

# Chapter 204-24 WAC

## TRACTION DEVICES

### WAC

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### DISPOSITION OF SECTIONS FORMERLY CODIFIED IN THIS CHAPTER

204-24-060	Period of use. [Order 7607, § 204-24-060, filed 9/14/76; Order 6902, § 204-24-060, filed 2/17/70.] Repealed by 08-24-030, filed 11/24/08, effective 12/25/08. Statutory Authority: RCW 46.37.005 and 46.37.420.
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**WAC 204-24-005 Promulgation.** By authority of RCW 46.37.005 and 46.37.420, the Washington state patrol adopts the following standards for tire chains and traction tires.

[Statutory Authority: RCW 46.37.005 and 46.37.420. 08-24-030, § 204-24-005, filed 11/24/08, effective 12/25/08.]

**WAC 204-24-010 Scope.** These standards apply to tire chains and traction tires designed for and used upon a public roadway.

[Statutory Authority: RCW 46.37.005 and 46.37.420. 08-24-030, § 204-24-010, filed 11/24/08, effective 12/25/08.]

**WAC 204-24-015 Definitions.** (1) "All wheel drive" means a vehicle which has four-wheel drive capability and may be driven with all wheels in gear.

(2) "Alternative traction device (ATD)" means pneumatically driven chains which, when engaged, spin under the drive wheels automatically as traction is lost or a traction device differing from metal chains in construction, material or design but capable of providing traction equal to or exceeding that of such metal chains under similar conditions.

(3) "Cable laid rope" means a compound laid rope consisting of several ropes or several layers of strands laid together into one rope.

(4) "Cable tire chains" means any ladder-type cable tire chain assemblies designed for use on tires that have been manufactured in accordance with the standards of the Tire & Rim Association, Inc.; 3200 West Market Street; Akron, Ohio 44313.

(5) "Cross cable fastener" means any suitable fastener used to attach each cross cable to the side cable. The fastener must be constructed and assembled to prevent accidental detachment.

(6) "Cross cable traction reinforcement sleeves" means a device that is constructed of the manufacturer's specified material and of suitable length and width to maximize traction, braking, cornering and longevity.

(7) "Fastener" means any suitable connecting device, secured to one end of a side cable constructed so that it can

(9/16/10)

connect to the opposing end and be easily closed (engaged or fastened) and be readily opened (released) by hand.

(8) "Link tire chains" means tire chains which consist of at least two chain loops, one on each side of the tire, connected by evenly spaced metal cross chains across the tire tread.

(9) "Reinforced cross cables" means stranded cable wrapped or covered to provide increased resistance to abrasive wear. This covering may be either a hard drawn spring wire, a high-carbon steel wire or nylon type 6 or 12. The wrapped or covered cable must be enclosed by traction reinforcement sleeves covering said cable essentially from side connector to side connector. Cross cable must be of specified length and provide proper drape over the tire tread.

(10) "Side cable" means stranded cable to complete one full circumference along the tire sidewall.

[Statutory Authority: RCW 46.37.420 and 46.37.005. 10-19-073, § 204-24-015, filed 9/16/10, effective 10/17/10; 08-24-030, § 204-24-015, filed 11/24/08, effective 12/25/08.]

**WAC 204-24-020 Standards for tire chains.** (1) Link tire chains must meet the National Association of Chain Manufacturers Tire Chain Specifications NACM-5179(TC).

(2) Cable tire chains must be designed for use on tires mounted in accordance with specifications in Society of Automotive Engineers (SAE) Recommended Practice J1232, Class S, and SAE Informational Report J683a. Oversized tires, snow tires, special service, or special traction tires, etc., may require chains of a larger size.

(a) Classifications. Cable tire chains described in this specification must be of the following types as specified for regular and restricted clearances:

- (i) Passenger car;
- (ii) Single light truck;
- (iii) Heavy truck;
- (iv) Special police and emergency vehicle.

(b) Requirements:

(i) Components. Cable tire chain assemblies must consist of two side cables, or two outer and one inner side cable, with reinforced cross cables, cross cable fastener, and fasteners necessary to form a complete assembly.

(ii) Material.

