
Chapter 296-155 WAC Construction Work

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**PART J
STAIRWAYS**

WAC 296-155-475 Scope and application. This part applies to all stairways used in construction, alteration, repair (including painting and decorating), and demolition workplaces covered under chapter 296-155 WAC, and also sets forth, in specified circumstances, when stairways are required to be provided.

Reference:

- *Requirements for ladders used on or with scaffolds are located in chapter 296-874 WAC, Scaffolds.*
- *Requirements for portable ladders are located in chapter 296-876 WAC.*

[Statutory Authority: RCW 49.17.010, .040, .050, and .060. 06-16-020 (Order 06-10), § 296-155-475, filed 07/24/06, effective 12/01/06. Statutory Authority: RCW 49.17.010, .040, .050, and .060. 05-20-068 (Order 05-10), § 296-155-475, filed 10/04/05, effective 01/01/06. Statutory Authority: Chapter 49.17 RCW. 91-24-017 (Order 91-07), § 296-155-475, filed 11/22/91, effective 12/24/91. Statutory Authority: RCW 49.17.040 and 49.17.050. 86-03-074 (Order 86-14), § 296-155-475, filed 1/21/86; Order 76-6, § 296-155-475, filed 3/1/76; Order 74-26, § 296-155-475, filed 5/7/74, effective 6/6/74.]

WAC 296-155-47501 Definitions applicable to this part.

- (1) **Equivalent** means alternative designs, materials, or methods that the employer can demonstrate will provide an equal or greater degree of safety for employees than the method or item specified in the standard.
- (2) **Failure** means load refusal, breakage, or separation of component parts. Load refusal is the point where the structural members lose their ability to carry the loads.
- (3) **Handrail** means a rail used to provide employees with a handhold for support.
- (4) **Lower levels** means those areas to which an employee can fall from a stairway or ladder. Such areas include ground levels, floors, roofs, ramps, runways, excavations, pits, tanks, material, water, equipment, and similar surfaces. It does not include the surface from which the employee falls.
- (5) **Nosing** means that portion of a tread projecting beyond the face of the riser immediately below.
- (6) **Platform** means a walking/working surface for persons, elevated above the surrounding floor or ground.
- (7) **Point of access** means all areas used by employees for work-related passage from one area or level to another. Such open areas include doorways, passageways, stairway openings, studded walls, and various other permanent or temporary openings used for such travel.
- (8) **Riser height** means the vertical distance from the top of a tread to the top of the next higher tread or platform/landing or the distance from the top of a platform/landing to the top of the next higher tread or platform/landing.
- (9) **Spiral stairway** means a series of steps attached to a vertical pole and progressing upward in a winding fashion within a cylindrical space.
- (10) **Stairrail system** means a vertical barrier erected along the unprotected sides and edges of a stairway to prevent employees from falling to lower levels. The top surface of a stairrail system may also be a "handrail."
- (11) **Tread depth** means the horizontal distance from front to back of a tread (excluding nosing, if any).

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- (12) **Unprotected sides and edges** means any side or edge (except at entrances to points of access) of a stairway where there is no stairrail system or wall 36 inches (.9 m) or more in height, and any side or edge (except at entrances to points of access) of a stairway landing, or ladder platform where there is no wall or guardrail system 39 inches (1 m) or more in height.

[Statutory Authority: RCW 49.17.010, .040, .050, and .060. 06-16-020 (Order 06-10), § 296-155-47501, filed 07/24/06, effective 12/01/06. Statutory Authority: RCW 49.17.010, .040, .050, and .060. 05-20-068 (Order 05-10), § 296-155-47501, filed 10/04/05, effective 01/01/06. Statutory Authority: Chapter 49.17 RCW. 91-24-017 (Order 91-07), § 296-155-47501, filed 11/22/91, effective 12/24/91.]

WAC 296-155-476 General requirements.

