

OTS-6728.2

AMENDATORY SECTION(Amending WSR 02-12-098, filed 6/5/02, effective 8/1/02)

WAC 296-24-012 Definitions applicable to all sections of this chapter.

Note: Meaning of words. Unless the context indicates otherwise, words used in this chapter shall have the meaning given in this section.

(1) "Approved" means approved by the director of the department of labor and industries or his/her authorized representative: Provided, however, That should a provision of this chapter state that approval by an agency or organization other than the department of labor and industries is required, such as Underwriters' Laboratories or the Mine Safety and Health Administration (MSHA) and the National Institute for Occupational Safety and Health (NIOSH), the provisions of WAC ((~~296-24-006~~) 296-800-360) shall apply.

(2) "Authorized person" means a person approved or assigned by the employer to perform a specific type of duty or duties or to be at a specific location or locations at the job site.

(3) "Competent person" means one who is capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective action to eliminate them.

(4) "Department" means the department of labor and industries.

(5) "Director" means the director of the department of labor and industries, or his/her designated representative.

(6) "Employer" means any person, firm, corporation, partnership, business trust, legal representative, or other business entity which engages in any business, industry, profession, or activity in this state and employs one or more employees or who contracts with one or more persons, the essence of which is the personal labor of such person or persons and includes the state, counties, cities, and all municipal corporations, public corporations, political subdivisions of the state, and charitable organizations: Provided, That any person, partnership, or business entity not having employees, and who is covered by the industrial insurance act shall be considered both an employer and an employee.

(7) "First aid" means, for purposes of this section, the extent of treatment that could be expected to be given by a person trained in basic first aid, using supplies from a first-aid kit. Tests, such as X rays, shall not be confused with treatment.

(8) "Hazard" means that condition, potential or inherent, which can cause injury, death, or occupational disease.

(9) "Hospitalization" means to be sent to; to go to; or be admitted to a hospital or an equivalent medical facility and receive medical treatment beyond that which would be considered as first-aid treatment, regardless of the length of stay in the hospital or medical facility.

(10) "Qualified" means one who, by possession of a recognized degree, certificate, or professional standing, or who by extensive knowledge, training, and experience, has successfully demonstrated the ability to solve or resolve problems relating to the subject matter, the work, or the project.

(11) "Safety factor" means the ratio of the ultimate breaking strength of a member or piece of material or equipment to the actual working stress or safe load when in use.

(12) "Safety and health standard" means a standard which requires the adoption or use of one or more practices, means, methods, operations, or processes reasonably necessary or appropriate to provide safe or healthful employment and places of employment.

(13) "Shall" means mandatory.

(14) "Should" means recommended.

(15) "Standard safeguard" means a device designed and constructed with the object of removing the hazard of accident incidental to the machine, appliance, tool, building, or equipment to which it is attached.

Standard safeguards shall be constructed of either metal or wood or other suitable material or a combination of these. The final determination of the sufficiency of any safeguard rests with the director of the department of labor and industries.

(16) "Suitable" means that which fits, or has the qualities or qualifications to meet a given purpose, occasion, condition, function, or circumstance.

(17) "Working day" means a calendar day, except Saturdays, Sundays, and legal holidays as set forth in [RCW 1.16.050](#), as now or hereafter amended, and for the purposes of the computation of time within which an act is to be done under the provisions of this chapter, shall be computed by excluding the first working day and including the last working day.

(18) "Worker," "personnel," "person," "employee," and other terms of like meaning, unless the context of the provision containing such term indicates otherwise, mean an employee of an employer who is employed in the business of his/her employer whether by way of manual labor or otherwise and every person in this state who is engaged in the employment of or who is working under an independent contract the essence of which is his/her personal labor for an employer whether by manual labor or otherwise.

(19) "Work place" means 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.

(20) Abbreviations used in this chapter:

(a) "ANSI" means American National Standards Institute.

(b) "API" means American Petroleum Institute.

(c) "ASA" means American Standards Association.

(d) "ASAE" means American Society of Agricultural Engineers.

(e) "ASHRE" means American Society of Heating and Refrigeration Engineers.

(f) "ASME" means American Society for Mechanical Engineers.

(g) "ASTM" means American Society for Testing and Materials.

