

WAC 296-24-33011 Industrial plants. (1) Scope.

(a) **Application.** This section applies to those industrial plants where:

(i) The use of flammable liquids is incidental to the principal business, or

(ii) Where flammable liquids are handled or used only in unit physical operations such as mixing, drying, evaporating, filtering, distillation, and similar operations which do not involve chemical reaction. This section does not apply to chemical plants, refineries or distilleries.

(b) **Exceptions.** Where portions of such plants involve chemical reactions such as oxidation, reduction, halogenation, hydrogenation, alkylation, polymerization, and other chemical processes, those portions of the plant must be in accordance with WAC 296-24-33017.

(2) **Incidental storage or use of flammable liquids.**

(a) **Application.** This must be applicable to those portions of an industrial plant where the use and handling of flammable liquids is only incidental to the principal business, such as automobile assembly, construction of electronic equipment, furniture manufacturing, or other similar activities.

(b) **Containers.** Flammable liquids must be stored in tanks or closed containers.

(i) Except as provided in (b)(ii) and (iii) of this subsection all storage shall comply with WAC 296-24-33009 (3) or (4).

(A) When the only operation involved is the storage of flammables in containers or tanks that are closed and remain closed throughout the storage, WAC 296-24-33009(5) and tables H-14 and H-15 will apply.

(B) When the procedure involved is mixing, transferring, or other exposure of liquids to vaporization through operational procedures in which containers or tanks do not remain closed in the storage area, you must use WAC 296-24-33009(4) and table H-13 to determine permissible quantities.

(ii) The quantity of liquid that may be located outside of an inside storage room or storage cabinet in a building or in any one fire area of a building must not exceed:

(A) 25 gallons of Category 1 flammable liquids in containers.

(B) 120 gallons of Category 2, 3, or 4 flammable liquids in containers.

(C) 660 gallons of Category 2, 3, or 4 flammable liquids in a single portable tank.

(iii) Where large quantities of flammable liquids are necessary, storage may be in tanks which must comply with the applicable requirements of WAC 296-24-33005.

(c) **Separation and protection.** You must separate areas in which flammable liquids are transferred from one tank or container to another container from other operations in the building by adequate distance or by construction having adequate fire resistance. You must provide drainage or other means to control spills. You must provide adequate natural or mechanical ventilation.

(d) **Handling liquids at point of final use.**

(i) You must keep Category 1 or 2 flammable liquids, or Category 3 flammable liquids with a flashpoint below 100°F (37.8°C), in covered containers when not actually in use.

(ii) Where flammable liquids are used or handled, except in closed containers, you must provide means to dispose promptly and safely of leakage or spills.

(iii) Category 1 or 2 flammable liquids, or Category 3 flammable liquids with a flashpoint below 100°F (37.8°C), may be used only where there are no open flames or other sources of ignition within the possible path of vapor travel.

(iv) You must draw flammable liquids from or transferred into vessels, containers, or portable tanks within a building only through a closed piping system, from safety cans, by means of a device drawing through the top, or from a container or portable tanks by gravity through an approved self-closing valve. You must prohibit transferring by means of air pressure on the container or portable tanks.

(3) **Unit physical operations.**

(a) **Application.** This subsection (3) must be applicable in those portions of industrial plants where flammable liquids are handled or used in unit physical operations such as mixing, drying, evaporating, filtering, distillation, and similar operations which do not involve chemical change. Examples are plants compounding cosmetics, pharmaceuticals, solvents, cleaning fluids, insecticides, and similar types of activities.

(b) **Location.** Industrial plants must be located so that each building or unit of equipment is accessible from at least one side for firefighting and fire control purposes. Buildings must be located with respect to lines of adjoining property which may be built upon as set forth in WAC 296-24-33017 (2)(a) and (b) except that the blank wall referred to in WAC 296-24-33017 (2)(b) must have a fire resistance rating of at least 2 hours.