(A) Stranded side and stranded cross cable wire must be constructed of preformed galvanized high-carbon steel with a minimum of 450 pounds breaking strength with seven wires per strand and seven strands per cable. The lay must be a right hand lay.

(B) Wire covering stranded cable must be constructed of high-carbon plow steel wire with a minimum tensile strength of 230,000 pounds per square inch.

(C) Spring wire covering stranded cable must be constructed of harddrawn spring wire with a minimum tensile strength of 200,000 pounds per square inch.

(D) Cables, spring, and plow wire must be manufactured in conformance to SAE Recommended Practice J113.

(E) Cross cable fasteners must be constructed of open hearth, electric furnace, or basic oxygen process steel.

(F) Metallic cross cable traction reinforcement sleeves must be constructed of open hearth, electric furnace, or basic oxygen process steel and shall comply with the following American Society for Testing Materials (ASTM) standards: Standard E6 - Bend Test, Standard E8 - Tension Test, Standard E18 - Test Methods for Rockwell Hardness, and Standard A568 - Table of Chemical Content of Steel.

(G) Nonmetallic cross cable traction reinforcement sleeves shall be constructed of "Zytel" ST-801 nylon or its equivalent.

(H) All side cable fasteners are to be constructed of material that will allow easy installation and removal.

(iii) Spacing of cross cable. The first cross cable must be attached to that point of each side cable nearest the fastener that will permit the fastener to lie in the proper plane when the assembled cable tire chain is applied to the tire. On single cable tire chains, the remainder of the cross cables must be attached to the side cable at intervals designed to provide for at least one cross cable in contact with the roadway at all times. On dual-triple tire chains, the remainder of the cross cable shall be attached to the outer side cables at like intervals and to the inner side chain with opposing cross cables staggered at the same intervals.

(iv) Tolerances.

(A) Cross cable length. The inside length of all cross cable, including fasteners held in the same plane, must be within a tolerance of minus 1/8 inch to plus 1/8 inch of the specified length indicated by the chain manufacturer's specifications. The length shall be measured by hanging the cross cable vertically on a horizontal pin and measuring the inside to inside length. The number of traction reinforcement sleeves in a cross cable may not vary from the number specified by the manufacturer.

(B) Side cable length. The length of all side cables must be within tolerance of minus 1/8 inch to plus 1/2 inch of the length indicated by the chain manufacturer's specifications.

(C) Stranded cable size. Stranded cable size must be subject to the following tolerances:

(I) Material up to and including .094 inch (2.4 mm) diameter shall not be less than the designated diameter and shall not exceed .010 inch (.25 mm) over the specified diameter.

(II) Material over .094 inch (2.4 mm) diameter shall not be less than the specified diameter and shall not exceed .014 inch (.36 mm) over the specified diameter.

(D) Component dimensions. The dimensions of manufactured components may vary, but the assembled cable chains must meet the tolerances specified in (b)(iv)(A), (B), and (C) of this subsection.

(E) Finish. All cable tire chains must have a rust-resistant finish for protection in transit and storage.

(F) Identification. Each half set of cable tire chains must be permanently marked with the manufacturing company's name, initials or trademark in order that it may be easily identified when not in the original container.

[Statutory Authority: RCW 46.37.005 and 46.37.420. 08-24-030, § 204-24-020, filed 11/24/08, effective 12/25/08. Statutory Authority: RCW 46.37.-

420, 46.37.190, 46.37.194 and 46.37.280. 82-16-047 (Order 82-07-01), § 204-24-020, filed 7/29/82; Order 7607, § 204-24-020, filed 9/14/76; Order 6902, § 204-24-020, filed 12/19/73; Order 6902, § 204-24-020, filed 2/17/70.]

**WAC 204-24-030 Standards for studded tires.** Studded tires must meet the following specifications:

(1) Studs must be metal, tipped with tungsten carbide.

(2) Metal studs must be inserted only in a new tire or a newly-recapped tire which has molded in the tread the "pin-holes" into which metal studs are to be inserted. Studs must not be inserted in any new tire or newly-recapped tire after it has been driven on a vehicle.

(3) Metal studs may be installed only by the tire manufacturer, or by a tire dealer or tire jobber who shall install the metal studs in conformance with the manufacturer's specifications.

