items recommended by the consulting physician or plant medical officer and, as a minimum, should contain an adequate supply of the following:

Antiseptic soap
3/4" or 1" adhesive compresses
Adhesive knuckle bands

2" Bandage compresses
4" Bandage compresses
3" x 3" gauze pads
Assorted sizes of large gauze pads
2" roller bandages
3" roller bandages
4" roller bandages
Assorted adhesive tape rolls
Eye dressings
Ammonia inhalants
Burn ointment
Triangular bandages
Scissors, forceps, razor and blades, medicine droppers
Safety pins
Drinking cups
Rubbing alcohol
Absorbent cotton
Arm and leg splints
Antidotes for specific industrial poisons
Pressure points chart
Stretcher
Wool blankets and clean linen
Hot water bottles
Quick colds or ice bag
Emergency first-aid kit
A method of sterilizing instruments

(5) A poster shall be maintained on, or in the cover of, each first-aid cabinet and near each first-aid room phone. Such poster will state phone numbers of available doctors, hospitals, and ambulance services within the employer's district. [Statutory Authority: RCW 49.17-.040, 49.17.050 and 49.17.240. 81-18-029 (Order 81-21), § 296-78-555, filed 8/27/81.]

WAC 296-78-560 Safe place standards. (1) Each employer shall furnish to each of his employees a place of employment free from recognized hazards that are causing or likely to cause serious injury or death to his employees.

(2) Every employer shall furnish and use safety devices and safeguards, and shall adopt and use practices, means, methods, operations, and processes which are reasonably adequate to render such employment and place of employment safe. Every employer shall do every other thing reasonably necessary to protect the life and safety of employees.

(3) No employer shall require any employee to go or be in any employment or place of employment which is not safe.

(4) No employer shall fail or neglect:

(a) To provide and use safety devices and safeguards.

(b) To adopt and use methods and processes reasonably adequate to render the employment and place of employment safe.

(c) To do every other thing reasonably necessary to protect the life and safety of employees.

(5) No employer, owner, or lessee of any real property shall construct or cause to be constructed any place of employment that is not safe.

(6) No person shall do any of the following:

(a) Remove, displace, damage, destroy or carry off any safety device, safeguard, notice, or warning, furnished for use in any employment or place of employment.

(b) Interfere in any way with the use thereof by any other person.

(c) Interfere with the use of any method or process adopted for the protection of any employee, including himself, in such employment, or place of employment.

(d) Fail or neglect to do every other thing reasonably necessary to protect the life and safety of employees.

(e) Intoxicating beverages and narcotics shall not be permitted or used in or around work sites. Workers under the influence of alcohol or narcotics shall not be permitted on the work site. This rule does not apply to persons taking prescription drugs and or narcotics as directed by a physician providing such use shall not endanger the worker or others. [Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81-18-029 (Order 81-21), § 296-78-560, filed 8/27/81.]

WAC 296-78-565 Log dumps and ponds--Headmills. [Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81-18-029 (Order 81-21), § 296-78-565, filed 8/27/81.]

WAC 296-78-56501 Log dumps and ponds. (1) Log dumps, booms, ponds or storage areas, if used at night, shall be illuminated in accordance with the requirements of WAC 296-62-09003, general occupational health standards.

(2) A log dump shall be constructed at each log pond or decking ground. Log trucks shall not be unloaded by use of peavies or by hand.

(a) The roadbed shall be of hard packed gravel, heavy planking or equivalent material and shall be maintained at all times. Roadbeds at log dumps shall be of width and evenness to insure safe operation of equipment.

(b) A mechanical unloading device shall be provided and used for unloading logs. Log unloading areas shall be arranged and maintained to provide a safe working area.

(c) Signs prohibiting unauthorized foot or vehicle traffic in log unloading and storage areas shall be posted.

(d) At no time shall one person be permitted to work alone on a log dump, a booming or rafting grounds, or a log pond.

(3) Water log dumps. Ungrounded electrically powered hoists using handheld remote control in grounded locations, such as log dumps or mill log lifts, shall be actuated by circuits operating at less than 50 volts to ground.

(4)(a) A brow log, skid timbers or the equivalent shall be installed on all log dumps.

(b) Where logs are unloaded onto skids, sufficient space shall be provided between the top of the skids and the ground to accommodate the body of a person.

(c) All truck dumps shall be built with not more than six inches variation of level from side to side.

(5)(a) All truck log dumps shall be equipped with a positive safeguard to prevent logs from leaving the load on the side opposite the brow log. Jill pokes shall not be used on truck log dumps.

(b) Unloading lines shall be attached and tightened or other positive safeguard in place before binder chains are released at any log dump.

(c) Stakes and chocks which trip shall be constructed in such manner that the tripping mechanism that releases the stake or chocks is activated at the opposite side of the load being tripped.

(d) Binders shall be released only from the side on which the unloader operates, except when released by remote control devices or except when person making release is protected by racks or stanchions or other equivalent means.

(e) Loads on which a binder is fouled by the unloading machine shall have an extra binder or metal band of equal strength placed around the load, or the load shall be otherwise secured so that the fouled binder can be safely removed.

(f) Unloading lines, crotch lines, or equally effective means shall be arranged and used in a manner to minimize the possibility of any log swinging or rolling back.

(6)(a) In unloading operations, the operator of unloading machine shall have an unobstructed view of the vehicle and the logs being unloaded.

(b) Unloading lines shall be arranged so that it is not necessary for the employees to attach them from the pond or dump site of the load except when entire loads are lifted from the log–transporting vehicle.

(7) All log dumps shall be kept reasonably free of bark and other debris.

(8) Employees shall remain in the clear until all moving equipment has come to a complete stop.

(9) Artificial log ponds subject to unhealthy stagnation shall be drained, cleansed, and water changed at least once every six months.

(10) All employees whose regular work requires walking on logs shall wear spiked or calked shoes, except when working in snow.

(11) Employees working on, over or along water, where the danger of drowning exists, shall be provided with and shall wear approved personal flotation devices.

(a) Employees are not considered exposed to the danger of drowning:

(i) When working behind standard height and strength guardrails;

(ii) When working inside operating cabs or stations which eliminate the possibility of accidentally falling into the water;

(iii) When wearing approved safety belts with lifeline attached so as to preclude the possibility of falling into the water.

(b) Prior to and after each use, personal floating devices shall be inspected for defects which would reduce their designed effectiveness. Defective personal flotation devices shall not be used.

(c) To meet the approved criteria required by subsection (11) of this subsection, a personal flotation device shall be approved by the United States Coast Guard as a Type I PFD, Type II PFD, Type III PFD, or Type V PFD, or their equivalent, pursuant to 46 CFR 160 (Coast Guard Lifesaving Equipment Specifications) and 33 CFR 175.23 (Coast Guard table of devices equivalent to personal flotation devices). Ski belt or inflatable type personal flotation devices are specifically prohibited.

(12)(a) Wooden pike poles shall be of continuous, straight grained No. 1 material. Defective poles, blunt or dull pikes shall not be used.

(b) Aluminum or other metal poles shall not be used where hazard of coming in contact with live electric wires exists.

(13)(a) Walkways and floats shall be provided and security anchored to provide safe passage for workers.

(b) Permanent cable swifters shall be so arranged that it will not be necessary to roll boom sticks in order to attach or detach them.

(c) Inspection of cable or dogging lines shall be made as necessary to determine when repair or removal from service is necessary.

(14)(a) Decks of floats or other walkways shall be kept above the waterline at all times and shall be capable of supporting four times the load to be imposed.

(b) Floating donkeys or other power–driven machinery used on booms shall be placed on a raft or float with enough buoyancy to keep the deck above water.

(15)(a) All regular boom sticks and foot logs shall be reasonably straight, have all protruding knots and bark removed, and shall be capable of supporting above the waterline at either end, any necessary weight of workers and equipment.

(b) Stiff booms shall be two float logs wide secured by boom chains or other connecting devices, and of a width adequate for the working needs. Walking surfaces shall be free of loose material and maintained in good repair.

(c) Boom sticks shall be fastened together with crossties or couplings. [Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81–18–029 (Order 81–21), § 296–78–56501, filed 8/27/81.]

WAC 296-78-56503 Log hauls. (1) Every log haul used as a walkway shall have at least one walkway with standard railing to enable workers to stand clear of the logs in the chute. Cleats shall be installed to provide safe footing on sloping walkways.

(2) Workers shall not stand under or dangerously near to logs that are being hoisted vertically to the log deck.

(3)(a) Log haul gears and bull chain drive mechanism shall be adequately guarded for the protection of employees.

(b) Log haul bull chains or cable shall be designed, installed, and maintained to provide a 4 to 1 safety factor for the intended load.

(c) Troughs for the return strand of log haul chains shall be provided over passageways.

(d) Overhead protection shall be provided for employees working below logs being moved to the log deck.

(4) Log haul controls shall be arranged to operate from a position where the operator will at all times be in

the clear of logs, machinery lines and rigging. Such controls shall operate mechanism only when moved toward the log slip or deck.

(5) Where possible an automatic stop shall be installed on all log hauls. A positive stop shall be installed on all log hauls to prevent logs from traveling too far ahead in the mill.

(6)(a) Slip persons shall handle pike poles in such manner as to be in the clear in case of a slip back.

(b) All sorting gaps shall have a stiff boom on each side.

(c) The banks of the log pond in the vicinity of the log haul shall be reinforced to prevent caving in. [Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81-18-029 (Order 81-21), § 296-78-56503, filed 8/27/81.]

Reviser's note: The caption of this section was supplied by the code reviser.

WAC 296-78-56505 Boats and mechanical devices on waters. (1) Prior to starting the boat motor, any spilled fuel shall be removed and vapors shall be exhausted from any area in which they may accumulate.

(2) The bilge area shall be kept clean and oil, grease, fuel, or highly combustible materials shall not be allowed to accumulate.

(3) Adequate ventilation equipment shall be provided and used for the bilge area to prevent the accumulation of toxic or explosive gases or vapors.

(4) Adequate ventilation equipment shall be provided and used for the cabin area on enclosed cabin-type boats to prevent an accumulation of harmful gases or vapors.

(5) Deck and cabin lighting shall be provided and used where necessary to provide safe levels of illumination aboard boats. Boats operated during the period from sunset to sunrise, or in conditions of restricted visibility, shall display navigation lights as required by the United States Coast Guard. Searchlights or floodlights shall be provided to facilitate safe navigation and to illuminate working or boarding areas adjacent to the craft.

(6) On craft used by workers wearing calked shoes, all areas where the operator or workers must stand or walk shall be made of or be covered with wood or other suitable matting or nonslip material and such covering shall be maintained in good condition.

(7) Each boat shall be provided with a fire extinguisher and life ring with at least fifty feet of one-fourth inch line attached. On log broncs, boom-scooters, or other small boomboats where all occupants are required to wear life saving devices and a life ring would present a tripping hazard, the life ring may be omitted.

(8)(a) Along docks, walkways, or other fixed installations on or adjacent to open water more than five feet deep, approved life rings with at least ninety feet of one-fourth inch line attached, shall be provided. The life rings shall be spaced at intervals not to exceed two hundred feet and shall be kept in easily visible and readily accessible locations.

(b) When employees are assigned work at other casual locations where exposure to drowning exists, at least one approved life ring with at least ninety feet of line attached, shall be provided in the immediate vicinity of the work assigned.

(c) When work is assigned over water where the vertical drop from the accidental fall would exceed fifty feet, special arrangements shall be made with and approved by the department of labor and industries prior to such assignment.

(d) Lines attached to life rings on fixed locations shall be at least ninety feet in length, at least one-fourth inch in diameter, and have a minimum breaking strength of five hundred pounds. Similar lines attached to life rings on boats shall be at least fifty feet in length.

(e) Life rings must be United States Coast Guard approved thirty-inch size.

(f) Life rings and attached lines shall be maintained to retain at least seventy-five percent of their designed buoyancy and strength.

(g) Log broncs, boomscooters, and boomboats shall not be loaded with personnel or equipment so as to adversely affect their stability or seaworthiness.

(h) Boats shall not be operated at an excessive speed or handled recklessly.

(i) Boat fuel shall be transported and stored in approved containers (Underwriters' Laboratories, Inc.). [Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81-18-029 (Order 81-21), § 296-78-56505, filed 8/27/81.]

WAC 296-78-56507 Log decks. (1) Dry deck storage. (a) Dry deck storage areas shall be kept orderly and shall be maintained in a condition which is conducive to safe operation of mobile equipment.

(b) Logs shall be stored in stabilized piles, and roadways and traffic lanes shall be maintained at a width adequate for safe travel of log handling equipment.

(c) Logs shall be arranged to minimize the chance of accidentally rolling from the deck.

(2)(a) Employees shall not spool cable on winch or drums with their hands.

(b) Log wells shall be provided with safeguard to prevent logs from rolling back into well off log deck.

(3) Jump skids on log decks shall be installed in grooves in a manner that they cannot work out onto the carriage way.

(4)(a) Log decks shall be provided with effective means to prevent logs from accidentally rolling down the deck onto the carriage or its runway.

(b) Swing saws. Swing saws on log decks shall be equipped with a barricade and stops for protection of employees who may be on the opposite side of the log haul chute.

(c) Drag saws. Where reciprocating log cutoff saws (drag saws) are provided, they shall not project into walkway or aisle.

(d) Circular cutoff saws. Circular log bucking or cutoff saws shall be so located and guarded as to allow safe entrance to and exit from the building.

(e) Entrance doorway. Where the cutoff saw partially blocks the entrance from the log haul runway the entrance shall be guarded.

(5) A barricade or other positive stop shall be erected between the sawyer's stand and the log deck to protect the sawyer from rolling logs. Such barricade or stop shall be of sufficient strength to stop any log.

(6) Chains from overhead canting gear or other equipment shall not be allowed to hang over the log deck in such manner as to endanger workers.

(7) Canting gear control levers shall be so arranged that they move away from the carriage to operate.

(8) Moving parts or equipment on or about log decks shall be guarded.

(9) Peavies, canthooks and other hand tools shall be kept in good repair at all times.

(10) Workers shall not go below logs on decks that are likely to roll or be rolled. Means of access shall be provided to the head rig which does not subject employees to the hazard of moving logs or equipment. [Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81-18-029 (Order 81-21), § 296-78-56507, filed 8/27/81.]

WAC 296-78-56509 Mechanical barkers. (1) Rotary barkers. Rotary barking devices shall be so guarded as to protect employees from flying chips, bark, or other extraneous material.

(2) Elevating ramp. If an elevating ramp or gate is used, it shall be provided with a safety chain, hook, or other means of suspension while employees are underneath.

(3) Area around barkers. The hazardous area around ring barkers and their conveyors shall be fenced off or posted as a prohibited area for unauthorized persons.

(4) Enclosing hydraulic barkers. Hydraulic barkers shall be enclosed with strong baffles at the inlet and outlet. The operator shall be protected by adequate safety glass or equivalent.

(5) Holddown rolls. Holddown rolls shall be installed at the infeed and outfeed sections of mechanical ring barkers to control the movement of logs.

(6) If such holddown rolls have a tendency to throw logs or chunks, horseshoe or equivalent type guards shall be installed to contain the logs or chunks. [Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81-18-029 (Order 81-21), § 296-78-56509, filed 8/27/81.]

WAC 296-78-56511 Head rigs and feed works. (1) A clear walkway shall be provided along the upper side of the log deck and around the head rig unless an overhead walkway is provided.

(2) The sawyer shall be primarily responsible for the safety of the carriage crew and off-bearers. He shall exercise due care in the operation of the carriage and log turning devices.

(3) Feedworks and log turning control levers shall be so arranged that they may be securely locked when not in use and shall be guarded against accidental contact.

(4)(a) A positive means shall be provided to prevent unintended movement of the carriage. This shall involve a control locking device, a carriage tie-down, or both.

(b) An emergency control or equally effective means shall be provided so that the sawyer may stop the head rig section of the mill without leaving the operator station.

(5) An effective method of disengaging the head rig saws from the power unit shall be installed on all head rigs where the power unit is not directly controlled by the sawyer. The saws shall be disengaged from the source of power while repairs or changes are made.

(6) A shield of lexan, makrolon, merlon, plestar, or equivalent transparent material, shall be installed between the sawyer's stand and the head saws in all circular mills. In band mills and chipper type installations, a wire screen of not less than twelve gauge wire, one-half inch mesh, mounted in a frame in compliance with the requirements of WAC 296-24-20531 of the general safety and health standards, is an acceptable substitute for the type shield required in circular mills.

(7) Safety glasses, safety shields or other suitable eye protection shall be provided for and use by head rig off-bearers. [Statutory Authority: RCW 49.17.040, 49.17-.050 and 49.17.240. 81-18-029 (Order 81-21), § 296-78-56511, filed 8/27/81.]

WAC 296-78-56513 Log carriages. (1) Carriages upon which employees are required to work shall be solidly decked over.

(2) Dogs. Dogging devices shall be adequate to secure logs, cants, or boards, during sawing operations.

(3) The feed control lever of friction or belt driven carriage feed works shall be arranged to operate away from the saws or carriage track.

(4) A quick action valve, controlled from the sawyer's stand, shall be located in the steam line to any steam operated feed works. The valve shall be tested daily.

(5) Valves in steam feeds shall be closed and locked in a neutral position before the sawyer leaves his station. Leaking steam valves or piping shall not be used on carriage drives.

(6)(a) Where employees ride the headrig carriage, clearance of the rear edge of the carriage shall be either not more than two inches or shall be not less than thirty inches from the side wall of the building. The side wall shall be boarded over smoothly to height of not less than six feet six inches from the setter's platform and for at least the length of the carriage travel. Where the clearance is thirty inches or more the floor between the back side of the setter's platform and the wall shall be raised to the level of the platform. The clearance between the floor edge and the platform shall not be more than two inches.

(b) Barriers and warning signs. A barrier shall be provided to prevent employees from entering the space necessary for travel of the carriage, with headblocks fully receded, for the full length and extreme ends of carriage runways. Warning signs shall be posted at possible entry points to this area.

(7) Safe access to the head rig shall be provided.

(8) No roof truss or roof timber or other obstruction shall be located within six feet six inches of the upper surface of the setter's platform on any carriage.

(9) Doors which lead onto a passageway at the end or side of the carriage runway shall be provided with a handrail opposite such doorway. Handrail shall not be less than eighteen inches from the carriage run. A warning sign shall be posted on the entrance side of such doorways.

(10) A stop or bumper capable of stopping the loaded carriage at operating speed shall be installed at each end of the carriage run.

(11) Rail sweeps shall be installed in front of the front wheels in the direction of travel. Such sweeps shall extend to within one-fourth inch of the rail.

(12) Where power operated log turners are used, carriage knees shall be provided with goosenecks or other means of protecting the carriage crew from climbing logs.

(13) Employees shall use a stick or wire brush to clear head blocks of debris.

(14) All weakened or broken carriage boards which will not support the load to be imposed with a safety factor of 4, shall be immediately replaced. [Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81-18-029 (Order 81-21), § 296-78-56513, filed 8/27/81.]

WAC 296-78-570 Band saws--Saws. (1) Band head rigs shall be given a thorough daily inspection and any deficiency reported and corrected.

(2) Any band saw found to have developed a crack greater than one-tenth the width of the saw shall be removed from service until the width of the saw is reduced to eliminate the crack, the cracked section is removed, or the development of the crack in arrested by welding.

(3) Band saws shall not be continued in use of the head rig for which they have been designed after they have been reduced forty percent in width.

(4) Leather gloves, or equivalent hand protection, shall be worn by employees while changing band saws.

(5) All head band saw wheels shall have a minimum rim thickness of five-eights inch, except for a distance of not to exceed one inch from the front edge of the wheel.

(6) Provisions shall be made for alerting and warning employees before starting band head saws, and measures shall be taken to insure that all persons are in the clear.

(7) No band saw shall be run at a peripheral speed in excess of that recommended by the manufacturer. The manufacturer's recommended maximum speed shall be stamped in plainly legible figures on some portion of the assembly.

(8) A band wheel that has developed a crack in the rim shall be immediately removed from service. If a crack has developed in a spoke the wheel shall be removed from service until repaired.

(9) All band wheels shall be completely encased or guarded on both sides. The exposed part of the saw blade on the uptravel between the two wheels shall be encased, and no portion of the blade exposed, except such part of the cutting edge as is essential for sawing the material at hand.

(10) All band wheel guards shall be constructed of not less than ten U.S. gauge metal, or not less than two inch wood material or equivalent, attached to the frames. Ventilating ports shall not exceed 2 x 4 inches in size. Openings necessary for lubrication or repair of the saw shall have doors or gates of equivalent strength to the remainder of the guard.

(11) Every band mill shall be equipped with a saw catcher, rest or guard of substantial construction.

(12) All band saws other than head mills shall be enclosed or guarded except the working side of the blade between the guide and the table. The guard for the portion of the saw between the sliding guide and the upper saw wheel guard shall be adjusted with the guide.

(13) Each gang ripper of band or straight saw type shall have the cutting edges of the saw guarded by a hood or screen secured to the framework of the machine. [Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81-18-029 (Order 81-21), § 296-78-570, filed 8/27/81.]

WAC 296-78-575 Circular saws. (1) Single circular head saws. Circular head saws shall not be operated at speeds in excess of those specified by the manufacturer. Maximum speed shall be etched on the saw.

(2) On all circular saw mills the horizontal distance from the side of the saw to the nearest post of the husk or frame shall be at least one inch greater than the clear vertical distance between the collars of the top and bottom saws.

(3) Circular head saws shall be equipped with safety guides that can be readily adjusted without use of wrench or other hand tools. Brackets or edging supports shall be installed between the saw and the side of the husk.

(4) The upper saw of a double circular mill shall be provided with a hood or guard. A screen or other suitable device shall be placed so as to protect the sawyer from flying particles.

(5) All circular sawmills where live rolls are not used behind the head saw shall be equipped with an effective spreader or splitter. In any mill where the head saw is used for edging lumber, the splitter shall be solid and stationary and shall extend above the head blocks.

(6) Drag saws or circular cut-off saws shall be so arranged that they will not project into any passageway. When existing installations do not leave clear passage, saws shall be fenced off in order to make it impossible for anyone to walk into them. Means to securely hold material being sawed shall be provided wherever such material creates a hazard.

(7) All employees shall be in the clear before starting operation of drag or swing cut-off saws.

(8) Twin circular head saws. Twin circular head saw rigs such as scrag saws, shall meet the specifications for single circular head saws in subsection (1) of this section, where applicable. [Statutory Authority: RCW 49-.17.040, 49.17.050 and 49.17.240. 81-18-029 (Order 81-21), § 296-78-575, filed 8/27/81.]

WAC 296-78-580 Edgers. (1) Edgers shall be guarded by a metal housing of ten gauge sheet metal,

ten gauge by one-half inch mesh wire, screen, or by a baffle of not less than two inch wood material.

(2) Openings in end frames shall be enclosed with sheet metal, wire screen or wood and may be hinged or arranged to permit oiling and removal of saws.

(3) The top of the edger shall be guarded to prevent contact by employees or debris being thrown and all chains and gears fully enclosed as required by WAC 296-78-710 of this chapter.

(4) Vertical arbor edgers installed ahead of the main saw shall be so located and guarded that an employee cannot contact any part of the edger saws from his normal operating position.

(5) Edgers shall not be located in the main roll case behind the head saw.

(6) All edgers shall be equipped with pressure feed rolls. The controls shall be installed and located so that from the normal work station the operator can quickly stop the infeed drive without releasing the hold down tension of the pressure rolls.

(7) All edgers shall be provided with a method of preventing or guarding against kickbacks. Finger units or dogs installed at the edger, or hinged steel plates suspended across the feed table may be used for this purpose. A kickback barricade, in line with the edger, if fenced off may be used.

(8) Pressure and feed rolls on edgers shall be guarded against accidental contact by means of roll covers, bars or strips. The pressure rolls shall not be lifted while stock is being run, or while any person is in line with the feed side of the saws.

(9) Edger men shall not raise feed rolls and reach between saws while edger is in operation.

(10) Edger men shall not put hands on cants being run through the edger.

(11) Live rolls in back of edger shall operate at a speed not less than the speed of the edger feed rolls.

(12) Tables in back of edgers shall be kept clear of cants, edgings and unnecessary debris. [Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81-18-029 (Order 81-21), § 296-78-580, filed 8/27/81.]

WAC 296-78-585 Equalizer saws. (1) Equalizer saws for bolts, staves, heading, etc., shall have the saws encased, except that portion immediately adjacent to the feeding device.

(2) Feeding devices on all such equipment shall be provided with guards to prevent contact with the feeding device by employees. [Statutory Authority: RCW 49.17-.040, 49.17.050 and 49.17.240. 81-18-029 (Order 81-21), § 296-78-585, filed 8/27/81.]

WAC 296-78-590 Gang saws and re-saws. (1) Gang saws and re-saws shall be fully guarded or housed in accordance with conditions. Cranks, pitman rods, and other moving parts shall be guarded.

(2) Feed rolls shall be enclosed by a cover over the top, front, and open ends except where guarded by location. Drive mechanism to feed rolls shall be enclosed.

(3) Feed rolls shall be enclosed and if the operator stands within thirty inches of the feed rolls, they shall be so guarded as to prevent operator coming into contact with them.

(4) Circular resaws or rip saws, except power feed rip saws with a roller or wheel back of the saw, shall be provided with splitters or spreaders.

(5) A hood of metal or wood of sufficient strength to give protection against splinters or flying teeth shall be provided over all circular rip saws.

(6) That portion of the saw extending below the table shall be so guarded as to prevent contact.

(7) Circular rip saws shall be equipped with a standard anti-kickback device.

(8) Carriage cradles of whole-log sash gang saws, Swedish gangs shall be of height to prevent logs from kicking out while being loaded.

(9) Band resaws. Band resaws shall meet the specifications for band head saws as required in subsection (7) of WAC 296-78-570.

(10) Circular gang resaws.

(a) Banks of circular gang resaws shall be guarded by a hood to contain teeth or debris which can be thrown by the saws.

(b) Circular gang resaws shall be provided with safety fingers or other anti-kickback devices.

(c) Circular gang resaws shall not be operated at speeds exceeding those recommended by the manufacturer.

(d) Feed belts and drive pulleys shall be guarded in accordance with the requirements of WAC 296-24-205 through 296-24-20533 of the general safety and health standard.

(e) Each circular gang resaw, except self-feed saws with a live roll or wheel at back of saw, shall be provided with spreaders. [Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81-18-029 (Order 81-21), § 296-78-590, filed 8/27/81.]

WAC 296-78-595 Jump saws. (1) Jump saws shall have guards below the top of the table or roll case. A guard shall be placed over the roll casing to prevent persons from walking into or over the saw.

(2) Jump saws, underhung swing saws, or bed trimmers shall be so arranged that the saws are fully enclosed when not in actual use.

(3) A positive stop shall be installed to prevent the saw from passing the front edge of the roll case or table. The throat in the table or roll case shall be only wide enough to permit unobstructed operation of the saw.

(4) Guards constructed of not less than two inch wood material or of heavy wire mesh mounted in a steel frame shall be placed in front of jump saw trimmers. Stops shall be installed to prevent timber from being thrown off the roll case.

(5) Foot treadle operated saws shall be provided with safeguards to prevent accidental contact. [Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81-18-029 (Order 81-21), § 296-78-595, filed 8/27/81.]

WAC 296-78-600 Trimmer and slasher saws. (1) Trimmer of slasher saws shall be guarded in front by a flat or round steel framework with a rigid metal screen

or light iron bars attached thereto, or by wood baffles of not less than two inch wood material securely bolted to the frame.

Maximum speed. Trimmer saws shall not be run at peripheral speeds in excess of those recommended by the manufacturer.

(2) Front guards for a series of saws shall be set as close to the top of the feed table as is practical when considering the type of machine in use and the material being cut. The end saws of a series shall be guarded or fenced off.

(3) The rear of a series of saws shall have a stationary or swinging guard of not less than two inch wood material or equivalent the full width of the saws and as much wider as is necessary to protect persons at the rear of the trimmer.

(4) Safety stops. Automatic trimmer saws shall be provided with safety stops or hangers to prevent saws from dropping on table.

(5) Feed chains shall be stopped while employees are on the feed table.

(6) Spotters for trimmers or slashers shall be provided with goggles or other eye protection when conditions so warrant. [Statutory Authority: RCW 49.17.040, 49.17-.050 and 49.17.240. 81-18-029 (Order 81-21), § 296-78-600, filed 8/27/81.]

WAC 296-78-605 Swing saws. (1) Overhead swing cut-off saws shall be guarded by a hood which shall cover the upper half of the cutting edge at least to the depth of the teeth.

(2) The driving belts on overhead swing cut-off saws, where exposed to contact, shall be provided with guards as required by WAC 296-78-030.

(3) Saws shall be completely enclosed when in idle position.

(4) Power operated swing saws shall have controls so arranged that the operators will not stand directly in front of saw when making cut.

(5) All swing saws shall be equipped with a counter balance which shall be permanently fastened to the frame of the saw and so arranged or adjusted that it will return the saw beyond the rear edge of the table or roll case without a rebounding motion. Wire rope, chain or nonmetallic rope running to a weight over a sheave shall not be used for attaching counter balance.

(6) No swing cut-off or trim saw shall be located directly in line with stock coming from an edger.

(7) Swing limit stops shall be provided and so adjusted that at no time shall the forward swing of the saw extend the cutting edge of the saw beyond a line perpendicular with the edge of the saw table, roll case, guard or barrier.

(8) Saws that are fed into the cut by means of air, steam, hydraulic cylinders, or other power device or arrangement shall be designed so they can be locked or rendered inoperative.

(9) Foot treadle operated saws shall be provided with safeguards to prevent accidental contact.

(10) Swing saws on log decks shall be equipped with a positive stop for the protection of persons who may be on the opposite side of the log haul chute.

(11) Operators of hand operated swing saws shall not stand directly in front of saw while making cut.

(12) Tables or roll casings for swing saws shall be provided with stops or lineup rail to prevent material being pushed off on opposite side. [Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81-18-029 (Order 81-21), § 296-78-605, filed 8/27/81.]

WAC 296-78-610 Circular saws, speeds, repairs. (1) Circular saws shall not be operated at speeds in excess of that specified by the manufacturer. Speeds shall be etched on all new saws. When saws are repaired, remanufactured or retensioned in any way to change their operating speeds, such change of speed shall be etched on the saw. These etched speeds shall not be exceeded.

(2) Circular saws shall be inspected for cracks each time that the teeth are filed or set.

(3) A circular saw shall be discontinued from use until properly repaired when found to have developed a crack equal to the length indicated in the following table:

Length of Crack	Diameter
1/2 - inch	Up to 12"
1 - inch	Over 12" to 24"
1-1/2 - inch	Over 24" to 36"
2 - inch	Over 36" to 48"
2-1/2 - inch	Over 48" to 60"
3 - inch	Over 60"

(4) Welding or slotting of cracked saws shall be done by a sawsmith under a procedure recommended by the saw manufacturer. Holes shall not be drilled in saws as a means of arresting cracks. After saws are repaired they shall be retensioned. Unless a sawsmith is employed, saws shall be returned to the manufacturer for welding or tensioning. [Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81-18-029 (Order 81-21), § 296-78-610, filed 8/27/81.]

WAC 296-78-615 Saw filing and grinding rooms and equipment. (1) Approaches to filing rooms shall be kept free from material and equipment at all times.

(2) Enclosed grinding and filing rooms shall be ventilated as specified in the general occupational health standard, WAC 296-62-110 through 296-62-11019.

(3) Each filing and grinding room shall be provided with two exits so arranged as to permit easy escape in case of fire.

(4) Floor shall be cleaned regularly and shall be kept free from oil, grease and other materials that might cause employees to slip or fall.

(5) Flooring around machines shall be kept in good repair at all times.

(6) Saw grinding machine belts shall be provided with guards where these belts pass through the frame of the machine.

(7) All grinding wheels on such machines shall be provided with a metal retaining hood which shall also cover the arbor ends if they are exposed to contact.

(8) Filing room employees shall be provided with goggles, face shields, or other necessary protective equipment and are required to wear the same.

(9) Guarding and mounting of abrasive wheels shall be in accordance with WAC 296-24-18003 through 296-24-18007 of the general safety and health standards. [Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81-18-029 (Order 81-21), § 296-78-615, filed 8/27/81.]

WAC 296-78-620 Miscellaneous woodworking machines--Planers, stickers, molders, matchers. (1) Each planing, molding, sticking and matching machine shall have all cutting heads, and saws if used, covered by a solid metal guard.

(2) Planers, stickers, molding, sticking and matching machines shall be provided with exhaust fans, hoods and dust conveyors to remove the harmful dusts, etc., from the vicinity of the operator. Such hoods may be arranged to serve as guards for cutting heads.

(3) Planers and other machinery or equipment shall not be oiled while in motion, unless provided with guards or other devices to permit oiling without any possibility of contact with moving parts of machinery.

(4) Feed rolls shall be guarded by means of roll covers, bars or strips, attached to the roll frame in such manner as to remain in adjustment for any thickness of lumber.

(5)(a) Levers or controls shall be so arranged or guarded as to prevent accidental operation of machines.

(b) Foot treadle operated machines shall have a treadle guard fastened over the treadle.

(c) Locks, blocks, or other device shall be provided for positive immobilization of machine controls while repairs or adjustments are being made.

(6) Side head hoods shall be of sufficient height to safeguard the head set screw.

(7) Side heads shall not be adjusted while machine is in operation, except when extension adjusting devices are provided.

(8) Side belt and pulley guards shall be kept in place at all times the machine is in motion.

(9) All universal joints shall be enclosed. [Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81-18-029 (Order 81-21), § 296-78-620, filed 8/27/81.]

WAC 296-78-625 Planers (stave and headings). (1) Each planer (stave and heading) shall have all cutting heads, and saws if used, covered by a solid metal guard.

(2) Stave and heading planers shall be provided with exhaust fans, hoods and dust conveyors to remove the harmful dusts, etc., from the vicinity of the operator. Such hoods may be arranged to serve as guards for cutting heads.

(3) Sectional feed rolls should be provided. Where solid feed rolls are used, a sectional finger device (or other means equally effective) shall be provided to prevent kickbacks. [Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81-18-029 (Order 81-21), § 296-78-625, filed 8/27/81.]

WAC 296-78-630 Stave croziers. (1) Stave croziers shall have the heads guarded completely by the exhaust hood or other device, except that portion which actually inbeds itself in the stock.

(2) Each stave crozier shall have all feed chains and sprockets completely enclosed. [Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81-18-029 (Order 81-21), § 296-78-630, filed 8/27/81.]

WAC 296-78-635 Jointers. (1) Each hand feed jointer or buzz planer with horizontal head shall be provided with an automatic guard over the cutting head both in front of and in back of the guide.

(2) Each jointer or buzz planer with horizontal head shall be equipped with a cylindrical cutting head, the throat of which shall not exceed three-eights inch in depth or one-half inch in width.

(3) Each jointer or buzz planer with vertical head shall be guarded by an exhaust hood or other approved device which shall completely enclose the revolving head except for a slot sufficiently wide to permit the application of material.

(4) Push sticks shall be provided and used for feeding stock through hand operated jointers or buzz planers. [Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81-18-029 (Order 81-21), § 296-78-635, filed 8/27/81.]

WAC 296-78-640 Jointers (stave and heading). (1) Stave and heading jointers and matchers shall have the heads guarded completely by the exhaust hood or other device, except that portion where the stock is applied.

(2) Foot power stave jointing machines shall have the knife effectively guarded to prevent the operator's fingers from coming in contact with it. [Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81-18-029 (Order 81-21), § 296-78-640, filed 8/27/81.]

WAC 296-78-645 Wood shapers. (1) The cutting head of each wood shaper, hand feed panel raiser, or other similar machine not automatically fed, shall be guarded with a cage or pulley guard or other device so designed as to keep the operator's hands away from the cutting edge. In no case shall a warning device of leather or other material attached to the spindle be acceptable. Cylindrical heads shall be used wherever the nature of the work permits. The diameter of circular shaper guards shall be not less than the greatest diameter of the cutter.

(2) All double spindle shapers shall be provided with a spindle starting and stopping device for each spindle or provision shall be made that only one spindle operate at any one time. [Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81-18-029 (Order 81-21), § 296-78-645, filed 8/27/81.]

WAC 296-78-650 Boring and mortising machines. Boring and mortising machines shall be provided with safety bit chucks without projecting set screws. Automatic machines shall be provided with point of operation guards. When necessary to prevent material from revolving with the bit, clamps or stops shall be provided and used to hold material firmly against the guides. [Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81-18-029 (Order 81-21), § 296-78-650, filed 8/27/81.]

WAC 296-78-655 Tenoning machines. (1) Each tenoning machine shall have all cutting heads, saws if used, and all exposed moving parts guarded. In the case of cutting heads and saws, the guard shall be of solid metal.

(2) If sheet metal is used, it shall be not less than ten U.S. gauge in thickness. If cast metal is used it shall be not less than three-sixteenths inch thick, or if aluminum is used, it shall be not less than five-eighths inch thick. The hood of the exhaust system may form part or all of the guard. When so used, the hood shall be constructed of metal of a thickness not less than that specified herein.

(3) Feed chains and sprockets of all double end tenoning machines shall be completely enclosed, except that portion of chain used for conveying stock. At rear ends of frames over which the feed conveyors run, sprockets and chains shall be guarded at the sides by plates projecting beyond the periphery of sprockets and ends of lugs.

(4) The rear end of the frame over which the feed conveyors run shall be so extended that the material as it leaves the machine will be guided to a point within easy reach of the person removing stock at the rear of the tenoner.

(5) Single end tenoners, hand fed, shall have a piece of sheet metal placed so that the operator's hands cannot slip off the lever handle into the tool in passing. Such guard shall be fastened to the lever. [Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81-18-029 (Order 81-21), § 296-78-655, filed 8/27/81.]

WAC 296-78-660 Lathe (pail and barrel). (1) Each profile, swing-head and back-knife lathe shall have all cutting heads covered by a solid metal guard.

(2) If sheet metal is used, it shall be not less than ten U.S. gauge in thickness. If cast metal is used, it shall be not less than three-sixteenths inch thick, or if aluminum is used, it shall be not less than five-eights inch thick. The hood of the exhaust system may form part or all of the guard. When so used, the hood shall be constructed of metal of a thickness not less than that specified above.

(3) Pail and barrel lathes shall be guarded in accordance with the specifications for Profile and Back-knife lathes insofar as they are applicable. [Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81-18-029 (Order 81-21), § 296-78-660, filed 8/27/81.]

WAC 296-78-665 Sanding machines. (1) Each belt sanding machine shall have both pulleys enclosed in such a manner as to guard the points where the belt runs onto the pulleys. The edges of the unused run of belt shall be enclosed or otherwise guarded from contact by employees.

(2) Each drum sanding machine shall be provided with a guard so arranged as to completely enclose the revolving drum except such portion required for the application of the material to be finished. Guards with hinges to facilitate the insertion of sandpaper may be installed. The exhaust hood may form part or all of this guard. When so used, the hood shall conform to the specifications as given under exhaust systems in WAC 296-78-710.

(3) All standard stationary sanding machines shall be provided with exhaust systems in conformity with the section of this code dealing with exhaust systems.

(4) All portable sanding machines shall be provided with means of removing excessive dust, or employees using equipment shall be provided with such necessary respiratory protective equipment as will conform to the requirements of the general occupational health standards, chapter 296-62 WAC. [Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81-18-029 (Order 81-21), § 296-78-665, filed 8/27/81.]

WAC 296-78-670 Glue machines. (1) Personal protective equipment as required by the General Safety and Health Standard, WAC 296-24-075 through 296-24-092, and the General Occupational Health Standard, WAC 296-62-11021, and proper washing facilities with noncaustic soap and sterilizers, shall be provided for all employees handling glue. Rubber gloves and other personal equipment must be sterilized when transferred from one person to another.

(2) Glue spreaders shall be enclosed on the in-running side, leaving only sufficient space to insert the stock.

(3) All glue spreaders shall be equipped with a panic bar or equivalent type device that can be reached from either the infeed or outfeed side of the spreader to shut-off the power in an emergency situation. Such device shall be installed on existing glue spreaders no later than April 1, 1982, and be standard equipment on any glue spreader purchased after January 1, 1982.

(4) All glue mixing and handling rooms where located above work areas shall have water tight floors.

(5) All glue rooms shall be provided with ventilation in accordance with WAC 296-62-110 through 296-62-11013, of the General Occupational Health Standard. [Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81-18-029 (Order 81-21), § 296-78-670, filed 8/27/81.]

WAC 296-78-675 Lathe mills. (1) Lath mills shall be so arranged that stock pickers shall be protected from slabs and blocks from slasher and trimmers.

(2) Bolters and lath machines shall be provided with a wall or shield of not less than two inch wood material or equivalent, constructed in front of the machines, to protect stock pickers and passing employees from kickbacks.

(3) Lath bolters and lath mills shall have all feed rolls, belts, gears and moving parts provided with approved guards. Feed chains shall be guarded to as low a point as the maximum height of the stock will permit.

(4)(a) Lath bolters and lath mill saws shall be provided with a sheet metal guard not less than one-eighth inch thick, or a cast iron guard not less than three-sixteenths inch thick, or equivalent. These hoods may be hinged so that they can be turned back to permit changing of the saws.

(b) A metal plate baffle, finger device or other device, shall be installed to prevent kickbacks.

(5)(a) The feed rolls on bolters or lath mills shall not be raised while any employee is in line with the saws.

(b) The stock shall be pushed through the saws with another piece of stock or push stick.

(6)(a) The lath trimmer shall be provided with guards on the ends, the top and the rear so designed as to contain debris and prevent employee contact with the saw. The belt drive shall be provided with guards as required by WAC 296-78-710.

(b) The entire top half of all trimmer saws shall be provided with guards. The guards shall be so adjusted as to prevent employees from accidentally contacting saws. [Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81-18-029 (Order 81-21), § 296-78-675, filed 8/27/81.]

WAC 296-78-680 Veneer and plywood plants--Peeling and barking. (1) Where peeling or barking pits are located directly under the log cranes, logs shall not be moved over workers.

(2) Single spiked hooks without a bell shall not be used for handling logs. Hooks shall be equipped with hand holds and shall be maintained in condition to safely perform the job application.

(3) Mechanical barking devices shall be so guarded as to protect employees from flying chips, bark or other matter.

(4) Logs shall not be removed from barker until barking head has ceased to revolve, unless barker is so designed and arranged that barking head will not create or constitute a hazard to employees. [Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81-18-029 (Order 81-21), § 296-78-680, filed 8/27/81.]

WAC 296-78-685 Veneer lathe. (1) The elevating ramp (gate) shall be provided with a safety chain and hook or other positive means of suspension while employees are working underneath same.

(2) The area under the tipple from lathe to stock trays shall be provided with railings or other suitable means of preventing employees from entering this area, if access is not prevented by the construction of the machine and employees can enter this area.

(3) Catwalks shall be provided along stock trays so that employees will not have to climb on the sides of trays to straighten stock.

(4) Any section of stock trays shall be locked out or shall have an operator stationed at starting controls while stock is being removed or adjusted.

(5) Guards which will cover the cutting edge of veneer lathe and clipper blades shall be provided and used while such blades are being transported about premises. [Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81-18-029 (Order 81-21), § 296-78-685, filed 8/27/81.]

WAC 296-78-690 Veneer slicer and cutter. Each veneer slicer and each rotary veneer cutter shall have all revolving and other moving knives provided with guards. [Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81-18-029 (Order 81-21), § 296-78-690, filed 8/27/81.]

WAC 296-78-695 Veneer clipper. (1) Each veneer clipper shall have either automatic feed or shall be provided with a guard which will make it impossible to place any portion of the hand under the knife while feeding stock. Where practicable, such guard shall be of the vertical finger type.

(2) The rear of each manually operated clipper shall be guarded either by a screen or vertical finger guard which shall make it impossible for any portion of the hand to be placed under the knife while removing clipped stock. [Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81-18-029 (Order 81-21), § 296-78-695, filed 8/27/81.]

WAC 296-78-700 Veneer wringer (swede). The entry side of each veneer wringer other than glue spreader shall be enclosed, leaving only sufficient space to insert stock. A guard shall be provided to prevent the veneer from overriding the top roll and kicking back. [Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81-18-029 (Order 81-21), § 296-78-700, filed 8/27/81.]

WAC 296-78-705 The shake and shingle industry. The following terms and standards shall apply only in the manufacturing of shakes and shingles and these requirements shall take precedence over other sawmill and woodworking standards. [Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81-18-029 (Order 81-21), § 296-78-705, filed 8/27/81.]

WAC 296-78-70501 Definitions--Terms, general. (1) "Block(s)" - those sections of a log cut in various lengths.

(2) "Block(s)" and "bolt(s)" may be considered to be synonymous.

(3) "Clipper saw" - a circular saw used to trim manufactured shingles.

(4) "Groover" - a cylinder-type knife (knives) similar to a planer knife (knives), used to cut grooves into the face surface of shakes or shingles.

(5) "Hip" and "ridge saw" - a circular saw used to cut various angles on the side edge of shakes or shingles.

(6) "Johnson bar" - a shaft used to control the feed of the carriage.

(7) "Knee bolter circular saw" - a stationary circular saw used to trim and debark blocks (the blocks are

manually maneuvered onto a carriage and fed into a saw).

(8) "Log haul" – a power conveyor used to move logs to mill.

(9) "Packers" – employees who pack the manufactured shakes or shingles into bundles.

(10) "Panagraph power splitter" – a hydraulically operated wedge, manually positioned into place, used to split blocks.

(11) "Power saw splitter" – a stationary circular saw used to split (saw) blocks, (the blocks are manually maneuvered onto a carriage and fed into the saw).

(12) "Set works" – a component of the shingle machine, located on the machine frame, used to control the thickness of each shingle being manufactured.

(13) "Shake machine" – a band saw used to cut shake blanks into manufactured shakes.

(14) "Shake splitter" – a stationary hydraulically operated wedge, manually controlled, used to split shake blocks into shake blanks or boards.

(15) "Shim saw" – a circular saw used to re–cut manufactured shingles into narrow widths.

(16) "Shingle machine" – a machine used to manufacture shingles; composed of a feed, set works, and carriage system, all functioning in relation to a circular saw.

(17) "Shingle saw" – a circular saw used to cut shingles from blocks.

(18) "Spault" – the first and last section(s) of a block as it is cut into shingles.

(19) "Spault catcher" – a device located on the shingle machine next to the solid feed rolls, used to hold the last section of each block being cut (called a spault), in place.

(20) "Track or swing cutoff saw" – a circular saw used to cut blocks from a log. [Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81–18–029 (Order 81–21), § 296–78–70501, filed 8/27/81.]

WAC 296–78–70503 Shake and shingle machinery––General. (1) Track or swing cutoff circular saw.

(a) A power operated track or swing cutoff circular saw shall have controls so arranged that operators are not positioned directly in front of the saw while making a cut.

(b) All track or swing cutoff circular saws shall be completely encased or guarded when the saw is in the retract position, except for that portion of the guard that must be left open for the operation of the saw.

(c) Track or swing cutoff circular saw guards shall be constructed of sheet metal not less than one–eighth inch thick, or a wood guard of not less than nominal two inch thick wood material, or equivalent.

Hinged or removable doors or gates will be permitted where necessary to permit adjusting and oiling.

(d) The driving belt(s) on the track or swing cutoff circular saw shall be guarded in accordance with the General Safety and Health Standard, WAC 296–24–205 through 296–24–20533.

(e) A safety catch shall be provided to prevent the track cutoff saw from leaving the track.

(2) Overhead deck splitter – panagraph.

(a) Panagraph splitters shall have a shroud incorporated on the upper pressure plate to eliminate the possibility of the splitter moving from the operating area. This shroud shall be constructed of solid design with a minimum width of three inches and a minimum thickness of three–eighths inch.

(b) Mechanically operated overhead splitters shall have handles moving opposite the stroke of the piston.

(c) When the leading edge of the panagraph splitter is completely extended, the maximum clearance from the deck to the splitting edge shall be two inches.

(3) Power splitter saw. Power splitters shall have spreaders behind the saw to prevent materials from squeezing the saw or being thrown back on the operator. The top of the saw shall be completely covered.

(4) Knee bolter circular saw.

(a) A safety catch shall be provided to prevent the bolter carriage from leaving the track.

(b) Bolter saws shall be provided with a canopy guard of sheet metal not less than one–eighth inch thick, or cast iron guard not less than three–sixteenths inch thick or a wood guard of not less than nominal four inch thick wood material or equivalent.

The bolter canopy guard shall completely enclose the rear portion of the saw. It shall be so arranged and adjusted as to cover the front of the saw; not to exceed twenty inches from the top of the carriage to the bottom of the guard on sixteen inch and eighteen inch block and twenty–six inches on twenty–four inch blocks, of the material being cut.

(c) Bolter saws shall be provided with wipers of belting or other suitable material. These wipers shall be installed on both sides of the saw in such a manner as to deflect knots, chips, slivers, etc., that are carried by the saw.

(d) A positive device shall be provided and used to manually lock and hold the feed table in the neutral position when not in use.

(e) That portion of all bolter saws which is below and behind the saw table shall be guarded by the exhaust hood or other device. Hinged or removable doors or gates will be permitted where necessary to permit adjusting and oiling. [Statutory Authority: RCW 49.17-.040, 49.17.050 and 49.17.240. 81–18–029 (Order 81–21), § 296–78–70503, filed 8/27/81.]

WAC 296–78–70505 Shake machinery. (1) Shake splitters.

(a) A positive de–energizing device shall be provided within ready reach of each shake splitter operator.

(b) Each shake splitter shall be provided with an adjustable stroke limiter to eliminate the splitting blade from striking the table.

(c) All splitters shall have a maximum clearance of four inches, from the splitting edge to the table surface, when the splitter is in the extended position.

(d) All splitter tables shall have a friction surface to reduce kick out of the material being split.

(e) Shake splitters shall not be operated at a speed that would cause chunks to be thrown in such a manner as to create a hazard.

(f) The use of foot pedal (treadle) mechanisms shall be provided with protection to prevent unintended operation from falling or moving objects or by accidental stepping onto the pedal.

(i) The pedal shall have a nonslip surface.

(ii) The pedal return spring shall be of the compression type, operating on a rod or guided within a hole or tube, or designed to prevent interleaving of spring coils in event of breakage.

(iii) If pedal counterweights are provided, the path of the travel of the weight shall be enclosed.

(2) Shake saw guards.

(a) Every shake band saw shall be equipped with a saw guard on both sides of the blade down to the top side of the guide.

(b) The outside saw guard shall extend a minimum of three and one–half inches below the bottom edge of the saw guide.

(c) The maximum opening between the saw guide and table rolls shall be fifteen inches.

(3) Shake saw band wheel guards.

(a) The band wheels on all shake band saws shall be completely encased or guarded on both sides. The guards shall be constructed of not less than No. 14 U.S. gauge metal or material equal in strength.

(b) The metal doors, on such guards, shall have a wood liner of a minimum thickness of one–half inch.

(4) Shake saw band wheel speeds and maintenance.

(a) No band wheel shall be run at a peripheral speed in excess of that recommended by the manufacturer.

(b) Each band wheel shall be carefully inspected at least once a month by management.

Any band wheel in which a crack is found in the rim or in a spoke shall be immediately discontinued from service until properly repaired.

(c) Each band saw frame shall be provided with a tension indicator. [Statutory Authority: RCW 49.17-.040, 49.17.050 and 49.17.240. 81–18–029 (Order 81–21), § 296–78–70505, filed 8/27/81.]

WAC 296–78–70507 Upright shingle machine. (1) Upright shingle saw guard.

(a) Every shingle machine carriage shall be equipped with a hand guard which:

(i) Projects at least one inch beyond the cutting edge of the saw.

(ii) Shall be located not more than one–half inch from the side of the saw blade.

(b) Shingle saw guards shall have a rim guard so designed and installed as to prevent chips and knots from flying from the saws. Such guards shall cover the edge of the saw to at least the depth of the teeth, except such part of the cutting edge as is essential for sawing the material.

(c) Saw arbors and couplings shall be guarded to prevent contact.

(d) Every part of a clipper saw blade, except that part which is exposed to trim shingles, shall be enclosed by a guard, so designed and installed to prevent contact with the clipper saw. An additional guard shall be installed not more than four inches above the clipper board and not more than one–half inch from the vertical plane of the saw.

(e) The underside of clipper saw boards shall be equipped with a finger guard to effectively protect the operator's fingers. The guard shall be a minimum of five inches long and one and one–quarter inches deep.

(2) Upright carriage guards.

(a) Automatic revolving cam set works and rocker arms, on machine frame, shall be guarded where exposed to contact.

(b) The spault catchers shall be not less than three–sixteenths inch thick and kept sharp at all times. Missing teeth shall be replaced.

(3) Carriage feed works.

(a) The pinion gear, bull wheel and Johnson bar, operating the saw carriage, shall be guarded where exposed to contact.

(b) Each shingle machine clutch treadle shall be arranged so that it is necessary to manually operate the treadle to start the machine. Devices which start the machine when the jaw treadle is released shall not be installed or used. The carriage shall have a brake to hold it in a neutral position.

(c) Carriage speed shall not exceed thirty–four strokes per minute. [Statutory Authority: RCW 49.17.040, 49-.17.050 and 49.17.240. 81–18–029 (Order 81–21), § 296–78–70507, filed 8/27/81.]

WAC 296–78–70509 Related shake and shingle sawing machinery. (1) Flat or taper saw. A wood or metal guard or its equivalent shall be secured to the sliding table at the side nearest the sawyer to protect him from contact with the cutting edge of the saw when a block is not in the cut.

(2) Hip and ridge saws. The hip and ridge saws shall be guarded with a hood–like device. This guard shall cover that portion of the saw not needed to cut the material, located above the cutting table.

(a) The remaining portion of the saw, located below the table, shall be guarded to prevent contact by employees.

(b) The hip and ridge guarding standard is applicable to both shake and shingle hip and ridge saws.

(3) Shim stock saws. The top ends and sides of the shim stock saws shall be guarded. All shim stock saw power transmission mechanism shall be guarded.

(4) Shake or shingle groover. The top ends and sides of the groover, to include the press rolls, shall be guarded to contain material or debris which can be thrown and to prevent contact. All groover machine power transmission mechanism shall be guarded in compliance with WAC 296–78–710.

(5) Circular saws, speeds and repairs.

(a) Maximum allowable speeds.

(i) No circular saw shall be run at a speed in excess of that recommended by the manufacturer.

(ii) Such speed shall be etched or otherwise permanently marked on the blade, and that speed shall not be exceeded.

(b) Repairs and reconditions.

(i) Shingle saws when reduced in size to less than forty inches in diameter shall be discontinued from service as shingle saws on upright or vertical machines.

(ii) Shingle saws may be reconditioned for use as clipper saws provided the surface is reground and the proper balance attained.

(iii) Shingle saws may be used to no less than thirty-six inches on flat or taper saw machines. [Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81-18-029 (Order 81-21), § 296-78-70509, filed 8/27/81.]

WAC 296-78-70511 Safety rules. (1) General.

(a) Workers shall not leave shingle machines unattended while the carriage is in motion.

(b) Shingle blocks shall not be piled more than one tier high on tables or roll cases. Chunks may be placed horizontally one tier high on top of shingle blocks. Shingle blocks shall be piled in a stable manner, not more than seventy-two inches high, within the immediate working area of the shingle sawyer or the area shall be barricaded.

(c) Provisions shall be made to prevent blocks from falling into the packing area.

(d) On each machine operated by electric motors, positive means shall be provided for rendering such controls or devices inoperative while repairs or adjustments are being made to the machines they control.

(e) Workers shall not stand on top of blocks while in the process of splitting other blocks into bolts.

(2) Jointers (shingle). Shingle jointers shall have the front, or cutting face of the knives, housed except for a narrow slot through which the shingles may be fed against the knives. [Statutory Authority: RCW 49.17-.040, 49.17.050 and 49.17.240. 81-18-029 (Order 81-21), § 296-78-70511, filed 8/27/81.]

WAC 296-78-710 Construction and isolated equipment. [Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81-18-029 (Order 81-21), § 296-78-710, filed 8/27/81.]

WAC 296-78-71001 General. (1) Construction when not specifically covered in these standards shall be governed by such other standards adopted by the department of labor and industries as may apply.

(2) All buildings, docks, tramways, walkways, log dumps and other structures shall be so designed, constructed, and maintained as to provide a safety factor of four. This means that all members shall be capable of supporting four times the maximum load to be imposed. This provision refers to buildings, docks and so forth designed and constructed subsequent to the effective date of these standards and also refers in all cases where either complete or major changes or repairs are made to such buildings, docks, tramways, walkways, log dumps and other structures.

(3) Basements on ground floors under mills shall be evenly surfaced, free from unnecessary obstructions and debris, and provided with lighting facilities in compliance with the requirements of the general occupational health standards, WAC 296-62-09003.

(4) All engines, motors, transmission machinery or operating equipment installed in mill basements or ground floors shall be equipped with standard safeguards for the protection of workers.

(5) Hazard marking. Physical hazard marking shall be as specified in WAC 296-24-135 through 296-24-13503 of the general safety and health standards.

(6) Flooring of buildings, ramps and walkways not subject to supporting motive equipment shall be of not less than two-inch wood planking or material of equivalent structural strength.

(7) Flooring of buildings, ramps, docks, trestles and other structure required to support motive equipment shall be of not less than full two and one-half inch wood planing or material of equivalent structural strength. However, where flooring is covered by steel floor plates, two inch wood planking or material or equivalent structural strength may be used.

(8) Walkways, docks, and platforms.

(a) Walkways, docks and platforms shall be constructed and maintained in accordance with the requirements of the general safety and health standards, WAC 296-24-735 through 296-24-75011.

(b) Maintenance. Walkways shall be evenly floored and kept in good repair.

(c) Where elevated platforms are used they shall be equipped with stairways or ladders in accordance with the general safety and health standards, WAC 296-24-765 through 296-24-81013. [Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81-18-029 (Order 81-21), § 296-78-71001, filed 8/27/81.]

WAC 296-78-71003 Floor openings. (1) All floor openings either temporary or permanent, shall be protected as required by the general safety and health standards, WAC 296-24-750 through 296-24-75011.

(2) The area under floor openings shall, where practical, be fenced off. When this is not practical, the areas shall be plainly marked with yellow lines and telltails shall be installed to hang within five and one-half feet of the ground or floor level.

(3) Where floor openings are used to drop materials from one level to another, audible warning systems shall be installed and used to indicate to employees on the lower level that material is to be dropped. [Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81-18-029 (Order 81-21), § 296-78-71003, filed 8/27/81.]

WAC 296-78-71005 Floors, docks, platforms and runways. (1) Faces of docks except on loading and unloading sides of rail and truck loading platforms, and runways used for the operation of lift trucks and other vehicles shall have a guard or shear timber eight by

eight inches set over three inch blocks and securely fastened to the floor by bolts of not less than five-eighths inch diameter.

(2) The flooring of buildings, docks and passageways shall be kept in good repair at all times. When a hazardous condition develops that cannot be immediately repaired, the area shall be fenced off and not used until adequate repairs are made.

(3) All working areas shall be kept free from unnecessary obstruction and debris.

(4) Floors around machines and other places where workers are required to stand shall be provided with effective means to prevent slipping. [Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81-18-029 (Order 81-21), § 296-78-71005, filed 8/27/81.]

WAC 296-78-71007 Footwalks and passageways. (1) All footwalks and passageways subject to slipping hazards due to peculiarities of conditions or processes of the operation shall be provided with nonslip surfaces.

(2) Walkways in accordance with WAC 296-78-71001(8) shall be provided over roll casings, transfer tables, conveyors or other moving parts except where stepping over such equipment is not in connection with usual and necessary traffic.

(3) Walkways alongside of sorting tables shall be of sufficient width to provide safe working area. Such walkways shall be evenly floored and kept in good repair at all times. They shall be kept free from obstructions and debris.

(4) When employees are required to clear plug-ups in veneer trays or lumber sorting trays, adequate walkways with standard guardrails shall be provided for access to the trays whenever possible. When walkways are not provided, safety belts or harnesses with lanyards, tied off to substantial anchorages, shall be provided and used at all times.

(5) Walkways and stairways with standard hand rails shall be provided wherever space will permit, for oilers and other employees whose duties require them to go consistently to elevated and hazardous locations.

(a) Where such passageways are over walkways or work areas, standard toeboards shall be provided.

(b) Protection as required by the general safety and health standard, WAC 296-24-205 through 296-24-20533 shall be provided against contact with transmission machinery or moving conveyors. [Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81-18-029 (Order 81-21), § 296-78-71007, filed 8/27/81.]

WAC 296-78-71009 Stairways and ladders. (1) Stairways shall be used in preference over ladders wherever possible. Stairways or ladders, whichever is used, shall be constructed and maintained in accordance with the provisions of the general safety and health standard, WAC 296-24-75009 through 296-24-81013.

(2) Doors shall not open directly on a flight of stairs.

(3) Permanent ladders shall be fastened securely at both top and bottom.

(4) Portable ladders shall not be used upon footing other than suitable type.

(5) Hooks or other means of securing portable ladders when in use, shall be provided.

(6) Portable ladders shall not be used for oiling machinery which is in motion. [Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81-18-029 (Order 81-21), § 296-78-71009, filed 8/27/81.]

WAC 296-78-71011 Egress and exit. (1) In all enclosed buildings, means of egress shall be provided in accordance with the provisions of the general safety and health standard, WAC 296-24-550 through 296-24-56531.

(2) All swinging doors shall be provided with windows, the bottom of which shall be not more than forty-eight inches above the floor. One window shall be provided for each section of double swinging doors. All such windows shall be of shatter proof or safety glass unless otherwise protected against breakage.

(3) Outside exits shall open outward. Where sliding doors are used as exits, an inner door not less than two feet six inches by six feet shall be cut inside each of the main doors and arranged to open outward.

(4) At least two fire escapes or substantial outside stairways, shall be provided for mill buildings where the floor level is more than eight feet above the ground.

(a) Buildings over one hundred fifty feet in length shall have at least one additional fire escape or substantial outside stairway for each additional one hundred fifty feet of length or fraction thereof.

(b) Passageways to fire escapes or outside stairways shall be marked and kept free of obstructions at all times.

(c) Fire protection. The requirements of WAC 296-24-585 through 296-24-62003 of the general safety and health standard, shall be complied with in providing the necessary fire protection for sawmills.

(d) Fire drills shall be held at least quarterly and shall be documented.

(5) Where a doorway opens upon a roadway, railroad track, or upon a tramway or dock over which vehicles travel, a barricade or other safeguard and a warning sign shall be placed to prevent workers from stepping directly into moving traffic.

(6) Tramways and trestles shall be substantially supported by piling or framed bent construction which shall be frequently inspected and maintained in good repair at all times. Tramways or trestles used both for vehicular and pedestrian traffic shall have a walkway with standard hand rail at the outer edge and shear timber on the inner edge, and shall provide three feet clearance to vehicles. When walkways cross over other thoroughfares, they shall be solidly fenced at the outer edge to a height of 42 inches over such thoroughfares.

(7) Where tramways and trestles are built over railroads they shall have a vertical clearance of twenty-two feet above the top of the rails. When constructed over carrier docks or roads, they shall have a vertical clearance of not less than six feet above the drivers foot rest on the carrier, and in no event shall this clearance be less than twelve feet from the surface of the lower roadway or dock.

(8) Walkways (either temporary or permanent) shall be not less than twenty-four inches wide and two inches thick, nominal size, securely fastened at each end. When such walkways are used on an incline the angle shall not be greater than twenty degrees from horizontal.

(9) Walkways from the shore or dock to floats or barges shall be securely fastened at the shore end only and clear space provided for the other end to adjust itself to the height of the water.

(10) Cleats of one by four inch material shall be fastened securely across walkways at uniform intervals of eighteen inches whenever the grade is sufficient to create a slipping hazard. [Statutory Authority: RCW 49.17-.040, 49.17.050 and 49.17.240. 81-18-029 (Order 81-21), § 296-78-71011, filed 8/27/81.]

WAC 296-78-71013 Cableways. (1)(a) Inclined cableways shall have a central line between the rails in practical alignment with the center of the hoisting drums. A substantial bumper shall be installed at the foot of each incline.

(b) Barricades or warning signs shall be installed to warn pedestrians to stand clear of the cables on inclined cableways. The cables shall not be put into motion without activating an alarm system, either audible or visible, which will inform anyone on the tracks to stand clear.

(2) Employees shall not ride on or stand below the cars on an inclined cableway. [Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81-18-029 (Order 81-21), § 296-78-71013, filed 8/27/81.]

WAC 296-78-71015 Tanks and chemicals. (1) All open vats and tanks into which workers may fall shall be guarded with standard railings or screen guards in all cases where such guarding is possible with regard to practical operation.

(2) Foundations of elevated tanks shall be accessible for inspections. When the tank platform is more than five feet above the ground a stairway or ladder shall be permanently attached.

(3) Every open tank over five feet in height shall be equipped with fixed standard ladders both inside and out, extending from the bottom to the rim of the tank arranged to be accessible to each other, so far as local conditions permit.

(4) The use of chemicals for treating of lumber for prevention of sap stain or mold or as preservatives, shall conform to the requirements of WAC 296-62-11021, open surface tanks.

(a) Storage, handling, and use of chemicals. Threshold limits. Employees shall not be exposed to airborne concentration of toxic dusts, vapors, mists or gases that exceed the threshold limit values set forth in WAC 296-62-070 through 296-62-080 of the general occupational health standards.

(b) Protective equipment. The use of chemicals shall be controlled so as to protect employees from harmful exposure to toxic materials. Where necessary, employees shall be provided with and required to wear such protective equipment as will afford adequate protection against harmful exposure as required by WAC 296-24-075 through 296-24-092 of the general safety and health standards.

(5)(a) Means shall be provided and used to collect any excess of chemicals used in treating lumber so as to protect workers from accidental contact with harmful concentrations of toxic chemicals or fumes.

(b) Dip tanks containing flammable or combustible liquids shall be constructed, maintained and used in accordance with WAC 296-24-405 of the general safety and health standards.

(c) An evacuation plan shall be developed and implemented for all employees working in the vicinity of dip tanks using flammable and/or combustible liquids. A copy of the plan shall be available at the establishment for inspection at all times. Every employee shall be made aware of the evacuation plan and know what to do in the event of an emergency and be evacuated in accordance with the plan. The plan shall be reviewed with employees at least quarterly and documented.

(d) When automatic foam, automatic carbon dioxide or automatic dry chemical extinguishing systems are used, an alarm device shall be activated to alert employees in the dip tank area before and during the activation of the system. The following combinations of extinguishment systems when used in conjunction with the evacuation plan as stated above will be acceptable in lieu of bottom drains:

(i) A dip tank cover with an automatic foam extinguishing system under the cover, or an automatic carbon dioxide system, or an automatic dry chemical extinguishing system, or an automatic water spray extinguishing system;

(ii) An automatic dry chemical extinguishing system with an automatic carbon dioxide system or a second automatic dry chemical extinguishing system or an automatic foam extinguishing system;

(iii) An automatic carbon dioxide system with a second automatic carbon dioxide system or an automatic foam extinguishing system.

(e) The automatic water spray extinguishing systems, automatic foam extinguishing systems, and dip tank covers shall conform with the requirements of WAC 296-24-405. The automatic carbon dioxide systems and dry chemical extinguishing system shall conform with the requirements of WAC 296-24-615 and 296-24-620.

(6) Where workers are engaged in the treating of lumber with chemicals or are required to handle lumber or other materials so treated, the workers shall be provided with, at no cost to the worker, and required to use such protective equipment as will provide complete protection against contact with toxic chemicals or fumes therefrom.

(7) Sanitation requirements. The requirements of WAC 296-24-120 through 296-24-13013 of the general safety and health standards, shall govern sanitation practices.

(8) The sides of steam vats and soaking pits unless otherwise guarded shall extend forty-two inches above the floor level. The floor adjacent thereto shall be of nonslip construction.

(9) Large steam vats or soaking pits, divided into sections, shall be provided with substantial walkways between each section, each walkway to be provided with standard railings which may be removable if necessary. [Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81-18-029 (Order 81-21), § 296-78-71015, filed 8/27/81.]

WAC 296-78-71017 Dry kilns. (1) Dry kilns shall be so constructed upon solid foundations that tracks will not sag. Dry kilns shall be provided with suitable walkways. Each kiln shall have doors that operate from the inside and be provided with escape doors of adequate height and width to accommodate an average size man, that also operates from the inside, and shall be located in or near the main door. Escape doors shall swing in the direction of exit. Kiln doors and door carriers shall be fitted with safety devices to prevent the doors or carriers from falling.

(2) Ladders. A fixed ladder, in accordance with the requirements of WAC 296-24-810 through 296-24-81009 of the general safety and health standards, or other means shall be provided to permit access to the roof. Where controls and machinery are mounted on the roof, a permanent stairway with standard handrail shall be installed in accordance with the requirements of WAC 296-24-765 through 296-24-76523 of the general safety and health standards.

(3) A heated room shall be provided for the use of the kiln operator in inclement weather. He should remain in such room for at least ten minutes after leaving a hot kiln before going to cold outside air.

(4) Where operating pits are used, they shall be well ventilated, drained and lighted. Substantial gratings shall be installed at the kiln floor line. Steam lines shall be provided with insulation wherever exposed to contact by employees. Fans shall be enclosed by standard safeguards.

(5) Mechanical equipment. All belts, pulleys, blowers, and other exposed moving equipment used in or about kilns shall be guarded in accordance with the requirements of WAC 296-24-205 through 296-24-20533 of the general safety and health standards. [Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81-18-029 (Order 81-21), § 296-78-71017, filed 8/27/81.]

WAC 296-78-71019 Exhaust systems. (1) Air requirements in buildings, where persons are habitually employed, shall meet the requirements of the general occupational health standard, WAC 296-62-100 through 296-62-11013.

(2) Where the natural ventilation is not sufficient to remove dust, fumes or vapors that create or constitute a hazard, additional means of removal shall be provided.

(3) All mills containing one or more machines whose operations create dust, shavings, chips or slivers during a period of time equal to or greater than one-fourth of the working day or shift, shall be equipped with a collecting system either continuous or automatic in action and of sufficient strength and capacity to thoroughly remove such refuse from the points of operation of the machines and the work areas.

(4) Each woodworking machine that creates dust, shavings, chips, or slivers shall be equipped with an exhaust or conveyor system located and adjusted to remove the maximum amount of refuse from the point of operation and immediate vicinity.

(5) Blower, collecting and exhaust systems shall be designed, constructed and maintained in accordance with American National Standards Z33.1 – 1961 (For the installation of blower and exhaust systems for dust, stock and vapor removal or conveying) and Z12.2 – 1962 (R1969) (Code for the prevention of dust explosions in woodworking and wood flour manufacturing plants.)

(6) Fans used for ventilating shall be of ample capacity, as evidenced by the performance schedules of the manufacturers, and shall be guarded when exposed to contact. Hoods, dust conveyors, dust collectors and other accessary equipment shall be large enough to insure free intake and discharge.

(7) The outlet or discharge of all ventilating equipment shall be so arranged that at no time will the dust, vapors, gases or other air borne impurities discharged, create or constitute a hazard.

(8) Where a hood is used to form a part or all of the guard required on a given machine, it shall be constructed of not less than ten U.S. gauge sheet metal, or if of cast iron it shall be not less than three-sixteenths inches in thickness.

(9) All exhaust pipes shall be of such construction and internal dimensions as to minimize the possibility of clogging. They shall be readily accessible for cleaning.

(10) All exhaust pipes shall empty into settling or dust chambers which shall effectively prevent the dust or refuse from entering any work area. Such settling or dust chambers shall be so designed and operated as to reduce to a minimum the danger of fire or dust explosions.

(11) In lieu of a general ventilating system, exhaust or blower units may be installed on the dust or fume producing machine, provided the required protection is secured thereby.

(12) When proper ventilation is not provided, and temporary hazardous conditions are therefore encountered, the employer shall furnish approved respiratory and visual equipment: *Provided, however,* That the exposure to such hazard shall not be for more than two hours duration. Protective measures and equipment shall meet the requirements of the general occupational health standard, WAC 296-62-070 through 296-62-09001 and the requirements of the general safety and health standard, WAC 296-24-081 through 296-24-08113.

(13) Provisions for the daily removal of refuse shall be made in all operations not required to have an exhaust system, or having refuse too heavy, or bulky, or otherwise unsuitable to be handled by an exhaust system. [Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81-18-029 (Order 81-21), § 296-78-71019, filed 8/27/81.]

WAC 296-78-71021 Spray painting. All spray painting operations shall be carried on in accordance with the requirements of the general safety and health standard, WAC 296-24-370 through 296-24-37027 and the general occupational health standard, WAC 296-62-11019. [Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81-18-029 (Order 81-21), § 296-78-71021, filed 8/27/81.]

WAC 296-78-71023 Lighting. The lighting and illumination requirements of the general occupational health standards, WAC 296-62-09003, shall apply. [Statutory Authority: RCW 49.17.040 and 49.17.050. 82-13-045 (Order 82-22), § 296-78-71023, filed 6/11/82. Statutory Authority: RCW 49.17.040, 49.17-.050 and 49.17.240. 81-18-029 (Order 81-21), § 296-78-71023, filed 8/27/81.]

WAC 296-78-71025 Gas piping and appliances. All gas piping and appliances shall be installed in accordance with the American National Standard Requirements for Gas Appliances and Gas Piping Installations, Z21.30 - 1964. [Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81-18-029 (Order 81-21), § 296-78-71025, filed 8/27/81.]

WAC 296-78-715 Mechanical, steam and electrical equipment. [Statutory Authority: RCW 49.17.040, 49-.17.050 and 49.17.240. 81-18-029 (Order 81-21), § 296-78-715, filed 8/27/81.]

WAC 296-78-71501 General provisions. (1) All machinery or other equipment located or used on the premises of the operation or in the processes incidental thereto, shall be provided and maintained with approved standard safeguards, irrespective of ownership.

(2) Machines shall be so located that each operator will have sufficient space in which to handle material with the least possible interference from or to other workers or machines.

(3) Machines shall be so placed that it will not be necessary for the operator to stand where passing traffic creates a hazard.

(4) Aisles of sufficient width to permit the passing of vehicles or employees without crowding shall be provided in all work areas and stock or storage rooms.

(5) All metal decking around machinery shall be equipped to effectively prevent slipping.

(6) All machinery or equipment started by a control so located as to create impaired vision of any part of such machinery or equipment shall be provided with an audible warning device, where such machinery or equipment is exposed to contact at points not visible to the operator. Such devices shall be sounded before starting up unless positive mechanical or electrical interlocking controls are provided which will prevent starting until all such posts are cleared.

(7) A mechanical or electrical power control device shall be provided at each machine which will make it possible for the operator to stop the machine feed without leaving his position at the point of operation.

(8) All machines operated by means of treadles, levers, or other similar devices, shall be provided with positive and approved nonrepeat devices except where such machine is being used as an automatic repeating device.

(9) Operating levers and treadles on all machines or machinery shall be so located and protected that they cannot be shifted or tripped accidentally.

(10) All power driven machinery shall be stopped and brought to a complete standstill before any repairs or adjustments are made or pieces of material or refuse removed, except where motion is necessary to make adjustments. [Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81-18-029 (Order 81-21), § 296-78-71501, filed 8/27/81.]

WAC 296-78-71503 Lock out--Tag out. (1) To avoid accidental activation of machinery, electrical devices or other equipment which could create a hazardous condition while performing maintenance, repair, cleanup or construction work, the main disconnect(s) (line circuit breakers) shall first be locked out and tagged in accordance with the following provisions:

(2) Effective date. Effective July 1, 1982, only padlocks or other equivalent protective devices shall be used for locking out the main disconnect(s) (line circuit breakers) of machinery, electrical devices or other equipment that is shut down while maintenance, repair, cleanup, construction work or other type of work is done to the equipment. Tags shall be used to supplement the padlocks or other equivalent protective devices, and shall be used only for informational purposes.

(3) Padlocks, tags or equivalent protective devices to be supplied. The employer shall supply and the employee(s) shall use as many padlocks or other equivalent protective devices as are necessary to effectively lock out all affected equipment.

(4) Lock out plan. An effective lock out plan shall be formulated in writing and all concerned employees so informed. The plan shall contain specific procedures for locking out equipment, information to be contained on supplemental tags and specific procedures for unlocking equipment after repairs, cleanup, etc., have been completed.

(5) Informational tags. Tags used for providing supplemental information with lock out padlocks or other equivalent protective devices shall contain the name of the person authorizing placement, reason for placing, date, signature of person placing tag and such other relative information as deemed necessary by the person placing the tag.

(6) Lock out by pushbutton only. Locking out a machine or item of equipment by use of a pushbutton or other local control device only will not be acceptable as meeting the intent of these rules.

(7) Coordination of locking out devices. When repair, adjustment, cleanup, maintenance or construction work is necessary and the lock out procedures must be followed by any person not familiar with all power sources or material entry sources to any area involved, that person shall consult with the operator, supervisor, or some

person that is capable of informing him of proper lock out procedures and supplemental tagging information.

(8) Lock out before removing guards. Equipment shall be stopped and locked out before employees remove guards or reach into any potentially hazardous area. The only exception to this rule will be when equipment must be in motion in order to make proper adjustments.

(9) Removal of lock outs. Each person actively engaged in the repair, maintenance, cleanup, etc., shall lock out the affected equipment and place the informational tag. Upon completion of the work and reinstallation of the guards, that person shall personally remove his lock and tag, except when it is positively determined that an employee has left the premises without removing his lock and tag, other persons may remove the locks and tags in accordance with a procedure formulated by each firm and approved by the Division of Industrial Safety and Health.