(c) **Chemical processes.** You must separate areas where unstable liquids are handled or small scale unit chemical processes are carried on from the remainder of the plant by a fire wall of two-hour minimum fire resistance rating.

(d) **Drainage.**

(i) You must provide emergency drainage systems to direct flammable liquid leakage and fire protection water to a safe location. This may require curbs, scuppers, or special drainage systems to control the spread of fire; see WAC 296-24-33005 (2)(g)(ii).

(ii) Emergency drainage systems, if connected to public sewers or discharged into public waterways, must be equipped with traps or separators.

(iii) The industrial plant must be designed and operated to prevent the normal discharge of flammable liquids into public waterways, public sewers, or adjoining property.

(e) **Ventilation.**

(i) Areas as defined in subsection (1)(a) of this section using Category 1 or 2 flammable liquids, or Category 3 flammable liquids with a flashpoint below 100°F (37.8°C), must be ventilated at a rate of not less than one cubic foot per minute per square foot of solid floor area. This must be accomplished by natural or mechanical ventilation with discharge or exhaust to a safe location outside of the building. You must make a provision for introduction of makeup air in such a manner as not to short circuit the ventilation. You must arrange ventilation to include all floor areas or pits where flammable vapors may collect.

(ii) Equipment used in a building and the ventilation of the building must be designed so as to limit flammable vapor-air mixtures under normal operating conditions to the interior of equipment, and to not more than five feet from equipment which exposes Category 1 or 2 flammable liquids, or Category 3 flammable liquids with a flashpoint below 100°F (37.8°C), to the air. Examples of such equipment are dis-

pensing stations, open centrifuges, plate and frame filters, open vacuum filters, and surfaces of open equipment.

(f) **Storage and handling.** The storage, transfer, and handling of liquid must comply with WAC 296-24-33017(4).

(4) **Tank vehicle and tank car loading and unloading.**

You must separate tank vehicle and tank car loading or unloading facilities from aboveground tanks, warehouses, other plant buildings or nearest line of adjoining property which may be built upon by a distance of 25 feet for Category 1 or 2 flammable liquids, or Category 3 flammable liquids with a flashpoint below 100°F (37.8°C), and fifteen feet for Category 3 flammable liquids with a flashpoint at or above 100°F (37.8°C) and Category 4 flammable liquids, measured from the nearest position of any fill stem. Buildings for pumps or shelters for personnel may be a part of the facility. Operations of the facility must comply with the appropriate portions of WAC 296-24-33013(3).

(5) **Fire control.**

(a) **Portable and special equipment.** You must provide portable fire extinguishment and control equipment in such quantities and types as are needed for the special hazards of operation and storage.

(b) **Water supply.** Water must be available in volume and at adequate pressure to supply water hose streams, foam-producing equipment, automatic sprinklers, or water spray systems as the need is indicated by the special hazards of operation, dispensing and storage.

(c) **Special extinguishers.** You must provide special extinguishing equipment such as that utilizing foam, inert gas, or dry chemical as the need is indicated by the special hazards of operation dispensing and storage.

(d) **Special hazards.** Where the need is indicated by special hazards of operation, you must protect flammable liquid processing equipment, major piping, and supporting steel by approved water spray systems, deluge systems, approved fire-resistant coatings, insulation, or any combination of these.

(e) **Maintenance.** You must adequately maintain and periodically inspect and test plant fire protection facilities to make sure they are always in satisfactory operating condition, and they will serve their purpose in time of emergency.

(6) **Sources of ignition.**

(a) **General.** You must take adequate precautions to prevent the ignition of flammable vapors. Sources of ignition include but are not limited to open flames; lightning; smoking; cutting and welding; hot surfaces; frictional heat; static, electrical and mechanical sparks; spontaneous ignition, including heat-producing chemical reactions; and radiant heat.

(b) **Grounding.** You must not dispense Category 1 or 2 flammable liquids, or Category 3 flammable liquids with a flashpoint below 100°F (37.8°C), into containers unless the nozzle and container are electrically interconnected. Where the metallic floorplate on which the container stands while filling is electrically connected to the fill stem or where the fill stem is bonded to the container during filling operations by means of a bond wire, the provisions of these standards must be deemed to have been complied with.