(h) "AWS" means American Welding Society.

(i) "BTU" means British thermal unit.

(j) "BTUH" means British thermal unit per hour.

(k) "CFM" means cubic feet per minute.

(l) "CFR" means Code of Federal Regulations.

(m) "CGA" means Compressed Gas Association.

(n) "CIE" means Commission Internationale de l' Eclairage.

(o) "DOT" means department of transportation.

(p) "FRP" means fiberglass reinforced plastic.

- (q) "GPM" means gallons per minute.
- (r) "ICC" means Interstate Commerce Commission.
- (s) "ID" means inside diameter.
- (t) "LPG" means liquefied petroleum gas.
- (u) "MCA" means Manufacturing Chemist Association. (New name: Chemical Manufacturers Association.)
- (v) "NBFU" means National Board of Fire Underwriters.
- (w) "NEMA" means National Electrical Manufacturing Association.
- (x) "NFPA" means National Fire Protection Association.
- (y) "NTP" means normal temperature and pressure.
- (z) "OD" means outside diameter.
- (aa) "PSI" means pounds per square inch.
- (bb) "PSIA" means pounds per square inch atmospheric.
- (cc) "PSIG" means pounds per square inch gauge.
- (dd) "RMA" means Rubber Manufacturers Association.
- (ee) "SAE" means Society of Automotive Engineers.
- (ff) "TFI" means The Fertilizer Institute.
- (gg) "TSC" means Trailer Standard Code.
- (hh) "UL" means Underwriters' Laboratories, Inc.
- (ii) "USASI" means United States of America Standards Institute.
- (jj) "USC" means United States Code.
- (kk) "USCG" means United States Coast Guard.
- (ll) "WAC" means Washington Administrative Code.
- (mm) "WISHA" means Washington Industrial Safety and Health Act of 1973.

[Statutory Authority: [RCW 49.17.010](#), [\[49.17\].040](#), [\[49.17\].050](#). 02-12-098, § 296-24-012, filed 6/5/02, effective 8/1/02. Statutory Authority: [Chapter 49.17 RCW](#). 94-15-096 (Order 94-07), § 296-24-012, filed 7/20/94, effective 9/20/94; 89-11-035 (Order 89-03), § 296-24-012, filed 5/15/89, effective 6/30/89; Order 73-5, § 296-24-012, filed 5/9/73 and Order 73-4, § 296-24-012, filed 5/7/73.]

~~((PART B-1~~

~~TEMPORARY LABOR CAMPS AND NONWATER CARRIAGE DISPOSAL SYSTEMS))PART E~~

~~HAZARDOUS MATERIALS, FLAMMABLE AND COMBUSTIBLE LIQUIDS, SPRAY FINISHING((,-DIP TANKS))~~

Hazardous Materials

AMENDATORY SECTION(Amending Order 81-32, filed 12/24/81)

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))~~ 296-800-31080.

[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.]

AMENDATORY SECTION(Amending Order 81-32, 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))~~ 296-800-310, 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.]

AMENDATORY SECTION(Amending Order 94-07, filed 7/20/94, effective 9/20/94)

WAC 296-24-63399 Appendix C -- Fire protection references for further information. (1) Appendix general references. The following references provide information which can be helpful in understanding the requirements contained in all of the sections of Part G:

(a) Fire Protection Handbook, National Fire Protection Association, Batterymarch Park, Quincy, MA 02269-9101.

(b) Accident Prevention Manual for Industrial Operations, National Safety Council, 444 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 Cleveland, OH 44115-2851, and the National Association of Fire Equipment Distributors (NAFED) of Chicago, IL 60611-4267.

(2) Appendix references applicable to individual sections. The following references are grouped according to individual sections contained in Part G. These references provide information which may be helpful in understanding and implementing the standards of each section of Part G.

(a) [WAC 296-24-58505](#) - Fire brigades:

(i) Private Fire Brigades, NFPA 27; National Fire Protection Association, Batterymarch Park, Quincy, MA 02269-9101.

(ii) Initial Fire Attack, Training Standard On, NFPA 197; National Fire Protection Association, Batterymarch Park, Quincy, MA 02269-9101.