(10) Valves to be locked and tagged out. Each valve used to control the flow of hazardous materials into, or used to activate the equipment being worked on, shall be locked and tagged out.

(11) Piping systems deactivated. Prior to working on piping systems containing pressurized or hazardous materials, the valve(s) controlling the flow to the affected area shall be locked and tagged out. The piping in the area to be worked on shall be drained and purged, if needed. If the piping contains hazardous materials, the piping shall be isolated from the work area by the insertion of blank flanges in the piping system.

(12) Pipe lines without valves. If pipelines or ducts are constructed without valves or closures that can be locked out, the lines or ducts shall be broken at a flange and a blank flange inserted to stop accidental flow of any hazardous material.

(13) Testing after lock out. After locking out and tagging equipment, a test shall be conducted to ascertain that the equipment has been made inoperative or the flow of hazardous material has been positively stopped. Precautions shall be taken to ascertain that persons will not be subjected to hazard while conducting the test if power source or flow of material is not shut off.

(14) Temporary or alternate power to be avoided. Whenever possible, temporary or alternate sources of power to the equipment being worked on shall be avoided. If the use of such power is necessary, all affected employees shall be informed and the source of temporary or alternate power shall be identified. [Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17-.240. 81-18-029 (Order 81-21), § 296-78-71503, filed 8/27/81.]

WAC 296-78-71505 Mechanical power transmission apparatus. (1) Machines and other equipment shall not be oiled while in motion, unless provided with guards or other devices to permit oiling without any possibility of contact with moving parts of machinery.

(2) Inspections shall be made to assure that shaftings, bearings and machines are in proper alignment at all times and that bolts in shaft hangars, couplings and boxes are tight.

(3) Isolated bearings or other equipment not reached by walkway shall be served by a ladder or other means of safe access.

(4) Running belts under power on or off pulleys shall be accomplished by mechanical means which will not expose employees to moving elements of the operation.

(5) Counterweights located on or near passageways or work areas shall be provided with enclosures. Overhead counterweights shall be provided with substantial safety chains or cables, or otherwise secured against falling.

(6) The construction, operation, and maintenance of all mechanical power-transmission apparatus shall be in accordance with the requirements of WAC 296-24-205 through 296-24-20533 of the general safety and health standard.

(7) Baffles shall be erected, where necessary, to protect employees from breaking belts, chains, ropes or cables.

(8) Overhead horizontal belts, chains or rope drives shall be provided with guards.

(9) Hydraulic systems. Means shall be provided to block, chain, or otherwise secure equipment normally supported by hydraulic pressure so as to provide for safe maintenance. [Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81-18-029 (Order 81-21), § 296-78-71505, filed 8/27/81.]

WAC 296-78-720 Boiler and pressure vessels. Boilers and pressure vessels shall be constructed, maintained and inspected in accordance with the provisions of the Boiler and Unfired Pressure Vessel Law, chapter 70.79 RCW, and chapter 296-104 WAC as administered by the boiler inspection section of the department of labor and industries. [Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81-18-029 (Order 81-21), § 296-78-720, filed 8/27/81.]

WAC 296-78-725 Nonionizing radiation. (1) Only qualified and trained employees shall be assigned to install, operate, adjust, and maintain laser equipment.

(2) Employees, when working in areas in which a potential exposure to direct or reflected laser light greater than 0.005 watts (5 milliwatts) exists, shall be provided with antilaser safety goggles which will protect for the specific wavelength of the laser and be of optical density (O.D.) adequate for the energy involved.

(3) Areas in which lasers are used shall be posted with standard laser warning placards.

(4) Beam shutters or caps shall be utilized, or the laser turned off, when laser transmission is not actually required. When the laser is left unattended for a substantial period of time, such as during lunch hour, overnight, or at change of shifts, the laser shall be turned off or shutters or caps shall be utilized.

(5) The laser beam shall not be directed at employees.

(6) The laser equipment shall bear such labels, logos and data placards to indicate maximum output and class designation as required of the manufacturer at time of sale, by I.A.W. Part 1040, CFR Title 21. Such labels, logos, data placards, etc., shall be maintained in a legible condition.

(7) Employees shall not be exposed to light intensities in excess of:

(a) Direct staring: One micro-watt per square centimeter;

(b) Incidental observing: One milliwatt per square centimeter;

(c) Diffused reflected light: Two and one-half watts per square centimeter.

(8) The laser equipment shall not be modified except by the manufacturer. [Statutory Authority: RCW 49-.17.040, 49.17.050 and 49.17.240. 81-18-029 (Order 81-21), § 296-78-725, filed 8/27/81.]

WAC 296-78-730 Electrical service and equipment. (1) Electrical service and equipment shall be constructed, maintained, inspected and operated in accordance with the provisions of chapter 19.28 RCW, chapter 296-46 WAC, WAC 296-24-950 through 296-24-955, and the electrical standard as promulgated by the division of building and construction safety inspection services.

(2) Repairs. Electrical repairs shall be made only by authorized and qualified personnel.

(3) Identification. Marks of identification on electrical equipment shall be clearly visible.

(4) Protective equipment. Rubber protective equipment shall be provided as required by WAC 296-24-092(1) of the general safety and health standard.

(5) Open switches. Before working on electrical equipment, switches shall be open and shall be locked out.

(6) Concealed conductors. Where electrical conductors are known to be concealed, no work shall be performed until such conductors are located.

(7) Overload relays. Overload relays shall be reset by authorized qualified personnel only.

(8) Passageways to panels. Passageways to switch centers or panels shall at all times be kept free from obstruction. Not less than three feet of clear space shall be maintained in front of switch centers or panels at all times.

(9) Bridging fuses. Fuses shall not be doubled or bridged. [Statutory Authority: RCW 49.17.040, 49.17-.050 and 49.17.240. 81-18-029 (Order 81-21), § 296-78-730, filed 8/27/81.]

WAC 296-78-735 Elevators, moving walks. Elevators, moving walks and other lifting devices intended for either passenger or freight service shall be constructed, maintained, inspected and operated in accordance with the provisions of chapter 70.87 RCW, WAC 296-24-870 through 296-24-90009 of the general safety and health standards, and those specific standards which are applicable from the division of building and construction safety inspection services, elevator section. [Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81-18-029 (Order 81-21), § 296-78-735, filed 8/27/81.]

WAC 296-78-740 Transportation--Lumber handling equipment--Cranes--Construction. (1) All apparatus shall be designed throughout, with not less than the following factors of safety, under static full rated load stresses, based on ultimate strength of the material used:

Material	Factor of Safety
Cast Iron	12
Cast Steel	8
Structural Steel	5
Forged Steel	5
Cables	5

(2) A notice shall be placed on every crane and hoist showing the maximum allowable load in pounds or tons. This notice shall be placed in such a manner as to be clearly legible from the floor.

(3) Cranes shall be of what is known as "all steel construction". No cast iron shall be used in parts subject to tension except in drums, trolley sides, bearings, brackets and brake shoes.

(4) The construction of cranes shall be such that all parts may be safely lubricated and inspected when cranes are not in operation.

(5) Bolts subject to stress shall be of the through type and all bolts shall be equipped with approved protection so that the bolt will not work loose or nuts work off.

(6) Outside crane cages shall be enclosed. There shall be windows on three sides of the cage and windows in the front, and the side opposite the door shall be the full width of the cage.

(7) Where a tool box or receptacle is used for the storing of oil cans, tools, etc., it shall be permanently secured in the cage or on the foot-walk of outside cranes and on the foot-walk of inside cranes. Tool boxes of hot metal cranes shall be constructed of metal.

(8) All gears on cranes shall be provided with standard guards.

(9) Keys projecting from revolving shafts shall be guarded.

(10) A braking apparatus shall be provided on every type of crane and shall be so designed and installed as to be capable of effectually braking a weight of at least one and one-half times the full rated load. [Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81-18-029 (Order 81-21), § 296-78-740, filed 8/27/81.]

WAC 296-78-745 Electrical equipment. (1) All exposed current-carrying parts except conductors, connected to circuits above three hundred volts to ground shall be so isolated, insulated, or guarded that no employee can come in contact with them. Exposed parts less than 300 volts shall be protected in some suitable way against possible accidental contact. Exposed metallic parts of conduit armored cable or molding shall be permanently grounded.

(2) Guards for the current-carrying parts of unisolated electrical equipment, such as controllers, motors, transformers, automatic cutouts, circuit breakers, switches, and other devices shall consist of cabinets, casings, or shields of permanently grounded metal or of insulating material.

(3) All parts of electrical equipment, such as fuses and the handles and arc chutes of circuit breakers, shall be so isolated or guarded that the liability of employees being struck or burned by sparking, flashing or movement during operation is reduced to a minimum.

(4) All exposed noncurrent carrying metal parts of electrical equipment shall be permanently grounded. The ground connection through well bonded track rails will be considered satisfactory.

(5) The metallic parts of portable cranes, derricks, hoists, and similar equipment on which wires, cables, chains, or other conducting objects are maintained shall be provided with an effective protective ground, where operated in the vicinity of supply lines.

(6) Readily accessible means shall be provided whereby all conductors and equipment located in cranes can be disconnected entirely from the source of energy at a point as near as possible to the main current collectors.

(7) Means shall be provided to prevent the starting and operation of equipment by unauthorized persons.

(8) The control levers of traveling cranes shall be so located that the operator can readily face the direction of travel.

(9) A hoist limiting device shall be provided for each hoist.

(10) All fuses shall be of the enclosed arcless type. [Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81-18-029 (Order 81-21), § 296-78-745, filed 8/27/81.]

WAC 296-78-750 Chains, wire rope, cables and fiber rope. (1) Ropes, cables, slings, and chains.

(a) Safe usage. Ropes, cables, slings, and chains shall be used in accordance with safe use practices recommended by the manufacturer or within safe limits recommended by the equipment manufacturer when used in conjunction with it.

(b) Proof testing. The employer shall ensure that before use, each new, repaired, or reconditioned alloy steel chain sling, including all welded components in the sling assembly, shall be proof tested by the sling manufacturer or equivalent entity, in accordance with paragraph 5.2 of the American Society of Testing and Materials Specification A391.65 (ANSI G61.1-1968). The employer shall retain the certificate of the proof test and shall make it available for examination. When a chain sling assembly is made up of segments of proof tested alloy chain and proof tested individual components such as mechanical coupling links, hooks and similar devices; it is not necessary to test the assembled unit, when appropriate test certification of individual components is available and the assembled sling is appropriately tagged by the manufacturer or equal entity. The sling shall not be used in excess of the rated capacity of the weakest component.

(c) Slings. Slings and their fittings and fastenings, when in use, shall be inspected daily for evidence of overloading, excessive wear, or damage. Slings found to be defective shall be removed from service.

(2) Proper storage shall be provided for slings while not in use.

(3) Protection shall be provided between the sling and sharp unyielding surfaces of the load to be lifted.

(4) Hooks. No open hook shall be used in rigging to lift any load where there is hazard from relieving the tension on the hook from the load or hook catching or fouling.

(5) Ropes or cables. Wire rope or cable shall be inspected when installed and once each day thereafter, when in use. It shall be removed from hoisting or load-carrying service when kinked or when one of the following conditions exist:

(a) When three broken wires are found in one lay of 6 by 6 wire rope.

(b) When six broken wires are found in one lay of 6 by 19 wire rope.

(c) When nine broken wires are found in one lay of 6 by 37 wire rope.

(d) When eight broken wires are found in one lay of 8 by 19 wire rope.

(e) When marked corrosion appears.

(f) Wire rope of a type not described herein shall be removed from service when four percent of the total number of wires composing such rope are found to be broken in one lay.

(g) Condemned. When wire rope, slings or cables deteriorate through rust, wear, broken wires, kinking or other conditions, to the extent there is a reasonable doubt that the necessary safety factor is maintained, the use of such equipment shall be discontinued.

(6) Wire rope removed from service due to defects shall be plainly marked or identified as being unfit for further use on cranes, hoists, and other load-carrying devices.

(7) The ratio between the rope diameter and the drum, block, sheave, or pulley tread diameter shall be such that the rope will adjust itself to the bend without excessive wear, deformation, or injury. In no case shall the safe value of drums, blocks, sheaves, or pulleys be reduced when replacing such items unless compensating changes are made for rope used and for safe loading limits.

(8) Drums, sheaves, and pulleys. Drums, sheaves, and pulleys shall be smooth and free from surface defects liable to injure rope. Drums, sheaves, or pulleys having eccentric bores or cracked hubs, spokes, or flanges shall be removed from service.

(9) Connections. Connections, fittings, fastenings, and other parts used in connection with ropes and cables shall be of the quality, size and strength recommended by the manufacturer for the use intended. These connections shall be installed in accordance with the manufacturer's recommendations.

(10) Socketing, splicing, and seizing.

(a) Socketing, splicing, and seizing of cables shall be performed only by qualified persons.

(b) All eye splices shall be made in a manner recommended by the manufacturer and wire rope thimbles of proper size shall be fitted in the eye, except that in slings the use of thimbles shall be optional.

(11) Wire rope clips attached with U–bolts shall have these bolts on the dead or short end of the rope. The U–bolt nuts shall be retightened immediately after initial load carrying use and at frequent intervals thereafter. The number and spacing of clips shall be as follows:

Improved Plow Steel Diameter of Rope	Number of Clips (Drop Forged)	Required Other Material	Minimum Space Between Clips
3/8 to 5/8"	3	4	3–3/4"
3/4"	4	5	4–1/2"
7/8"	4	5	5–1/4"
1 "	5	6	6 "
1–1/8"	6	6	6–3/4"
1–1/4"	6	7	7–1/2"
1–3/8"	7	7	8–1/4"
1–1/2"	7	8	9 "

(a) When a wedge socket–type fastening is used, the dead or short end of the cable shall be clipped with a U–bolt or otherwise made secure against loosening.

(b) Fittings. Hooks, shackles, rings, pad eyes, and other fittings that show excessive wear or that have been bent, twisted, or otherwise damaged shall be removed from service.

(12) Running lines. Running lines of hoisting equipment located within six feet six inches of the ground or working level shall be boxed off or otherwise guarded, or the operating area shall be restricted.

(13) Preventing abrasion. The reeving of a rope shall be so arranged as to minimize chafing or abrading while in use.

(14) Sheave guards. Bottom sheaves shall be protected by close fitting guards to prevent cable from jumping the sheave.

(15) There shall be not less than two full wraps of hoisting cable on the drums of cranes and hoists at all times of operation.

(16) Where the cables are allowed to pile on the drums of cranes, the drums shall have a flange at each end to prevent the cables from slipping off the drum.

(17) Chains. Chains used in load carrying service shall be inspected before initial use and weekly thereafter.

If at any time any three–foot length of chain is found to have stretched one–third the length of a link it shall be discarded.

(18) Chains shall be spliced in compliance with the requirements of the general safety and health standard, WAC 296–24–29413.

(19) Wherever annealing of chains is attempted, it shall be done in properly equipped annealing furnaces and under the direct supervision of a competent person thoroughly versed in heat treating.

Chain shall be normalized or annealed periodically as recommended by the manufacturer.

(20) Fiber rope.

(a) Frozen fiber rope shall not be used in load carrying service.

(b) Fiber rope that has been subjected to acid shall not be used for load carrying purposes.

(c) Fiber rope shall be protected from abrasion by padding where it is fastened or drawn over square corners or sharp or rough surfaces. [Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81–18–029 (Order 81–21), § 296–78–750, filed 8/27/81.]

WAC 296–78–755 Natural and synthetic fiber rope slings. (1) Sling use.

(a) Fiber rope slings made from conventional three strand construction fiber rope shall not be used with loads in excess of the rated capacities prescribed in Tables D–16 through D–19 of Part "D" of the general safety and health standards, chapter 296–24 WAC.

(b) Slings not included in these tables shall be used only in accordance with the manufacturer's recommendations.

(2) Safe operating temperatures. Natural and synthetic fiber rope slings, except for wet frozen slings, may be used in a temperature range from minus 20°F to plus 180°F without decreasing the working load limit. For operations outside this temperature range and for wet frozen slings, the sling manufacturer's recommendations shall be followed.

(3) Splicing. Spliced fiber rope slings shall not be used unless they have been spliced in accordance with the following minimum requirements and in accordance with any additional recommendations of the manufacturer:

(a) In manila rope, eye splices shall consist of at least three full tucks, and short splices shall consist of at least six full tucks, three on each side of the splice center line.

(b) In synthetic fiber rope, eye splices shall consist of at least four full tucks, and short splices shall consist of at least eight full tucks, four on each side of the center line.

(c) Strand end tails shall not be trimmed flush with the surface of the rope immediately adjacent to the full tucks. This applies to all types of fiber rope and both eye and short splices. For fiber rope under one inch in diameter, the tail shall project at least six rope diameters beyond the last full tuck. For fiber rope one inch in diameter and larger, the tail shall project at least six inches beyond the last full tuck. Where a projecting tail interferes with the use of the sling, the tail shall be tapered and spliced into the body of the rope using at least two additional tucks (which will require a tail length of approximately six rope diameters beyond the last full tuck).

(d) Fiber rope slings shall have a minimum clear length of rope between eye splices equal to ten times the rope diameter.

(e) Knots shall not be used in lieu of splices.

(f) Clamps not designed specifically for fiber ropes shall not be used for splicing.

(g) For all eye splices, the eye shall be of such size to provide an included angle of not greater than sixty degrees at the splice when the eye is placed over the load or support.

(4) End attachments. Fiber rope slings shall not be used if end attachments in contact with the rope have sharp edges or projections.

(5) Removal from service. Natural and synthetic fiber rope slings shall be immediately removed from service if any of the following conditions are present:

(a) Abnormal wear.

(b) Powdered fiber between strands.

(c) Broken or cut fibers.

(d) Variations in the size or roundness of strands.

(e) Discoloration or rotting.

(f) Distortion of hardware in the sling.

(6) Repairs. Only fiber rope slings made from new rope shall be used. Use of repaired or reconditioned fiber rope slings is prohibited. [Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81-18-029 (Order 81-21), § 296-78-755, filed 8/27/81.]

WAC 296-78-760 Synthetic web slings. (1) Sling identification. Each sling shall be marked or coded to show the rated capacities for each type of hitch and type of synthetic web material.

(2) Webbing. Synthetic webbing shall be of uniform thickness and width and selvage edges shall not be split from the webbing's width.

(3) Fittings. Fittings shall be:

(a) Of a minimum breaking strength equal to that of the sling; and

(b) Free of all sharp edges that could in any way damage the webbing.

(4) Attachment of end fittings to webbing and formation of eyes. Stitching shall be the only method used to attach end fittings to webbing and to form eyes. The thread shall be in an even pattern and contain a sufficient number of stitches to develop the full breaking strength of the sling.

(5) Sling use. Synthetic web slings illustrated in Figure D-6 shall not be used with loads in excess of the rated capacities specified in Tables D-20 through D-22. Slings not included in these tables shall be used only in accordance with the manufacturer's recommendations.

(6) Environmental conditions. When synthetic web slings are used, the following precautions shall be taken:

(a) Nylon web slings shall not be used where fumes, vapors, sprays, mists or liquids of acids or phenolics are present.

(b) Polyester and polypropylene web slings shall not be used where fumes, vapors, sprays, mists or liquids of caustics are present.

(c) Web slings with aluminum fittings shall not be used where fumes, vapors, sprays, mists or liquids of caustics are present.

(7) Safe operating temperatures. Synthetic web slings of polyester and nylon shall not be used at temperatures in excess of 180°F. Polypropylene web slings shall not be used at temperatures in excess of 200°F.

(8) Repairs.

(a) Synthetic web slings which are repaired shall not be used unless repaired by a sling manufacturer or an equivalent entity.

(b) Each repaired sling shall be proof tested by the manufacturer or equivalent entity to twice the rated capacity prior to its return to service. The employer shall retain a certificate of the proof test and make it available for examination.

(c) Slings, including webbing and fittings, which have been repaired in a temporary manner shall not be used.

(9) Removal from service. Synthetic web slings shall be immediately removed from service if any of the following conditions are present:

(a) Acid or caustic burns;

(b) Melting or charring of any part of the sling surface;

(c) Snags, punctures, tears or cuts;

(d) Broken or worn stitches; or

(e) Distortion of fittings. [Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81-18-029 (Order 81-21), § 296-78-760, filed 8/27/81.]

WAC 296-78-765 Floor operated cranes. (1) An unobstructed aisle not less than three feet wide shall be maintained for travel of the operator except in such cases where the control handles are hung from the trolleys of traveling cranes.

(2) The controller or controllers, if rope operated, shall automatically return to the "off" position when released by the operator.

(3) Pushbuttons, in pendant stations, shall return to the "off" position when pressure is released by the crane operator.

(4) All pushbuttons shall be marked to indicate their purpose. [Statutory Authority: RCW 49.17.040, 49.17-.050 and 49.17.240. 81-18-029 (Order 81-21), § 296-78-765, filed 8/27/81.]

WAC 296-78-770 Operators. (1) Cranes shall be operated only by regular crane operators, authorized substitutes who have had adequate experience and training under the supervision of a competent operator, or by crane repair person or inspectors.

(2) No person under the age of eighteen years shall be permitted to operate a crane.

(3) Operators shall be required to pass a practical examination limited to the specific type of equipment to be operated. Operators shall meet the following physical qualifications:

(a) Have vision of at least 20/30 Snellen in one eye, and 20/50 in the other, with or without corrective lenses.

(b) Be able to distinguish red, green, and yellow, regardless of position of colors, if color differentiation is required for operation.

(c) Hearing, with or without hearing aid, must be adequate for the specific operation.

(d) A history of epilepsy or an uncorrected disabling heart condition shall be cause for a doctor decision to determine qualifications to operate a crane.

(4) Hands shall be kept free when going up and down ladders. Articles which are too large to go into pockets or belts shall be lifted to or lowered from the crane by hand line. (Except where stairways are provided.)

(5) Cages shall be kept free of clothing and other personal belongings. Tools, extra fuses, oil cans, waste and other articles necessary in the crane cage shall be

stored in a tool box and not left loose on or about the crane.

(6) The operator shall familiarize himself fully with all crane rules and with the crane mechanism and its proper care. If adjustments or repairs are necessary, he shall report the same at once to the proper authority.

(7) The operator shall not eat, smoke or read while actually engaged in the operation of the crane.

(8) The operator or someone especially designated shall lubricate all working parts of the crane.

(9) Cranes shall be examined for loose parts or defects each day on which they are in use.

(10) Sawdust, oil or other debris shall not be allowed to accumulate to create a fire, health or slipping hazard.

(11) Operators shall avoid, as far as possible, carrying loads over workers. Loads shall not be carried over employees without sounding an audible warning alarm.

(12) Whenever the operator finds the main or emergency switch open, he shall not close it, even when starting on regular duty, until he has made sure that no one is on or about the crane. He shall not oil or repair the crane unless the main switch is open.

(13) If the power goes off, the operator shall immediately throw all controllers to "off" position until the power is again available.

(14) Before closing the main switch the operator shall make sure that all controllers are in "off" position until the power is again available.

(15) The operator shall pay special attention to the block, when long hitches are made, to avoid tripping the limit switch.

(16) The operator shall recognize signals only from the person who is supervising the lift except for emergency stop signals. Operating signals shall follow established standard crane signals as illustrated in WAC 296-78-830 of this chapter. Whistle signals may be used where one crane only is in operation. Cranes shall have audible warning device which shall be sounded in event of emergency.

(17) Before starting to hoist, the operator shall place the trolley directly over the load to avoid swinging it when being hoisted.

(18) The operator shall not make side pulls with the crane except when especially instructed to do so by the proper authority.

(19) When handling maximum loads, the operator shall test the hoist brakes after the load has been lifted a few inches. If the brakes do not hold, the load shall be lowered at once and the brakes adjusted or repaired.

(20) Bumping into runway stops or other cranes shall be avoided. When the operator is ordered to engage with or push other cranes, he shall do so with special care for the safety of persons on or below cranes.

(21) When lowering a load, the operator shall proceed carefully and make sure that he has the load under safe control.

(22) When leaving the cage the operator shall throw all controllers to "off" position and open the main switch.

(23) If the crane is located out of doors the operator shall lock the crane in a secure position to prevent it from being blown along or off the track by a severe wind.

(24) Railroad cars shall not be pulled along the tracks with sidepulls on an overhead crane.

(25) Operators shall not move the crane or a load unless floor signals are clearly understood.

(26) The rated lifting capacity of a crane shall not be exceeded. If any doubt exists about the weight of a load which might exceed the rated capacity, the foreman in charge must be contacted before any attempt is made to lift the load. The foreman shall determine that the load is within the rated capacity of the crane or the load shall not be lifted.

(27) Crane operators and floorpersons shall coordinate their activities on every lift or movement of the crane. Both the operator and signalperson shall clearly understand any problem a movement might create with regard to surrounding materials, structures, equipment or personnel. [Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81-18-029 (Order 81-21), § 296-78-770, filed 8/27/81.]

WAC 296-78-775 Signalpersons. (1) Signalpersons shall give all the signals to the operator in accordance with established standard signals as illustrated in WAC 296-78-830 of this chapter.

(2) A designated person shall be responsible for the condition and use of all hoisting accessories and for all hitches.

(3) Before an operator moves a crane upon which an empty chain or cable sling is hanging, both ends of the sling shall be placed on the hook.

(4) Signalpersons, where necessary, shall walk ahead of the moving load and warn people to keep clear of it. They shall see that the load is carried high enough to clear all obstructions.

(5) Signalpersons shall notify the person in charge in advance when an extra heavy load is to be handled.

(6) No person shall be permitted to stand or pass under an electric magnet in use.

(7) The electrical circuit for electric magnets shall be maintained in good condition. Means for taking up the slack cable shall be provided. [Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81-18-029 (Order 81-21), § 296-78-775, filed 8/27/81.]

WAC 296-78-780 Repairpersons. (1) When repairs are necessary, repairpersons shall have the crane run to a location where the repair work will least interfere with the other cranes and with operations on the floor.

(2) Before starting repairs, repairpersons shall see that all controllers are thrown to the "off" position, and that main or emergency switches are opened; one of these shall be locked out in compliance with WAC 296-78-715(11) of this chapter.

(3) Repairpersons shall immediately place warning signs or "Out of Order" signs on a crane to be repaired and also on the floor beneath or hanging from the crane so that it can easily be seen from the floor. If other cranes are operated on the same runway, repairpersons

shall also place rail stops at a safe distance or make other safe provisions.

(4) When repairing runways, repairpersons shall place rail stops and warning signs or signals so as to protect both ends of the section to be repaired.

(5) Repairpersons shall take care to prevent loose parts from falling or being thrown upon the floor beneath.

(6) Repairs shall not be considered complete until all guards and safety devices have been put in place and the block and tackle and other loose material have been removed. [Statutory Authority: RCW 49.17.040, 49.17-.050 and 49.17.240. 81-18-029 (Order 81-21), § 296-78-780, filed 8/27/81.]

WAC 296-78-785 Construction requirements. (1) Calculations for wind pressure on outside overhead traveling cranes shall be based on not less than 30 pounds per square foot of exposed surface.

(2) No overhung gears shall be used unless provided with an effective means of keeping them in place, and keys shall be secured to prevent gears working loose.

Safety lugs or brackets shall be provided on the trolley frames and bridge ends of overhead traveling cranes, so that in the event of a broken axle or wheel the trolley or bridge proper will not have a drop greater than one inch.

(3) Where there are no members over an outside overhead crane suitable for attaching blocks for repair work, and a locomotive crane is not available, a structural steel outrigger of sufficient strength to lift the heaviest part of the trolley shall be provided.

(4) Outside overhead traveling cranes shall be equipped with wind indicators and rail clamps as required by the general safety and health standards, WAC 296-24-23503.

(5) Foot brakes, or other effective means shall be provided to control the bridge travel of all overhead traveling cranes. [Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81-18-029 (Order 81-21), § 296-78-785, filed 8/27/81.]

WAC 296-78-790 Crane platforms and footwalks. (1) Platforms shall be provided when changing and repairing truck wheels on end trucks.

(2) A platform or footwalk shall be located on crane or crane runway to give access to the crane cage, and it shall be accessible from one or more stairways or fixed ladders. This platform or footwalk shall be not less than eighteen inches in width.

(3) Where stairways are used to give access to platforms they shall make an angle of not more than fifty degrees with the horizontal and shall be equipped with substantial railing. If ladders are used to give access to platforms they shall extend not less than thirty-six inches above the platform. Railed stairways or ladders to be used as a means of ingress and egress to crane cages shall be located at either or both ends.

(4) A footwalk shall be placed along the entire length of the bridge on the motor side, and a short platform twice the length of the trolley placed at one end of the girder on the opposite side, with a vertical clearance of a least six feet six inches where the design of crane or building permits, but in no case shall there be less than four feet clearance. For hand operated cranes the footwalk shall not be required to be installed on the bridge of the crane, but there shall be a repair platform equal in strength and design to that required for motor operated cranes, installed on the wall of the building or supported by the crane runway at a height equal to the lower edge of the bridge girder to facilitate necessary repairs.

(5) Clear width of footwalks shall not be less than eighteen inches except around the bridge motor where it may be reduced to fifteen inches.

(6) Footwalks shall be of substantial construction and rigidly braced. Footwalks for outside service shall be constructed so as to provide proper drainage, but the cracks between the boards shall not be wider than one-fourth inch.

(7) Every footwalk shall have a standard railing and toeboard at all exposed edges. Railings and toeboards shall conform in construction and design with the following requirements:

(a) Railings shall be not less than thirty-six inches nor more than forty-two inches in height, with an additional rail midway between the top rail and the floor.

(b) Pipe railings shall be not less than one and one-fourth inch inside diameter if of iron or be not less than one and one-half inches outside diameter if of brass tubing.

(c) Metal rails other than pipe shall be at least equal in strength to that of one and one-half by three-sixteenths inch angle and shall be supported by uprights of equal strength.

(d) Posts or uprights shall be spaced not more than eight feet center to center.

(e) Toeboards shall be not less than four inches in height.

(f) Toeboards shall be constructed in a permanent and substantial manner of metal, wood, or other material equivalent thereto in strength. Where of wood, toeboards shall be at least equal in cross section to one inch by four inches; where of steel at least one-eighth inch by four inches; where of other construction at least equal to the requirements for steel. Perforations up to one-half inch are permissible in metal toeboards.

(8) No openings shall be permitted between the bridge footwalk and the crane girders. Where wire mesh is used to fill this opening the mesh openings shall be not greater than one-half inch.

(9) All footwalks and platforms shall be so designed as to be capable of sustaining a concentrated load of one hundred pounds per lineal foot. [Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81-18-029 (Order 81-21), § 296-78-790, filed 8/27/81.]

WAC 296-78-795 Crane cages. (1) Safe means of escape shall be provided for operators of all cranes in all operating locations. Rope ladders shall not be used as a regular means of access but may be installed as an emergency escape device to be used in the event of fire, mechanical breakdown or other emergency.

(2) The operator's cage shall be located at a place from which signals can be clearly distinguishable, and shall be securely fastened in a place and well braced to minimize vibration. It shall be large enough to allow ample room for the control equipment and the operator. The operator shall not be required to step over an open space of more than eighteen inches when entering the cage.

(3) Cab operated cranes shall be equipped with a portable fire extinguisher which meets the requirements of the general safety and health standard, WAC 296-24-590 through 296-24-59007.

(4) In establishments where continuous loud noises prevail such as caused by the operation of pneumatic tools, steam exhausts from boilers, etc., adequate signals shall be installed on cranes or one or more employees shall be placed on the floor for each crane operated to give warning to other employees of the approach of a crane with a load. Where there are more than two cranes on the same runway or within the same building structure, signaling devices are required to give warning to other employees of the approach of a crane with a load.

(5) Cages of cranes subjected to heat from below shall be of noncombustible construction and shall have a steel plate shield not less than one-eighth inch thick, placed not less than six inches below the bottom of the floor of the cage.

(6) Outside crane cages shall be enclosed. There shall be windows on three sides of the cage. The windows in the front and the side opposite the door shall be the full width of the cage.

(7) The floor of the cage on out-door cranes shall be extended to form an entrance landing which shall be equipped with a handrail and toeboard constructed to the specifications of WAC 296-78-790 of this chapter.

(8) A copy of the rules for operators shall be permanently posted in the cages of all cage-operated cranes. [Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81-18-029 (Order 81-21), § 296-78-795, filed 8/27/81.]

WAC 296-78-800 Crane rail stops, bumpers and fenders. (1) Rail stops shall be provided at both ends of the crane runway and at ends of the crane bridge. When two trolleys are operated on the same bridge rails, bumpers shall be provided to prevent collision of trolleys.

(2) Bumpers and rail stops shall extend at least as high as the centers of the wheel.

(3) Rail stops shall be fastened to the girders or girders and rails, but not to the rails alone. This does not apply to portable rail stops. Portable rail stops shall not be used as permanent rail stops.

(4) Rail stops shall be built up of plates and angles or be made of cast steel.

(5) Fenders shall be installed which extend below the lowest point of the treads of gantry type crane wheels. They shall be f a shape and form that will tend to push or raise an employee's hand, arm or leg off the rail and away from the wheel. [Statutory Authority: RCW 49-.17.040, 49.17.050 and 49.17.240. 81-18-029 (Order 81-21), § 296-78-800, filed 8/27/81.]

WAC 296-78-805 Crawler locomotive and truck cranes. Crawler locomotive and truck cranes shall be constructed, maintained, inspected and operated in accordance with the provisions of WAC 296-24-240 through 296-24-24019 of the general safety and health standards. [Statutory Authority: RCW 49.17.040, 49-.17.050 and 49.17.240. 81-18-029 (Order 81-21), § 296-78-805, filed 8/27/81.]

WAC 296-78-810 Chain and electric hoists. (1) Chain and electric hoists shall be of what is known as "all steel construction." No cast iron shall be used in parts subject to tension except drums, bearings or brake shoes.

(2) The chains shall be made of the best quality steel or iron with welded links.

(3) Chain and electric hoists shall have a factor of safety of at least five.

(4) Chain and electric hoists shall be equipped with a device which will automatically lock the load when hoisting is stopped.

(5) Electric hoists shall be provided with a limit stop to prevent the hoist block from traveling too far in case the operating handle is not released in time.

(6) Workers shall not ride the load of any chain or electric hoist. If necessary to balance the load manually, it shall be done from a safe distance.

(7) The rated capacity of the hoist shall be posted on both the hoist and the jib or rail. [Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81-18-029 (Order 81-21), § 296-78-810, filed 8/27/81.]

WAC 296-78-815 Monorail hoists. (1) No attempt shall be made with a monorail hoist to lift or move an object by a side pull, unless designed for that purpose.

(2) A stop shall be provided at all switches and turntables which will prevent the trolley from running off should the switch be turned or be left in the open position.

(3) All monorail hoists operating on swivels shall be equipped with one or more safety catches which will support the load should a suspension pin fail. All trolley frames shall be safeguarded against spreading.

(4) Rail stops shall be provided at the ends of crane runways. Such rail stops shall extend at least as high as the centers of the wheels.

(5) All monorail hoists shall have the rated capacity posted on both the hoist and the rail. [Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81-18-029 (Order 81-21), § 296-78-815, filed 8/27/81.]

WAC 296-78-820 Air hoists. (1) To prevent piston rod lock nuts from becoming loose and allowing rod to drop when supporting a load, lock nut shall be secured to piston rod by a castellated nut and cotter-pin.

(2) A clevis, "D" Strap or other means shall be used to prevent the hoist cylinder becoming detached from the hanger.

(3) All air hoists shall have their rated capacity posted on both the hoist and the jib or rail. [Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81-18-029 (Order 81-21), § 296-78-820, filed 8/27/81.]

WAC 296-78-825 Jib, pillar, and portable floor cranes, crabs, and winches. (1) Side pulls shall not be made with jib or pillar cranes. The arm or boom shall be directly over the load when making a lift.

(2) The gears of all cranes shall be enclosed, and if hand operated by means of a crab or winch, a locking dog shall be provided to hold load when the handle is released.

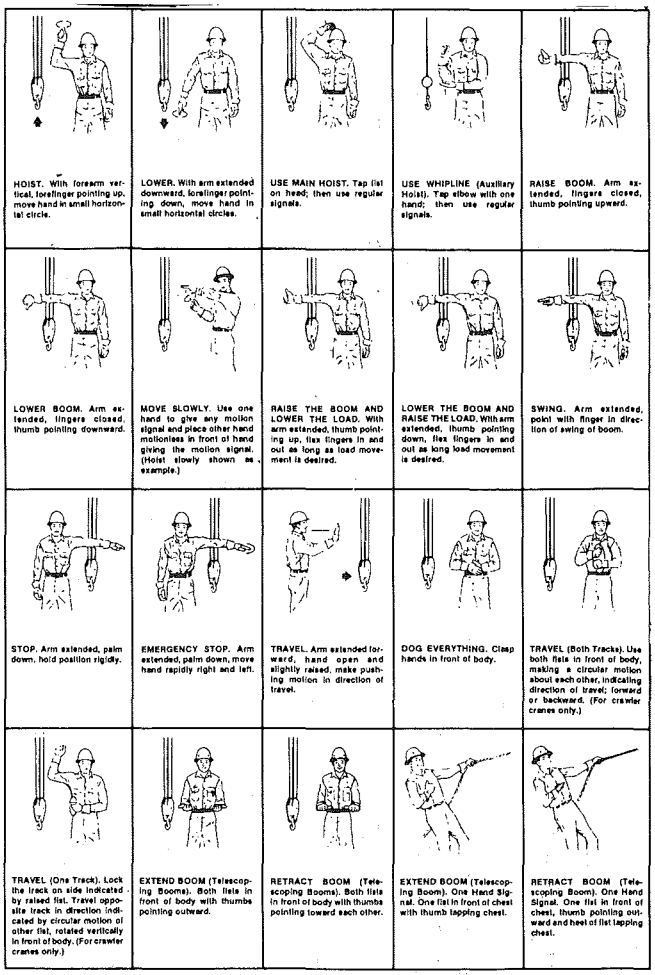
(3) Some form of brake or safety lowering device shall be provided on all crabs, winches, and jib cranes.

(4) A hoist limiting device shall be provided on all jib cranes of ten or more tons capacity.

(5) The rated capacity of the hoisting device shall be posted on the hoist and the arm or boom. [Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81-18-029 (Order 81-21), § 296-78-825, filed 8/27/81.]

WAC 296-78-830 Standard crane hand signals--Illustrations. (1) The following hand signals shall be used for crawler, locomotive, and truck cranes and a copy shall be posted in the cab at the operator's station.

CRAWLER, LOCOMOTIVE, AND TRUCK CRANES



HOIST. With forearm vertical, forefinger pointing up, move hand in small horizontal circle.

LOWER. With arm extended downward, forefinger pointing down, move hand in small horizontal circles.

USE MAIN HOIST. Tap fist on head; then use regular signals.

USE WHIPLINE (Auxiliary Hoist). Tap elbow with one hand; then use regular signals.

RAISE BOOM. Arm extended, fingers closed, thumb pointing upward.

LOWER BOOM. Arm extended, fingers closed, thumb pointing downward.

MOVE SLOWLY. Use one hand to give any motion signal and place other hand motionless in front of hand giving the motion signal. (Hoist slowly shown as example.)

RAISE THE BOOM AND LOWER THE LOAD. With arm extended, thumb pointing up, flex fingers in and out as long as load movement is desired.

LOWER THE BOOM AND RAISE THE LOAD. With arm extended, thumb pointing down, flex fingers in and out as long load movement is desired.

SWING. Arm extended, point with finger in direction of swing of boom.

STOP. Arm extended, palm down, hold position rigidly.

EMERGENCY STOP. Arm extended, palm down, move hand rapidly right and left.

TRAVEL. Arm extended forward, hand open and slightly raised, make pushing motion in direction of travel.

DOG EVERYTHING. Clasp hands in front of body.

TRAVEL (Both Tracks). Use both fists in front of body, making a circular motion about each other, indicating direction of travel; forward or backward. (For crawler cranes only.)

TRAVEL (One Track). Lock the track on side indicated by raised fist. Travel opposite track in direction indicated by circular motion of other fist, rotated vertically in front of body. (For crawler cranes only.)

EXTEND BOOM (Telescoping Booms). Both fists in front of body with thumbs pointing outward.

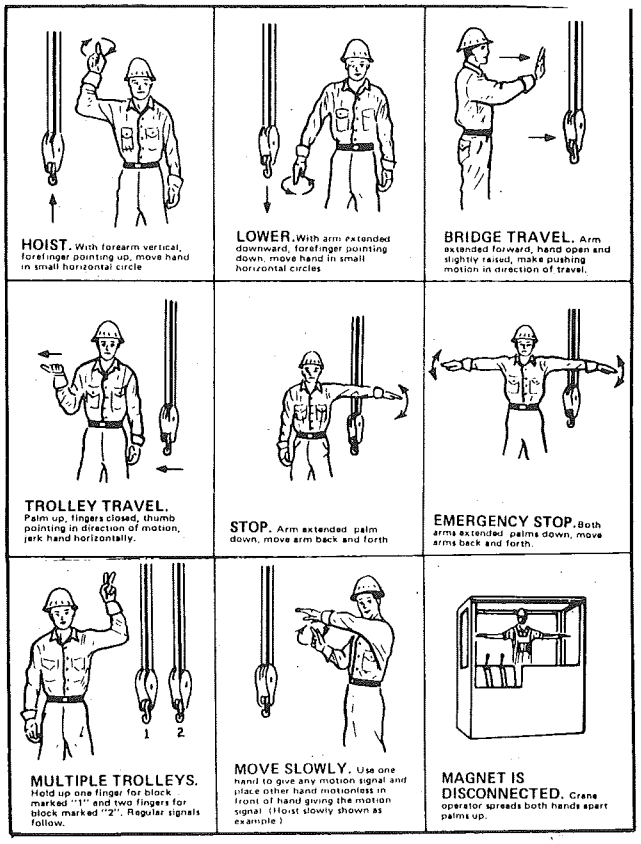
RETRACT BOOM (Telescoping Booms). Both fists in front of body with thumbs pointing toward each other.

EXTEND BOOM (Telescoping Boom). One Hand Signal. One fist in front of chest with thumb tapping chest.

RETRACT BOOM (Telescoping Boom). One Hand Signal. One fist in front of chest, thumb pointing outward and heel of fist tapping chest.

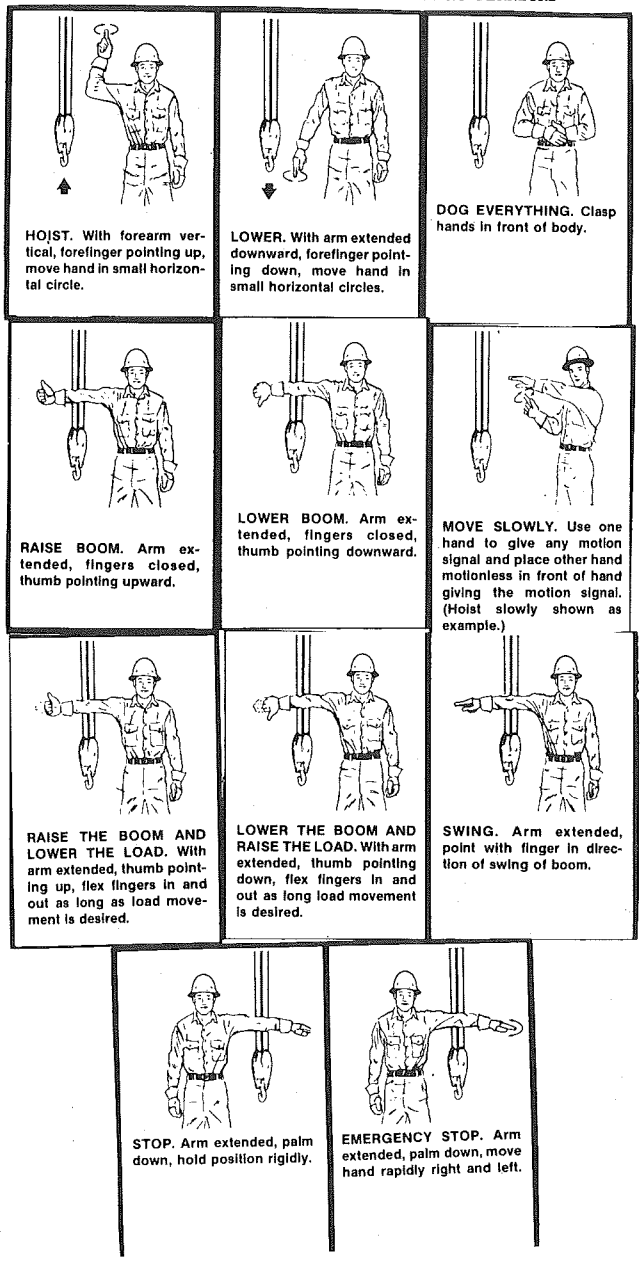
(2) The following hand signals shall be used for overhead and gantry cranes and a copy shall be posted in the cab at the operator's station.

STANDARD HAND SIGNALS FOR CONTROLLING OVERHEAD AND GANTRY CRANES



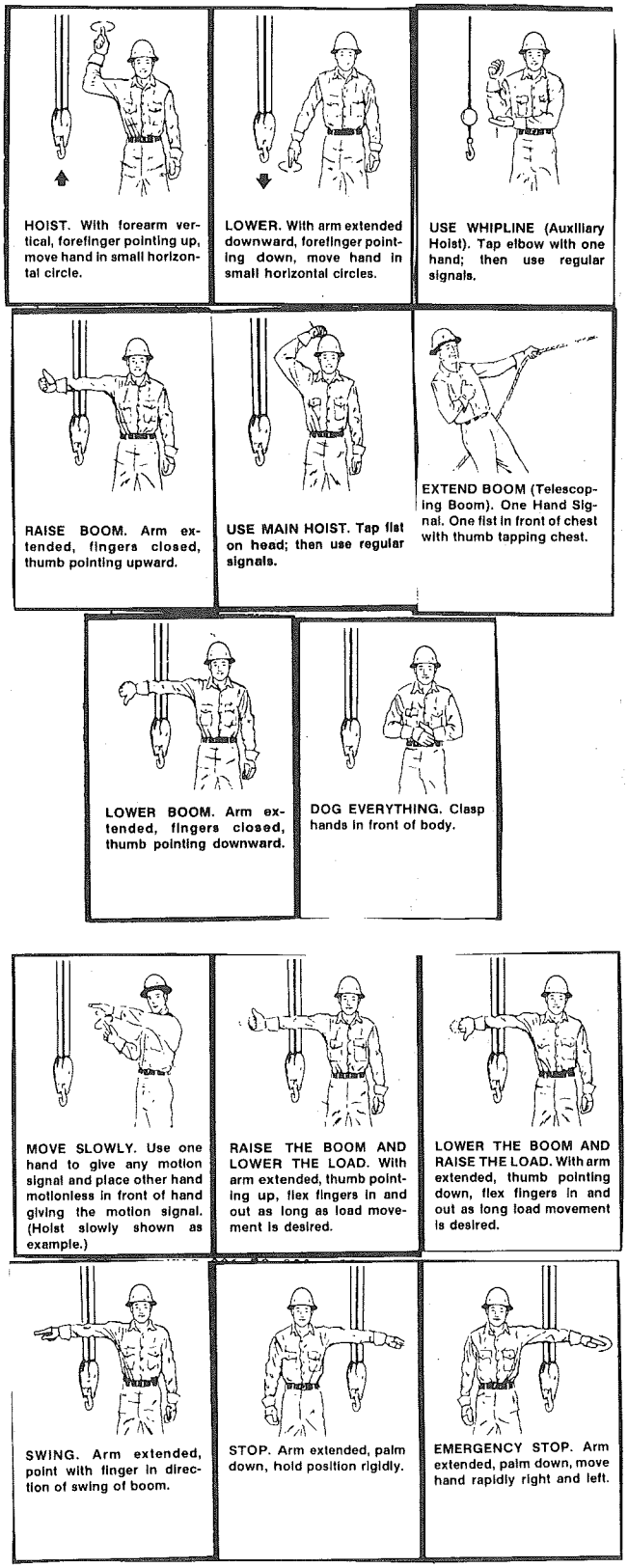
(3) The following hand signals shall be used for derricks and a copy shall be posted in the cab at the operator's station.

STANDARD HAND SIGNALS FOR CONTROLLING DERRICKS



(4) The following hand signals shall be used for portal, tower, and pillar cranes and a copy shall be posted in the cab at the operator's station.

STANDARD HAND SIGNALS FOR CONTROLLING PORTAL, TOWER AND PILLAR CRANES



[Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81-18-029 (Order 81-21), § 296-78-830, filed 8/27/81.]

WAC 296-78-835 Vehicles. (1) Vehicles.

(a) Scope. Vehicles shall include all mobile equipment normally used in sawmill, planing mill, storage, shipping, and yard operations, including log sorting yards.

(b) Lift trucks. Lift truck shall be designed, constructed, maintained and operated in accordance with the requirements of WAC 296-24-230 through 296-24-23035 of the general safety and health standards.

(c) Carriers. Drive chains on lumber carriers shall be adequately guarded to prevent contact at the pinch points.

(d)(i) Lumber carriers shall be so designed and constructed that the operator's field of vision shall not be unnecessarily restricted.

(ii) Carriers shall be provided with ladders or equivalent means of access to the operator's platform or cab.

(e) Lumber hauling trucks.

(i) On trucks where the normal operating position is ahead of the load in the direction of travel, the cab shall be protected by a barrier at least as high as the cab. The barrier shall be capable of stopping the weight of the load capacity of the vehicle if the vehicle were to be stopped suddenly while traveling at its normal operating speed. The barrier shall be constructed in such a manner that individual pieces of a normal load will not go through openings in the barrier.

(ii) Stakes, stake pockets, racks, tighteners, and binders shall provide a positive means to secure the load against any movement during transit.

(iii) Where rollers are used, at least two shall be equipped with locks which shall be locked when supporting loads during transit.

(2) All vehicles used in a sawmill, lumber yard, factory or other establishment shall be equipped with audible warning signals that shall be maintained in good order at all times.

(3) Flywheels, gears, sprockets and chains and other exposed parts that constitute a hazard to workers shall be enclosed in standard guards.

(4) All vehicles operated after dark or in any area of reduced visibility shall be equipped with head lights which adequately illuminate the direction of travel for the normal operating speed of the vehicle. The vehicle shall also be equipped with tail lights which are visible enough to give sufficient warning to surrounding traffic at the normal traffic operating speed.

(5) All vehicles operated in areas where overhead hazards exist shall be equipped with an overhead guard for the protection of the operator.

(6) Where vehicles are so constructed and operated that there is a possibility of the operator being injured by backing into objects, a platform guard shall be provided and so arranged as not to hinder the exit of the driver.

(7) Trucks, lift trucks and carriers shall not be operated at excessive rates of speed. When operating on tramways or docks more than six feet above the ground

or lower level they shall be limited to a speed of not more than twelve miles per hour. When approaching blind corners they shall be limited to four miles per hour.

(8) Vehicles shall not be routed across principal thoroughfares while employees are going to or from work unless pedestrian lanes are provided.

(a) Railroad tracks and other hazardous crossings shall be plainly posted and traffic control devices (American National Standard D8.1 – 1967 for Railroad–Highway Grade Crossing Protection) should be utilized.

(b) Restricted overhead clearance. All areas of restricted side or overhead clearance shall be plainly marked.

(c) Pickup and unloading points. Pickup and unloading points and paths for lumber packages on conveyors and transfers and other areas where accurate spotting is required, shall be plainly marked and wheel stops provided where necessary.

(d) Aisles, passageways, and roadways. Aisles, passageways, and roadways shall be sufficiently wide to provide safe side clearance. One–way aisles may be used for two–way traffic if suitable turnouts are provided.

(9) Where an operator's vision is impaired by the vehicle or load it is carrying, he shall move only on signal from someone so stationed as to have a clear view in the direction the vehicle is to travel.

(10) Lift trucks shall be equipped, maintained and operated in compliance with the requirements of the general safety and health standard, WAC 296–24–230 through 296–24–23035.

(11) Load limits. No vehicle shall be operated with loads exceeding its safe load capacity.

(12) Vehicles with internal combustion engines shall not be operated in enclosed buildings or buildings with ceilings less than sixteen feet high unless the buildings have ventilation adequate to maintain air quality as required by the general occupational health standard, chapter 296–62 WAC.

(13) Vehicles shall not be refueled while motor is running. Smoking or open flames shall not be allowed in the refueling area.

(14) No employee other than trained operators or mechanics shall start the motor of, or operate any log or lumber handling vehicle.

(15) All vehicles shall be equipped with brakes capable of holding and controlling the vehicle and capacity load upon any grade or incline over which they may operate.

(16) Unloading equipment and facilities.

(a) Machines used for hoisting, unloading, or lowering logs shall be equipped with brakes capable of controlling or holding the maximum load in midair.

(b) The lifting cylinders of all hydraulically operated log handling machines, where the load is lifted by wire rope, shall be equipped with a positive device for preventing the uncontrolled lowering of the load or forks in case of a failure in the hydraulic system.

(c) A limit switch shall be installed on powered log handling machines to prevent the lift arms from traveling too far in the event the control switch is not released in time.

(d) When forklift–type machines are used to load trailers, a means of securing the loading attachment to the fork shall be installed and used.

(e) A–frames and similar log unloading devices shall have adequate height to provide safe clearance for swinging loads and to provide for adequate crotch lines and spreader bar devices.

(f) Log handling machines used to stack logs or lift loads above operator's head shall be equipped with overhead protection.

(g) Unloading devices shall be equipped with a horn or other plainly audible signaling device.

(h) Movement of unloading equipment shall be coordinated by audible or hand signals when operator's vision is impaired or operating in the vicinity of other employees.

Lift trucks regularly used for transporting peeler blocks or cores shall have tusks or a similar type hold down device to prevent the blocks or cores from rolling off the forks.

(17) Where spinners are used on steering wheels, they shall be of the automatic retracting type or shall be built into the wheel in such a manner as not to extend above the plane surface of the wheel. Vehicles equipped with positive antikickback steering are exempted from this requirement.

(18) Mechanical stackers and unstackers shall have all gears, sprockets and chains exposed to the contact of workers, fully enclosed by guards as required by WAC 296–78–710 of this chapter.

(19) Manually operated control switches shall be properly identified and so located as to be readily accessible to the operator. Main control switches shall be so designed that they can be locked in the open position.

(20) Employees shall not stand or walk under loads being lifted or moved. Means shall be provided to positively block the hoisting platform when employees must go beneath the stacker or unstacker hoist.

(21) No person shall ride any lift truck or lumber carrier unless a suitable seat is provided, except for training purposes.

(22) Unstacking machines shall be provided with a stopping device which shall at all times be accessible to at least one employee working on the machine.

(23) Floor of unstacker shall be kept free of broken stickers and other debris. A bin or frame shall be provided to allow for an orderly storage of stickers.

(24) Drags or other approved devices shall be provided to prevent lumber from running down on graders.

(25) Liquified petroleum gas storage and handling. Storage and handling of liquified petroleum gas shall be in accordance with the requirements of WAC 296–24–475 through 296–24–47517 of the general safety and health standards.

(26) Flammable liquids. Flammable liquids shall be stored and handled in accordance with WAC 296–24–

330 through 296-24-33019 of the general safety and health standards.

(27) Guarding side openings. The hoistway side openings at the top level of the stacker and unstacker shall be protected by enclosures of standard railings.

(28) Guarding hoistway openings. When the hoist platform or top of the load is below the working platform, the hoistway openings shall be guarded.

(29) Guarding lower landing area. The lower landing area of stackers and unstackers shall be guarded by enclosures that prevent entrance to the area or pit below the hoist platform. Entrances should be protected by electrically interlocked gates which, when open, will disconnect the power and set the hoist brakes. When the interlock is not installed, other positive means of protecting the entrance shall be provided.

(30) Lumber lifting devices. Lumber lifting devices on all stackers shall be designed and arranged so as to minimize the possibility of lumber falling from such devices.

(31) Inspection. At the start of each work shift, equipment operators shall inspect the equipment they will use for evidence of failure or incipient failure. Equipment found to have defects which might affect the operating safety shall not be used until the defects are corrected.

(32) Cleaning pits. Safe means of entrance and exit shall be provided to permit cleaning of pits.

(33) Preventing entry to hazardous area. Where the return of trucks from unstacker to stacker is by mechanical power or gravity, adequate signs, warning devices, or barriers shall be erected to prevent entry into the hazardous area. [Statutory Authority: RCW 49.17-.040, 49.17.050 and 49.17.240. 81-18-029 (Order 81-21), § 296-78-835, filed 8/27/81.]

WAC 296-78-840 Loading, piling, storage and conveying. [Statutory Authority: RCW 49.17.040, 49.17-.050 and 49.17.240. 81-18-029 (Order 81-21), § 296-78-840, filed 8/27/81.]

WAC 296-78-84001 Loading, piling, storage and conveying--General. (1) Units or loads of lumber built up for transportation by overhead cranes, lift trucks, auto trucks, or manually or mechanically operated transfers shall be provided with at least one set of stickers for each eighteen inches in height of unit or load. One set of stickers shall be not more than six inches from the top of units of lumber up to three inch dimension. Where dimension of material is greater than three inches, a set of stickers shall be placed under the top layer. Stickers shall extend the full width of the package, shall be uniformly spaced, and shall be aligned one above the other. Stickers may be lapped with a minimum overlapping of twelve inches. Stickers shall not protrude more than two inches beyond the sides of the package.

(2) Lumber loading. Loads shall be built and secured to insure stability in transit.

(3) Units or loads of lumber shall not be lifted or moved until all workers are in the clear.

(4) Gradient of roll sets or roll cases over which units of lumber are to be moved shall not exceed three percent. The movement of units shall be under control at all times.

(5) Stacking of lumber in yards, either by units or in block piles, shall be conducted in a safe and orderly manner.

(6) Foundations for piling lumber in yards shall be capable of supporting the maximum applied load without tipping or sagging.

(7) The height of stacked units in storage areas shall not exceed seven of the usual four foot units, subject to the following qualifications:

(a) Units of lumber shall not be stacked more than four high unless two or more stacks of units are tied together with ties.

(b) Long units of lumber shall not be stacked upon shorter packages except where a stable pile can be made with the use of package separators.

(c) In unit package piles, substantial polsters or unit separators shall be placed between each package directly over the stickers.

(8) Wooden horses used for loading preformed loads of lumber shall be of material not less than four by six inches in cross section net measure.

(9) Unstable piles. Piles of lumber which have become unstable shall be immediately made stable or removed.

(10) Lift boards or pallets shall be loaded in such a manner as to prevent material from spilling or the material shall be secured with a binder.

(11) Packing rooms shall be kept free of debris and chutes shall be equipped with a means of slowing down the materials.

(12) Sorting chains shall be provided with a stopping device which shall at all times be readily accessible to at least one employee working on the chain.

(13) The inside of the walkway of all green chains and sorting tables shall be provided with a standard toeboard.

(14) Rollers or other devices shall be provided for removing heavy dimension lumber from the cabin or table.

(15) Roll casings and transfer tables shall be cleaned regularly and shall be kept reasonably free from debris.

(16) In all permanent installations, green chains and sorting tables shall be roofed over to provide protection from inclement weather. Normal work stations shall be provided with a drained work surface which is evenly floored of nonslip material.

(17) Power driven rolls shall be operated in a manner to prevent end collisions.

(18) The space between live rolls shall be filled in on either side of crosswalks with material of structural strength to withstand the load imposed with a four to one safety factor.

(19) The driving mechanism of live rolls shall be guarded wherever exposed to contact.

(20) Live rolls shall be replaced when their surface develops a break or hole.

(21) Guarding. Spiked live rolls shall be guarded.

(22) Ramps or skidways used to transfer lumber or materials from one level to another shall be provided

with all safeguards necessary for the protection of workers.

(23) Landings on a lower level where lumber or timbers are discharged over ramps or skidways shall be provided with a solid bumper not less than six inches in height at the outer edge. Such landing shall be maintained in good repair at all times.

(24) Ramps or skidways shall be so arranged that the person putting lumber down shall have a clear view of the lower landing. Lumber or timbers shall not be put down until all workers are in the clear.

(25)(a) The under face of all ramp or skidway landings shall be fenced off or other positive means provided to prevent persons from walking out under dropping timber.

(b) Return strands of sorting table ramp chains shall be supported by troughs of sufficient strength to support the weight of a broken chain. [Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81-18-029 (Order 81-21), § 296-78-84001, filed 8/27/81.]

WAC 296-78-84003 Conveyors. (1) Construction, operation, and maintenance of conveyors shall be in accordance with American National Standard B20.1 - 1957, Safety Code for Conveyors, Cableways and related equipment.

(2) Conveyor troughs in which the working strands of a conveyor operate shall be of ample dimension and strength to carry a broken chain and shall afford effective protection to all employees.

(3) When the return strand of a conveyor operates within seven feet of the floor there shall be a trough provided of sufficient strength to carry the weight resulting from a broken chain.

(4) When the return strands of a conveyor pass over passageways or work areas such guards shall be placed under them as will effectively protect workers.

(5) When the working strand of a conveyor crosses within three feet of the floor level in passageways, the trough in which it works shall be bridged the full width of the passageway.

(6) Where conveyor, idler pulleys or other equipment is located over or dangerously near burning refuse, any worker going to such location shall use a safety line which shall be securely fastened to his body and tended by a helper.

(7) Conveyors shall be provided with an emergency panic-type stopping device which can be reached by a person in a sitting position on the conveyor. Such device shall be located near the material entrance to each barker, chipper, hog, saw, or similar type of equipment except where the conveyor leading into such equipment is under constant control of an operator who has full view of the material entrance and is located or restrained where he/she cannot possibly fall onto the conveyor. The device shall stop the conveyor a sufficient distance away from the hazard to prevent injury or further injury by the hazard.

(8) Screw or auger type conveyor troughs and boxes shall be equipped with covers. If it is not practical to cover the troughs or boxes, other equivalent type guards shall be provided. [Statutory Authority: RCW 49.17-.040, 49.17.050 and 49.17.240. 81-18-029 (Order 81-21), § 296-78-84003, filed 8/27/81.]

WAC 296-78-84005 Dry kilns. (1) Transfer, kiln and dolly tracks shall be properly maintained at all times and shall have a grade of not more than one and one-fourth percent. Bumpers or stops shall be installed at the ends of all tracks capable of stopping a normal load for which the track is installed. A means shall be provided for chocking or blocking cars.

(2) Doors.

(a) Main kiln doors. Main kiln doors shall be provided with a method of holding them open while kiln is being loaded.

(b) Counterweights on vertical lift doors shall be boxed or otherwise guarded.

(c) Means shall be provided to firmly secure main doors, when they are disengaged from carriers and hangers, to prevent toppling.

(3) Kilns whose operation requires inside inspection shall be maintained with not less than eighteen inches clearance between loaded cars and the walls of the kiln. The requirements for personal protective equipment specified in WAC 296-24-075 through 296-24-092 shall be complied with.

(4) Kiln loads shall be equipped or arranged for easy attachment and detachment of transfer cables. Means for stopping kiln cars shall be available at all times.

(5) Cars shall not be moved until tracks are clear and workers are out of the bight of transfer lines.

(6) When kiln or dolly loads of lumber are permitted to coast through or adjacent to any work area, audible warning shall be given.

(7) Stickers shall not be allowed to protrude more than two inches from the sides of kiln stacks.

(8) Yards and storage areas shall be kept reasonably free of debris and unnecessary obstruction. Warning signs shall be conspicuously posted wherever there is danger from moving vehicles or equipment. [Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81-18-029 (Order 81-21), § 296-78-84005, filed 8/27/81.]

WAC 296-78-84007 Chippers and logs. (1) Chippers. The feed system to the chipper shall be arranged so the operator does not stand in direct line with the chipper spout (hopper). The chipper spout shall be enclosed to a height or distance of not less than forty inches from the floor or the operator's station. A safety belt and lifeline shall be worn by workers when working at or near the spout unless the spout is guarded. The lifeline shall be short enough to prevent workers from falling into the chipper.

(2) Hog mills shall be provided with feed chutes so designed and arranged that from no position on the rim of the chute shall the distance to the knives or feed roll be less than forty inches. Baffles shall be provided which shall effectively prevent material from being thrown from the mill.

(3) Employees feeding hog mills shall be provided with safety belts and lines, which they shall be required to use at all times, unless otherwise protected from any possibility of falling into the mill. [Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81-18-029 (Order 81-21), § 296-78-84007, filed 8/27/81.]

WAC 296-78-84009 Bins and bunkers. (1) Bins, bunkers, hoppers, and fuel houses. Guarding. Open bins, bunkers, and hoppers whose upper edges extend less than three feet above working level shall be equipped with standard handrails and toeboards, or have their tops covered by a substantial grill or grating with openings small enough to prevent a person from falling through.

(2) Fuel hoppers shall be provided with doors that may be remotely operated.

(3) Fuel hoppers shall be provided with platforms with standard railings and adequately lighted for the protection of workers taking out fuel.

(4)(a) Fuel bins shall be provided with an approved railed platform or walkway near the top or other approved means, for the use of employees engaged in dislodging congested fuel. No employee shall enter any fuel bin except where adequately safeguarded.

(b) Recognizing however, the varying designs of fuel storage vaults and the type of fuel handled and certain peculiar local conditions, the adequacy of safety devices shall be determined by a duly authorized representative of the department of labor and industries, division of industrial safety and health.

(c) During operations when the flow of normal fuel is interrupted but dust from operating sanders is received in the bin, workers shall not enter the fuel bin until the flow of sander dust has been discontinued and the dust has settled.

(d) Use of wheeled equipment to load bins. Where automotive or other wheeled equipment is used to move materials into bins, bunkers, and hoppers, adequate guard rails shall be installed along each side of the runway, and a substantial bumper stop provided when necessary. [Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81-18-029 (Order 81-21), § 296-78-84009, filed 8/27/81.]

WAC 296-78-84011 Burners. (1) Burners and smoke stacks other than the self-supporting type shall be adequately guyed. Buckle guys shall be installed if burner or stack is more than fifty feet in height.

(2) Runway. The conveyor runway to the burner shall be equipped with a standard handrail. If the runway crosses a roadway or thoroughfare, standard toeboards shall be provided in addition. [Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81-18-029 (Order 81-21), § 296-78-84011, filed 8/27/81.]

Chapter 296-79 WAC

SAFETY STANDARDS FOR PULP, PAPER, AND PAPERBOARD MILLS AND CONVERTERS

WAC

296-79-020	General requirements.
296-79-050	Personal protection.
296-79-140	Installation, inspection, and maintenance of pipes, piping systems, and hoses.
296-79-170	Requirements for crawler and truck cranes.
296-79-180	Privately owned standard gauge railroad operations.
296-79-220	Deactivating and lockout requirements.
296-79-29029	Broke hole.
296-79-300	Machine room equipment and procedures.

WAC 296-79-020 General requirements. (1) Housekeeping. Floors shall be kept reasonably clear of spilled or leaking oil, grease, water, broke, etc., that may cause slipping, tripping or falling. Nonskid type surfacing shall be installed in vehicular or pedestrian traffic areas in which slipping hazards otherwise would exist.

In areas where it is not possible to keep the floor free of materials which cause a slipping hazard, mats, cleats, or other suitable materials which will effectively minimize or eliminate the hazard shall be installed.

(2) Storage of hoses, cords, slings or similar items or equipment. Hoses, cords, slings or similar items or equipment shall be stored in such a manner that they will not create a hazard.

(3) Storage and transportation of materials. Materials, objects or equipment shall be stored or transported by use of means or methods which will prevent them from falling, tipping or rolling.

(4) Compressed gas cylinders. Compressed gas cylinders shall be stored away from heat sources, combustible materials or other materials which may cause hazardous conditions. Storage facilities shall comply with the requirements of the general safety and health standards, chapter 296-24 WAC. Cylinders shall be secured in a manner which will prevent them from tipping or falling. Acetylene cylinders shall be stored, transported, or used while in the upright position only.

(5) Warning of obstructions. Open manholes or excavations shall be roped off, barricaded, or adequately safeguarded by an approved method when located in or adjacent to walkways, aisleways, or roadways. During periods of darkness or reduced visibility, such areas shall be provided with warning lights or lanterns.

(6) Employees to be instructed. Employees shall not be permitted to operate any machine or equipment until they have received proper instruction and are familiar with safe operating procedures.

(7) Training personnel to handle emergencies. In each area where hazardous substances may be encountered, personnel shall be trained to cope with emergencies arising from breaks, ruptures, or spills which would create a hazardous condition.

(8) Working alone. When an employee is assigned to work alone in a remote or isolated area, a system shall be instituted whereby such employee reports by use of

radio or telephone to someone periodically or a designated person shall check on his safety at reasonable intervals. All persons involved in working alone shall be advised of the procedures to be followed.

(9) Lifting or moving objects. Employees shall be instructed in proper lifting or moving techniques and methods. Mechanical devices should be used or employees should ask for assistance in lifting or moving heavy objects.

(10) Reporting hazards. Any faulty equipment or hazardous condition shall be promptly reported to the person in charge.

(11) Exits from hazardous areas. Where physically and reasonably possible, there shall be at least two unobstructed exits from any hazardous area. Such exits shall preferably be on opposite walls.

(12) Safe work area. Sufficient clearance shall be maintained between machines to allow employees a safe work area.

(13) Protection from overhead hazard. Warning signs shall be placed in conspicuous locations below areas where overhead work is being done and shall be removed promptly when work is completed.

(14) Welding areas protected. Areas in which welding is being done shall be screened or barricaded to protect persons from flash burns, when practical. If the welding process cannot be isolated, all persons who may be exposed to the hazard of arc flash shall be properly protected.

(15) Testing safety devices. Brakes, back stops, anti-runaway devices, overload releases and other safety devices shall be inspected and tested frequently to ensure that all are operative and maintained in good repair.

(16) Starting and stopping devices. Electrically or manually operated power disconnecting devices shall be provided within easy reach of the operator while in his normal operating position. If necessary for safety of the operation, the machine shall be so equipped that retarding or braking action can be applied at the time of or after the source of power is deactivated.

(17) Use of compressed air for cleaning purposes. Compressed air shall not be used for cleaning purposes if it may endanger other persons in the area or for cleaning clothing while it is being worn.

(18) Coupling high pressure air hoses. Sections of high pressure air hoses shall be properly coupled and have safety chains or equivalent safety device attached between the sections (30 psi or more is high pressure air).

(19) Punch bars. Open pipes shall not be used as punch bars if the use would create a hazard.

(20) Saw table limit stop or extension. Employees shall be protected from contact with the front edge of a circular saw by a limit stop which will prevent the forward swing of the cutting edge from extending beyond the edge of the table or a table extension shall be installed.

(21) Explosive-actuated tools. Explosive-actuated tool design, construction, operation and use shall comply with all requirements specified in "Safety requirements for powder actuated fastening systems," adopted by the department of labor and industries. In addition, after using such tools a careful check shall be made in order to ascertain that no cartridges or charges are left where they could enter equipment or be accidentally discharged in any area where they could create a fire or explosion hazard.

(22) Approved life buoys. Where work is being performed on docks or adjacent to open water five feet or more in depth U.S. Coast Guard approved life buoys shall be provided. Such life buoys shall have sufficient line attached and be spaced at intervals not exceeding 200 feet.

(23) Ladders required on waterfront docks. Either permanent ladders or portable ladders which are readily available for emergency use shall be provided on all waterfront docks. Such ladders shall extend from the face of the dock to the water line at its lowest elevation. Spacing between ladder installations shall not exceed 400 feet. The dock area immediately adjacent to ladder locations shall be painted with a bright color which contrasts with the surrounding area. A suitable method shall be used to secure the ladders.

(24) Protection from hot pipes. All exposed hot pipes within seven feet of the floor or working platform, or within 15" measured horizontally from stairways, ramps or fixed ladders, shall be covered with an insulating material or be guarded in such a manner as to prevent contact.

(25) Prevent overhang while removing materials. Extreme care shall be taken to prevent material from creating an overhang while removing the materials from piles or bins.

(26) Establishments subject to chapter 296-79 WAC shall comply with the following standards of the American National Standards Institute:

(a) ANSI Z33.1-1961, Installation of Blower and Exhaust Systems for Dust, Stock and Vapor Removal or Conveying;

(b) ANSI B56.1-1969, Safety Standard for Powered Industrial Trucks. [Statutory Authority: RCW 49.17-.040 and 49.17.050. 82-13-045 (Order 82-22), § 296-79-020, filed 6/11/82; Order 77-12, § 296-79-020, filed 7/11/77; Order 74-24, § 296-79-020, filed 5/6/74; Order 70-6, § 296-79-020, filed 7/10/70, effective 8/10/70.]

WAC 296-79-050 Personal protection. (1) Personal protective equipment and clothing. Personal protective clothing and equipment as required by the general safety and health standards and the general occupational health standards shall be furnished by the employer and worn or used by the employee when needed to eliminate or minimize the degree of hazard involved with any specific operation.

(a) Required clothing, caps, etc. Employees shall wear sufficient clothing to protect them from hazards to which they may be exposed while performing their duties. Consideration must be given to temperatures in certain areas in which persons work. Employees whose

hair is long enough to be caught in machinery or equipment around which they work shall wear caps, hair nets or other protection which will adequately confine the hair while performing their duties.

Rings or other jewelry which could create a hazard should not be worn by employees while in the performance of their work.

(b) Protective footwear. Employees who work in areas where there is a possibility of foot injury due to falling or rolling objects shall wear safety type footwear. Shoe guards and toe protectors will be supplied by management. Management shall also make safety shoes available for purchase by employees at not more than actual cost to management.

Calks or other suitable footwear which will afford reasonable protection from slipping shall be worn while working on logs. Calk boots shall be made available at cost.

(2) Working over or near water. (a) Employees working over or near water who are exposed to the danger of drowning shall be provided with and shall wear U.S. Coast Guard approved personal flotation devices.

(b) Prior to and after each use, buoyant work devices shall be inspected for defects which would alter their strength or buoyancy. Defective units shall not be used.

(3) Protection from noise. (a) Employees shall be protected from the effects of noise exposures which exceed the noise levels deemed to be safe as defined by the general occupational health standards adopted by the department of labor and industries.

(b) Noise levels which exceed the maximum allowable amount deemed to be safe shall be reduced by feasible administrative or engineering control.

(c) When feasible administrative and engineering controls do not lower the noise levels below the limits deemed to be safe, all persons exposed shall be provided with and shall use proper personal protective equipment.

(d) In all cases where the noise levels in any area exceed the levels deemed to be safe, a continuing effective hearing conservation program as defined in chapter 296-62 WAC, general occupational health standards, shall be administered.

(4) Respiratory protection. (a) Respiratory protective equipment is designed to protect the wearer from inhalation of hazardous atmospheres. Such equipment shall include air purifying respirators, airline respirators, hose masks, self-contained breathing apparatus and combinations thereof.

(b) Where reasonable engineering or operational controls will afford the proper protection, these shall be instituted by the employer in preference to requiring employees to wear respiratory protective equipment. Where control by engineering or operational means is impractical, workers shall be required to wear respiratory protective equipment in hazardous atmospheres.

(c) The Respiratory Protective Devices Manual published by the American Conference of Governmental Industrial Hygienists and the American Industrial Hygiene Association shall be used as a guide for selecting respiratory protective equipment.

(d) Respiratory protective equipment and its use shall be approved by the department of labor and industries. The department will accept approval by the U.S. Bureau of Mines, U.S. Department of Agriculture, Atomic Energy Commission and the U.S. Department of Defense for the conditions for which the equipment has been approved.

(e) When the use of respiratory protective equipment is required the proper equipment shall be furnished by the employer and it shall be used in the prescribed manner by the employee. The employer shall provide training, maintenance and surveillance to insure this equipment is properly used. (Refer to the general occupational health standards.)

(f) Self-contained breathing apparatus, air supplied masks or other approved respiratory protective equipment compatible with the conditions which may be encountered shall be provided for emergency or rescue purposes in areas throughout the plant where they may be needed. Storage locations shall be clearly identified and persons shall familiarize themselves with the locations. [Statutory Authority: RCW 49.17.040 and 49.17-.050. 82-13-045 (Order 82-22), § 296-79-050, filed 6/11/82; Order 74-24, § 296-79-050, filed 5/6/74; Order 70-6, § 296-79-050, filed 7/10/70, effective 8/10/70.]

WAC 296-79-140 Installation, inspection, and maintenance of pipes, piping systems, and hoses. (1) Definitions applicable to this section.

(a) Hazardous material system – any system within the following classifications:

(i) Flammable or explosive – any system containing materials which are hazardous because they are easily ignited and create a fire or explosion hazard, defined by NFPA as Class I liquids;

(ii) Chemically active or toxic – any system containing material which offers corrosion or toxic hazard in itself or can be productive of harmful gases upon release, defined by NFPA 704M as Class 3 and 4 materials;

(iii) Thermally hazardous – any system above 130°F which exposes persons to potential thermal burns;

(iv) Pressurized – any gaseous system above 200 psig or liquid system above 500 psig.

(b) Piping system – any fixed piping, either rigid pipe or flexible hose, including all fittings and valves, in either permanent or temporary application.

(2) Design and installation. All new piping systems intended to be used in hazardous material service shall be designed and installed in accordance with applicable provisions of the ASME Code for Pressure Piping or in accordance with applicable provisions of ANSI B31.1 through B31.8. The referenced edition in effect at the time of installation shall be utilized.

Note: Both referenced standards have identical requirements.

(3) Inspection and maintenance.