- (1) A stairway or ladder shall be provided at all personnel points of access where there is a break in elevation of 19 inches (48 cm) or more, and no ramp, runway, sloped embankment, or personnel hoist is provided.
- (a) Employees shall not use any spiral stairways that will not be a permanent part of the structure on which construction work is being performed.
- (b) A double-cleated ladder or two or more separate ladders shall be provided when ladders are the only means of access or exit from a working area for 25 or more employees, or when a ladder is to serve simultaneous two-way traffic.
- (c) When a building or structure has only one point of access between levels, that point of access shall be kept clear to permit free passage of employees. When work must be performed or equipment must be used such that free passage at that point of access is restricted, a second point of access shall be provided and used.
- (d) When a building or structure has two or more points of access between levels, at least one point of access shall be kept clear to permit free passage of employees.
- (2) Employers shall provide and install all stairway and ladder fall protection systems required by this part and shall comply with all other pertinent requirements of this part before employees begin the work that necessitates the installation and use of stairways, ladders, and their respective fall protection systems.

[Statutory Authority: RCW 49.17.010, .040, .050, and .060. 06-05-027 (Order 05-45), § 296-155-476, filed 02/07/06, effective 04/01/06. Statutory Authority: Chapter 49.17 RCW. 91-24-017 (Order 91-07), § 296-155-476, filed 11/22/91, effective 12/24/91.]

WAC 296-155-477 Stairways.

- (1) General. The following requirements apply to all stairways as indicated:
- (a) Stairways that will not be a permanent part of the structure on which construction work is being performed shall have landings of not less than 30 inches (76 cm) in the direction of travel and extend at least 22 inches (56 cm) in width at every 12 feet (3.7 m) or less of vertical rise.
- (b) Stairs shall be installed between 30 deg. and 50 deg. from horizontal.
- (c) In all buildings or structures two or more stories or twenty-four feet or more in height or depth, suitable permanent or temporary stairways shall be installed.
- (d) Stairways, ramps or ladders shall be provided at all points where a break in elevation of eighteen inches or more occurs in a frequently traveled passageway, entry or exit.

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- (e) A minimum of one stairway shall be provided for access and exit for buildings and structures to three stories or thirty-six feet; if more than three stories or thirty-six feet, two or more stairways shall be provided. Where two stairways are provided and work is being performed in the stairways, one shall be maintained clear for access between levels at all times.
- (f) Wood frame buildings.
 - (i) The stairway to a second or higher floor shall be completed before studs are raised to support the next higher floor.
 - (ii) Roof and attic work areas of all buildings shall be provided with a safe means of access and egress, such as stairways, ramps or ladders.
 - (iii) Cleats shall not be nailed to studs to provide access to and egress from roof or other work areas.
- (g) Steel frame buildings. Stairways shall extend to the uppermost floor that has been planked or decked. Ladders may be used above that point.
- (h) Reinforced concrete or composite steel-Concrete buildings. Stairways shall extend to the lowermost floor upon which a complete vertical shoring system is in place. A minimum of two ladders at different locations for each floor may be used above this floor but not to exceed three floors.
- (i) Riser height and tread depth shall be uniform within each flight of stairs, including any foundation structure used as one or more treads of the stairs. Variations in riser height or tread depth shall not be over 1/4-inch (0.6 cm) in any stairway system.
- (j) 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 (51 cm).
- (k) Metal pan landings and metal pan treads, when used, shall be secured in place before filling with concrete or other material.
- (l) All parts of stairways shall be free of hazardous projections, such as protruding nails.
- (m) Slippery conditions on stairways shall be eliminated before the stairways are used to reach other levels.
- (n) Employers are permitted to use alternating tread type stairs as long as they install, use, and maintain the stairs in accordance with manufacturer's recommendations and the following:
 - (i) The stair must be installed at an angle of seventy degrees or less.
 - (ii) The stair must be capable of withstanding a minimum uniform load of one hundred pounds per square foot with a design factor of 1.7, and the treads must be capable of carrying a minimum concentrated load of three hundred pounds at the center of any treadspan or exterior arc with a design factor of 1.7. If the stair is intended for greater loading, construction must allow for that loading.
 - (iii) The stair must be equipped with a handrail on each side to assist the user in climbing or descending.