(iii) Fire Fighter Professional Qualifications, NFPA 1001; National Fire Protection Association, Batterymarch Park, Quincy, MA 02269-9101.

(iv) Organization for Fire Services, NFPA 1201; National Fire Protection Association, Batterymarch Park, Quincy, MA 02269-9101.

(v) Organization of a Fire Department, NFPA 1202; National Fire Protection Association, Batterymarch Park, Quincy, MA 02269-9101.

(vi) Protective Clothing for Structural Fire Fighting, ANSI/NFPA 1971; National Fire Protection Association, Batterymarch Park, Quincy, MA 02269-9101.

(vii) American National Standards Institute for Men's Safety-Toe Footwear, ANSI Z41.1; American National Standards Institute, New York, NY 10036.

(viii) American National Standards Institute for Occupational and Educational Eye and Face Protection, ANSI Z87.1; American National Standards Institute, New York, NY 10036.

(ix) American National Standards Institute, Safety Requirements for Industrial Head Protection, ANSI Z89.1; American National Standards Institute, New York, NY 10036.

(x) Specifications for Protective Headgear for Vehicular Users, ANSI Z90.1; American National Standards Institute, New York, NY 10036.

(xi) Testing Physical Fitness; Davis and Santa Maria, Fire Command, April 1975.

(xii) 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.

(xiii) Proposed Sample Standards for Fire Fighters' Protective Clothing and Equipment; International Association of Fire Fighters, Washington, D.C. 20006-5395.

(xiv) A Study of Facepiece Leakage of Self-Contained Breathing Apparatus by DOP Man Tests; Los Alamos National Laboratory, Los Alamos, N.M.

(xv) 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.

(xvi) Model Performance Criteria for Structural Fire Fighters' Helmets; National Fire Prevention and Control Administration, Washington, D.C., 1977.

(xvii) Fire Fighters; Job Safety and Health Magazine, Occupational Safety and Health Administration, Washington, D.C., June 1978.

(xviii) Eating Smoke -- The Dispensable Diet; Utech, H.P. The Fire Independent, 1975.

(xix) Project Monoxide -- A Medical Study of an Occupational Hazard of Fire Fighters; International Association of Fire Fighters, Washington, D.C. 20006-5395.

(xx) Occupational Exposures to Carbon Monoxide in Baltimore Fire Fighters; Radford Baltimore, MD. Journal of Occupational Medicine, September, 1976.

(xxi) Fire Brigades; National Safety Council, Chicago, IL 60611, 1966.

(xxii) American National Standards Institute, Practice for Respiratory Protection for the Fire Service, ANSI Z88.5; American National Standards Institute, New York, NY 10036.

(xxiii) 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 National Laboratory; Los Alamos, NM 87545, January, 1980.

(b) [WAC 296-24-592](#) - Portable fire extinguishers:

(i) Standard for Portable Fire Extinguishers, ANSI/NFPA 10; National Fire Protection Association, Batterymarch Park, Quincy, MA 02269.

(ii) Methods for Hydrostatic Testing of Compressed-Gas Cylinders, C-1; Compressed Gas Association, 1725 Jefferson Davis Highway, Arlington, VA 22202-4100.

(iii) Recommendations for the Disposition of Unserviceable Compressed-Gas Cylinders, C-2; Compressed Gas Association, 1725 Jefferson Davis Highway, Arlington, VA 22202-4100.

(iv) Standard for Visual Inspection of Compressed-Gas Cylinders, C-6; Compressed Gas Association, 1725 Jefferson Davis Highway, Arlington, VA 22202-4100.

(v) Portable Fire Extinguisher Selection Guide, National Association of Fire Equipment Distributors, 401 North Michigan Avenue Chicago, IL 60611-4267.

(c) [WAC 296-24-602](#) - Standpipe and hose systems:

(i) Standard for the Installation of Sprinkler Systems, ANSI/NFPA 13; National Fire Protection Association, Batterymarch Park, Quincy, MA 02269-9101.

(ii) Standard of the Installation of Standpipe and Hose Systems, ANSI/NFPA 14; National Fire Protection Association, Batterymarch Park, Quincy, MA 02269-9101.

(iii) Standard for the Installation of Centrifugal Fire Pumps, ANSI/NFPA 20; National Fire Protection Association, Batterymarch Park, Quincy, MA 02269-9101.