(4) When a tire is sold or offered for sale as a studded tire or when studs are installed in a new tire or a newly recapped tire, there must be a minimum of seventy metal studs evenly spaced around the tread of the tire.

(5) A tire must contain a minimum of fifty-six metal studs at all times in order to qualify as a "studded tire" or as an approved traction device.

(6) Metal studs must not be installed in any tire of a vehicle which has a gross vehicle weight of ten thousand pounds or over.

(7) School buses and fire department equipment tires are exempt from subsection (6) of this section.

[Statutory Authority: RCW 46.37.005 and 46.37.420. 08-24-030, § 204-24-030, filed 11/24/08, effective 12/25/08. Statutory Authority: RCW 46.37.420, 46.12.330, 46.37.005. 02-19-055, § 204-24-030, filed 9/12/02, effective 10/13/02. Statutory Authority: RCW 46.12.330. 00-15-009, § 204-24-030, filed 7/10/00, effective 8/10/00. Statutory Authority: RCW 46.37.420. 92-05-016, § 204-24-030, filed 2/10/92, effective 3/12/92; 83-21-080 (Order 83-10-01), § 204-24-030, filed 10/19/83; Order 7607, § 204-24-030, filed 9/14/76; Order 6902, § 204-24-030, filed 2/17/70.]

**WAC 204-24-040 Traction devices.** The following equipment items are approved by the state patrol for use as traction devices wherever traction devices are required by the department of transportation:

(1) Tire chains meeting the standards in WAC 204-24-020.

(2) Studded tires meeting the standards in WAC 204-24-030.

(3) Approved traction tires. An approved traction tire must have the following tread characteristics:

(a) A minimum of 4/32 inch tread, measured in the center portion of the tire at three locations equally spaced around the circumference of the tire.

(b) A relatively aggressive tread pattern designed primarily to provide additional starting, stopping, and driving traction on snow or ice. The tread must have ribs, lugs, blocks or buttons the edges of which are at an angle greater than thirty degrees to the tire circumferential centerline.

(c) On at least one side of the tread design, the shoulder lugs protrude at least 1/2-inch in a direction generally perpendicular to the direction of travel.

(d) Tires manufactured to meet these specifications must:

- (i) Be permanently labeled on at least one sidewall with the words "mud and snow" or any contraction using the letters "M" and "S" (e.g. MS, M/S, M-S, M & S, etc.); or
- (ii) Be permanently labeled on at least one side wall with the mountain/snowflake symbol.

[Statutory Authority: RCW 46.37.005 and 46.37.420. 09-15-150, § 204-24-040, filed 7/21/09, effective 8/21/09; 08-24-030, § 204-24-040, filed 11/24/08, effective 12/25/08. Statutory Authority: RCW 46.37.420. 92-05-016, § 204-24-040, filed 2/10/92, effective 3/12/92; 83-21-080 (Order 83-10-01), § 204-24-040, filed 10/19/83. Statutory Authority: RCW 46.37.005. 82-11-045 (Order 82-05-01), § 204-24-040, filed 5/12/82; Order 7607, § 204-24-040, filed 9/14/76; Order 6902, § 204-24-040, filed 2/17/70.]

**WAC 204-24-050 Use of tire chains or other traction devices.** (1) Vehicles under 10,000 pounds gross vehicle weight.

When traffic control signs are posted by the department of transportation it will be unlawful for any vehicle to enter the controlled area without having mounted on its drive tires the traction device specified by the sign, which must also meet the requirements of WAC 204-24-040.

Exception for all wheel drive vehicles. When "chains required" signs are posted, all-wheel drive vehicles will be exempt from the chain requirement when all wheels are in gear and are equipped with approved traction devices as specified in WAC 204-24-040 provided that tire chains for at least one set of drive tires are carried in the vehicle.

(2) Vehicles or combinations of vehicles over 10,000 pounds gross vehicle weight rating (GVWR).

When traffic control signs marked "chains required" are posted by the department of transportation it will be unlawful for any vehicle or combination of vehicles to enter the controlled area without having mounted on its tires, tire chains as follows: Provided, That highway maintenance vehicles operated by the department of transportation for the purpose of snow removal and its ancillary functions are exempt from the following requirements if such vehicle has sanding capability in front of the drive tires.