(a) Management shall develop a formal program of inspections for all hazardous material piping systems.

The program shall be based on sound maintenance engineering principle and shall demonstrate due consideration for the manufacturing specifications of the pipe, hose, valves and fittings, the ambient environment of the installation and the corrosive or abrasive effect of the material handled within the system.

(b) Type and frequency of tests and/or inspections and selection of inspection sites shall be adequate to give indications that minimum safe design operating tolerances are maintained. The tests may include visual or nondestructive methods.

(c) All companies shall submit their formal program of initial and ongoing inspections to the department for approval within one year after the effective date of this requirement.

(d) All existing hazardous material systems shall be inspected to the criteria of this section prior to two years after effective date, or in accordance with a schedule approved by the department.

(4) Inspection records.

(a) Results of inspections and/or tests shall be maintained as a record for each system.

(b) Past records may be discarded provided the current inspection report and the immediately preceding two reports are maintained.

(c) When a system is replaced, a new record shall be established and all past records may be discarded.

(d) The records for each system shall be made available for review by the department upon request.

(e) Portions of systems that are buried or enclosed in permanent structures in such a manner as to prevent exposure to employees even in the event of a failure, may be exempted from the inspection requirements only.

(5) Systems or sections of systems found to be below the minimum design criteria requirements for the current service shall be repaired or replaced with component parts and methods which equal the requirements for new installations.

(6) Identification of piping systems.

(a) Pipes containing hazardous materials shall be identified. It is recommended that USAS A13.1 "Scheme for Identification of Piping Systems" be followed.

(b) Positive identification of a piping system content shall be lettered legend giving the name of the content in full or abbreviated form, or a commonly used identification system. Such identification shall be made and maintained at suitable intervals and at valves, fittings, and on both sides of walls or floors as needed. Arrows may be used to indicate the direction of flow. Where it is desirable or necessary to give supplementary information such as hazard of use of the piping system content, this may be done by additional legend or by color applied to the entire piping system or as colored bands. Legends may be placed on colored bands.

Examples of legend which may give both positive identification and supplementary information regarding hazards or use are:

Ammonia	Hazardous liquid or gas
Chlorine	Hazardous liquid or gas
Chlorine Dioxide	Hazardous liquid or gas
Sulphur Dioxide	Hazardous gas
Liquid Caustic	Hazardous liquid
Liquid Sulphur	Hazardous liquid
Sulphuric Acid	Hazardous liquid
Sodium Chlorate	When dry, danger of fire or explosion

Note: Manual L-1, published by Chemical Manufacturers Association, Inc., is a valuable guide in respect to supplementary legend.

(c) When color, applied to the entire piping system or as colored bands, is used to give supplementary information it should conform to the following:

CLASSIFICATION	PREDOMINANT COLOR
F—Fire-Protection Equipment	Red
D—Dangerous Materials	Yellow (or orange)
S—Safe Materials	Green (or the achromatic colors, white, black, gray or aluminum)
and, when required, P—Protective Materials	Bright blue

(d) Legend boards showing the color and identification scheme in use shall be prominently displayed at each plant. They shall be located so that employees who may be exposed to hazardous material piping systems will have a frequent reminder of the identification program.

(e) All employees who work in the area of hazardous material piping systems shall be given training in the color and identification scheme in use.

(7) Test holes not to be covered. Test holes in blow lines of piping systems shall not be covered with insulation or other materials.

(8) Steam hoses. Steam hoses shall be specifically designed to safely carry steam at any pressures to which they may be subjected. [Statutory Authority: RCW 49-.17.040, 49.17.050 and 49.17.240. 81-13-053 (Order 81-9), § 296-79-140, filed 6/17/81. Statutory Authority: RCW 49.17.040, 49.17.240, and chapters 43.22 and 42.30 RCW. 81-03-007 (Order 80-31), § 296-79-140, filed 1/8/81; Order 74-24, § 296-79-140, filed 5/6/74; Order 70-6, § 296-79-140, filed 7/10/70, effective 8/10/70.]

WAC 296-79-170 Requirements for crawler and truck cranes. (1) Rated capacity chart. A chart indicating the manufacturer's rated capacity at all operating radii for all permissible boom lengths and jib lengths with alternate ratings for optional equipment affecting such ratings shall be posted in all mobile type cranes and shall be readily visible to the operator in his normal operating position.

(2) Boom length indicated. The length shall be plainly marked on each boom section of a mobile crane having a sectioned boom.

(3) Radius or boom angle indicator. A radius or boom angle indicator shall be installed where it is readily visible to the operator in his normal operating position on all cranes having a movable working boom.

(4) Safety device for light fixtures. Any light fixtures attached to crane boom or machinery house shall have a

safety strap or other device attached which will prevent the fixture from falling.

(5) Boom stops. Boom stops shall be installed to govern the upward travel of the boom to a safe limit. Boom stops shall be of adequate strength to prevent the boom from traveling past the vertical position.

(6) Controls marked. Crane operating controls shall be marked or an explanation of the controls' functions shall be posted in full view of the operator.

(7) Locking hydraulic outriggers. Hydraulic outriggers shall be equipped with a pilot operated check valve or a mechanical lock shall be installed which will prevent outriggers from retracting in case of failure of the hydraulic system.

(8) Top of boom painted. The top six feet of the boom or jib shall be painted bright yellow or other bright contrasting color if the boom is yellow.

(Several makes of cranes are already "all yellow." Users say they want to retain the contrasting color theme to call attention to the boomtop.)

(9) Warning devices. All cranes shall be equipped with a suitable warning device such as a horn or whistle.

(10) Hook safety device. All hooks shall be equipped with a safety device or other effective means shall be used to prevent accidental unhooking of the load.

(11) Counterweight limited. The amount of crane counterweight shall not exceed the maximum amount specified by the crane manufacturer.

(12) Use proper size wire rope for sheaves. The size and diameter of sheaves and wire rope shall be compatible and follow the recommendations published by the Wire Rope Institute or other acceptable engineering practices.

(13) Loading or unloading gear. Unloading gear such as grapples, tongs, and buckets, shall not be left suspended when not in use.

(a) Where grapples, trip tongs or similar device is used for loading, the log holding device shall be lowered to the ground whenever the machine is unattended.

(14) No one under load. Personnel shall not position themselves under crane loads and such loads shall not be carried over workers.

(15) Operating clearance from stationary objects. A distance of 30" shall be maintained between the outermost part of a revolving crane and any stationary object within the swing radius of the crane where the area is accessible to workers or the hazardous area must be temporarily guarded or barricaded.

(16) Clearance requirements from unprotected electrical transmission and distribution lines.

(a) Except as provided in subdivision (b), all parts of cranes and loads being handled shall maintain the following specified clearances:

(i) For lines rated 50 kv or below, minimum clearance between the lines and any part of the crane or load shall be ten feet;

(ii) For lines rated over 50 kv minimum, clearance between the lines and any part of the crane or load shall be 10 feet plus 0.4 inch for each 1 kv over 50 kv, or twice the length of the line insulator but never less than 10 feet;

(iii) In transit with no load and boom lowered the equipment clearance shall be a minimum of 4 feet for voltages less than 50 kv, and 10 feet for voltages over 50 kv up to and including 345 kv, and 16 feet for voltages up to and including 750 kv;

(iv) A person shall be designated to observe clearance of the equipment and give timely warning for all operations where it is difficult for the operator to maintain the desired clearance by visual means;

(v) Any overhead wire shall be considered to be an energized line unless and until the person owning such line or the electrical utility authorities indicate that it is not an energized line and it has been visibly grounded.

(b) Cranes may be operated within the clearances specified in subdivision (a) only when the following precautions are taken:

(i) Lines may be deenergized and visibly grounded at the point of work; or

(ii) Lines owned or under the control of the employer may be deenergized, grounded and locked out on the employer's premises; or

(iii) On N.E.C. approved installation of insulated aerial cable, insulating barriers, not a part of or an attachment to the equipment or machinery, may be erected to prevent physical contact with the line.

(17) Operators shall avoid contacting overhead obstructions which may damage the boom or adversely affect stability. In instances where the operator may have difficulty in observing clearances, a signal person shall be stationed where they can observe clearances and signal the operator.

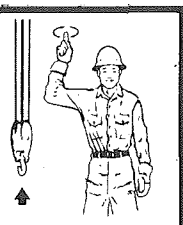
(18) Safe travel across thoroughfares or railroad tracks. When moving across thoroughfares or railroad tracks with cranes, shovels or similar types of equipment, which by its design does not allow the operator clear vision of approaching traffic, a flagperson shall be stationed where he/she can control other traffic and signal the equipment operator.

(19) One crew member to give signals. Only a designated member of the crew shall give signals to the crane operator except that anyone may give an emergency stop signal.

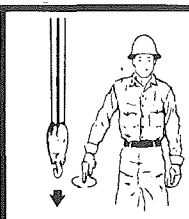
(20) Standard hand signals. When visual signals are used standard hand signals, as illustrated in the general safety and health standards, shall be used for directing crane operators.

CRAWLER, LOCOMOTIVE, AND TRUCK CRANES

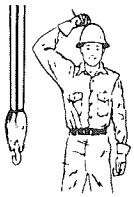
STANDARD HAND SIGNALS



HOIST. With forearm vertical, forefinger pointing up, move hand in small horizontal circle.

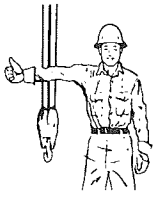


LOWER. With arm extended downward, forefinger pointing down, move hand in small horizontal circles.

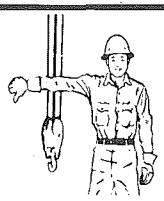


USE MAIN HOIST. Tap fist on head; then use regular signals.

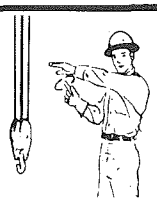
USE WHIPLINE (Auxiliary Hoist). Tap elbow with one hand; then use regular signals.



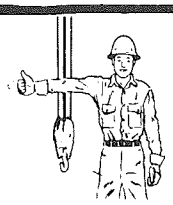
RAISE BOOM. Arm extended, fingers closed, thumb pointing upward.



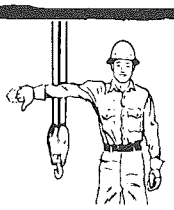
LOWER BOOM. Arm extended, fingers closed, thumb pointing downward.



MOVE SLOWLY. Use one hand to give any motion signal and place other hand motionless in front of hand giving the motion signal. (Hoist slowly shown as example.)

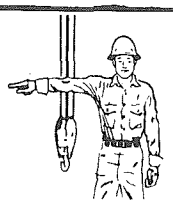


RAISE THE BOOM AND LOWER THE LOAD. With arm extended, thumb pointing up, flex fingers in and out as long as load movement is desired.

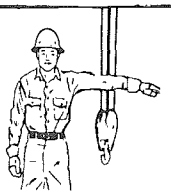


LOWER THE BOOM AND RAISE THE LOAD. With arm extended, thumb pointing down, flex fingers in and out as long load movement is desired.

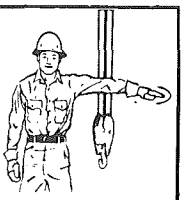
CRAWLER, LOCOMOTIVE, AND TRUCK CRANES (CONTINUED)



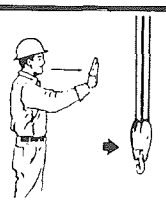
SWING. Arm extended, point with finger in direction of swing of boom.



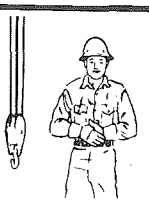
STOP. Arm extended, palm down, hold position rigidly.



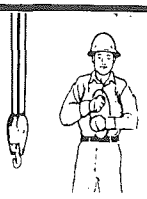
EMERGENCY STOP. Arm extended, palm down, move hand rapidly right and left.



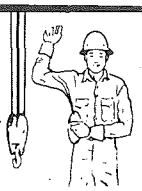
TRAVEL. Arm extended forward, hand open and slightly raised, make pushing motion in direction of travel.



DOG EVERYTHING. Clasp hands in front of body.

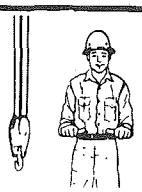


TRAVEL (Both Tracks). Use both fists in front of body, making a circular motion about each other, indicating direction of travel; forward or backward. (For crawler cranes only.)

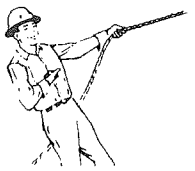


TRAVEL (One Track). Lock the track on side indicated by raised fist. Travel opposite track in direction indicated by circular motion of other fist, rotated vertically in front of body. (For crawler cranes only.)

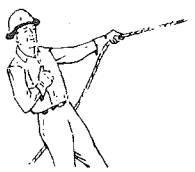
EXTEND BOOM (Telescoping Booms). Both fists in front of body with thumbs pointing outward.



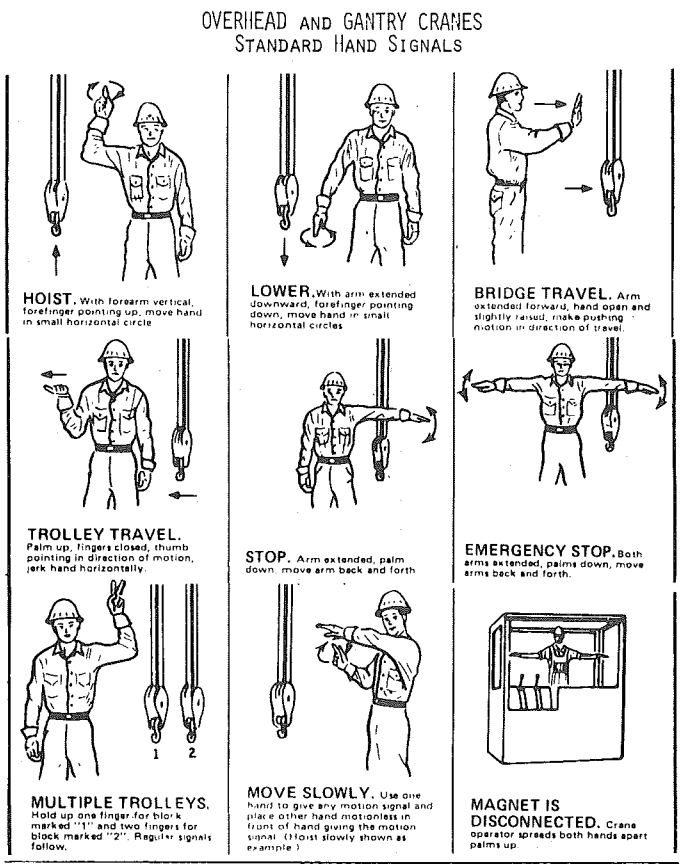
RETRACT BOOM (Telescoping Booms). Both fists in front of body with thumbs pointing toward each other.



RETRACT BOOM (Telescoping Boom). One Hand Signal. One fist in front of chest, thumb pointing outward and heel of fist tapping chest.



EXTEND BOOM (Telescoping Boom). One Hand Signal. One fist in front of chest with thumb tapping chest.



(21) Signals by use of radio frequencies. Class "D" citizen's band radio frequencies shall not be used for signaling crane operators. [Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81-13-053 (Order 81-9), § 296-79-170, filed 6/17/81. Statutory Authority: RCW 49.17.040, 49.17.240, and chapters 43.22 and 42.30 RCW. 81-03-007 (Order 80-31), § 296-79-170, filed 1/8/81; Order 74-24, § 296-79-170, filed 5/6/74; Order 70-6, § 296-79-170, filed 7/10/70, effective 8/10/70.]

WAC 296-79-180 Privately owned standard gauge railroad operations. (1) Blue flag or light. A blue signal (blue flag or blue light for nonilluminated areas) shall be displayed at one or both ends of an engine, car(s), or train, to indicate that workers are under or about the railway equipment. When such warning devices are displayed, the equipment shall not be coupled to or moved. On a dead end spur, a blue signal may be displayed adjacent to the switch opening while cars are being loaded or unloaded.

(2) Work being carried on which subjects employees to the hazard of moving railroad equipment shall be protected by blue signals and derails set a minimum of 50 feet from one or both ends of the worksite. Where the spur track switch is less than 50 feet from the work location, the switch padlocked in the open position will take the place of the derail and the blue signal shall be placed at that point.

(3) Signals unobscured. Equipment which would obscure the blue signal shall not be placed on the track.

(4) Signals displayed by each maintenance crew. Each maintenance crew shall display and remove its own set of blue signals.

(5) Warning device. A flashing warning light or other device shall be installed near any opening which leads to a passageway crossing railroad tracks adjacent to the building. Such light or device shall be activated prior to any switching or movement of railroad equipment to warn workers of the dangerous condition in the area.

(6) Cars to be immobilized. Spotted cars shall either have brakes set, wheels blocked, or shall be coupled to other immobilized cars to prevent each car from rolling.

(7) Crawling under or between coupled cars prohibited. Workers shall not crawl under or pass between coupled railroad cars to cross tracks.

(8) Warning at road crossing. An audible whistle, horn or bell shall be sounded by the locomotive engineer to give adequate warning prior to switching across any road crossing.

(9) Flying switches. When switching railroad equipment in congested areas or across roadways or walkways "flying switches" shall be prohibited.

(10) Car opening devices. All box car doors and associated mechanisms shall be carefully inspected before workers attempt to open or close them. If the door is not free and cannot be opened safely by hand, equipment shall be provided, where necessary, and a safe method shall be used to open or close the door.

(11) Clearance from railroad tracks. Materials shall not be stacked or piled closer than 8 1/2' from the center line of a standard gauge railroad track.

(12) Operating under limited visibility conditions.

(a) Unless trains are operated in a manner to allow the operator to see a safe stopping distance in the direction of travel, a flagperson(s) shall be positioned in such a manner to safely direct movement of the train.

(b) Flagperson shall remain within sight of the operator or shall be equipped to maintain visual or voice communication with the operator as conditions dictate.

(13) A flagperson shall direct the movement of trains being moved across main roads or thoroughfares which do not have adequate traffic warning lights, bells or barricades. [Statutory Authority: RCW 49.17.040, 49-.17.240, and chapters 43.22 and 42.30 RCW. 81-03-007 (Order 80-31), § 296-79-180, filed 1/8/81; Order 74-24, § 296-79-180, filed 5/6/74; Order 70-6, § 296-79-180, filed 7/10/70, effective 8/10/70.]

WAC 296-79-220 Deactivating and lockout requirements. (1) Tagout or other alternative security procedures shall be phased out by (one after effective date). In the one year interim, all requirements and procedures of this section shall apply except:

(a) Physical restraint devices other than padlocks may be used.

(b) Whenever devices other than identified padlocks are used, a warning information tag shall be required.

(c) Whenever the operating control cannot be physically blocked by the restraining device, a warning information tag shall be required.

(2) Control requirement. Whenever the unexpected startup of machinery, the energizing of electrical circuits, the flow of material in piping systems or the removal of guards would endanger workers, such exposure shall be prevented by deactivating and locking out the controls as required by this section.

Exception: In instances where any machine must be in motion for proper adjustment, for removal or replacement of materials from the machine, for machine clothing changes or for roping up, the following precautions shall be observed:

(a) The machine shall be operated at slow or jog speed;

(b) Extension tools which minimize personnel exposure shall be used where possible;

(c) The operating controls shall at all times be under the control of a qualified operator or craftsman;

(d) All personnel shall remain in view of the operator or other means of communication shall be established whenever possible;

(e) All personnel must be beyond the reach of other machine section(s) or element(s) which offer potential exposure. In any instance where such potential exposure exists, such other section(s) or element(s) shall be separately locked out.

(3) Equipment requirements.

(a) The employer shall provide and each employee shall use as many padlocks, tags, chains, or devices as required to implement these requirements.

(b) Provisions shall be made whereby the source of power or exposure can be locked out in accordance with the requirements of this section.

(c) On electrically powered equipment, "stop/start" control switches shall not be used as lockout switches. Lockout switches must be circuit disconnects and must adequately separate the power source from the prime mover so that accidental startup of the equipment being locked out is precluded.

(4) Training requirements.

(a) Each person who will be given authority to implement these requirements shall first be thoroughly trained in the requirements and procedures.

(b) Before being given authority to deactivate and lockout a particular system or piece of equipment, authorized personnel shall be made fully aware of all power sources and/or material entry sources which may offer exposure.

(c) On complex systems or equipment which contain multiple lockout points not at the immediate work location, a complete checklist of all lockout points necessary for isolation is recommended to help eliminate the chance of human error.

(5) Control procedure.

(a) Each person who would be exposed to the hazard shall apply a personal padlock on the control mechanism. Padlocks shall be applied in such a manner as to physically block the control from being moved into the operating position. Each lock shall be personally identified or an information tag identifying the owner shall be attached to the lock.

(b) Padlocks used in lockout procedures may only be removed by the person identified on the lock, except, when it is positively determined that the owner/user of the lock has left the premises without removing a lock, the job supervisor may remove the lock in accordance with a specific procedure formulated by the local plant labor/management safety committee or approved by the department.

(6) Testing after lockout or tagout. After tagging or locking out equipment, a test shall be conducted to ascertain that the equipment has been made inoperative or the flow of material has been positively stopped. Precautions shall be taken to ascertain that persons will not be subjected to hazard while conducting test if power source or flow of material is not shut off.

(7) Alternate lockout procedure. Before an alternate procedure can be utilized, a specific written procedure shall be reviewed by the local plant labor/management safety committee and approved by the department of labor and industries.

(8) Temporary or alternate power to be avoided. Whenever possible, temporary or alternate sources of power to the equipment being worked on shall be avoided. If the use of such power is necessary, all affected employees shall be informed and the source of temporary or alternate power shall be identified.

(9) Where tags are required to implement these lockout and control procedures, the tag and attachment device shall be constructed of such material that it will not be likely to deteriorate in the environment that it will be subjected to.

(10) Provisional exception. Electrical lighting and instrument circuits of 240 volts or less on single phase systems or 277 volts on three-phase systems may be exempted from the lockout requirements of (5)(a) of this section provided that:

(a) An information tag meeting the requirements of subsection (9) of this section is used in lieu of a padlock;

(b) The information tag shall be placed on the switch or switch cover handle in such a manner as to easily identify the deactivated switchgear.

(11) Deactivating piping systems.

(a) Hazardous material systems are defined as: Gaseous systems that are operated at more than 200 psig; systems containing any liquid at more than 500 psig; systems containing any material at more than 130°F; systems containing material which is chemically hazardous as defined by NFPA 704 M Class 3 and 4; systems containing material classified as flammable or explosive as defined in NFPA Class I.

(b) Lockout of piping systems shall provide isolation to the worksite, including backflow where such potential exists and the system is classified as a hazardous material system. The required method shall be applied based on the content of the system as specified below:

(i) Nonhazardous systems shall be deactivated by locking out either the pump or a single valve.

(ii) Hazardous material systems shall be deactivated by one of the following methods:

(A) Locking out both the pump and one valve between the pump and the worksite;

(B) Locking out two valves between the hazard source and the worksite;

(C) Installing and locking out a blank flange between the hazard source and worksite;

(D) On hazardous chemical systems where methods (A), (B) or (C) are not available, or where methods (A), (B) or (C) by themselves create a hazard, single valve closure isolation may be used provided that potentially exposed employees are adequately protected by other means such as personal protective equipment.

(E) On all steam systems where methods (A), (B) or (C) are not available, single valve closure isolation may be used provided that the system is equipped with valves meeting all requirements of ANSI B16.5 and ANSI B16.34. Where single valve isolation is used, the steamline must also be equipped with a bleed valve downstream from the valve closure to prove isolation of the worksite.

(12) Reactivating separated hazardous material systems. When a blank flange (blind) is used to separate off portions of hazardous material systems from a portion which is in operation, removal of the blind offers potential exposure to employees. The removal procedure shall be protected by:

(a) Two separate valve closures between the blank flange and the potential exposure; or

(b) A single valve closure with a bleeder valve or weep drain between the blank flange and the valve closure. Employees shall closely check for evidence of escapement from the bleeder valve or weep plug before starting to remove the blank flange.

(c) Where subdivisions (a) or (b) are not possible or, in themselves create a hazard, potentially exposed employees must be adequately protected by personal protective equipment before removing the blank flange.

(d) Bleeder valves are recommended behind all primary valve closures on hazardous material systems. Consideration should be given to the nature of the material in the system when installing bleeder valves. To assist in preventing plugging, bleeder valves should generally be installed in the top one-third of the pipe. Short exhaust pipes should be installed on bleeder valves to direct the flow of possible escapement away from the position where an employee would normally be when using the bleeder valve. [Statutory Authority: RCW 49.17-.040, 49.17.050 and 49.17.240. 81-13-053 (Order 81-9), § 296-79-220, filed 6/17/81. Statutory Authority: RCW 49.17.040, 49.17.240, and chapters 43.22 and 42-.30 RCW. 81-03-007 (Order 80-31), § 296-79-220, filed 1/8/81; Order 76-7, § 296-79-220, filed 3/1/76; Order 74-24, § 296-79-220, filed 5/6/74; Order 70-6, § 296-79-220, filed 7/10/70, effective 8/10/70.]

WAC 296-79-29029 Broke hole. (1) An alarm bell or flashing light shall be actuated or other suitable warning shall be given before dropping material through a broke hole when persons working below may be endangered.

(2) Broke holes shall be guarded to the fullest extent possible consistent with operational necessities. The degree of guarding provided by standard height and strength guardrails will be considered as a minimum acceptable level of protection.

(3) When repulping devices or feed conveyor systems for repulping devices are located beneath broke holes, special precautions shall be used. The broke hole opening shall be reduced to the smallest practical dimension. If such broke hole opening must be large enough to permit a worker to fall through and the opening is not guarded at least to the equivalent degree of protection provided by standard guardrails, any employee pushing broke down the broke hole shall wear a safety belt attached to a safety belt line. The safety belt line shall be fastened in such a manner that it is impossible for the person to fall into the repulping device.

(4) Guarding to the equivalent degree of protection provided by standard guardrails and meeting the requirements of subsections (2) and (3), may be achieved by the use of guard bars separated no more than 15-1/2 inches in a vertical plane and 12 inches in a horizontal plane, or any other location within that segment. [Statutory Authority: RCW 49.17.040, 49.17.240, and chapters 43.22 and 42.30 RCW. 81-03-007 (Order 80-31), § 296-79-29029, filed 1/8/81; Order 74-24, § 296-79-29029, filed 5/6/74.]

WAC 296-79-300 Machine room equipment and procedures. (1) Lock-out and tag-out procedures to be followed. Lock-out and tag-out requirements and procedures contained in these standards shall be complied with.

(2) Emergency stopping controls. Pulp and paper machines shall be equipped with emergency stopping control(s) which can be actuated quickly from all normal operating stations. If useful for the safety of personnel, the stopping control(s) shall be interlocked with adequate retarding or braking action to stop the machine as quickly as is practical.

(3) Walkways. Steps and footwalks along the fourdrinier and press section shall have nonslip surfacing and be complete with standard handrails, when practical.

(4) Machine lubrication. If a machine must be lubricated while in operation an automatic lubricating device shall be provided or oil cups and grease fittings shall be provided which can be serviced safely without exposing the worker to any hazards.

(5) Weights on levers. All levers carrying weights shall be so constructed that weights will not slip or fall off.

(6) Guarding inrunning nip points. (a) The drums on pulp and paper machine winders shall be provided with suitable guards to prevent a person from being caught between the roll and the front drum on the winder when the pinch point is on the operator's side. Any such guard shall be interlocked with the drive mechanism to prevent the winder from running while the guard is not in place except that the winder may be wired to allow it to run at

a slow speed only for adjustment and start-up purposes while the guard is not in position. A zero speed switch or locking device shall be installed to prevent the guard from being removed while the roll is turning.

Paper machine winders when used to produce rolls of 15 inches or less in diameter may be exempted from this subsection but must comply with the provisions of (6)(b).

(b) Rewinders. (i) When rewinding large rolls and the nip point is adjacent to the normal work area, the nip point shall be protected by a barrier guard. Such guard shall be interlocked with the drive mechanism to prevent operating the machine above jog speed without the guard in place. A zero speed switch shall be installed to prevent the guard from being raised while the roll is turning.

(ii) On small rolls 15 inches or less in diameter where barrier guards are impractical they shall not be required if the nip point is separated from the employees by at least 18" while operating at more than jog speed. When the rewinder is running at more than jog speed no worker shall place any part of his body closer than 18" from the nip.

(c) Inrunning nips where paper is not being fed into a calender should be protected by barriers.

(7) Audible alarm in dryer section. An audible alarm shall be sounded prior to starting up any section of a pulp or paper machine. Sufficient time shall be allowed between activation of the alarm system and start-up of the equipment to allow any persons to clear the hazardous area.

(8) Starting up dryer section. In starting up a dryer section, steam to heat the drums shall be introduced slowly and while the drums are revolving.

(9) Starting paper into nip. When starting paper into the nip of drum type reels or calender stacks a safe method shall be used. This may be accomplished by the use of feeder belts, carrier ropes, air carriage or other device or instrument. A rope carrying system should be used wherever possible at points of transfer. Sheaves should be spaced so that they do not create a nip point with each other and the sheave and its support should be capable of withstanding the speed and breaking strength of the rope for which they are intended.

(10) Feeding stack with hand held device. Employees shall not feed a stack with any hand held device which is capable of going through the nip.

(11) Broken carrier rope. Employees shall not attempt to remove a broken carrier rope from a dryer while the section is running at operating speed.

(12) Removing a wrap. Employees shall stop dryer to remove a wrap except in cases where it can be safely removed by using air or other safe means.

(13) Deposits on rolls. To remove deposits from rolls, a specially designed scraper or tool shall be used. Scraping of rolls shall be performed on the outgoing nip side.

(14) Cleaning doctor blades. Employees shall not place their hands between the sharp edge of an unloaded doctor blade and the roll while cleaning the doctor blade.

(15) Sharp edges of doctor blades to be covered. Doctor blades shall have the sharp edges properly guarded during transportation and storage.

(16) Handling doctor blades. Special protective gloves shall be provided and shall be worn by employees when filing or handling sharp edged doctor blades.

(17) Steps, platforms or walkways for calender stacks. When steps, platforms, or walkways are necessary to perform work on calender stacks they shall have nonskid type surfaces. Guardrails shall be installed where possible.

(18) Lifting reels. (a) Reels shall stop rotating before being lifted away from reel frame.

(b) All lifting equipment (clamps, cables, and slings) shall be maintained in a safe condition and inspected regularly.

(c) Exposed rotating reel shafts with square block ends shall be guarded.

(19) Reels to be properly seated. The crane operator shall ascertain that reels are properly seated at winder stand or at reel arms before he disengages the hooks.

(20) Space between reels. On stack reels, a clearance of at least 8 inches between the reels of paper shall be maintained.

(21) Set screws. Set screws for securing core collars to winding and unwinding shafts shall not protrude above the face of the collar. All edges of the collar that an operator's hand may come in contact with shall be beveled to remove all sharp corners.

(22) Properly set up core cutting device. The worker shall make certain that any core cutting device is properly set up and guard is in proper position before using the machine.

(23) Winder shaft. All winder shafts should be equipped with a winder collar guide. The winder should have a guide rail to align the shaft for easy entrance into the opened rewind shaft bearing housing. If winder shafts are too heavy for manual handling, mechanical equipment shall be used.

(24) Barrier guards for shaftless winders. Shaftless winders shall be provided with a barrier guard of sufficient strength and size to confine the rolls in the event they become dislodged while running.

(25) Grounding. All calender stacks and spreader bars shall be grounded as protection against shock induced by static electricity.

(26) Sole plates. All exposed sole plates between dryers, calenders, reels and rewinders shall have a nonskid type surface.

(27) Nonskid type surface required. A nonskid type surface shall be provided in the work areas around the winders or rewinders. Areas in front of the winder shall be kept clear of oil, broke, and other debris that may cause workers to slip, trip, or fall.

(28) Roll lowering table. If a powered roll ejector is used it should be interlocked to prevent accidental actuation until the receiving platform or roll lowering table is in position to receive the roll.

(29) Lowerator. Employees shall keep clear of hazardous areas around the lowerator, especially all lowerator openings in a floor and where roll is being discharged.

(30) Rider rolls. Provision shall be made to hold the rider roll when in a raised position unless counterbalancing eliminates the hazard.

(31) Gas hood entry procedures. Whenever an employee is inside a gas hood he shall be accompanied by another worker or a person shall be stationed near the entrance.

(32) Drain openings in pits. Flush floor drain openings larger than 3" in diameter in the bottom of pits shall be guarded to prevent workers from stepping through, while working in this area. [Statutory Authority: RCW 49.17-.040, 49.17.240, and chapters 43.22 and 42.30 RCW. 81-03-007 (Order 80-31), § 296-79-300, filed 1/8/81; Order 76-7, § 296-79-300, filed 3/1/76; Order 74-24, § 296-79-300, filed 5/6/74; Order 70-6, § 296-79-300, filed 7/10/70, effective 8/10/70.]

Chapter 296-81 WAC
SAFETY RULES GOVERNING EXISTING ELEVATORS, DUMBWAITERS, ESCALATORS AND OTHER LIFTING DEVICES--MOVING WALKS

WAC

296-81-002	Repealed.
296-81-003	Repealed.
296-81-005	National elevator codes adopted.
296-81-006	National elevator code adopted—1967.
296-81-007	National elevator code adopted.
296-81-008	National elevator code supplement adopted.
296-81-260	Photo electric or electric eye devices.
296-81-990	Advisory board.

DISPOSITION OF SECTIONS FORMERLY CODIFIED IN THIS CHAPTER

296-81-002	Foreword. [Foreword, filed 9/28/64.] Repealed by 82-12-005 (Order 82-18), filed 5/20/82. Statutory Authority: RCW 70.87.030.
296-81-003	Waiver and variance. [Waiver and Variance, filed 9/28/64.] Repealed by 82-12-005 (Order 82-18), filed 5/20/82. Statutory Authority: RCW 70.87.030.

WAC 296-81-002 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-81-003 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-81-005 National elevator codes adopted. (1) American Standard Safety Code for Elevators, Dumbwaiters and Escalators A 17.1 1960 shall apply to all elevators, dumbwaiters, and escalators installed between November 1, 1963, and December 29, 1967.

(2) American Standard Safety Code Rules for Moving Walks A.S.A. 17.1.13 1962 shall apply to all moving walks installed between November 1, 1963, and December 29, 1967.

(3) Part X of A.S.A. A17.1 1960 Maintenance shall apply to installations in existence on November 1, 1963. [Statutory Authority: RCW 70.87.030. 82-12-005 (Order 82-18), § 296-81-005, filed 5/20/82. Prior: Effective 11/1/63.]

WAC 296-81-006 National elevator code adopted--1967. USAS STANDARD A 17.1-1965 "Safety Code for Elevators, Dumbwaiters, Escalators and Moving Walks" (Revision and Consolidation of A17.1-1-1960, A17.1a-1963, and A17.1-13-1962) plus Supplement USAS-A17.1a-1967, USAS A17.1b-1968, USAS A17.1c-1969 (excluding Appendix E) and ANSI A17.1d-1970 shall apply to all elevators, dumbwaiters, escalators, and moving walks installed from December 30, 1967, through February 24, 1972. [Statutory Authority: RCW 70.87.030. 82-12-005 (Order 82-18), § 296-81-006, filed 5/20/82; Order 70-11, § 296-81-006, filed 9/18/70; filed 12/29/67.]

Reviser's note: The A.S.A. publications are published by the American Society of Mechanical Engineers at 345 47th Street, New York, New York 10017.

WAC 296-81-007 National elevator code adopted. (1) The American National Standard Safety Code for Elevators, Dumbwaiters, Escalators and Moving Walks, American National Standards Institute A17.1, as amended or revised through the year 1971, are hereby adopted as the standards for compliance in this state for elevators, dumbwaiters, escalators, and moving walks installed from February 25, 1972, through June 30, 1982.

(2) The American National Standard Safety Code for Elevators, Dumbwaiters, Escalators, and Moving Walks, ANSI A17.1, 1981 edition, is hereby adopted as the standard for elevators, dumbwaiters, escalators, and moving walks installed on or after July 1, 1982. [Statutory Authority: RCW 70.87.030. 82-12-005 (Order 82-18), § 296-81-007, filed 5/20/82; Order 72-2, § 296-81-007, filed 2/25/72.]

WAC 296-81-008 National elevator code supplement adopted. The American National Standard Supplement to Safety Code for Elevators, Dumbwaiters, Escalators and Moving Walks, A17.1-1971, ANSI A17.1a-1972 is hereby adopted as additional standards for compliance in this state for elevators, dumbwaiters, escalators, and moving walks installed from February 25, 1972, through June 30, 1982, and by this reference such standards are incorporated herein as though fully set forth. Copies of this supplement may be obtained from The American Society of Mechanical Engineers, 345 East 47th Street, New York, New York 10017. [Statutory Authority: RCW 70.87.030. 82-12-005 (Order 82-18), § 296-81-008, filed 5/20/82; Order 76-37, § 296-81-008, filed 12/3/76; Order 74-31, § 296-81-008, filed 6/14/74.]

WAC 296-81-260 Photo electric or electric eye devices. An elevator equipped with a photo electric or electric eye device for reopening of the car and hoistway doors shall be provided with a means that will automatically bypass the light ray if obstruction of the light ray for approximately 20 seconds has prevented the doors

from closing. The light ray shall not be reestablished until the doors have fully closed. Upon a sufficient showing of need by a hospital or a nursing home, the department may authorize an automatic bypass means that will cause the doors to close within 35 seconds after the expiration of the normal door open time. [Statutory Authority: RCW 70.87.030. 82-12-005 (Order 82-18), § 296-81-260, filed 5/20/82; Order 76-37, § 296-81-260, filed 12/3/76; Order 73-1, § 296-81-260, filed 4/16/73.]

WAC 296-81-990 Advisory board. (1) There is created an advisory board on conveyances. The board shall be composed of five persons appointed by the director of labor and industries or his or her designee with the advice of the chief of the elevator section. The first board members shall serve the following terms:

(a) One member shall serve for one year;
(b) One member shall serve for two years;
(c) One member shall serve for three years; and
(d) Two members shall serve for four years.

After the first terms, all members shall serve for four years.

(2) The board shall meet on the third Tuesday of February, May, August, and November of each year, and at other times at the discretion of the chief of the elevator section. The board members shall serve without per diem or travel expenses.

(3) The purposes of the board are to advise the department on adoption of codes and rules that apply to conveyances; methods for enforcing and administering the elevator law, chapter 70.87 RCW; and matters of concern to the industry and to owners and users of conveyances.

(4) The chief of the elevator section shall act as secretary for the board. [Statutory Authority: RCW 70.87-.030. 82-12-005 (Order 82-18), § 296-81-990, filed 5/20/82.]

Chapter 296-86 WAC

REGULATIONS AND FEES FOR FREIGHT AND PASSENGER ELEVATORS, MANLIFTS, DUMBWAITERS, ESCALATORS, MOVING WALKS, AUTOMOBILE PARKING ELEVATORS, AND PERSONNEL ELEVATORS

WAC

296-86-010	Permits for construction, alteration, relocation of installations.
296-86-020	Construction and alteration fee.
296-86-030	Installation fee for personnel elevators, material hoists, and cantilever hoists.
296-86-040	Submission of plans for new installations.
296-86-060	Annual operating permit fees.
296-86-070	Supplemental inspections.
296-86-075	Reinspection fees.
296-86-080	Fee for inspection of regular elevators being used as temporary personnel elevators.

WAC 296-86-010 Permits for construction, alteration, relocation of installations. Before a permit is issued for the construction, alteration, relocation, or installation of a conveyance subject to the provisions of this act, application for such a permit shall be made to the department accompanied by the fee set forth in the appropriate fee schedule in this chapter. No work shall be done until the permit has been issued. Construction and alteration permits shall be valid for one year from date of issue. Renewals may be obtained for one dollar for each permit. No permit or fee shall be required for ordering repairs and replacement of damaged, broken, or worn parts necessary for normal maintenance and no permit or fee shall be required for any conveyance exempted by RCW 70.87.200. [Statutory Authority: RCW 70.87.030. 82-12-005 (Order 82-18), § 296-86-010, filed 5/20/82; Order 70-5, § 296-86-010, filed 6/2/70.]

WAC 296-86-020 Construction and alteration fee. The construction and alteration fee schedule shall be:

TOTAL COST	FEE
$250.00 to and including $1,000	$ 25.00
$1,001 to and including $15,000	
For first $1,001	35.00
For each additional $1,000 or fraction	7.00
$15,001 to and including $100,000	
For first $15,001	133.00
For each additional $1,000 or fraction	5.00
Over $100,001	
For first $100,001	558.00
For each additional $1,000 or fraction	4.00

[Statutory Authority: RCW 70.87.030. 82-12-005 (Order 82-18), § 296-86-020, filed 5/20/82; Order 70-5, § 296-86-020, filed 6/2/70.]

WAC 296-86-030 Installation fee for personnel elevators, material hoists, and cantilever hoists. The fee for the installation of each personnel elevator, material hoist, and cantilever hoist shall be $60.00. [Statutory Authority: RCW 70.87.030. 82-12-005 (Order 82-18), § 296-86-030, filed 5/20/82; Order 76-37, § 296-86-030, filed 12/3/76; Order 74-36, § 296-86-030, filed 10/1/74; Order 70-11, § 296-86-030, filed 9/18/70, effective 10/21/70; Order 70-5, § 296-86-030, filed 6/2/70.]

WAC 296-86-040 Submission of plans for new installations. Plans shall be submitted in duplicate to the elevator section prior to construction for approval in accordance with the American Standard Safety Code for Elevators, Dumbwaiters, Escalators and Moving Walks A 17.1-1981. [Statutory Authority: RCW 70.87.030. 82-12-005 (Order 82-18), § 296-86-040, filed 5/20/82; Order 74-36, § 296-86-040, filed 10/1/74; Order 70-5, § 296-86-040, filed 6/2/70.]

WAC 296-86-060 Annual operating permit fees. Fees for annual operation shall be paid in accordance

with the following schedule and no operating permit shall be issued for the operation of a conveyance until such fees have been received.

CONVEYANCE	ANNUAL FEE
Each passenger elevator	$ 60.00
Each freight elevator	60.00
Each sidewalk freight elevator	60.00
Each hand power freight elevator	20.00
Each hand power manlift	26.00
Each incline lift	60.00
Each belt manlift	60.00
Each boat launching elevator	60.00
Each auto parking elevator	60.00
Each escalator	52.00
Each moving walk	52.00
Each dumbwaiter	20.00
Each people mover	45.00
Each stair lift	13.00
Each wheel chair lift	13.00
Each personnel elevator	60.00
Each material hoist	60.00
Each cantilever hoist	60.00

[Statutory Authority: RCW 70.87.030. 82-12-005 (Order 82-18), § 296-86-060, filed 5/20/82; Order 76-37, § 296-86-060, filed 12/3/76; Order 74-36, § 296-86-060, filed 10/1/74; Order 71-16, § 296-86-060, filed 12/7/71; Order 70-11, § 296-86-060, filed 9/18/70, effective 10/22/70; Order 70-5, § 296-86-060, filed 6/2/70.]

WAC 296-86-070 Supplemental inspections. Any person, firm, corporation or governmental agency may secure supplemental inspections of conveyances by paying to the department a fee of $235.00 per day plus the standard per diem and mileage allowed by the department to its inspectors. [Statutory Authority: RCW 70-.87.030. 82-12-005 (Order 82-18), § 296-86-070, filed 5/20/82; Order 76-37, § 296-86-070, filed 12/3/76; Order 74-36, § 296-86-070, filed 10/1/74; Order 70-11, § 296-86-070, filed 9/18/70, effective 10/21/70.]

WAC 296-86-075 Reinspection fees. No fee shall be charged for the yearly inspection or for the initial inspection after installation or alteration. If, however, the conveyance does not meet the requirements of the department, and if another inspection is required to confirm compliance by the person having control over the conveyance with the regulations of the department, then an inspection fee of $35 per conveyance to be inspected shall be charged for the reinspection, and if there is still failure to comply with the rules of the department, a fee of $40 shall be charged for every conveyance requiring a further reinspection. These fees are in addition to the fees charged under WAC 296-86-020 and must be paid before issuance of an operating permit. The department may waive the reinspection fee where, through no fault of the requesting person or agency, or of the person or agency responsible for payment of the reinspection fee, reinspection is not possible; or for other reasons that in justice or equity obviate the necessity of payment of the reinspection fee. [Statutory Authority: RCW 70.87.030. 82-12-005 (Order 82-18), § 296-86-075, filed 5/20/82; Order 76-37, § 296-86-075, filed 12/3/76; Order 72-2, § 296-86-075, filed 2/25/72.]

WAC 296-86-080 Fee for inspection of regular elevators being used as temporary personnel elevators. The fee for the inspection and testing of regular elevators for use as temporary personnel elevators shall be $60.00. [Statutory Authority: RCW 70.87.030. 82-12-005 (Order 82-18), § 296-86-080, filed 5/20/82; Order 76-37, § 296-86-080, filed 12/3/76; Order 70-11, § 296-86-080, filed 9/18/70, effective 10/21/70.]

Chapter 296-104 WAC
BOARD OF BOILER RULES--SUBSTANTIVE

WAC

296-104-055 Examination fees.
296-104-060 Commissions as inspectors.
296-104-200 Standards for new construction.
296-104-700 Inspection fees—Certificate fees—Expenses.

WAC 296-104-055 Examination fees. A fee of forty dollars will be charged for each applicant taking the examination for a certificate of competency or any examination sponsored by the National board of boiler and pressure vessel inspectors. If an applicant fails to pass the examination this fee shall be good for one year during which a re-examination may be taken. Checks for examination fees shall be made payable to the state treasurer. [Statutory Authority: RCW 70.79.030 and 70.79.330. 82-24-025 (Order 82-36), § 296-104-055, filed 11/23/82, effective 1/1/83; Order 74-37, § 296-104-055, filed 11/8/74; Part II, § 8, filed 3/23/60.]

WAC 296-104-060 Commissions as inspectors. Upon the request of any company authorized to insure and insuring against loss from explosion of boilers and pressure vessels in this state, or upon the request of any company operating pressure vessels in this state, the chief inspector shall issue a commission as a special inspector and an identifying commission card to any inspector actively engaged in boiler or pressure vessel inspection in this state if the inspector is employed by the requesting company and if the inspector has passed the written examination and holds a certificate of competency as set forth in WAC 296-104-050. The fee for the commission is twenty-five dollars. The commission shall be held at the home office of the employing company. Inspectors shall carry identifying commission cards while they are inspecting. A commission shall be valid for one year and may be renewed annually at the request of the employing company for a fee of ten dollars. The employing company shall return the commission and the identifying commission card at once to the chief inspector when the inspector to whom the commission was issued is no longer in its employ, or at the request of the chief inspector. The department may suspend or revoke a certificate of competency and commission issued to an inspector upon ten days notice to

the inspector and to the inspector's employer for incompetency or untrustworthiness; for wilful falsification of any matter or statement contained in his application, or in the report of any inspection, or in any other application, or in the report of any inspection; or for other sufficient reason. The holder of a certificate of competency is entitled to a hearing before the board before the revocation or suspension of the certificate of competency. A person whose commission has been suspended, except for untrustworthiness, may apply to the board for reinstatement. A person whose commission has been revoked, except for untrustworthiness, may apply to the board to take a new examination for a commission after ninety days from the date of the revocation. [Statutory Authority: RCW 70.79.030 and 70.79.330. 82-24-025 (Order 82-36), § 296-104-060, filed 11/23/82, effective 1/1/83; Order 74-37, § 296-104-060, filed 11/8/74; Part II, § 9, filed 3/23/60.]

WAC 296-104-200 Standards for new construction. The standards for new construction are the 1980 edition of the ASME Boiler & Pressure Vessel code, ANSI B31.3 for oil and chemical plants, and ANSI B31.1 for other nonnuclear construction, with all addenda made to each code before November 1, 1982. The 1980 code as applicable may be used on and after the date of issue and becomes mandatory twelve months after adoption by the board as defined in RCW 70.79.050(2). The board recognizes that the ASME code states that new editions of the code become mandatory on issue and that subsequent addenda become mandatory six months after the date of issue. Also, in circumstances such as nuclear systems the time period for addenda becoming mandatory is defined in the Code of Federal Regulations. [Statutory Authority: RCW 70.79.030 and 70.79.330. 82-24-025 (Order 82-36), § 296-104-200, filed 11/23/82, effective 1/1/83. Statutory Authority: RCW 70.79.030. 82-05-003 (Order 82-2), § 296-104-200, filed 2/4/82; 81-12-012 (Order 81-10), § 296-104-200, filed 5/28/81; 81-01-114 (Order 80-28), § 296-104-200, filed 12/24/80; 80-05-065 (Order 80-7), § 296-104-200, filed 4/23/80; 79-05-054 (Order 79-7), § 296-104-200, filed 4/30/79; 78-10-096 (Order 78-19), § 296-104-200, filed 10/3/78; Order 77-23, § 296-104-200, filed 11/8/77; Order 77-9, § 296-104-200, filed 5/26/77; Order 75-35, § 296-104-200, filed 10/29/75; Order 74-37, § 296-104-200, filed 11/8/74; Order 73-1, § 286-104-200, filed 3/22/73; Order 72-17, § 296-104-200, filed 9/28/72; Order 72-11, § 296-104-200, filed 7/7/72; Part IV, § 1, filed 3/23/60.]

WAC 296-104-700 Inspection fees--Certificate fees--Expenses. The following fees shall be paid by, or on behalf of, the owner or user upon the completion of the inspection. The inspection fees apply to inspections made by inspectors employed by the state and include the certificate fee:

Heating Boilers:	Internal	External
Cast Iron—All Sizes	25.00	20.00
All other boilers less than 500 sq. ft.	30.00	20.00
500 sq. ft. to 2500 sq. ft.	50.00	25.00
Each additional 2500 sq. ft. of total heating surface, or any portion thereof	20.00	10.00

Power Boilers:	Internal	External
Less than 100 sq. ft.	25.00	20.00
100 sq. ft. to less than 500 sq. ft.	30.00	20.00
500 sq. ft. to 2500 sq. ft.	50.00	25.00
Each additional 2500 sq. ft. of total heating surface, or any portion thereof	20.00	10.00

Pressure Vessels:

Automatic Utility Hot Water Supply Heaters per RCW 70.79.090		12.00
All other Pressure Vessels: Square feet shall be determined by multiplying the length of the shell by its diameter.	Internal	External
Less than 15 sq. ft.	20.00	15.00
15 sq. ft. to less than 50 sq. ft.	30.00	15.00
50 sq. ft. to 100 sq. ft.	35.00	20.00
For each additional 100 sq. ft. or any portion thereof	10.00	5.00

Certificate of Inspection fees: For objects inspected by a special inspector employed by an authorized insurance company or user owner, the certificate of inspection fee is $10.00 per object.

Nonnuclear Shop Inspections, Field Construction Inspections, and Special Inspection Services:

For each hour or part of an hour up to 8 hours	30.00
For each hour or part of an hour in excess of 8 hours	45.00

Nuclear Shop Inspections, Nuclear Field Construction Inspections, and Nuclear Triennial Shop Survey and Audit:

For each hour or part of an hour up to 8 hours	45.00
For each hour or part of an hour in excess of 8 hours	70.00

Nonnuclear Triennial Shop Survey and Audit:

When state is authorized inspection agency:	
For each hour or part of an hour up to 8 hours	30.00
For each hour or part of an hour in excess of 8 hours	45.00
When insurance company is authorized inspection agency:	
For each hour or part of an hour up to 8 hours	45.00
For each hour or part of an hour in excess of 8 hours	70.00

Expenses shall include:
Travel time and mileage: The department shall charge for its inspectors' travel time from their offices to the inspection sites and return. The travel time shall be charged for at the same rate as that for the inspection, audit, or survey. The department shall also charge 20 cents per mile or the actual cost of purchased transportation.
Hotel and meals: Actual cost.

Reinspection Fee: Same as the fee for the previous inspection during which

discrepancies were reported. The fee will be charged only if the discrepancies are not corrected before the reinspection. The fee shall not exceed $25.00.
Washington State Specials: For each vessel to be considered by the board for a Washington State Special certificate, a fee of $300.00 must be paid to the department before the board meets to consider the vessel. The board may, at its discretion, prorate the fee when a number of vessels that are essentially the same are to be considered.

[Statutory Authority: RCW 70.79.030 and 70.79.330. 82-24-025 (Order 82-36), § 296-104-700, filed 11/23/82, effective 1/1/83; Order 77-23, § 296-104-700, filed 11/8/77; Emergency Order 77-22, § 296-104-700, filed 11/8/77.]

Chapter 296-116 WAC
PILOTAGE RULES

WAC

296-116-070 Collection of fees.
296-116-075 Qualifications for pilot applicants.
296-116-080 Licensing of pilots.
296-116-085 Association by-laws.
296-116-185 Tariffs, and pilotage rates for the Grays Harbor pilotage district.
296-116-205 Vessel certification.
296-116-300 Pilotage rates for the Puget Sound pilotage district.
296-116-320 Retirement fund contribution.

WAC 296-116-070 Collection of fees. All pilots shall pay an annual license fee of eight hundred dollars for every year in which they perform any pilotage services. If a licensed pilot does not perform pilotage services during a calendar year, his fee for that year shall be reduced to four hundred dollars upon application to the board. The board of pilotage commissioners shall receive all fees for licenses or for other purposes and make proper accounting of same and transmit all such funds to the pilotage account. [Statutory Authority: RCW 88-.16.035. 82-24-010 (Order 82-8, Resolution No. 82-8), § 296-116-070, filed 11/18/82; 79-11-063 (Order 79-5, Resolution 79-5), § 296-116-070, filed 10/18/79. Statutory Authority: RCW 88.16.035 and 88.16.155. 78-09-057 (Order 78-2, Resolution 78-2), § 296-116-070, filed 8/23/78; Order 2-68, § 296-116-070, filed 11/1/68; § 7, effective 11/25/58.]

WAC 296-116-075 Qualifications for pilot applicants. Under the authority of RCW 88.16.090 pilot applicants must meet one of the following additional qualifications before taking the Washington state pilotage examination for either the Grays Harbor or Puget Sound pilotage districts:

(1) One year of service as master of ocean or coastwise vessels while holding a license as master ocean steam or motor vessels any gross tons; or

(2) One year of service as master of coastwise steam or motor vessels while holding a license as a master of coastwise steam or motor vessels any gross tons; or

(3) Two years of service as master of freight or towing vessel, while holding a license as a master of freight and towing vessels not more than 1000 gross tons; or

(4) Two years of service as master on lakes, bays, and sounds while holding a license as master on lakes, bays, and sounds any gross tons; or

(5) Three years of experience as a member of an organized professional pilots association, during which period the candidate was actively engaged in piloting while holding a minimum license as a master freight or towing vessel not more than 1000 gross tons; or

(6) Two years service as a chief officer on ocean or coastwise vessels of not less than 1000 gross tons while holding a license as master ocean steam or motor vessel any gross tons; or

(7) Two years service as commanding officer of U.S. government vessels of not less than 1000 gross tons, and holding a license as master ocean steam or motor vessel any gross tons.

Note: (All licenses referred to in sections (1)-(7) shall be licenses for inspected vessels).

[Statutory Authority: RCW 88.16.090. 82-15-026 (Order 82-6, Resolution No. 82-6), § 296-116-075, filed 7/14/82.]

WAC 296-116-080 Licensing of pilots. (1) No person shall be licensed by the board unless he has applied for a pilotage license and successfully completed: (a) The pilotage examination; (b) familiarization trips required by the board; and (c) the pilotage training program, if applicable.

The majority of the entire board shall pass on the licensing of a pilot and licenses shall be signed by the chairperson. All applicants shall have and display a United States government masters license and a first class United States endorsement without restrictions on that license to pilot in whichever pilotage district the applicant desires a license. In addition all applicants shall have and display an endorsement to their masters license issued by the United States Coast Guard certifying competence as a radar observer.

(2) Prior to commencing familiarization trips, and the pilot training program, if applicable, an applicant must pass a written and oral examination given and graded by the board. The board shall hold examinations at such times as will ensure the maintenance of an efficient and competent pilotage service. Notice of the examination shall be published four months in advance by one paid advertisement in a major newspaper and written notice to one radio station, one television station, United Press International, and the Associated Press, as well as all pilots licensed by the board and all operators registered with the board. The board may, in an emergency, call for an immediate examination of applicants who have an application on file with the board.

(a) The examination may be taken by all qualified applicants who:

(i) Have had a license application on file with the board for at least one month prior to the examination.

(This requirement may be waived upon the showing of good cause);

(ii) Have tendered an examination fee of one hundred dollars which will be applied to his first year license fee if successful and shall be returned to the applicant if he is unable to sit for the examination; and

(iii) Have had a physical examination by a physician designated by the board not more than thirty days prior to the examination to determine his physical fitness to be a pilot.

(b) The examination shall be in compliance with RCW 88.16.090 and shall consist of questions covering, but not limited to, the following subjects as they pertain to the pilotage district for which the examination is being given:

(i) Rules of the road as set forth in United States Government Publications;

(ii) Aids to navigation;

(iii) Courses, distances, and distance past abeam at change–of–course points, course points within channels, waterways, and navigable tributaries within the pilotage district for which the examination is being given;

(iv) Cable crossing areas;

(v) Dredged channel widths and depths;

(vi) Bridge signals – width, regulations, and closed periods;

(vii) Ship handling, docking and undocking problems, use of towboats and anchors, and seamanship;

(viii) Vessel traffic system regulations where applicable;

(ix) Ranges for determining compass error;

(x) Channel ranges;

(xi) Engine and rudder order commands for United States and foreign merchant vessels and United States naval vessels;

(xii) Operation and use of marine radar, including rapid plotting techniques;

(xiii) Calculation of currents and tides;

(xiv) Pier, wharf, or terminal locations and berth numbers; dock or pier headings, lengths, and minimum depths of water alongside;

(xv) Prohibited areas, restricted areas, and explosive anchorages;

(xvi) Use of navigational and bridge instruments;

(xvii) Anchorage locations;

(xviii) Duties of pilot;

(xix) Relationship between pilot and master;

(xx) Location and meaning of storm warning signals;

(xxi) Meaning of one and two flag signals;

(xxii) United States government public health quarantine regulations;

(xxiii) Harbor regulations;

(xxiv) Washington State Pilotage Act and rules of the board of pilotage commissioners;

(xxv) Chart knowledge, including chart symbols and abbreviations as set forth in the latest department of commerce NOS (National Ocean Survey) Chart No. 1.

(3) After successful completion of the examination, the board shall determine the number of familiarization trips which the applicant will have to make pursuant to RCW 88.16.090. Familiarization trips are ship movements over specified routes on which the applicant observes the route and the actions of the licensed pilot on board.

(4) After passing the examination, applicants for the Puget Sound pilotage district must enter and successfully complete a familiarization and training program. In this program applicants shall be required to pilot vessels under the supervision of Puget Sound pilots with more than five years experience. After every such assignment the supervisory pilots shall fill out, on a form provided by the board, an evaluation of the applicant's performance. After completion of the training period, the board shall evaluate the applicant's performance in shiphandling skills on the basis of these forms and other relevant information and decide whether the applicant should be licensed. Dependent on the applicant's experience level and grade of license, applicants in this training program shall pilot under such supervision for a minimum period of four months and seventy–five assignments and a maximum period of six months and one hundred assignments. Some or all of the familiarization trips required by RCW 88.16.090(7) may, at the board's discretion, be combined with trips during which the applicant is piloting the vessel under the supervision of a licensed pilot. [Statutory Authority: RCW 88.16.090. 82–15–028 (Order 82–7, Resolution No. 82–7), § 296–116–080, filed 7/14/82; 81–21–019 (Order 81–4, Resolution 81–4), § 296–116–080, filed 10/13/81. Statutory Authority: RCW 88.16.035. 80–03–081 (Order 79–6, Resolution 79–6), § 296–116–080, filed 3/4/80; 79–11–063 (Order 79–5, Resolution 79–5), § 296–116–080, filed 10/18/79; 79–05–023 (Order 79–2, Resolution 79–2), § 296–116–080, filed 4/17/79; Order 75–8, § 296–116–080, filed 3/10/75; Order 73–6, § 296–116–080, filed 5/11/73; Order 2–68, § 296–116–080, filed 11/1/68; § 8, effective 11/25/58.]

WAC 296–116–085 Association by–laws. The association of pilots for the Puget Sound pilotage district, together with the association of pilots for the Grays Harbor pilotage district, shall maintain on file with the commission a current copy of their respective association by–laws and amendments. Hereafter they shall file with the commission each new amendment adopted by their respective groups in order that the board may be kept informed of association acts and activities. [Statutory Authority: RCW 88.16.035. 82–13–087 (Order 82–10–049, Resolution No. 82–10–049), § 296–116–085, filed 6/23/82; Order 76–12, § 296–116–085, filed 4/22/76.]

WAC 296–116–185 Tariffs, and pilotage rates for the Grays Harbor pilotage district. The following rates shall become effective on April 1, 1981:

CLASSIFICATION OF PILOTAGE SERVICE RATE

Piloting of vessels in the inland waters and tributaries of Grays Harbor:

Each vessel shall be charged according to its draft and tonnage. The draft charges shall be $31.35 per meter (or $9.56 per foot) and the tonnage charge shall be $.10 per net registered ton. The minimum net registered tonnage charge is $350.00. The charge for an extra vessel (in case of tow) is $200.00.

Boarding Fee:

Per each boarding/deboarding from a boat $150.00

Note: Fifty dollars of the boarding fee is to finance the purchase of the pilot boat "Chehalis" and "Grays Harbor." When the boats are fully amortized, the boarding fee is to be terminated. The one-hundred dollar additional fee will be placed in an account for maintenance of the pilot boats.

Harbor Shifts:

For each shift from dock to dock, dock to anchorage, anchorage to dock, or anchorage to anchorage 250.00
Delays per hour 60.00
Cancellation charge (pilot only) 100.00
Cancellation charge (pilot boat only) 300.00

Travel Allowance:

Boarding or deboarding a vessel off Grays Harbor entrance 50.00
Pilot when traveling to an outlying port to join a vessel or returning through an outlying port from a vessel which has been piloted to sea shall be paid $250.00 for each day or fraction thereof, and the travel expense incurred.

Bridge Transit:

Charge for each bridge transited 110.00

Miscellaneous:

The balance of amounts due for pilotage rates not paid within 60 days of invoice will be assessed at 1% per month late charge. At least a four hour notice shall be given for an arrival, sailing, or change of ETA or ETD.

[Statutory Authority: RCW 88.16.035(4). 82-08-016 (Order 82-1, Resolution No. 82-1), § 296-116-185, filed 3/29/82. Statutory Authority: RCW 88.16.035(4). 81-07-009 (Order 81-1, Resolution 81-1), § 296-116-185, filed 3/6/81; 80-03-081 (Order 79-6, Resolution 79-6), § 296-116-185, filed 3/4/80; Order 2-68, § 296-116-185, filed 11/1/68.]

WAC 296-116-205 Vessel certification. (1) Upon boarding a vessel in the Puget Sound pilotage district or Grays Harbor pilotage district, a pilot shall request on the form provided in WAC 296-116-2051 that the master of the vessel certify that: (a) The engine room is properly staffed, able to maneuver, and all related equipment is in good order; (b) there are no defects listed against the ship by the United States Coast Guard which would prevent it from sailing; (c) the vessel is not leaking oil; (d) the vessel is experiencing no propulsion or maneuvering difficulties.

If the master is unable to certify that all of the above conditions are met, he shall be asked to certify that the United States Coast Guard captain of the port has been notified of said deficiencies and has authorized the vessel to proceed.

If the master is unable or unwilling to certify that either of the above are the case, the pilot shall not offer pilotage services to said vessel. Instead, the pilot shall disembark from the vessel as soon as practicable, immediately inform the captain of the port of the conditions and circumstances by the best possible means and forward a written report to the board of pilotage commissioners no later than 24 hours after disembarking from the vessel. Any Washington licensed pilot who offers pilotage services to a vessel on which the master has failed to make a certification required by this section shall be subject to the penalties provided in RCW 88.16.100 and 88.16.150.

(2) Upon boarding vessels in either the Puget Sound pilotage district or the Grays Harbor pilotage district, the pilot shall also request to see the vessel's SOLAS certificate, and the Federal Maritime Commission certificate of financial responsibility.

The pilot shall also inspect the following of the ship's equipment and conditions and indicate their suitability:

VHF radio, channels 13, 14; radar; gyrocompass; rudder angle indicator; whistle; wheelhouse staffed by an officer and helmsman, one of whom speaks English; local, up-to-date charts; and wheelhouse to engine room communications.

(3) The form appearing in WAC 296-116-2051 shall be used by pilots and masters in complying with the above requirements.

(4) Forms completed by masters and pilots which indicate that the vessel is in compliance and nondeficient shall be forwarded to the offices of the board of pilotage commissioners where they will be retained for a period of at least six months. Forms indicating a vessel not in compliance or deficient and forms upon which either the master or the pilot have failed to make the required certification shall be forwarded to the board of pilotage commissioners and retained for a period of at least twelve months. [Statutory Authority: RCW 88.16.035. 82-13-087 (Order 82-10-049, Resolution No. 82-10-049), § 296-116-205, filed 6/23/82; 79-11-063 (Order 79-5, Resolution 79-5), § 296-116-205, filed 10/18/79. Statutory Authority: RCW 88.16.035 and 88.16.155.

78-09-057 (Order 78-2, Resolution 78-2), § 296-116-205, filed 8/23/78.]

WAC 296-116-300 Pilotage rates for the Puget Sound pilotage district. These rates shall become effective on June 15, 1982, or as soon thereafter as provided in RCW 34.04.040.

CLASSIFICATION	RATE
Ship Length overall (LOA) Charges:	per LOA rate schedule in this section
Boarding Fee: Per each boarding/deboarding at the Port Angeles Pilot station.	$22.00
Harbor Shift – Live Ship (Seattle Port)	LOA Zone I
Harbor Shift – Live Ship (Other than Seattle Port)	LOA Zone I
Harbor Shift – Dead Ship	Double LOA Zone I
Dead Ship Towing Charge: LOA of tug + LOA of tow + beam of tow	Double LOA Zone
Any tow exceeding seven hours, two pilots are mandatory. Harbor shifts shall constitute and be limited to those services in moving vessels from dock to dock, from anchorage to dock, from dock to anchorage, or from anchorage to anchorage in the same port after all other applicable tariff charges for pilotage services have been recognized as payable.	
Waterway and Bridge Charges: Ships up to 90' beam: A charge of $110.00 shall be in addition to bridge fees for any vessel movements both inbound and outbound required to transit south of Spokane Street Bridge in Seattle, south of Eleventh Street Bridge in any of the Tacoma waterways, in Port Gamble, or in the Snohomish River. Any vessel movements required to transit through bridges shall have an additional charge of $52.00 per bridge.	
Ships 90' beam and/or over: A charge of $147.00 shall be in addition to bridge fees for any vessel movements both inbound and outbound required to transit south of Spokane Street Bridge in Seattle and south of Eleventh Street Bridge in any of the Tacoma waterways. Any vessel movements required to transit through bridges shall have an additional charge of $103.00 per bridge.	
(The above charges shall not apply to transit of vessels from Shilshole Bay to the limits of Lake Washington.)	
In a case where two pilots are employed for a single vessel waterway or bridge transit, a second pilot charge shall be levied in the amount of a harbor shift only.	
Compass Adjustment	146.00
Radio Direction Finder Calibration	146.00
Launching Vessels	219.00
Trial Trips, 6 hours or less (Minimum $352.00)	59.00 per hr.
Trial Trips, over 6 hours (two pilots)	117.00 per hr.
Shilshole Bay — Salmon Bay	85.00
Salmon Bay — Lake Union	68.00
Lake Union — Lake Washington (plus LOA zone from Webster Point)	85.00
Cancellation Charge	LOA Zone I
Cancellation Charge — Port Angeles (When pilot is ordered and vessel proceeds without stopping for pilot)	LOA Zone I
Docking Delay after Anchoring: Applicable Harbor Shift rate to apply, plus $59.00 per hour standby. No charge if delay is 60 minutes or less. If the delay is more than 60 minutes, charge is $59.00 for every hour or fraction thereof.	59.00
Sailing Delay	59.00 per hour
No charge if delay is 60 minutes or less. If the delay is more than 60 minutes, charge is $59.00 for every hour or fraction thereof.	
Slow-Down — $59.00 per hour for all time in excess of time spent in that particular transit for that speed of advance normal for vessel that is slowed.	59.00 per hour
Super Ships — Additional charge to LOA zone mileage of $0.0365 a gross ton for all gross tonnage in excess of 20,000 gross tons up to 50,000 gross tons. In excess of 50,000 gross tons, the charge shall be $0.0437 per gross ton.	
Delayed Arrival Port Angeles (When pilot is ordered and vessel does not arrive within two hours without notification of change of ETA.)	59.00 per hour
Transportation to vessels on Puget Sound:	
March Point or Anacortes	$ 96.00
Bangor	56.00

CLASSIFICATION	RATE
Bellingham	106.00
Bremerton	29.00
Cherry Point	125.00
Dupont	56.00
Edmonds	20.00
Everett	36.00
Ferndale	115.00
Manchester	44.00
Mukilteo	35.00
Olympia	72.00
Point Wells	20.00
Port Gamble	51.00
Port Townsend (Indian Island)	73.00
Semiahmoo (Blaine)	131.00
Tacoma	37.00
Tacoma Smelter	42.00
Winslow	29.00

(a) Interport shifts: Transportation paid to and from both points.

(b) Intraharbor shifts: Transportation to be paid both ways. If intraharbor shift is cancelled on or before scheduled reporting time, transportation paid one way only.

(c) Cancellation: Transportation both ways unless notice of cancellation is received prior to scheduled reporting time in which case transportation need only be paid one way.

(d) Any new facilities or other seldom used terminals, not covered above, shall be based on mileage x $1.40 per mile.

Delinquent payment charge: 1% per month after 60 days from first billing.

Non Use of Pilots: Ships taking and discharging pilots without using their services through all Puget Sound and adjacent inland waters shall pay full pilotage fees on the LOA zone mileage basis from Port Angeles to destination, from place of departure to Port Angeles, or for entire distance between two ports on Puget Sound and adjacent inland waters.

LOA Rate Schedule

The following rate schedule is based upon distances furnished by National Oceanic and Atmospheric Administration, computed to the nearest half-mile and includes retirement fund contributions.

LOA	ZONE I	ZONE II	ZONE III	ZONE IV	ZONE V	ZONE VI
	Intra Harbor	0–30 Miles	31–51 Miles	51–75 Miles	76–100 Miles	101 Miles & Over
Up to 499	103	161	279	419	565	735
450 – 459	105	164	282	426	572	738
460 – 469	109	167	285	432	581	740
470 – 479	112	171	288	441	584	743
480 – 489	114	174	290	448	589	746
490 – 499	117	176	294	456	595	750
500 – 509	121	180	298	464	600	755
510 – 519	123	184	301	470	605	757
520 – 529	125	191	307	473	611	764
530 – 539	130	194	311	477	620	771
540 – 549	132	197	316	482	631	778
550 – 559	135	202	319	488	635	785
560 – 569	140	208	325	492	642	794
570 – 579	143	212	329	494	648	800
580 – 589	149	215	334	498	653	808
590 – 599	155	219	337	501	661	816
600 – 609	161	226	341	503	668	821
610 – 619	170	229	347	507	676	829
620 – 629	177	233	351	510	684	837
630 – 639	187	237	355	512	689	845
640 – 649	195	243	359	515	697	852
650 – 659	206	247	365	518	705	860
660 – 669	212	250	369	521	712	866
670 – 679	217	255	372	529	720	873
680 – 689	223	260	377	535	727	881
690 – 699	229	265	382	544	735	897
700 – 719	240	273	390	551	748	909
720 – 739	253	282	399	559	764	924
740 – 759	265	294	408	565	778	940
760 – 779	276	306	417	572	794	954
780 – 799	288	317	426	581	808	970
800 – 819	299	329	434	587	821	984
820 – 839	311	340	443	595	837	997
840 – 859	324	352	452	602	852	1013
860 – 879	335	365	461	617	866	1028
880 – 899	347	376	470	632	881	1042
900 – 919	358	388	478	646	897	1057
920 – 939	370	399	488	661	909	1073
940 – 959	382	411	495	676	924	1085
960 – 979	393	423	505	689	940	1101
980 – 999	406	434	513	705	954	1116
1000 & over	417	447	523	720	970	1130

[Statutory Authority: RCW 88.16.035(4). 82-13-065 (Order 82-4, Resolution No. 82-4), § 296-116-300, filed 6/16/82. Statutory Authority: RCW 88.16.035. 81-12-017 (Order 81-2, Resolution 81-2), § 296-116-300, filed 5/29/81; 80-06-084 (Order 80-1, Resolution 80-1), § 296-116-300, filed 5/28/80. Statutory Authority: RCW 88.16.035(4). 79-07-033 (Order 79-4, Resolution 79-4), § 296-116-300, filed 6/19/79. Statutory Authority: Chapter 88.16 RCW and 1977 ex. sess. c 337, §§ 1 and 4. 78-02-008 (Order 78-1), § 296-116-300, filed 1/6/78, effective 2/10/78; Order 77-18, § 296-116-300, filed 9/20/77, effective 11/1/77; Order 76-24, § 296-116-300, filed 7/22/76; Order 75-3, § 296-116-300, filed 2/10/75; Order 74-2, § 296-116-300, filed 1/8/74; Order 73-8, § 296-116-300, filed 6/20/73 and Emergency Order 73-10, filed 7/19/73, effective 8/14/73; Order 70-7, § 296-116-300, filed 7/16/70; 7/25/67; 2/18/64; 10/29/62; 12/28/60; 3/23/60.]

WAC 296-116-320 Retirement fund contribution. With respect to $750 per month for a full-time pilot and $375 per month for a half-time pilot retirement fund contributions:

(1) Each active pilot member of the association of pilots for the Puget Sound pilotage district shall make a

retirement fund contribution of $750 per month for a full–time pilot and $375 per month for a half–time pilot for retirement purposes which shall be accumulated and payable upon death or retirement only, and shall be deposited in a joint account in the name of the individual pilot and the association, in a qualified public depository approved for the purpose by the board: *Provided, however,* The board grants further authority, subject to the following withdrawal limitations, for a portion or all of the retirement fund contributions for pilots on and after July 18, 1975, to be placed into trust programs limited to interest bearing notes, interest bearing accounts, investments, and accumulations of money in short–term money funds, and participation in bank pooled bond funds. These investments would be for self–employed individuals, so as to qualify said programs under applicable federal laws for deferral of income benefits and other personal advantages. Funds may also be put in fixed income accounts designed to comply with HR–10 Self–Employed Individuals Tax Retirement Act of 1962, as amended by the Employee Retirement Income Security Act of 1974, when such trust plans are submitted to the board for prior approval. Participation in such approved self–employment retirement plans shall be conditioned upon the following:

(a) Once established these plans shall not be terminated except upon the death or retirement of the participating pilot.

(b) Each participating pilot shall issue to the trustee of the self–employment retirement plan signed instructions directing the trustee to give advance notice to the office of the chairperson of the board of pilotage commissioners of any application for distribution or termination of an established self–employment retirement plan. Any pilot, or any person acting on behalf of said pilot's estate, making such an application for distribution or termination at any time other than upon the event of death or retirement of the pilot, shall be directed by the board to withdraw such application.

(c) Should a pilot have not elected retirement prior to age 70 1/2, said pilot shall be permitted to receive a distribution in whatever form he elects, under the provisions of his self–employment retirement plan, thereby complying with the mandatory distribution requirements of the above–mentioned retirement laws, provided that any and all funds so distributed be immediately deposited into a joint account in the name of the individual pilot and the association of pilots for the Puget Sound pilotage district, in a qualified public depository approved for the purpose by the board, and thereafter withdrawn only upon actual death or retirement.

(d) It is to be understood by any pilot electing to direct contributions toward these self–employed plans and trust programs, that such activity is at their own financial choosing and the general approval by the board for such arrangement is not to be taken as any kind of recommendation or positive approval by the board as to these types of programs. This contribution of $750 per month for a full–time pilot and $375 per month for a half–time pilot shall be derived from the pilot's gross revenues.

(2) On quarterly reports required under RCW 88.16-.110, the pilot shall state for the preceding quarter the total retirement fund contribution received, through that quarter and shall itemize all withdrawals or payments from such fund. Further, the pilot shall reflect what portion of his retirement funds, on a quarterly basis, have been diverted into KEOGH approved investment retirement plans.

(3) All persons hereafter licensed by the board to pilot on the waters of Puget Sound under the provisions of the Pilotage Act, chapter 88.16 RCW shall be deemed to have agreed to and be bound by the foregoing.

(4) These regulations have been enacted pursuant to the board of pilotage commissioners' authority to fix rates of pilotage as set forth hereinabove. Failure to comply with any aspect of these regulations controlling the use of the $750 per month for a full–time pilot and $375 per month for a half–time pilot contribution amount granted for retirement purpose shall result in disciplinary action pursuant to RCW 88.16.120 and such violation may be charged as a misdemeanor pursuant to RCW 88.16.150. [Statutory Authority: RCW 88.16.035. 82–13–087 (Order 82–10–049, Resolution No. 82–10–049), § 296–116–320, filed 6/23/82; 80–03–081 (Order 79–6, Resolution 79–6), § 296–116–320, filed 3/4/80. Statutory Authority: Chapter 88.16 RCW and 1977 ex. sess. c 337, §§ 1 and 4. 78–02–008 (Order 78–1), § 296–116–320, filed 1/6/78, effective 2/10/78; Order 77–18, § 296–116–320, filed 9/20/77, effective 11/1/77; Order 76–24, § 296–116–320, filed 7/22/76; Order 76–12, § 296–116–320, filed 4/22/76; Order 73–8, § 296–116–320, filed 6/20/73 and Emergency Order 73–10, filed 7/19/73, effective 8/14/73; Order 70–7, § 296–116–320, filed 7/16/70; 7/25/67.]