(iv) Standard for Water Tanks for Private Fire Protection, ANSI/NFPA 22; National Fire Protection Association, Batterymarch Park, Quincy, MA 02269-9101.

(v) Standard for Screw Threads and Gaskets for Fire Hose Connections, ANSI/NFPA 194; National Fire Protection Association, Batterymarch Park, Quincy, MA 02269-9101.

(vi) Standard for Fire Hose, NFPA 196; National Fire Protection Association, Batterymarch Park, Quincy, MA 02269-9101.

(vii) Standard for the Care of Fire Hose, NFPA 198; National Fire Protection Association, Batterymarch Park, Quincy, MA 02269-9101.

(d) [WAC 296-24-607](#) - Automatic sprinkler systems:

(i) Standard of the Installation of Sprinkler Systems, ANSI/NFPA 13; National Fire Protection Association, Batterymarch Park, Quincy, MA 02269-9101.

(ii) Standard for the Care and Maintenance of Sprinkler Systems, ANSI/NFPA 13A; National Fire Protection Association, Batterymarch Park, Quincy, MA 02269-9101.

(iii) Standard for the Installation of Standpipe and Hose Systems, ANSI/NFPA 14; National Fire Protection Association, Batterymarch Park, Quincy, MA 02269-9101.

(iv) Standard for the Installation of Centrifugal Fire Pumps, ANSI/NFPA 20; National Fire Protection Association, Batterymarch Park, Quincy, MA 02269-9101.

(v) Standard for Water Tanks for Private Fire Protection, ANSI/NFPA 22; National Fire Protection Association, Batterymarch Park, Quincy, MA 02269-9101.

(vi) Standard for Indoor General Storage, ANSI/NFPA 231; National Fire Protection Association, Batterymarch Park, Quincy, MA 02269-9101.

(vii) Standard for Rack Storage of Materials, ANSI/NFPA 231C; National Fire Protection Association, Batterymarch Park, Quincy, MA 02269-9101.

(e) [WAC 296-24-617](#) - Fixed extinguishing systems, general information:

(i) Standard for Foam Extinguishing Systems, ANSI/NFPA 11; National Fire Protection Association, Batterymarch Park, Quincy, MA 02269-9101.

(ii) Standard for Hi-Expansion Foam Systems, ANSI/NFPA 11A; National Fire Protection Association, Batterymarch Park, Quincy, MA 02269-9101.

(iii) Standard on Synthetic Foam and Combined Agent Systems, ANSI/NFPA 11B; National Fire Protection Association, Batterymarch Park, Quincy, MA 02269-9101.

(iv) Standard on Carbon Dioxide Extinguishing Systems, ANSI/NFPA 12; National Fire Protection Association, Batterymarch Park, Quincy, MA 02269-9101.

(v) Standard on Halon 1301, ANSI/NFPA 12A; National Fire Protection Association, Batterymarch Park, Quincy, MA 02269-9101.

(vi) Standard on Halon 1211, ANSI/NFPA 12B; National Fire Protection Association, Batterymarch Park, Quincy, MA 02269-9101.

(vii) Standard for Water Spray Systems, ANSI/NFPA 15; National Fire Protection Association, Batterymarch Park, Quincy, MA 02269-9101.

(viii) Standard for Foam-Water Sprinkler Systems and Foam-Water Spray Systems, ANSI/NFPA 16; National Fire Protection Association, Batterymarch Park, Quincy, MA 02269-9101.

(ix) Standard for Dry Chemical Extinguishing Systems, ANSI/NFPA 17; National Fire Protection Association, Batterymarch Park, Quincy, MA 02269-9101.

(f) [WAC 296-24-622](#) - Fixed extinguishing systems, dry chemical:

(i) Standard for Dry Chemical Extinguishing Systems, ANSI/NFPA 17; National Fire Protection Association, Batterymarch Park, Quincy, MA 02269-9101.

(ii) National Electrical Code, ANSI/NFPA 70; National Fire Protection Association, Batterymarch Park, Quincy, MA 02269-9101.

(iii) 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, Batterymarch Park, Quincy, MA 02269-9101.