(7) **Electrical.**

(a) You must install all electrical wiring and equipment shall be installed according to chapter 296-24 WAC Part L.

(b) Locations where flammable vapor-air mixtures may exist under normal operations must be classified Class I, Division 1 according to the requirements of chapter 296-24 WAC Part L. For those pieces of

equipment installed in accordance with the requirements of subsection (3)(e)(ii) of this section, the Division 1 area must extend five feet in all directions from all points of vapor liberation. All areas within pits must be classified Division 1 if any part of the pit is within a Division 1 or 2 classified area, unless the pit is provided with mechanical ventilation.

(c) Locations where flammable vapor-air mixtures may exist under abnormal conditions and for a distance beyond Division 1 locations must be classified Division 2 according to the requirements of chapter 296-24 WAC Part L. These locations include an area within twenty feet horizontally, three feet vertically beyond a Division 1 area, and up to three feet above floor or grade level within twenty-five feet, if indoors, or ten feet if outdoors, from any pump, bleeder, withdrawal fitting, meter, or similar device handling Category 1 or 2 flammable liquids, or Category 3 flammable liquids with a flashpoint below 100°F (37.8°C). Pits provided with adequate mechanical ventilation within a Division 1 or 2 area must be classified Division 2. If only Category 3 flammable liquids with a flashpoint at or above 100°F (37.8°C) or Category 4 flammable liquids are handled, then ordinary electrical equipment is satisfactory though care must be used in locating electrical apparatus to prevent hot metal from falling into open equipment.

(d) Where the provisions of (a), (b), and (c) of this subsection require the installation of electrical equipment suitable for Class I, Division 1 or Division 2 locations, ordinary electrical equipment including switchgear may be used if installed in a room or enclosure which is maintained under positive pressure with respect to the hazardous area. Ventilation makeup air must be uncontaminated by flammable vapors.

(8) **Repairs to equipment.** You must only permit hot work, such as welding or cutting operations, use of spark-producing power tools, and chipping operations under supervision of an individual in responsible charge. The individual in responsible charge must make an inspection of the area to be sure that it is safe for the work to be done and that safe procedures will be followed for the work specified.

(9) **Housekeeping.**

(a) **General.** Maintenance and operating practices must be in accordance with established procedures which will tend to control leakage and prevent the accidental escape of flammable liquids. You must clean up spills promptly.

(b) **Access.** You must maintain adequate aisles for unobstructed movement of personnel and so that fire protection equipment can be brought to bear on any part of flammable liquid storage, use, or any unit physical operation.

(c) **Waste and residue.** You must keep combustible waste material and residues in a building or unit operating area to a minimum, stored in covered metal receptacles and disposed of daily.

(d) **Clear zone.** You must keep ground area around buildings and unit operating areas free of weeds, trash, or other unnecessary combustible materials.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, and 49.17.060. WSR 15-24-100, § 296-24-33011, filed 12/1/15, effective 1/5/16. Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060 and 29 C.F.R. 1910 Subpart Z. WSR 14-07-086, § 296-24-33011, filed 3/18/14, effective 5/1/14. Statutory Authority: Chapter 49.17 RCW. WSR 94-15-096 (Order 94-07), § 296-24-33011, filed 7/20/94, effective 9/20/94; WSR 91-24-017 (Order 91-07), § 296-24-33011, filed

11/22/91, effective 12/24/91; WSR 89-11-035 (Order 89-03), § 296-24-33011, filed 5/15/89, effective 6/30/89. Statutory Authority: RCW 49.17.040 and 49.17.050. WSR 85-10-004 (Order 85-09), § 296-24-33011, filed 4/19/85; Order 76-6, § 296-24-33011, filed 3/1/76; Order 73-5, § 296-24-33011, filed 5/9/73 and Order 73-4, § 296-24-33011, filed 5/7/73.]