Chapter 296–127 WAC
PREVAILING WAGE

WAC

296–127–010 Definitions.
296–127–011 Time for determining prevailing wage.
296–127–017 Notice of wage determinations.
296–127–020 Interpretation of locality.
296–127–021 Apprentice worker.
296–127–030 Irrigation district exemption.
296–127–040 Statement of intent to pay prevailing wages.
296–127–045 Affidavit of wages paid.
296–127–060 Director of department of labor and industries to arbitrate disputes—General provisions.
296–127–061 Requests for arbitration.
296–127–062 Conduct of arbitration hearing.

WAC 296–127–010 Definitions. (1) "Department" means the department of labor and industries.

(2) "Director" means the director of the department of labor and industries or his duly authorized deputy or representative.

(3) "Industrial statistician" means the industrial statistician of the department of labor and industries, industrial relations division.

(4) "Assistant director" means the supervisor of industrial relations for the department of labor and industries or his duly authorized deputy or representative. [Statutory Authority: RCW 39.12.015, 39.12.060 and House Bill 795, 1982 1st ex.s. c 38. 82-18-041 (Order 82-28), § 296-127-010, filed 8/27/82.]

WAC 296-127-011 Time for determining prevailing wage. The department will use the date bids are due as the effective date for determining prevailing wages provided the contract is awarded within 60 days after bids are due. If the contract is not awarded within 60 days after bids are due, the department will determine the prevailing wage on the date the contract is awarded. If the contract is not awarded pursuant to bids, the department will determine the prevailing wage on the date the contract is awarded. [Statutory Authority: RCW 39.12.015, 39.12.060 and House Bill 795, 1982 1st ex.s. c 38. 82-18-041 (Order 82-28), § 296-127-011, filed 8/27/82.]

WAC 296-127-017 Notice of wage determinations. Current prevailing wage data will be furnished by the industrial statistician upon request. Please mail the request to:

Industrial Statistician
Department of Labor and Industries
Employment Standards Division
General Administration Building
Olympia, Washington 98504 MS AX31r
(Telephone: (206) 753-4019).

[Statutory Authority: RCW 39.12.015, 39.12.060 and House Bill 795, 1982 1st ex.s. c 38. 82-18-041 (Order 82-28), § 296-127-017, filed 8/27/82.]

WAC 296-127-020 Interpretation of locality. The department interprets the definition of "locality" contained in RCW 39.12.010(2), "wherein the physical work is being performed," as the actual work site. For example, if materials are prefabricated in a county other than the county wherein the public works project is to be completed, the wage for the prefabrication shall be the prevailing wage for the county where the physical work of prefabrication is actually performed. Standard items for sale on the general market are not subject to the requirements of chapter 39.12 RCW. [Statutory Authority: RCW 39.12.015, 39.12.060 and House Bill 795, 1982 1st ex.s. c 38. 82-18-041 (Order 82-28), § 296-127-020, filed 8/27/82.]

WAC 296-127-021 Apprentice worker. Any apprentice employed on public works projects for whom an apprentice agreement is registered and approved by the state apprenticeship council pursuant to chapter 49.04 RCW within 60 days of hiring may be considered an apprentice and paid the applicable prevailing hourly rate for an apprentice of that trade for all hours worked. [Statutory Authority: RCW 39.12.015, 39.12.060 and House Bill 795, 1982 1st ex.s. c 38. 82-18-041 (Order 82-28), § 296-127-021, filed 8/27/82.]

WAC 296-127-030 Irrigation district exemption. Contracts awarded by irrigation districts for the reclamation or development of waste or undeveloped lands are not covered by the prevailing wage law, pursuant to RCW 39.04.010. Any work, construction alteration, repair or improvement that is not solely for the reclamation or development of waste or undeveloped land is covered by the prevailing wage laws and therefore subject to all the laws and regulations contained in and adopted pursuant to chapter 39.12 RCW. [Statutory Authority: RCW 39.12.015, 39.12.060 and House Bill 795, 1982 1st ex.s. c 38. 82-18-041 (Order 82-28), § 296-127-030, filed 8/27/82.]

WAC 296-127-040 Statement of intent to pay prevailing wages. (1) All statements of intent to pay prevailing wages submitted to the industrial statistician of the department shall be accompanied by a fee of $12.50 for each statement. Fees shall be made payable to the department of labor and industries.

(2) Any agency, division, or department of the state of Washington which through agreement with the department certifies statements of intent for its own contracts shall provide to the industrial statistician each month the number of statements of intent certified and quarterly shall send a fee of $10.00 for each statement of intent to pay prevailing wages it has certified. This fee shall be sent to the industrial statistician and be made payable to the department of labor and industries. [Statutory Authority: RCW 39.12.015, 39.12.060 and House Bill 795, 1982 1st ex.s. c 38. 82-18-041 (Order 82-28), § 296-127-040, filed 8/27/82.]

WAC 296-127-045 Affidavit of wages paid. (1) All affidavits of wages paid submitted to the industrial statistician of the department shall be accompanied by a fee of $12.50 for each affidavit of wages paid. All fees shall be made payable to the department of labor and industries.

(2) Any agency, division, or department of the state of Washington which through agreement with the department certifies affidavits of wages paid for its own contracts shall provide to the industrial statistician each month the number of affidavit of wages paid it has certified and quarterly shall send a fee of $10.00 for each affidavit of wages paid it has certified. This fee shall be sent to the industrial statistician and be made payable to the department of labor and industries. [Statutory Authority: RCW 39.12.015, 39.12.060 and House Bill 795, 1982 1st ex.s. c 38. 82-18-041 (Order 82-28), § 296-127-045, filed 8/27/82.]

WAC 296-127-060 Director of department of labor and industries to arbitrate disputes--General provisions. (1) The contract executed between a public authority and the successful bidder or contractor and all of his subcontractors shall contain a provision that in case any dispute arises as to what are the prevailing rates of wages for a specific trade, craft or occupation and such

dispute cannot be adjusted by the parties in interest, including labor and management representatives, the matter shall be referred for arbitration to the director, and his decision shall be final, conclusive, and binding on all parties involved in the dispute.

(2) In exercising his authority to hear and decide disputes the director shall consider among other things, timeliness, the nature of the relief sought, matters of undue hardship or injustice, or public interest. A "timely" request for arbitration is one received within 30 days after the contract has been awarded.

(3) Any party in interest who is seeking a modification or other change in a wage determination under RCW 39.12.015, and who has requested the industrial statistician to make such modification or other change and the request has been denied, after appropriate reconsideration by the assistant director shall have a right to petition for arbitration of the determination.

(a) For purpose of this section, the term "party in interest" is considered to include, without limitation:

(i) Any contractor, or an association representing a contractor, who is likely to seek or to work under a contract containing a particular wage determination, or any worker, laborer or mechanic, or any council of unions or any labor organization which represents a laborer or mechanic who is likely to be employed or to seek employment under a contract containing a particular wage determination, and

(ii) Any public agency concerned with the administration of a proposed contract or a contract containing a particular wage determination issued pursuant to chapter 39.12 RCW.

(b) For good cause shown, the director may permit any party in interest to intervene or otherwise participate in any proceeding held by the director. A petition to intervene or otherwise participate shall be in writing, and shall state with precision and particularity:

(i) The petitioner's relationship to the matters involved in the proceedings, and

(ii) The nature of the presentation which he would make. Copies of the petition shall be served on all parties or interested persons known to be participating in the proceeding, who may respond to the petition. Appropriate service shall be made of any response. [Statutory Authority: RCW 39.12.015, 39.12.060 and House Bill 795, 1982 1st ex.s. c 38. 82-18-041 (Order 82-28), § 296-127-060, filed 8/27/82.]

WAC 296-127-061 Requests for arbitration. (1) The petition for arbitration (original and four copies) shall be filed with Director, Department of Labor and Industries, General Administration Building, Olympia, Washington 98504. In addition, copies of the petition shall be served personally or by mail upon each of the following:

(a) The public agency or agencies involved,

(b) The industrial statistician, and

(c) Any other person (or the authorized representatives of such person) known to be interested in the subject matter of the petition.

(2) The director shall under no circumstances request any administering agency to postpone any contract performance because of the filing of a petition. This is a matter which must be resolved directly with the administering agency by the petitioner or other party in interest.

(3) A petition for arbitration of a wage determination shall:

(a) Be in writing and signed by the petitioner or his counsel (or other authorized representative), and

(b) Identify clearly the wage determination, location of project or projects in question, and the agency concerned, and

(c) State that the petitioner has requested reconsideration of the wage determination in question and describe briefly the action taken in response to the request, and

(d) Contain a short and plain statement of the grounds for review, and

(e) Be accompanied by supporting data, views, or arguments, and

(f) Be accompanied by a filing fee of $75.00. Fees shall be made payable to the department of labor and industries. [Statutory Authority: RCW 39.12.015, 39-.12.060 and House Bill 795, 1982 1st ex.s. c 38. 82-18-041 (Order 82-28), § 296-127-061, filed 8/27/82.]

WAC 296-127-062 Conduct of arbitration hearing. (1) Interested persons other than the petitioner shall have a reasonable opportunity as specified by the director in particular cases to submit to the director written data, views, or arguments relating to the petition. Such material (original and four copies) shall be filed with the director, Department of Labor and Industries, General Administration Building, Olympia, Washington 98504 and be accompanied by a filing fee of $35.00. Fees shall be made payable to the department of labor and industries. Copies of any such material shall be served on the petitioner and other interested persons.

(2) Each party in interest shall have the right to appear in person or by or with counsel or other qualified representatives in any proceeding before the director. If all parties agree, oral testimony may be waived and arguments submitted in writing.

(3) Upon his own initiative or upon motion of any interested person or party, the director may consolidate in any proceeding or concurrently consider two or more appeals which involve substantially the same persons or parties, or issues which are the same or closely related, if he finds that such consolidation or concurrent review will contribute to an efficient review and to the ends of justice, and it will not unduly delay consideration of any such appeals.

(4) The director shall prescribe the time and place for hearing. The director shall schedule the hearing within 45 days of the request. For good cause shown, the director may allow a continuance at the request of a party in interest.

(a) With respect to any proceeding before him, the director may upon his own initiative or upon the request of any interested person or party direct the interested persons or parties to appear before the director at a

specified time and place in order to simplify the issues presented or to take up any other matters which may tend to expedite or otherwise facilitate the disposition of the proceeding.

(b) All papers submitted to the director under this section shall be filed with the Department of Labor and Industries, General Administration Building, Olympia, Washington 98504. An original and four copies of all papers shall be submitted. Service under this part shall be by the filing party or interested person; service may be personal or may be by mail. Service by mail is complete on mailing.

(5) The final disposition shall be by the director.

(a) The director may decline review of any case whenever in his judgment a review would be inappropriate or because of the lack of timeliness, the nature of the relief sought, or other reasons.

(b) The director shall decide the case upon the basis of all relevant matter contained in the entire record before him but the director may utilize his experience, technical competence, and specialized knowledge in evaluating the evidence.

(c) Upon reasonable notice to the parties or interested persons, the director may vary the procedures specified in this part in particular cases.

(6) The director may allow all parties a period of ten days for filing post-hearing briefs prior to closing the record and concluding the hearing.

(7) The director shall issue a written decision within 30 days of the conclusion of the hearing. A copy shall be sent to each party in interest. [Statutory Authority: RCW 39.12.015, 39.12.060 and House Bill 795, 1982 1st ex.s. c 38. 82-18-041 (Order 82-28), § 296-127-062, filed 8/27/82.]

Chapter 296-150A WAC
RULES AND REGULATIONS FOR FACTORY-BUILT HOUSING AND COMMERCIAL STRUCTURES AND GOVERNOR'S ADVISORY BOARD ADMINISTRATIVE RULES

WAC

296-150A-005 Application and scope.
296-150A-010 Repealed.
296-150A-011 Enforcement.
296-150A-015 Repealed.
296-150A-016 Definitions.
296-150A-020 Repealed.
296-150A-021 Insignia of approval—In general.
296-150A-024 Filing a design plan.
296-150A-025 Repealed.
296-150A-026 Repealed.
296-150A-027 Repealed.
296-150A-030 Requirements for design plans.
296-150A-035 Engineering analysis and test procedures.
296-150A-040 Department check of the design plan.
296-150A-045 Resubmittal of corrected design plan.
296-150A-050 Repealed.
296-150A-051 Application for approval of a compliance control manual.
296-150A-055 Changes to a design plan or an approved compliance control manual.
296-150A-060 Renewal of a design plan.
296-150A-065 Trade secrets.
296-150A-070 Applications for inspection and insignia for factory-built structures and components.
296-150A-075 Applications for insignia for factory-built structures and components.
296-150A-080 Inspections at a manufacturer's plant by a local enforcement agency, an independent inspection agency, or the manufacturer.
296-150A-085 Other inspections by the department.
296-150A-090 Action after inspection.
296-150A-095 Inspection of factory-built structures after installation at the building site.
296-150A-100 Complaint investigations.
296-150A-105 Fee required if a structure or component is not ready for inspection.
296-150A-110 Alterations.
296-150A-115 Application for alteration insignia and approval of alteration.
296-150A-120 Lost or damaged insignia.
296-150A-125 Notice of violations.
296-150A-130 Prohibited sale or lease notice.
296-150A-135 Approval of equipment.
296-150A-140 Department approval of listing and testing agencies, licensed professional engineers, and licensed architects.
296-150A-145 Approval of alternates.
296-150A-150 Manufacturing in more than one location.
296-150A-155 Change of name, address, or ownership.
296-150A-160 Discontinuance of a product line.
296-150A-170 Reciprocal agreements.
296-150A-300 Construction standards for factory-built structures.
296-150A-315 Repealed.
296-150A-320 Repealed.
296-150A-325 Repealed.
296-150A-330 Repealed.
296-150A-333 Repealed.
296-150A-335 Repealed.
296-150A-400 Repealed.
296-150A-405 Repealed.
296-150A-410 Repealed.
296-150A-415 Repealed.
296-150A-417 Repealed.
296-150A-420 Repealed.
296-150A-423 Repealed.
296-150A-424 Repealed.
296-150A-425 Repealed.
296-150A-430 Repealed.
296-150A-435 Repealed.
296-150A-440 Repealed.
296-150A-445 Repealed.
296-150A-450 Repealed.
296-150A-500 Repealed.
296-150A-505 Repealed.
296-150A-506 Repealed.
296-150A-510 Repealed.
296-150A-515 Repealed.
296-150A-516 Repealed.
296-150A-520 Repealed.
296-150A-521 Repealed.
296-150A-525 Repealed.
296-150A-530 Repealed.
296-150A-535 Repealed.
296-150A-540 Repealed.
296-150A-545 Repealed.
296-150A-550 Repealed.
296-150A-555 Repealed.
296-150A-560 Repealed.
296-150A-565 Repealed.
296-150A-570 Repealed.
296-150A-575 Repealed.
296-150A-580 Repealed.
296-150A-585 Repealed.
296-150A-590 Repealed.
296-150A-595 Repealed.
296-150A-600 Repealed.
296-150A-605 Repealed.
296-150A-606 Repealed.

296-150A-610 Repealed.
296-150A-615 Repealed.
296-150A-620 Repealed.
296-150A-625 Repealed.
296-150A-630 Repealed.
296-150A-640 Repealed.
296-150A-650 Repealed.
296-150A-675 Repealed.
296-150A-680 Repealed.
296-150A-685 Repealed.
296-150A-690 Repealed.
296-150A-695 Repealed.
296-150A-700 Repealed.
296-150A-710 Repealed.
296-150A-950 Hearing on aggrievances.
296-150A-990 Fees.

DISPOSITION OF SECTIONS FORMERLY CODIFIED IN THIS CHAPTER

296-150A-010 Administration—Authority for factory-built housing and commercial structures code. [Order 77-8, § 296-150A-010, filed 4/29/77; Order 74-15, § 296-150A-010, filed 4/30/74.] Repealed by 82-12-004 (Order 82-19), filed 5/20/82. Statutory Authority: RCW 43.22.475 and 43.22.480.

296-150A-015 Application and scope. [Order 77-8, § 296-150A-015, filed 4/29/77; Order 74-15, § 296-150A-015, filed 4/30/74] Repealed by 82-12-004 (Order 82-19), filed 5/20/82. Statutory Authority: RCW 43.22-.475 and 43.22.480.

296-150A-020 Department services. [Order 77-8, § 296-150A-020, filed 4/29/77; Order 74-15, § 296-150A-020, filed 4/30/74.] Repealed by 82-12-004 (Order 82-19), filed 5/20/82. Statutory Authority: RCW 43.22.475 and 43.22.480.

296-150A-025 Conditions of reciprocity. [Order 77-8, § 296-150A-025, filed 4/29/77; Order 74-15, § 296-150A-025, filed 4/30/74.] Repealed by 82-12-004 (Order 82-19), filed 5/20/82. Statutory Authority: RCW 43.22-.475 and 43.22.480.

296-150A-026 Acceptance from out-of-state jurisdictions. [Order 77-8, § 296-150A-026, filed 4/29/77; Order 74-15, § 296-150A-026, filed 4/30/74.] Repealed by 82-12-004 (Order 82-19), filed 5/20/82. Statutory Authority: RCW 43.22.475 and 43.22.480.

296-150A-027 Educational. [Order 77-8, § 296-150A-027, filed 4/29/77; Order 74-15, § 296-150A-027, filed 4/30/74.] Repealed by 82-12-004 (Order 82-19), filed 5/20/82. Statutory Authority: RCW 43.22.475 and 43.22.480.

296-150A-050 Definitions—General. [Order 77-8, § 296-150A-050, filed 4/29/77; Order 74-15, § 296-150A-050, filed 4/30/74.] Repealed by 82-12-004 (Order 82-19), filed 5/20/82. Statutory Authority: RCW 43.22.475 and 43.22.480.

296-150A-315 Construction requirements. [Order 77-8, § 296-150A-315, filed 4/29/77; Order 74-15, § 296-150A-315, filed 4/30/74.] Repealed by 82-12-004 (Order 82-19), filed 5/20/82. Statutory Authority: RCW 43.22.475 and 43.22.480.

296-150A-320 Electrical requirements. [Order 77-8, § 296-150A-320, filed 4/29/77; Order 75-5, § 296-150A-320, filed 3/5/75; Order 74-15, § 296-150A-320, filed 4/30/74.] Repealed by 82-12-004 (Order 82-19), filed 5/20/82. Statutory Authority: RCW 43.22.475 and 43.22.480.

296-150A-325 Mechanical requirements. [Order 77-8, § 296-150A-325, filed 4/29/77; Order 74-15, § 296-150A-325, filed 4/30/74.] Repealed by 82-12-004 (Order 82-19), filed 5/20/82. Statutory Authority: RCW 43.22-.475 and 43.22.480.

296-150A-330 Plumbing requirements. [Order 77-8, § 296-150A-330, filed 4/29/77; Order 74-15, § 296-150A-330, filed 4/30/74.] Repealed by 82-12-004 (Order 82-19), filed 5/20/82. Statutory Authority: RCW 43.22-.475 and 43.22.480.

296-150A-333 Handicap standards. [Order 77-8, § 296-150A-333, filed 4/29/77.] Repealed by 82-12-004 (Order 82-19), filed 5/20/82. Statutory Authority: RCW 43.22-.475 and 43.22.480.

296-150A-335 Code research and materials evaluation service. [Order 74-15, § 296-150A-335, filed 4/30/74.] Repealed by 82-12-004 (Order 82-19), filed 5/20/82. Statutory Authority: RCW 43.22.475 and 43.22.480.

296-150A-400 Enforcement and administration—Enforcement. [Order 77-8, § 296-150A-400, filed 4/29/77; Order 74-15, § 296-150A-400, filed 4/30/74.] Repealed by 82-12-004 (Order 82-19), filed 5/20/82. Statutory Authority: RCW 43.22.475 and 43.22.480.

296-150A-405 Equipment and systems. [Order 74-15, § 296-150A-405, file 4/30/74.] Repealed by 82-12-004 (Order 82-19), filed 5/20/82. Statutory Authority: RCW 43.22.475 and 43.22.480.

296-150A-410 Department disapproval of listed or labeled equipment and systems. [Order 74-15, § 296-150A-410, filed 4/30/74.] Repealed by 82-12-004 (Order 82-19), filed 5/20/82. Statutory Authority: RCW 43.22.475 and 43.22.480.

296-150A-415 Alternates and equivalents. [Order 74-15, § 296-150A-415, filed 4/30/74.] Repealed by 82-12-004 (Order 82-19), filed 5/20/82. Statutory Authority: RCW 43.22.475 and 43.22.480.

296-150A-417 Prohibited notice. [Order 77-8, § 296-150A-417, filed 4/29/77.] Repealed by 82-12-004 (Order 82-19), filed 5/20/82. Statutory Authority: RCW 43.22-.475 and 43.22.480.

296-150A-420 Inspections. [Order 77-8, § 296-150A-420, filed 4/29/77; Order 74-15, § 296-150A-420, filed 4/30/74.] Repealed by 82-12-004 (Order 82-19), filed 5/20/82. Statutory Authority: RCW 43.22.475 and 43.22.480.

296-150A-423 Compliance control programs (CC). [Order 77-8, § 296-150A-423, filed 4/29/77; Order 74-15, § 296-150A-423, filed 4/30/74.] Repealed by 82-12-004 (Order 82-19), filed 5/20/82. Statutory Authority: RCW 43.22.475 and 43.22.480.

296-150A-424 Factory-built—Compliance control (FB-CC). [Order 77-8, § 296-150A-424, filed 4/29/77; Order 74-15, § 296-150A-424, filed 4/30/74.] Repealed by 82-12-004 (Order 82-19), filed 5/20/82. Statutory Authority: RCW 43.22.475 and 43.22.480.

296-150A-425 Local enforcement agency—Compliance control (LEA-CC). [Order 74-15, § 296-150A-425, filed 4/30/74.] Repealed by 82-12-004 (Order 82-19), filed 5/20/82. Statutory Authority: RCW 43.22.475 and 43.22.480.

296-150A-430 Local enforcement agency application. [Order 74-15, § 296-150A-430, filed 4/30/74.] Repealed by 82-12-004 (Order 82-19), filed 5/20/82. Statutory Authority: RCW 43.22.475 and 43.22.480.

296-150A-435 The local enforcement agency. [Order 74-15, § 296-150A-435, filed 4/30/74.] Repealed by 82-12-004 (Order 82-19), filed 5/20/82. Statutory Authority: RCW 43.22.475 and 43.22.480.

296-150A-440 The local enforcement agency responsibility. [Order 77-8, § 296-150A-440, filed 4/29/77; Order 74-15, § 296-150A-440, filed 4/30/74.] Repealed by 82-12-004 (Order 82-19), filed 5/20/82. Statutory Authority: RCW 43.22.475 and 43.22.480.

296-150A-445 Manufacturer compliance control (M-CC). [Order 74-15, § 296-150A-445, filed 4/30/74.] Repealed by 82-12-004 (Order 82-19), filed 5/20/82. Statutory Authority: RCW 43.22.475 and 43.22.480.

296-150A-450 Independent inspection agency compliance control (IIA-CC). [Order 74-15, § 296-150A-450, filed 4/30/74.] Repealed by 82-12-004 (Order 82-19), filed 5/20/82. Statutory Authority: RCW 43.22.475 and 43.22.480.

296-150A-500 Design plan approval—General. [Order 77-8, § 296-150A-500, filed 4/29/77; Order 74-15, § 296-150A-500, filed 4/30/74.] Repealed by 82-12-004 (Order

82-19), filed 5/20/82. Statutory Authority: RCW 43.22.475 and 43.22.480.

296-150A-505 Design plan approval application. [Order 74-15, § 296-150A-505, filed 4/30/74.] Repealed by 82-12-004 (Order 82-19), filed 5/20/82. Statutory Authority: RCW 43.22.475 and 43.22.480.

296-150A-506 Design plan types and descriptions. [Order 77-15, § 296-150A-506, filed 8/19/77; Order 74-15, § 296-150A-506, filed 4/30/74.] Repealed by 82-12-004 (Order 82-19), filed 5/20/82. Statutory Authority: RCW 43.22.475 and 43.22.480.

296-150A-510 Engineering and test procedures. [Order 74-15, § 296-150A-510, filed 4/30/74.] Repealed by 82-12-004 (Order 82-19), filed 5/20/82. Statutory Authority: RCW 43.22.475 and 43.22.480.

296-150A-515 Design plan requirements. [Order 77-15, § 296-150A-515, filed 8/19/77; Order 74-15, § 296-150A-515, filed 4/30/74.] Repealed by 82-12-004 (Order 82-19), filed 5/20/82. Statutory Authority: RCW 43.22.475 and 43.22.480.

296-150A-516 Technical report. [Order 74-15, § 296-150A-516, filed 4/30/74.] Repealed by 82-12-004 (Order 82-19), filed 5/20/82. Statutory Authority: RCW 43.22.475 and 43.22.480.

296-150A-520 Live loads. [Order 77-15, § 296-150A-520, filed 8/19/77; Order 74-15, § 296-150A-520, filed 4/30/74.] Repealed by 82-12-004 (Order 82-19), filed 5/20/82. Statutory Authority: RCW 43.22.475 and 43.22.480.

296-150A-521 Plastic DWV piping. [Order 77-15, § 296-150A-521, filed 8/19/77; Order 74-15, § 296-150A-521, filed 4/30/74.] Repealed by 82-12-004 (Order 82-19), filed 5/20/82. Statutory Authority: RCW 43.22.475 and 43.22.480.

296-150A-525 Manufacturing in more than one location. [Order 74-15, § 296,150A-525, filed 4/30/74.] Repealed by 82-12-004 (Order 82-19), filed 5/20/82. Statutory Authority: RCW 43.22.475 and 43.22.480.

296-150A-530 Out-of-state applicant. [Order 77-8, § 296-150A-530, filed 4/29/77; Order 74-15, § 296-150A-530, filed 4/30/74.] Repealed by 82-12-004 (Order 82-19), filed 5/20/82. Statutory Authority: RCW 43.22.475 and 43.22.480.

296-150A-535 Nonconforming application and plans. [Order 74-15, § 296-150A-535, filed 4/30/74.] Repealed by 82-12-004 (Order 82-19), filed 5/20/82. Statutory Authority: RCW 43.22.475 and 43.22.480.

296-150A-540 Manufacturers evidence of Department approval. [Order 74-15, § 296-150A-540, filed 4/30/74.] Repealed by 82-12-004 (Order 82-19), filed 5/20/82. Statutory Authority: RCW 43.22.475 and 43.22.480.

296-150A-545 Design plan approval expiration. [Order 77-15, § 296-150A-545, filed 8/19/77; Order 74-15, § 296-150A-545, filed 4/30/74.] Repealed by 82-12-004 (Order 82-19), filed 5/20/82. Statutory Authority: RCW 43.22.475 and 43.22.480.

296-150A-550 Revocation of approval. [Order 74-15, § 296-150A-550, filed 4/30/74.] Repealed by 82-12-004 (Order 82-19), filed 5/20/82. Statutory Authority: RCW 43.22.475 and 43.22.480.

296-150A-555 Changes to approved plans. [Order 77-15, § 296-150A-555, filed 8/19/77; Order 74-15, § 296-150A-555, filed 4/30/74.] Repealed by 82-12-004 (Order 82-19), filed 5/20/82. Statutory Authority: RCW 43.22.475 and 43.22.480.

296-150A-560 Transfer of approvals. [Order 77-15, § 296-150A-560, filed 8/19/77; Order 74-15, § 296-150A-560, filed 4/30/74.] Repealed by 82-12-004 (Order 82-19), filed 5/20/82. Statutory Authority: RCW 43.22.475 and 43.22.480.

296-150A-565 Change of name or address. [Order 74-15, § 296-150A-565, filed 4/30/74.] Repealed by 82-12-004 (Order 82-19), filed 5/20/82. Statutory Authority: RCW 43.22.475 and 43.22.480.

296-150A-570 Discontinuance of manufacturer. [Order 74-15, § 296-150A-570, filed 4/30/74.] Repealed by 82-12-004 (Order 82-19), filed 5/20/82. Statutory Authority: RCW 43.22.475 and 43.22.480.

296-150A-575 Existing approvals. [Order 74-15, § 296-150A-575, filed 4/30/74.] Repealed by 82-12-004 (Order 82-19), filed 5/20/82. Statutory Authority: RCW 43.22.475 and 43.22.480.

296-150A-580 Compliance. [Order 77-15, § 296-150A-580, filed 8/19/77; Order 74-15, § 296-150A-580, filed 4/30/74.] Repealed by 82-12-004 (Order 82-19), filed 5/20/82. Statutory Authority: RCW 43.22.475 and 43.22.480.

296-150A-585 Contingency. [Order 77-8, § 296-150A-585, filed 4/29/77.] Repealed by 82-12-004 (Order 82-19), filed 5/20/82. Statutory Authority: RCW 43.22.475 and 43.22.480.

296-150A-590 Field erection. [Order 74-15, § 296-150A-590, filed 4/30/74.] Repealed by 82-12-004 (Order 82-19), filed 5/20/82. Statutory Authority: RCW 43.22.475 and 43.22.480.

296-150A-595 Proprietary material. [Order 74-15, § 296-150A-595, filed 4/30/74.] Repealed by 82-12-004 (Order 82-19), filed 5/20/82. Statutory Authority: RCW 43.22.475 and 43.22.480.

296-150A-600 Insignia—Insignia required. [Order 77-8, § 296-150A-600, filed 4/29/77; Order 74-15, § 296-150A-600, filed 4/30/74.] Repealed by 82-12-004 (Order 82-19), filed 5/20/82. Statutory Authority: RCW 43.22.475 and 43.22.480.

296-150A-605 Application for insignia. [Order 77-15, § 296-150A-605, filed 8/19/77; Order 74-15, § 296-150A-605, filed 4/30/74.] Repealed by 82-12-004 (Order 82-19), filed 5/20/82. Statutory Authority: RCW 43.22.475 and 43.22.480.

296-150A-606 Notification to local enforcement agency. [Order 77-8, § 296-150A-606, filed 4/29/77; Order 74-15, § 296-150A-606, filed 4/30/74.] Repealed by 82-12-004 (Order 82-19), filed 5/20/82. Statutory Authority: RCW 43.22.475 and 43.22.480.

296-150A-610 Alteration or conversion. [Order 77-8, § 296-150A-610, filed 4/29/77; Order 74-15, § 296-150A-610, filed 4/30/74.] Repealed by 82-12-004 (Order 82-19), filed 5/20/82. Statutory Authority: RCW 43.22.475 and 43.22.480.

296-150A-615 Denial of insignia. [Order 74-15, § 296-150A-615, filed 4/30/74.] Repealed by 82-12-004 (Order 82-19), filed 5/20/82. Statutory Authority: RCW 43.22.475 and 43.22.480.

296-150A-620 Insignia removal. [Order 77-15, § 296-150A-620, filed 8/19/77; Order 74-15, § 296-150A-620, filed 4/30/74.] Repealed by 82-12-004 (Order 82-19), filed 5/20/82. Statutory Authority: RCW 43.22.475 and 43.22.480.

296-150A-625 Lost or damaged insignia. [Order 74-15, § 296-150A-625, filed 4/30/74.] Repealed by 82-12-004 (Order 82-19), filed 5/20/82. Statutory Authority: RCW 43.22.475 and 43.22.480.

296-150A-630 Custom building. [Order 74-15, § 296-150A-630, filed 4/30/74.] Repealed by 82-12-004 (Order 82-19), filed 5/20/82. Statutory Authority: RCW 43.22.475 and 43.22.480.

296-150A-640 Unauthorized use. [Order 74-15, § 296-150A-640, filed 4/30/74.] Repealed by 82-12-004 (Order 82-19), filed 5/20/82. Statutory Authority: RCW 43.22.475 and 43.22.480.

296-150A-650 Unit identification. [Order 74-15, § 296-150A-650, filed 4/30/74.] Repealed by 82-12-004 (Order 82-19), filed 5/20/82. Statutory Authority: RCW 43.22.475 and 43.22.480.

296-150A-675 Components. [Order 74-15, § 296-150A-675, filed 4/30/74.] Repealed by 82-12-004 (Order 82-19), filed 5/20/82. Statutory Authority: RCW 43.22.475 and 43.22.480.

296-150A-680 Components application. [Order 77-15, § 296-150A-680, filed 8/19/77; Order 74-15, § 296-150A-680, filed 4/30/74.] Repealed by 82-12-004 (Order 82-

19), filed 5/20/82. Statutory Authority: RCW 43.22-.475 and 43.22.480.

296-150A-685 Components approval. [Order 74-15, § 296-150A-685, filed 4/30/74.] Repealed by 82-12-004 (Order 82-19), filed 5/20/82. Statutory Authority: RCW 43.22.475 and 43.22.480.

296-150A-690 Components testing. [Order 74-15, § 296-150A-690, filed 4/30/74.] Repealed by 82-12-004 (Order 82-19), filed 5/20/82. Statutory Authority: RCW 43.22-.475 and 43.22.480.

296-150A-695 Components fees and production reports. [Order 77-8, § 296-150A-695, filed 4/29/77; Order 74-15, § 296-150A-695, filed 4/30/74.] Repealed by 82-12-004 (Order 82-19), filed 5/20/82. Statutory Authority: RCW 43.22.475 and 43.22.480.

296-150A-700 Fee schedule. [Order 77-8, § 296-150A-700, filed 4/29/77; Order 74-15, § 296-150A-700, filed 4/30/74.] Repealed by 82-12-004 (Order 82-19), filed 5/20/82. Statutory Authority: RCW 43.22.475 and 43.22.480.

296-150A-710 Department application forms. [Order 77-15, § 296-150A-710, filed 8/19/77.] Repealed by 82-12-004 (Order 82-19), filed 5/20/82. Statutory Authority: RCW 43.22.475 and 43.22.480.

WAC 296-150A-005 Application and scope. (1) This chapter implements the provisions of RCW 43.22-.450 through 43.22.490, which cover the construction and approval of factory-built structures.

(2) This chapter applies to:

(a) Factory-built structures;

(b) components; and

(c) equipment and installations intended to be used in factory-built structures and components. [Statutory Authority: RCW 43.22.475 and 43.22.480. 82-12-004 (Order 82-19), § 296-150A-005, filed 5/20/82.]

WAC 296-150A-010 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-150A-011 Enforcement. The department administers and enforces the provisions of this chapter. An officer, agent, or employee of the department may enter any premises, during working hours or at other reasonable times, where structures or components are manufactured, sold, leased, or offered for sale or lease. He or she may examine a manufacturer's compliance control and production records, and may inspect any construction, equipment, or installations to ensure that the manufacturer is complying with this chapter. If necessary to make a proper inspection, he or she may require a manufacturer, dealer, distributor, or consumer to remove part of the structure or component. [Statutory Authority: RCW 43.22.475 and 43.22.480. 82-12-004 (Order 82-19), § 296-150A-011, filed 5/20/82.]

WAC 296-150A-015 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-150A-016 Definitions. For the purposes of this chapter:

(1) "Alteration" means the replacement, addition, modification, or removal of any equipment or installations that affect the construction, structural members, fire safety, or occupancy classification, or the plumbing, heating, or electrical systems, of a structure or component.

The following are not alterations unless they are made to repair damage caused by fires, floods, or wrecks in transit or during installation:

(a) Repairs with approved parts;

(b) modification of a listed fuel-burning appliance in accordance with the terms of its listing;

(c) replacement of equipment with similar equipment; and

(d) adjustment and maintenance of equipment.

(2) "Approved" means approved by the department.

(3) "Audit" means an inspection to examine for compliance a manufacturer's production and compliance control procedures.

(4) "Building site" means a tract, parcel, or subdivision of land on which a structure is or will be installed.

(5) "Compliance control" means the plan and method for ensuring that the manufacture, fabrication, assembly, or erection of structures, components, and installations, and the storing, handling, and use of materials, complies with this chapter.

(6) "Component" means a discrete element that is:

(a) Designed to be installed in a structure;

(b) manufactured as a unit; and

(c) designed for a particular function or group of functions.

A component may be a floor, wall panel, roof panel, plumbing wall, electrical service wall, heating assembly, or similar assemblies. "Component" includes service cores, but does not include roof trusses.

(7) "Consumer" means a person, firm, corporation, agency, or governmental body, other than a manufacturer or dealer, that buys or leases a structure for his, her, or its own use.

(8) "Custom structure" means a one-of-a-kind structure.

(9) "Dealer" means a person, company, or corporation authorized to engage in the business of leasing, selling, offering for sale or lease, buying, or trading structures.

(10) "Department" means the Washington state department of labor and industries.

(11) "Design option" means a design that a manufacturer may use as an option to its design plan.

(12) "Design plan" means a plan for construction of a structure or component.

(13) "Equipment" means all materials, appliances, devices, fixtures, fittings, or accessories used in the manufacture, assembly, installation, or alteration of structures and components.

(14) "Factory-built structure" means a structure that is designed for occupation or use, or is occupied or used by persons; and that complies with the uniform building code. "Factory-built structure" includes factory-built housing and commercial structures.

(15) "Independent inspection agency" means an organization that is in the business of inspecting structures, components, or equipment.

(16) "Insignia" means a label, stamp, or tag issued by the department to indicate that the structure or component bearing the insignia complies with this chapter.

(17) "Install" means to erect, construct, assemble, or set in place a structure, component, or piece of equipment at a building site or in another structure or building.

(18) "Labeled" means bearing the department's insignia or a label of approval from a testing or listing agency.

(19) "Lease" means an oral or written contract for the use, possession, or occupancy of property. It includes rent.

(20) "Listed" means that a piece of equipment, a component, or an installation appears in a list published by an approved testing or listing agency.

(21) "Listing agency" means an organization that is in the business of approving equipment or installations.

(22) "Local enforcement agency" means a city or county agency that enforces laws or ordinances governing the construction and installation of structures and components.

(23) "Manufacturing" means making, fabricating, forming, or assembling a structure, component, equipment, or installation.

(24) "Structure" means a factory-built structure that is entirely or substantially prefabricated or assembled at a factory or a place other than the building site on which the structure will be installed.

(25) "System" means a part of a structure or component that is designed to serve a particular function, such as a structural, plumbing, electrical, heating, or mechanical system.

(26) "Testing agency" means an organization that is in the business of testing equipment, installations, or systems. [Statutory Authority: RCW 43.22.475 and 43-.22.480. 82-12-004 (Order 82-19), § 296-150A-016, filed 5/20/82.]

WAC 296-150A-020 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-150A-021 Insignia of approval--In general. (1) A manufacturer of a structure or component that is intended to be sold, leased, or used in Washington must obtain an insignia for each structure or component before it sells, leases, or allows the use of the structure or component.

(2) A manufacturer need not obtain an insignia for a component or structure if:

(a) The structure or component is manufactured in Washington but the manufacturer has designated it for delivery, and delivered it to, a purchaser in another state;

(b) the structure or component is delivered in Washington, but is purchased by a common carrier, shipped by the seller via the purchaser, carried under a bill of lading, and the structure or component is transported to a destination in another state;

(c) the structure or component is delivered in Washington, but is purchased from a dealer or manufacturer in another state for use outside this state, and the purchaser transports the structure or component from Washington to a point outside Washington within 30 days of the date of delivery. [Statutory Authority: RCW 43.22.475 and 43.22.480. 82-12-004 (Order 82-19), § 296-150A-021, filed 5/20/82.]

WAC 296-150A-024 Filing a design plan. (1)(a) A manufacturer of a component or structure must file with the department a design plan for the structure or component. The department will not grant an insignia unless the design plan is filed.

(2)(a) The application must include:

(i) A completed application form. The manufacturer may obtain a form from the department.

(ii) An application for approval of a compliance control manual, if necessary. (See WAC 296-150A-051).

(iii) One complete set of design plans, specifications, engineering data, and test results, plus one additional complete set for each location at which the manufacturer will manufacture the structure or component.

(iv) The filing fee for the design plan (see WAC 296-150A-990).

(b) If a manufacturer is from out of state, the application must also include a statement from the manufacturer that it agrees to submit to the department annually the names and addresses of all Washington dealers and distributors for the manufacturer's product. [Statutory Authority: RCW 43.22.475 and 43.22.480. 82-12-004 (Order 82-19), § 296-150A-024, filed 5/20/82.]

WAC 296-150A-025 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-150A-026 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-150A-027 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-150A-030 Requirements for design plans. (1) General requirements. A design plan must include plan and elevation views of the structure or component, and the specifications, engineering data, and test results necessary for a complete evaluation of the design. A manufacturer may submit the specifications, engineering data, and test results separately from the drawings.

If the specifications, engineering data, and test reports are not included on the plan drawings, they must be fastened together. The cover sheet of the plan must note that the documents are part of the plan.

The plan and elevation views for the design plan must be drawn to scale on uniformly sized standard drawing sheets. The applicant must submit prints of the drawings; the department will not accept originals.

The applicant must provide, on the cover or face sheet of the design plan, information that describes the plan, including the plan designation, description of design options, sheet numbers, and titles. The cover sheet should also have space for the department to insert the plan number and the approval date.

The plan must indicate where the manufacturer will affix the insignia to the structure or component. A plan

that covers three or more modules must have a "key" drawing to show the arrangement of the modules.

(2) A design plan for factory-built structures, other than one- and two-family dwellings, must be accompanied by a plot plan or side measurements that show the location of the building on the property, the dimensions of the property lines, the dimensions to other buildings on the property, and the fire zone classification.

(3) Specific requirements. The department has numerous specific requirements for design plans. When an applicant intends to file a design plan, it should specify the kind of structure or component it intends to manufacturer, and the kind of design plan it intends to submit. The department will send the applicant a copy of the specific requirements. [Statutory Authority: RCW 43.22.475 and 43.22.480. 82-12-004 (Order 82-19), § 296-150A-030, filed 5/20/82.]

WAC 296-150A-035 Engineering analysis and test procedures. (1) When a manufacturer must show that a structural design, method of construction, installation, or piece of equipment is adequate to fulfill its intended function, the manufacturer must submit to the department information on and the results of an engineering analysis or a physical test.

(2) If the manufacturer does an engineering analysis of the design, method, installation, or equipment, the analysis must be made in accordance with generally established principles of engineering and must be signed by an architect or professional engineer licensed in Washington.

(3) If the manufacturer tests the design, method, installation, or equipment, the tests must be performed by a testing agency or an architect or professional engineer licensed in Washington.

Test reports must contain the following items:

(a) A description of the method or standards that applied to the test;

(b) a description and drawings of the item tested;

(c) a description of the test set-up;

(d) a description of the procedure used to load the item for, and to measure, each condition;

(e) test data (and graphs, where applicable), including pertinent observations of the characteristics and behavior of the item tested;

(f) engineering data; and

(g) analysis, comments, and conclusion.

(4) The results of the tests or analyses must be in writing and must identify the design plan to which the results relate. [Statutory Authority: RCW 43.22.475 and 43.22.480. 82-12-004 (Order 82-19), § 296-150A-035, filed 5/20/82.]

WAC 296-150A-040 Department check of the design plan. The department shall check a design plan for compliance with this chapter. If the design plan does not comply with this chapter, the department shall notify the applicant in writing of the deficiencies in the plan. The applicant may resubmit a corrected design plan pursuant to WAC 296-150A-045.

If the department does not find any areas in which the design plan does not comply with this chapter, the department will send the applicant a letter stating the applicant's manufacturer number and the plan number for the design plan. The applicant may begin construction of the structure or component upon receipt of the letter from the department.

The applicant must keep a copy of the design plan at each location at which it is building the structure or component described by the design plan. [Statutory Authority: RCW 43.22.475 and 43.22.480. 82-12-004 (Order 82-19), § 296-150A-040, filed 5/20/82.]

WAC 296-150A-045 Resubmittal of corrected design plan. An applicant who has been notified of deficiencies in its design plan may correct the plan and resubmit it within 90 days after it receives the notice. If the applicant does not meet this deadline, the department may treat the resubmittal as a new application for the design plan.

Each resubmittal must include the minimum resubmittal fee set out in WAC 296-150A-990. [Statutory Authority: RCW 43.22.475 and 43.22.480. 82-12-004 (Order 82-19), § 296-150A-045, filed 5/20/82.]

WAC 296-150A-050 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-150A-051 Application for approval of a compliance control manual. (1) A manufacturer of a component must apply, and a manufacturer of a factory-built structure may apply, to the department for approval of a compliance control manual. The application must include:

(a) A completed application form. The manufacturer may obtain a form from the department.

(b) One copy of the compliance control manual plus one additional copy for each location at which the manufacturer will build the structure or component. The copies must be printed on substantial 8 1/2 by 11 inch paper and must be fastened together.

(c) An outline of the compliance control procedure.

(d) The name of the corporate officer, partner, or manager who is responsible for the compliance control program and for maintaining the inspection records for each unit.

(e) An application fee.

(2) If the department has previously approved a compliance control manual for the manufacturer, the manufacturer need not submit copies of the manual with the application.

(3) When the manufacturer asks the department for an application form, it should inform the department of what kind of product it intends to manufacture. The department will send the manufacturer the specific requirements for the compliance control manual. [Statutory Authority: RCW 43.22.475 and 43.22.480. 82-12-004 (Order 82-19), § 296-150A-051, filed 5/20/82.]

WAC 296-150A-055 Changes to a design plan or an approved compliance control manual. If a manufacturer wants to change its design plan or compliance control manual, or a change is required because the department has amended the rules in this chapter, the manufacturer must file the new design plan pursuant to WAC 296-150A-024, or apply for approval of the new compliance control manual pursuant to WAC 296-150A-051.

If the manufacturer must change the design plan or compliance control manual to comply with changes in this chapter, the manufacturer may continue to manufacture its product under the old design plan or compliance control manual for 90 days after the changes in this chapter become effective. The manufacturer should submit its new design plan or compliance control manual within 30 days after the change takes effect to ensure that the department will have time to examine and approve the plan or manual. [Statutory Authority: RCW 43.22.475 and 43.22.480. 82-12-004 (Order 82-19), § 296-150A-055, filed 5/20/82.]

WAC 296-150A-060 Renewal of a design plan. (1) The filing of a design plan expires 12 months after the date the department notifies the manufacturer that it may begin building structures or components pursuant to the plan.

(2) A manufacturer must apply to the department for renewal of the design plan each year at least one month before the filing expires to ensure that the department will have time to examine the design plan. The manufacturer may obtain an application for renewal of plan filing from the department. The manufacturer must submit:

(a) A completed application form; and

(b) the renewal fee required by WAC 296-150A-990.

The renewed plan must be identical to the original design plan, except that the manufacturer may change the model name or designation. [Statutory Authority: RCW 43.22.475 and 43.22.480. 82-12-004 (Order 82-19), § 296-150A-060, filed 5/20/82.]

WAC 296-150A-065 Trade secrets. The department will keep confidential all material, design plans, specifications, engineering data, test results, compliance control manuals, and other design information that a manufacturer submits to the department. The department will release this information to public scrutiny only if ordered to do so by a court, or if otherwise required by law. [Statutory Authority: RCW 43.22.475 and 43.22-.480. 82-12-004 (Order 82-19), § 296-150A-065, filed 5/20/82.]

WAC 296-150A-070 Applications for inspection and insignia for factory-built structures and components. (1) Inspections in general. A manufacturer of factory-built structures or components must apply to the department for inspections of its products. The department will not issue an insignia for a unit until it has completed inspecting the unit.

The manufacturer may obtain an inspection application form from the department. It must submit the form and an application fee. The department must receive the application at least five days before the proposed date of the inspection.

A manufacturer need not apply to the department for inspection if the department has approved an independent inspection agency, a local enforcement agency, or the manufacturer itself to inspect its products. See WAC 296-150A-080.

Each unit of the manufacturer's product must have a specific serial number to ensure that the department has inspected each unit. The manufacturer must have the design plan and, if applicable, the approved compliance control manual at the location at which it is manufacturing the product. A manufacturer with a compliance control manual must provide a control card or other compliance control document for each unit.

(2) The department shall generally inspect each factory-built structure and component twice. The department shall make an "ok to cover" inspection of a unit before the electrical, plumbing, mechanical, heating, and structural systems are covered or sealed during the construction. After the unit is completed, the department shall make a "final" inspection. [Statutory Authority: RCW 43.22.475 and 43.22.480. 82-12-004 (Order 82-19), § 296-150A-070, filed 5/20/82.]

WAC 296-150A-075 Applications for insignia for factory-built structures and components. The manufacturer of a factory-built structure or component must apply to the department for an insignia for each unit. The manufacturer may obtain an application form from the department. The manufacturer must submit with the application a fee for each insignia. The department will give an insignia to a manufacturer for installation on a unit if it has received the application and fees, and if the final inspection reveals that the unit complies with this chapter. [Statutory Authority: RCW 43.22.475 and 43-.22.480. 82-12-004 (Order 82-19), § 296-150A-075, filed 5/20/82.]

WAC 296-150A-080 Inspections at a manufacturer's plant by a local enforcement agency, an independent inspection agency, or the manufacturer. (1) A manufacturer who wants to be inspected by a local enforcement agency or an independent inspection agency may ask the agency to inspect it. The local enforcement agency or independent inspection agency may do so if it obtains approval from the department.

If the department approves of the agency, it shall by contract allow the agency to perform the inspections. The contract shall require the agency to comply with and enforce the requirements of this chapter, and shall list all manufacturers that the agency may inspect. The parties may amend the contract at any time to add or delete a manufacturer. The manufacturer may obtain the departmental insignia from the agency instead of the department.

(2) A manufacturer may contract with the department to inspect its own products. The contract shall require the manufacturer to comply with and enforce the requirements of this chapter and the manufacturer's

compliance control manuals. The contract shall specify the management procedures by which the manufacturer will assure that the inspections are carried out, and shall designate the officer, partner, or owner who is responsible for the inspections.

(3) The department shall audit the agency's or manufacturer's inspections to ensure they are complying with the contract and this chapter. If the agency or manufacturer is not complying with the contract or this chapter, the department may require the agency or manufacturer to allow the department to perform the inspections. [Statutory Authority: RCW 43.22.475 and 43.22.480. 82–12–004 (Order 82–19), § 296–150A–080, filed 5/20/82.]

WAC 296–150A–085 Other inspections by the department. (1) A person must ask the department to inspect a structure or component if:

(a) The person is selling, leasing, or offering for sale or lease a structure or component that does not bear an insignia and is required to bear an insignia;

(b) the person is altering or has altered the component, or the structure before or during installation of the structure on the building site; or

(c) the department has issued a correction notice and a reinspection is necessary.

(2) An applicant for an inspection must submit an application on forms supplied by the department at least five working days before the desired date of inspection. The applicant must submit with the application an application fee pursuant to WAC 296–150A–990.

(3) For any inspection, the applicant must provide to the department the design plans, specifications, engineering data, and test results on request. [Statutory Authority: RCW 43.22.475 and 43.22.480. 82–12–004 (Order 82–19), § 296–150A–085, filed 5/20/82.]

WAC 296–150A–090 Action after inspection. After an inspection, if the structure or component meets the requirements of this chapter, and the applicant submits completed insignia application forms, insignia fees, and inspection fees, the department shall issue an insignia for the structure or component. [Statutory Authority: RCW 43.22.475 and 43.22.480. 82–12–004 (Order 82–19), § 296–150A–090, filed 5/20/82.]

WAC 296–150A–095 Inspection of factory–built structures after installation at the building site. (1) A manufacturer, dealer, or owner must obtain the approval of the local enforcement agency for each installation of a factory–built structure at a building site. After the department performs a final inspection of a unit, it may send a notice to the local enforcement agency that specifies what connections, standards, and items the agency should check when the unit is installed.

(2) The local enforcement agency may require the manufacturer to provide a set of design plans and specifications for the unit, and to obtain all necessary permits, before it allows the manufacturer to transport the unit to the building site.

(3) The local enforcement agency may not open for inspection any factory–built structure or component that bears the department's insignia.

(4) The local enforcement agency shall notify the department if a unit has been damaged en route to the building site, or during installation, so that the department can inspect the damage to the unit. [Statutory Authority: RCW 43.22.475 and 43.22.480. 82–12–004 (Order 82–19), § 296–150A–095, filed 5/20/82.]

WAC 296–150A–100 Complaint investigations. A person may complain in writing to the department about a structure or component. The complaint should describe the items that the person feels do not comply with this chapter. The department will send a copy of the complaint to the manufacturer and the dealer. The manufacturer and dealer have 30 days to respond. The department shall base its actions on the response.

If the department decides an investigation is necessary and discovers that the unit inspected violates this chapter, the manufacturer or dealer shall pay the cost of the inspection. If the department does not discover any violations, the complainant must pay the fees. [Statutory Authority: RCW 43.22.475 and 43.22.480. 82–12–004 (Order 82–19), § 296–150A–100, filed 5/20/82.]

WAC 296–150A–105 Fee required if a structure or component is not ready for inspection. If a manufacturer or person applies to the department for an inspection of a structure or component, and the structure or component is not ready to be inspected at the time or place specified in the application, the manufacturer or person must pay the department the application fee and any travel and per diem expenses. [Statutory Authority: RCW 43.22.475 and 43.22.480. 82–12–004 (Order 82–19), § 296–150A–105, filed 5/20/82.]

WAC 296–150A–110 Alterations. (1) No person may alter a factory–built structure before or during the installation of the factory–built structure unless the person has first applied for and obtained the department's approval of the alternation. "Alteration" is defined in WAC 296–150A–016(1).

(2) If a person alters a structure in violation of subsection (1), the insignia affixed to the structure is void and may be confiscated by the department. [Statutory Authority: RCW 43.22.475 and 43.22.480. 82–12–004 (Order 82–19), § 296–150A–110, filed 5/20/82.]

WAC 296–150A–115 Application for alteration insignia and approval of alteration. (1) If a person proposes to alter a factory–built structure before or during the installation of the factory–built structure, the person must file an application for an alteration insignia and an alteration fee with the department. The person may obtain an application form from the department.

(2) As a condition to approval of an alteration, the department may require inspections of the structure during the alteration to ensure that the alteration complies with this chapter. If the department indicates that

inspections are required, the person altering the structure must apply for inspections pursuant to WAC 296-150A-085.

After the final inspection of the alteration, if the alteration complies with this chapter and the applicant has paid the inspection and insignia fees, the department shall issue an insignia for the altered structure. [Statutory Authority: RCW 43.22.475 and 43.22.480. 82-12-004 (Order 82-19), § 296-150A-115, filed 5/20/82.]

WAC 296-150A-120 Lost or damaged insignia. If an insignia is lost or damaged after it is affixed to a structure or component, the manufacturer, owner, or user must notify the department in writing immediately. The manufacturer or owner must specify the manufacturer, the vehicle identification number or serial number of the structure, and the insignia number if possible. The manufacturer, owner, or user must also return a damaged insignia if possible.

The department shall replace a damaged or lost insignia on payment of the insignia replacement fee pursuant to WAC 296-150A-990. [Statutory Authority: RCW 43.22.475 and 43.22.480. 82-12-004 (Order 82-19), § 296-150A-120, filed 5/20/82.]

WAC 296-150A-125 Notice of violations. If an inspection or investigation reveals that a structure or component violates this chapter, the department shall give or mail a notice of violations to the owner, dealer, manufacturer, or other person responsible for the violation. The notice of violation shall describe how the structure or component violates this chapter.

A person who receives a notice of violations must, within ten days after receipt, notify the department in writing of the action he or she has taken or will take to correct the violation. If the person has not corrected the violation within ten days after receipt of the notice, or within any other period of time allowed by the department, the department may confiscate the insignia assigned to the structure or component.

No person who has received a notice of violations may move, cause to be moved, or allow another person to move the structure or component to which the notice refers until the violations have been corrected, the corrections have been inspected and approved by the department, and the person has paid the appropriate inspection and insignia fees. [Statutory Authority: RCW 43.22.475 and 43.22.480. 82-12-004 (Order 82-19), § 296-150A-125, filed 5/20/82.]

WAC 296-150A-130 Prohibited sale or lease notice. If an inspection or investigation reveals that a structure violates this chapter, the department may post the structure with a prohibited sale or lease notice. No person may sell or lease a structure that is posted with a prohibited sale or lease notice. No person may remove, cause to be removed, or allow to be removed a prohibited sale or lease notice until the violations have been corrected, the corrections have been inspected and approved by the department, and the person has paid the appropriate inspection and insignia fees.

The department may also prohibit the occupancy or use of a structure if it is not occupied or used at the time the violation is discovered. [Statutory Authority: RCW 43.22.475 and 43.22.480. 82-12-004 (Order 82-19), § 296-150A-130, filed 5/20/82.]

WAC 296-150A-135 Approval of equipment. Equipment used in the body and frame, or the fire safety, plumbing, heating, mechanical, and electrical systems of structures and components must comply with this chapter and must be approved by the department. The department may approve equipment that is listed or labeled by an approved testing or listing agency. The department may approve equipment that is not listed or labeled if it determines that the equipment is adequate to protect health and safety.

The department may refuse to approve equipment that is listed or labeled if it determines that the equipment is not adequate to protect health and safety. [Statutory Authority: RCW 43.22.475 and 43.22.480. 82-12-004 (Order 82-19), § 296-150A-135, filed 5/20/82.]

WAC 296-150A-140 Department approval of listing and testing agencies, licensed professional engineers, and licensed architects. (1) The department will consider the following information in determining whether to approve a listing or testing agency, professional engineer, or licensed architect:

(a) The names of agents or officers;

(b) the location of offices;

(c) a description of services the agency, engineer, or architect furnishes or proposes to furnish;

(d) a description of the employees' qualifications and responsibilities;

(e) a summary of the agency's, engineer's, or architect's experience;

(f) a description of the procedures and facilities the agency, engineer, or architect will use to evaluate a product, inspect the product manufacturer's operations and compliance control, and label the units of a product;

(g) a description of the specific information the agency, engineer, or architect will furnish with its listings;

(h) a description of how the agency, engineer, or architect will deal with errors in its procedures that result in defective or unacceptable products;

(i) proof of independence and absence of conflict of interest; and

(j) a published directory that includes a list of product manufacturers and product information.

(2) To obtain departmental approval, a listing or testing agency, professional engineer, or licensed architect may not be under the control of a manufacturer, dealer, or supplier for the structures, components, equipment, or installations that it approves or lists.

A listing or testing agency must publish at least annually a list of the equipment, components, or installations it has approved. The listing must certify that the equipment, components, and installations have been tested and meet nationally approved standards and must

specify the permissible uses for the equipment, components, and installations.

A listing agency must periodically inspect the manufacture of equipment, components, and installations that it has approved. A testing agency must test at least annually the equipment, components, and installations it has approved. [Statutory Authority: RCW 43.22.475 and 43.22.480. 82-12-004 (Order 82-19), § 296-150A-140, filed 5/20/82.]

WAC 296-150A-145 Approval of alternates. The department may approve the use of an alternative design, material, appliance, system, device, arrangement, or method of construction if this chapter does not specifically proscribe the use of the alternative, and the alternative equals or betters the quality, strength, effectiveness, fire resistance, durability, and safety of the design, material, appliance, system, device, arrangement, or method of construction required by this chapter. [Statutory Authority: RCW 43.22.475 and 43.22.480. 82-12-004 (Order 82-19), § 296-150A-145, filed 5/20/82.]

WAC 296-150A-150 Manufacturing in more than one location. A manufacturer that is manufacturing its product at more than one location must notify the department in writing of each location. Manufacturers of factory-built structures must keep a design plan and may be required to keep an approved compliance control manual at each location. [Statutory Authority: RCW 43.22.475 and 43.22.480. 82-12-004 (Order 82-19), § 296-150A-150, filed 5/20/82.]

WAC 296-150A-155 Change of name, address, or ownership. If a manufacturer changes its name or address, it must notify the department in writing of the change within ten days. The notice must be accompanied with the appropriate fee.

If a manufacturer changes ownership, the new owner must notify the department in writing within ten days. The notice must be accompanied with the appropriate fee. The new owner need not file its design plan if it continues to manufacture the product in accordance with a previously filed design plan. [Statutory Authority: RCW 43.22.475 and 43.22.480. 82-12-004 (Order 82-19), § 296-150A-155, filed 5/20/82.]

WAC 296-150A-160 Discontinuance of a product line. When a manufacturer discontinues producing a product that it is manufacturing pursuant to a design plan, the manufacturer must notify the department in writing within ten days and must return all insignia issued to the manufacturer for that product. [Statutory Authority: RCW 43.22.475 and 43.22.480. 82-12-004 (Order 82-19), § 296-150A-160, filed 5/20/82.]

WAC 296-150A-170 Reciprocal agreements. In accordance with RCW 43.22.485, the director has examined the statutes and rules of several states and finds that the statutes and rules provide construction standards that are equal to those of Washington, and that the states enforce their statutes and rules. The department has entered into reciprocal agreements with those states. The department has all reciprocal agreements on file at the factory-assembled structures section. The public may inspect and copy the agreements during regular business hours. [Statutory Authority: RCW 43.22.475 and 43.22.480. 82-12-004 (Order 82-19), § 296-150A-170, filed 5/20/82.]

WAC 296-150A-300 Construction standards for factory-built structures. Factory-built structures must comply with the following codes, except where a state law supersedes a code provision.

(1)(a) The design and fabrication of factory-built structures must comply with the uniform building code, appendix (except for chapter 35), and standards (1979 editions). The "building official" mentioned in the uniform building code means the assistant director of the department's building and construction safety inspection services division or his or her authorized representative.

(b) Live loading designs must comply with the uniform building code. Live loading for roofs must comply with Section 2305(d), Snow Loads, and may not be less than 25 pounds per square foot.

(2) Electrical equipment, installations, and systems in or on factory-built housing and commercial structures must comply with the National Electrical Code (1981 edition) published by the National Fire Protection Association, as amended by chapter 19.28 RCW and the rules adopted under that chapter.

(3) Mechanical equipment, installations, and systems in or on factory-built housing and commercial structures must comply with the uniform mechanical code (1979 edition) published by the international association of plumbing and mechanical officials, including Appendix B of chapter 22 and the standards.

(4)(a) Plumbing equipment, installations, and systems in or on factory-built housing and commercial structures must comply with the uniform plumbing code (1979 edition) published by the international association of plumbing and mechanical officials. The code, however, shall not apply to gas piping, water heaters, or vents for water heaters.

(b) A manufacturer may not use plastic drain, waste, or vent pipe for laundries, laundromats, cleaners, service stations, repair garages, restaurants, snack bars, hospitals, nursing homes, medical clinics, manufacturing plants, factories, assembly buildings, theatres, or schools, or other buildings used for education, unless the pipes will carry only domestic sewage.

(5) All factory-built structures that are not residential dwellings must comply with the rules adopted pursuant to RCW 19.27.030(5), which requires manufacturers to make buildings and facilities accessible to and usable by the physically handicapped and elderly persons.

(6) All factory-built structures must comply with the Washington State Energy Code set by chapter 51-12 WAC as of March 1, 1982. [Statutory Authority: RCW 43.22.475 and 43.22.480. 82-12-004 (Order 82-19), § 296-150A-300, filed 5/20/82.]

WAC 296-150A-315 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-150A-320 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-150A-325 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-150A-330 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-150A-333 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-150A-335 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-150A-400 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-150A-405 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-150A-410 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-150A-415 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-150A-417 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-150A-420 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-150A-423 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-150A-424 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-150A-425 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-150A-430 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-150A-435 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-150A-440 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-150A-445 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-150A-450 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-150A-500 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-150A-505 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-150A-506 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-150A-510 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-150A-515 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-150A-516 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-150A-520 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-150A-521 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-150A-525 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-150A-530 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-150A-535 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-150A-540 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-150A-545 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-150A-550 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-150A-555 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-150A-560 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-150A-565 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-150A-570 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-150A-575 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-150A-580 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-150A-585 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-150A-590 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-150A-595 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-150A-600 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-150A-605 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-150A-606 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-150A-610 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-150A-615 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-150A-620 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-150A-625 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-150A-630 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-150A-640 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-150A-650 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-150A-675 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-150A-680 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-150A-685 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-150A-690 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-150A-695 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-150A-700 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-150A-710 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-150A-950 Hearing on aggrievances. A person who is aggrieved by an order, notice, or decision of the department under this chapter may request a hearing. The request must be in writing and must describe briefly the cause of the grievance.

The director of the department may hear the matter, or may assign the hearing to his or her representative. The department shall notify the complainant of the time, date, and place for the hearing. The hearing shall be held no later than 30 days after the department receives the request for the hearing. If the complainant fails to appear at the scheduled hearing, the department may dismiss the matter.

Upon conclusion of the hearing, the director or his or her representative shall notify the petitioner in writing of his or her decision in the matter. [Statutory Authority: RCW 43.22.475 and 43.22.480. 82-12-004 (Order 82-19), § 296-150A-950, filed 5/20/82.]

WAC 296-150A-990 Fees.

(1) Initial manufacturer filing fee:	$ 35.00
(2) (a) Fee for filing a design plan:	$100.00
(b) Fee for resubmittal of a design plan:	$ 50.00
(3) Design plan renewal fees.	
(a) Renewal of an unexpired and unrevoked design plan:	$ 35.00
(b) Renewal of an expired or revoked design plan:	$100.00
(4) Fee for transfer of design plan approval to a different manufacturer:	$140.00
(5) Fees related to compliance control programs.	
(a) Fee for filing a component compliance control manual:	$ 14.00
(b) Fee for filing a factory-built structure compliance control manual:	$350.00
(c) Fee for resubmittal of a factory-built structure compliance control manual:	$140.00
(d) Fee for revisions to a factory-built structure compliance control manual:	$ 14.00 per page up to $ 70.00 maximum.
(e) Transfer of approval of a factory-built structure compliance control manual:	$125.00
(6) Fee for inspections and other services performed by the department:	$50.00 minimum plus $25.00 for every half-hour or fraction of

	a half-hour over one hour.
(7) Insignia fees.	
(a) For each single section factory-built structure, or for the first section of a multiple section factory-built structure:	$140.00
(b) For each additional section of a multiple section factory-built structure:	$ 14.00
(c) For each service core:	$ 70.00
(d) For each component other than a service core:	$ 14.00
(e) For each reissuance of a factory-built structure insignia:	$ 35.00
(f) For each alteration insignia:	$ 14.00
(8) Fee for a notification to a local enforcement agency:	$ 21.00
(9) Travel fees and expenses. If a manufacturer or other person outside the state of Washington requests an inspection or other technical service outside the state, the manufacturer must pay the travel expenses of the department's employees. The expenses shall be calculated pursuant to the following list:	
(a) Surface travel, per mile:	$ .185
(b) Air travel:	Cost of air fare based published rates.
(c) Hourly charge for travel time:	$ 35.00 per half-hour or fraction of a half-hour.
(d) Expenses include, but are not limited to, car rental, parking lot charges, and personal expenses. Personal expenses, including food, lodging, and per diem, shall be calculated pursuant to the allowances set by the Washington State Office of Financial Management.	
(10) Fee for change in manufacturer's name, address, or ownership:	$ 21.00

[Statutory Authority: RCW 43.22.440, 43.22.475 and 43.22.480. 82-12-040 (Order 82-20), § 296-150A-990, filed 5/28/82. Statutory Authority: RCW 43.22.475 and 43.22.480. 82-12-004 (Order 82-19), § 296-150A-990, filed 5/20/82.]

Chapter 296-150B WAC

STANDARDS FOR MOBILE HOMES, COMMERCIAL COACHES, AND RECREATIONAL VEHICLES

WAC

296-150B-005 Application and scope.
296-150B-010 Enforcement.
296-150B-015 Definitions.
296-150B-020 Insignia of approval—In general.
296-150B-025 Application for approval of a design plan.
296-150B-030 Requirements for design plans.
296-150B-035 Engineering analysis and test procedures.
296-150B-040 Department approval of the design plan.
296-150B-045 Resubmittal of corrected design plan.
296-150B-050 Application for approval of a quality control manual.
296-150B-055 Changes to an approved design plan or quality control manual.
296-150B-060 Expiration of design plan approval.
296-150B-065 Trade secrets.
296-150B-070 Applications for HUD insignia for mobile homes.
296-150B-075 Applications for inspection and insignia for commercial coaches, recreational vehicles, and components.
296-150B-080 Applications for insignia for commercial coaches, recreational vehicles, and components.
296-150B-085 Inspections at a manufacturer's plant by a local enforcement agency, an independent inspection agency, or the manufacturer.
296-150B-090 Other inspections by the department.
296-150B-095 Action after inspection.
296-150B-100 Inspection of commercial coaches after installation at the building site.
296-150B-105 Complaint investigations.
296-150B-110 Fee required if a structure or component is not ready for inspection.
296-150B-115 Alterations.
296-150B-120 Application for alteration insignia and approval of alteration.
296-150B-125 Identification of commercial coaches and recreational vehicles.
296-150B-130 Lost or damaged insignia.
296-150B-135 Notice of noncompliance.
296-150B-140 Prohibited sale or lease notice.
296-150B-145 Approval of equipment.
296-150B-150 Department approval of listing and testing agencies, licensed professional engineers, and licensed architects.
296-150B-155 Approval of alternates.
296-150B-160 Manufacturing in more than one location.
296-150B-165 Change of name or address.
296-150B-175 Change of ownership.
296-150B-180 Reciprocal agreements.
296-150B-200 General installation requirements for mobile homes.
296-150B-205 Installation permits.
296-150B-210 Inspections.
296-150B-215 Requirements of local jurisdictions.
296-150B-220 Inspection by local jurisdictions or other agents.

296–150B–225 Building site preparation.
296–150B–230 Foundation system footings.
296–150B–235 Foundation system piers.
296–150B–240 Foundation system plates and shims.
296–150B–245 Foundation facia.
296–150B–250 Anchoring systems.
296–150B–255 Assembly.
296–150B–300 Construction requirements for mobile homes.
296–150B–305 Standards for recreational vehicles.
296–150B–310 Construction requirements for recreational vehicles—Power–supply assembly.
296–150B–315 Construction standards for recreational vehicles—Low voltage circuits.
296–150B–400 Definitions.
296–150B–403 Minimum requirements.
296–150B–407 Structural analysis.
296–150B–410 Standards for equipment and installations.
296–150B–413 Structural design—Requirements.
296–150B–417 New materials and methods.
296–150B–420 Design dead loads.
296–150B–423 Design live loads.
296–150B–427 Standard wind.
296–150B–430 Roof loads.
296–150B–433 Snow loads.
296–150B–437 Posting design loads.
296–150B–440 Design load deflection.
296–150B–443 Fastening of structural systems.
296–150B–447 Instructions.
296–150B–450 Walls.
296–150B–453 Drilling or notching of wood wall structural members.
296–150B–457 Firestopping.
296–150B–460 Interior walls and partitions.
296–150B–463 Floors.
296–150B–467 Drilling or notching of wood joist structural members.
296–150B–470 Roof trusses.
296–150B–473 Structural load test.
296–150B–477 Roof coverings.
296–150B–480 Flame–spread limitations and combustibility.
296–150B–483 Kitchen cabinet protection.
296–150B–487 Carpeting.
296–150B–490 Undervehicle closure material.
296–150B–497 Bathroom.
296–150B–500 Glass and glazed openings.
296–150B–503 Fire warning equipment—Automatic smoke detectors.
296–150B–507 Room and hallway sizes.
296–150B–510 Handicap standards.
296–150B–513 Light and ventilation.
296–150B–517 Exit facilities.
296–150B–520 Weather resistance.
296–150B–523 Windstorm protection.
296–150B–527 Table—Ties required per side of single width commercial coach.
296–150B–530 Table—Accepted engineering practice standards.
296–150B–533 Table—Glazing in hazardous locations.
296–150B–537 Table—Minimum uniformly distributed live loads.
296–150B–540 Table—Concentrated live loads.
296–150B–543 Interior privacy.
296–150B–547 Interior passage.
296–150B–550 Electrical—General.
296–150B–553 Definitions.
296–150B–557 Low–voltage systems—Low–voltage circuits.
296–150B–560 Wiring materials—Combination electrical systems.
296–150B–563 Generator installations—Mounting.
296–150B–567 Branch circuit and feeder calculations.
296–150B–570 Disconnecting means and branch–circuit protective equipment—General.
296–150B–573 Power supply—Feeder assembly equipment.
296–150B–577 Identification of feeder assembly connection.
296–150B–580 Wiring methods—Wiring of expandable or multiple units.
296–150B–583 Under–chassis wiring.
296–150B–587 Rodent resistance.
296–150B–590 Electrical equipment—Lighting fixtures.
296–150B–593 Equipment mounting.
296–150B–597 Outdoor outlets, fixtures, air cooling equipment, etc.
296–150B–600 Grounding—General.
296–150B–603 Switch and receptacle plates.
296–150B–607 Dielectric strength test.
296–150B–610 Mechanical—General.
296–150B–613 Mechanical—Definitions.
296–150B–617 LPG equipment and installations—Construction of containers.
296–150B–620 Location of LPG containers and systems.
296–150B–623 LPG container valves and accessories.
296–150B–627 LPG safety devices.
296–150B–630 LPG system enclosure and mounting.
296–150B–633 LPG system design and service line pressure.
296–150B–637 Electrical equipment.
296–150B–640 Gas piping systems—General.
296–150B–643 Piping design.
296–150B–647 Materials.
296–150B–650 Expandable or multiple commercial coaches.
296–150B–653 System sizing—Gas pipe sizing.
296–150B–657 Sizing and capacity of gas piping.
296–150B–660 Description of tables.
296–150B–663 Use of capacity tables.
296–150B–667 Table—Iron pipe and tubing sizes.
296–150B–670 Joints and installation—Joints for gas pipe.
296–150B–673 Joints in gas tubing systems.
296–150B–677 Concealed tubing.
296–150B–680 Pipe–joint compound.
296–150B–683 Concealed joints.
296–150B–687 Hangers and supports.
296–150B–690 Electrical ground.
296–150B–693 Identification of gas supply connections.
296–150B–697 Gas piping system openings.
296–150B–700 Appliance connections.
296–150B–703 Valves.
296–150B–707 Testing for leakage—Before appliances are connected.
296–150B–710 After appliances are connected.
296–150B–713 Rodent resistance.
296–150B–717 Oil piping systems—General.
296–150B–720 Oil piping systems—Expandable or multiple commercial coaches.
296–150B–723 Oil piping systems—Materials.
296–150B–727 Oil piping systems—Size of oil piping.
296–150B–730 Oil piping systems—Joints for oil piping.
296–150B–733 Oil piping systems—Tubing joints.
296–150B–737 Oil piping systems—Pipe–joint compound.
296–150B–740 Oil piping systems—Couplings.
296–150B–743 Oil piping systems—Grade of piping.
296–150B–747 Oil piping systems—Strap hangers.
296–150B–750 Oil piping systems—Testing for leakage.
296–150B–753 Appliances—Heat–producing.
296–150B–757 Appliances—Installation.
296–150B–760 Appliances—Venting, ventilation, and combustion air.
296–150B–763 Appliances—Clearance–general.
296–150B–767 Safety devices—Water heater relief valves.
296–150B–770 Air duct material for circulating air supply system.
296–150B–773 Sizing of air ducts.
296–150B–777 Airtightness of air supply duct systems.
296–150B–780 Air ducts—Expandable or multiple commercial coach connections.
296–150B–783 Air ducts—Return air systems.
296–150B–787 Air ducts—Joints and seams.
296–150B–790 Air ducts—Registers or grills.
296–150B–793 Air ducts—Duct and plenum insulation.
296–150B–797 Plumbing—Definitions.
296–150B–800 Plumbing—General.
296–150B–803 Plumbing—Location of water–supply connections.
296–150B–807 Plumbing—Tub and shower enclosures.
296–150B–810 Drainage—Location of drain outlets.
296–150B–813 Drainage—Cap or plug.
296–150B–817 Drainage—Clearance from drain outlet.
296–150B–820 Drainage—Drainage systems materials.
296–150B–950 Hearing on aggrievances.
296–150B–990 Fees.

WAC 296-150B-005 Application and scope. (1) This chapter implements the provisions of RCW 43.22-.340 through 43.22.445, which cover the construction and approval of mobile homes, commercial coaches, and recreational vehicles. The purpose of this chapter is to combine under one heading all applications, procedures, requirements, and codes relating to mobile homes, commercial coaches, and recreational vehicles. Many of the applications and procedures are the same for each kind of structure; occasionally, they will differ. These rules specify when a person must follow a procedure other than the general procedure.

(2) This chapter applies to:

(a) Mobile homes, commercial coaches, and recreational vehicles manufactured after 1 January 1968, other than mobile homes labeled by the Department of Housing and Urban Development (HUD) after 15 June 1976. HUD-labeled mobile homes are governed by the federal mobile home standards in 24 CFR Part 3280 and 24 CFR Part 3282 until they are sold or leased to a dealer, distributor, or consumer;

(b) alterations to the plumbing, heating, or electrical systems, or to the body or frame of a mobile home not labeled by HUD, commercial coach, or recreational vehicle, regardless of the date of manufacture;

(c) alterations to the plumbing, heating, or electrical systems, or to the body or frame, of a HUD-labeled mobile home after the manufacturer has sold the mobile home to a dealer, distributor, or consumer;

(d) components; and

(f) equipment and installations intended to be used in mobile homes, commercial coaches, recreational vehicles, and components. [Statutory Authority: RCW 43-.22.340. 82-09-053 (Order 82-13), § 296-150B-005, filed 4/16/82.]