(g) [WAC 296-24-623](#) - Fixed extinguishing systems, gaseous agents:

(i) Standard on Carbon Dioxide Extinguishing Systems, ANSI/NFPA 12; National Fire Protection Association, Batterymarch Park, Quincy, MA 02269-9101.

(ii) Standard on Halon 1301, ANSI/NFPA 12B; National Fire Protection Association, Batterymarch Park, Quincy, MA 02269-9101.

(iii) Standard on Halon 1211, ANSI/NFPA 12B; National Fire Protection Association, Batterymarch Park, Quincy, MA 02269-9101.

(iv) Standard on Explosion Prevention Systems, ANSI/NFPA 69; National Fire Protection Association, Batterymarch Park, Quincy, MA 02269-9101.

(v) National Electrical Code, ANSI/NFPA 70; National Fire Protection Association, Batterymarch Park, Quincy, MA 02269-9101.

(vi) Standard on Automatic Fire Detectors, ANSI/NFPA 72E; National Fire Protection Association, Batterymarch Park, Quincy, MA 02269-9101.

(vii) 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:

(i) Standard for Foam Extinguisher Systems, ANSI/NFPA 11; National Fire Protection Association, Batterymarch Park, Quincy, MA 02269-9101.

(ii) Standard for High-Expansion Foam Systems, ANSI/NFPA 11A; National Fire Protection Association, Batterymarch Park, Quincy, MA 02269-9101.

(iii) Standard for Water Spray Fixed Systems for Fire Protection, ANSI/NFPA 15; National Fire Protection Association, Batterymarch Park, Quincy, MA 02269-9101.

(iv) Standard for the Installation of Foam-Water Sprinkler Systems and Foam-Water Spray Systems, ANSI/NFPA 16; National Fire Protection Association, Batterymarch Park, Quincy, MA 02269-9101.

(i) [WAC 296-24-629](#) - Fire detection systems:

(i) National Electrical Code, ANSI/NFPA 70; National Fire Protection Association, Batterymarch Park, Quincy, MA 02269-9101.

(ii) Standard for Central Station Signaling Systems, ANSI/NFPA 71; National Fire Protection Association, Batterymarch Park, Quincy, MA 02269-9101.

(iii) Standard on Automatic Fire Detectors, ANSI/NFPA 72E; National Fire Protection Association, Batterymarch Park, Quincy, MA 02269-9101.

(j) WAC ((~~296-24-634~~)) [296-800-310](#) - Employee alarm systems:

(i) National Electrical Code, ANSI/NFPA 70; National Fire Protection Association, Batterymarch Park, Quincy, MA 02269-9101.

(ii) Standard for Central Station Signaling Systems, ANSI/NFPA 71; National Fire Protection Association, Batterymarch Park, Quincy, MA 02269-9101.

(iii) Standard for Local Protective Signaling Systems, ANSI/NFPA 72A; National Fire Protection Association, Batterymarch Park, Quincy, MA 02269-9101.

(iv) Standard for Auxiliary Protective Signaling Systems, ANSI/NFPA 72B; National Fire Protection Association, Batterymarch Park, Quincy, MA 02269-9101.

(v) Standard for Remote Station Protective Signaling Systems, ANSI/NFPA 72C; National Fire Protection Association, Batterymarch Park, Quincy, MA 02269-9101.

(vi) Standard for Proprietary Protective Signaling Systems, ANSI/NFPA 72D; National Fire Protection Association, Batterymarch Park, Quincy, MA 02269-9101.

(vii) Vocal Emergency Alarms in Hospitals and Nursing Facilities: Practice and Potential, National Institute of Standards and Technology, Quince Orchard and Clopper Roads, Gaithersburg, MD 20899-0011, July, 1977.

(viii) Fire Alarm and Communication Systems, National Institute of Standards and Technology, Quince Orchard and Clopper Roads, Gaithersburg, MD 20899-0011, April, 1976.

[Statutory Authority: [Chapter 49.17 RCW](#). 94-15-096 (Order 94-07), § 296-24-63399, filed 7/20/94, effective 9/20/94; 92-23-017 (Order 92-13), § 296-24-63399, filed 11/10/92, effective 12/18/92; 88-14-108 (Order 88-11), § 296-24-63399, filed 7/6/88; 87-24-051 (Order 87-24), § 296-24-63399, filed 11/30/87. Statutory Authority: [RCW 49.17.040](#) and [49.17.050](#). 82-02-003 (Order 81-32), § 296-24-63399, filed 12/24/81.]