(a) Vehicles or vehicle combinations with two to four axles including but not limited to trucks, truck-tractors, buses and school buses: For vehicles with a single drive axle, one tire on each side of the drive axle must be chained. For vehicles with dual drive axles, one tire on each side of one of the drive axles must be chained. For vehicle combinations including trailers or semi-trailers; one tire on the last axle of the last trailer or semi-trailer, must be chained. If the trailer or semi-trailer has tandem rear axles, the chained tire may be on either of the last two axles.

(b) Automobile transporters are any vehicle combination designed and used specifically for the transport of assembled (capable of being driven) highway vehicles. For vehicles with single drive axles, one tire on each side of the drive axle must be chained. For vehicles with dual drive axles, one tire on each side of each of the drive axles must be chained. For vehicle combinations including trailers or semi-trailers, one tire on the last axle of the last trailer or semi-trailer must be chained. If the trailer or semi-trailer has tandem rear axles, the chained tire may be on either of the last two axles.

(c) Vehicle combinations with five axles consisting of a truck tractor with dual drive axles and a tandem axled semi-trailer; all tires on one drive axle may be chained or one tire on each side of each of the drive axles may be chained.

Chains must be applied to a minimum of four tires on the drive axles. On the tandem axle semi-trailer, the chained tire may be on either of the last two axles.

(d) Vehicle combinations with five axles, consisting of a truck and trailer, or truck tractor and semi-trailer with a single drive axle, or truck tractor, semi-trailer and full trailer: For vehicles with a single drive axle, all tires on the drive axle must be chained. For vehicles with dual drive axles, all tires on one of the drive axles must be chained. For vehicle combinations including trailers or semi-trailers, one tire on the last axle of the last trailer or semi-trailer must be chained. If the trailer or semi-trailer has tandem rear axles, the chained tire may be on either of the last two axles.

(e) Vehicle combinations with six or more axles, including but not limited to truck and trailer or truck tractor and semi-trailer or truck tractor semi-trailer and full trailer: For vehicles with a single drive axle, all tires on the drive axle must be chained. For vehicles with dual drive axles where traffic control signs marked "approved traction tires required" are posted, all tires on one of the drive axles must be chained. For vehicles with dual drive axles where traffic control signs marked "chains required" are posted, all tires on one of the drive axles must be chained. In addition, one tire on each side of the additional drive axle must be chained. For vehicle combinations including trailers or semi-trailers, one tire on the last axle must be chained. For vehicles with tandem axle trailers or semi-trailers, the chained tire may be on either of the last two axles.

(f) All vehicles over 10,000 pounds gross vehicle weight rating (GVWR) must carry a minimum of two extra chains for use in the event that road conditions require the use of more chains or in the event that chains in use are broken or otherwise made useless.

(g) Approved chains for vehicles over 10,000 pounds gross vehicle weight rating (GVWR) must have at least two side chains to which are attached sufficient cross chains of hardened metal so that at least one cross chain is in contact with the road surface at all times. Plastic chains will not be allowed.

(h) On the following routes all vehicles and combinations of vehicles over 10,000 gross vehicle weight rating (GVWR) pounds must carry sufficient tire chains to meet the requirements of this chapter from November 1 to April 1 of each year or at other times when chains are required for such vehicles:

- (i) I-90 - Between North Bend (MP 32) and Ellensburg (MP 101).
- (ii) SR-97 - Between (MP 145) and Junction SR-2.
- (iii) SR-2 - Between Dryden (MP 108) and Index (MP 36).
- (iv) SR-12 - Between Packwood (MP 135) and Naches (MP 187).
- (v) SR-97 - Between the Columbia River (MP 0.00) and Toppenish (MP 59.00).
- (vi) SR-410 - From Enumclaw to Naches.
- (vii) SR-20 - Between Tonasket (MP 262) and Kettle Falls (MP 342); and SR-20 between Newhalem (MP 120) and Winthrop (MP 192).
- (viii) SR-155 - Between Omak (MP 79) and Nespelem (MP 45).
- (ix) SR-970 - Between (MP 0) and (MP 10).

(x) SR-14 - Between Gibbons Creek (MP 18.00) and (MP 108.40) intersection of Cliffs Road.

(xi) SR-542 - Mt. Baker highway between (MP 22.91) and (MP 57.26).