WAC 296-150B-010 Enforcement. The department administers and enforces the provisions of this chapter. Pursuant to approval by HUD, it also administers and enforces the federal mobile home law by acting as a production Inspection Primary Inspection Agency (IPIA) and as the State Administrative Agency (SAA).

An officer, agent, or employee of the department may enter any premises, during working hours or at other reasonable times, where structures or components are manufactured, sold, leased, or offered for sale or lease. He or she may examine a manufacturer's quality control and production records, and may inspect any construction, equipment, or installations to ensure that the manufacturer is complying with this chapter. If necessary to make a proper inspection, he or she may require a manufacturer, dealer, distributor, or consumer to remove part of the structure or component. [Statutory Authority: RCW 43.22.340. 82-09-053 (Order 82-13), § 296-150B-010, filed 4/16/82.]

WAC 296-150B-015 Definitions. For the purposes of this chapter:

(1) "Alteration" means the replacement, addition, modification, or removal of any equipment or installations that affect the construction, structural members, fire safety, or occupancy classification, or the plumbing, heating, or electrical systems, of a structure or component.

The following are not alterations unless they are made to repair damage caused by fires, floods, or damage in transit or during installation.

(a) Repairs with approved parts;

(b) modification of a listed fuel-burning appliance in accordance with the terms of its listing;

(c) replacement of equipment with similar equipment; and

(d) adjustment and maintenance of equipment.

(2) "Approved" means approved by the department.

(3) "Anchoring system" means a system of straps, cables, turnbuckles, bolts, fasteners, or other approved components that secures a mobile home to ground anchors or to other approved fastening devices.

(4) "Audit" means an inspection to examine for compliance a manufacturer's production and quality control procedures.

(5) "Building site" means a tract, parcel, or subdivision of land, including a mobile home park, on which a structure other than a recreational vehicle is or will be installed.

(6) "Component" means a discrete element that is:

(a) Designed to be installed in a structure;

(b) manufactured as a unit; and

(c) designed for a particular function or group of functions. "Component" includes service cores.

(7) "Consumer" means a person, firm, corporation, agency, or governmental body, other than a manufacturer or dealer, that buys or leases a structure for his, her, or its own use.

(8) "Custom structure" means a one-of-a-kind structure.

(9) "Dealer" means a person, company, or corporation authorized to engage in the business of leasing, selling, offering for sale or lease, buying, or trading structures.

(10) "Department" means the department of labor and industries.

(11) "Design option" means a design that a manufacturer may use as an option to its design plan.

(12) "Design plan" means a plan for construction of a structure or component.

(13) "Equipment" means all materials, appliances, devices, fixtures, fittings, or accessories used in the manufacture, assembly, installation, or alteration of structures and components.

(14) "Footing" means the portion of a foundation system that transmits loads from a mobile home to the soil.

(15) "Foundation facia" means the materials that enclose the entire perimeter of a mobile home and form a plane between the exterior wall of the mobile home and the ground.

(16) "Foundation system" means the footings, piers, caps, and shims that support a mobile home.

(17) "HUD" means the federal Department of Housing and Urban Development.

(18) "Independent inspection agency" means an organization that is in the business of inspecting structures, components, or equipment.

(19) "Insignia" means a label, stamp, or tag issued by the department to indicate that the structure or component bearing the insignia complies with this chapter or the HUD mobile home standards.

(20) "Install" means to erect, construct, assemble, or set in place a structure, component, or piece of equipment at a building site or in another structure or building.

(21) "Labeled" means bearing the department's insignia, HUD's insignia, or a label of approval from a testing or listing agency.

(22) "Lease" means an oral or written contract for the use, possession, or occupancy of property. It includes rent.

(23) "Listed" means that a piece of equipment, a component, or an installation appears in a list published by an approved testing or listing agency.

(24) "Listing agency" means an organization that is in the business of approving equipment or installations.

(25) "Local enforcement agency" means a city or county agency that enforces laws or ordinances governing the construction and installation of structures and components.

(26) "Main frame" means the structural component on which the structure may be mounted.

(27) "Manufacturing" means making, fabricating, forming, or assembling a structure, service core, component, equipment, or installation.

(28) "Mobile home" means a structure, transportable in one or more sections, that, in the traveling mode, is eight body feet or more in width or thirty-two body feet or more in length, or, when erected on site, is three hundred twenty or more square feet, and that is built on a permanent chassis and designed to be used as a dwelling with or without a permanent foundation when connected to the required utilities, and includes the plumbing, heating, air-conditioning, and electrical systems contained therein. "Mobile home" shall include any structure that meets all the requirements of this paragraph except the size requirements and with respect to which the manufacturer voluntarily files a certification required by HUD and complies with the standards established by HUD.

(29) "Ordinance" means the part of a code adopted by this chapter that prescribes an item other than a method of construction, such as room sizes, floor plans, lighting, ventilation, ceiling heights, and exits.

(30) "Pier" means the part of the mobile home foundation system between the footing and the floor frame or floor joist, excluding caps and shims.

(31) "Quality control" means the plan and method for ensuring that the manufacture, fabrication, assembly, or erection of structures, components, and installations, and the storing, handling, and use of materials, complies with this chapter.

(32) "Recreational vehicle" means a motor home, travel trailer, truck camper, or camping trailer that is:

(a) With or without motive power;

(b) built on a single chassis;

(c) designed for human habitation in an emergency or for recreation; and

(d) has a living area of less than 220 square feet.

The living area excludes built-in spaces such as wardrobes, closets, cabinets, kitchen units and fixtures, and bath or toilet rooms.

(33) "Structure" means a mobile home, commercial coach, or recreational vehicle that is entirely or substantially prefabricated or assembled at a factory or a place other than the building site on which the structure will be installed.

(34) "System" means a part of a structure or component that is designed to serve a particular function, such as a structural, plumbing, electrical, heating, or mechanical system.

(35) "Testing agency" means an organization that is in the business of testing equipment, installations, or systems. [Statutory Authority: RCW 43.22.340. 82-09-053 (Order 82-13), § 296-150B-015, filed 4/16/82.]

WAC 296-150B-020 Insignia of approval--In general. (1)(a) A manufacturer of a structure or component that is intended to be sold, leased, or used in Washington must obtain an insignia for each structure or component before it sells, leases, or allows the use of the structure or component.

(b) A person who has altered or intends to alter a structure must obtain a new insignia before it offers for sale, sells, or leases the structure.

(c) A person who brought a structure or component into Washington from another state must obtain an insignia before he or she uses, sells, or leases the structure or component, unless the structure or component has been used outside the state for at least six months.

(2) A manufacturer need not obtain an insignia for a component or structure, except for HUD mobile homes, if:

(a) The structure or component is manufactured in Washington but the manufacturer has designated it for delivery, and delivered it to, a purchaser in another state;

(b) the structure or component is delivered in Washington, but is purchased by a common carrier, shipped by the seller via the purchaser, carried under a bill of lading, and the structure or component is transported to a destination in another state;

(c) the structure or component is delivered in Washington, but is purchased from a dealer or manufacturer in another state for use outside this state, and the purchaser transports the structure or component from Washington to a point outside Washington within 30 days of the date of delivery. [Statutory Authority: RCW 43.22.340. 82-09-053 (Order 82-13), § 296-150B-020, filed 4/16/82.]

WAC 296-150B-025 Application for approval of a design plan. (1)(a) A manufacturer of a component or structure, except for HUD mobile homes, must obtain

the department's approval of a design plan for the structure or component. The department will not grant an insignia unless the design plan is approved.

(2)(a) The application must include:

(i) A completed application form. The manufacturer may obtain a form from the department.

(ii) An application for approval of a quality control manual, if necessary. (See WAC 296-150B-050).

(iii) One complete set of design plans, specifications, engineering data, and test results, plus one additional complete set for each location at which the manufacturer will manufacture the structure or component.

(iv) The filing fee and the minimum fee for examining the design plan (see WAC 296-150B-990).

(b) If a manufacturer is from out of state, the application must also include a statement from the manufacturer that it agrees to submit to the department annually the names and addresses of all Washington dealers and distributors for the manufacturer's product.

(3) A manufacturer of mobile homes, pursuant to HUD's rules, must have a Design Approval Primary Inspection Agency (DAPIA) check its design plan instead of applying for approval with the department. [Statutory Authority: RCW 43.22.340. 82-09-053 (Order 82-13), § 296-150B-025, filed 4/16/82.]

WAC 296-150B-030 Requirements for design plans. (1) General requirements. A design plan must include plan and elevation views of the structure or component, and the specifications, engineering data, and test results necessary for a complete evaluation of the design. A design plan for a recreational vehicle need not include an elevation view or structural data. A manufacturer may submit the specifications, engineering data, and test results separately from the drawings.

If the specifications, engineering data, and test reports are not included on the plan drawings, they must be fastened together. The cover sheet of the plan must note that the documents are part of the plan.

The plan and elevation views for the design plan must be drawn to scale on uniformly sized standard drawing sheets. The applicant must submit prints of the drawings; the department will not accept originals.

The applicant must provide, on the cover or face sheet of the design plan, information that describes the plan, including the plan designation, description of design options, sheet numbers, and titles. The cover sheet should also have space for the department to insert the plan number and the approval date.

The plan must indicate where the manufacturer will affix the insignia to the structure or component. A plan that covers three or more modules must have a "key" drawing to show the arrangement of the modules.

(2) If a manufacturer is applying for approval of a design plan for a commercial coach, the manufacturer must designate the occupancy class of the commercial coach pursuant to the occupancy classifications given in the uniform building code.

(3) Specific requirements. The department has numerous specific requirements for design plans. When an applicant asks for an application form for approval of its design plan, it should specify the kind of structure or component it intends to manufacture, and the kind of design plan it intends to submit. The department will send the applicant a copy of the specific requirements. [Statutory Authority: RCW 43.22.340. 82-09-053 (Order 82-13), § 296-150B-030, filed 4/16/82.]

WAC 296-150B-035 Engineering analysis and test procedures. (1) When a manufacturer must show that a structural design, method of construction, installation, or piece of equipment is adequate to fulfill its intended function, the manufacturer must submit to the department information on and the results of an engineering analysis or a physical test.

(2) If the manufacturer does an engineering analysis of the design, method, installation, or equipment, the analysis must be made in accordance with generally established principles of engineering and must be signed by an architect or professional engineer licensed in Washington.

(3) If the manufacturer tests the design, method, installation, or equipment, the tests must be performed by a testing agency or must be directed, witnessed, and evaluated by an approved architect or professional engineer licensed in Washington.

Test reports must contain the following items:

(a) A description of the method or standards that applied to the test;

(b) a description and drawings of the item tested;

(c) a description of the test set-up;

(d) a description of the procedure used to load the item for, and to measure, each condition;

(e) test data (and graphs, where applicable), including pertinent observations of the characteristics and behavior of the item tested;

(f) engineering data; and

(g) analysis, comments, and conclusion.

(4) The results of the tests or analyses must be in writing and must identify the design plan to which the results relate. [Statutory Authority: RCW 43.22.340. 82-09-053 (Order 82-13), § 296-150B-035, filed 4/16/82.]

WAC 296-150B-040 Department approval of the design plan. (1) The department shall approve a design plan if it complies with this chapter. If the department approves a design plan, it will return an approved copy of the plan to the applicant. The applicant must keep a copy of the approved plan at each location at which it is building the structure or component described by the design plan.

(2) If the design plan does not comply with this chapter, the department shall notify the applicant in writing of the deficiencies in the plan. The applicant may resubmit a corrected design plan pursuant to WAC 296-150B-045. [Statutory Authority: RCW 43.22.340. 82-09-053 (Order 82-13), § 296-150B-040, filed 4/16/82.]

WAC 296-150B-045 Resubmittal of corrected design plan. An applicant who has been notified of deficiencies in its design plan may correct the plan and resubmit it within 90 days after it receives the notice. If the applicant does not meet this deadline, the department may treat the resubmittal as a new application for approval of the design plan.

Each resubmittal must include the minimum resubmittal fee set out in WAC 296-150B-990. [Statutory Authority: RCW 43.22.340. 82-09-053 (Order 82-13), § 296-150B-045, filed 4/16/82.]

WAC 296-150B-050 Application for approval of a quality control manual. (1) A manufacturer of a recreational vehicle or commercial coach must apply, and a manufacturer of a component may apply, to the department for approval of a quality control manual. The application must include:

(a) A completed application form. The manufacturer may obtain a form from the department.

(b) One copy of the quality control manual plus one additional copy for each location at which the manufacturer will build the structure or component. The copies must be printed on substantial 8 1/2 by 11 inch paper and must be fastened together.

(c) An outline of the quality control procedure.

(d) The name of the corporate officer, partner, or manager who is responsible for the quality control program and for maintaining the inspection records for each unit.

(e) An application fee.

(2) If the department has previously approved a quality control manual for the manufacturer, the manufacturer need not submit copies of the manual with the application.

(3) When the manufacturer asks the department for an application form, it should inform the department of what kind of product it intends to manufacturer. The department will send the manufacturer the specific requirements for the quality control manual. [Statutory Authority: RCW 43.22.340. 82-09-053 (Order 82-13), § 296-150B-050, filed 4/16/82.]

WAC 296-150B-055 Changes to an approved design plan or quality control manual. If a manufacturer wants to change its design plan or quality control manual, or a change is required because the department has amended the rules in this chapter, the manufacturer must apply for approval of the new design plan pursuant to WAC 296-150B-025, or the new quality control manual pursuant to WAC 296-150B-050.

If the manufacturer must change the design plan or quality control manual to comply with changes in this chapter, the manufacturer may continue to manufacture its product under the old design plan or quality control manual for 90 days after the changes in this chapter become effective. The manufacturer should submit its new design plan or quality control manual within 30 days after the change takes effect to ensure that the department will have time to examine and approve the plan or manual. [Statutory Authority: RCW 43.22.340. 82-09-053 (Order 82-13), § 296-150B-055, filed 4/16/82.]

WAC 296-150B-060 Expiration of design plan approval. (1) Approval of a design plan expires 12 months after the date the department approves the plan.

(2) A manufacturer must apply to the department for renewal of the design plan approval at least two months before the approval expires to ensure that the department will have time to examine and approve the application. The manufacturer may obtain an application for renewal of plan approval from the department. The manufacturer must submit:

(a) A completed application form; and

(b) the renewal fee required by WAC 296-150B-990. The renewed plan must be identical to the original design plan, except that the manufacturer may change the model name or designation.

(3) If a manufacturer allows a design plan approval to expire, it must return all unused insignia issued to the manufacturer for the product covered by the expired design plan. [Statutory Authority: RCW 43.22.340. 82-09-053 (Order 82-13), § 296-150B-060, filed 4/16/82.]

WAC 296-150B-065 Trade secrets. The department will keep confidential all material, design plans, specifications, engineering data, test results, quality control manuals, and other design information that a manufacturer submits to the department. The department will release this information to public scrutiny only if ordered to do so by a court. [Statutory Authority: RCW 43.22.340. 82-09-053 (Order 82-13), § 296-150B-065, filed 4/16/82.]

WAC 296-150B-070 Applications for HUD insignia for mobile homes. A manufacturer of mobile homes may apply to the department for HUD insignias for its mobile homes. The manufacturer may obtain an application for insignia from the department. The manufacturer must submit with the application a fee for the insignias. Upon receipt of the application and the fee, the department will send the insignias to the manufacturer. The manufacturer must notify the department immediately of any changes in the information it provided under this section. [Statutory Authority: RCW 43.22.340. 82-09-053 (Order 82-13), § 296-150B-070, filed 4/16/82.]

WAC 296-150B-075 Applications for inspection and insignia for commercial coaches, recreational vehicles, and components. (1) Inspections in general. A manufacturer of commercial coaches, recreational vehicles, or components must apply to the department for inspections of its products. The department will not issue an insignia for a unit until it has completed inspecting the unit.

The manufacturer may obtain an inspection application form from the department. It must submit the form and an application fee. The department must receive the

application at least five days before the proposed date of inspection.

A manufacturer need not apply to the department for inspection if the department has approved an independent inspection agency, a local enforcement agency, or the manufacturer itself to inspect its products. See WAC 296-150B-085.

Each unit of the manufacturer's product must have a specific serial number to ensure that the department has inspected each unit. The manufacturer must have the approved design plan and, if applicable, the approved quality control manual at the location at which it is manufacturing the product. A manufacturer with a quality control manual must provide a control card or other quality control document for each unit.

(2) The department shall generally inspect each commercial coach and component twice. The department shall make an "ok to cover" inspection of a unit before the electrical, plumbing, mechanical, heating, and structural systems are covered or sealed during the construction. After the unit is completed, the department shall make a "final" inspection.

If a commercial coach is built to a simple design, the department may choose to make only a final inspection of the commercial coach.

(3) The department may inspect a recreational vehicle either before or after it has been completed. [Statutory Authority: RCW 43.22.340. 82-09-053 (Order 82-13), § 296-150B-075, filed 4/16/82.]

WAC 296-150B-080 Applications for insignia for commercial coaches, recreational vehicles, and components. The manufacturer of a commercial coach, recreational vehicle, or component must apply to the department for an insignia for each unit. The manufacturer may obtain an application form from the department. The manufacturer must submit with the application a fee for each insignia. The department will give an insignia to a manufacturer for installation on a unit if it has received the application and fees, and if the final inspection reveals that the unit complies with this chapter. [Statutory Authority: RCW 43.22.340. 82-09-053 (Order 82-13), § 296-150B-080, filed 4/16/82.]

WAC 296-150B-085 Inspections at a manufacturer's plant by a local enforcement agency, an independent inspection agency, or the manufacturer. (1) This section applies to manufacturers of components and factory-built structures.

(2) A manufacturer who wants to be inspected by a local enforcement agency or an independent inspection agency may ask the agency to inspect it. The local enforcement agency or independent inspection agency may do so if it obtains approval from the department.

If the department approves of the agency, it shall by contract allow the agency to perform the inspections. The contract shall require the agency to comply with and enforce the requirements of this chapter, and shall list all manufacturers that the agency may inspect. The parties may amend the contract at any time to add or delete a manufacturer. The manufacturer may obtain the departmental insignia from the agency instead of the department.

(3) A manufacturer may contract with the department to inspect its own products. The contract shall require the manufacturer to comply with and enforce the requirements of this chapter and the manufacturer's quality control manuals. The contract shall specify the management procedures by which the manufacturer will assure that the inspections are carried out, and shall designate the officer, partner, or owner who is responsible for the inspections.

(4) The department shall audit the agency's or manufacturer's inspections to ensure they are complying with the contract and this chapter. If the agency or manufacturer is not complying with the contract or this chapter, the department may require the agency or manufacturer to allow the department to perform the inspections. [Statutory Authority: RCW 43.22.340. 82-09-053 (Order 82-13), § 296-150B-085, filed 4/16/82.]

WAC 296-150B-090 Other inspections by the department. (1) A person must ask the department to inspect a structure or component if:

(a) The person is selling, leasing, or offering for sale or lease a structure or component that does not bear an insignia and is required to bear an insignia;

(b) the person is altering or has altered the structure or component; and

(c) the department has issued a correction notice and a reinspection is necessary.

(2) An applicant for an inspection must submit an application on forms supplied by the department at least five working days before the desired date of inspection. The applicant must submit with the application an application fee pursuant to WAC 296-150B-990.

(3) For any inspection, the applicant must provide to the department the design plans, specifications, engineering data, and test results on request. [Statutory Authority: RCW 43.22.340. 82-09-053 (Order 82-13), § 296-150B-090, filed 4/16/82.]

WAC 296-150B-095 Action after inspection. After an inspection, if the structure or component meets the requirements of this chapter, and the applicant submits completed insignia application forms, insignia fees, and inspection fees, the department shall issue an insignia for the structure or component. [Statutory Authority: RCW 43.22.340. 82-09-053 (Order 82-13), § 296-150B-095, filed 4/16/82.]

WAC 296-150B-100 Inspection of commercial coaches after installation at the building site. (1) A manufacturer, dealer, or owner must obtain the approval of the local enforcement agency for each installation of a commercial coach at a building site. After the department performs a final inspection of a unit, it may send a notice to the local enforcement agency that specifies what connections, standards, and items the agency should check when the unit is installed.

(2) The local enforcement agency may require the manufacturer to provide a set of design plans and specifications for the unit, and to obtain all necessary permits, before it allows the manufacturer to transport the unit to the building site.

(3) The local enforcement agency may not open for inspection any commercial coach or component that bears the department's insignia.

(4) The local enforcement agency shall notify the department if a unit has been damaged en route to the building site, or during installation, so that the department can inspect the damage to the unit. [Statutory Authority: RCW 43.22.340. 82-09-053 (Order 82-13), § 296-150B-100, filed 4/16/82.]

WAC 296-150B-105 Complaint investigations. A person may complain in writing to the department about a structure or component. The complaint should describe the items that the person feels do not comply with this chapter. The department will send a copy of the complaint to the manufacturer and the dealer. The manufacturer and dealer have 30 days to respond. The department shall base its actions on the response.

If the department decides an investigation is necessary and discovers that the unit inspected violates this chapter, the manufacturer or dealer shall pay the cost of the inspection. If the department does not discover any violations, the complainant must pay the fees. [Statutory Authority: RCW 43.22.340. 82-09-053 (Order 82-13), § 296-150B-105, filed 4/16/82.]

WAC 296-150B-110 Fee required if a structure or component is not ready for inspection. If a manufacturer or person applies to the department for an inspection of a structure or component, and the structure or component is not ready to be inspected at the time or place specified in the application, the manufacturer or person must pay the department the application fee and any travel and per diem expenses. [Statutory Authority: RCW 43.22.340. 82-09-053 (Order 82-13), § 296-150B-110, filed 4/16/82.]

WAC 296-150B-115 Alterations. (1) No person may alter a mobile home, commercial coach, or recreational vehicle unless the person has first applied for and obtained the department's approval of the alteration. "Alteration" is defined in WAC 296-150B-015(1).

(2) If a person alters a structure in violation of subsection 1, the insignia affixed to the structure is void and may be confiscated by the department. [Statutory Authority: RCW 43.22.340. 82-09-053 (Order 82-13), § 296-150B-115, filed 4/16/82.]

WAC 296-150B-120 Application for alteration insignia and approval of alteration. (1) If a person proposes to alter a structure, the person must file an application for an alteration insignia and an alteration fee with the department. The person may obtain an application form from the department.

(2) As a condition to approval of an alteration, the department may require inspections of the structure during the alteration to ensure that the alteration complies with this chapter. If the department indicates that inspections are required, the person altering the structure must apply for inspections pursuant to WAC 296-150B-090.

After the final inspection of the alteration, if the alteration complies with this chapter and the applicant has paid the inspection and insignia fees, the department shall issue an insignia for the altered structure. [Statutory Authority: RCW 43.22.340. 82-09-053 (Order 82-13), § 296-150B-120, filed 4/16/82.]

WAC 296-150B-125 Identification of commercial coaches and recreational vehicles. (1) Each commercial coach or recreational vehicle manufactured, sold, leased, or offered for sale or lease in Washington shall bear a permanently affixed identification label that contains the following information:

(a) The name of the manufacturer;

(b) the month and year of manufacture;

(c) the vehicle identification number;

(d) the manufacturer's assigned identification number; and

(e) where applicable, the plan approval number.

(2) The identification label shall be permanently attached either on the forward half of the left side of the exterior wall of the commercial coach or recreational vehicle, not less than six inches above the floor line, or in proximity to the insignia. [Statutory Authority: RCW 43.22.340. 82-09-053 (Order 82-13), § 296-150B-125, filed 4/16/82.]

WAC 296-150B-130 Lost or damaged insignia. If an insignia is lost or damaged after it is affixed to a structure or component, the manufacturer, owner, or user must notify the department in writing immediately. The manufacturer or owner must specify the manufacturer, the vehicle identification number or serial number of the structure, and the insignia number if possible. The manufacturer, owner, or user must also return a damaged insignia if possible.

The department shall replace a damaged or lost insignia on payment of the insignia replacement fee pursuant to WAC 296-150B-990. [Statutory Authority: RCW 43.22.340. 82-09-053 (Order 82-13), § 296-150B-130, filed 4/16/82.]

WAC 296-150B-135 Notice of noncompliance. If an inspection or investigation reveals that a structure or component violates this chapter, the department shall give or mail a notice of violations to the owner, dealer, manufacturer, or other person responsible for the violation. The notice of violation shall describe how the structure or component violates this chapter.

A person who receives a notice of violations must, within ten days after receipt, notify the department in writing of the action he or she has taken or will take to correct the violation. If the person has not corrected the violation within ten days after receipt of the notice, or

within any other period of time allowed by the department, the department may confiscate the insignia assigned to the structure or component.

No person who has received a notice of violations may move, cause to be moved, or allow another person to move the structure or component to which the notice refers until the violations have been corrected, the corrections have been inspected and approved by the department, and the person has paid the appropriate inspection and insignia fees. [Statutory Authority: RCW 43.22.340. 82-09-053 (Order 82-13), § 296-150B-135, filed 4/16/82.]

WAC 296-150B-140 Prohibited sale or lease notice. If an inspection or investigation reveals that a structure violates this chapter, the department may post the structure with a prohibited sale or lease notice. No person may sell or lease a structure that is posted with a prohibited sale or lease notice. No person may remove, cause to be removed, or allow to be removed a prohibited sale or lease notice until the violations have been corrected, the corrections have been inspected and approved by the department, and the person has paid the appropriate inspection and insignia fees.

The department may also prohibit the occupancy or use of a structure if it is not occupied or used at the time the violation is discovered. [Statutory Authority: RCW 43.22.340. 82-09-053 (Order 82-13), § 296-150B-140, filed 4/16/82.]

WAC 296-150B-145 Approval of equipment. Equipment used in the body and frame, or the fire safety, plumbing, heating, mechanical, and electrical systems of structures and components must comply with this chapter and must be approved by the department. The department may approve equipment that is listed or labeled by an approved testing or listing agency. The department may approve equipment that is not listed or labeled if it determines that the equipment is adequate to protect health and safety.

The department may refuse to approve equipment that is listed or labeled if it determines that the equipment is not adequate to protect health and safety. [Statutory Authority: RCW 43.22.340. 82-09-053 (Order 82-13), § 296-150B-145, filed 4/16/82.]

WAC 296-150B-150 Department approval of listing and testing agencies, licensed professional engineers, and licensed architects. (1) The department will consider the following information in determining whether to approve a listing or testing agency, professional engineer, or licensed architect:

(a) The names of agents or officers;

(b) the location of offices;

(c) a description of services the agency, engineer, or architect furnishes or proposes to furnish;

(d) a description of the employees' qualifications and responsibilities;

(e) a summary of the agency's, engineer's, or architect's experience;

(f) a description of the procedures and facilities the agency, engineer, or architect will use to evaluate a product, inspect the product manufacturer's operations and quality control, and label the units of a product;

(g) a description of the specific information the agency, engineer, or architect will furnish with its listings;

(h) a description of how the agency, engineer, or architect will deal with errors in its procedures that result in defective or unacceptable products;

(i) proof of independence and absence of conflict of interest; and

(j) a published directory that includes a list of product manufacturers and product information.

(2) To obtain departmental approval, a listing or testing agency, professional engineer, or licensed architect may not be under the control of a manufacturer, dealer, or supplier for the structures, components, equipment, or installations that it approves or lists.

A listing or testing agency must publish at least annually a list of the equipment, components, or installations it has approved. The listing must certify that the equipment, components, and installations have been tested and meet nationally approved standards and must specify the permissible uses for the equipment, components, and installations.

A listing agency must periodically inspect the manufacture of equipment, components, and installations that it has approved. A testing agency must test at least annually the equipment, components, and installations it has approved. [Statutory Authority: RCW 43.22.340. 82-09-053 (Order 82-13), § 296-150B-150, filed 4/16/82.]

WAC 296-150B-155 Approval of alternates. The department may approve the use of an alternative design, material, appliance, system, device, arrangement, or method of construction if this chapter does not specifically proscribe the use of the alternative, and the alternative equals or betters the quality, strength, effectiveness, fire resistance, durability, and safety of the design, material, appliance, system, device, arrangement, or method of construction required by this chapter. [Statutory Authority: RCW 43.22.340. 82-09-053 (Order 82-13), § 296-150B-155, filed 4/16/82.]

WAC 296-150B-160 Manufacturing in more than one location. A manufacturer that is manufacturing its product at more than one location must notify the department in writing of each location. A manufacturer of structures must keep an approved design plan and an approved quality control manual at each location. [Statutory Authority: RCW 43.22.340. 82-09-053 (Order 82-13), § 296-150B-160, filed 4/16/82.]

WAC 296-150B-165 Change of name or address. If a manufacturer changes its name or address, it must notify the department in writing of the change within ten days. The notice must be accompanied with the appropriate fee. [Statutory Authority: RCW 43.22.340. 82-

09-053 (Order 82-13), § 296-150B-165, filed 4/16/82.]

WAC 296-150B-175 Change of ownership. If a manufacturer changes ownership, the new owner must notify the department in writing within ten days. The notice must be accompanied with the appropriate fee. The new owner need not submit a new application for design plan approval if it continues to manufacture the product in accordance with previously approved design plans. [Statutory Authority: RCW 43.22.340. 82-09-053 (Order 82-13), § 296-150B-175, filed 4/16/82.]

WAC 296-150B-180 Reciprocal agreements. In accordance with RCW 43.22.400, the director has examined the statutes and rules of several states and finds that the statutes and rules provide construction standards that are equal to those of Washington, and that the states enforce their statutes and rules. The department has entered into reciprocal agreements with those states. The department has all reciprocal agreements on file at the factory-assembled structures section. The public may inspect and copy the agreements during regular business hours. [Statutory Authority: RCW 43.22.340. 82-09-053 (Order 82-13), § 296-150B-180, filed 4/16/82.]

WAC 296-150B-200 General installation requirements for mobile homes. (1) All mobile homes shall be installed in compliance with the national manufactured housing procedural and enforcement regulations in subparts F and I of 24 C.F.R. Part 3282 adopted as of April 1, 1982, which are incorporated into these rules by this reference.

(2) A HUD-labeled mobile home shall also be installed in compliance with the mobile home manufacturer's installation recommendations. The recommendations must be approved by HUD. The manufacturer shall send two copies of its approved installation recommendations to the purchaser of the mobile home. The copies shall be in the home and available at the time of inspection.

A mobile home not labeled by HUD shall also be installed in accordance with installation recommendations provided by a professional engineer or architect licensed in Washington.

(3) To the extent that the installation of a mobile home is not covered by a manufacturer's, engineer's, or architect's recommendations, the mobile home shall comply with the installation requirements set out in WAC 296-150B-225 through 296-150B-255.

(4) No person, firm, partnership, corporation, or other entity may install a mobile home unless he, she, or it owns the mobile home, is a licensed mobile home dealer, or is a contractor registered under chapter 18.27 RCW.

(5) In those areas that are (a) recognized as flood plains by the Washington state department of ecology or the Federal Emergency Management Agency, or (b) hazardous because of the probability of earthquakes, ground slides, avalanches, or high winds, the local jurisdictions may set requirements that are necessary to lessen the hazards. [Statutory Authority: RCW 43.22-.350 and 43.22.440. 83-01-018 (Order 82-37), § 296-150B-200, filed 12/6/82. Statutory Authority: RCW 43.22.440. 82-09-059 (Order 82-12), § 296-150B-200, filed 4/19/82.]

WAC 296-150B-205 Installation permits. The owner or the installer of a mobile home must obtain an installation permit from the local enforcement agency before it installs a mobile home that will be used as a residence on a building site. The applicant shall include with the application for the permit the permit fee set by the local enforcement agency. A dealer may not deliver a mobile home until it has verified that the owner or the installer has obtained an installation permit for the mobile home. [Statutory Authority: RCW 43.22.350 and 43.22.440. 83-01-018 (Order 82-37), § 296-150B-205, filed 12/6/82. Statutory Authority: RCW 43.22.440. 82-09-059 (Order 82-12), § 296-150B-205, filed 4/19/82.]

WAC 296-150B-210 Inspections. (1) The installer shall request an inspection after all aspects of the installation, other than installation of the foundation facia, have been completed. The local enforcement agency will, if it accepts responsibility for inspections under WAC 296-150B-220, inspect the installation within five business days after it receives the request. If the inspection is not completed within five business days, the tenant or owner may occupy the mobile home at his or her own risk. Occupancy before inspection does not imply approval.

(2) The local enforcement agency shall approve the installation of a mobile home, and allow the mobile home to be occupied if the installation complies with the installation requirements of this chapter and the conditions of the installation permit.

(3) If the installation does not comply with the installation requirements of this chapter and the conditions of the installation permit, the local enforcement agency shall provide the installer with a list of corrections that the installer must make. The list of corrections shall state a date by which the corrections must be completed. The local enforcement agency shall reinspect the installation after the corrections are completed. If the items that require correction do not endanger the health or safety of the occupants, or substantially affect the habitability of the mobile home, the local enforcement agency may permit the owner of the mobile home to occupy it. [Statutory Authority: RCW 43.22.350 and 43-.22.440. 83-01-018 (Order 82-37), § 296-150B-210, filed 12/6/82. Statutory Authority: RCW 43.22.440. 82-09-059 (Order 82-12), § 296-150B-210, filed 4/19/82.]

WAC 296-150B-215 Requirements of local jurisdictions. Local jurisdictions may enforce their regulations that govern the installation of mobile homes if the

regulations do not conflict with the installation requirements of this chapter. [Statutory Authority: RCW 43-.22.440. 82-09-059 (Order 82-12), § 296-150B-215, filed 4/19/82.]

WAC 296-150B-220 Inspection by local jurisdictions or other agents. RCW 43.22.440 authorizes the department to inspect installations and to enforce the law to the extent necessary. RCW 43.22.440 also authorizes the department to appoint agents to inspect and enforce the law. The department believes that local jurisdictions best know the level of inspections and enforcement necessary in their jurisdictions. Accordingly, upon written notice from a local jurisdiction that the local jurisdiction will inspect and enforce the mobile home installation requirements, the department will authorize the local jurisdiction to do so. If the local jurisdiction does not want to inspect and enforce the installation requirements itself, but believes that inspection and enforcement are necessary in its jurisdiction, the department will upon a petition from the local jurisdiction appoint another agent to inspect and enforce the requirements in that jurisdiction. The department will not itself inspect installations of mobile homes or enforce the installation requirements.

If a dispute concerning an installation requirement of this chapter arises between any person or business and a local jurisdiction or other agent of the department, the dispute may be submitted to the mobile home, commercial coach, and recreational vehicle advisory board for its opinion as to the proper interpretation of the requirement. [Statutory Authority: RCW 43.22.350 and 43.22-.440. 83-01-018 (Order 82-37), § 296-150B-220, filed 12/6/82. Statutory Authority: RCW 43.22.440. 82-09-059 (Order 82-12), § 296-150B-220, filed 4/19/82.]

WAC 296-150B-225 Building site preparation. A mobile home may not be installed at a building site unless the ground at the site has adequate compaction and load-bearing ability to meet the support requirements of WAC 296-150B-230. The installer or, if the building site is in a mobile home park, the park owner must ensure that the ground on which a mobile home is to be installed has been improved as necessary to provide a proper base for the mobile home and that the area beneath the mobile home has adequate drainage. [Statutory Authority: RCW 43.22.350 and 43.22.440. 83-01-018 (Order 82-37), § 296-150B-225, filed 12/6/82. Statutory Authority: RCW 43.22.440. 82-09-059 (Order 82-12), § 296-150B-225, filed 4/19/82.]

WAC 296-150B-230 Foundation system footings. (1) Footings shall be constructed of:

(a) Solid concrete or an approved alternate that is at least 3 1/2 inches thick by 16 inches square; or

(b) two 8-inch by 16-inch by 4-inch solid concrete blocks that are laid with their joint parallel to the main frame longitudinal member.

(2) Footings shall be:

(a) Evenly bedded and leveled;

(b) placed on firm, undisturbed, or compacted soil that is free of organic material;

(c) centered in a line directly under the main frame longitudinal members on both sides of a mobile home; and

(d) spaced not more than 8 feet apart, and not more than 2 feet from the ends of the main frame. A closer spacing may be required, depending on the load-bearing capacity of the soil.

(3) A mobile home with more than one section must have center line blocking at end walls and at any other point of connection of the sections of the mobile home that are a ridgebeam bearing support. Blocking is also required at both ends of a door opening that is 6 feet or more wide in an exterior wall.

(4) If a mobile home requires footings on its exterior perimeter, the footings shall be installed below the frost line. Footings for the main frame longitudinal members must be recessed only if frost heave is likely to occur.

(5) Footings shall be constructed so that seventy-five percent of the area under the mobile home has at least 18 inches clearance between the bottom of the main chassis members and the ground level. The area beneath furnace cross-overs and fireplaces, however, must always have at least 18 inches clearance. At no point under the mobile home may clearance be less than 12 inches. [Statutory Authority: RCW 43.22.350 and 43-.22.440. 83-01-018 (Order 82-37), § 296-150B-230, filed 12/6/82. Statutory Authority: RCW 43.22.440. 82-09-059 (Order 82-12), § 296-150B-230, filed 4/19/82.]

WAC 296-150B-235 Foundation system piers. An installer must build and position piers and load-bearing supports or devices to distribute the required loads evenly. An installer may use manufactured piers or load-bearing supports or devices that are listed or approved for the intended use, or may build piers that comply with the following requirements. All blocks must be concrete blocks.

(1) A pier may be made of a single stack of 8-inch by 8-inch by 16-inch blocks if the blocks are not stacked more than three blocks high. A pier made of a single stack of blocks shall be installed at a right angle to the main frame longitudinal member and shall be capped with no more than two 2-inch by 8-inch by 16-inch wood blocks or one 4-inch by 8-inch by 16-inch concrete block.

(2) A pier may be made of a double stack of 8-inch by 8-inch by 16-inch blocks if the blocks are not stacked more than 5 blocks high. Each row of blocks in such a pier shall be stacked at right angles to the abutting rows of blocks. A wood block must be of hem-fir, douglas fir, or spruce pine fir. The pier shall be capped with two 2-inch by 8-inch by 16-inch wood or concrete blocks. The pier shall be installed so that the joint between the cap blocks is at right angles to the main frame longitudinal member.

(3) A pier may be made with more than five rows of blocks if the stacked blocks are filled with 2000 psi concrete or mortar. A licensed architect or professional engineer must approve a foundation system that includes a pier that is higher than 72 inches (9 blocks) high, or in which more than 20 percent of the piers exceed 40 inches (5 blocks) high.

(4) All blocks shall be set with the cores placed vertically. [Statutory Authority: RCW 43.22.350 and 43.22-.440. 83-01-018 (Order 82-37), § 296-150B-235, filed 12/6/82. Statutory Authority: RCW 43.22.440. 82-09-059 (Order 82-12), § 296-150B-235, filed 4/19/82.]

WAC 296-150B-240 Foundation system plates and shims. An installer may fill a gap between the top of a pier and the main frame with a wood plate that is not more than 2 inches thick and two opposing wedge-shaped shims that are not more than 2 inches thick. Wood plates and shims must be of hem-fir, douglas fir, or spruce pine fir. A shim shall be at least 4 inches wide and 6 inches long. The installer shall fit the shim properly and drive it tight between the wood plate or pier and the main frame to ensure that the mobile home is level and properly supported at all load-bearing points. A block that abuts a wedge-shaped shim shall be solid. [Statutory Authority: RCW 43.22.440. 82-09-059 (Order 82-12), § 296-150B-240, filed 4/19/82.]

WAC 296-150B-245 Foundation facia. A mobile home shall have an approved foundation facia around its entire perimeter. The wood of the facia shall be at least 3 inches from the ground unless it is pressure-treated wood. Metal fasteners shall be galvanized, stainless steel, or other corrosion-resistant material. Ferrous metal members in contact with the earth, other than those that are galvanized or stainless steel, shall be coated with an asphaltic emulsion.

A mobile home that is installed on a nonrecessed site and that has a metal foundation facia shall have ventilation openings with a net area of at least 1-1/2 square inches per linear foot. A mobile home that has been installed on a recessed site or that has a foundation facia that is not made of metal shall have ventilation openings in the foundation facia with a net area of at least 1 1/2 square feet for each 25 linear feet of facia. The openings shall be designed to provide cross ventilation on at least two approximately opposite sides of the mobile home. The installer shall locate the openings as close to the corners of the mobile home as practical, and shall cover the openings with corrosion-resistant wire mesh or louvers.

Dryer vents and hot water tank pressure relief valves shall exhaust on the exterior of the foundation facia. The facia for each section of a mobile home shall have an opening of at least 18 inches by 24 inches, with a cover of metal or pressure treated wood, to allow access to the crawl space. The foundation facia must be installed within thirty days after the mobile home is occupied. [Statutory Authority: RCW 43.22.350 and 43.22.440. 83-01-018 (Order 82-37), § 296-150B-245, filed 12/6/82. Statutory Authority: RCW 43.22.440. 82-09-059 (Order 82-12), § 296-150B-245, filed 4/19/82.]

WAC 296-150B-250 Anchoring systems. A local jurisdiction may require a single-section or multiple-section mobile home to have an anchoring system. Such an anchoring system may be less than or equal to the following requirements.

(1) Components of the anchoring system shall have a resistance to weather deterioration that is at least equivalent to that of a zinc coating that is not less than 0.3 ounces per square foot of coated surface. Cut edges of zinc-coated strapping do not need to be coated.

(2) An installer shall install, preload, and adjust a ground anchor in accordance with the anchor manufacturer's instructions. The installer must supply a copy of the instructions to the department or the local enforcement agency, as appropriate. A ground anchor, when installed, must be able to resist a working load of 3,150 pounds in the direction of the tie plus a 50 percent overload (4,725 pounds total) without failure. Failure occurs if the point of connection of a vertical tie to an anchor is withdrawn more than 2 inches at 3,150 pounds, or when the point of connection of a diagonal tie is moved more than 4 inches horizontally when a load of 3,150 pounds is applied at 45 degrees from the horizontal. Ground anchors shall be marked with the manufacturer's identification and model number in a location that is visible after the anchor is installed. The manufacturer of a ground anchor must provide instructions with each anchor that specify the kinds of soil for which the anchor is suitable.

(3) If concrete slabs or continuous footings are used to transfer the anchoring loads to the ground, the following requirements apply:

(a) Steel rods cast in concrete shall be able to resist the loads and corrosion as specified for ground anchors.

(b) A deadman anchor may be used in place of a listed anchor. It shall be constructed of solid concrete at least 6 inches in diameter and 2 feet long; reinforced with two #4 deformed steel rods; and installed at least 5 feet below the surface of the ground.

(c) A concrete slab may be used in place of a ground anchor if it provides holding strength equal to that required for ground anchors.

(4) Ties shall be of cable, strapping, or other approved materials. Ties shall be fastened to ground anchors and drawn tight with turnbuckles, yoke fasteners, or other approved tensioning devices.

Tension devices shall end in clevis, forged, or welded eyes. Hook ends are not permitted. Tension devices shall be designed to prevent self-disconnection if the tie becomes slack. Cable tie eyes shall be secured with two U-bolt cable clamps or an approved equivalent.

Tie materials must resist a working load of 3,150 pounds with no more than 2 percent elongation, and must withstand a 50 percent overload (4,725 pounds total).

Ties shall connect the ground anchor to the main frame longitudinal member. Ties may not connect to

steel outrigger beams that fasten to the main frame, unless the manufacturer's installation instructions specifically approve the connection.

Diagonal ties must lie at least 40 degrees from the vertical. Vertical ties must be substantially vertical. If a vertical tie is not substantially vertical, the anchor must be placed outboard of the tie's connection to the main frame.

A cable frame tie shall be connected to the main frame by a 5/8 inch drop forged closed eye bolt through a hole drilled in the center of the I-beam web, or by an approved alternative. The installer shall reinforce the web if necessary to maintain the strength of the I-beam.

The installer shall space the ties as evenly as practical, and shall locate a tie within 8 feet of each end of the mobile home. The installer may attach two or more ties to a single ground anchor if the anchor can carry the total required load. The installer shall install vertical ties at each detached corner of a clerestory roof and of add-on sections of expandable mobile homes.

As a minimum, the installer shall install the following number of ties for each I-beam or other main frame longitudinal member:

Length of Home (feet) (excluding hitch)	Number of Vertical Ties	Number of Diagonal Ties
32-54	2	3
55-73	2	4

Multiple section mobile homes require only diagonal ties. Vertical ties are not required. [Statutory Authority: RCW 43.22.350 and 43.22.440. 83-01-018 (Order 82-37), § 296-150B-250, filed 12/6/82. Statutory Authority: RCW 43.22.440. 82-09-059 (Order 82-12), § 296-150B-250, filed 4/19/82.]

WAC 296-150B-255 Assembly. (1) Sections of a multiple section mobile home shall be aligned, closed, and securely fastened at the required points along the ridge beam, endwalls, and floor line. Heat ducts, electrical connections, and other fixtures and connections required between sections of a mobile home shall be properly installed. The floor of the mobile home shall be level within the tolerances given in the following table.

Tolerances may not exceed the following amounts (L equals the clear span between supports, twice the length of a cantilever):

Floor:	L/240
Roof and ceiling:	L/180
Headers, beams, girders (vertical load):	L/180
Walls and partitions:	L/180

(2) The installer shall provide adequate clearance to ensure that the cross-over heat duct does not touch the ground and is not compressed. The installer shall insulate the cross-over duct at the intersection. The installer shall insulate and seal areas of potential air leaks to ensure that the mobile home is air-tight, and shall seal areas of potential water leaks with metal flashing or trim, if required, and with putty tape or other approved caulking to ensure the mobile home is watertight.

(3) The water pipe connection to the mobile home shall have a main shut off valve in compliance with 24 CFR 3280.609(b) adopted as of April 1, 1982. In all other respects, utility connections to the mobile home, including water, sewer, electricity, and gas, shall comply with local codes. Accessory structures attached to or located next to a home, such as awnings, carports, garages, porches, or steps, shall be constructed in conformance with local codes. [Statutory Authority: RCW 43.22.440. 82-09-059 (Order 82-12), § 296-150B-255, filed 4/19/82.]

WAC 296-150B-300 Construction requirements for mobile homes. Alterations and repairs to mobile homes made after sale to a dealer shall comply with this section.

(1) Subject to the exceptions in subsections 2 and 3, mobile homes must comply with the 1977 edition of the Standard for Mobile Homes, as adopted by the National Fire Protection Association (NFPA) and approved by the American National Standards Institute (ANSI) in ANSI/NFPA 501B 1977.

(2) Mobile homes need not comply with Chapter 1, 1-2 Definitions Common to Chapters 1-5 (see WAC 296-150-015).

(3) Mobile homes must comply with the following provisions of ANSI/NFPA 501B 1977, as amended. Chapter 4, Section 4-6.3.5 Installation of Solid Fuel-Burning Fireplaces and Fireplace Stoves. Subsection (A)1. is amended to read: "A listed factory-built chimney designed to be attached directly to the fireplace or fireplace stove shall be used. The listed factory-built chimney shall be equipped with and contain as part of its listing a termination device and a spark arrester." Subsection (A)3. is amended to read: "The combustion air inlet shall conduct the air directly into the fire chamber and shall be designed to prevent material from the hearth dropping into the area beneath the mobile home." [Statutory Authority: RCW 43.22.340. 82-04-060 (Order 82-4), § 296-150B-300, filed 2/2/82.]

WAC 296-150B-305 Standards for recreational vehicles. (1) Subject to the exceptions in subsection (2), recreational vehicles must comply with the 1977 edition of the Standard for Recreational Vehicles, as adopted by the National Fire Protection Association (NFPA) and approved by the American National Standards Institute (ANSI) ANSI/NFPA 501C (1977 edition).

(2) Recreational vehicles need not comply with the following provision of ANSI/NFPA 501C 1977.

(a) Delete Section 4-7.6.4 and exceptions No. 1 and No. 2 of Chapter 4, Electrical Systems. See WAC 296-150B-310.

(b) Delete the note in Section 3-6.2.2 in Chapter 3, Heating/Air Conditioning, and add the following exception:

A fuel-burning refrigerator may be installed to meet the above requirements using panels provided by the recreational vehicle manufacturer if the refrigerator manufacturer furnishes the necessary vents and grills as specified by the listing requirements and the refrigerator

is equipped with the necessary means to ensure the integrity of the separation of the combustion system when the refrigerator is removed for field service and reinstalled.

(c) Delete Section 4-4.1 from Chapter 4, Electrical Systems. See WAC 296-150B-315. [Statutory Authority: RCW 43.22.340. 82-04-060 (Order 82-4), § 296-150B-305, filed 2/2/82.]

WAC 296-150B-310 Construction requirements for recreational vehicles--Power-supply assembly. In accordance with Sections 4-7.6.4 and 4-7.4.4 of Chapter 4 of ANSI/NFPA 501C 1977, any recreational vehicle with a rating that exceeds 30 amperes, 120 volts, shall use an approved, listed, and appropriately rated 120/240 volt power-supply assembly. However, if a recreational vehicle has a dual power supply source that consists of a generator and a power-supply cord, the recreational vehicle must comply with Section 4-7.8 of Chapter 4 of ANSI/NFPA 501C 1977. [Statutory Authority: RCW 43.22.340. 82-04-060 (Order 82-4), § 296-150B-310, filed 2/2/82.]

WAC 296-150B-315 Construction standards for recreational vehicles--Low voltage circuits. (1) All low-voltage circuits furnished and installed by a recreational vehicle manufacturer are subject to this chapter, except for battery circuits of 24 volts or less if they

(a) are installed in a recreational vehicle that has no electrical circuits other than battery circuits of 24 volts or less; and

(b) are used exclusively for the following purposes:

(i) to illuminate lights when the recreational vehicle contains no systems, such as plumbing or heating systems, other than the battery-powered electrical system; or

(ii) to supply power for running lights, taillights, stoplights, electrical braking, or ignition.

(2) The metal frame or chassis of a recreational vehicle may be used as the return path for exterior lighting circuits. Terminals for connection to the frame or chassis shall be of the solderless kind and shall be approved for the size and kind of wire used. Mechanical connections to the frame or chassis shall be made secure. [Statutory Authority: RCW 43.22.340. 82-04-060 (Order 82-4), § 296-150B-315, filed 2/2/82.]

WAC 296-150B-400 Definitions. The following definitions shall apply to WAC 296-150B-400 through 296-150B-820.

(1) "Ceiling height" means the clear vertical distance from the finished floor to the finished ceiling.

(2) "Dead load" means the weight of all permanent construction including walls, floors, roof, partitions, and fixed service equipment.

(3) "Diagonal tie" means a tie intended primarily to resist horizontal or shear forces and which may secondarily resist vertical, uplift, and overturning forces.

(4) "Dormitory" means a room designed to be occupied by more than two guests.

(5) "Dwelling unit" means one or more habitable rooms that are designed to be occupied by one family with facilities for living, sleeping, cooking, eating and sanitation.

(6) "Exit" means a continuous and unobstructed means of egress to a public way.

(7) "Gross floor area" means the net floor area within the enclosing walls of a room in which the ceiling height is not less than five feet.

(8) "Guest room" means a room used or intended to be used by a guest for sleeping purposes. Every one hundred square feet of superficial floor area in a dormitory shall be considered to be a guest room.

(9) "Habitable room" means a room or enclosed floor space arranged for living, eating, food preparation, or sleeping purposes (not including bathrooms, toilet compartment, laundries, pantries, foyers, hallways and other accessory floor spaces).

(10) "Interior finish" means the surface material of walls, fixed or movable partitions, ceilings and other exposed interior surfaces affixed to the commercial coach structure, including any material such as paint or wallpaper. Interior finish does not include decorations or furnishings that are not affixed to the commercial coach structure.

(11) "Live load" means the weight superimposed by the use and occupancy of the commercial coach, including wind load and snow load, but not including dead load.

(12) "Occupancy" means the purpose for which a commercial coach is designed to be used.

(13) "Perimeter blocking" means supports placed under exterior walls.

(14) "Shear wall" means a wall designed and constructed to transfer lateral loads.

(15) "Tiedown" means a device designed to anchor a commercial coach to ground anchors.

(16) "Wind load" means the lateral or vertical pressure or uplift due to wind blowing in any direction.

(17) "Window" means a glazed opening on the exterior of a structure, including glazed doors. [Statutory Authority: RCW 43.22.340. 82-04-060 (Order 82-4), § 296-150B-400, filed 2/2/82.]

WAC 296-150B-403 Minimum requirements. (1) The design and construction of a commercial coach shall conform with the provisions of WAC 296-150B-400 through 296-150B-820. Requirements for any size, weight, or quality of material modified by the terms of "minimum," "not less than," "at least," and similar expressions are minimum standards. The manufacturer or installer may exceed these standards provided such deviation does not result in any inferior installation or defeat the purpose and intent of the standard.

(2) All construction methods and installations shall conform with this chapter and accepted engineering practices, provide minimum health and safety to the occupants of commercial coaches and the public, and demonstrate acceptable workmanship reflecting journeyman quality of work of the various trades.

(3) When a habitable room is part of a commercial vehicle, the habitable room(s) shall meet egress, ventilation, interior finish, automatic smoke detectors and applicable plumbing, mechanical, and electrical requirements. [Statutory Authority: RCW 43.22.340. 82-04-060 (Order 82-4), § 296-150B-403, filed 2/2/82.]

WAC 296-150B-407 Structural analysis. The strength and rigidity of the components, equipment, and integrated structure shall be determined by engineering analysis or by suitable load tests pursuant to WAC 296-150B-473. [Statutory Authority: RCW 43.22.340. 82-04-060 (Order 82-4), § 296-150B-407, filed 2/2/82.]

WAC 296-150B-410 Standards for equipment and installations. Standards for equipment and installations are listed in WAC 296-150B-530. Equipment and installations conforming to these standards or to other approved standards shall be considered acceptable by the department when listed or labeled and installed in accordance with the requirements of this chapter and the conditions of their approval, except where otherwise provided in this chapter. All equipment shall be clearly labeled to indicate compliance with applicable standards. [Statutory Authority: RCW 43.22.340. 82-04-060 (Order 82-4), § 296-150B-410, filed 2/2/82.]

WAC 296-150B-413 Structural design--Requirements. Each commercial coach shall be designed and constructed as a completely integrated structure capable of sustaining the design load requirements of this chapter and shall be capable of transmitting these loads to stabilizing devices without causing an unsafe deformation or abnormal internal movement of the structure or its structural parts. The commercial coach shall be capable of withstanding the adverse effects of transportation shock and vibration, both as an integrated structure and to its parts. [Statutory Authority: RCW 43.22.340. 82-04-060 (Order 82-4), § 296-150B-413, filed 2/2/82.]

WAC 296-150B-417 New materials and methods. (1) Any new material or method of construction not provided for in this standard and any material or method of questioned suitability, proposed for use in the manufacture of the structure, shall nevertheless conform in performance to the requirements of this standard.

(2) Unless based on accepted engineering design for the use indicated, all new commercial coach materials, equipment systems or methods of construction not provided for in this standard shall be subjected to the tests specified in subsection (4).

(3) Allowable design stress. The design stresses of all materials shall conform to accepted engineering practice. The use of materials not identified as to strength or stress grade shall be limited to the minimum allowable stresses under accepted engineering practice.

(4) Alternate test procedures. In the absence of listed and prescribed standards, the manufacturer shall develop or cause to be developed necessary tests, suitable to the department, to demonstrate the structural properties and the significant characteristics of the method employed. The tests shall be made by an approved testing agency or by a licensed professional engineer or architect. Copies of the test results shall be submitted to the department for approval. [Statutory Authority: RCW 43.22.340. 82-04-060 (Order 82-4), § 296-150B-417, filed 2/2/82.]

WAC 296-150B-420 Design dead loads. Design dead loads shall be the actual dead load supported by the structural assembly under consideration. [Statutory Authority: RCW 43.22.340. 82-04-060 (Order 82-4), § 296-150B-420, filed 2/2/82.]

WAC 296-150B-423 Design live loads. The design live loads shall be as specified in WAC 296-150B-427, 296-150B-430, 296-150B-440, 296-150B-450, 296-150B-463, and 296-150B-473 and shall be considered to be uniformly distributed. The roof live load shall not be considered as acting simultaneously with the wind load, and the roof and the floor live loads shall not be considered as resisting the overturning moment due to wind. The roof live load and the floor live load shall be considered to act both simultaneously and separately in order to determine the critical design loading for stresses and deflections. [Statutory Authority: RCW 43.22.340. 82-04-060 (Order 82-4), § 296-150B-423, filed 2/2/82.]

WAC 296-150B-427 Standard wind. When a commercial coach is not designated "hurricane and windstorm-resistive," the commercial coach and each wind resisting part and portion thereof shall be designed for the following wind loads:

Horizontal	15 lb/ft^2 (1 day load duration)
Vertical upward	9 lb/ft^2 (1 day load duration)
Vertical downward	(See WAC 296-150B-430 Roof loads)

For exposures in areas where records or experience indicate that the commercial coach will be subjected to wind loads in excess of the above loads, the coach shall be designed for the loads to which it will be subjected. [Statutory Authority: RCW 43.22.340. 82-04-060 (Order 82-4), § 296-150B-427, filed 2/2/82.]

WAC 296-150B-430 Roof loads. Flat, curved, and pitched roofs shall be designed to sustain all loadings as follows:

(1) All dead loads plus a minimum unit live load of 30 lb/ft^2 (2 months load duration).

(2) A vertical net uplift load of 9 lb/ft^2 (1 day load duration). [Statutory Authority: RCW 43.22.340. 82-04-060 (Order 82-4), § 296-150B-430, filed 2/2/82.]

WAC 296-150B-433 Snow loads. For exposures in areas where snow records or experience indicate that the commercial coach will be subjected to snow loads in excess of 30 lb/ft^2, the roof shall be designed for the

loads to which it will be subjected. [Statutory Authority: RCW 43.22.340. 82–04–060 (Order 82–4), § 296–150B–433, filed 2/2/82.]

WAC 296–150B–437 Posting design loads. The manufacturer shall post the loads the commercial coach has been designed for as follows:

Roof live load ..... _____ psf
Floor live load ..... _____ psf
Wind load ..... _____ psf

Design loads shall be posted on the exterior of the commercial coach. The design loads shall be shown on a label securely affixed to the rear of the vehicle on the lower left hand corner of the exterior wall not less than six inches above the floor line or on the exterior wall immediately adjacent to the main door not less than six inches above floor line. [Statutory Authority: RCW 43-.22.340. 82–04–060 (Order 82–4), § 296–150B–437, filed 2/2/82.]

WAC 296–150B–440 Design load deflection. When a structural assembly is subjected to total design live loads, the deflection for structural framing members shall not exceed the following:

Floor L/240
Roof and ceiling L/180
(See WAC 296–150B–470)
Headers, beams, girders L/180
(vertical loads only)
Walls and partitions L/180

L = the clear span between supports or two times the length of a cantilever.

[Statutory Authority: RCW 43.22.340. 82–04–060 (Order 82–4), § 296–150B–440, filed 2/2/82.]

WAC 296–150B–443 Fastening of structural systems. Roof framing shall be securely fastened to wall framing, walls to floor structure and floor structure to chassis to secure and maintain continuity between the floor and chassis, so as to resist wind uplift, overturning and sliding as imposed by design loads in WAC 296–150B–427. Directions for setup and anchorage shall accompany all commercial coaches. [Statutory Authority: RCW 43.22.340. 82–04–060 (Order 82–4), § 296–150B–443, filed 2/2/82.]

WAC 296–150B–447 Instructions. The manufacturer shall provide printed instructions with each commercial coach specifying the following:

(1) The location and required capacity of stabilizing devices, (tiedowns, piers, blocking, etc.) on which the design is based.

(2) Devices and methods to be used in connecting all components and systems including, but not limited to, roofs, walls, floors, frames and utilities.

(3) Leveling, including releveling. [Statutory Authority: RCW 43.22.340. 82–04–060 (Order 82–4), § 296–150B–447, filed 2/2/82.]

WAC 296–150B–450 Walls. The walls shall be of sufficient strength to withstand the load requirements set out in WAC 296–150B–427, 296–150B–430, and 296–150B–433 without exceeding the deflections specified in WAC 296–150B–440. The connections between the bearing walls, floor, and roof framework members shall be fabricated to provide support for the material used to enclose the commercial coach and to provide for transfer of all lateral and vertical loads to the floor and chassis. [Statutory Authority: RCW 43.22.340. 82–04–060 (Order 82–4), § 296–150B–450, filed 2/2/82.]

WAC 296–150B–453 Drilling or notching of wood wall structural members. Except where substantiated by engineering designs, studs shall not be notched or drilled. [Statutory Authority: RCW 43.22.340. 82–04–060 (Order 82–4), § 296–150B–453, filed 2/2/82.]

WAC 296–150B–457 Firestopping. Firestopping shall be provided in commercial coaches to cut off all concealed draft openings in all stud walls and partitions, including furred spaces, so placed that the maximum vertical dimension of any concealed space is not over eight feet. [Statutory Authority: RCW 43.22.340. 82–04–060 (Order 82–4), § 296–150B–457, filed 2/2/82.]

WAC 296–150B–460 Interior walls and partitions. Interior walls and partitions shall be constructed with structural capacity adequate for the intended purpose and shall be capable of resisting a horizontal load of not less than five pounds per square foot without exceeding the deflections specified in WAC 296–150B–440. [Statutory Authority: RCW 43.22.340. 82–04–060 (Order 82–4), § 296–150B–460, filed 2/2/82.]

WAC 296–150B–463 Floors. (1) Floor assemblies shall be designed in accordance with accepted engineering practice standards to support a minimum uniform and concentrated live load, in accordance with WAC 296–150B–537 and 296–150B–540, plus the dead load of the materials. In addition (but not simultaneously), floors and floor sheathing shall be able to support a 200–pound concentrated load on a one–inch diameter disc at the most critical location with a maximum deflection not to exceed one–eighth inch relative to the floor framing. The floor sheathing shall be able to support a 600–pound concentrated load on a one–inch diameter disc at the most critical location. Joists of more than six inches depth shall be stabilized against overturning from superimposed loads as follows: At ends by solid blocking not less than two–inch thickness by full depth of joist, or by connecting to a continuous header not less than two–inch thickness and not less than the depth of the joist with connecting device; at eight–feet maximum intermediate spacing by solid blocking or by wood cross–bridging of not less than one inch by three inches, metal cross–bridging of equal strength, or by other approved methods.

(2) Wood floors or subfloors in kitchens, bathrooms (including toilet compartments), laundry rooms, water

heater compartments, and any other areas subject to excessive moisture shall be moisture resistant or shall be made moisture resistant by sealing or by an overlay of nonabsorbent material applied with water-resistant adhesive. [Statutory Authority: RCW 43.22.340. 82-04-060 (Order 82-4), § 296-150B-463, filed 2/2/82.]

WAC 296-150B-467 Drilling or notching of wood joist structural members. Except where substantiated by engineering design, notches on the ends of joists shall not exceed one-fourth the joist depth. Holes bored in joists shall not be within 2 inches of the top or bottom of the joist, and the diameter of any such hole shall not exceed one-third of the depth of the joist. Notches in the top or bottom of the joists shall not exceed one-sixth the depth and shall not be located in the middle third of the span. Joists in transverse floor framing systems, which do not have perimeter blocking, shall not be drilled or notched without substantiation by engineering design or approved tests. [Statutory Authority: RCW 43.22.340. 82-04-060 (Order 82-4), § 296-150B-467, filed 2/2/82.]

WAC 296-150B-470 Roof trusses. All roof truss construction shall be first approved by a licensed professional engineer or architect and subsequently approved by the department. Roof trusses shall be tested as directed in ANSI/NFPA 501B-1977, Appendix to chapter 2. Initial certification tests shall be performed using certified minimum quality of materials (lowest of the grade) and workmanship.

Any one of the three following options may be used in production:

(1) Stress graded materials must be used in the manufacture of rafters and trusses.

(2) Nongraded materials may be used if each truss is tested in an approved testing jig at the manufacturer's site with a load equivalent to full design load. (1.75 times the full design load sustained for 12 hours.)

(3) The manufacturer shall employ an approved testing agency to certify the rafter and truss construction and to test the rafters and trusses as to required loads. The testing agency is to prepare an approved quality control program and to test the rafters and trusses in accordance with sound testing procedures.

(4) When requested by the department, representative trusses taken from the production line shall be tested and a report furnished to the department by the approved testing agency or a licensed architect or civil or structural engineer. Unless there are apparent problems with the trusses, the frequency of these tests shall not exceed two times per year per design.

(5) The manufacturer shall be required to maintain an acceptable quality level not to exceed 1% using acceptable sampling procedures. (The acceptable quality level is defined as the maximum percentage of defective units.)

(6) All test reports are to be stamped, signed, and dated by a licensed professional engineer. [Statutory Authority: RCW 43.22.340. 82-04-060 (Order 82-4), § 296-150B-470, filed 2/2/82.]

WAC 296-150B-473 Structural load test. Structural assemblies or subassemblies tested for qualification shall sustain the design dead load (see WAC 296-150B-420), plus the superimposed design live loads (see WAC 296-150B-423) equal to 1.75 times the required live loads for a period of 12 hours without failure, unless otherwise specified in this chapter. Failure shall be considered rupture, fracture, or residual deflection which is greater than the limits set in WAC 296-150B-440. An assembly or subassembly to be tested shall be representative of the minimum quality of materials of the group of assemblies or subassemblies as ordinarily manufactured. Each test assembly, component or subassembly shall be identified as to type and quality or grade of material. Structural load tests or other tests based on nationally recognized standards may be approved. Submit the test procedure to the department for approval before proceeding with the tests. [Statutory Authority: RCW 43.22.340. 82-04-060 (Order 82-4), § 296-150B-473, filed 2/2/82.]

WAC 296-150B-477 Roof coverings. (1) General. The roof covering shall be securely fastened in an approved manner to the supporting roof construction and shall provide weather protection for the commercial coach and the occupants. All roof decks shall be designed with sufficient slope or camber to assure adequate drainage, or shall be designed to support maximum loads including possible ponding of water due to deflection. The roof covering shall be installed in accordance with the manufacturer's instructions and as approved by the department.

(2) Construction. All roofs shall be so framed and tied into the framework and supporting walls as to form an integral part of the commercial coach. All trusses shall be laterally braced.

(3) Roofing membranes shall be of sufficient rigidity to prevent deflection that would permit ponding of water or separation of seams due to snow and wind, or erection or transportation forces.

(4) Cutting of roof framework members for passage of electrical, plumbing, or mechanical systems shall not be allowed except where substantiated by engineering analysis.

(5) Electrical, plumbing, or mechanical systems shall not penetrate the roofing membrane unless the penetration point is adequately sealed. [Statutory Authority: RCW 43.22.340. 82-04-060 (Order 82-4), § 296-150B-477, filed 2/2/82.]

WAC 296-150B-480 Flame-spread limitations and combustibility. (1) The surface flame-spread rating of interior finish materials shall not exceed the following when tested by the Standard Method of Test for Surface Burning Characteristics of Building Materials, ASTM E84. Testing shall be by an approved testing agency.

(a) The interior finish of all walls and partitions shall have a flame-spread rating not exceeding 200 except as otherwise specified in this section. The flame-spread limitation shall not apply to molding, trim, windows, doors or series of doors not exceeding 4 feet in width,

and permanently attached decorative items such as pictures or accent panels constituting not more than 10 percent of the aggregate wall surface in any room or space nor more than 32 square feet in surface area, whichever is less.

(b) All ceiling interior finish shall have a flame–spread rating not exceeding 200, excluding molding and trim 2 inches or less in width.

(c) Furnace and water heater spaces shall be enclosed by walls, ceiling, and doors having an interior finish with a flame–spread rating not exceeding 200.

(d) Combustible kitchen cabinet doors, countertops, exposed bottoms, and end panels shall not exceed a flame–spread rating of 200. Cabinet rails, stiles, mullions, and toe strips are exempted.

(e) Exposed interior finishes adjacent to the cooking range shall have a flame–spread rating not exceeding 50. Adjacent surfaces are the exposed vertical surfaces between the range top height and the overhead cabinets or ceiling and within 6 horizontal inches of the cooking range.

(f) Finish surfaces of plastic bath tubs, shower units and tub or shower doors shall not exceed a flame–spread rating of 200.

(2) Combustibility. The exposed wall adjacent to the cooking range, as defined in subsection (1)(e), shall be surfaces with 5/16 inch gypsum board or material having equivalent fire protective properties. At furnace and water heater spaces, all openings for pipes and vents shall be tight–fitted or firestopped. [Statutory Authority: RCW 43.22.340. 82–04–060 (Order 82–4), § 296–150B–480, filed 2/2/82.]

WAC 296–150B–483 Kitchen cabinet protection. The bottom and sides of combustible kitchen cabinets over cooking ranges or tops including a space of 6 inches from the edge of the burners shall be protected with at least 1/4 inch thick asbestos millboard covered with not less than 26 gage sheet metal (.017 stainless steel, .024 aluminum or .020 copper) or equivalent protection. The protective metal over the range shall form a hood with not less than a 3–inch eyebrow (measuring horizontally from face of cabinet). The hood shall be centered over and shall be at least as wide as the cooking range or top. [Statutory Authority: RCW 43.22.340. 82–04–060 (Order 82–4), § 296–150B–483, filed 2/2/82.]

WAC 296–150B–487 Carpeting. (1) Surface flammability of carpets and rugs shall at least meet the Department of Commerce Standard DOCFF 1 test.

(2) Carpeting shall not be used under a heat–producing appliance.

(3) Carpet and carpet pads shall not be installed in concealed spaces subject to excessive moisture such as under plumbing fixtures.

(4) Carpet and carpet pads shall not be installed beneath the bottom plate of shear, bearing, or exterior walls. [Statutory Authority: RCW 43.22.340. 82–04–060 (Order 82–4), § 296–150B–487, filed 2/2/82.]

WAC 296–150B–490 Undervehicle closure material. Undervehicle closure material and method of construction shall be such as to resist damage that would permit penetration of the underside of the commercial coach by air, water, rodents, insects, or dust. The closure material shall be listed and installed as follows:

(1) Fibrous material (with or without patches) shall meet or exceed the level of 48 inch–pounds of puncture resistance as tested by the Beach Puncture Test in accordance with ASTM designation D 781–68.

(2) The material shall be installed in accordance with installation instructions furnished by the supplier of the material.

(3) The material shall be suitable for patches and the patch life shall be equivalent to the material life. Patch installation instructions shall be included in the commercial coach manufacturer's instructions. [Statutory Authority: RCW 43.22.340. 82–04–060 (Order 82–4), § 296–150B–490, filed 2/2/82.]

WAC 296–150B–497 Bathroom. Each bathroom shall be provided with artificial light and with external windows or doors having not less than 1/2 square feet of fully openable glazed area, except where a mechanical ventilation system capable of producing a change of air every 12 minutes is provided. Any mechanical ventilation system shall exhaust directly to the outside of the commercial coach. [Statutory Authority: RCW 43.22-.340. 82–04–060 (Order 82–4), § 296–150B–497, filed 2/2/82.]

WAC 296–150B–500 Glass and glazed openings. (1) Application. The provisions of this section shall apply to the installation of glass or glazed openings including hazardous locations as indicated in WAC 296–150B–533.

(2) Standards and identification. Safety–glazing materials shall meet the requirements of American National Standards Institute (ANSI) Standard Z–97, 1–1975.

(3) Louvered windows. Plate, float, sheet or patterned glass in jalousies and louvered windows shall be not thinner than nominal 3/16–inch and no more than 40 inches in length. Exposed edges shall be smooth.

(4) Wind loads and glass area limitations. Exterior glass and glazing shall be capable of withstanding a wind load pressure of 20 pounds per square foot acting inward or outward.

(5) Glazing and hazardous locations. For safety glazing installed in hazardous locations such as sliding glass doors, storm doors, exit and entrance doors, and fixed glass panels located within 18 inches of the floor or equivalent surface, shower or tub enclosures or their doors to a height of 6 feet above the fixture floor shall meet the requirements set forth in WAC 296–150B–533. [Statutory Authority: RCW 43.22.340. 82–04–060 (Order 82–4), § 296–150B–500, filed 2/2/82.]

WAC 296–150B–503 Fire warning equipment—Automatic smoke detectors. (1) General. At least one listed smoke detector (which may be a single station smoke

detector) shall be installed in each commercial coach to protect each separate bedroom. Smoke detectors shall meet the requirements of the Standard for Single and Multiple Station Smoke Detectors of the Underwriters Laboratories Inc. (UL 217-1976).

(2) Smoke detector location. A smoke detector shall be installed in the hallway or space communicating with the bedroom, and shall be mounted, where possible, between the living area and the first bedroom door on an interior wall. Where such mounting cannot be achieved due to limited interior wall space, the smoke detector shall be located as close as practical to the first bedroom door on an interior wall. Commercial coaches having bedrooms separated by one or a combination of common use areas (such as a kitchen, dining room, living room, or family room, but not a bathroom or utility room) shall have at least two smoke detectors, one smoke detector protecting each bedroom.

(3) Installation. Smoke detectors shall be installed on an interior wall of the commercial coach. The top of the detector shall be 5 to 7 inches from the ceiling. The smoke detector mounting shall be attached to an electrical outlet box and the detector shall be permanently wired into a general purpose electrical circuit. There shall be no switches in the circuits to the detectors other than the circuit breaker serving the circuits.

(4) The commercial coach manufacturer shall provide a copy of the testing and maintenance instructions supplied by the manufacturer of the smoke detector for the information of the consumer and users of the commercial coach. [Statutory Authority: RCW 43.22.340. 82-04-060 (Order 82-4), § 296-150B-503, filed 2/2/82.]

WAC 296-150B-507 Room and hallway sizes. (1) Rooms designed for sleeping purposes shall have a minimum gross square foot floor area as follows:

One person	50
Two persons	70
Each person in excess of two	50

(2) Every habitable room shall have a minimum ceiling height of not less than 7 feet.

(3) No habitable room, except a kitchen, shall be less than five feet in any clear horizontal dimension.

(4) Each toilet compartment shall be a minimum of 30 inches in width and have at least 21 inches of clear space in front of each toilet.

(5) Hallways shall have a minimum horizontal dimension of 32 inches. [Statutory Authority: RCW 43-.22.340. 82-04-060 (Order 82-4), § 296-150B-507, filed 2/2/82.]

WAC 296-150B-510 Handicap standards. When applicable, a commercial coach shall comply with the standards set by the Washington state building code in RCW 19.27.030(5) requiring buildings and facilities to be accessible to and usable by physically handicapped and elderly persons. [Statutory Authority: RCW 43.22-.340. 82-04-060 (Order 82-4), § 296-150B-510, filed 2/2/82.]

WAC 296-150B-513 Light and ventilation. Habitable rooms shall be provided with exterior windows or doors having a total glazed area of not less than 10 percent of the floor area. An area equivalent to not less than 5 percent of the floor area shall be available for unobstructed ventilation. Glazed areas need not be openable where a mechanical ventilation system is provided and is capable of producing a change of air in the room(s) every thirty minutes with not less than one-fifth of the air supply taken from outside the commercial coach. [Statutory Authority: RCW 43.22.340. 82-04-060 (Order 82-4), § 296-150B-513, filed 2/2/82.]

WAC 296-150B-517 Exit facilities. (1) Commercial coaches shall have a minimum of two exterior doors located remote from each other and so arranged as to provide a means of unobstructed travel to the outside of the commercial coach.

(2) Exterior doors shall be constructed for exterior use and in no case provide less than a 35-inch wide by 79-inch high clear opening (36" x 80" door). Each swinging exterior door shall have a key-operated lock that has a deadlocking latch. A deadlock with a passage set installed below the deadlock may be used as an acceptable alternate for each exterior door. The locking mechanism of the lock shall be engaged or disengaged by the use of a lever, knob, button, handle, or other device from the side from which egress is to be made when the commercial coach is occupied. Locks shall not require the use of a key for operation from the inside.

(3) The department may grant a variance to the two door and/or the minimum door size and locking mechanism requirements for special commercial coach usage or conditions. A commercial coach that is 24 feet or less in length and 14 feet or less in width needs only one exit door, unless it has a sleeping area.

(4) Every room designed expressly for sleeping purposes, unless it has an exit door, shall have at least one outside window which can be opened from the inside without the use of tools to provide a clear opening of not less than 22 inches in its smallest dimension and 5 square feet in area with the bottom of the opening not more than 3 feet above the floor.

Where a screen or storm window is required to be removed from this window to permit emergency egress, it shall be readily removable without requiring the use of tools. [Statutory Authority: RCW 43.22.340. 82-04-060 (Order 82-4), § 296-150B-517, filed 2/2/82.]

WAC 296-150B-520 Weather resistance. Exterior covering shall be of moisture and weather-resistive materials attached with corrosion-resistant fasteners to resist wind and rain deterioration. Electro-plated, electro-deposited zinc, electro-galvanized, etc. staples shall not be considered as qualifying as corrosion resistant. Metal covering shall be of corrosion-resistant materials. [Statutory Authority: RCW 43.22.340. 82-04-060 (Order 82-4), § 296-150B-520, filed 2/2/82.]

WAC 296-150B-523 Windstorm protection. (1) Provisions for support and anchoring systems. Each

commercial coach shall have provisions for support and anchoring systems that, when properly designed and installed, will resist overturning and lateral movement of the commercial coach as imposed by the respective design loads, and shall be designed by a licensed professional engineer or architect.