AMENDATORY SECTION(Amending Order 90-18, filed 1/10/91, effective 2/12/91)

WAC 296-24-75011 Railing, toeboards, and cover specifications. (1) A standard railing shall consist of top rail, intermediate rail, and posts, and shall have a vertical height of ~~((from thirty-six to))~~ forty-two inches ((nominal)), plus or minus three inches, from upper surface of top rail to floor, platform, runway, or ramp level and:

- (a) The top rail shall be smooth-surfaced throughout the length of the railing.
- (b) The intermediate rail shall be approximately halfway between the top rail and the floor, platform, runway, or ramp.
- (c) The ends of the rails shall not overhang the terminal posts except where such overhang does not constitute a projection hazard.
- (d) Guardrails with heights greater than 42 inches are permissible provided the extra height does not create a dangerous situation for employees and that additional mid-rails were installed so that openings beneath the top rail would not permit the passage of a 19-inch or larger spherical object.

(2) A stair railing shall be of construction similar to a standard railing but the vertical height shall be not more than thirty-four inches nor less than thirty inches from upper surface of top rail to surface of tread in line with face of riser at forward edge of tread.

(3) Minimum requirements for standard railings under various types of construction are specified in this subsection. Dimensions specified are based on the U.S. Department of Agriculture Wood Handbook, No. 72, 1955 (No. 1 (S4S) Southern Yellow Pine (Modulus of Rupture 7,400 p.s.i.)) for wood; ANSI G 41.5-1970, American National Standard Specifications for Structural Steel, for structural steel; and ANSI B 125.1-1970,

American National Standard Specifications for Welded and Steamless Steel Pipe, for pipe.

(a) For wood railings, the posts shall be of at least two-inch by four-inch nominal stock spaced not to exceed six feet; the top and intermediate rails shall be of at least two-inch by four-inch nominal stock. If top rail is made of two right-angle pieces of one-inch by four-inch stock, posts may be spaced on eight-foot centers, with two-inch by four-inch intermediate rail.

(b) For pipe railings, posts and top and intermediate railings shall be at least one and one-half inches nominal diameter (outside diameter) with posts spaced not more than eight feet on centers.

(c) For structural steel railings, posts and top and intermediate rails shall be of two-inch by two-inch by three-eighths-inch angles or other metal shapes of equivalent bending strength with posts spaced not more than eight feet on centers.

(d) 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 two hundred pounds applied in any direction at any point on the top rail.

(e) Other types, sizes, and arrangements of railing construction are acceptable provided they meet the following conditions:

(i) A smooth-surfaced top rail at a height above floor, platform, runway, or ramp level of from thirty-six to forty-two inches nominal;

(ii) A strength to withstand at least the minimum requirement of two hundred pounds top rail pressure;

(iii) Protection between top rail and floor, platform, runway, ramp, or stair treads, equivalent at least to that afforded by a standard intermediate rail;

(iv) Elimination of overhang of rail ends unless such overhang does not constitute a hazard; such as, baluster railings, scrollwork railings, paneled railings.

(4) A standard toeboard shall be a minimum of four inches nominal 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 with not more than one-quarter-inch clearance above floor level. It may be made of any substantial material either solid or with openings not over one inch in greatest dimension.

Where material is piled to such height that a standard toeboard does not provide protection, paneling from floor to intermediate rail, or to top rail shall be provided.

(5) A handrail shall consist of a lengthwise member mounted directly on a wall or partition by means of brackets attached to the lower side of the handrail so as to offer no obstruction to a smooth surface along the top and both sides of the handrail. The handrail shall be of rounded or other section that will furnish an adequate handhold for anyone grasping it to avoid falling. The ends of the handrail should be turned in to the supporting wall or otherwise arranged so as not to constitute a projection hazard.

(a) The height of handrails shall be not more than thirty-four inches nor less than thirty inches from upper surface of handrail to surface of tread in line with face of riser or to surface of ramp.

