

**WAC 296-24-75011 Railing, toeboards, and cover specifications.**

(1) You must ensure that a standard railing consists of top rail, intermediate rail, and posts, and has a vertical height of forty-two inches, plus or minus three inches, from upper surface of top rail to floor, platform, runway, or ramp level and:

(a) The top rail must be smooth-surfaced throughout the length of the railing.

(b) The intermediate rail must be approximately halfway between the top rail and the floor, platform, runway, or ramp.

(c) The ends of the rails must 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) You must ensure that a stair railing is of construction similar to a standard railing but the vertical height is not more than 34 inches nor less than 30 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 Seamless Steel Pipe, for pipe.

(a) For wood railings, the posts must be of at least 2-inch by 4-inch nominal stock spaced not to exceed 6 feet; the top and intermediate rails must be of at least 2-inch by 4-inch nominal stock. If top rail is made of two right-angle pieces of 1-inch by 4-inch stock, posts may be spaced on 8-foot centers, with 2-inch by 4-inch intermediate rail.

(b) For pipe railings, posts and top and intermediate railings must be at least 1 1/2 inches nominal diameter (outside diameter) with posts spaced not more than 8 feet on centers.

(c) For structural steel railings, posts and top and intermediate rails must 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.

(d) The anchoring of posts and framing of members for railings of all types shall be of such construction that the completed structure must be capable of withstanding a load of at least 200 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 36 to 42 inches nominal;

(ii) A strength to withstand at least the minimum requirement of 200 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) You must ensure that a standard toeboard is a minimum of 4 inches nominal in vertical height from its top edge to the level of the floor, platform, runway, or ramp. It must be securely fastened in place and with 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 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 must be provided.

(5) You must ensure that a handrail consists 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 must 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 must 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.

(b) The size of handrails must be: When of hardwood, at least 2 inches in diameter; when of metal pipe, at least 1 1/2 inches in diameter. The length of brackets must be such as will give a clearance between handrail and wall or any projection thereon of at least 1 1/2 inches. The spacing of brackets shall not exceed 8 feet.

(c) The mounting of handrails must be such that the completed structure is capable of withstanding a load of at least 200 pounds applied in any direction at any point on the rail.

(6) You must ensure that all handrails and railings are provided with a clearance of not less than 1 1/2 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, must 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, must comply with local standard highway requirements if any; otherwise, they must 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 must set flush with the floor or cover surface.

(8) You must ensure that skylight screens are of such construction and mounting that they are capable of withstanding a load of at least 200 pounds applied perpendicularly at any one area on the screen. You must also ensure that they are 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 must be of grillwork with openings not more than 4 inches long or of slatwork with openings not more than 2 inches wide with length unrestricted.

(9) You must ensure that wall opening barriers (rails, rollers, picket fences, and half doors) are 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) at any point on the top rail or corresponding member.

(10) You must ensure that wall opening grab handles are not less than 12 inches in length and are so mounted as to give 1 1/2 inches clearance from the side framing of the wall opening. The size, material, and anchoring of the grab handle must be such that the completed structure is capable of withstanding a load of at least 200 pounds applied in any direction at any point of the handle.

(11) You must ensure that wall opening screens are 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 grillwork with openings not more than 8 inches long, or of slatwork with openings not more than 4 inches wide with length unrestricted.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, and 49.17.060. WSR 18-03-159, § 296-24-75011, filed 1/23/18, effective 2/23/18; WSR 15-24-100, § 296-24-75011, filed 12/1/15, effective 1/5/16; WSR 04-07-161, § 296-24-75011, filed 3/23/04, effective 6/1/04. Statutory Authority: Chapter 49.17 RCW. WSR 91-03-044 (Order 90-18), § 296-24-75011, filed 1/10/91, effective 2/12/91; WSR 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. WSR 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.]