(2) The manufacturer of each commercial coach is required to make provision for the support and anchoring systems but is not required to provide the anchoring equipment or stabilizing devices.

(3) The manufacturer shall provide printed instructions with each commercial coach specifying the location and required capacity of stabilizing devices on which the design is based.

(4) The provisions made for anchoring systems shall be based on the following design criteria for single–wide commercial coaches:

(a) The minimum number of ties required per side shall be in accordance with WAC 296–150B–527.

(b) Ties shall be as evenly spaced as practicable along the length of the commercial coach with not more than 8 feet open–end spacing on each end.

(c) When continuous straps are provided as vertical ties, such ties shall be positioned at rafters and studs. Where a vertical tie and diagonal tie are located at the same place, both ties may be connected to a single ground anchor, provided that the anchor used is capable of carrying both loadings.

(d) Add–on sections of expandable commercial coaches shall have provisions for vertical ties at the exposed ends.

(5) Double–wide commercial coaches require only the diagonal ties specified in the following table. These shall be placed along the outer side walls.

(6) Protection shall be provided at sharp corners where the anchoring system requires the use of external cables or straps. Protection shall also be provided to minimize damage to roofing or siding by the cable or strap.

(7) Anchoring equipment shall be capable of resisting an allowable working load equal to or exceeding 3,150 pounds and shall be capable of withstanding a 50 percent overload (4,725 pounds total) without failure of either the anchoring equipment or the attachment point on the commercial coach.

(8) Anchoring equipment exposed to weathering shall have a resistance to weather deterioration at least equivalent to that provided by a coating of zinc on steel of not less than 0.30 ounces per square foot of surface coated.

(a) Slit or cut edges of zinc–coated steel strapping do not need to be zinc–coated.

(b) Type 1, Class B, Grade 1 steel strapping, 1 1/4 inches wide and 0.035 inch thick, conforming with Federal Specification QQ–S–781–G, is judged to conform with the provisions of this paragraph. [Statutory Authority: RCW 43.22.340. 82–04–060 (Order 82–4), § 296–150B–523, filed 2/2/82.]

WAC 296–150B–527 Table––Ties required per side of single width commercial coach.

Number of Ties Required Per Side of Single Width[1] Commercial Coaches

This table is based on a minimum working load per anchor of 3,150 pounds with a 50 percent overload (4,725 pounds total).

Length of Commercial Coach (Feet)[2,4]	Hurricane Resistive No. of Vertical Ties	Hurricane Resistive No. of Diagonal Ties[3]	Non–Hurricane Resistive No. of Vertical Ties	Non–Hurricane Resistive No. of Diagonal Ties[3]
32–40	2	4	2	3
41–46	2	4	2	3
47–49	2	5	2	3
50–54	3	5	2	3
55–58	3	5	2	4
59–64	3	6	2	4
65–70	3	6	2	4
71–73	3	7	2	4
74–84	4	7	2	5

(1) Double–width commercial coaches require only the diagonal ties specified in column 3 or 5, and these shall be placed along the outer side walls.

(2) Length of commercial coach (as used in this table) means length excluding draw bar.

(3) Diagonal ties in this method shall deviate at least 40° from a vertical direction.

(4) In commercial coaches less than 32' long, the number of ties shall be according to engineering analysis approved by the department.

[Statutory Authority: RCW 43.22.340. 82–04–060 (Order 82–4), § 296–150B–527, filed 2/2/82.]

WAC 296–150B–530 Table––Accepted engineering practice standards.

ACCEPTED ENGINEERING PRACTICE STANDARDS

This table is included for information purposes.

ALUMINUM

Aluminum Construction Manual, Specifications for Aluminum Structures AA–1976

STEEL

Specification for the Design, Fabrication and Erection of Structural Steel for Buildings ..... AISC–1969+

Specification for the Design of Cold-Formed Steel Structural Members ..... AISI-1968++
Specification for the Design of Light-Gage Cold-Formed Stainless Steel Structural Members AISI-1974
Standard Specifications for Open Web Steel Joists, J- and H-Series .....SJ1 and AISC-1974

WOOD AND WOOD PRODUCTS

Hardboard ..... AHA PS 58, 59, & 60-1973
Hardwood and Decorative Plywood ..... USDC PS 51-71
Structural Design Guide for Hardwood Plywood HPMA-SG-71
Inspection Manual for Structural Glued Laminated Timber AITC-200-1973
Timber Construction Manual .. AITC-1974 (2nd Ed.)
Structural Glued Laminated Timber ..... USDC PS, 56-73
Plywood—Construction & Industrial ..... USDC PS 1-74
Plywood Commercial/Industrial Construction Guide APA-Y300-1976
Plywood Residential Construction Guide APA-Y405-1976
Plywood Design Specification APA-Y510-1977
Plywood Design Specification Supplement No. 2 - "Plywood Beams" APA-S812-1977
Plywood Design Specification Supplement No. 3 - "Stressed Skin Panels" APA-U813-1977
Plywood Fabrication Specification GT-8 "Trussed Rafters" APA-W395-1974
Plywood Fabrication Specification BB-8 "Plywood Beams" APA-V375-1975
Plywood Fabrication Specification SS-8 "Stress Skin Panels" APA-V340-1974
All Plywood Beams for Mobile Homes, Report 124 ..... APA-Y490-1976
Plywood Diaphragm Construction ... APA-U310-1976
Stress Grade Lumber and its Fastenings — National Design Specifications for ..... (N) FPA-1977
Structural Design Data — Wood ..... (N) FPA-1977
Span Tables for Joists and Rafters (PS 20-70) ..... (N) FPA-1977
Working Stresses for Joists and Rafters ..... (N) FPA-1977*
Timber Construction Standards AITC-100-1976
Design Specifications for Light Metal Plate Connected Wood Trusses TPI-74
Mat-Formed Wood Particleboard (Type 2) ..... CS 236-66

FIRE SAFETY

Method of Test for Surface Burning Characteristics of Building Materials ..... ASTM E84-76a.
Method of Test for Surface Flammability of Materials Using Radiant Heat Energy Source ..... ASTM E162-76.
Safety to Life from Fire in Buildings and Structures ..... ANSI/NFPA No. 101-76
Standard for the Installation, Maintenance and Use of Household Fire Warning Equipment ..... NFPA No. 74-1975

WINDOWS AND GLAZING

Transparent Safety Glazing Material Used in Buildings ..... ANSI Z97.1-1975

UNCLASSIFIED

ASHRAE Handbook of Fundamentals — 1977
Building Code Requirements for Minimum Design Loads in Buildings and Other Structures .. ANSI A58.1-1972
Pneumatic and Mechanically Driven Building Construction Fasteners ..... HUD-FHA Bulletin No. UM-25d
(Published by HUD, I-SANTA, and FIT)
Nails, Brads, Staples and Spikes; Wire, Cut and Wrought FF-N-105B
(Published by U.S. Gov't Printing Office and available from GSA, FIT and I-SANTA)

+ Supplements Nos. 1, 2 and 3—November 1, 1970, December 8, 1971 and June 12, 1974.
++ With Addendum No. 1, dated November 19, 1970, and Addendum No. 2, dated February 4, 1977.
* Supplement issued December, 1972.

AA - The Aluminum Association, 750 Third Ave., New York, N.Y. 10017.
AMA - American Board Products Association, 205 West Toulay Ave., Park Ridge, Illinois 60068.
AISC - American Institute of Steel Construction, 1221 Avenue of the Americas, New York, N.Y. 10020.
AISI - American Iron and Steel Institute, 1000 16th St. NW, Washington, DC 20036.
AITC - American Institute of Timber Construction, 333 West Hampden Ave., Englewood, Colorado 80110.
ANSI - American National Standards Institute, 1430 Broadway, New York, N.Y. 10017.
APA - American Plywood Association, 1119 A Street, Tacoma, Washington 98401.

ASHRAE – American Society of Heating, Refrigeration and Airconditioning Engineers, 345 East 47th Street, New York, N.Y. 10017.
ASTM – American Society for Testing and Materials, 1916 Race Street, Philadelphia, Pennsylvania 19103.
CS – Commercial Standards – available from Sup't. of Documents, U.S. Government Printing Office, Washington, D.C. 20402.
FIT – Fastener Institute of Tectonics, P.O. Box 5490, Hacienda Heights, California 91745.
HPMA – Hardwood Plywood Manufacturers Assn., P.O. Box 6246, Arlington, Virginia 22206.
HUD – U.S. Department of Housing and Urban Development, Washington, DC 20411.
I-SANTA – Industrial Staple and Nailing Technical Association, 435 N. Michigan Ave., Suite 1717, Chicago, Illinois 60611.
NFPA – National Fire Protection Assn., 470 Atlantic Avenue, Boston, Massachusetts 02210.
(N) FPA – National Forest Products Association (formerly National Lumber Manufacturers Assn.), 1619 Massachusetts Ave. N.W., Washington, D.C. 20036.
NPA – National Particleboard Association, 2306 Perkins Place, Silver Spring, Maryland 20910.
PFS – Product Fabrication Service, 1619 West Beltline Highway, Madison, Wisconsin 53713.
PS – Product Standard – available from Sup't. of Documents, U.S. Government Printing Office, Washington, D.C. 20402.
SJI – Steel Joist Institute, 2001 Jefferson Davis Highway, Arlington, Virginia 22202.
TPI – Truss Plate Institute, 7100 Baltimore Ave., College Park, Maryland 20740.
UL – Underwriters' Laboratories, Inc., 333 Pfingsten Road, Northbrook, Illinois 60062.
USDC – United States Department of Commerce, Washington, D.C. 20234.

[Statutory Authority: RCW 43.22.340. 82-04-060 (Order 82-4), § 296-150B-530, filed 2/2/82.]

WAC 296-150B-533 Table--Glazing in hazardous locations.

GLAZING IN THE FOLLOWING SPECIFIC HAZARDOUS LOCATIONS SHALL MEET THE FOLLOWING REQUIREMENTS:

Specific Hazardous Locations	Size of Individual Glazed Area	Requirements[2]
Glazing in exit and entrance doors	Over 6 sq. ft.	Each glazed area shall pass the requirements of ANSI Standard Z97.1—1975 if not protected by a protective grille[1] firmly attached to stiles on each exposed side.
Glazing in storm doors	Over 2 sq. ft.	Each glazed area shall pass the requirements of ANSI Standard Z97.1—1975 if not protected by a protective grille[1] firmly attached to stiles on each exposed side.
Glazing in sliding exterior doors	All Sizes	Each glazed area shall pass the requirements of ANSI Standard Z97.1—1975.
Glazing in all unframed doors (swinging)	All Sizes	Each glazed area shall be fully tempered glass and pass the requirements of ANSI Standard Z97.1—1975.
Glazing in shower doors and tub enclosures	All Sizes	Each glazed area shall pass the test requirements of ANSI Standard Z97.1—1975 except Section 4.3.
Other fixed glazed panels located within 12 inches on either side of exit and entrance doors	Over 18 inches	Each glazed area within 18 inches of the floor shall pass the requirements of ANSI Standard Z97.1—1975 unless the glazed area is protected by a barrier within 12 inches immediately in front of the glazing.

[1]Shall be constructed and attached in such a manner so as to prevent human impact from being transmitted to glass surface.

[2]Annealed glass less than single strength in thickness shall not be used. If short dimension is larger than 24 inches, annealed glass must be double strength or thicker.

[Statutory Authority: RCW 43.22.340. 82-04-060 (Order 82-4), § 296-150B-533, filed 2/2/82.]

WAC 296-150B-537 Table--Minimum uniformly distributed live loads.

MINIMUM UNIFORMLY DISTRIBUTED LIVE LOADS

Occupancy or Use	Live Load psf
Apartments (see Residential)	
Assembly halls and other places of assembly:	
Fixed seating	50
Movable seating and other areas	100

Occupancy or Use	Live Load psf
Corridors (same as occupancy served except as indicated)	
Dining rooms and restaurants	100
Dwellings (see Residential)	
Hospitals	
Operating rooms	60
Private rooms	40
Wards	40
Hotels (see Residential)	
Libraries	
Reading rooms	60
Stack rooms	150
Manufacturing or Storage	
Light	125
Heavy	250
Office Units	
Offices (including job shacks)	50
Lobbies	100
Residential	
Multifamily units:	
Private apartments	40
Public rooms	100
Corridors	80
Single family units	40
Schools	
Classrooms	40
Corridors	80
Stores	
Retail	75
Theaters	
Aisles, corridors and lobbies	100
Office floors (except 8' and 10' wide units)	2,000
Schools and 10' wide office floors	1,000

*Uniformly distributed over a 2 1/2 foot square area placed anywhere on the floor without the uniform live load present.

[Statutory Authority: RCW 43.22.340. 82-04-060 (Order 82-4), § 296-150B-537, filed 2/2/82.]

WAC 296-150B-540 Table--Concentrated live loads.

CONCENTRATED LIVE LOADS

Location	Loads in pounds*

[Statutory Authority: RCW 43.22.340. 82-04-060 (Order 82-4), § 296-150B-540, filed 2/2/82.]

WAC 296-150B-543 Interior privacy. A commercial coach interior door, when provided with a privacy lock, shall have a privacy lock that has an emergency release on the outside to permit entry when lock has been locked by a locking knob, lever, button, or other locking device on the inside. [Statutory Authority: RCW 43.22.340. 82-04-060 (Order 82-4), § 296-150B-543, filed 2/2/82.]

WAC 296-150B-547 Interior passage. Commercial coach interior doors having passage hardware shall open from either side by a single movement of the hardware mechanism. [Statutory Authority: RCW 43.22.340. 82-04-060 (Order 82-4), § 296-150B-547, filed 2/2/82.]

WAC 296-150B-550 Electrical--General. Electrical equipment and installations in or on a commercial coach shall be installed in accordance with requirements of the National Electrical Code, 1981 Edition, unless otherwise specifically exempted or required by these rules. The provisions of this section are also applicable to the alteration or conversion of electrical equipment and installations in any commercial coach bearing or required to bear a department insignia of approval. [Statutory Authority: RCW 43.22.340. 82-04-060 (Order 82-4), § 296-150B-550, filed 2/2/82.]

WAC 296-150B-553 Definitions. Definitions contained in the National Electrical Code, 1981 Edition, and the following definitions shall apply to the commercial coach standards.

(1) Converter means a device that changes electrical energy from one form to another, as from alternating current to direct current.

(2) Feeder assembly means the overhead or under-chassis feeder conductor, including the grounding conductor, together with the necessary fittings and equipment or a power-supply cord approved for mobile home use, designed to deliver energy from the source of electrical supply to the distribution panelboard within a commercial coach.

(3) Low voltage means an electromotive force rated at 24 volts or less, supplied from a transformer, converter, or battery.

(4) N.E.C. means the National Electrical Code, 1981 Edition. [Statutory Authority: RCW 43.22.340. 82-04-060 (Order 82-4), § 296-150B-553, filed 2/2/82.]

WAC 296-150B-557 Low-voltage systems--Low-voltage circuits. (1) Low-voltage circuits furnished and

installed by the commercial coach manufacturer are subject to these rules, except that commercial coaches containing only battery circuits of 24 volts or less supplying energy exclusively for the following are not subject to this section:

(a) Illuminating lights when the commercial coach contains no other systems such as plumbing, heating, or electrical over 24 volts; and

(b) Circuits supplying running lights, taillights, stop lights, electrical braking, or vehicle ignition systems.

(2) Low–voltage wiring materials.

(a) Copper or copper–clad aluminum conductors shall be used for low–voltage circuits.

(b) The insulation of low–voltage conductors used in battery and direct current circuits shall be rated at least 60° C.

(c) Conductors furnished and installed by the commercial coach manufacturer shall have a minimum of 30 mils thermoplastic insulation or equal.

(d) The insulation of outdoor or under–chassis wire shall be moisture and heat resistant, type THW or equivalent.

(e) Single–wire, low–voltage conductors shall be of the stranded type.

(3) Low–voltage wiring methods.

(a) Conductors shall be protected against physical damage and shall be secured.

(b) Conductors shall be spliced or joined with approved splicing devices or by brazing, welding, or soldering with a fusible metal or alloy. Soldered splices shall first be so spliced or joined as to be mechanically and electrically secure without solder and then soldered. All splices, joints and free ends of conductors shall be covered with an insulation equivalent to that on the conductors.

(c) Low–voltage circuits shall be physically separated by at least a 1/2 inch gap or other approved means, from wiring of circuits in excess of 24 volts. This may be accomplished by clamping, routing, or equivalent means that ensure permanent total separation.

(4) Battery installations. Storage batteries subject to the provisions of this standard shall be securely attached to the commercial coach and installed in an area vapor-tight to the interior and ventilated directly to the exterior of the commercial coach. When batteries are installed in a compartment, the compartment shall be ventilated with openings of not less than 2 square inches at the top and 2 square inches at the bottom. Batteries shall not be installed in a compartment containing spark or flame producing equipment, except that they may be installed in an engine generator compartment if the only charging source is from the engine generator.

(5) Overcurrent protection.

(a) Low–voltage circuit wiring shall be protected by overcurrent protective devices rated not in excess of the ampacity of the conductors, as follows:

Wire Size	Area Cir. Mils	Ampacity	Wire Type
18	1620	6	Stranded only
16	2580	8	Stranded only
14	4110	15	Stranded or solid
12	6530	20	Stranded or solid
10	10380	30	Stranded or solid

(b) Circuit breakers or fuses shall be of an approved type, including automotive types. Fuseholders shall be clearly marked with maximum fuse size. For further information, see Society of Automotive Engineers (SAE) Standard J 554a–1973 and Underwriters' Laboratories, Inc. Standard 275B–1973.

(c) Higher current–consuming direct–current appliances such as pumps, compressors, heater blowers, and similar motor–driven appliances shall be installed in accordance with the manufacturer's instructions.

(d) The overcurrent protective device shall be installed in an accessible location on the commercial coach as close as practical to the point where the power supply connects to the vehicle circuits. If located outside the commercial coach, the device shall be protected against weather and physical damage.

(6) Switches shall be rated at not less than the connected load. [Statutory Authority: RCW 43.22.340. 82–04–060 (Order 82–4), § 296–150B–557, filed 2/2/82.]

WAC 296–150B–560 Wiring materials—Combination electrical systems. (1) General. Vehicle wiring suitable for connection to a battery or direct current supply source shall be permitted to be connected to a 115–volt source if the entire wiring system and equipment are rated and installed in full conformity with requirements of this section covering 115–volt electrical systems. Circuits fed from alternating current transformers shall not supply direct current appliances.

(2) Voltage converters (115–volt alternating current to low–voltage direct current). The 115–volt alternating current side of voltage converters, other than those supplied as an integral part of a listed appliance, shall be wired in full conformity with the provisions of this section for 115–volt electrical systems. All converters and transformers shall be listed and shall be used within their marked electrical ratings.

(3) Dual–voltage fixtures or appliances. Fixtures or appliances having both 115–volt and low–voltage connections shall be listed or approved for dual voltage.

(4) Autotransformers shall not be used.

(5) Receptacles and plug caps. When a commercial coach is equipped with a 120–volt or 120/240–volt alternating current system and a low–voltage system, receptacles and plug caps of the low–voltage system shall differ in configuration from those of the 120– or 120/240–volt system.

(6) Identification. When a commercial coach equipped with a battery or direct current system has an

external connection for low-voltage power, the receptacle shall have a configuration that will not accept 120-volt power. The commercial coach shall have permanently affixed on the outside wall adjacent to the point of entrance of the power supply conductors a label that reads:

THIS CONNECTION IS FOR LOW-VOLTAGE BATTERY OR DIRECT CURRENT ONLY. DO NOT CONNECT TO 120 OR 240 VOLTS AC.

[Statutory Authority: RCW 43.22.340. 82-04-060 (Order 82-4), § 296-150B-560, filed 2/2/82.]

WAC 296-150B-563 Generator installations--Mounting. (1) Generators shall be mounted in such a manner as to be effectively bonded to the commercial coach chassis.

(2) Generator protection. Equipment shall be installed to ensure that the generator is disconnected when the vehicle is energized from an outside source and to ensure that the outside source is disconnected when the vehicle is energized by the generator. The generator field shall be protected by appropriately rated, listed equipment.

(3) Installation of generators. Internal combustion driven generator units (subject to the provisions of this chapter) shall be secured in place to avoid displacement from vibration and road shock and shall be installed in a compartment that is vaportight to the interior of the vehicle. (See WAC 296-150B-557(4) for battery installations.)

(4) Ventilation of generator compartments. Compartments accommodating internal combustion driven generator units shall be provided with approved ventilation in accordance with instructions provided by the manufacturer of the generator unit.

(5) Location of internal combustion engine generator exhaust. Exhaust from generator internal combustion engines shall not terminate within 3 feet of the commercial coach gasoline tank filler spout inlet.

(6) Supply conductors. Supply conductors from the generator(s) to the junction box (having a blank cover) on the compartment wall shall be of the stranded type installed in flexible conduit. [Statutory Authority: RCW 43.22.340. 82-04-060 (Order 82-4), § 296-150B-563, filed 2/2/82.]

WAC 296-150B-567 Branch circuit and feeder calculations. Branch circuit and feeder calculations shall be determined in accordance with Article 220 of the National Electrical Code. [Statutory Authority: RCW 43-.22.340. 82-04-060 (Order 82-4), § 296-150B-567, filed 2/2/82.]

WAC 296-150B-570 Disconnecting means and branch circuit protective equipment--General. (1) The branch circuit equipment shall be permitted to be combined with the disconnecting means as a single assembly. Such a combination shall be permitted to be designated as a distribution panelboard. If a fused distribution panelboard is used, the maximum fuse size for the mains shall be plainly marked with lettering at least 1/4-inch high and visible when fuses are changed.

See Article 110-22 of the National Electrical Code concerning identification of each disconnecting means and each service, feeder or branch circuit at the point where it originated and type marking needed.

(2) Plug fuses and fuseholders shall be tamper-resistant, Type "S," enclosed in dead-front fuse panelboards.

(3) Disconnecting means. A single disconnecting means shall be provided in each commercial coach consisting of a circuit breaker or a switch and fuses and their accessories installed in a readily accessible location near the point of entrance of the supply cord or conductors into the commercial coach. The main circuit breakers or fuses shall be plainly marked "main." This equipment shall contain a solderless type of grounding connector or bar for the purposes of grounding with sufficient terminals for all grounding conductors. The neutral bar termination of the grounded circuit conductors shall be insulated.

(4) The disconnecting equipment shall have a rating suitable for the connected load. The distribution equipment, either circuit breaker or fused type, shall be located a minimum of 24 inches from the bottom of such equipment to the floor level of the commercial coach. The main circuit breakers or switches shall be plainly marked "main." There shall be a label attached to the panelboard stating:

This Panelboard shall be connected by a Feeder Assembly having Overcurrent Protection rated at not more than _____ Amperes.

The correct ampere rating shall be marked in the blank space.

(5) Branch circuit distribution equipment shall be installed in each commercial coach and shall include overcurrent protection for each branch circuit consisting of either circuit breakers or fuses.

(6) The branch circuit overcurrent devices shall be rated:

(a) Not more than the circuit conductors; and

(b) not more than 150 percent of the rating of a single appliance rated ten amperes or more; but

(c) not more than the overcurrent protection rating marked on the motor operated appliance.

A device not approved for branch circuit protection, such as a thermal cutout or motor overload protective device, shall not be considered as the overcurrent device protecting the circuit.

(7) A 20-ampere fuse or circuit breaker shall be considered adequate protection for fixture leads, cords for portable appliances and No. 14 AWG (American Wire Gauge) tap conductors, not over six feet long, for recessed lighting fixtures.

(8) If more than one outlet or load is on a branch circuit, a 15-ampere receptacle shall be considered protected by a 20-ampere fuse or circuit breaker.

(9) When circuit breakers are provided for branch circuit protection, 240-volt circuits shall be protected by two-pole common or companion trip circuit breakers.

[Statutory Authority: RCW 43.22.340. 82-04-060 (Order 82-4), § 296-150B-570, filed 2/2/82.]

WAC 296-150B-573 Power supply--Feeder assembly equipment. A commercial coach shall be provided with feeder assembly equipment, installed by the manufacturer in accordance with the National Electrical Code and the provisions of this chapter. The assembly shall consist of either:

(1) One overhead assembly containing the required number of insulated color-coded feeder conductors, one of which shall be a grounding conductor; or

(2) One undervehicle assembly consisting of conduit running from the commercial coach branch circuit panelboard to the underside of the commercial coach. Conduit shall be sized in accordance with the National Electrical Code; or

(3) Other installations approved by the department. [Statutory Authority: RCW 43.22.340. 82-04-060 (Order 82-4), § 296-150B-573, filed 2/2/82.]

WAC 296-150B-577 Identification of feeder assembly connection. (1) Each commercial coach equipped with a 120-volt electrical system shall have permanently affixed on the outside wall adjacent to the point of entrance of the feeder assembly, a label that reads:

THIS CONNECTION IS FOR 110-125 VOLT AC SERVICE. DO NOT CONNECT HIGHER VOLTAGE .

(2) Each commercial coach equipped with a 120/240-volt AC electrical system shall have permanently affixed on the outside wall, adjacent to the point of entrance of the supply assembly or permanently installed feeders, a label that reads:

THIS CONNECTION IS FOR 120/240 VOLT AC ---------- AMPERE SERVICE .

The correct service rating shall be stamped in the blank space.

(3) Each commercial coach equipped with a 480/277-volt electrical system shall have permanently affixed on the outside wall, adjacent to the point of entrance of the supply assembly or permanently installed feeders, a label that reads:

THIS CONNECTION IS FOR 480/277 VOLT AC ---------- AMPERE SERVICE

The correct service rating shall be stamped in the blank space. [Statutory Authority: RCW 43.22.340. 82-04-060 (Order 82-4), § 296-150B-577, filed 2/2/82.]

WAC 296-150B-580 Wiring methods--Wiring of expandable or multiple units. (1) Where circuits in expandable or multiple units are designed to be energized from one main panelboard, permanent-type wiring methods and materials shall be used for connecting the units to each other.

(2) Commercial coaches may have individual branch circuit panelboards installed in each unit subject to the requirements of WAC 296-150B-570, 296-150B-573 and 296-150B-577 of this chapter. [Statutory Authority: RCW 43.22.340. 82-04-060 (Order 82-4), § 296-150B-580, filed 2/2/82.]

WAC 296-150B-583 Under-chassis wiring. Outdoor or under-chassis wiring (120/240 volts) exposed to moisture and mechanical damage shall be protected by rigid metal conduit, electrical metallic tubing or liquid-tight flexible metal conduit. The conductors shall be NMC, RW, TW or equivalent, subject to the requirements of WAC 296-150B-550. [Statutory Authority: RCW 43.22.340. 82-04-060 (Order 82-4), § 296-150B-583, filed 2/2/82.]

WAC 296-150B-587 Rodent resistance. All exterior openings around wiring, conduit, cable boxes, and equipment shall be sealed to resist the entrance of rodents. [Statutory Authority: RCW 43.22.340. 82-04-060 (Order 82-4), § 296-150B-587, filed 2/2/82.]

WAC 296-150B-590 Electrical equipment--Lighting fixtures. Combustible walls or ceiling finish, exposed between the edge of a fixture, canopy, or pan and an outlet box shall be covered with noncombustible material. [Statutory Authority: RCW 43.22.340. 82-04-060 (Order 82-4), § 296-150B-590, filed 2/2/82.]

WAC 296-150B-593 Equipment mounting. Electrical equipment shall be securely mounted to prevent displacement during transit. [Statutory Authority: RCW 43.22.340. 82-04-060 (Order 82-4), § 296-150B-593, filed 2/2/82.]

WAC 296-150B-597 Outdoor outlets, fixtures, air cooling equipment, etc. (1) Outdoor fixtures and equipment shall be listed for outdoor use. Outdoor receptacle or convenience outlets shall be of a gasketed-cover type for use in wet locations. A disconnecting means shall be located in sight of the equipment.

(2) A commercial coach designed to energize heating and/or air-conditioning equipment located outside the commercial coach shall have permanently affixed, adjacent to the point of connection, a label that reads:

" THIS CONNECTION IS FOR ---------- PHASE AIR-CONDITIONING EQUIPMENT RATED AT NOT MORE THAN ---------- AMPERES, AT ---------- VOLTS, 60 HERTZ ."

The correct voltage and ampere rating shall be given. [Statutory Authority: RCW 43.22.340. 82-04-060 (Order 82-4), § 296-150B-597, filed 2/2/82.]

WAC 296-150B-600 Grounding--General. Grounding of both electrical and nonelectrical metal parts in a commercial coach shall be through connection to a grounding bus in the commercial coach distribution panel. The grounding bus shall be grounded through the green-colored conductor in the supply cord or the feeder wiring to the service ground in the service-entrance equipment located adjacent to the commercial coach location. Neither the frame of the commercial coach nor

the frame of any appliance shall be connected to the neutral conductor in the commercial coach.

(1) Insulated neutral.

(a) The grounded circuit conductor (neutral) shall be insulated from the grounding conductors and from equipment enclosures and other grounded parts. The grounded (neutral) circuit terminals in the distribution panels and in ranges, clothes dryers, counter-mounted cooking units and wall-mounted ovens shall be insulated from the equipment enclosure. Bonding screws, straps or buses in the distribution panel or in appliances shall be removed and discarded.

(b) Connections of ranges and clothes dryers with 115/230 v, 3-wire ratings shall be made with 4-conductor cord and 3-pole, 4-wire grounding-type plugs or by Type AC metalclad cable or individual conductors enclosed in flexible metal conduit.

Type NM or Type SE cable shall not be used to connect a range or a dryer. This shall not prohibit the use of Type NM or Type SE cable between the branch circuit overcurrent protective device and a junction box or range or dryer receptacle.

For 115-v rated devices, a 3-conductor cord and 2-pole, 3-wire grounding-type plug shall be permitted.

(2) Equipment grounding means.

(a) The green-colored grounding wire in the supply cord or permanent feeder wiring shall be connected to the grounding bus in the distribution panel or disconnecting means.

(b) In the electrical system, all exposed metal parts, enclosures, frames, lamp fixture canopies, etc., shall be effectively bonded to the grounding terminal or enclosure of the distribution panel.

(c) Cord-connected appliances shall be grounded by means of an approved cord with grounding conductor and grounding-type attachment plug.

(3) Bonding of noncurrent-carrying metal parts.

(a) All exposed noncurrent-carrying metal parts that may become energized shall be effectively bonded to the grounding terminal or enclosure of the distribution panelboard. A bonding conductor shall be connected between each distribution panelboard and an accessible terminal on the chassis.

(b) Grounding terminals shall be of the solderless type and approved as pressure-terminal connectors recognized for the wire size used. The bonding conductor shall be solid or stranded, insulated or bare and shall be No. 8 copper minimum or equal. The bonding conductor shall be routed so as not to be exposed to physical damage.

(c) Metallic gas, water and waste pipes and metallic air circulating ducts shall be considered bonded if they are connected to the terminal on the chassis (see (3)(a) of this section) by clamps, solderless connectors or by suitable grounding-type straps.

(d) Any metallic roof and exterior covering shall be considered bonded if (i) the metal panels overlap one another and are securely attached to the wood or metal frame parts by metallic fasteners, and (ii) if the lower panel of the metallic exterior covering is secured by metallic fasteners at a cross-member of the chassis by two metal straps per commercial coach unit or section at opposite ends. [Statutory Authority: RCW 43.22.340. 82-04-060 (Order 82-4), § 296-150B-600, filed 2/2/82.]

WAC 296-150B-603 Switch and receptacle plates. Metallic faceplates shall be used only with grounding-type devices or grounded metallic outlet boxes. [Statutory Authority: RCW 43.22.340. 82-04-060 (Order 82-4), § 296-150B-603, filed 2/2/82.]

WAC 296-150B-607 Dielectric strength test. (1) The wiring of each commercial coach shall be subjected to a 1-minute, 900-volt, dielectric strength test (with all switches closed) between live parts (including neutral) and the commercial coach ground. Alternatively, the test may be performed at 1,080 volts for 1 second. This test shall be performed after branch circuits are complete and after fixtures or appliances are installed. However, fixtures and appliances that are listed shall not be required to withstand the dielectric strength test.

(2) Each commercial coach designed with a 480-volt electrical system shall be subjected to a one-minute 1,275-volt dielectric strength test between current-carrying conductors and the coach ground. Alternatively, the test may be performed at 1,500 volts for one second.

(3) Low-voltage circuit conductors in each commercial coach shall withstand the applied potential without electrical breakdown of a one-minute, 500-volt or a one-second, 600-volt dielectric strength test. The potential shall be applied between live and grounded conductors.

The test may be performed on running light circuits before the lights are installed provided the vehicle's outer covering and interior cabinetry has been secured. The braking circuit may be tested before being connected to the brakes provided the wiring has been completely secured. [Statutory Authority: RCW 43.22.340. 82-04-060 (Order 82-4), § 296-150B-607, filed 2/2/82.]

WAC 296-150B-610 Mechanical--General. Mechanical equipment and installations in or on a commercial coach shall be installed in accordance with the requirements of this chapter and the conditions of the mechanical equipment approval or listing. The provisions of this chapter are also applicable to the alteration or conversion of mechanical equipment and installations in any commercial coach bearing or required to bear a department insignia of approval. [Statutory Authority: RCW 43.22.340. 82-04-060 (Order 82-4), § 296-150B-610, filed 2/2/82.]

WAC 296-150B-613 Mechanical--Definitions. The following definitions shall apply to this chapter.

(1) Absorber (adsorber) means that part of the low side of an absorption system used for absorbing (adsorbing) vapor refrigerant.

(2) Absorption system means a refrigerating system in which the gas evolved in the evaporator is taken up by an absorber or adsorber.

(3) Absorption unit means a factory–built assembly designed to produce refrigeration for comfort cooling or comfort heating by the application of heat.

(a) A direct absorption unit is a unit in which the refrigerant evaporator is in direct contact with the air to be conditioned.

(b) An indirect absorption unit is a unit in which the refrigerant evaporator is not in direct contact with the air to be conditioned.

(4) Accessible means when applied to a fixture, connection, appliance, or equipment, having access thereto but which may require the removal of an access panel, door, or similar obstruction.

(5) Air–conditioning or comfort–cooling equipment means equipment intended or installed to treat air to control its temperature, humidity, cleanliness, or distribution to meet the requirements of the conditioned space.

(6) Air–handling unit means a blower or fan used to distribute conditioned air to a room or space.

(7) Anti–flooding device means a primary safety control which causes the liquid fuel flow to be shut off upon a rise in fuel level or upon receiving excess fuel, and that operates before a hazardous discharge of fuel can occur.

(8) Appliance compartment means a room having a floor area not in excess of twice the largest plan area of the appliance or appliances contained therein plus the clearances required in this chapter.

(9) Automatic pilot device means a device employed with gas–burning equipment that will either automatically shut off the gas supply to the burner being served or automatically actuate, electrically or otherwise, a gas shut–off device when the pilot flame is extinguished.

(10) Automatic pump (oil lifter) means a pump, not an integral part of the oil–burning appliance, that automatically pumps oil from the supply tank and delivers the oil by gravity under a constant head to an oil–burning appliance.

(11) Btu means British Thermal Unit, which is the quantity of heat required to raise the temperature of one pound of water one degree Fahrenheit.

(12) Btuh means British Thermal Units per Hour.

(13) Burner means a device for the final conveyance of fuel or a mixture of fuel and air to the combustion zone.

(14) Chimney, factory–built means a chimney consisting entirely of factory–made parts, each designed to be assembled with the others without requiring field construction.

(15) Class O air ducts means a duct of materials and connectors having a fire–hazard classification of zero.

(16) Class I air ducts means a duct of materials and connectors having a flame–spread rating of not over 25 without evidence of continued progressive combustion and a smoke–developed rating of not over 50.

(17) Class II air ducts means a duct of materials and connectors having a flame–spread rating of not over 50 without evidence of continued progressive combustion and a smoke–developed rating of not over 50 for the inside surface and not over 100 for the outside surface.

(18) Clearance means the distance between the appliance, chimney, vent, or chimney or vent connector or plenum and the nearest surface.

(19) Combustible material means a material adjacent to or in contact with heat–producing appliances, vent connectors, chimneys, or steam and hot water pipes, made of or surfaced with wood, compressed paper, plant fibers, or other materials that will ignite and burn. Such material shall be considered combustible even though flameproofed, fire–retardant treated, or plastered.

(20) Compressor means a specific machine, with or without accessories, for compressing a given refrigerant vapor.

(21) Compressor unit means a condensing unit less the condenser and liquid receiver.

(22) Condenser means a vessel or arrangement of pipe or tubing in which vaporized refrigerant is liquefied by the removal of heat.

(23) Condensing unit means a specific refrigerating machine combination for a given refrigerant, consisting of one or more power–driven compressors, condensers, liquid receivers (when required), and the regularly furnished accessories.

(24) Connector–gas appliance means a flexible or semi–rigid connector listed as conforming to ANSI Standard Z21.24, Metal Connectors for Gas Appliances, used to convey fuel gas, three feet or less in length (six feet or less for gas ranges), between a gas outlet and a gas appliance in the same room with the outlet.

(25) Duct means a conduit or passageway for conveying air to or from heating, cooling, air conditioning, or ventilation equipment, but not including the plenum.

(26) Evaporator means that part of the system in which liquid refrigerant is vaporized to produce refrigeration.

(27) Expansion coil means an evaporator constructed of pipe or tubing.

(28) Fuel gas piping system means the arrangement of piping, tubing, fittings, connectors, valves, and devices designed and intended to supply or control the flow of fuel gas to an appliance.

(29) Fuel oil piping system means the arrangement of piping, tubing, fittings, connectors, valves, and devices designed and intended to supply or control the flow of fuel oil to an appliance.

(30) Gas means fuel gas, such as natural gas, manufactured gas, undiluted liquefied petroleum gas (vapor phase only), liquefied petroleum air–gas mixtures, or mixtures of these gases that would ignite in the presence of oxygen.

(31) Gas clothes dryer means a device used to dry wet laundry by means of heat derived from the combustion of fuel gases. Dryer classifications are as follows:

(a) Type 1. Factory–built package, multiple produced. Primarily used in family living environment. May or may not be coin–operated for public use. Usually the smallest unit physically and in function output.

(b) Type 2. Factory–built package, multiple produced. Used in business with direct intercourse of the function with the public. May or may not be operated by public or hired attendant. May or may not be coin–operated.

Not designed for use in individual family living environment. May be small, medium or large in relative size.

(32) Gas refrigeration means a gas-burning appliance that is designed to extract heat from a suitable chamber.

(33) Gas-supply connection means the terminal end or connection to which a gas-supply connector is attached.

(34) Gas vents means factory-built vent piping and vent fittings listed by an approved testing agency that are assembled and used in accordance with the terms of their listings, for conveying flue gases to the outside atmosphere.

(a) Type-B gas vent. A gas vent for venting gas appliances with draft hoods and other gas appliances listed for use with Type-B gas vents.

(b) Type-BW gas vent. A gas vent for venting listed gas-fired vented wall furnaces.

(35) Heating appliance means an appliance for comfort heating of a commercial coach or for water heating.

(36) Heat-producing appliance means all heating and cooking appliances and all fuel burning appliances.

(37) High side means the parts of a refrigerating system under condenser pressure.

(38) Input rating means the maximum fuel-burning capacity of any warm-air furnace, recessed heater, or burner expressed in British Thermal Units per Hour.

(39) Liquefied petroleum gases (LPG) means any material that is composed predominantly of propane, propylene, butanes (normal butane or isobutane), and butylenes, or any mixture of them.

(40) Low side means the parts of a refrigerating system under evaporator pressure.

(41) Plenum means an air compartment that is part of an air-distributing system to which one or more ducts are connected.

(a) A furnace-supply plenum is a plenum attached directly to, or an integral part of, the air-supply outlet of the furnace.

(b) A furnace-return plenum is a plenum attached directly to or an integral part of, the return inlet of the furnace.

(42) Quick-disconnect device means a hand-operated device that provides a means for connecting and disconnecting a gas supply or connecting gas systems and that is equipped with an automatic means to shut off the gas supply when the device is disconnected.

(43) Readily accessible means having direct access without the necessity of removing any panel, door, or similar obstruction.

(44) Refrigerant means a substance used to produce refrigeration by its expansion or vaporization.

(45) Refrigerating system means a combination of interconnected refrigerant-containing parts constituting one closed refrigerant circuit in which a refrigerant is circulated for the purpose of extracting heat.

(46) Roof jack means that portion of a commercial coach heater flue or vent assembly, including the cap, insulating means, flashing, and ceiling plate, located in and above the roof of a commercial coach.

(47) Sealed absorption system means a unit system for Group 2 refrigerants only in which all refrigerant-containing parts are made permanently tight by welding or brazing against refrigerant loss.

(48) Sealed combustion system appliance means an appliance that by its inherent design is constructed so that all air supplied for combustion, the combustion system of the appliance, and all products of combustion are completely isolated from the atmosphere of the space in which it is installed.

(49) Self-contained system means a complete factory-made and factory-tested system in a suitable frame or enclosure that is fabricated and shipped in one or more sections and in which no refrigerant-containing parts are connected in the field other than by companion or block valves.

(50) Unit system means a self-contained system that has been assembled and tested prior to its installation and that is installed without connecting any refrigerant-containing parts. A unit system may include factory-assembled companion or block valves.

(51) Vent connector means a pipe for conveying products of combustion from a fuel-burning appliance to a vent.

(52) Water heater means an appliance for heating water for domestic purposes other than for space heating. [Statutory Authority: RCW 43.22.340. 82-04-060 (Order 82-4), § 296-150B-613, filed 2/2/82.]

WAC 296-150B-617 LPG equipment and installations--Construction of containers. Containers shall be constructed and marked in accordance with the specifications for LPG containers of the U.S. Department of Transportation (DOT) or the Rules for Construction of Unfired Pressure Vessels, Section VIII, Division 1, ASME Boiler and Pressure Vessel Code. ASME containers shall have a design pressure of not less than 312.5 psig.

(1) Container supply systems shall be arranged for vapor withdrawal only.

(2) Container openings for vapor withdrawal shall be located in the vapor space when the container is in service or shall be provided with a suitable internal withdrawal tube which communicates with the vapor sauce in or near the highest point in the container when it is mounted in service position, with the commercial coach on a level surface. Containers shall be permanently and legibly marked in a conspicuous manner on the outside to show the correct mounting position and the position of the service outlet connection. The method of mounting in place shall be such as to minimize the possibility of an incorrect positioning of the container. [Statutory Authority: RCW 43.22.340. 82-04-060 (Order 82-4), § 296-150B-617, filed 2/2/82.]

WAC 296-150B-620 Location of LPG containers and systems. (1) LPG containers shall not be installed, nor shall provisions be made for installing or storing any LPG container, even temporarily, inside any commercial coach except for listed, completely self-contained hand torches, lanterns, or similar equipment with containers having a maximum water capacity of not more that 2 1/2 pounds (approximately one pound LPG capacity).

(2) Containers, control valves and regulating equipment, when installed, shall be mounted on the "A" frame of the commercial coach, or installed in a compartment that is vapor–tight to the inside of the commercial coach and accessible only from the outside. The compartment shall be ventilated at top and bottom to facilitate diffusion of vapors. The compartment shall be ventilated with two vents having an aggregate area of not less than two percent of the floor area of the compartment and shall open unrestricted to the outside atmosphere. The required vents shall be equally distributed between the floor and ceiling of the compartment. If the lower vent is located in the access door or wall, the bottom edge of the vent shall be flush with the floor level of the compartment. The top vent shall be located in the access door or wall with the bottom of the vent not more than 12 inches below the ceiling level of the compartment. All vents shall have an unrestricted discharge to the outside atmosphere. Access doors or panels of compartments shall not be equipped with locks or require special tools or knowledge to open.

(3) Permanent and removable fuel containers shall be securely mounted to prevent jarring loose, slipping, or rotating and the fastenings shall be designed and constructed to withstand static loading in any direction equal to twice the weight of the tank and attachments when filled with fuel, using a safety factor of not less than four based on the ultimate strength of the material to be used. [Statutory Authority: RCW 43.22.340. 82–04–060 (Order 82–4), § 296–150B–620, filed 2/2/82.]

WAC 296–150B–623 LPG container valves and accessories. (1) Valves in the assembly of a two–cylinder system shall be arranged so that replacement of containers can be made without shutting off the flow of gas to the appliance. This provision is not to be construed as requiring an automatic change–over device.

(2) Shutoff valves on the containers shall be protected in transit, in storage, and while being moved into final use as follows:

(a) By setting into a recess of the container to prevent possibility of their being struck if container is dropped upon a flat surface, or,

(b) By ventilated cap or collar, fastened to the container, capable of withstanding a blow from any direction equivalent to that of a 30–pound weight dropped four feet. Construction shall be such that the blow will not be transmitted to the valve.

(3) Regulators shall be connected directly to the container shutoff valve outlets or mounted securely by means of a support bracket and connected to the container shutoff valve or valves with listed high–pressure connections. If the container is permanently mounted, the connector shall be as required above or with a listed semi–rigid tubing connector. [Statutory Authority: RCW 43.22.340. 82–04–060 (Order 82–4), § 296–150B–623, filed 2/2/82.]

WAC 296–150B–627 LPG safety devices. (1) DOT containers shall be provided with safety–relief devices as required by the regulations of the U.S. Department of Transportation. ASME containers shall be provided with relief valves in accordance with Subsection 221 of the Standard for the Storage and Handling of Liquefied–Petroleum Gases (NFPA No. 58–1976). Safety–relief valves shall have direct communication with the vapor space of the vessel.

(2) The delivery side of the gas–pressure regulator shall be equipped with a safety–relief device set to a discharge at a pressure not less than two times and not more than three times the delivery pressure of the regulator.

(3) Systems mounted on the "A" frame assembly shall be so located that the discharge from the safety–relief devices shall be into the open air and not less than three feet horizontally from any opening into the commercial coach below the level of such discharge. [Statutory Authority: RCW 43.22.340. 82–04–060 (Order 82–4), § 296–150B–627, filed 2/2/82.]

WAC 296–150B–630 LPG system enclosure and mounting. (1) Housings and enclosures shall be designed to provide proper ventilation at least equivalent to that specified in WAC 296–150B–620(2).

(2) Doors, hoods, domes, or portions of housings and enclosures required to be removed or opened for replacement of containers shall incorporate means for clamping them firmly in place and preventing them from working loose during transit.

(3) Provisions shall be incorporated in the assembly to hold the containers firmly in position and prevent their movement during transit.

(4) Containers shall be mounted on a substantial support or a base secured firmly to the commercial coach chassis. Neither the container nor its support shall extend below the commercial coach frame. [Statutory Authority: RCW 43.22.340. 82–04–060 (Order 82–4), § 296–150B–630, filed 2/2/82.]

WAC 296–150B–633 LPG system design and service line pressure. Systems shall be of the vapor–withdrawal type. Gas, at a pressure not over 14 inches water column (1/2 psi) shall be delivered from the system into the gas supply connection. [Statutory Authority: RCW 43.22-.340. 82–04–060 (Order 82–4), § 296–150B–633, filed 2/2/82.]

WAC 296–150B–637 Electrical equipment. All electrical equipment installed in conjunction with gas equipment shall be listed for the purpose intended. [Statutory Authority: RCW 43.22.340. 82–04–060 (Order 82–4), § 296–150B–637, filed 2/2/82.]

WAC 296–150B–640 Gas piping systems—General. The requirements of this section shall govern the installation of all fuel gas piping attached to any commercial coach. Gas delivered into the gas supply system shall be at a pressure not exceeding 14 inch water column (1/2 psi). None of the requirements listed in this section shall apply to the piping supplied as a part of an appliance. [Statutory Authority: RCW 43.22.340. 82–04–060 (Order 82–4), § 296–150B–640, filed 2/2/82.]

WAC 296-150B-643 Piping design. Commercial coaches requiring fuel gas for any purpose shall be equipped with a gas-piping system that is designed for LPG only, combination LPG and natural gas, or natural gas. [Statutory Authority: RCW 43.22.340. 82-04-060 (Order 82-4), § 296-150B-643, filed 2/2/82.]

WAC 296-150B-647 Materials. All materials used for the installation, extension, alteration, or repair of any gas-piping system shall be new and free from defects or internal obstructions. It shall not be permissible to repair defects in gas piping or fittings. Inferior or defective materials shall be removed and replaced with acceptable material. The system shall be made of materials having a melting point of not less than 1,450°F (789°C), except as provided in WAC 296-150B-670. They shall consist of one or more of the following materials:

(1) Steel or wrought-iron pipe shall comply with ANSI Standard B36.10-1975 for Wrought-Steel and Wrought-Iron Pipe. Threaded brass pipe in iron pipe sizes may be used.

(2) Fittings for gas piping shall be wrought iron, malleable iron, steel or brass (containing not more than 75 percent copper).

(3) Copper tubing shall be annealed type, Grade K or L, conforming to the Specifications for Seamless Copper Water Tube (ASTM B88-76), or shall comply with the Specifications for Seamless Copper Tube for Air Conditioning and Refrigeration Field Service, ASTM B280-76. When used on systems designed for natural gas, such tubing shall be internally tinned.

(4) Steel tubing shall have a minimum wall thickness of 0.032 inch for tubing of 1/2 inch diameter and smaller and 0.049 inch for diameters 1/2 inch and larger. Steel tubing shall be constructed in accordance with ASTM Specification for Electric-Resistance-Welded Coiled Steel Tubing for Gas and Fuel Oil Lines (ASTM A539-73), and shall be externally corrosion protected. [Statutory Authority: RCW 43.22.340. 82-04-060 (Order 82-4), § 296-150B-647, filed 2/2/82.]

WAC 296-150B-650 Expandable or multiple commercial coaches. Where gas piping is to be installed in more than one portion of an expandable or multiple commercial coach, the design and construction shall be as follows:

(1) There shall be only one point of crossover which shall be readily accessible from the exterior of the commercial coach.

(2) The connector between units shall be a listed flexible connector for exterior use, sized in accordance with WAC 296-150B-653.

(3) Protective caps or plugs shall be permanently attached to the coach by means of a metal chain and used to seal the system when not in use. [Statutory Authority: RCW 43.22.340. 82-04-060 (Order 82-4), § 296-150B-650, filed 2/2/82.]

WAC 296-150B-653 System sizing--Gas pipe sizing. Gas piping systems shall be sized so that the pressure drop to any appliance inlet connection from any gas supply connection, when all appliances are in operation at maximum capacity, is not more than 0.5 inch water column as determined on the basis of test or in accordance with WAC 296-150B-667. The natural gas supply connection shall be not less than the size of the gas piping but shall be not smaller than 3/4 inch nominal pipe size. [Statutory Authority: RCW 43.22.340. 82-04-060 (Order 82-4), § 296-150B-653, filed 2/2/82.]

WAC 296-150B-657 Sizing and capacity of gas piping. In order to determine the size of piping to be used in designing a gas piping system, the following factors must be considered:

(1) Allowable loss in pressure from the commercial coach gas supply connection to appliance.

(2) Maximum gas consumption to be provided.

(3) Length of piping.

(4) Type of gas. [Statutory Authority: RCW 43.22-.340. 82-04-060 (Order 82-4), § 296-150B-657, filed 2/2/82.]

WAC 296-150B-660 Description of tables. (1) The quantity of gas to be provided at each outlet shall be determined directly from the manufacturer's Btu input rating of the appliance that will be installed.

(2) Capacities for combustion of LPG and natural gas at low pressures (0.5 psig or less) in thousands of Btu per hour for different sizes and lengths are shown in the table in WAC 296-150B-667 for iron pipe or equivalent rigid pipe and for semi-rigid tubing. WAC 296-150B-667 is based upon a pressure drop of 0.5 inch water column. In using the table, no additional allowance is necessary for an ordinary number of fittings.

(3) Capacities in thousands of Btu per hour of undiluted liquefied petroleum gases based on a pressure drop of 0.5 inch water column for different sizes and lengths are shown in the table in WAC 296-150B-667 for iron pipe or equivalent rigid pipe and for semi-rigid tubing. In using this table, no additional allowance is necessary for an ordinary number of fittings.

(4) For any gas piping system, for special gas appliances or for conditions other than those covered by WAC 296-150B-667, such as longer runs, greater gas demands or greater pressure drops, the size of each gas piping system shall be determined by standard engineering methods acceptable to the department. [Statutory Authority: RCW 43.22.340. 82-04-060 (Order 82-4), § 296-150B-660, filed 2/2/82.]

WAC 296-150B-663 Use of capacity tables. To determine the size of each section of gas piping in a system within the range of the capacity tables, proceed as follows:

(1) Determine the gas demand of each appliance to be attached to the piping system. When the table in WAC 296-150B-667 is to be used to select the piping size, calculate the gas demand in terms of thousands of Btuh for each piping system outlet.

(2) Measure the length of piping from the gas supply connection to the most remote outlet in the commercial coach.

(3) In the appropriate capacity table, select the column showing the measured length or the next longer length if the table does not give the exact length. This is the only length used in determining the size of any section of gas piping.

(4) Use this same vertical column to locate ALL gas demand figures for this particular system of piping.

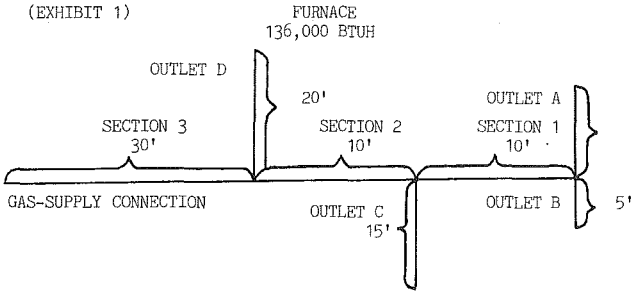
(5) Starting at the most remote outlet, find in the vertical column just selected the gas demand for that outlet. If the exact figure or demand is not shown, choose the next larger figure below in the column.

(6) Opposite this demand figure, in the first column at the left, will be found the correct size of gas piping.

(7) Proceed in a similar manner for each outlet and each section of gas piping. For each section of piping, determine the total gas demand supplied by that section.

– Example of piping system design:

Determine the required pipe size of each section and outlet of the piping system, with a designated pressure drop of 0.5 inch water column.



OUTLET A	WATER HEATER	30,000 BTUH
OUTLET B	REFRIGERATOR	3,000 BTUH
OULET C	RANGE	73,000 BTUH
OUTLET D	FURNACE	136,000 BTUH

SOLUTION :

(1) The length of pipe from the gas supply inlet to the most remote outlet (A) is 60 feet. This is the only distance used.

(2) Using the column marked 60 feet in the table:

Outlet A, supplying 30,000 BTUH, requires 3/8" iron pipe.

Outlet B, supplying 3,000 BTUH, requires 1/4" iron pipe.

Section 1, supplying outlets A and B, or 33,000 BTUH, requires 3/8" iron pipe.

Outlet C, supplying 73,000 BTUH, requires 3/4" iron pipe.

Section 2, supplying outlets A, B and C, or 106,000 BTUH, requires 3/4" iron pipe.

Outlet D, supplying 136,000 BTUH, requires 3/4" iron pipe.

Gas Supply Connection, Section 3, supplying outlets A, B, C and D, or 242,000 BTUH, requires 1" iron pipe.

[Statutory Authority: RCW 43.22.340. 82-04-060 (Order 82-4), § 296-150B-663, filed 2/2/82.]

WAC 296-150B-667 Table--Iron pipe and tubing sizes.

PART I

Maximum Capacity of Different Sizes of Pipe and Tubing in Thousands of Btu's Per Hour of Natural Gas For Gas Pressures of 0.5 Psig or Less and a Maximum Pressure Drop of 1/2 Inch Water Column

PART I(A)

Iron Pipe Sizes

Length in Feet

I.D.	10	20	30	40	50	60	70	80	90	100
1/4"	43	29	24	20	18	16	15	14	13	12
3/8"	95	65	52	45	40	36	33	31	29	27
1/2"	175	120	97	82	73	66	61	57	53	50
3/4"	360	250	200	170	151	138	125	118	110	103
1"	680	465	375	320	285	260	240	220	215	195

PART I(B)

Tubing

Length in Feet

O.D.	10	20	30	40	50	60	70	80	90	100
3/8"	27	18	15	13	11	10	9	9	8	8
1/2"	56	38	31	26	23	21	19	18	17	16
5/8"	113	78	62	53	47	43	39	37	34	33
3/4"	197	136	109	93	83	75	69	64	60	57
7/8"	280	193	155	132	117	106	98	91	85	81

PART II

Maximum Capacity of Different Sizes of Pipe and Tubing in Thousands of BTU's Per Hour of Undiluted Liquefied Petroleum Gas Based on a Maximum Pressure Drop of 1/2 Inch Water Column

PART II(A)

Iron Pipe Sizes

Length in Feet

I.D.	10	20	30	40	50	60	70	80	90	100
1/4"	67	46	37	31	28	25	23	21	20	19
3/8"	147	101	81	70	62	56	51	48	45	42
1/2"	275	189	152	129	114	103	96	89	83	78
3/4"	567	393	315	267	237	217	196	185	173	162
1"	1071	732	590	504	448	409	378	346	322	307

PART II(B)

Tubing										
	Length in Feet									
O.D.	10	20	30	40	50	60	70	80	90	100
3/8"	39	26	21	19	—	—	—	—	—	—
1/2"	92	62	50	41	37	35	31	29	27	26
5/8"	199	131	107	90	79	72	67	62	59	55
3/4"	329	216	181	145	131	121	112	104	95	90
7/8"	501	346	277	233	198	187	164	155	146	138

[Statutory Authority: RCW 43.22.340. 82–04–060 (Order 82–4), § 296–150B–667, filed 2/2/82.]

WAC 296–150B–670 Joints and installation—Joints for gas pipe. All pipe joints in the piping system, unless welded or brazed, shall be threaded joints that comply with ANSI Standard Pipe Threads (Except Dryseal) B2.1–1968. Right and left nipples or couplings shall not be used. Unions, if used, shall be of ground joint type. The material used for welding or brazing pipe connections shall have a melting temperature in excess of 1,000°F (537°C). [Statutory Authority: RCW 43.22-.340. 82–04–060 (Order 82–4), § 296–150B–670, filed 2/2/82.]

WAC 296–150B–673 Joints in gas tubing systems. Tubing joints shall be made with either a single or double flare of the proper degree, as recommended by the tubing manufacturer, by means of listed gas tubing fittings, or by being brazed with material having a melting point exceeding 1,000°F (537°C). [Statutory Authority: RCW 43.22.340. 82–04–060 (Order 82–4), § 296–150B–673, filed 2/2/82.]

WAC 296–150B–677 Concealed tubing. Tubing shall not be run inside walls, floors, partitions, or roofs. Where tubing passes through walls, floors, partitions, roofs, or similar installations, the tubing shall be protected by the use of weather resistant grommets that snugly fit both the tubing and the hole through which the tubing passes. [Statutory Authority: RCW 43.22-.340. 82–04–060 (Order 82–4), § 296–150B–677, filed 2/2/82.]

WAC 296–150B–680 Pipe–joint compound. Screw joints shall be made tight with listed pipe–joint compound that is insoluble in liquefied petroleum gas. The pipe–joint compound shall be applied to the male threads only. [Statutory Authority: RCW 43.22.340. 82–04–060 (Order 82–4), § 296–150B–680, filed 2/2/82.]

WAC 296–150B–683 Concealed joints. Piping or tubing joints shall not be located in any floor, wall partition, or similar concealed construction space. [Statutory Authority: RCW 43.22.340. 82–04–060 (Order 82–4), § 296–150B–683, filed 2/2/82.]

WAC 296–150B–687 Hangers and supports. All gas piping shall be adequately supported by galvanized or equivalently protected metal straps or hangers at intervals of not more than four feet, except where adequate support and protection is provided by structural members. Solid–iron pipe gas–supply connections shall be rigidly anchored to a structural member within six inches of the supply connections. [Statutory Authority: RCW 43.22.340. 82–04–060 (Order 82–4), § 296–150B–687, filed 2/2/82.]

WAC 296–150B–690 Electrical ground. Gas piping shall not be used for an electrical ground. [Statutory Authority: RCW 43.22.340. 82–04–060 (Order 82–4), § 296–150B–690, filed 2/2/82.]

WAC 296–150B–693 Identification of gas supply connections. A label shall be permanently attached on the outside of the exterior wall of the commercial coach adjacent to the gas supply connection which reads (as appropriate) either:

LP–Gas System

This gas piping system is designed for use of liquefied petroleum gas only.

DO NOT CONNECT NATURAL GAS TO THIS SYSTEM.

CONTAINER SHUTOFF VALVES SHALL BE CLOSED DURING TRANSIT .

When connecting to lot outlet, use a listed gas supply connector for vehicles rated at

☐ 100,000 Btuh
or more
☐ 250,000 Btuh

Before turning on gas, make certain all gas connections have been made tight, all appliance valves are turned off, and any unconnected outlets are capped.

After turning on gas, test gas piping and connections to appliances for leakage with soapy water or bubble solution, and light all pilots.

or

Combination LP–Gas and Natural Gas System

This gas piping system is designed for use of either liquefied petroleum gas or natural gas.

NOTICE: BEFORE TURNING ON GAS, BE CERTAIN APPLIANCES ARE DESIGNED FOR THE GAS CONNECTED AND ARE EQUIPPED WITH CORRECT ORIFICES. SECURELY CAP THIS INLET WHEN NOT CONNECTED FOR USE .

When connecting to lot outlet, use a listed gas supply connector for vehicles rated at

☐ 100,000 Btuh
or more
☐ 250,000 Btuh

Before turning on gas, make certain all gas connections have been made tight, all appliance valves are turned off, and any unconnected outlets are capped.

After turning on gas, test gas piping and connections to appliances for leakage with soapy water or bubble solution, and light all pilots.

The appropriate Btuh input rating shall be marked.

[Statutory Authority: RCW 43.22.340. 82–04–060 (Order 82–4), § 296–150B–693, filed 2/2/82.]

WAC 296–150B–697 Gas piping system openings. All openings in the gas piping system shall be closed gas–tight with threaded pipe plugs or pipe caps. [Statutory Authority: RCW 43.22.340. 82–04–060 (Order 82–4), § 296–150B–697, filed 2/2/82.]

WAC 296–150B–700 Appliance connections. All interior gas–burning appliances shall be connected to the gas piping system with materials as provided in WAC 296–150B–647 or with listed gas appliance connectors. Listed appliance connectors, if used, shall not be run through walls, floors, ceilings, or partitions. Listed appliance connectors shall also not be run through cabinets or cupboards unless protected or positioned to minimize mechanical damage. Where a listed connector is used, only one connector may be used to serve a single appliance. Connectors with aluminum exterior surfaces shall not be used outdoors. [Statutory Authority: RCW 43-.22.340. 82–04–060 (Order 82–4), § 296–150B–700, filed 2/2/82.]

WAC 296–150B–703 Valves. (1) A shutoff valve shall be installed in the fuel piping outside of each gas appliance but inside the commercial coach structure, and upstream of the union or connector, in addition to any valve on the appliance. The shutoff valve shall be located within 6 feet of a cooking appliance and within 3 feet of any other appliance. A shutoff valve may serve more than one appliance if located as required above.

(2) Shutoff valves used in connection with gas piping shall be of a type designed and listed for use on LPG. [Statutory Authority: RCW 43.22.340. 82–04–060 (Order 82–4), § 296–150B–703, filed 2/2/82.]

WAC 296–150B–707 Testing for leakage––Before appliances are connected. The piping system shall stand a pressure of at least six inches mercury or three PSI gage for a period of not less than ten minutes without showing any drop in pressure. Pressure shall be measured with a mercury manometer or slope gage calibrated so as to be read in increments of not greater than one–tenth pound or an equivalent device. The source of pressure shall be isolated before the pressure tests are made. Before a test is begun, the temperature of the ambient air and of the piping shall be approximately the same and constant air temperature shall be maintained throughout the test. [Statutory Authority: RCW 43.22-.340. 82–04–060 (Order 82–4), § 296–150B–707, filed 2/2/82.]

WAC 296–150B–710 After appliances are connected. After gas appliances have been connected, the gas–piping system shall be subjected to a pressure test with the burner valves closed. The test shall consist of air at not less than ten inches nor more than 14 inches pressure of water column (six to eight ounces), the system shall hold this pressure for a period of not less than 10 minutes with no perceptible leakage. Before beginning the test, the temperature of the gas–piping system and the test air shall be equalized and maintained throughout the test.

Appliance shut–off valves ahead of listed gas cooking appliances may be closed for the performance of this test. When the test is satisfactorily performed in this manner, these valves shall be opened and, while the system is under pressure, the appliance connectors shall be tested with an approved leak detector or approved bubble solution. [Statutory Authority: RCW 43.22.340. 82–04–060 (Order 82–4), § 296–150B–710, filed 2/2/82.]

WAC 296–150B–713 Rodent resistance. All exterior openings around piping, ducts, plenums, or vents shall be sealed to resist the entrance of rodents. [Statutory Authority: RCW 43.22.340. 82–04–060 (Order 82–4), § 296–150B–713, filed 2/2/82.]

WAC 296–150B–717 Oil piping systems––General. The requirements of this section shall govern the installation of all liquid fuel piping attached to any commercial coach. None of the requirements listed in this section shall apply to the piping in the appliances. [Statutory Authority: RCW 43.22.340. 82–04–060 (Order 82–4), § 296–150B–717, filed 2/2/82.]

WAC 296–150B–720 Oil piping systems––Expandable or multiple commercial coaches. When a commercial coach is composed of two or more units or includes expandable rooms, the oil–piping system shall be located only in the unit containing the oil–supply connection. [Statutory Authority: RCW 43.22.340. 82–04–060 (Order 82–4), § 296–150B–720, filed 2/2/82.]

WAC 296–150B–723 Oil piping systems––Materials. All materials used for the installation, extension, alteration, or repair of any oil piping system shall be new and free from defects or internal obstructions. The system shall be made of materials having a melting point of not less than 1,450°F (789°C), except as provided in WAC 296–150B–730. They shall consist of one or more of the following materials:

(1) Steel or wrought–iron pipe shall comply with American National Standard for Wrought–Steel or Wrought–Iron Pipe, B36.10–1975. Threaded copper or brass pipe in iron pipe sizes may be used.

(2) Fittings for oil piping shall be wrought iron, malleable iron, steel, or brass (containing not more than 75 percent copper).

(3) Copper tubing shall be annealed type, Grade K or L, conforming to the Specifications for Seamless Copper Water Tube (ASTM B88–76); or shall comply with the specifications for Seamless Copper Tube for Air Conditioning and Refrigeration Field Service, ASTM B280–76.

(4) Steel tubing shall have a minimum wall thickness of 0.032 inch for diameters up to 1/2 inch and 0.049

inch for diameters of 1/2 inch and larger. Steel tubing shall be constructed in accordance with the Specification for Electric-Resistance Welded Coiled Steel Tubing for Gas and Fuel Oil Lines (ASTM A539-73) and shall be externally corrosion protected. [Statutory Authority: RCW 43.22.340. 82-04-060 (Order 82-4), § 296-150B-723, filed 2/2/82.]

WAC 296-150B-727 Oil piping systems--Size of oil piping. The minimum size of all fuel-oil tank piping connecting outside tanks to the appliance shall be no smaller than three-eighth-inch OD copper tubing or one-fourth-inch ips. If No. 1 fuel oil is used with a listed automatic pump (fuel lifter), copper tubing shall be sized as specified by the pump manufacturer. [Statutory Authority: RCW 43.22.340. 82-04-060 (Order 82-4), § 296-150B-727, filed 2/2/82.]

WAC 296-150B-730 Oil piping systems--Joints for oil piping. All pipe joints in the piping system, unless welded or brazed, shall be threaded joints which comply with American National Standard for Pipe Threads (Except Dryseal), B2.1-1968. The material used for brazing pipe connections shall have a melting temperature in excess of 1,000°F (537°C). [Statutory Authority: RCW 43.22.340. 82-04-060 (Order 82-4), § 296-150B-730, filed 2/2/82.]

WAC 296-150B-733 Oil piping systems--Tubing joints. Tubing joints shall be made with either a single or double flare of the proper degree, as recommended by the tubing manufacturer, by means of listed tubing fittings or brazed with material having a melting point exceeding 1,000°F (537°C). [Statutory Authority: RCW 43.22.340. 82-04-060 (Order 82-4), § 296-150B-733, filed 2/2/82.]

WAC 296-150B-737 Oil piping systems--Pipe-joint compound. Threaded joints shall be made tight with listed pipe joint compound which shall be applied to the male threads only. [Statutory Authority: RCW 43.22-.340. 82-04-060 (Order 82-4), § 296-150B-737, filed 2/2/82.]

WAC 296-150B-740 Oil piping systems--Couplings. Pipe couplings and unions shall be used to join sections of threaded pipe. Right and left nipples or couplings shall not be used. [Statutory Authority: RCW 43.22.340. 82-04-060 (Order 82-4), § 296-150B-740, filed 2/2/82.]

WAC 296-150B-743 Oil piping systems--Grade of piping. Fuel oil piping installed in conjunction with gravity feed systems to oil heating equipment shall slope in a gradual rise upward from a central location to both the oil tank and the appliance in order to eliminate air locks. [Statutory Authority: RCW 43.22.340. 82-04-060 (Order 82-4), § 296-150B-743, filed 2/2/82.]

WAC 296-150B-747 Oil piping systems--Strap hangers. All oil piping shall be adequately supported by galvanized or equivalently protected metal straps or hangers at intervals of not more than 4 feet, except where adequate support and protection is provided by structural members. Solid-iron-pipe oil supply connections shall be rigidly anchored to a structural member within 6 inches of the supply connections. [Statutory Authority: RCW 43.22.340. 82-04-060 (Order 82-4), § 296-150B-747, filed 2/2/82.]

WAC 296-150B-750 Oil piping systems--Testing for leakage. Before setting the system in operation, tank installations and piping shall be checked for oil leaks with fuel oil of the same grade that will be burned in the appliance. No other material shall be used for testing fuel oil tanks and piping. Tanks shall be filled to maximum capacity for the final check for oil leakage. [Statutory Authority: RCW 43.22.340. 82-04-060 (Order 82-4), § 296-150B-750, filed 2/2/82.]

WAC 296-150B-753 Appliances--Heat-producing. General. (1) Heat-producing appliances and vents, roof jacks, and chimneys necessary for their installations in commercial coaches shall be listed or certified by a nationally recognized testing agency for use in mobile homes or commercial coaches. Air conditioning units and combination air conditioning and heating units shall be listed or certified by a nationally recognized testing agency for the application for which the unit is intended.

(2) Fuel-burning heat-producing appliances and refrigeration appliances, except ranges and ovens, shall be of the vented type and vented to the outside.

(3) Fuel-burning appliances shall not be converted from one fuel to another fuel unless converted in accordance with the terms of their listing and the appliance manufacturer's instructions.

(4) Gas-fired absorption comfort-cooling units shall meet all the requirements of American National Standard for Gas-Fired Absorption Summer Air Conditioning Appliances (ANSI Z21.40.1-1973).

(5) Mechanical comfort-cooling units shall meet all the requirements of the Standard for Unitary Air-Conditioning Equipment (ARI Standard 210-74).

(6) Direct refrigerating systems serving any air conditioning or comfort-cooling system installed in a commercial coach shall employ a type of refrigerant that ranks no lower than Group 5 in the Underwriters' Laboratories, Inc. "Classification of Comparative Life Hazard of Various Chemicals." [Statutory Authority: RCW 43.22.340. 82-04-060 (Order 82-4), § 296-150B-753, filed 2/2/82.]

WAC 296-150B-757 Appliances--Installation. (1) The installation of each appliance shall conform to the terms of its listing and the manufacturer's instructions. The installer shall leave the manufacturer's instructions attached to the appliance. Every appliance shall be secured in place to avoid displacement.

(2) All fuel-burning appliances, except ranges, ovens, illuminating appliances, clothes dryers, solid fuel-burning fireplaces and solid fuel-burning fireplace stoves, shall be installed to provide for the complete separation of the combustion system from the interior atmosphere

of the commercial coach. Combustion air inlets and flue gas outlets shall be listed or certified as components of the appliance. The required separation may be obtained by:

(a) The installation of direct vent system (sealed combustion system) appliances, or

(b) The installation of appliances within enclosures so as to separate the appliance combustion system and venting system from the interior atmosphere of the commercial coach. There shall not be any door, removable access panel or other opening into the enclosure from the inside of the commercial coach. Any opening for ducts, piping, wiring, etc., shall be sealed.

(3) A forced air appliance and its return–air system shall be designed and installed so that negative pressure created by the air–circulating fan cannot affect its or another appliance's combustion air supply or act to mix products of combustion with circulating air.

(4) The air circulating fan of a furnace installed in an enclosure with another fuel–burning appliance shall be operable only when any door or panel covering an opening in the furnace fan compartment or in a return air plenum or duct is in the closed position. This subsection does not apply if both appliances are direct vent system (sealed combustion system) appliances.

(5) If a warm air appliance is installed within an enclosure to conform to subsection (2)(b), each warm–air outlet and each return air inlet shall extend to the exterior of the enclosure. Ducts, if used for that purpose, shall not have any opening within the enclosure and shall end at a location exterior to the enclosure.

(6) Cooling coils installed as a portion of, or in connection with, any forced–air furnace shall be installed on the downstream side unless the furnace is specifically otherwise listed.

(a) A cooling coil shall not be located in the air discharge duct or plenum of any forced–air furnace unless such furnace is listed for use with a cooling coil or listed for operation at not less than 0.5 inch water column external static pressure.

(b) If a cooling coil is installed within a forced–air furnace, the coil shall be listed for use with that furnace in the manner so installed or be approved for such use. [Statutory Authority: RCW 43.22.340. 82–04–060 (Order 82–4), § 296–150B–757, filed 2/2/82.]

WAC 296–150B–760 Appliances—Venting, ventilation, and combustion air. (1) The venting required by WAC 296–150B–753(2) shall be accomplished by:

(a) An integral vent system listed or certified as part of the appliance; or

(b) a venting system consisting entirely of listed components, including a roof jack, installed in accordance with the terms of the appliance listing and the appliance manufacturer's instructions (see WAC 296–150B–757(2)).

(2) Venting and combustion air systems shall be installed in accordance with the following:

(a) Components shall be securely assembled and properly aligned using the method shown in the appliance manufacturer's instructions.

(b) Draft hood connectors shall be firmly attached to draft hood outlets or flue collars by sheet metal screws or by an equivalent means.

(c) Every joint of a vent, vent connector, exhaust duct, and combustion air intake shall be secure and in alignment.

(3) Venting systems shall not terminate underneath a commercial coach.

(4) Venting system terminations shall be not less than three feet from any motor–driven air intake discharging into habitable areas.

(5) The area in which cooking appliances are located shall be ventilated by a metal duct which may be single wall, not less than 12.5 square inches in cross–sectional area (minimum dimension shall be two inches) located above the appliances and terminating outside the commercial coach, or by listed mechanical ventilating equipment that is installed in accordance with the terms of listing and the manufacturer's instructions. Gravity or mechanical ventilation shall be installed within a horizontal distance of not more than ten feet from the vertical front of the appliances. [Statutory Authority: RCW 43.22.340. 82–04–060 (Order 82–4), § 296–150B–760, filed 2/2/82.]

WAC 296–150B–763 Appliances—Clearance–general. (1) Information on clearances, input rating, lighting, and shut–down shall be attached to the appliances with the same permanence as the nameplate and so located that it is easily readable when the appliance is properly installed.

(2) Each fuel–burning appliance shall bear permanent marking designating the types of fuel for which it is listed.

(3) Every appliance shall be accessible for inspection, service, repair, and replacement without removing permanent construction. Sufficient room shall be available to enable the operator to observe the burner, control, and ignition means while starting the appliance.

(4) Heat–producing appliances shall be so located that no doors, drapes, or other such material can be placed or swung closer to the front of the appliance than the clearances specified on the labeled appliances.

(5) Clearances between heat–producing appliances and adjacent surfaces shall not be less than specified in the terms of their listing. Clearance spaces shall be framed in or guarded to prevent creation of storage space.

(6) Operating instructions shall be provided with appliances. [Statutory Authority: RCW 43.22.340. 82–04–060 (Order 82–4), § 296–150B–763, filed 2/2/82.]

WAC 296–150B–767 Safety devices—Water heater relief valves. (1) All water heaters shall be installed with approved and listed fully automatic valve or valves designed to provide temperature and pressure relief.

(2) Any temperature relief valve or combined pressure and temperature relief valve installed for this purpose shall have the temperature sensing element immersed in the hottest water within the upper 6 inches of the tank. It shall be set to start relieving at a pressure of 150 psi

or the rated working pressure of the tank, whichever is lower, and at or below a water temperature of 210°F.

(3) Relief valves shall be provided with full-sized drains that shall be directed downward and shall discharge beneath the commercial coach. Drain lines shall be of a material listed for hot water distribution and shall drain fully by gravity, shall not be trapped, and shall not have their outlets threaded. [Statutory Authority: RCW 43.22.340. 82-04-060 (Order 82-4), § 296-150B-767, filed 2/2/82.]

WAC 296-150B-770 Air duct material for circulating air supply system. Supply ducts shall be made from galvanized steel, tin-plated steel, or aluminum, or shall be listed Class 0, Class 1, or Class 2 air ducts. Class 2 air ducts shall be located at least 3 feet from the furnace bonnet or plenum. A duct system integral with the structure shall be of durable construction that can be demonstrated to be equally resistant to fire and deterioration. Ducts constructed from sheet metal shall be in accordance with Table H-3.