(b) The size of handrails shall be: When of hardwood, at least two inches in diameter; when of metal pipe, at least one and one-half inches in diameter. The length of brackets shall be such as will give a clearance between handrail and wall or any projection thereon of at least one and one-half inches. The spacing of brackets shall not exceed eight feet.

(c) The mounting of handrails shall be such that the completed structure is capable of withstanding a load of at least two hundred pounds applied in any direction at any point on the rail.

(6) All handrails and railings shall be provided with a clearance of not less than one and one-half inches between the handrail or railing and any other object.

(7) Floor opening covers may be of any material that meets the following strength requirements:

(a) Trench or conduit covers and their supports, when located in plant roadways, shall be designed to carry a truck rear-axle load of at least twenty thousand pounds.

(b) Manhole covers and their supports, when located in plant roadways, shall comply with local standard highway requirements if any; otherwise, they shall be designed to carry a truck rear-axle of at least twenty thousand pounds.

(c) The construction of floor opening covers may be of any material that meets the strength requirements. Covers projecting not more than one inch above the floor level may be used providing all edges are chamfered to an angle with the horizontal of not over thirty degrees. All hinges, handles, bolts, or other parts shall set flush with the floor or cover surface.

(8) Skylight screens shall be of such construction and mounting that they are capable of withstanding a load of at least two hundred pounds applied perpendicularly at any one area on the screen. They shall also be of such construction and mounting that under ordinary loads or impacts, they will not deflect downward sufficiently to break the glass below them. The construction shall be of grillwork with openings not more than four inches long or of slatwork with openings not more than two inches wide with length unrestricted.

(9) Wall opening barriers (rails, rollers, picket fences, and half doors) 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 two hundred pounds applied in any direction (except upward) at any point on the top rail or corresponding member.

(10) Wall opening grab handles shall be not less than twelve inches in length and shall be so mounted as to give one and one-half inches clearance from the side framing of the wall opening. The size, material, and anchoring of the grab handle shall be such that the completed structure is capable of withstanding a load of at least two hundred pounds applied in any direction at any point of the handle.

(11) Wall opening screens shall be of such construction and mounting that they are capable of withstanding a load of at least two hundred pounds applied horizontally at any point on the near side of the screen. They may be of solid construction, of grillwork with openings not more than eight inches long, or of slatwork with openings not more than four inches wide with length unrestricted.

[Statutory Authority: [Chapter 49.17 RCW](#). 91-03-044 (Order 90-18), § 296-24-75011, filed 1/10/91, effective 2/12/91; 89-11-035 (Order 89-03), § 296-24-75011, filed 5/15/89, effective 6/30/89. Statutory Authority: [RCW 49.17.040](#), [49.17.150](#), and [49.17.240](#). 79-08-115 (Order 79-9), § 296-24-75011, filed 7/31/79; Order 73-5, § 296-24-75011, filed 5/9/73 and Order 73-4, § 296-24-75011, filed 5/7/73.]

AMENDATORY SECTION(Amending Order 91-07, filed 11/22/91, effective 12/24/91)

WAC 296-24-95603 Electric utilization systems. (1) Scope.

(a) **Covered.** The provisions of [WAC 296-24-95603](#) through 296-24-985 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 under 750 volts. Chapter ~~((296-44))~~ [296-45 WAC](#), Safety standards~~((--))~~ for electrical ~~((Construction Code))~~ workers, shall apply to industrial substations of 750 volts or more;

(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 296-24-985 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	AC systems to be grounded.	

		(iv)	
"	"	(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)	Fixed equipment required to be grounded.
		(A) through (D)	
"	"	(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.
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 296-24-985.

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 April 16, 1981:

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 296-24-95609		(10)(f)(ii)(B)	Switching series capacitors over 600 volts.
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: [Chapter 49.17 RCW](#). 91-24-017 (Order 91-07), § 296-24-95603, filed 11/22/91, effective 12/24/91; 87-24-051 (Order 87-24), § 296-24-95603, filed 11/30/87. Statutory Authority: [RCW 49.17.040](#) and [49.17.050](#). 82-08-026 (Order 82-10), § 296-24-95603, filed 3/30/82.]

REPEALER

The following section of the Washington Administrative Code is repealed:

WAC 296-24-120 Sanitation.