(xii) I-82 - Between Ellensburg Exit 3 (MP 3.00) and Selah Exit 26 (MP 26.00).

Vehicles making local deliveries as indicated on bills of lading and not crossing the mountain pass are exempt from this requirement if operating outside of a chain required area.

(3) The Washington state department of transportation or Washington state patrol may prohibit any vehicle from entering a chain/approved traction device control area when it is determined that the vehicle will experience difficulty in safely traveling the area.

[Statutory Authority: RCW 46.37.005 and 46.37.420. 08-24-030, § 204-24-050, filed 11/24/08, effective 12/25/08. Statutory Authority: RCW 46.37-420, 46.12.330, 46.37.005. 02-19-055, § 204-24-050, filed 9/12/02, effective 10/13/02. Statutory Authority: RCW 46.37.005. 00-03-081, § 204-24-050, filed 1/19/00, effective 2/19/00; 99-06-023, § 204-24-050, filed 2/22/99, effective 3/25/99; 98-19-042, § 204-24-050, filed 9/11/98, effective 10/12/98; 95-07-137, § 204-24-050, filed 3/22/95, effective 4/22/95. Statutory Authority: RCW 46.37.420. 94-08-069, § 204-24-050, filed 4/4/94, effective 5/5/94; 92-05-016, § 204-24-050, filed 2/10/92, effective 3/12/92. Statutory Authority: RCW 46.37.005. 91-14-004 (Order 91-003), § 204-24-050, filed 6/21/91, effective 7/22/91. Statutory Authority: RCW 46.37.420. 83-21-080 (Order 83-10-01), § 204-24-050, filed 10/19/83. Statutory Authority: RCW 46.37.005. 82-11-045 (Order 82-05-01), § 204-24-050, filed 5/12/82. Statutory Authority: RCW 46.37.005 and 46.37.420. 81-10-038 (Order 81-04-01), § 204-24-050, filed 4/30/81; 78-02-091 (Order 7607A), § 204-24-050, filed 1/30/78; Order 7607, § 204-24-050, filed 9/14/76; Order 6902, § 204-24-050, filed 2/17/70.]

Patrol, 210 11th Avenue, Olympia, WA 98504, and may also be ordered from the Society of Automotive Engineers International, 400 Commonwealth Drive, Warrendale, PA 15096.

[Statutory Authority: RCW 46.37.420 and 46.37.005. 10-19-073, § 204-24-070, filed 9/16/10, effective 10/17/10; 08-24-030, § 204-24-070, filed 11/24/08, effective 12/25/08. Statutory Authority: RCW 46.37.420. 92-05-016, § 204-24-070, filed 2/10/92, effective 3/12/92; 83-21-080 (Order 83-10-01), § 204-24-070, filed 10/19/83; 78-02-091 (Order 7607A), § 204-24-070, filed 1/30/78; Order 7607, § 204-24-070, filed 9/14/76.]

**WAC 204-24-070 Approval of tire chains or traction devices.** (1) Any tire chain, wheel chains, or studded tires meeting the standards in this chapter or certified under one of the following:

(a) Conformance to Federal Motor Vehicle Safety Standards, or, if none,

(b) Conformance to current standards and specifications of the Society of Automotive Engineers will be considered as an approved type chain, or studded tire.

(2) In order for an alternative traction device to be considered approved:

(a) The alternative traction device must be:

(i) Tested in accordance with a recognized standard; and  
(ii) Meet or exceed the standard as compared to the results of a referenced tire chain approved for use in the United States tested using the same standard.

(b) The following information must be provided to the Washington state patrol:

(i) Certification of test results, which must contain the following statement "I certify that the test methods, conditions and results reported are accurate and complete" and bear the signature of the tester.

(ii) A copy of the testing standards used.

(iii) Documentation of the testing results, which must include the data produced for each test comparing the alternative traction device to the referenced tire chain.

(3) Links to the Code of Federal Regulations are available on the Washington state patrol web site at [www.wsp.wa.gov](http://www.wsp.wa.gov). Copies of the CFR may also be ordered through the United States Government Printing Office, 732 N. Capitol Street, N.W., Washington, D.C. 20401. Copies of the SAE standards are available for review at the Washington State