Class 1 air ducts shall have a flame-spread rating of not over 25 without evidence of continual progressive combustion and a smoke-developed rating of not over 50. Class 2 air ducts shall have a flame-spread rating of not over 50 without evidence of continued progressive combustion and a smoke-developed rating of not over 50 for the inside surface material and not over 100 for the outside surface material.

Minimum Metal Thickness for Ducts*

Duct Type	Diameter or 14 inches or less	Width over 14 inches
Round	0.013 in.	0.016 in.
Enclosed Rectangular	0.013 in.	0.016 in.
Exposed Rectangular	0.016 in.	0.019 in.

*When "nominal" thicknesses are specified, 0.003 inch shall be added to these "minimum" metal thicknesses.

[Statutory Authority: RCW 43.22.340. 82-04-060 (Order 82-4), § 296-150B-770, filed 2/2/82.]

WAC 296-150B-773 Sizing of air ducts. Ducts shall be designed so that when a labeled forced-air furnace is installed and operated continually at its normal input rating in the commercial coach, with all registers in full open position, the static pressure measured in the duct plenum shall not exceed that shown in the table in WAC 296-150B-777 or exceed that shown on the label of the appliance. When an air-cooler coil is installed between the furnace and the duct plenum, the total static pressure between the furnace and the coil shall not exceed that shown on the label of the furnace. The minimum dimension of any branch duct shall be at least 1 1/2 inches, and of any main duct, 2 1/2 inches. [Statutory Authority: RCW 43.22.340. 82-04-060 (Order 82-4), § 296-150B-773, filed 2/2/82.]

WAC 296-150B-777 Airtightness of air supply duct systems. An air supply duct system shall be considered substantially airtight when the static pressure in the duct system, with all registers sealed and with the furnace air circulator at high speed, is at least 80 percent of the static pressure measured in the furnace casing, with its outlets sealed and the furnace air circulator operating at high speed. For the purpose of this section and WAC 296-150B-783, pressures shall be measured with a water manometer or equivalent device calibrated to read in increments not greater than 1/10 inch water column.

Maximum Allowable Static Pressures in Supply Duct Systems

Input to Forced-Air Furnace Btu/hr.	External Static Pressure Inches Water Column Measured at the Furnace Outlet: Temperature of Outlet Air Determined by Function of Limit Control — Above 165°F	165°F or Less
55,000 and under	0.10	0.20
Over 55,000 to 80,000	0.12	0.24
Over 80,000 to 100,000	0.15	0.30

[Statutory Authority: RCW 43.22.340. 82-04-060 (Order 82-4), § 296-150B-777, filed 2/2/82.]

WAC 296-150B-780 Air ducts--Expandable or multiple commercial coach connections. (1) An expandable or multiple commercial coach may have ducts of the heating system installed in the various units. The points of connection must be so designed and constructed that when the commercial coach is fully expanded or coupled, the resulting duct joint will conform to the requirements of this chapter.

(2) Installation instructions for supporting the crossover duct from the commercial coach shall be provided for onsite installation. The duct shall not be in contact with the ground. [Statutory Authority: RCW 43.22.340. 82-04-060 (Order 82-4), § 296-150B-780, filed 2/2/82.]

WAC 296-150B-783 Air ducts--Return air systems. Provisions shall be made to permit the return of circulating air from all rooms and living spaces except toilet rooms, to the circulating air supply inlet of the furnace.

(1) Duct material. Return ducts and any diverting dampers contained therein shall be in accordance with the following:

(a) Portions of return ducts directly above the heating surfaces or closer than 2 feet from the outer jacket or

casing of the furnace shall be constructed of metal in accordance with the table in WAC 296-150B-770 or shall be listed Class 0 or Class 1 air ducts.

(b) Return ducts, except as required by (1)(a), shall be constructed of one-inch (nominal) wood boards (flame-spread classification of not more than 200), other suitable material no more flammable than one-inch board, or in accordance with the table in WAC 296-150B-770.

(c) The interior of combustible ducts shall be lined with noncombustible material at points where there might be danger from incandescent particles dropped through the register or furnace such as directly under floor registers and the bottom of vertical ducts or directly under furnaces having a bottom return.

(2) The cross-sectional area of the return air duct shall not be less than 2 square inches for each 1,000 Btu per hour input rating of the appliance. Dampers shall not be placed in any return air duct, except that a diverting damper may be placed in a combination fresh air intake and return air duct so arranged that the required cross-sectional area will not be reduced at all possible positions of the damper.

(3) Permanent uncloseable openings. Living areas not served by return air ducts or closed off from the return opening of the furnace by doors, sliding partitions, or other means shall be provided with permanent uncloseable openings in the doors or separating partitions to allow circulated air to return to the furnace. The openings may be grilled or louvered. The net free area of each opening shall be not less than 1 square inch for every 5 square feet of total living area closed off from the furnace by the door or partition serviced by that opening. Undercutting doors connecting the closed-off space may be used as a means of providing return air area. However, in the event that doors are undercut, they shall be undercut a minimum of 2 inches and no more than 2 1/2 inches and no more than one-half of the free air area so provided shall be counted as return air area. [Statutory Authority: RCW 43.22.340. 82-04-060 (Order 82-4), § 296-150B-783, filed 2/2/82.]

WAC 296-150B-787 Air ducts--Joints and seams. Joints and seams of ducts shall be securely fastened and made substantially airtight. Slip joints shall have a lap of at least 1 inch and shall be individually fastened. Tape or caulking compound may be used for sealing mechanically secure joints. Where used, tape or caulking compound shall not be subject to deterioration under long exposures to temperatures up to 200°F. and to conditions of high humidity, excessive moisture, or mildew. Ducts shall be securely supported. [Statutory Authority: RCW 43.22.340. 82-04-060 (Order 82-4), § 296-150B-787, filed 2/2/82.]

WAC 296-150B-790 Air ducts--Registers or grills. Fittings connecting the registers or grills to the duct system shall be constructed of metal or material that complies with the requirements of Class 1 or 2 ducts under Underwriters' Laboratories, Inc. Standard for Air Ducts, UL181-1974. Registers or grills shall be constructed of metal or conform with the following:

(1) Be made of a material classified 94VE-0 or 94VE-1 when tested as described in Underwriters' Laboratories, Inc. Standard for Tests for Flammability of Plastic Materials for Parts in Devices and Appliances, UL94-1976.

(2) Floor register or grills shall resist without structural failure a 200 lb. concentrated load on a 2-inch diameter disc applied to the most critical area of the exposed face of the register or grill. For this test the register or grill is to be at a temperature of not less than 165°F. and is to be supported in accordance with the manufacturer's instructions. [Statutory Authority: RCW 43.22.340. 82-04-060 (Order 82-4), § 296-150B-790, filed 2/2/82.]

WAC 296-150B-793 Air ducts--Duct and plenum insulation. Every heating and cooling duct and plenum shall be installed in accordance with the following:

(1) Air supply ducts that are not within the coach insulation having a thermal insulation (R) factor of at least 4 shall be insulated.

(2) Supply ducts within the coach but not within the insulation described in subsection (1) shall be insulated with rigid insulation having a thermal insulation (R) factor not less than 3 with a continuous vapor barrier having a perm rating of not more than 1.0.

(3) Supply ducts exposed directly to outside air, such as under chassis crossover ducts, shall be insulated with material having a thermal insulation (R) of not less than 4.0 with a continuous vapor barrier having a perm rating of not less than 1.0.

(4) Aluminum foil used as a vapor barrier shall be at least 2 mils in thickness. [Statutory Authority: RCW 43.22.340. 82-04-060 (Order 82-4), § 296-150B-793, filed 2/2/82.]

WAC 296-150B-797 Plumbing--Definitions. Definitions contained in the Uniform Plumbing Code, 1979 Edition, and the following definitions shall apply to this chapter:

(1) Drain outlet means the discharge end of the commercial coach main drain to which a drain connector may be attached.

(2) Main drain means the principal artery of the commercial coach drainage system to which drainage branches may be connected.

(3) Uniform Plumbing Code (UPC) means the 1979 edition, as published by the International Association of Plumbing and Mechanical Officials.

(4) Water-supply connection means the fitting or point of connection of the commercial coach water distribution system designed for connection to a water connector. [Statutory Authority: RCW 43.22.340. 82-04-060 (Order 82-4), § 296-150B-797, filed 2/2/82.]

WAC 296-150B-800 Plumbing--General. Plumbing fixtures, equipment, and installations in commercial coaches shall conform to the provisions of the Uniform

Plumbing Code, 1979 Edition, except part 1, unless specifically exempted or required by this section. The provisions of this chapter are also applicable to the alteration or conversion of plumbing equipment and installations in any commercial coach bearing or required to bear a department insignia of approval. [Statutory Authority: RCW 43.22.340. 82-04-060 (Order 82-4), § 296-150B-800, filed 2/2/82.]

WAC 296-150B-803 Plumbing--Location of water-supply connections. (1) Each commercial coach equipped with a water distribution system shall have a water-supply connection that shall terminate within 18 inches of the outside wall of the commercial coach.

(2) Water-supply connections shall be equipped with a watertight cap or plug that shall be permanently attached to the vehicle. [Statutory Authority: RCW 43-.22.340. 82-04-060 (Order 82-4), § 296-150B-803, filed 2/2/82.]

WAC 296-150B-807 Plumbing--Tub and shower enclosures. Wall surfacing for tub and shower enclosures shall meet the following requirements:

(1) The wall covering material must have an exposed surface that is impervious to water; the substrate material must be resistant to deterioration from exposure to high humidity and temporary water leakage.

(a) The complete wall assembly, including the wall covering substrate, shall be capable of withstanding a uniform load of five pounds per square foot applied perpendicular to the surface. The deflection, under load, shall not exceed 1/180 of the height of the wall, for the assembly; or 1/240 the distance between framing members, for the wall covering substrate.

(b) Surface finish. The exposed surface must meet the minimum requirements of the American Hardboard Association PS59-73, Prefinished Hardboard Paneling, Class 1, as certified by the panel manufacturer.

(c) Size. The minimum thickness of the material shall be 1/8" nominal. The width shall be sufficient to give a continuous unbroken surface from corner to corner or the end of the tub in a corner installation. In an installation incorporating a shower, the unbroken surface must continue to a height of at least 6' above the floor of the shower.

(d) Type. The substrate material shall also meet the requirements of the appropriate standard:

(i) Hardboard shall be of high strength and water resistance to meet Commercial Standard CS-251-63 or AHA PS 58-73, either standard or tempered.

(ii) Softwood plywood must meet U.S. Product Standard P.S. 1-74, including exterior type glue line and grade A face veneer "suitable for painting."

(iii) Hardwood plywood must meet U.S. Product Standard P.S. 51-71 Type I glue line and sound grade face veneer.

(iv) Other materials not meeting subsections (d)(i), (d)(ii), or (d)(iii) above, shall meet the requirements of this chapter and the appropriate product standard, industry standard, commercial standard, or federal specification.

(2) Installation. The material must be installed in conformance with this chapter and the application instructions provided by the material manufacturer. In case of conflict, this chapter shall take precedence.

(a) Framing. Wood framing shall be spaced not more than 16" o.c. Blocking shall be 1" x 3" or equal, installed horizontally at height to match rim of the tub or shower pan. All corners shall have sufficient framing members for attachment of corner moldings.

(b) Fastening. All edges and ends of panel shall occur on framing members. Panels shall be applied to wood framing members using water resistant, non-hard setting adhesive. Adhesive shall be applied to the face of all framing members except locations where panel edges fall beneath applied moldings. Panels may also be applied over solid backing using an adhesive.

Fasteners, if necessary, shall be used only in locations where they will be covered by applied moldings and shall be used on not more than two adjacent edges. No other interior fasteners or fixtures, other than required functional plumbing fixtures, shall penetrate the face of the panel. Openings for these plumbing fixtures must be sealed with caulk.

(c) Corners and edges. All corners and edges must be caulked or sealed against moisture penetration. A nonhard setting sealant material must be used with applied moldings. Fastening of moldings to framing shall not be greater than 6" o.c. [Statutory Authority: RCW 43.22.340. 82-04-060 (Order 82-4), § 296-150B-807, filed 2/2/82.]

WAC 296-150B-810 Drainage--Location of drain outlets. (1) Each commercial coach equipped with plumbing fixtures or equipment shall have only one drain outlet, which shall terminate within 18 inches of the outside wall of the commercial coach.

(2) A multiple commercial coach may have more than one drain outlet when approved by the department. [Statutory Authority: RCW 43.22.340. 82-04-060 (Order 82-4), § 296-150B-810, filed 2/2/82.]

WAC 296-150B-813 Drainage--Cap or plug. Drain outlets shall be equipped with a watertight cap or plug that shall be permanently attached to the vehicle. [Statutory Authority: RCW 43.22.340. 82-04-060 (Order 82-4), § 296-150B-813, filed 2/2/82.]

WAC 296-150B-817 Drainage--Clearance from drain outlet. The drain outlet and couplers shall be provided with a minimum clearance of three inches in any direction from all parts of the structure or appurtenances and with not less than 18 inches unrestricted clearance directly in front of the drain outlet. [Statutory Authority: RCW 43.22.340. 82-04-060 (Order 82-4), § 296-150B-817, filed 2/2/82.]

WAC 296-150B-820 Drainage--Drainage systems materials. Plastic drain-waste-vent piping shall be permitted for domestic sewage as defined in the Uniform Plumbing Code. [Statutory Authority: RCW 43.22.340.

82-04-060 (Order 82-4), § 296-150B-820, filed 2/2/82.]

WAC 296-150B-950 Hearing on aggrievances. A person who is aggrieved by an order, notice, or decision of the department under this chapter may request a hearing. The request must be in writing and must describe briefly the cause of the grievance.

The director of the department may hear the matter, or may assign the hearing to his or her representative. The department shall notify the complainant of the time, date, and place for the hearing. The hearing shall be held no later than 30 days after the department receives the request for the hearing. If the complainant fails to appear at the scheduled hearing, the department may dismiss the matter.

Upon conclusion of the hearing, the director or his or her representative shall notify the petitioner in writing of his or her decision in the matter. [Statutory Authority: RCW 43.22.340. 82-04-060 (Order 82-4), § 296-150B-950, filed 2/2/82.]

WAC 296-150B-990 Fees.

(1) Initial manufacturer filing fee:	$ 25.00
(2) Fees for application for design plan approval. The fees listed in this subsection cover the application filing fee and one hour of examination time. The applicant will be required to pay for examination time beyond the base hours pursuant to the fees set in subsection (6).	
(a) Fee for application for commercial coach, recreational vehicle, or component design plan approval:	$ 70.00
(b) Fees for resubmittals of a design plan for a commercial coach, recreational vehicle, or component:	$ 50.00
(3) Design plan renewal fees.	
(a) Renewal of an unexpired and unrevoked commercial coach or recreational vehicle design plan or related group of plans:	$ 30.00
(b) Renewal of an expired or revoked design plan:	100% of fee for new design plan.
(4) Fee for transfer of design plan approval to a different manufacturer:	$100.00
(5) Fee for filing a commercial coach, recreational vehicle, or component quality control manual:	$ 10.00
(6)(a) Fee for inspections, examinations of design plans, and other technical services performed by the department; other than inspections, examinations, and services for a HUD-labeled mobile home before it is sold or leased to a consumer:	$50.00 minimum plus $25.00 for every half-hour or fraction of a half-hour over one hour.
(b) Fee for inspections, examinations, and other technical services performed by the department for a HUD-labeled mobile home before it is sold or leased to a consumer:	$32.00 minimum plus $16.00 for every half-hour or fraction of a half-hour over one hour.
(7) Insignia fees.	
(a) For each recreational vehicle:	$ 20.00
(b) For each single width commercial coach, or for the first section of a multiple section commercial coach:	$ 15.00

(c) For each additional section of a multiple section commercial coach:	$ 10.00
(d) For each service core:	$ 50.00
(e) For each component other than a service core:	$ 10.00
(f) For each reissuance of a mobile home, commercial coach, or recreational vehicle insignia:	$ 10.00
(g) For each alteration insignia:	$ 25.00
(8) Fee for each notification to a local enforcement agency:	$ 15.00
(9) Travel fees and expenses. If a manufacturer or other person requests an inspection or other technical service outside the state, the manufacturer must prepay the travel expenses of the department's employees on an estimated basis to be corrected after the inspections are completed. The department will not charge for travel expenses incurred for inspections or other services performed in Washington. The expenses shall be calculated pursuant to the following list:	
(a) Surface travel, per mile:	$ .185
(b) Air travel:	Cost of air fare based on published rates.
(c) Hourly charge for travel time:	$25.00 per half-hour or fraction of a half-hour.
(d) Expenses: Expenses include, but are not limited to, car rental, parking lot charges, and personal expenses. Personal expenses, including food, lodging, and per diem, shall be calculated pursuant to the allowances and costs set by the Washington State Office of Financial Management.	
(10) Fee for change in manufacturer's or dealer's name, address, or ownership:	$ 15.00

[Statutory Authority: RCW 43.22.350 and 43.22.440. 83-01-018 (Order 82-37), § 296-150B-990, filed 12/6/82. Statutory Authority: RCW 43.22.440, 43.22-.475 and 43.22.480. 82-12-040 (Order 82-20), § 296-150B-990, filed 5/28/82. Statutory Authority: RCW 43.22.340. 82-09-053 (Order 82-13), § 296-150B-990, filed 4/16/82.]

Chapter 296-155 WAC

SAFETY STANDARDS FOR CONSTRUCTION WORK

Subchapters

Part J Ladders and scaffolding. (WAC 296-155-475 through 296-155-48519)

Part K Floor and wall openings and stairways. (WAC 296-155-500 through 296-155-510)

Part N Excavation, trenching, and shoring. (WAC 296-155-650 through 296-155-66505)

Part J

LADDERS AND SCAFFOLDING

WAC

296-155-485 Scaffolding.

296-155-48501 Repealed.

296-155-48502 Repealed.

DISPOSITION OF SECTIONS FORMERLY CODIFIED IN THIS SUBCHAPTER

296-155-48501 Figure J-1. [Order 76-29, Figure J-1 (codified as WAC 296-155-48501), filed 9/30/76; Order 74-26, § 296-155-485 (part), Figure J-1, filed 5/7/74, effective 6/6/74.] Repealed by 82-08-026 (Order 82-10), filed 3/30/82. Statutory Authority: RCW 49.17-.040 and 49.17.050.

296-155-48502 Figure J-2. [Order 76-29, Figure J-2 (codified as WAC 296-155-48502), filed 9/30/76; Order 74-26, § 296-155-485 (part), Figure J-2, filed 5/7/74, effective 6/6/74.] Repealed by 82-08-026 (Order 82-10), filed 3/30/82. Statutory Authority: RCW 49.17-.040 and 49.17.050.

WAC 296-155-485 Scaffolding. (1) General requirements.

(a) All applicable rules for design, construction, maintenance, operation, testing, and use of scaffolds contained in chapter 296-24 WAC, "General safety and health standards," shall apply within the construction industry. (See WAC 296-24-825 through 296-24-84013.)

(b) Scaffolds shall be erected in accordance with requirements of this section.

(c) The footing or anchorage for scaffolds shall be sound, rigid, and capable of carrying the maximum intended load without settling or displacement. Unstable objects such as barrels, boxes, loose brick, or concrete blocks, shall not be used to support scaffolds or planks.

(d) No scaffold shall be erected, moved, dismantled, or altered except under the supervision of competent persons.

(e) Guardrails and toeboards shall be installed on all open sides and ends of platforms more than 10 feet above the ground or floor, except needle beam scaffolds and floats. Scaffolds 4 feet to 10 feet in height, having a minimum horizontal dimension in either direction of less than 45 inches, shall have standard guardrails and toeboards installed on all open sides and ends of the scaffold platform.

(f) Where persons are required to work or pass under the scaffold, scaffolds shall be provided with a screen between the toeboard and the guardrail, extending along the entire opening, consisting of No. 18 gauge U.S. Standard wire 1/2-inch mesh, or the equivalent.

(g) Scaffolds and their components shall be capable of supporting without failure at least 4 times the maximum intended load.

(h) Any scaffold including accessories such as braces, brackets, trusses, screw legs, ladders, etc. damaged or weakened from any cause shall be immediately repaired or replaced.

(i) All load-carrying timber members of scaffold framing shall be a minimum of 1,500 fiber (stress grade) construction grade lumber. All dimensions are nominal sizes as provided in the American Lumber Standards, except that where rough sizes are noted, only rough or undressed lumber of the size specified will satisfy minimum requirements.

(j) All planking shall be scaffold grades, or equivalent, as recognized by approved grading rules for the species of wood used. The maximum permissible spans for 2- x 10-inch or wider planks shall be as shown in Table J-1.

(k) The maximum permissible span for 1 1/4- x 9-inch or wider plank of full thickness shall be 4 feet with medium duty loading of 50 p.s.f.

(l) All planking or platforms shall be overlapped (minimum 12 inches), or secured from movement and the platform shall be a minimum of two 2-inch by 10-inch planks in width or a minimum of 18 inches.

(m) An access ladder or equivalent safe access shall be provided.

(n) Scaffold planks shall extend over their end supports not less than 6 inches nor more than 12 inches.

(o) The poles, legs, or uprights of scaffolds shall be plumb, and securely and rigidly braced to prevent swaying and displacement.

(p) Overhead protection shall be provided for persons on a scaffold exposed to overhead hazards.

(q) Slippery conditions on scaffolds shall be eliminated as soon as possible after they occur.

(r) No welding, burning, riveting, or open flame work shall be performed on any staging suspended by means of fiber or synthetic rope. Only treated or protected fiber or synthetic ropes shall be used for or near any work involving the use of corrosive substances or chemicals. Specific requirements for boatswain's chairs and float or ship scaffolds are contained in subsections (12) and (23) of this section.

(s) Wire, synthetic, or fiber rope used for scaffold suspension shall be capable of supporting at least 6 times the rated load.

(t) The use of shore or lean-to scaffolds is prohibited.

(2) Wood pole scaffolds.

(a) Scaffold poles shall bear on a foundation of sufficient size and strength to spread the load from the pole over a sufficient area to prevent settlement. All poles shall be set plumb.

(b) Where wood poles are spliced, the ends shall be squared and the upper section shall rest squarely on the lower section. Wood splice plates shall be provided on at least two adjacent sides and shall be not less than 4 feet in length, overlapping the abutted ends equally, and have the same width and not less than the cross-sectional area of the pole. Splice plates or other materials of equivalent strength may be used.

(c) Independent pole scaffolds shall be set as near to the wall of the building as practicable.

(d) All pole scaffolds shall be securely guyed or tied to the building or structure. Where the height or length exceeds 25 feet, the scaffold shall be secured at intervals not greater than 25 feet vertically and horizontally.

(e) Putlogs or bearers shall be set with their greater dimension vertical, and long enough to project over the ledgers of the inner and outer rows of poles at least 3 inches for proper support.

(f) Every wooden putlog on single pole scaffolds shall be reinforced with a 3/16- x 2-inch steel strip, or equivalent, secured to its lower edge throughout its entire length.

(g) Ledgers shall be long enough to extend over two pole spaces. Ledgers shall not be spliced between the poles. Ledgers shall be reinforced by bearing blocks securely nailed to the side of the pole to form a support for the ledger.

(h) Diagonal bracing shall be provided to prevent the poles from moving in a direction parallel with the wall of the building, or from buckling

(i) Cross bracing shall be provided between the inner and outer sets of poles in independent pole scaffolds. The free ends of pole scaffolds shall be cross braced.

(j) Full diagonal face bracing shall be erected across the entire face of pole scaffolds in both directions. The braces shall be spliced at the poles. The inner row of

poles on medium and heavy duty scaffolds shall be braced in a similar manner.

(k) Platform planks shall be laid with their edges close together so the platform will be tight with no spaces through which tools or fragments of material can fall.

(l) Where planking is lapped, each plank shall lap its end supports at least 12 inches. Where the ends of planks abut each other to form a flush floor, the butt joint shall be at the centerline of a pole. The abutted ends shall rest on separate bearers. Intermediate beams shall be provided where necessary to prevent dislodgment of planks due to deflection, and the ends shall be secured to prevent their dislodgment.

(m) When a scaffold materially changes its direction, the platform planks shall be laid to prevent tipping. The planks that meet the corner putlog at an angle shall be laid first, extending over the diagonally placed putlog far enough to have a good safe bearing, but not far enough to involve any danger from tipping. The planking running in the opposite direction at an angle shall be laid so as to extend over and rest on the first layer of planking.

(n) When moving platforms to the next level, the old platform shall be left undisturbed until the new putlogs or bearers have been set in place, ready to receive the platform planks.

(o) All wood pole scaffolds 60 feet or less in height shall be constructed and erected in accordance with Tables J–2 to J–8. If they are over 60 feet in height, they shall be designed by a qualified engineer competent in this field, and it shall be constructed and erected in accordance with such design.

(3) Tube and coupler scaffolds.

(a) A light duty tube and coupler scaffold shall have all posts, bearers, runners, and bracing of nominal 2–inch O.D. steel tubing. The posts shall be spaced no more than 6 feet apart by 10 feet along the length of the scaffold. Other structural metals when used must be designed to carry an equivalent load. No dissimilar metals shall be used together.

(b) A medium duty tube and coupler scaffold shall have all posts, runners, and bracing of nominal 2–inch O.D. steel tubing. Posts spaced not more than 6 feet apart by 8 feet along the length of the scaffold shall have bearers of nominal 2 1/2–inch O.D. steel tubing. Posts spaced not more than 5 feet apart by 8 feet along the length of the scaffold shall have bearers of nominal 2–inch O.D. steel tubing. Other structural metals, when used, must be designed to carry an equivalent load. No dissimilar metals shall be used together.

(c) A heavy duty tube and coupler scaffold shall have all posts, runners, and bracing of nominal 2–inch O.D. steel tubing, with the posts spaced not more than 6 feet by 6 feet–6 inches. Other structural metals, when used, must be designed to carry an equivalent load. No dissimilar metals shall be used together.

(d) Tube and coupler scaffolds shall be limited in heights and working levels to those permitted in Tables J–8, J–9 and J–10. Drawings and specifications of all tube and coupler scaffolds above the limitations in Tables J–8, J–9 and J–10 shall be designed by a qualified engineer competent in this field.

(e) All tube and coupler scaffolds shall be constructed and erected to support four times the maximum intended loads, as set forth in Tables J–8, J–9 and J–10, or as set forth in the specifications by a licensed professional engineer competent in this field.

(f) Posts shall be accurately spaced, erected on suitable bases, and maintained plumb.

(g) Runners shall be erected along the length of the scaffold, located on both the inside and the outside posts at even height. Runners shall be interlocked to the inside and the outside posts at even heights. Runners shall be interlocked to form continuous lengths and coupled to each post. The bottom runners shall be located as close to the base as possible. Runners shall be placed not more than 6 feet–6 inches on centers.

(h) Bearers shall be installed transversely between posts and shall be securely coupled to the posts bearing on the runner coupler. When coupled directly to the runners, the coupler must be kept as close to the posts as possible.

(i) Bearers shall be at least 4 inches but not more than 12 inches longer than the post spacing or runner spacing.

(j) Cross bracing shall be installed across the width of the scaffold at least every third set of posts horizontally and every fourth runner vertically. Such bracing shall extend diagonally from the inner and outer runners upward to the next outer and inner runners.

(k) Longitudinal diagonal bracing on the inner and outer rows of poles shall be installed at approximately a 45° angle from near the base of the first outer post upward to the extreme top of the scaffold. Where the longitudinal length of the scaffold permits, such bracing shall be duplicated beginning at every fifth post. In a similar manner, longitudinal diagonal bracing shall also be installed from the last post extending back and upward toward the first post. Where conditions preclude the attachment of this bracing to the posts, it may be attached to the runners.

(l) The entire scaffold shall be tied to and securely braced against the building at intervals not to exceed 30 feet horizontally and 26 feet vertically.

(4) Tubular welded frame scaffolds.

(a) Metal tubular frame scaffolds, including accessories such as braces, brackets, trusses, screw legs, ladders, etc., shall be designed, constructed, and erected to safely support four times the maximum rated load.

(b) Spacing of panels or frames shall be consistent with the loads imposed.

(c) Scaffolds shall be properly braced by cross bracing or diagonal braces, or both, for securing vertical members together laterally, and the cross braces shall be of such length as will automatically square and aline vertical members so that the erected scaffold is always plumb, square, and rigid. All brace connections shall be made secure.

(d) Scaffold legs shall be set on adjustable bases or plain bases placed on mud sills or other foundations adequate to support the maximum rated load.

(e) The frames shall be placed one on top of the other with coupling or stacking pins to provide proper vertical alinement of the legs.

(f) Where uplift may occur, panels shall be locked together vertically by pins or other equivalent suitable means.

(g) To prevent movement, the scaffold shall be secured to the building or structure at intervals not to exceed 30 feet horizontally and 26 feet vertically.

(h) Maximum permissible spans or planking shall be in conformity with (1)(j) of this section.

(i) Drawings and specifications for all frame scaffolds over 125 feet in height above the base plates shall be designed by a registered professional engineer.

(5) Manually propelled mobile scaffolds.

(a) When freestanding mobile scaffold towers are used, the height shall not exceed four times the minimum base dimension.

(b) Casters shall be properly designed for strength and dimensions to support four times the maximum intended load. All casters shall be provided with a positive locking device to hold the scaffold in position.

(c) Scaffolds shall be properly braced by cross bracing and horizontal bracing conforming with subsection (4)(c) of this section.

(d) Platforms shall be tightly planked for the full width of the scaffold except for necessary entrance opening. Platforms shall be secured in place.

(e) A ladder or stairway shall be provided for proper access and exit and shall be affixed or built into the scaffold and so located that when in use it will not have a tendency to tip the scaffold. A landing platform must be provided at intervals not to exceed 35 feet.

(f) The force necessary to move the mobile scaffold shall be applied near or as close to the base as practicable and provision shall be made to stabilize the tower during movement from one location to another. Scaffolds shall only be moved on level floors, free of obstructions and openings.

(g) The employer shall not allow employees to ride on manually propelled scaffolds unless the following conditions exist:

(i) The floor or surface is within 3° of level, and free from pits, holes, or obstructions;

(ii) The minimum dimension of the scaffold base when ready for rolling, is at least one-half of the height. Outriggers, if used, shall be installed on both sides of staging;

(iii) The wheels are equipped with rubber or similar resilient tires;

(iv) All tools and materials are secured or removed from the platform before the mobile scaffold is moved.

(h) Scaffolds in use by any persons shall rest upon a suitable footing and shall stand plumb. The casters or wheels shall be locked to prevent any movement.

(i) Mobile scaffolds constructed of metal members shall also conform to applicable provisions of subsections (2), (3), and (4) of this section, depending on the material of which they are constructed.

(6) Elevating and rotating work platforms. Applicable requirements of American National Standards Institute A92.2-1969, Vehicle Mounted Elevating and Rotating Work Platforms, shall be complied with for such equipment, as required by the provisions of WAC 296-155-580.

(7) Outrigger scaffolds.

(a) Outrigger beams shall extend not more than 6 feet beyond the face of the building. The inboard end of outrigger beams, measured from the fulcrum point to anchorage point, shall be not less than 1 1/2 times the outboard end in length. The beams shall rest on edge, the sides shall be plumb, and the edges shall be horizontal. The fulcrum point of the beam shall rest on a secure bearing at least 6 inches in each horizontal dimension. The beam shall be secured in place against movement and shall be securely braced at the fulcrum point against tipping.

(b) The inboard ends of outrigger beams shall be securely anchored either by means of struts bearing against sills in contact with the overhead beams or ceiling, or by means of tension members secured to the floor joists underfoot, or by both if necessary, or by a securely fastened solid body counterweight. (Water in an open container or loose material in bags shall not be permitted.) The inboard ends of outrigger beams shall be secured against tipping and the entire supporting structure shall be securely braced in both directions to prevent any horizontal movement.

(c) Unless outrigger scaffolds are designed by a registered professional engineer competent in this field, they shall by constructed and erected in accordance with Table J-11. Outrigger scaffolds, designed by a registered professional engineer, shall be constructed and erected in accordance with such design.

(d) Planking shall be laid tight and shall extend to within 3 inches of the building wall. Planking shall be secured to the beams.

(8) Masons' adjustable multiple-point suspension scaffolds.

(a) The scaffold shall be capable of sustaining a working load of 50 pounds per square foot and shall not be loaded in excess of that figure.

(b) The scaffold shall be provided with hoisting machines that meet the requirements of Underwriters' Laboratories, Factory Mutual Engineering Corporation, or other agency or laboratory approved by the department of labor and industries.

(c) The platform shall be supported by wire ropes, capable of supporting at least 6 times the intended load, suspended from overhead outrigger beams.

(d) The scaffold outrigger beams shall consist of structural metal securely fastened or anchored to the frame or floor system of the building or structure.

(e) Each outrigger beam shall be equivalent in strength to at least a standard 7-inch, 15.3-pound steel I-beam, at least 15 feet long, and shall not project more than 6 feet 6 inches beyond the bearing point.

(f) Where the overhang exceeds 6 feet 6 inches, outrigger beams shall be composed of stronger beams or multiple beams and be installed under the supervision of a competent person.

(g) All outrigger beams shall be set and maintained with their webs in a vertical position.

(h) A stop bolt shall be placed at each end of every outrigger beam.

(i) The outrigger beam shall rest on suitable wood bearing blocks.

(j) The free end of the suspension wire ropes shall be equipped with proper size thimbles and secured by splicing or other equivalent means. The running ends shall be securely attached to the hoisting drum and at least four turns of wire rope shall at all times remain on the drum. The use of fiber rope is prohibited.

(k) Where a single outrigger beam is used, the steel shackles or clevises with which the wire ropes are attached to the outrigger beams shall be placed directly over the hoisting drums.

(l) The scaffold platform shall be equivalent in strength to at least 2–inch planking. (For maximum planking spans, see subsection (1)(j) of this section.)

(m) When employees are at work on the scaffold and an overhead hazard exists, overhead protection shall be provided on the scaffold, not more than 9 feet above the platform, consisting of 2–inch planking, or material of equivalent strength, laid tight, and extending not less than the width of the scaffold.

(n) Each scaffold shall be installed or relocated under the supervision of a competent person.

(9) (Swinging scaffolds) two–point suspension.

(a) Two–point suspension scaffold platforms shall be not less than 20 inches nor more than 36 inches wide overall. The platform shall be securely fastened to the hangers by U–bolts or by other equivalent means.

(b) The hangers of two–point suspension scaffolds shall be made of mild steel, or other equivalent materials, having a cross–sectional area capable of sustaining 4 times the maximum rated load, and shall be designed with a support for guardrail, intermediate rail, and toeboard.

(c) When hoisting machines are used on two–point suspension scaffolds, such machines shall be of a design tested and approved by Underwriters' Laboratories, Factory Mutual Engineering Corporation, or by an agency or laboratory approved by the department of labor and industries.

(d) The roof irons or hooks shall be of mild steel, or other equivalent material, of proper size and design, securely installed and anchored. Tiebacks of 3/4–inch manila rope, or the equivalent, shall serve as a secondary means of anchorage, installed at right angles to the face of the building, whenever possible, and secured to a structurally sound portion of the building.

(e) Two–point suspension scaffolds shall be suspended by wire, synthetic or fiber ropes capable of supporting at least 6 times the rated load. All other components shall be capable of supporting at least four times the rated load.

(f) The sheaves of all blocks, consisting of at least one double and one single block, shall fit the size and type of rope used.

(g) All wire ropes, fiber and synthetic ropes, slings, hangers, platforms, and other supporting parts shall be inspected before every installation. Periodic inspections shall be made while the scaffold is in use.

(h) On suspension scaffolds designed for a working load of 500 pounds, no more than two persons shall be permitted to work at one time. On suspension scaffolds with a working load of 750 pounds, no more than three persons shall be permitted to work at one time. On suspension scaffolds with a working load of 1,000 pounds, no more than four persons shall be permitted to work at one time. Each employee shall be protected by an approved safety life belt attached to a dropline. The droplines shall be securely attached to substantial members of the structure (not scaffold), or to securely rigged lines, which will safely suspend the employee in case of a fall. In order to keep the dropline continuously attached, with a minimum of slack, to a fixed structure, the attachment point of the dropline shall be appropriately changed as the work progresses.

(i) When a multi–tiered two–point suspension scaffold is provided with safety droplines that attach to each end of the scaffold through an approved quick acting safety device, in case either or both of the main suspension lines should break, the lanyard of the safety belt shall be tied off to a substantial member of the scaffold itself or to a horizontal lifeline substantially attached to each end of the scaffold or a sliding device on the horizontal lifeline. The two additional safety droplines shall be individually suspended from roof irons, hooks, or other approved devices and shall be in the near proximity to the suspension droplines to prevent unnecessary side impact. The safety dropline shall also have a 6 to 1 safety factor.

(j) Two–point suspension scaffolds shall be securely lashed to the building or structure to prevent the scaffolds from swaying. Window cleaners' anchors shall not be used for this purpose.

(k) The platform of every two–point suspension scaffold shall be one of the following types:

(i) Ladder–type platforms. The side stringer shall be of clear straight–grained spruce or materials of equivalent strength and durability. The rungs shall be of straight–grained oak, ash, or hickory, at least 1 1/8 inch in diameter, with 7/8–inch tenons mortised into the side stringers at least 7/8–inch. The stringers shall be tied together with the rods not less than one–quarter inch in diameter, passing through the stringers and riveted up tight against washers on both ends. The flooring strips shall be spaced not more than five–eighths inch apart except at the side rails where the space may be 1 inch. Ladder–type platforms shall be constructed in accordance with Table J–12.

(ii) Plank–type platforms. Plank–type platforms shall be composed of not less than nominal 2– x 10–inch unspliced planks, properly cleated together on the underside, starting 6 inches from each end; intervals in between shall not exceed 4 feet. The plank–type platform shall not extend beyond the hangers more than 12 inches. A bar or other effective means shall be securely fastened to the platform at each end to prevent its slipping off the hanger. The span between hangers for plank–type platforms shall not exceed 8 feet.

(iii) Beam–type platforms. Beam platforms shall have side stringers of lumber not less than 2 x 6 inches set on edge. The span between hangers shall not exceed 12 feet when beam platforms are used. The flooring shall be supported on 2– x 6–inch cross beams, laid flat and set into the upper edge of the stringers with a snug fit, at intervals of not more than 4 feet, securely nailed in place. The flooring shall be of 1– x 6–inch material properly nailed. Floor boards shall not be spaced more than one–half inch apart.

(iv) Light metal–type platforms, when used, shall be tested and listed according to Underwriters' Laboratories, Factory Mutual Engineering Corporation, or the department of labor and industries.

(10) Stone setters' adjustable multiple–point suspension scaffolds.

(a) The scaffold shall be capable of sustaining a working load of 25 pounds per square foot and shall not be overloaded. Scaffolds shall not be used for storage of stone or other heavy materials.

(b) When used, the hoisting machine and its supports shall be of a type tested and listed by Underwriters' Laboratories, Factory Mutual Engineering Corporation or the department of labor and industries.

(c) The platform shall be securely fastened to the hangers by U–bolts or other equivalent means. (For materials and spans, see item (ii) of subsection (9)(j), Plank–type Platforms and Table J–12 of this section.)

(d) The scaffold unit shall be suspended from metal outriggers, iron brackets, wire rope slings, or iron hooks.

(e) Outriggers, when used, shall be set with their webs in a vertical position, securely anchored to the building or structure and provided with stop bolts at each end.

(f) The scaffold shall be supported by wire rope capable of supporting at least 6 times the rated load. All other components shall be capable of supporting at least 4 times the rated load.

(g) The free ends of the suspension wire ropes shall be equipped with proper size thimbles, secured by splicing or other equivalent means. The running ends shall be securely attached to the hoisting drum and at least four turns of wire rope shall remain on the drum at all times.

(h) When two or more scaffolds are used on a building or structure, they shall not be bridged one to the other; but shall be maintained at even height with platforms abutting closely.

(11) Single–point adjustable suspension scaffolds.

(a) The scaffolding, including power units or manually operated winches, shall be of a type tested and listed by Underwriters' Laboratories, Factory Mutual Engineering Corporation or the department of labor and industries.

(b) The power units may be either electrically or air motor driven.

(c) All power–operated gears and brakes shall be enclosed.

(d) In addition to the normal operating brake, all power–driven units shall have an emergency brake which engages automatically when the normal speed of descent is exceeded.

(e) The hoisting machines, cables, and equipment shall be regularly serviced and inspected.

(f) The units may be combined to form a two–point suspension scaffold. Such scaffold shall then comply with subsection (9) of this section.

(g) The supporting cable shall be vertical for its entire length, and the basket shall not be swayed nor the cable fixed to any intermediate points to change the original path of travel.

(h) Suspension methods shall conform to applicable provisions of subsections (8) and (9) of this section.

(i) For additional details not covered in this subsection applicable technical portions of American National Standards Institute, A120.1–1970, Power–Operated Devices for Exterior Building Maintenance Powered Platforms, shall be used.

(12) Boatswain's chairs.

(a) The chair seat shall not be less than 12 x 24 inches, and 1–inch thickness. The seat shall be reinforced on the underside by cleats securely fastened to prevent the board from splitting.

(b) The two fiber rope seat slings shall be of 5/8–inch diameter, reeved through the four seat holes so as to cross each other on the underside of the seat.

(c) Seat slings shall be of at least 3/8–inch wire rope when an employee is conducting a heat–producing process, such as gas welding.

(d) The employee shall be protected by a safety belt and lifeline in accordance with WAC 296–155–225. The attachment point of the lifeline to the structure shall be appropriately changed as the work progresses.

(e) The tackle shall consist of correct size ball bearing or bushed blocks and properly spliced 5/8–inch diameter first grade manila rope, or equivalent.

(f) The roof irons, hooks, or the object to which the tackle is anchored, shall be securely installed. Tiebacks, when used, shall be installed at right angles to the face of the building and securely fastened.

(13) Carpenters' bracket scaffolds.

(a) The brackets shall consist of a triangular wood frame not less than 2 x 3 inches in cross section, or of metal of equivalent strength. Each member shall be properly fitted and securely joined.

(b) Each bracket shall be attached to the structure by means of one of the following:

(i) A bolt, no less than 5/8–inch in diameter, which shall extend through to the inside of the building wall;

(ii) A metal stud attachment device;

(iii) Welding to steel tanks;

(iv) Hooking over a well–secured and adequately strong supporting member.

(c) The brackets shall be spaced no more than 8 feet apart.

(d) No more than two employees shall occupy any given 8 feet of a bracket scaffold at any one time. Tools and materials shall not exceed 75 pounds in addition to the occupancy.

(e) The platform shall consist of not less than two 2– x 10–inch planks extending not more than 12 inches or less than 6 inches beyond each end support.

(14) Bricklayers' square scaffolds.

(a) The squares shall not exceed 5 feet in width and 5 feet in height.

(b) Members shall be not less than those specified in Table J-13.

(c) The squares shall be reinforced on both sides of each corner with 1- x 6-inch gusset pieces. They shall also have diagonal braces 1 x 8 inches on both sides running from center to center of each member, or other means to secure equivalent strength and rigidity.

(d) The squares shall be set not more than 5 feet apart for medium duty scaffolds, and not more than 8 feet apart for light duty scaffolds. Bracing, 1 x 8 inches, extending from the bottom of each square to the top of the next square, shall be provided on both front and rear sides of the scaffold.

(e) Platform planks shall be at least 2 x 10-inch. The ends of the planks shall overlap the bearers of the squares and each plank shall be supported by not less than three squares.

(f) Bricklayers' square scaffolds shall not exceed three tiers in height and shall be so constructed and arranged that one square shall rest directly above the other. The upper tiers shall stand on a continuous row of planks laid across the next lower tier and be nailed down or otherwise secured to prevent displacement.

(g) Scaffolds shall be level and set upon a firm foundation.

(15) Horse scaffolds.

(a) Horse scaffolds shall not be constructed or arranged more than two tiers or 10 feet in height.

(b) The members of the horses shall be not less than those specified in Table J-14.

(c) Horses shall be spaced not more than 5 feet for medium duty and not more than 8 feet for light duty.

(d) When arranged in tiers, each horse shall be placed directly over the horse in the tier below.

(e) On all scaffolds arranged in tiers, the legs shall be nailed down or otherwise secured to the planks to prevent displacement or thrust and each tier shall be substantially cross braced.

(f) Horses or parts which have become weak or defective shall not be used.

(16) Needle beam scaffold.

(a) Wood needle beams shall be not less than 4 x 6 inches in size, with the greater dimension placed in a vertical direction. Metal beams or the equivalent, conforming to subsections (1)(h) and (j) of this section, may be used and shall not be altered or moved horizontally while they are in use.

(b) Ropes or hangers shall be provided for supports. The span between supports on the needle beam shall not exceed 10 feet for 4- x 6-inch timbers. Rope supports shall be equivalent in strength to 1-inch diameter first-grade manila rope.

(c) The ropes shall be attached to the needle beams by a scaffold hitch or a properly made eye splice. The loose end of the rope shall be tied by a bowline knot or by a round turn and a half hitch.

(d) The scaffold hitch shall be arranged so as to prevent the needle beam from rolling or becoming otherwise displaced.

(e) The platform span between the needle beams shall not exceed 8 feet when using 2-inch scaffold plank. For spans greater than 8 feet, platforms shall be designed based on design requirements for the special span. The overhang of each end of the platform planks shall be not less than 6 inches and not more than 12 inches.

(f) When needle beam scaffolds are used, the planks shall be secured against slipping.

(g) All unattached tools, bolts, and nuts used on needle beam scaffolds shall be kept in suitable containers, properly secured.

(h) One end of a needle beam scaffold may be supported by a permanent structural member conforming to subsections (1)(h) and (j) of this section.

(i) Each employee working on a needle beam scaffold shall be protected by a safety belt and lifeline in accordance with WAC 296-155-225.

(17) Plasterers', decorators', and large area scaffolds.

(a) Plasters', lathers', and ceiling workers' inside scaffolds shall be constructed in accordance with the general requirements set forth for independent wood pole scaffolds. (See subsection (2) of this section and Tables J-5, J-6 and J-7.)

(b) All platform planks shall be laid with the edges close together.

(c) When independent pole scaffold platforms are erected in sections, such sections shall be provided with connecting runways equipped with substantial guardrails.

(18) Interior hung scaffolds.

(a) An interior hung scaffold shall be hung or suspended from the roof structure or ceiling beams.

(b) The suspending wire or fiber rope shall be capable of supporting at least 6 times the rated load. The rope shall be wrapped at least twice around the supporting members and twice around the bearers of the scaffold, with each end of the wire rope secured by at least three standard wire-rope clips properly installed.

(c) For hanging wood scaffolds, the following minimum nominal size material shall be used:

(i) Supporting bearers 2 x 10 inches on edge;

(ii) Planking 2 x 10 inches, with maximum span 7 feet for heavy duty and 10 feet for light duty or medium duty.

(d) Steel tube and coupler members may be used for hanging scaffolds with both types of scaffold designed to sustain a uniform distributed working load up to heavy duty scaffold loads with a safety factor of four.

(19) Ladder jack scaffolds.

(a) All ladder jack scaffolds shall be limited to light duty and shall not exceed a height of 20 feet above the floor or ground.

(b) All ladders used in connection with ladder jack scaffolds shall be heavy-duty ladders and shall be designed and constructed in accordance with American National Standards Institute A14.1-1968, Safety Code for Portable Wood Ladders, and A14.2-1968, Safety Code for Portable Metal Ladders. Cleated ladders shall not be used for this purpose.

(c) The ladder jack shall be so designed and constructed that it will bear on the side rails in addition to

the ladder rungs, or if bearing on rungs only, the bearing area shall be at least 10 inches on each rung.

(d) Ladders used in conjunction with ladder jacks shall be so placed, fastened, held, or equipped with devices so as to prevent slipping.

(e) The wood platform planks shall be not less than 2 inches in thickness. Both metal and wood platform planks shall overlap the bearing surface not less than 12 inches. The span between supports for wood shall not exceed 8 feet. Platform width shall be not less than 18 inches.

(f) Not more than two employees shall occupy any given 8 feet of any ladder jack scaffold at any one time.

(20) Window jack scaffolds.

(a) Window jack scaffolds shall be used only for the purpose of working at the window opening through which the jack is placed.

(b) Window jacks shall not be used to support planks placed between one window jack and another or for other elements of scaffolding.

(c) Window jack scaffolds shall be provided with guardrails unless safety belts with lifelines are attached and used by the employee.

(d) Not more than one employee shall occupy a window jack scaffold at any one time.

(21) Roofing brackets.

(a) Roofing brackets shall be constructed to fit the pitch of the roof.

(b) Brackets shall be secured in place by nailing in addition to the pointed metal projections. When it is impractical to nail brackets, rope supports shall be used. When rope supports are used, they shall consist of first-grade manila of at least 3/4-inch diameter, or equivalent.

(c) A catch platform shall be installed below the working area of roofs more than 16 feet from the ground to eaves with a slope greater than 4 inches in 12 inches without a parapet. In width, the platform shall extend 2 feet beyond the protection of the eaves and shall be provided with a guardrail, midrail, and toeboard. This provision shall not apply where employees engaged in work upon such roofs are protected by a safety belt attached to a lifeline.

(22) Crawling boards or chicken ladders.

(a) Crawling boards shall be not less than 10 inches wide and 1 inch thick, having cleats 1 x 1 1/2 inches. The cleats shall be equal in length to the width of the board and spaced at equal intervals not to exceed 24 inches. Nails shall be driven through and clinched on the underside. The crawling board shall extend from the ridge pole to the eaves when used in connection with roof construction, repair, or maintenance.

(b) A firmly fastened lifeline of at least 3/4-inch diameter rope, or equivalent, shall be strung beside each crawling board for a handhold.

(c) Crawling boards shall be secured to the roof by means of adequate ridge hooks or other effective means.

(23) Float or ship scaffolds.

(a) Float or ship scaffolds shall not be used to support more than three persons and a few light tools, such as those needed for riveting, bolting, and welding. They shall be constructed as designed in subdivisions (b) through (f) of this subsection, unless substitute designs and materials provide equivalent strength, stability, and safety.

(b) The platform shall be not less than 3 feet wide and 6 feet long, made of 3/4-inch plywood, equivalent to American Plywood Association Grade B-B, Group I, Exterior, or other similar material.

(c) Under the platform, there shall be two supporting bearers made from 2- x 4-inch, or 1- x 10-inch rough, "selected lumber," or better. They shall be free of knots or other flaws and project 6 inches beyond the platform on both sides. The ends of the platform shall extend 6 inches beyond the outer edges of the bearers. Each bearer shall be securely fastened to the platform.

(d) An edging of wood not less than 3/4 x 1 1/2 inches or equivalent shall be placed around all sides of the platform to prevent tools from rolling off.

(e) Supporting ropes shall be 1-inch diameter manila rope or equivalent, free from deterioration, chemical damage, flaws, or other imperfections. Rope connections shall be such that the platform cannot shift or slip. If two ropes are used with each float, they shall be arranged so as to provide four ends which are to be securely fastened to an overhead support. Each of the two supporting ropes shall be hitched around one end of bearer and pass under the platforms to the other end of the bearer where it is hitched again, leaving sufficient rope at each end for the supporting ties.

(f) Each employee shall be protected by an approved safety lifebelt and lifeline, in accordance with WAC 296-155-225.

(24) Form scaffolds.

(a) Form scaffolds shall be constructed of wood or other suitable materials, such as steel or aluminum members of known strength characteristics. All scaffolds shall be designed and erected with a minimum safety factor of 4, computed on the basis of the maximum rated load.

(b) All scaffold planking shall be a minimum of 2- x 10-inch nominal Scaffold Grade, as recognized by approved grading rules for the species of lumber used, or equivalent material. Maximum permissible spans shall not exceed 8 feet on centers for 2- x 10-inch nominal planking. Scaffold planks shall be either nailed or bolted to the ledgers or of such length that they overlap the ledgers at least 6 inches. Unsupported projecting ends of scaffolding planks shall be limited to a maximum overhang of 12 inches.

(c) Scaffolds shall not be loaded in excess of the working load for which they were designed.

(d) Figure-four form scaffolds:

(i) Figure-four scaffolds are intended for light duty and shall not be used to support loads exceeding 25 pounds per square foot unless specifically designed for heavier loading. For minimum design criteria, see Table J-15.

(ii) Figure-four form scaffold frames shall be spaced not more than 8 feet on centers and constructed from sound lumber, as follows: The outrigger ledger shall consist of two pieces of 1- x 6-inch or heavier material

nailed on opposite sides of the vertical form support. Ledgers shall project not more than 3 feet 6 inches from the outside of the form support and shall be substantially braced and secured to prevent tipping or turning. The knee or angle brace shall intersect the ledger at least 3 feet from the form at an angle of approximately 45°, and the lower end shall be nailed to a vertical support. The platform shall consist of two or more 2– x 10–inch planks, which shall be of such length that they extend at least 6 inches beyond ledgers at each end unless secured to the ledgers. When planks are secured to the ledgers (nailed or bolted), a wood filler strip shall be used between the ledgers. Unsupported projecting ends of planks shall be limited to an overhang of 12 inches.

(e) Metal bracket form scaffolds:

(i) Metal brackets or scaffold jacks which are an integral part of the form shall be securely bolted or welded to the form. Folding type brackets shall be either bolted or secured with a locking–type pin when extended for use.

(ii) "Clip–on" or "hook–over" brackets may be used, provided the form walers are bolted to the form or secured by snap ties or shea–bolt extending through the form and securely anchored.

(iii) Metal brackets shall be spaced not more than 8 feet on centers.

(iv) Scaffold planks shall be either bolted to the metal brackets or of such length that they overlap the brackets at each end by at least 6 inches. Unsupported projecting ends of scaffold planks shall be limited to a maximum overhang of 12 inches.

(v) Metal bracket form scaffolds shall be equipped with wood guardrails, intermediate rails, toeboards, and scaffold planks meeting the minimum dimensions shown in Table J–16. (Metal may be substituted for wood, providing it affords equivalent or greater design strength.)

(f) Wooden bracket form scaffolds:

(i) Wooden bracket form scaffolds shall be an integral part of the form panel. The minimum design criteria set forth herein and in Table J–17 cover scaffolding intended for light duty and shall not be used to support loads exceeding 25 pounds per square foot, unless specifically designed for heavier loading.

(ii) Scaffold planks shall be either nailed or bolted to the ledgers or of such length that they overlap the ledgers at each end by at least 6 inches. Unsupported projecting ends of scaffold planks shall be limited to a maximum overhang of 12 inches.

(25) Pump jack scaffolds.

(a) Pump jack scaffolds shall:

(i) Not carry a working load exceeding 500 pounds; and

(ii) Be capable of supporting without failure at least four times the maximum intended load.

(iii) The manufactured components shall not be loaded in excess of the manufacturer's recommended limits.

(b) Pump jack brackets, braces, and accessories shall be fabricated from metal plates and angles. Each pump jack bracket shall have two positive gripping mechanisms to prevent any failure or slippage.

(c) The platform bracket shall be fully docked and the planking secured. Planking, or equivalent, shall conform with subsection (1) of this section.

(d) (i) When wood scaffold planks are used as platforms, poles used for pump jacks shall not be spaced more than 10 feet center to center. When fabricated platforms are used that fully comply with all other provisions of this subsection, pole spacing may exceed 10 feet center to center.

(ii) Poles shall not exceed 30 feet in height.

(iii) Poles shall be secured to the work wall by rigid triangular bracing, or equivalent, at the bottom, top, and other points as necessary, to provide a maximum vertical spacing of not more than 10 feet between braces. Each brace shall be capable of supporting a minimum of 225 pounds tension or compression.

(iv) For the pump jack bracket to pass bracing already installed, an extra brace shall be used approximately 4 feet above the one to be passed until the original brace is reinstalled.

(e) All poles shall bear on mud sills or other adequate firm foundations.

(f) Pole lumber shall be two 2 x 4's, of Douglas fir or equivalent, straight–grained, clear, free of cross–grain, shakes, large loose or dead knots, and other defects which might impair strength.

(g) When poles are constructed of two continuous lengths, they shall be two by fours, spiked together with the seam parallel to the bracket, and with 10d common nails, no more than 12 inches center to center, staggered uniformly from opposite outside edges.

(h) If two by fours are spliced to make up the pole, the splices shall be so constructed as to develop the full strength of the member.

(i) A ladder, in accordance with WAC 296–155–480, shall be provided for access to the platform during use.

(j) Not more than two persons shall be permitted at one time upon a pump jack scaffold between any two supports.

(k) Pump jack scaffolds shall be provided with standard guardrails, unless safety belts with lifelines are used by employees.

(l) When a work bench is used at an approximate height of 42 inches, the top guardrail may be eliminated, if the work bench is fully decked, the planking secured, and is capable of withstanding 200 pounds pressure in any direction.

(m) Employees shall not be permitted to use a work bench as a scaffold platform.

(26) Factory–built scaffold units. Factory–built or prefabricated scaffold units intended for assembly on the job, prefabricated plank, staging, etc., mechanical hoisting units, or other devices for use on or in connection with any type scaffolds, shall be approved by an agency or laboratory approved by the department before being used.

(27) Waler bracket scaffolds.

(a) Waler brackets shall be constructed of 1 5/8" x 1 1/2" x 3/16" angle iron minimum size, or material of equivalent strength.

(b) All steel connections shall be welded and riveted or bolted, except where detrimental to strength of materials.

(c) The maximum length of horizontal leg shall not be more than 36" between bracket hook and railing standard.

(d) A 4" x 4" x 3/16" gusset plate shall be securely welded at inside of leg angle.

(e) Nailing holes shall be provided in lower end of vertical leg for purpose of securing bracket against lifting or shifting.

(f) Waler hook or hooks shall be a minimum of 4–inch depth and be constructed of material of a strength to support a minimum of 400 pounds at extreme outer end of bracket.

(28) Ladder supported scaffolds.

(a) Box scaffolds.

(i) A step ladder scaffold, trestle scaffold, or an extension trestle scaffold shall be composed of two or more step ladders, or trestle ladders, or trestle, or extension trestle placed in line and supporting the platform in the interval or intervals, or in paralleled lines supporting stringers in the interval or intervals, upon which are supported kick plank platforms, not exceeding one platform to each bay. Such scaffolds are also known as "box scaffolds."

(ii) The number of persons working on each bay shall not exceed three at any one time.

(b) Step ladder scaffolds.

(i) Platforms more than 8 feet above the floor level shall not be supported on step ladders.

(ii) Platforms shall not be supported on the top step of a step ladder unless it is provided with stops at least one inch high at each side to prevent the plank from slipping off.

(c) Trestle ladder scaffolds.

(i) Platforms more than 16 feet above the floor level shall not be supported on trestle ladders.

(ii) The top of the trestle ladder shall be at least three steps above the level of the scaffold platform.

(iii) Where an extension trestle ladder is used to support a scaffold platform the maximum height of the platform shall be 20 feet above the floor level and the point of support on the extension section shall not be more than 6 feet above the apex of the base section.

(d) Extension trestle scaffolds.

(i) Platforms supported on extension trestles shall not be more than 16 feet above the floor level.

(ii) Ladders shall be provided for access to extension trestle scaffolds. Workers shall not climb up or down on the extension trestle.

(iii) It shall be the individual responsibility of the supervisor and of each worker to make sure that all clamps and fastenings on the extension trestle are secure before employees are allowed to work on the scaffold.

(29) Chimney, stack and tank bracket scaffolds.

(a) General. A chimney, stack or tank bracket scaffold shall be composed of a platform supported by brackets which are hooked over a steel cable which surrounds the circumference of the chimney, stack or tank approximately in a horizontal plane. The platform shall be not less than two planks wide and be designed with a safety factor of not less than 4.

(b) All brackets shall have a mild steel suspension hook 2 inches by 1/4–inch with at least 3 inches projecting beyond the throat of the hook. Hooks shall be integral with or securely attached to the bracket.

(c) Wood spacer blocks shall be provided to hold the suspending cable away from the structure at the points where brackets are hooked on. These spacer blocks shall be not less than 2 inches by 4 inches by 12 inches.

(d) All suspending cables shall be improved plow steel 6 x 19 wire rope or equivalent. In no case shall less than 1/2–inch diameter wire rope be used.

(e) The turnbuckle used to tighten suspending cables shall be not less than 1 inch drop forged steel. The cables shall be provided with thimbles and not less than 3 U–bolt type clips at each end and be attached to the turnbuckles by means of shackles. Open hooks shall not be used.

(f) All chimney, stack and tank bracket scaffolds shall be provided with standard guard rails, intermediate rails and toeboards.

(g) For access to a chimney, stack or tank bracket scaffold, ladders or a boatswain's chair shall be used.

(h) All chimney, stack or tank brackets for scaffolds shall be welded and riveted or bolted.

(30) Scaffold platforms supported by catenary or stretch cables.

(a) When a scaffold platform is supported by cables at least 4 cables shall be used, two near each end of the scaffold.

(b) The cables shall be attached to the scaffold by means of U–bolts or the equivalent through which the cables pass.

(c) Cables shall not be tightened beyond their safe working load. A hanger or set of falls shall be used approximately every 50 feet to pick up the sag in the cable. [Statutory Authority: RCW 49.17.040 and 49.17.050. 82–08–026 (Order 82–10), § 296–155–485, filed 3/30/82. Statutory Authority: RCW 49.17.040, 49.17-.150, and 49.17.240. 79–08–115 (Order 79–9), § 296–155–485, filed 7/31/79; Order 76–29, § 296–155–485, filed 9/30/76; Order 76–6 § 296–155–485, filed 3/1/76; Order 74–26, § 296–155–485, filed 5/7/74, effective 6/6/74.]

WAC 296–155–48501 Repealed. See Disposition Table at beginning of this chapter.

WAC 296–155–48502 Repealed. See Disposition Table at beginning of this chapter.

Part K

FLOOR AND WALL OPENINGS AND STAIRWAYS

WAC

296–155–500 Definitions applicable to this part.
296–155–505 Guardrails, handrails, and covers.
296–155–50501 Appendix—Roofs.

WAC 296-155-500 Definitions applicable to this part. (1) "Built-up-roofing" means a weatherproofing cover, applied over roof decks, consisting of either a liquid-applied system, a single-ply system, or a multiple-ply system. Liquid-applied systems generally consist of silicone rubber, plastics, or similar material applied by spray or roller equipment. Single-ply systems generally consist of a single layer of synthetic rubber, plastic, or similar material, and a layer of adhesive. Multiple-ply systems generally consist of layers of felt and bitumen, and may be covered with a layer of mineral aggregate.

(2) "Built-up-roofing work" means the hoisting, storage, application, and removal of built-up roofing materials and equipment, including related insulation, sheet metal, and vapor barrier work, but not including the construction of the roof deck.

(3) "Floor hole" means an opening measuring less than 12 inches but more than 1 inch in its least dimension in any floor, roof, or platform through which materials but not persons may fall, such as a belt hole, pipe opening, or slot opening.

(4) "Floor opening" means an opening measuring 12 inches or more in its least dimension in any floor, roof, or platform, through which persons may fall.

(5) "Handrail" means a single bar or pipe supported on brackets from a wall or partition, as on a stairway or ramp, to furnish persons with a handhold in case of tripping.

(6) "Low-pitched roof" means a roof having a slope less than or equal to four in twelve.

(7) "Mechanical equipment" means all motor or human propelled wheeled equipment except for wheelbarrows and mopcarts.

(8) "MSS systems" (motion-stopping-safety systems) means fall protection using the following equipment singly or in combination: Standard railings (guardrails) as described in WAC 296-155-505(6); scaffolds or platforms with guardrails as described in WAC 296-155-485; safety nets as described in WAC 296-155-230; and safety belt systems as described in WAC 296-155-225.

(9) "Nose, nosing" means that portion of a tread projecting beyond the face of the riser immediately below.

(10) "Platform" means a working space for persons, elevated above the surrounding floor or ground, such as a balcony or platform for the operation of machinery and equipment.

(11) "Rise" means the vertical distance from the top of a tread to the top of the next higher tread.

(12) "Roof" means the exterior surface on the top of a building. This does not include floors which, because a building has not been completely built, temporarily become the top surface of a building.

(13) "Runway" means a passageway for persons, elevated above the surrounding floor or ground level, such as a footwalk along shafting or a walkway between buildings.

(14) "Safety-monitoring system" means a safety system in which a competent person monitors the safety of all employees in a roofing crew, and warns them when it appears to the monitor that they are unaware of the hazard or are acting in an unsafe manner. The competent person must be on the same roof as and within visual sighting distance of the employees, and must be close enough to verbally communicate with the employees.

(15) "Stair platform" means an extended step or landing breaking a continuous run of stairs.

(16) "Stair railing" means a vertical barrier erected along exposed sides of a stairway to prevent falls of persons.

(17) "Stairs, stairways" means a series of steps leading from one level or floor to another, or leading to platforms, pits, boiler rooms, crossovers, or around machinery, tanks, and other equipment that are used more or less continuously or routinely by employees or only occasionally by specific individuals. For the purpose of this part, a series of steps and landings having three or more rises constitutes stairs or stairway.

(18) "Standard railing" means a vertical barrier erected along exposed edges of a floor opening, wall opening, ramp, platform, or runway to prevent falls of persons.

(19) "Standard strength and construction" means any construction of railings, covers, or other guards that meets the requirements of this part.

(20) "Toeboard" means a vertical barrier at floor level erected along exposed edges of a floor opening, wall opening, platform, runway, or ramp to prevent falls of materials.

(21) "Tread width" means the horizontal distance from front to back of tread, including nosing, when used.

(22) "Unprotected side or edge" means any side or edge of a roof perimeter where there is no wall three feet (.9 meters) or more in height.

(23) "Wall opening" means an opening at least 30 inches high and 18 inches wide, in any wall or partition, through which persons may fall, such as an opening for a window, a yard-arm doorway or chute opening.

(24) "Work area" means that portion of a roof where built-up roofing work is being performed. [Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81-13-053 (Order 81-9), § 296-155-500, filed 6/17/81; Order 74-26, § 296-155-500, filed 5/7/74, effective 6/6/74.]

WAC 296-155-505 Guardrails, handrails, and covers. (1) General provisions. This part shall apply to temporary or emergency conditions where there is danger of employees or materials falling through floor, roof, or wall openings, or from stairways or runways.

(2) Guarding of floor openings and floor holes.

(a) Floor openings shall be guarded by a standard railing and toe boards or cover, as specified in subsection (6) of this section. In general, the railing shall be provided on all exposed sides, except at entrances to stairways. All vehicle service pits shall have a cover or removable type standard guardrail. When not in use, pits shall be covered or guarded. Where vehicle service pits are to be used again immediately, and the service man is within a 50 foot distance of the unguarded pit and also within line of sight of the unguarded pit, the cover or

guardrail need not be replaced between uses. Where vehicle service pits are used frequently, the perimeters of the pits shall be delineated by high visibility, luminescent, skid resistant paint. Such painted delineation shall be kept clean and free of extraneous materials.

(b) Ladderway floor openings or platforms shall be guarded by standard railings with standard toe boards on all exposed sides, except at entrance to opening, with the passage through the railing either provided with a swinging gate or so offset that a person cannot walk directly into the opening.

(c) Hatchways and chute floor openings shall be guarded by one of the following:

(i) Hinged covers of standard strength and construction and a standard railing with only one exposed side. When the opening is not in use, the cover shall be closed or the exposed side shall be guarded at both top and intermediate positions by removable standard railings;

(ii) A removable standard railing with toe board on not more than two sides of the opening and fixed standard railings with toe boards on all other exposed sides. The removable railing shall be kept in place when the opening is not in use and shall be hinged or otherwise mounted so as to be conveniently replaceable.

(d) Wherever there is danger of falling through a skylight opening, it shall be guarded by a fixed standard railing on all exposed sides or a cover capable of sustaining the weight of a 200–pound person.

(e) Pits and trap–door floor openings shall be guarded by floor opening covers of standard strength and construction. While the cover is not in place, the pit or trap openings shall be protected on all exposed sides by removable standard railings.

(f) Manhole floor openings shall be guarded by standard covers which need not be hinged in place. While the cover is not in place, the manhole opening shall be protected by standard railings.

(g) Temporary floor openings shall have standard railings.

(h) Floor holes, into which persons can accidentally walk, shall be guarded by either a standard railing with standard toe board on all exposed sides, or a floor hole cover of standard strength and construction that is secured against accidental displacement. While the cover is not in place, the floor hole shall be protected by a standard railing.

(i) Where doors or gates open directly on a stairway, a platform shall be provided, and the swing of the door shall not reduce the effective width of the platform to less than 20 inches.

(3) Guarding of wall openings.

(a) Wall openings, from which there is a drop of more than 4 feet, and the bottom of the opening is less than 3 feet above the working surface, shall be guarded as follows:

(i) When the height and placement of the opening in relation to the working surface is such that either a standard rail or intermediate rail will effectively reduce the danger of falling, one or both shall be provided;

(ii) The bottom of a wall opening, which is less than 4 inches above the working surface, regardless of width, shall be protected by a standard toe board or an enclosing screen either of solid construction or as specified in (6)(g)(ii) of this section.

(b) An extension platform, outside a wall opening, onto which materials can be hoisted for handling shall have side rails or equivalent guards of standard specifications. One side of an extension platform may have removable railings in order to facilitate handling materials.

(c) When a chute is attached to an opening, the provisions of subdivision (a) of this subsection shall apply, except that a toe board is not required.

(4) Guarding of open–sided floors, platforms, and runways.

(a) Every open–sided floor or platform 6 feet or more above adjacent floor or ground level shall be guarded by a standard railing, or the equivalent, as specified in (6)(a) of this section, on all open sides, except where there is entrance to a ramp, stairway, or fixed ladder. The railing shall be provided with a standard toe board wherever, beneath the open sides, persons can pass, or there is moving machinery, or there is equipment with which falling materials could create a hazard.

(b) Runways shall be guarded by a standard railing, or the equivalent, as specified in subsection (6) of this section, on all open sides, 4 feet or more above floor or ground level. Wherever tools, machine parts, or materials are likely to be used on the runway, a toe board shall also be provided on each exposed side.

(c) Runways used exclusively for special purposes may have the railing on one side omitted where operating conditions necessitate such omission, providing the falling hazard is minimized by using a runway not less than 18 inches wide.

(d) Where employees entering upon runways become thereby exposed to machinery, electrical equipment, or other danger not a falling hazard, additional guarding shall be provided.

(e) Regardless of height, open–sided floors, walkways, platforms, or runways above or adjacent to dangerous equipment, pickling or galvanizing tanks, degreasing units, and similar hazards, shall be guarded with a standard railing and toe board.

(5) Stairway railings and guards.

(a) Every flight of stairs having four or more risers shall be equipped with standard stair railings or standard handrails as specified below, the width of the stair to be measured clear of all obstructions except handrails:

(i) On stairways less than 44 inches wide having both sides enclosed, at least one handrail, preferably on the right side descending;

(ii) On stairways less than 44 inches wide having one side open, at least one stair railing on the open side;

(iii) On stairways less than 44 inches wide having both sides open, one stair railing on each side;

(iv) On stairways more than 44 inches wide but less than 88 inches wide, one handrail on each enclosed side and one stair railing on each open side;

(v) On stairways 88 or more inches wide, one handrail on each enclosed side, one stair railing on each open

side, and one intermediate stair railing located approximately midway of the width.

(b) Winding stairs shall be equipped with a handrail offset to prevent walking on all portions of the treads having width less than 6 inches.

(6) Standard specifications.

(a) A standard railing shall consist of top rail, intermediate rail, toe board, and posts, and shall have a vertical height of 36 inches to 42 inches from upper surface of top rail to floor, platform, runway, or ramp level. Each length of lumber shall be smooth-surfaced throughout the length of the railing. The intermediate rail shall be halfway between the top rail and the floor, platform, runway, or ramp. The ends of the rails shall not overhang the terminal posts except where such overhang does not constitute a projection hazard. Minimum requirements for standard railings under various types of construction are specified in the following items:

(i) For wood railings, the posts shall be of at least 2-inch by 4-inch stock spaced not to exceed 8 feet; the top rail shall be of at least 2-inch by 4-inch stock; the intermediate rail shall be of at least 1-inch by 6-inch stock.

(ii) For pipe railings, posts and top and intermediate railings shall be at least 1 1/2 inches nominal OD diameter with posts spaced not more than 8 feet on centers.

(iii) For structural steel railings, posts and top and intermediate rails shall be of 2-inch by 2-inch by 3/8-inch angles or other metal shapes of equivalent bending strength, with posts spaced not more than 8 feet on centers.

(iv) For wire rope railings, the top and intermediate railings shall be at least 1/2-inch fibre core rope, or the equivalent, with posts spaced not more than 8 feet on centers. The rope shall be stretched taut, so as to present a minimum deflection.

(v) The anchoring of posts and framing of members for railings of all types shall be of such construction that the completed structure shall be capable of withstanding a load of at least 200 pounds applied in any direction at any point on the top rail, with a minimum of deflection.

(vi) Railings receiving heavy stresses from employees trucking or handling materials shall be provided additional strength by the use of heavier stock, closer spacing of posts, bracing, or by other means.

(vii) Other types, sizes, and arrangements of railing construction are acceptable, provided they meet the following conditions:

(A) A smooth-surfaced top rail at a height above floor, platform, runway, or ramp level of between 36 inches and 42 inches;

(B) A strength to withstand at least the minimum requirement of 200 pounds top rail pressure with a minimum of deflection;

(C) Protection between top rail and floor, platform, runway, ramp, or stair treads, equivalent at least to that afforded by a standard intermediate rail;

(D) Elimination of overhang of rail ends unless such overhang does not constitute a hazard.

(b) A stair railing shall be of construction similar to a standard railing, but the vertical height shall be not more than 34 inches nor less than 30 inches from upper surface to top rail to surface of tread in line with face of riser at forward edge of tread.

(c) (i) A standard toe board shall be 4 inches minimum in vertical height from its top edge to the level of the floor, platform, runway, or ramp. It shall be securely fastened in place and have not more than 1/4-inch clearance above floor level. It may be made of any substantial material, either solid, or with openings not over 1 inch in greatest dimension.

(ii) Where material is piled to such height that a standard toe board does not provide protection, paneling, or screening from floor to intermediate rail or to top rail shall be provided.

(d) (i) A standard handrail shall be of construction similar to a standard railing except that it is mounted on a wall or partition, and does not include an intermediate rail. It shall have a smooth surface along the top and both sides of the handrail. The handrail shall have an adequate handhold for any one grasping it to avoid falling. Ends of the handrail shall be constructed so as not to constitute a projection hazard.

(ii) The height of handrails shall be not more than 34 inches nor less than 30 inches from upper surface of handrail to surface of tread, in line with face of riser or to surface of ramp.

(iii) All handrails and railings shall be provided with a clearance of approximately 3 inches between the handrail or railing and any other object.

(e) Floor opening covers shall be of any material that meets the following strength requirements:

(i) Conduits, trenches, and manhole covers and their supports, when located in roadways, and vehicular aisles shall be designed to carry a truck rear-axle load of at least 2 times the maximum intended load;

(ii) The floor opening cover shall be capable of supporting the maximum intended load and so installed as to prevent accidental displacement.

(f) Skylight openings that create a falling hazard shall be guarded with a standard railing, or covered in accordance with (e)(ii) of this subsection.

(g) Wall opening protection shall meet the following requirements:

(i) Barriers shall be of such construction and mounting that, when in place at the opening, the barrier is capable of withstanding a load of at least 200 pounds applied in any direction (except upward), with a minimum of deflection at any point on the top rail or corresponding member.

(ii) Screens shall be of such construction and mounting that they are capable of withstanding a load of at least 200 pounds applied horizontally at any point on the near side of the screen. They may be of solid construction, of grill work with openings not more than 8 inches long, or of slat work with openings not more than 4 inches wide with length unrestricted.

(7) Guarding of low-pitched roof perimeters during the performance of built-up roofing work.

(a) General provisions. During the performance of built-up roofing work on low-pitched roofs with a ground to eave height greater than 16 feet (4.9 meters), employees engaged in such work shall be protected from falling from all unprotected sides and edges of the roof as follows:

(i) By the use of a motion-stopping-safety system (MSS system); or

(ii) By the use of a warning line system erected and maintained as provided in subdivision (7)(c) of this section and supplemented for employees working between the warning line and the roof edge by the use of either an MSS system or, where mechanical equipment is not being used or stored, by the use of a safety monitoring system; or

(iii) By the use of a safety monitoring system on roofs 50 feet (15.25 meters) or less in width (see WAC 296-155-50501 Appendix—Roofs), where mechanical equipment is not being used or stored.

(b) Exception. The provisions of (7)(a) of this section do not apply at points of access such as stairways, ladders, and ramps, or when employees are on the roof only to inspect, investigate, or estimate roof level conditions. Roof edge materials handling areas and materials storage areas shall be guarded as provided in subdivision (7)(e) of this section.

(c) Warning lines.

(i) Warning lines shall be erected around all sides of the work area.

(A) When mechanical equipment is not being used, the warning line shall be erected not less than six feet (1.8 meters) from the roof edge;

(B) When mechanical equipment is being used, the warning line shall be erected not less than six feet (1.8 meters) from the roof edge which is parallel to the direction of mechanical equipment operation, and not less than 10 feet (3.1 meters) from the roof edge which is perpendicular to the direction of mechanical equipment operation.

(ii) The warning line shall consist of a rope, wire, or chain, and supporting stanchions erected as follows:

(A) The rope, wire, or chain shall be flagged at not more than six foot (1.8 meters) intervals with high-visibility material;

(B) The rope, wire, or chain shall be rigged and supported in such a way that its lowest point (including sag) is no less than 34 inches (.86 meters) from the roof surface and its highest point is no more than 39 inches (1 meter) from the roof surface;

(C) After being erected, with the rope, wire, or chain attached, stanchions shall be capable of resisting, without tipping over, a force of at least 16 pounds (71 Newtons) applied horizontally against the stanchion, 30 inches (0.76 meters) above the roof surface, perpendicular to the warning line, and in the direction of the roof edge;

(D) The rope, wire, or chain shall have a minimum tensile strength of 500 pounds (227 Kilograms), and after being attached to the stanchions, shall be capable of supporting, without breaking, the loads applied to the stanchions as prescribed in subitem (7)(c)(ii)(C) of this section; and

(E) The line shall be attached at each stanchion in such a way that pulling on one section of the line between stanchions will not result in slack being taken up in adjacent sections before the stanchion tips over.

(iii) Access paths shall be erected as follows:

(A) Points of access, materials handling areas and storage areas shall be connected to the work area by a clear access path formed by two warning lines.

(B) When the path to a point of access is not in use, a rope, wire, or chain, equal in strength and height to the warning line, shall be placed across the path at the point where the path intersects the warning line erected around the work area.

(d) Mechanical equipment. Mechanical equipment may be used or stored only in areas where employees are being protected by either a warning line or an MSS system. Mechanical equipment may not be used or stored between the warning line and the roof edge unless the employees are being protected by an MSS system. Mechanical equipment may not be used or stored where the only protection provided is by a safety monitoring system.

(e) Roof edge materials handling areas and materials storage. Employees working in a roof edge materials handling or materials storage area located on a low-pitched roof with a ground to eave height greater than 16 feet (4.9 meters) shall be protected from falling by the use of an MSS system along all unprotected roof sides and edges of the area.

(i) When guardrails are used at hoisting areas, a minimum of four feet of guardrail shall be erected on each side of the access point through which materials are hoisted.

(ii) A chain or gate shall be placed across the opening between the guardrail sections when hoisting operations are not taking place.

(iii) When guardrails are used at bitumen pipe outlets, a minimum of four feet of guardrail shall be erected on each side of the pipe.

(iv) When safety belt systems are used, they shall not be attached to the hoist.

(v) When safety belt systems are used, they shall be rigged to allow the movement of employees only as far as the roof edge.

(vi) Materials may not be stored within six feet of the roof edge unless guardrails are erected at the roof edge.

(vii) Materials which are piled, grouped, or stacked shall be stable and self-supporting.

(f) Training.

(i) The employer shall provide a training program for all employees engaged in built-up roofing work so that they are able to recognize and deal with the hazards of falling associated with working near a roof perimeter. The employees shall also be trained in the safety procedures to be followed in order to prevent such falls.

(ii) The employer shall assure that employees engaged in built-up roofing work have been trained and instructed in the following areas:

(A) The nature of fall hazards in the work area near a roof edge;

(B) The function, use, and operation of the MSS system, warning line, and safety monitoring systems to be used;

(C) The correct procedures for erecting, maintaining, and disassembling the systems to be used;

(D) The role of each employee in the safety monitoring system when this system is used;

(E) The limitations on the use of mechanical equipment; and

(F) The correct procedures for the handling and storage of equipment and materials.

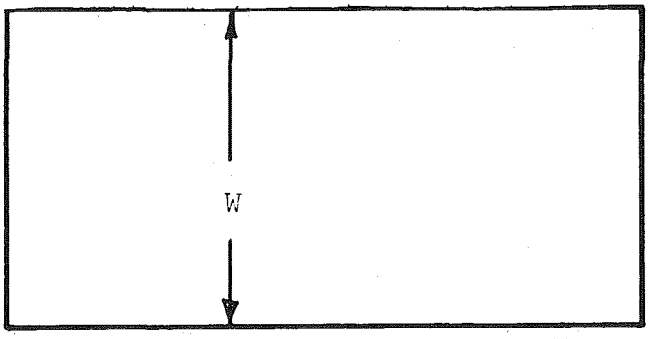
(iii) Training shall be provided for each newly hired employee, and for all other employees as necessary, to assure that employees maintain proficiency in the areas listed in item (7)(f)(ii) of this section. [Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81-13-053 (Order 81-9), § 296-155-505, filed 6/17/81; Order 76-29, § 296-155-505, filed 9/30/76; Order 74-26, § 296-155-505, filed 5/7/74, effective 6/6/74.]

WAC 296-155-50501 Appendix--Roofs. This appendix serves as a guideline to assist employers in complying with the appropriate requirements of WAC 296-155-505(7)(a). Each example shows a roof plan or plans and indicates where each roof or roof area is to be measured to determine its width. Section views or elevation views are shown where appropriate. Some examples show "correct" and "incorrect" subdivisions of irregularly shaped roofs into smaller regularly shaped areas. In all examples, the dimension selected to be the width of an area is the lesser of the two primary dimensions of the area. Example A shows that on a simple rectangular roof, width is the lesser of the two primary overall dimensions. This is also the case with roofs which are sloped toward or away from the roof center, as shown in Example B.

Many roofs are not simple rectangles. Such roofs may be broken down into subareas as shown in Example C. The process of dividing a roof area can produce many different configurations. Example C gives the general rule of using dividing lines of minimum length to minimize the size and number of the areas which are potentially less than 50 feet wide. The intent is to minimize the number of roof areas where WAC 296-155-505(7)(a)(iii) can be applied.

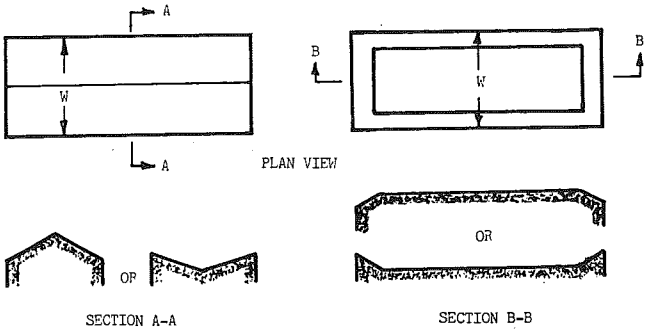
Roofs which are comprised of several separate, noncontinuous roof areas, as in Example D, may be considered as a series of individual roofs. Some roofs have penthouses, additional floors, courtyard openings, or similar architectural features; Example E shows how the rule for dividing roofs into subareas is applied to such configurations. Irregular, nonrectangular roofs must be considered on an individual basis, as shown in Example F.

Example A.
RECTANGULAR SHAPED ROOFS



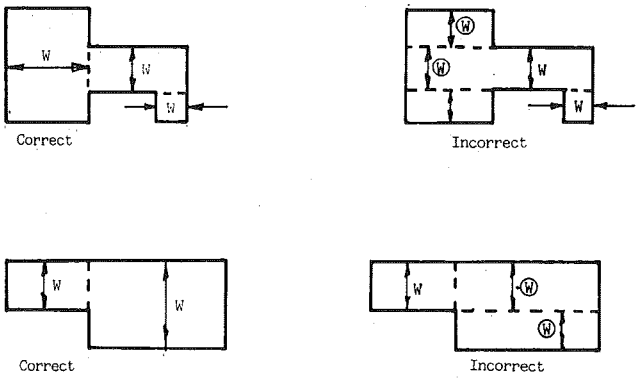
PLAN VIEW

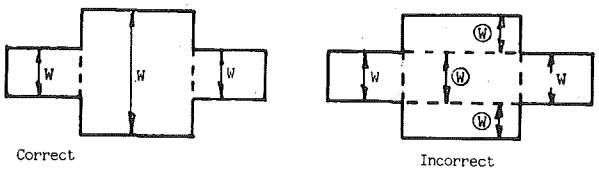
Example B.
SLOPED RECTANGULAR SHAPED ROOFS



Example C.
IRREGULARLY SHAPED ROOFS WITH RECTANGULAR SHAPED SECTIONS

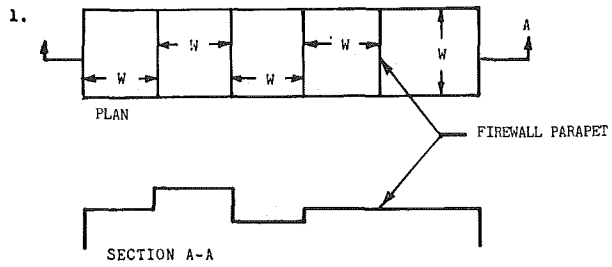
Such roofs are to be divided into subareas by using dividing lines of minimum length to minimize the size and number of the areas which are potentially less than or equal to 50 feet (15.25 meters) in width, in order to limit the size of roof areas where WAC 296-155-505(7)(a)(iii) can be applied. Dotted lines are used in the examples to show the location of dividing lines. X denotes incorrect measurements of width.

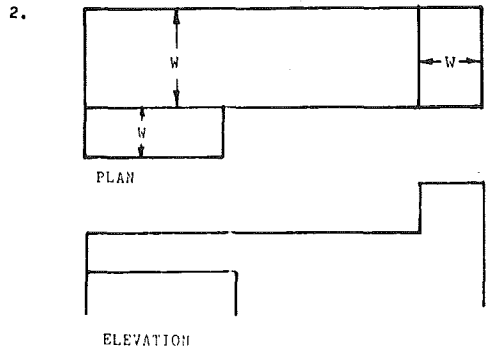




Example D.

SEPARATE, NONCONTIGUOUS ROOF AREAS

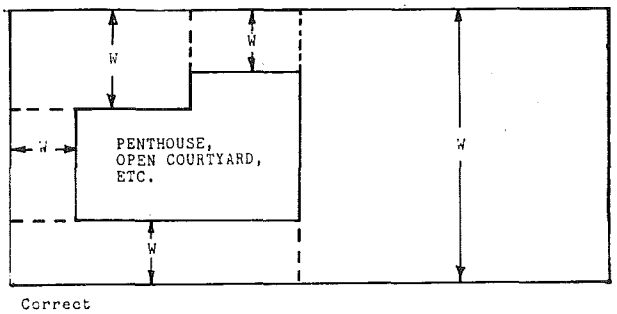


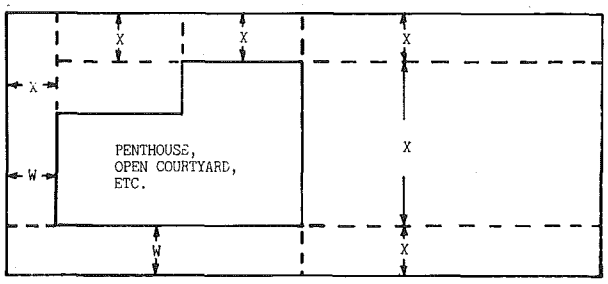


Example E.

ROOFS WITH PENTHOUSES, OPEN COURT YARDS, ADDITIONAL FLOORS, ETC.

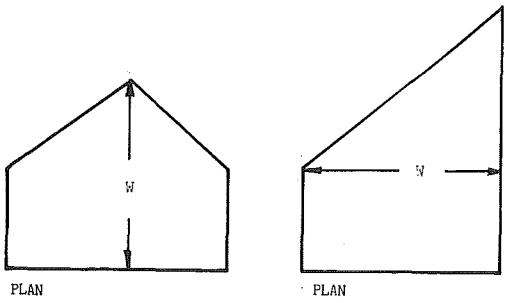
Such roofs are to be divided into subareas by using dividing lines of minimum length to minimize the size and number of the areas which are potentially less than or equal to 50 feet (15.25 meters) in width, in order to limit the size of roof areas where WAC 296-155-505(7)(a)(iii) can be applied. Dotted lines are used in the examples to show the location of dividing lines. X denotes incorrect measurements of width.

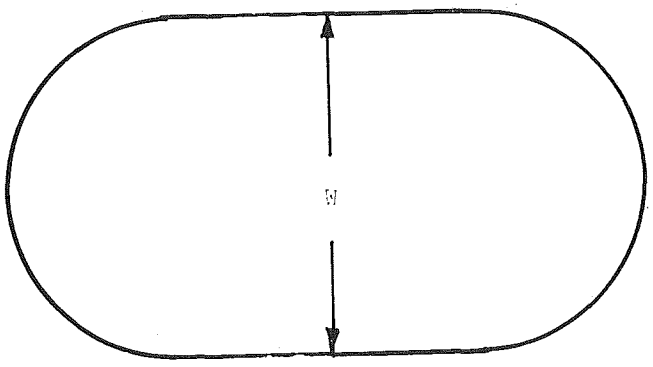




Example F.

IRREGULAR, NONRECTANGULAR SHAPED ROOFS





[Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81-13-053 (Order 81-9), § 296-155-50501, filed 6/17/81.]

Part N

EXCAVATION, TRENCHING, AND SHORING

WAC

296-155-650 Definitions applicable to this part.
296-155-655 General protection requirements.
296-155-660 Specific excavation requirements.
296-155-665 Specific trenching requirements.
296-155-66501 Table N-1.
296-155-66505 Table N-5.

WAC 296-155-650 Definitions applicable to this part. (1) "Accepted engineering requirements (or practices)" means those requirements or practices which are compatible with standards required by a registered architect, a registered professional engineer, or other duly licensed or recognized authority.

(2) "Angle of repose" means the greatest angle above the horizontal plane at which a material will lie without sliding or rolling.

(3) "Bank" means a mass of soil rising above a digging level.

(4) "Belled excavation" means a part of a shaft or footing excavation, usually near the bottom and bell-shaped; i.e., an enlargement of the cross section above.

(5) "Braces (trench)" means the horizontal members of the shoring system whose ends bear against the uprights or stringers.

(6) "Cofferdam" means a watertight chamber used to exclude water or other fluid or semi-fluid material during excavation for foundations and the construction of subsurface structures.

(7) "Compact shale" means a type of hardened clay that has not yet split into thin layers.

(8) "Competent person" means one who is capable of identifying hazards in the surroundings or working conditions which are unsanitary, hazardous or dangerous.

(9) "Equipment" means ladders, scaffolds, ramps, runways, railings, barricades, sheet piling, shoring, bracing and any such safeguards, protective construction and devices used in affording protection to the workers engaged in excavating work.

(10) "Excavation" means any manmade cavity or depression in the earth's surface, including its sides, walls, or faces, formed by earth removal and producing unsupported earth conditions by reasons of the excavation. If installed forms or similar structures reduce the depth-to-width relationship, an excavation may become a trench.

(11) "Faces" see (19) of this section.

(12) "Hard compact soil" means all earth materials not classified as running or unstable.

(13) "Kickouts" means accidental release or failure of a shore or brace.

(14) "Moving ground" means any ground, which for any reason, will not remain in it's original location.

(15) "Ramp" means an inclined runway.

(16) "Runway" means any planked-over walkway or drive constructed and maintained as a passageway for workers or rolling equipment.

(17) "Sheet pile" means a pile, or sheeting, that may form one of a continuous interlocking line, or a row of timber, concrete, or steel piles, driven in close contact to provide a tight wall to resist the lateral pressure of water, adjacent earth, or other materials.

(18) "Shoring system" means any assembly of equipment or material used to prevent the ground or earth from moving.

(19) "Sides," "walls," or "faces" means the vertical or inclined earth surfaces formed as a result of excavation work.

(20) "Slope" means the angle with the horizontal at which a particular earth material will stand indefinitely without movement.

(21) "Stringers" (wales) means the horizontal members of a shoring system whose sides bear against the uprights or earth.

(22) "Structural construction" means any activity or process required in the actual construction of any type of structure, pipeline or conduit exclusive of the excavation.

(23) "Trench" means a narrow excavation made below the surface of the ground. In general, the depth is greater than the width, but the width of a trench is not greater than 15 feet.

(24) "Trench jack" means screw or hydraulic type jacks used as cross bracing in a trench shoring system.

(25) "Trench shield" means a shoring system composed of steel plates and bracing, welded or bolted together, which support the walls of a trench from the ground level to the trench bottom and which can be moved along as work progresses.

(26) "Unstable soil" means earth material, other than running that because of its nature or the influence of related conditions, cannot be depended upon to remain in place without extra support, such as would be furnished by a system of shoring.

(27) "Uprights" means the vertical members of a shoring system.

(28) "Wales" see subsection (21) of this section.

(29) "Walls" see subsection (19) of this section. [Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81-13-053 (Order 81-9), § 296-155-650, filed 6/17/81; Order 74-26, § 296-155-650, filed 5/7/74, effective 6/6/74.]

WAC 296-155-655 General protection requirements. (1) This part on "excavation work" and "trenching" is intended to provide for the protection of all employees during all excavation work or trenching in connection with all construction work relating thereto, such as trenches, underpinning, shoring and bracing, and in connection with the construction of footings, foundations, retaining walls and other construction work below ground level.

(2) Any safety device or equipment needed in connection with excavation work or trenching shall be inspected, erected, and maintained in a safe condition, for the duration of the operation, by the owner, contractor, or person in direct charge and authority.

(3) Federal or state codes, rules, regulations and ordinances governing any and all phases of excavation work and trenching shall be observed at all times.

(4) Walkways, runways, and sidewalks shall be kept clear of excavated material or other obstructions and no sidewalks shall be undermined unless shored to carry a minimum live load of one hundred and twenty-five pounds per square foot.

(5) If planks are used for raised walkways, runways, or sidewalks, they shall be laid parallel to the length of the walk and fastened together against displacement.

(6) Planks shall be uniform in thickness and all exposed ends shall be provided with beveled cleats to prevent tripping.

(7) Raised walkways, runways, and sidewalks shall be provided with plank steps on strong stringers. Ramps, used in lieu of steps, shall be provided with cleats to insure a safe walking surface.

(8) All employees shall be protected with personal protective equipment for the protection of the head, eyes, respiratory organs, hands, feet, and other parts of the body as set forth in Part C of this chapter.

(9) Employees exposed to vehicular traffic shall wear hard hats and warning vests marked with or made of reflectorized or high visibility material.

(10) Employees subjected to hazardous dusts, gases, vapors, fumes, mists, or atmospheres deficient in oxygen, shall be protected with approved respiratory protection as set forth in Part B of this chapter.

(11) No person shall be permitted under loads handled by power shovels, derricks, hoists, or front end loaders. To avoid any injury from spillage; employees, including the driver, unless he is protected adequately by the cab, shall be required to stand away from any vehicle being loaded.

(12) Inspections of excavations and trenches shall be made prior to each work shift by a competent person. If evidence of possible cave-ins or slides is apparent, all work in the excavation or trench shall cease until the necessary precautions have been taken to safeguard the employees. [Statutory Authority: RCW 49.17.040, 49-.17.050 and 49.17.240. 81-13-053 (Order 81-9), § 296-155-655, filed 6/17/81; Order 76-29, § 296-155-655, filed 9/30/76; Order 74-26, § 296-155-655, filed 5/7/74, effective 6/6/74.]

WAC 296-155-660 Specific excavation requirements. (1) Prior to opening an excavation, effort shall be made to determine whether underground installations; i.e., sewer, telephone, water, fuel, electric lines, etc., will be encountered, and if so, where such underground installations are located. When the excavation approaches the estimated location of such an installation, the exact location shall be determined, and when it is uncovered, proper supports shall be provided for the existing installation. Utility companies shall be contacted and advised of proposed work prior to the start of actual excavation.

(2) Trees, boulders, and other surface encumbrances, located so as to create a hazard to employees involved in excavation work or in the vicinity thereof at any time during operations, shall be removed or made safe before excavating is begun or continued.

(3) The walls and faces of all excavations in which employees are exposed to danger from moving ground, falling rocks, sluffing or sliding earth shall be guarded by a shoring system, sloping of the ground, or some other equivalent means. Sloping of the ground or the shoring system shall extend to the bottom of the excavation.

(4) Excavations shall be inspected by a competent person after every rainstorm or other hazard-increasing occurrence, and the protection against slides and cave-ins shall be increased if necessary.

(5) The determination of the angle of repose and design of the supporting system shall be based on careful evaluation of pertinent factors such as: Depth of cut; possible variation in water content of the material while the excavation is open; anticipated changes in materials from exposure to air, sun, water, or freezing; loading imposed by structures, equipment, overlying material, or stored material; and vibration from equipment, blasting, traffic or other sources.

(6) Supporting systems; i.e., piling, cribbing, shoring, etc., shall be designed by a qualified person and meet accepted engineering requirements. When tie rods are used to restrain the top of sheeting or other retaining systems, the rods shall be securely anchored well back of the angle of repose. When tight sheeting or sheet piling is used, full loading due to ground water table shall be assumed, unless prevented by weep holes or drains or other means. Additional stringers, ties, and bracing shall be provided to allow for any necessary temporary removal of individual supports. Excavation and lagging done in conjunction with soldier piles shall be completed in not more than eight foot lifts.

(7) All slopes shall be excavated to at least the angle of repose except for areas where solid rock allows for line drilling or presplitting. (Refer to Tables N-1 and N-5.)

(8) The angle of repose shall be flattened when an excavation has water conditions, silty materials, loose boulders, and areas where erosion, deep frost action, and slide planes appear.

(9)(a) In excavations which employees may be required to enter, excavated or other material shall be effectively stored and retained at least 2-feet or more from the edge of the excavation.

(b) As an alternative to the clearance prescribed in (a) of this subsection, the employer may use effective barriers or other effective retaining devices in lieu thereof in order to prevent excavated or other materials from falling into the excavation.

(10) Sides, slopes, and faces of all excavations shall meet accepted engineering requirements by scaling, benching, barricading, rock bolting, wire meshing, or other equally effective means. Special attention shall be given to slopes which may be adversely affected by weather or moisture content.

(11) Support systems shall be planned and designed by a qualified person when excavation is in excess of 20 feet in depth, adjacent to structures or improvements, or subject to vibration or ground water.

(12) Materials used for sheeting, sheet piling, cribbing, bracing, shoring, and underpinning shall be in good serviceable condition, and timbers shall be sound, free from large or loose knots, and of proper dimensions.

(13) Special precautions shall be taken in sloping or shoring the sides of excavations adjacent to a previously backfilled excavation or a fill, particularly when the separation is less than the depth of the excavation. Particular attention also shall be paid to joints and seams of material comprising a face and the slope of such seams and joints.

(14) The sides of every excavation four feet or more in depth, shall be supported by substantial sheet piling and bracing, or other effective means, or the sides of the excavation sloped to the angle of repose of the material being excavated. (In accordance with Tables N-1, N-2, N-3, N-4 and N-5.)

(15) Temporary sheet piling which has been installed to permit the construction of a retaining wall shall not be removed until such wall has acquired its full strength.

(16) Where workers are employed adjacent to an excavation on work other than that directly connected with the excavation, protection such as standard guardrails or other equivalent protection to prevent their falling into the excavation shall be provided for such workers as well as for the workers in the excavation.

(17) Except in hard rock, excavations below the level of the base of footing of any foundation or retaining wall shall not be permitted, unless the wall is underpinned and all other precautions taken to insure the stability of the adjacent walls for the protection of employees involved in excavation work or in the vicinity thereof.

(18) If the stability of adjoining buildings or walls is endangered by excavations or trenches, shoring, bracing, or underpinning shall be provided as necessary to insure their safety. Such shoring, bracing, or underpinning shall be inspected daily or more often, as conditions warrant, by a competent person and the protection effectively maintained.

(19) Diversion ditches, dikes, or other suitable means shall be used to prevent surface water from entering an excavation or trench and to provide adequate drainage of the area adjacent to the excavation or trench. If necessary, pumps shall be used to minimize water from accumulating in the excavation or trench.

(20) If it is necessary to place or operate power shovels, derricks, trucks, materials, or other heavy objects on a level above and near an excavation or trench, the side of the excavation or trench shall be sheet-piled, shored, or braced as necessary to resist the extra pressure due to such superimposed loads.

(21) Blasting and the use of explosives shall be performed in accordance with chapter 296-52 WAC.

(22) When mobile equipment is utilized or allowed adjacent to excavations or trenches, substantial stop logs or barricades shall be installed, except excavating and backfill equipment used during actual excavating or backfill operations.

(23) Adequate barrier physical protection shall be provided at all remotely located excavations or trenches. All wells, pits, shafts, etc., shall be barricaded or covered. Upon completion of exploration and similar operations, temporary wells, pits, shafts, etc., shall be backfilled.

(24) Dust conditions shall be kept to a minimum by the use of water, salt, calcium chloride, oil, or other means.

(25)(a) In locations where oxygen deficiency or gaseous conditions are possible, air in the excavation or trench shall be tested. Controls, as set forth in Parts B and C of this chapter, shall be established to assure acceptable atmospheric conditions. When flammable gases are present, adequate ventilation shall be provided and sources of ignition shall be eliminated. Attended emergency rescue equipment, such as breathing apparatus, a safety harness and line, basket stretcher, etc., shall be readily available where adverse atmospheric conditions may exist or develop in an excavation or trench. During these conditions a competent top person shall be in constant attendance.

(b) During the conditions stated in item (a) above, the top person shall maintain voice or visual contact with the person in the excavation or trench. It shall be the employer's responsibility to ensure that a top person remains in constant attention until such time as the aforementioned condition no longer exists.

(26) Where employees or equipment are required or permitted to cross over excavations or trenches, walkways or bridges with standard guardrails shall be provided.

(27) Where ramps are used for employees or equipment, they shall be designed and constructed by qualified persons in accordance with accepted engineering requirements.

(28) All ladders used on excavation or trenching operations shall be in accordance with the requirements of this chapter.

(29) Ramps or runways used for vehicles shall have a width of not less than four feet wider than the vehicle used and provided with timber guards not less than eight inches by eight inches, placed parallel to and secured to the sides of the runway as a protection to trucks or other equivalent protection shall be provided.

(30) All ramps and runways shall receive frequent inspection, and shall be maintained in a safe and serviceable condition.

(31) Workers shall be instructed to stay off ramps and runways when trucks are passing over them.

(32) When ramps and runways as referenced in subsection (29) of this section, are formed on hard ground without the use of planking, all ruts and holes shall be filled in, humps leveled off and the runway made as smooth as possible.

(33) Blocks used for pulling trucks up ramps shall be well anchored. [Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81-13-053 (Order 81-9), § 296-155-660, filed 6/17/81; Order 76-29, § 296-155-660, filed 9/30/76; Order 74-26, § 296-155-660, filed 5/7/74, effective 6/6/74.]

WAC 296-155-665 Specific trenching requirements. (1) As trench construction is a hazardous operation, particular attention shall be given to the protection of the worker, the protection to be governed by the nature of the ground.

(2) No one person shall be allowed to work alone in a trench over four feet in depth unless there is a top person in constant attendance. The top person shall be in addition to the equipment operator when the person in the trench is not in constant view of the equipment operator.

(3) Except in solid rock and compact shale, the sides of all trenches, including embankments, 4 feet or more in depth and 6 feet or more in length, shall be shored, sheeted, braced, sloped or otherwise supported by means of sufficient strength to protect the employees working within them. (See Tables N-1, N-2, N-3, N-4 and N-5.) Trenches less than 4 feet in depth and 6 feet or more in length, shall also be effectively protected when

the ground indicates that hazardous ground movement is possible. (See Tables N–1, N–2, N–3, N–4 and N–5.)

(4) When the sloping to the angle of repose does not extend to the bottom of the trench, shoring shall be required to support the vertical part of the trench. The shoring shall extend above the bottom of the slope a minimum of 12 inches to prevent material from sliding into the trench.

(5) The surface of the slope shall be cleaned of boulders, stumps, or other hard masses of earth on the angle of repose slope to eliminate the danger of any such materials sliding or rolling into the trench.

(6) In hard or compact soil, when the outside diameter of the pipe to be laid is 6 feet or larger, the sides of the trench can be vertical at the bottom 4 feet of the trench, providing a 4 foot bench is provided immediately above the vertical portion, and the remaining portion of the trench above the bench is sloped to the angle of repose. (See Table N–4.)

(7) Materials used for sheeting and sheet piling, bracing, shoring, and underpinning, shall be in good serviceable condition, and timbers used shall be sound and free from large or loose knots, and shall be designed and installed so as to provide adequate personnel protection to the bottom of the excavation.

(8) Additional precautions by way of shoring and bracing shall be taken to prevent slides or cave–ins when excavations or trenches are made in locations adjacent to backfilled excavations or trenches, or where excavations or trenches are subjected to vibrations from railroad or highway traffic, the operation of machinery, or any other source.

(9) Where a mechanical digger is used, the bracing shall be placed as close as possible to the lower end of the boom.

(10) When trenches are undercut, they shall be shored as necessary to safely support the overhanging material.

(11) If for any reason prior to, during or subsequent to the placement of the trench bracing system, voids should form in the sides or face of excavation or trench, such voids shall be promptly filled with compacted material or blocking, as required to distribute the load uniformly onto the bracing system.

(12) If a trench is cut alongside an existing structure and the footings of the structure are nearer to the trench than the plane of repose for the soil, they shall be underpinned or the side wall of the trench rigidly supported.

(13) Excavations or trenches made in ledge rock or compact shale shall not require bracing or shoring but shall be inspected by a competent representative of the employer before each shift of work, at which time all loose, shattered or disintegrated rock shall be removed from sides and face of excavation or trench.

(14) Excavated material and superimposed loads shall not be placed nearer than two feet to the sides of the trench, unless bracing has been designed and installed to withstand the load.

(15) Employees entering bell–bottom pier holes shall be protected by the installation of a removable–type casing of sufficient strength to resist shifting of the surrounding earth. Such temporary protection shall be provided for the full depth of that part of each pier hole which is above the bell.

(16) A means of emergency egress shall be decided prior to personnel entering bell–bottom pier holes. Employees expected to enter bell–bottom pier holes shall be instructed as to the hazards of their respective jobs, and in the means of emergency egress.

NOTE: Example of protection: A lifeline, suitable for instant rescue and securely fastened to a shoulder harness, may be worn by each employee entering the shafts. This lifeline could be individually manned and separate from any line used to remove materials excavated from the bell footing.

(17)(a) Minimum requirements for trench timbering shall be in accordance with Table N–3.

(b) Braces and diagonal shores in a wood shoring system shall not be subjected to compressive stress in excess of values given by the following formula:

$$S = 1300 - \frac{20L}{D}$$

$$\text{Maximum ratio } \frac{L}{D} = 50$$

Where:

L = Length, unsupported, in inches.
D = Least side of the timber in inches.
S = Allowable stress in pounds per square inch of cross–section.

(18) When employees are required to be in trenches 4 feet deep or more, an adequate means of exit, such as a ladder or steps, shall be provided and located so as to require no more than 25 feet of lateral travel. An earth ramp is acceptable providing: (a) The stability of the earth is adequate for good footing. (b) The total travel distance does not exceed 25 feet. (c) The trench depth does not exceed 15 feet. (d) Adequate shoring or equivalent protection is provided for the entire escape route.

(19) Bracing or shoring of trenches shall be carried along with the excavation.

(20) Cross braces or trench jacks shall be placed in true horizontal position, be spaced vertically, and be secured to prevent sliding, falling, or kickouts.

(21) Portable trench boxes or sliding trench shields may be used for the protection of personnel in lieu of a shoring system or sloping. Where such trench boxes or shields are used, they shall be designed, constructed, and maintained in a manner which will provide protection equal to or greater than the sheeting or shoring required for the trench.

(22) Backfilling and removal of trench supports shall progress together from the bottom of the trench. Jacks or braces shall be released slowly and, in unstable soil, ropes shall be used to pull out the jacks or braces from above after employees have cleared the trench.

(23) Signalpersons shall be employed to direct equipment when backfilling.

(24) The construction of temporary shoring work shall be done, or supervised, by a competent person, who shall make frequent inspections and issue instructions for its removal.

(25) Workers shall be instructed to immediately report any signs or indications of weakness of shoring or bracing.

(26) Trenching machines (ladder and rotary type). (a) Trenching machine operators shall not get on or off machine while in operation.

(b) Workers shall not work at sloping top of ditch near bucket line.

(c) Excavated material shall be conveyed to pile not closer than within 2 feet of edge of trench.

(d) Trucks hauling excavated material away from trenching machine shall not approach closer to the edge of trench than the trench depth from the surface of ground.

(e) Where side cutters are installed it will be mandatory that persons stay clear of bucket line. [Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81-13-053 (Order 81-9), § 296-155-665, filed 6/17/81; Order 77-12, § 296-155-665, filed 7/11/77; Order 76-29, § 296-155-665, filed 9/30/76; Order 74-26, § 296-155-665, filed 5/7/74, effective 6/6/74.]

WAC 296-155-66501 Table N-1.

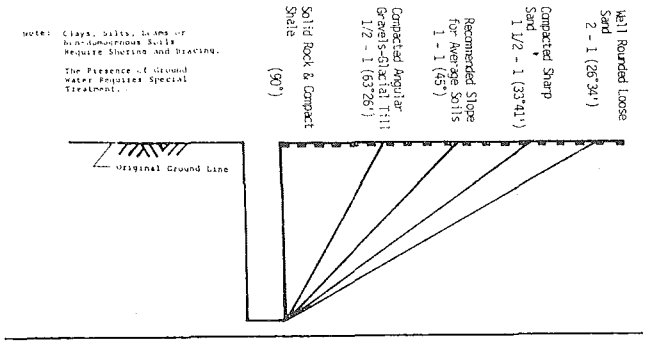


TABLE N-1
MINIMUM ANGLE OF REPOSE
For Sloping of Sides of Excavation and/or Trenches

NOTE: Clays, Silts, Loams or Non-Homogenous Soils Require Shoring and Bracing.

The Presence of Ground Water Requires Special Treatment.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-13-045 (Order 82-22), § 296-155-66501, filed 6/11/82; Order 76-29, Table N-1 (codified as WAC 296-155-66501), filed 9/30/76; Order 74-26, § 296-155-665 (part), Table N-1, filed 5/7/74, effective 6/6/74.]

WAC 296-155-66505 Table N-5.

TABLE N-5
EXCAVATION AND TRENCH SHORING
MINIMUM REQUIREMENTS

TABLE N-5--Part I

Depth of trench or excavation & Kind or condition of earth	Size and spacing of members			
	Uprights		Stringers	
	Minimum dimension	Maximum spacing	Min. dim.	Max. sp.
Feet	Inches	Feet	In.	Ft.
4 to 10				
Hard, compact	3x4 or 2x6	6		
Likely to crack	3x4 or 2x6	3	4x6	4
Soft, sandy, or filled	3x4 or 2x6	Close sheeting	4x6	4
Hydrostatic pressure	3x4 or 2x6	Close sheeting	6x8	4
10 to 15				
Hard	3x4 or 2x6	4	4x6	4
Likely to crack	3x4 or 2x6	2	4x6	4
Soft, sandy, or filled	3x4 or 2x6	Close sheeting	4x6	4
Hydrostatic pressure	3x6	Close sheeting	8x10	4
15 to 20				
All kinds or conditions	3x6	Close sheeting	4x12	4
Over 20				
All kinds or conditions	3x6	Close sheeting	6x8	4

TABLE N-5--Part II

Depth of trench or excavation & Kind or condition of earth	Size and spacing of members						
	Cross braces[1]						
	Width of trench					Maximum spacing	
	Up to 3 ft.	3-6 ft.	6-9 ft.	9-12 ft.	12-15 ft.	Vert.	Hori.
Feet	In.	In.	In.	In.	In.	Ft.	Ft.
4 to 10							
Hard, compact	2x6	4x4	4x6	6x6	6x8	4	6
Likely to crack	2x6	4x4	4x6	6x6	6x8	4	6
Soft, sandy, or filled	4x4	4x6	6x6	6x8	8x8	4	6
Hydrostatic pressure	4x4	4x6	6x6	6x8	8x8	4	6
10 to 15							
Hard	4x4	4x6	6x6	6x8	8x8	4	6
Likely to crack	4x4	4x6	6x6	6x8	8x8	4	6
Soft, sandy, or filled	4x6	6x6	6x8	8x8	8x10	4	6
Hydrostatic pressure	4x6	6x6	6x8	8x8	8x10	4	6
15 to 20							
All kinds or conditions	4x12	6x8	8x8	8x10	10x10	4	6
Over 20							
All kinds or conditions	4x12	8x8	8x10	10x10	10x12	4	6

[1] Trench jacks may be used in lieu of, or in combination with, cross braces. Shoring is not necessarily required in solid rock, hard shale, or hard slag. Where desirable, steel sheet piling and bracing of equal strength may be substituted for wood.

NOTE: In excavations over 15 feet in width, cross bracing shall be designed by a qualified person.

[Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81-13-053 (Order 81-9), § 296-155-66505, filed 6/17/81; Order 76-29, Table N-5 (codified as WAC 296-155-66505), filed 9/30/76; Order 74-26, § 296-155-665 (part), Table N-5, filed 5/7/74, effective 6/6/74.]

Chapter 296-200 WAC
CONTRACTOR CERTIFICATE OF REGISTRATION RENEWALS--SECURITY--INSURANCE

WAC

296-200-005 Purpose of chapter.
296-200-010 Repealed.
296-200-015 Definitions.
296-200-020 Repealed.
296-200-025 Initial application for registration and renewal of registration.
296-200-030 Repealed.
296-200-035 Length of registration period.
296-200-040 Suspension of contractor's registration.
296-200-050 Change in business structure, name, or address.
296-200-060 Cancelling surety bonds and insurance policies.
296-200-070 Refund of security deposited with the section.
296-200-080 Filing suit against a contractor.
296-200-090 Collection of judgments.
296-200-100 Priority for payment of judgments.
296-200-900 Fees.

DISPOSITION OF SECTIONS FORMERLY CODIFIED IN THIS CHAPTER

296-200-010 Certificate of registration—Initial application. [Order 74-16, § 296-200-010, filed 5/6/74. Formerly chapter 308-27 WAC.] Repealed by 81-21-001 (Order 81-25), filed 10/8/81. Statutory Authority: RCW 18.27.040.

296-200-020 Re-registration, renewal and reinstatement. [Order 74-16, § 296-200-020, filed 5/6/74. Formerly chapter 308-27 WAC.] Repealed by 81-21-001 (Order 81-25), filed 10/8/81. Statutory Authority: RCW 18.27.040.

296-200-030 Security and insurance requirements. [Order 74-16, § 296-200-030, filed 5/6/74. Formerly chapter 308-27 WAC.] Repealed by 81-21-001 (Order 81-25), filed 10/8/81. Statutory Authority: RCW 18.27.040.

WAC 296-200-005 Purpose of chapter. The contractor's registration law, chapter 18.27 RCW, is a valuable protection for persons who do business with contractors in Washington. In administering and interpreting the law, however, several problems have arisen. The contractors registration section cannot keep up with the paperwork the law entails. Many people are confused about the provisions in RCW 18.27.040 on suits against contractors and collection of judgments. Also, when a contractor and its bond are sued in several counties at the same time, problems arise over the priority of paying judgments from the bond. The intent of the rules in this chapter is to lessen the paperwork of the section and to clarify the confusing passages of the law. The rules are necessary to ensure that the law is efficiently and properly administered. [Statutory Authority: RCW 18.27-.040. 81-21-001 (Order 81-25), § 296-200-005, filed 10/8/81.]

WAC 296-200-010 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-200-015 Definitions. For the purposes of this chapter:

(1) "Bonded contractor" means a contractor who has obtained a surety bond in order to comply with RCW 18.27.040;

(2) "Department" means the department of labor and industries;

(3) "Section" means the contractors registration section of the department;

(4) "Secured contractor" means a contractor who has assigned a savings account to the department or deposited cash or other security with the section in order to comply with RCW 18.27.040; and

(5) "Security" means a savings account assigned to the department or cash or other security deposited with the section. [Statutory Authority: RCW 18.27.040. 81-21-001 (Order 81-25), § 296-200-015, filed 10/8/81.]

WAC 296-200-020 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-200-025 Initial application for registration and renewal of registration. (1) A contractor may register if it:

(a) Completes an application for registration;

(b) Provides the information required by RCW 18.27.030;

(c) Obtains a surety bond, assigns a savings account to the department, or deposits cash or other security with the section. If a contractor obtains a bond, it must submit the original bond to the section (see RCW 18.27.040);

(d) Obtains public liability and property damage insurance, and submits a copy of the insurance certificate to the section (see RCW 18.27.050); and

(e) Pays a fee of $20.00.

(2) The section shall send a renewal notice to a contractor's last recorded address at least 45 days before the contractor's registration expires. The contractor may renew its registration if it submits the renewal card and provides the materials required in paragraphs (1)(b), (c), and (e).

(3) The contractor must submit all of the materials to the section in one package. Each of the materials must name the contractor exactly as it is named on the application for registration or the renewal card, as appropriate. If the contractor is renewing its registration, each of the materials must include the contractor's registration number. If any of the materials are missing, do not properly name the contractor, or do not include the registration number, the section shall refuse to register or renew the registration of the contractor.

(4) The contractor may request, in a letter filed with the application or renewal materials, that the registration period end on a particular day. The resulting registration period may not be longer than one year.

(5) When the section receives the required materials, it shall register or renew the registration of the contractor. [Statutory Authority: RCW 18.27.040. 81-21-001 (Order 81-25), § 296-200-025, filed 10/8/81.]

WAC 296-200-030 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-200-035 Length of registration period. If a contractor's bond or insurance will expire less than one year after the day the registration begins, the section shall require the contractor to accept a registration period that ends on the day the bond or insurance expires.

If the contractor wants a full one-year registration period, the contractor must obtain a short-term bond or insurance policy that will extend the bond or insurance coverage to the expiration date of the one-year registration period. [Statutory Authority: RCW 18.27.040. 81-21-001 (Order 81-25), § 296-200-035, filed 10/8/81.]

WAC 296-200-040 Suspension of contractor's registration. A contractor can be registered only if it complies with the requirements of WAC 296-200-025. Therefore, if a contractor's surety bond or other security is impaired or cancelled, or if the contractor's insurance policy is cancelled, the section shall suspend the contractor's registration until the contractor obtains a new bond, other security, or insurance policy, or eliminates the impairment to the bond or other security. The contractor may not do business while its registration is suspended. [Statutory Authority: RCW 18.27.040. 81-21-001 (Order 81-25), § 296-200-040, filed 10/8/81.]

WAC 296-200-050 Change in business structure, name, or address. (1) If a contractor changes its business structure (for example[,] if it changes from a partnership to a corporation, or if the partners in a partnership change), the contractor must apply for [a] new registration in the manner required by WAC 296-200-025. The new registration must be accompanied by a $20.00 registration fee. If a contractor does not reregister after a change in its business structure, its registration may be invalid. See RCW 18.27.040.

(2) If a registered contractor changes its name or address it must notify the section of the change. The contractor must include a $20.00 registration fee with the notification of a change in name. [Statutory Authority: RCW 18.27.040, 42.17.290 and 42.17.300. 82-18-026 (Order 82-26), § 296-200-050, filed 8/25/82. Statutory Authority: RCW 18.27.040. 81-21-001 (Order 81-25), § 296-200-050, filed 10/8/81.]

Reviser's note: RCW 34.04.058 requires the use of underlining and deletion marks to indicate amendments to existing rules, and deems ineffectual changes not filed by the agency in this manner. The bracketed material in the above section does not appear to conform to the statutory requirement.

WAC 296-200-060 Cancelling surety bonds and insurance policies. (1) A cancellation of a surety bond or insurance policy shall be effective 30 days after the section receives the cancellation notice, if the cancellation notice contains the following information:

(a) The name of the contractor, exactly as it appears in the contractor's registration file;

(b) The contractor's registration number;

(c) The contractor's business address;

(d) The names of the owners, partners, or officers of the contractor;

(e) The bond or insurance policy number; and

(f) The effective date of the bond or insurance policy.

To help the section process cancellations, the information should be given in the order shown.

(2) The insurance and bonding companies should send cancellation notices to the section by certified or registered mail. [Statutory Authority: RCW 18.27.040. 81-21-001 (Order 81-25), § 296-200-060, filed 10/8/81.]

WAC 296-200-070 Refund of security deposited with the section. (1) If a contractor is secured, the section will release its interest in the security one year after the contractor's last registration expired. The section shall not release its interest, however, if an unsatisfied court judgment or claim is outstanding against the contractor.

(2) The section will release its interest in the security before one year has elapsed after the contractor's last registration period expired if the contractor provides a surety bond that covers both the contractor's previous and current registration periods. [Statutory Authority: RCW 18.27.040. 81-21-001 (Order 81-25), § 296-200-070, filed 10/8/81.]

WAC 296-200-080 Filing suit against a contractor. (1) All suits against a contractor for claims under chapter 18.27 RCW must be brought in superior court. In particular, if a secured contractor is sued, the section will be unable to pay an unsatisfied final judgment from the securities if the suit is not brought in superior court.

(2) If a claimant sues a contractor, the claimant shall serve the summons and complaint on the contractor and its bonding company by serving three copies of the summons and complaint by registered or certified mail on the section. The section shall not accept personal service of the summons and complaint.

(3) The section may be unable to process a summons and complaint if the summons and complaint do not contain the following information:

(a) The name of the contractor, exactly as it appears in the contractor's registration file;

(b) The contractor's business address;

(c) The names of the owners, partners, or officers of the contractor; and

(d) The contractor's license number.

If the suit joins a bonding company, the summons and complaint should also include:

(e) The name of the bonding company that issued the contractor's bond;

(f) The bond number; and

(g) The effective date of the bond.

If the information is insufficient for the section to identify that contractor or bonding company that is being sued, the section will not attempt to serve the summons and complaint and will return them to the claimant.

[Statutory Authority: RCW 18.27.040. 81-21-001 (Order 81-25), § 296-200-080, filed 10/8/81.]

WAC 296-200-090 Collection of judgments. (1) If a contractor is secured, a claimant who has received a final judgment against the contractor from a superior court may satisfy the judgment out of the security held by the section. The section cannot satisfy a district court judgment.

(2) The section shall satisfy a superior court final judgment if the claimant services on the section, by registered or certified mail, three certified copies of the unsatisfied judgment within one year of the date the judgment was entered. The claimant must include the following information with the copies of the judgment:

(a) The name of the contractor, exactly as it appears in the contractor's registration file;

(b) The contractor's business address;

(c) The names of the owners, partners, or officers of the contractor;

(d) The contractor's license number; and

(e) The exact amount of the judgment awarded by the superior court, including attorneys fees and interest.

If the section does not receive sufficient information to enable it to pay the judgment, it shall inform the claimant that more information is needed.

(3) If a contractor is bonded, a claimant who has received a final judgment against the contractor can satisfy the judgment against the contractor or the bonding company only. The section can neither satisfy the judgment nor force the contractor or the bonding company to pay the judgment. The claimant must join the bonding company in the suit if it wants the bonding company to pay the judgment. [Statutory Authority: RCW 18.27-.040. 81-21-001 (Order 81-25), § 296-200-090, filed 10/8/81.]

WAC 296-200-100 Priority for payment of judgments. RCW 18.27.040 contains two different provisions for priority in paying judgments from the contractor's bond or security.

(1) If a contractor is secured, the section shall satisfy final judgments against the contractor in the order the section receives the judgments.

(2) If a contractor is bonded, the priority for paying judgments from the bond is not a race priority such as the priority for payment of judgments against a security contractor. Instead, it is similar to the priority in bankruptcies. Claims for labor and employee benefits are satisfied first; claims for breach of contract are satisfied second; material and equipment claims are third; claims for taxes and contributions to the state of Washington are fourth; and claims for court costs, interest, and attorneys fees are satisfied last. No claim in a lesser category may be satisfied until all claims in the preceding categories are satisfied unless the total amount of all claims in the preceding categories is less than the amount of the bond that remains unimpaired. [Statutory Authority: RCW 18.27.040. 82-24-057 (Order 82-35), § 296-200-100, filed 12/1/82; 81-21-001 (Order 81-25), § 296-200-100, filed 10/8/81.]

WAC 296-200-900 Fees. (1) The department shall charge a $20.00 fee for each registration and renewal of registration. For purposes of this rule, a contractor renews its registration after its registration expires, or after the registration has lapsed because the contractor's bond or insurance has been cancelled. The department shall charge $10.00 for providing a duplicate certificate of registration.

(2) The department will charge the following amounts for providing copies or documented information from a contract's file. The department will not charge for providing an oral answer for requests for information.

(a) Charge for certifying a letter that states that a contractor is not registered or that describes the contents of a contractor's file:	$14.00
(b) Charge for copying documents from a contractor's file in addition to providing a certified letter:	$.60 per page
(c) Charge for copying documents from a contractor's file when no certified letter is requested:	$14.00 for the first page and $.60 for each additional page.

A request for copies or written information must enclose a check or money order made out to the department for $14.00. The department will bill the person making the request for any additional charges. The department shall not charge more than a total of $24.00 for additional copies. [Statutory Authority: RCW 18.27.040, 42.17.290 and 42.17.300. 82-18-026 (Order 82-26), § 296-200-900, filed 8/25/82. Statutory Authority: RCW 18.27-.040. 81-21-001 (Order 81-25), § 296-200-900, filed 10/8/81.]

Chapter 296-306 WAC
SAFETY STANDARDS FOR AGRICULTURAL CODE

WAC

296-306-200 Roll-over protective structures (ROPS) for tractors used in agricultural operations.

WAC 296-306-200 Roll-over protective structures (ROPS) for tractors used in agricultural operations. (1) Scope. Agricultural tractors manufactured after October 25, 1976, shall meet the requirements in this section.

(2) Roll-over protective structure. A roll-over protective structure (ROPS) shall be provided by the employer for each tractor operated by an employee. Except as

provided in subsection (6) of this section, ROPS used on wheel-type tractors shall meet the test and performance requirements of WAC 296-306-250 through 296-306-25023 and ROPS used on track-type tractors shall meet the test and performance requirements of WAC 296-306-260 through 296-306-270. (See ROPS Design and Testing Criteria Addendum.)

(3) Seatbelts. (a) Where ROPS are required by this section, the employer shall:

(i) Provide each tractor with a seatbelt which meets the requirements of this subsection;

(ii) Require that each employee uses such seatbelt while the tractor is moving; and

(iii) Require that each employee tightens the seatbelt sufficiently to confine the employee to the protected area provided by the ROPS.

(b) Each seatbelt shall meet the requirements set forth in Society of Automotive Engineers Standard SAE J4C, 1965 Motor Vehicle Seat Belt Assemblies,* except as noted hereafter:

(i) Where a suspended seat is used, the seatbelt shall be fastened to the movable portion of the seat to accommodate a ride motion of the operator.

(ii) The seatbelt anchorage shall be capable of withstanding tensile loading as required by WAC 296-306-275 through 296-306-275(2)(c).

(iii) The seatbelt webbing material shall have a resistance to acids, alkalis, mildew, aging, moisture and sunlight equal to or better than that of untreated polyester fiber.

(4) Protection from spillage. Batteries, fuel tanks, oil reservoirs and coolant systems shall be constructed and located or sealed to assure that spillage will not occur which may come in contact with the operator in the event of an upset.

(5) Protection from sharp surfaces. All sharp edges and corners at the operator's station shall be designed to minimize operator injury in the event of an upset.

(6) Exempted uses. Items (2) and (3) of this section do not apply to the following uses:

(a) "Low profile" tractors while they are used in orchards, vineyards or hop yards where the vertical clearance requirements would substantially interfere with normal operations, and while their use in incidental to the work performed therein.

(b) "Low profile" tractors while used inside a farm building or greenhouse in which the vertical clearance is insufficient to allow a ROPS equipped tractor to operate, and while their use is incidental to the work performed therein.

(c) Tractors while used with mounted equipment which is incompatible with ROPS (e.g., cornpickers, cotton strippers, vegetable pickers and fruit harvesters.)

(d) Track-type agricultural tractors whose overall width (as measured between the outside edges of the tracks) is at least three times the height of their rated center of gravity, and whose rated maximum speed in either forward or reverse is not greater than 7-miles per hour, when used only for tillage or harvesting operations and while their use is incidental thereto, and which:

(i) Does not involve operating on slopes in excess of 40 degrees from horizontal, and

(ii) Does not involve operating on piled crop products or residue, as for example, silage in stacks or pits, and

(iii) Does not involve operating in close proximity to irrigation ditches, streams or other excavations more than two feet deep which contain slopes of more than 40 degrees from horizontal, and

(iv) Does not involve construction-type operation, such as bulldozing, grading or land clearing.

(7) Remounting. Where ROPS are removed for any reason, they shall be remounted so as to meet the requirements of this subsection.

(8) Labeling. Each ROPS shall have a label, permanently affixed to the structure, which states:

(a) Manufacturer's or fabricator's name and address;

(b) ROPS model number, if any;

(c) Tractor makes, models, or series numbers that the structure is designed to fit; and

(d) That the ROPS model was tested in accordance with the requirements of this section.

(9) Operating instructions. Every employee who operates an agricultural tractor shall be informed of the operating practices contained in Exhibit A of this section and of any other practices dictated by the work environment. Such information shall be provided at the time of initial assignment and at least annually thereafter.

*Copies may be obtained from the Society of Automotive Engineers, 400 Commonwealth Drive, Warrendale, PA 15096.

EXHIBIT A

EMPLOYEE OPERATING INSTRUCTIONS

1. Securely fasten your seat belt if the tractor has a ROPS.
2. Where possible, avoid operating the tractor near ditches, embankments and holes.
3. Reduce speed when turning, crossing slopes and on rough, slick or muddy surfaces.
4. Stay off slopes too steep for safe operation.
5. Watch where you are going, especially at row ends, on roads and around trees.
6. Passengers, other than persons required for instruction or machine operation, shall not be permitted to ride on equipment unless a passenger seat or other protective device is provided.
7. Operate the tractor smoothly—no jerky turns, starts, or stops.
8. Hitch only to the drawbar and hitch points recommended by tractor manufacturers.
9. When tractor is stopped, set brakes securely and use park lock if available.

NOTE: See Number LI-414-28.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-08-026 (Order 82-10), § 296-306-200, filed 3/30/82; Order 76-28, § 296-306-200, filed 9/28/76.]

Chapter 296-350 WAC
REASSUMPTION OF JURISDICTION PURSUANT TO RCW 49.17.140

WAC
296-350-080 Reassumption of jurisdiction—Final determination—Mailing.
296-350-095 Settlement agreements.
296-350-35055 Extension of abatement date(s)—Hearings.
296-350-400 Posting of notices—Posting of citation and notice—Availability of act and applicable standards.

WAC 296-350-080 Reassumption of jurisdiction--Final determination--Mailing. (1) Immediately following the informal conference the presiding officer shall complete a status report of the reassumption of jurisdiction which shall include a summary of findings and conclusions and shall state therein the redetermination and final decision of the department. The presiding officer shall then complete and submit those documents which are necessary for the expeditious processing of these redeterminations and final decisions such that all corrective abatement, relating to the subject matter of the reassumption of jurisdiction, can be issued by the department within fifteen working days of the determination to reassume jurisdiction over the subject matter of the appeal.

(2) Corrective notices issued following reassumption of jurisdiction shall be forwarded by certified mail or personal delivery or service. Upon receipt of a corrective notice of redetermination issued by the department pursuant to RCW 49.17.140(3), the employer shall immediately post the corrective notice of redetermination or a copy thereof in a prominent place at or near each place a violation referred to in the corrective notice of redetermination occurred. The corrective notice of redetermination or a copy thereof shall remain posted as required by this section until the violation(s) have been abated, or for three working days, whichever is longer. [Statutory Authority: RCW 49.17.040 and 49.17.050. 82-13-045 (Order 82-22), § 296-350-080, filed 6/11/82; Order 76-6, § 296-350-080, filed 3/1/76; Order 75-14, § 296-350-080, filed 4/14/75; Order 74-21, § 296-350-080, filed 5/6/74.]

WAC 296-350-095 Settlement agreements. (1) Every settlement agreement in an appeal to the board of industrial insurance appeals shall contain a statement of the abatement date for the cited condition or a statement that the condition has been abated. If any settlement agreement lacks a statement of abatement date, the department shall assign an abatement date to the condition which allows the same amount of time for abatement as was allowed by the original abatement date; the amount of time for abatement shall be figured from the date that the board of industrial insurance appeals issues its order adopting the settlement agreement.

(2) Every settlement agreement shall contain a statement that payment of any penalty has been tendered or a statement of a promise to pay any penalty. [Statutory Authority: RCW 49.17.040 and 49.17.050. 82-13-045 (Order 82-22), § 296-350-095, filed 6/11/82.]

WAC 296-350-35055 Extension of abatement date(s)--Hearings. (1) The assistant director shall designate personnel of the staff of the division of industrial safety and health to act as hearing officers at hearings on applications for extension of abatement date(s).

(2) A hearing officer shall be present and preside over the proceedings at all hearings conducted. The hearing officer may be accompanied by an assistant attorney general who shall be able to render legal advice to the hearing officer. The assistant attorney general may, at the hearing officer's request, preside over the proceedings.

(3) Prior to the commencement of the hearing, the hearing officer may confer with the parties attending the hearing concerning the material to be presented for the record in order to determine an orderly method of procedure.

(4) The provisions of chapter 34.04 RCW are applicable to hearings conducted pursuant to the provisions of this section.

(5) All proceedings relating to a hearing under this section shall be recorded mechanically or otherwise. Copies of transcripts of such recordings will be made available to any parties involved, upon request therefore and payment of the reasonable costs thereof. [Statutory Authority: RCW 49.17.040 and 49.17.050. 82-13-045 (Order 82-22), § 296-350-35055, filed 6/11/82. Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, chapters 42.30 and 43.22 RCW. 80-17-014 (Order 80-20), § 296-350-35055, filed 11/13/80; Order 75-14, § 296-350-35055, filed 4/14/75.]

WAC 296-350-400 Posting of notices--Posting of citation and notice--Availability of act and applicable standards. (1) Definitions. The definitions of WAC 296-350-010 and 296-27-020 shall apply to this section.

(2) Each employer shall post and keep posted a notice or notices (the WISHA Poster, WISHERS No. 1) to be furnished by the division of industrial safety and health, department of labor and industries, informing employees of the protections and obligations provided for in the act and that for assistance and information, including copies of the act, and of specific safety and health standards employees should contact the employer or the nearest office of the department of labor and industries. Such notice or notices shall be posted by the employer at each establishment in a conspicuous place or places where notices to employees are customarily posted. Each employer shall take steps to assure that such notices are not altered, defaced or covered by other material.

(3) The notice identified in subsection (2) of this section shall be posted in each establishment of the employer as defined in WAC 296-27-020(7).

(4) All notices required to be posted by provisions of the act, provisions of this chapter or the provisions of any other safety and health standard, rule or regulation adopted pursuant to the authority of the act, shall be posted as required by this section, or as required by the act, or as required by the provision of the applicable safety and health standard, rule or regulation.

(5) Unless otherwise specified in this section, the act, or the applicable safety and health standard, rule or regulation, notices or other materials required to be posted, shall be posted in each establishment of the employer, as defined in WAC 296-27-020(7).

(6) Copies of the act, all regulations published in this chapter and all applicable standards shall be available at all regional offices of the division of industrial safety and health, department of labor and industries. If an employer has obtained copies of these materials, he shall make them available upon request to any employee or his authorized representative on the same day the request is made, or at the earliest time mutually convenient to the employee or his authorized representative and the employer, for review by the requesting employee or authorized representative.

(7) Any employer failing to comply with the provisions of this section shall be subject to citation and penalty in accordance with the provisions of section 12 and 18 of the act. (RCW 49.17.120 and 49.17.180.)

(8) Documents required to be posted include, but shall not be limited to the following:

(a) A copy or copies of an application or applications for a variance or variances from any safety and health standards applied for in accordance with RCW 49.17-.080 or 49.17.090 shall be posted at each establishment to which the variance, if granted, will apply. The manner of posting such applications shall be in accordance with subsections (4) and (5) of this section.

(b) Upon receipt of any CITATION AND NOTICE issued by the department pursuant to RCW 49.17.120 or 49-.17.130, the employer shall immediately post the CITATION AND NOTICE or a copy thereof in a prominent place at or near each place a violation referred to in the CITATION AND NOTICE occurred. Where, because of the nature of the employer's operations, it is not practicable to post the CITATION AND NOTICE or a copy thereof at or near each place of violation, the CITATION AND NOTICE or a copy thereof shall be posted in the establishment of the employer, as defined in WAC 296-27-020(7).

The posted CITATION AND NOTICE or copy thereof shall be complete and shall not be abstracted, edited or otherwise changed from the original. The posted CITATION AND NOTICE or copy thereof shall be readily visible, and shall not be defaced or covered by other material.

The CITATION AND NOTICE or copy thereof shall remain posted as required by this subsection until the violation(s) has been abated, or for three working days, whichever is longer.

(c) A copy of the notice of filing of appeal pursuant to RCW 49.17.140, the notice of conference pursuant to WAC 263-12-090, and the notice of hearing pursuant to WAC 263-12-100 shall be posted by the employer at each establishment to which the notices apply in a conspicuous place or places where notices to employees are customarily posted. The manner of posting such notices shall be in accordance with subsections (4) and (5) of this section.

(d) In the event that a proposed agreement settling an appeal of a citation and notice to the board of industrial insurance appeals is reached between the employer and the department without the concurrence of the affected employees or employee groups, a copy of the proposed agreement shall be posted by the employer at each establishment to which the agreement applies in a conspicuous place or places where notices to employees are customarily posted. The agreement shall be posted for 10 days before it is filed with the board of industrial insurance appeals. The manner of posting shall be in accordance with subsections (4) and (5) of this section.

(e) Notices required to be posted by specific provisions of any safety and health standard or other rule or regulation duly adopted by the director shall be posted according to the standard, rule or regulation requiring such posting. If the provision containing the requirement for posting does not specify the manner of posting, such posting shall conform to the requirements of subsections (4) and (5) of this section. [Statutory Authority: RCW 49.17.040 and 49.17.050. 82-13-045 (Order 82-22), § 296-350-400, filed 6/11/82; Order 75-14, § 296-350-400, filed 4/14/75. Formerly WAC 296-27-200.]

Chapter 296-360 WAC
DISCRIMINATION, PURSUANT TO RCW 49.17.160

WAC

296-360-030 Filing a complaint of discrimination.

WAC 296-360-030 Filing a complaint of discrimination. (1) Who may file. A complaint of RCW 49.17-.160 discrimination may be filed by the employee him- or herself, or by a representative authorized to do so on his or her behalf.

(2) Nature of filing. No particular form of complaint is required.

(3) Place of filing. The complaint should be filed with the division.

(4) Time for filing. RCW 49.17.160(3) provides that an employee who believes that he or she has been discriminated against in violation of RCW 49.17.160 "may, within thirty days after such violation occurs" file a complaint with the assistant director. A major purpose of the thirty-day period is to allow the assistant director to decline to entertain complaints that have become stale. Accordingly, the division will presume that complaints not filed within thirty days of an alleged violation are untimely. There may be circumstances, however, that justify tolling the thirty-day period on recognized equitable principles or because strongly extenuating circumstances exist, e.g., where the employer has concealed, or misled the employee regarding the grounds for, discharge or other adverse action. In the absence of circumstances justifying a tolling of the thirty-day period, the division shall not accept untimely complaints. [Statutory Authority: RCW 49.17.040 and 49.17.050. 82-13-045 (Order 82-22), § 296-360-030, filed 6/11/82. Statutory Authority: RCW 49.17.040, 49.17-.050, 49.17.240, chapters 43.22 and 42.30 RCW. 80-17-015 (Order 80-21), § 296-360-030, filed 11/13/80.]

Chapter 296-401 WAC
CERTIFICATION OF COMPETENCY FOR JOURNEYMAN ELECTRICIANS

WAC

296-401-010 Examination and fees.
296-401-020 Electricians with licenses or practicing the electrical trade at effective date of the act.
296-401-050 Repealed.
296-401-080 Eligibility for journeyman's examination.
296-401-100 Computation of years of employment.
296-401-140 Supervision of trainees in the electrical trades.
296-401-150 Penalties for false statements or material misrepresentation.
296-401-160 Enforcement.
296-401-180 Examination subjects for specialty's and journeyman's certificates of competency.

DISPOSITION OF SECTIONS FORMERLY CODIFIED IN THIS CHAPTER

296-401-050 Meetings of governor's advisory board. [Order 73-21, § 296-401-050, filed 11/5/73.] Repealed by 81-06-037 (Order 81-5), filed 2/27/81, effective 4/1/81. Statutory Authority: RCW 19.28.060.

WAC 296-401-010 Examination and fees. A person who wants to take the examination for a journeyman or specialty electrician certificate of competency must pay a $35.00 fee to the department to cover the cost of the examination. After the examination, the department will certify the results within thirty days after the examination and will notify the applicant whether he or she has passed or failed. An applicant who has failed the examination may, after thirty days from the date of the notice, apply to the department to retake the examination upon payment of an additional $35.00 examination fee. [Statutory Authority: RCW 19.28.060 and 19.28.210. 82-18-036 (Order 82-29), § 296-401-010, filed 8/26/82; Order 73-21, § 296-401-010, filed 11/5/73.]

WAC 296-401-020 Electricians with licenses or practicing the electrical trade at effective date of the act. Any application for certification under RCW 19.28.560 of this act must be received by the department prior to December 14, 1973. As defined in RCW 19.28.530 an applicant to be certified as a journeyman electrician must have had four or more years of experience under the direct supervision of a licensed journeyman electrician. [Statutory Authority: RCW 19.28.060. 81-06-037 (Order 81-5), § 296-401-020, filed 2/27/81, effective 4/1/81; Order 76-3, § 296-401-020, filed 1/30/76; Order 73-21, § 296-401-020, filed 11/5/73.]

WAC 296-401-050 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-401-080 Eligibility for journeyman's examination. A person holding an electrical trainee certificate who has been employed under the direct supervision of a journeyman electrician for four years, or who has completed a four year apprenticeship program in electrical construction that is registered with the state apprenticeship council or the Federal Bureau of Apprenticeship and Training, or who is a graduate of a trade school program in electrical construction that was established during 1946, shall be eligible to take the examination for a journeyman's certificate of competency. A person who has had two years of schooling under the conditions provided in RCW 19.28.530 in addition to two years of employment under the direct supervision of a journeyman electrician shall be eligible to take the examination for a journeyman's certificate of competency. [Statutory Authority: RCW 19.28.060. 81-06-037 (Order 81-5), § 296-401-080, filed 2/27/81, effective 4/1/81. Statutory Authority: RCW 18.37.130. 80-02-052 (Order 80-1), § 296-401-080, filed 1/16/80.]

WAC 296-401-100 Computation of years of employment. (1) For the purposes of RCW 19.28.530, 1800 hours of employment shall be considered one year of employment.

(2) At the time of renewal, the holder shall provide the department with an accurate list of the holder's employers in the electrical industry for the previous year and the number of hours worked for each employer.

(3) A person who has completed a four year apprenticeship program in electrical construction that is registered with the state apprenticeship council or the Federal Bureau of Apprenticeship and Training shall be considered to have completed 7200 hours (four years) of employment.

(4) A person who has completed a two year apprenticeship program in an electrical specialty that is registered with the state apprenticeship council or the Federal Bureau of Apprenticeship and Training shall be considered to have completed 3600 hours (two years) of employment. [Statutory Authority: RCW 19.28.060. 81-06-037 (Order 81-5), § 296-401-100, filed 2/27/81, effective 4/1/81. Statutory Authority: RCW 18.37.130. 80-02-052 (Order 80-1), § 296-401-100, filed 1/16/80.]

WAC 296-401-140 Supervision of trainees in the electrical trades. A person possessing a training certificate (trainee) shall be under the direct supervision of a supervising electrician as defined in RCW 19.28.510. The supervising electrician shall be working on the same job site and within the immediate working proximity of the trainee. The supervising electrician must assign and examine the trainee's electrical work to see that it conforms to the applicable electrical codes. [Statutory Authority: RCW 19.28.060. 81-06-037 (Order 81-5), § 296-401-140, filed 2/27/81, effective 4/1/81. Statutory Authority: RCW 18.37.130. 80-02-052 (Order 80-1), § 296-401-140, filed 1/16/80.]

WAC 296-401-150 Penalties for false statements or material misrepresentation. All applications required under chapter 19.28 RCW and the annual statement of hours of employment required under RCW 19.28.510, shall be made under oath. A person who knowingly makes a false statement or material misrepresentation on an application or statement may be referred to the county prosecutor for criminal prosecution under RCW 9A.72.020, 9A.72.030, and 9A.72.040. The department

may also file a civil action under RCW 19.28.620 and may subtract up to 900 hours of employment from a trainee's total hours, if the department determines the trainee has made a false statement or material misrepresentation. [Statutory Authority: RCW 19.28.060. 81-06-037 (Order 81-5), § 296-401-150, filed 2/27/81, effective 4/1/81. Statutory Authority: RCW 18.37.130. 80-02-052 (Order 80-1), § 296-401-150, filed 1/16/80.]

WAC 296-401-160 Enforcement. (1) The department shall ensure that employers and employees subject to chapter 19.28 RCW comply with that chapter and chapter 296-401 WAC by inspecting electrical job sites. The inspections shall be made by the department's compliance officers.

(2) The compliance officer shall determine whether:

(a) Each person doing electrical work on the job site has a proper journeyman, specialty, or trainee certificate;

(b) The ratio of the certified journeyman electricians to the certified trainees on the job site is correct; and

(c) Each certified trainee is directly supervised by an individual with a journeyman or specialty certificate of competency.

(3) If the compliance officer determines that an employer or employee has violated chapters 19.28 RCW or 296-401 WAC, the department shall issue a notice of violation that describes the reason the employer or employee has violated chapters 19.28 RCW or 296-401 WAC and prescribes a time for abatement of the violation.

(4) If the employer or employee has not abated the violation within the time prescribed in the notice of violation issued pursuant to subsection (3), the department may:

(a) Inform the electrical inspection section and the electrical utility that the electrical worker or workers on the job site are in violation of chapters 19.28 RCW or 296-401 WAC pursuant to the authority granted in RCW 19.28.620. The electrical inspection section shall prohibit the connection of electrical service and the utility shall not connect the electrical service until the department is satisfied that the electrical work complies with chapters 19.28 RCW and 296-401 WAC.

(b) Ask the attorney general to begin an action to collect the civil penalties provided for in RCW 19.28-.620; and

(c) Issue a cease and desist order that forbids future conduct that is similar to the violation. The order shall take effect immediately when it is received by the employer or employee to whom it is directed.

(5) The employer or employee to whom a cease and desist order is directed may request a hearing pursuant to WAC 296-401-170; however, the request shall not stay the effect of the order. If the employer or employee disobeys the cease and desist order, the department shall apply to the superior court for a court order enforcing the cease and desist order. If the employer or employee disobeys the court order, the department shall request the attorney general to apply to the superior court for an order holding the employer or employee in contempt of court. [Statutory Authority: RCW 19.28.060. 81-06-037 (Order 81-5), § 296-401-160, filed 2/27/81, effective 4/1/81. Statutory Authority: RCW 18.37.130. 80-02-052 (Order 80-1), § 296-401-160, filed 1/16/80.]

WAC 296-401-180 Examination subjects for specialty's and journeyman's certificates of competency. The following subjects are among those that may be included in the examination for certificate of competency. The list is not exclusive, and the test may also contain subjects not in the list.

JOURNEYMAN ELECTRICIAN EXAMINATIONS MAY BE BASED ON THESE ITEMS:

AC – Generator; Three-phase; Meters; Characteristics of; Power in AC Circuits (power factor); Mathematics of Ac Circuits
Air conditioning – Basic
Blueprints – Surveys and plot plans; Floor plans; Service and feeders; Electrical symbols; Elevation views; Plan views
Building wire – Sizes
Cable trays
Calculations
Capacitive reactance
Capacitor – Types; In series and parallel
Circuits – Series; Parallel; Combination; Basic; Branch; Outside branch circuits; Calculations
Conductor – Voltage drop (line loss); Grounded
Conduit – Wiring methods
DC – Generator; Motors; Construction of motors; Meters
Definitions
Electrical units
Electron theory
Fastening devices
Fire alarms – Introduction to; Initiating circuits
Fuses
Generation – Principles of
Grounding
Incandescent lights
Inductance – Introduction to; Reactance
Insulation – of wire
Mathematics – Square root; Vectors' figuring percentages
Motors – Motors vs. Generators/CEMF; Single phase; Capacitor; Repulsion; Shaded pole; Basic principles of AC motors
Ohm's Law
Power
Power factor – AC circuits; Correction of; Problems
Rectifiers
Resistance – of wire
Rigging

Safety – Electrical shock
Services
Three–wire system
Tools
Transformers – Principles of; Types; Single phase; Three–phase connections
Voltage polarity across a load
Wiring methods – Conduit; General
Wiring systems – Less than 400 volts; 480/277 volts; Three–phase delta; Distribution

SPECIALTY RESIDENTIAL ELECTRICIAN EXAMINATIONS MAY BE BASED ON THESE ITEMS:

AC – Meters
Blueprints – Residential plans; Floor plans; Service and feeders
Calculations
Circuits – Series; Parallel; Combination; Basic; Outside branch
Conductor – Voltage drop (line loss); Grounded; Aluminum
Conduit – Wiring methods
Electrical units
First aid
Fuses
General lighting
Grounding of conductors
Insulation of wire
Ladder safety
Mathematics – Figuring percentage
Ohm's Law
Overcurrent protection
Resistance of wire
Services
Sizes of building wire
Three–wire system
Tools
Transformer – Ratios; Single–phase

[Statutory Authority: RCW 19.28.060. 81–06–037 (Order 81–5), § 296–401–180, filed 2/27/81, effective 4/1/81. Statutory Authority: RCW 18.37.130. 80–02–052 (Order 80–1), § 296–401–180, filed 1/16/80.]

Title 299 WAC
LAW ENFORCEMENT OFFICERS' TRAINING COMMISSION

Chapters

299–04 Practice and procedure.
299–08 Recruitment––Selection––Training.

Chapter 299–04 WAC
PRACTICE AND PROCEDURE

WAC
299–04–010 through 299–04–570 Repealed.

DISPOSITION OF SECTIONS FORMERLY CODIFIED IN THIS CHAPTER

299–04–010 Appearance and practice before agency—Who may appear. [Filed 4/19/67.] Decodified under RCW 34.04.050(5). Later promulgation, see Title 139.
299–04–020 Appearance and practice before agency—Solicitation of business unethical. [Filed 4/19/67.] Decodified under RCW 34.04.050(5). Later promulgation, see Title 139.
299–04–030 Appearance and practice before agency—Standards of ethical conduct. [Filed 4/19/67.] Decodified under RCW 34.04.050(5). Later promulgation, see Title 139.
299–04–040 Appearance and practice before agency—Appearance by former employee of board or former member of attorney general's staff. [Filed 4/19/67.] Decodified under RCW 34.04.050(5). Later promulgation, see Title 139.
299–04–050 Computation of time. [Filed 4/19/67.] Decodified under RCW 34.04.050(5). Later promulgation, see Title 139.
299–04–060 Notice and opportunity for hearing in contested cases. [Filed 4/19/67.] Decodified under RCW 34.04.050(5). Later promulgation, see Title 139.
299–04–070 Service of process—By whom served. [Filed 4/19/67.] Decodified under RCW 34.04.050(5). Later promulgation, see Title 139.
299–04–080 Service of process—Upon whom served. [Filed 4/19/67.] Decodified under RCW 34.04.050(5). Later promulgation, see Title 139.
299–04–090 Service of process—Service upon parties. [Filed 4/19/67.] Decodified under RCW 34.04.050(5). Later promulgation, see Title 139.
299–04–100 Service of process—Method of service. [Filed 4/19/67.] Decodified under RCW 34.04.050(5). Later promulgation, see Title 139.
299–04–110 Service of process—When service complete. [Filed 4/19/67.] Decodified under RCW 34.04.050(5). Later promulgation, see Title 139.
299–04–120 Service of process—Filing with agency. [Filed 4/19/67.] Decodified under RCW 34.04.050(5). Later promulgation, see Title 139.
299–04–130 Subpoenas—Where provided by law—Form. [Filed 4/19/67.] Decodified under RCW 34.04.050(5). Later promulgation, see Title 139.
299–04–140 Subpoenas—Issuance to parties. [Filed 4/19/67.] Decodified under RCW 34.04.050(5). Later promulgation, see Title 139.
299–04–150 Subpoenas—Service. [Filed 4/19/67.] Decodified under RCW 34.04.050(5). Later promulgation, see Title 139.
299–04–160 Subpoenas—Fees. [Filed 4/19/67.] Decodified under RCW 34.04.050(5). Later promulgation, see Title 139.
299–04–170 Subpoenas—Proof of service. [Filed 4/19/67.] Decodified under RCW 34.04.050(5). Later promulgation, see Title 139.
299–04–180 Subpoenas—Quashing. [Filed 4/19/67.] Decodified under RCW 34.04.050(5). Later promulgation, see Title 139.
299–04–190 Subpoenas—Enforcement. [Filed 4/19/67.] Decodified under RCW 34.04.050(5). Later promulgation, see Title 139.
299–04–200 Subpoenas—Geographical scope. [Filed 4/19/67.] Decodified under RCW 34.04.050(5). Later promulgation, see Title 139.
299–04–210 Depositions and interrogatories in contested cases—Right to take. [Filed 4/19/67.] Decodified under RCW 34.04.050(5). Later promulgation, see Title 139.
299–04–220 Depositions and interrogatories in contested cases—Scope. [Filed 4/19/67.] Decodified under RCW 34.04.050(5). Later promulgation, see Title 139.