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- (o) Due to space limitations, when a permanent stairway must be installed at an angle above fifty degrees, such an installation (commonly called an inclined or ship's ladder) shall have treads, open risers and handrails on both sides.
 - (p) Where ladders are permitted for access under subsection (1) of this section, means shall be provided for employee hoisting of tools and material, such as a well wheel and hoisting line or the equivalent, so employees will have both hands free for ascending and descending ladders.
- (2) Temporary service. The following requirements apply to all stairways as indicated:
- (a) Except during stairway construction, foot traffic is prohibited on stairways with pan stairs where the treads and/or landings are to be filled in with concrete or other material at a later date, unless the stairs are temporarily fitted with wood or other solid material at least to the top edge of each pan. Such temporary treads and landings shall be replaced when worn below the level of the top edge of the pan.
 - (b) Except during stairway construction, foot traffic is prohibited on skeleton metal stairs where permanent treads and/or landings are to be installed at a later date, unless the stairs are fitted with secured temporary treads and landings long enough to cover the entire tread and/or landing area.
 - (c) Treads for temporary service shall be made of wood or other solid material, and shall be installed the full width and depth of the stair.
- (3) Stairrails and handrails. The following requirements apply to all stairways as indicated:
- (a) Stairways having four or more risers or rising more than 30 inches (76 cm), whichever is less, shall be equipped with:
 - (i) At least one handrail; and
 - (ii) One stairrail system along each unprotected side or edge.

Note: When the top edge of a stairrail system also serves as a handrail, subdivision (g) of this subsection applies.

- (b) Winding and spiral stairways shall be equipped with a handrail offset sufficiently to prevent walking on those portions of the stairways where the tread width is less than 6 inches (15 cm).
- (c) The height of stairrails shall be as follows:
 - (i) Stairrails installed after the effective date of this standard, shall be not less than 36 inches (91.5 cm) from the upper surface of the stairrail system to the surface of the tread, in line with the face of the riser at the forward edge of the tread.
 - (ii) Stairrails installed before the effective date of this standard, shall be not less than 30 inches (76 cm) nor more than 34 inches (86 cm) from the upper surface of the stairrail system to the surface of the tread, in line with the face of the riser at the forward edge of the tread.

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- (d) Midrails, screens, mesh, intermediate vertical members, or equivalent intermediate structural members, shall be provided between the top rail of the stairrail system and the stairway steps.
 - (i) Midrails, when used, shall be located at a height midway between the top edge of the stairrail system and the stairway steps.
 - (ii) Screens or mesh, when used, shall extend from the top rail to the stairway step, and along the entire opening between top rail supports.
 - (iii) When intermediate vertical members, such as balusters, are used between posts, they shall be not more than nineteen inches (48 cm) apart.
 - (iv) Other structural members, when used, shall be installed such that there are no openings in the stairrail system that are more than 19 inches (48 cm) wide.
- (e) Handrails and the top rails of stairrail systems shall be capable of withstanding, without failure, a force of at least 200 pounds (890 n) applied within 2 inches (5 cm) of the top edge, in any downward or outward direction, at any point along the top edge.
- (f) The height of handrails shall be not more than 37 inches (94 cm) nor less than 30 inches (76 cm) from the upper surface of the handrail to the surface of the tread, in line with the face of the riser at the forward edge of the tread.
- (g) When the top edge of a stairrail system also serves as a handrail, the height of the top edge shall be not more than 37 inches (94 cm) nor less than 36 inches (91.5 cm) from the upper surface of the stairrail system to the surface of the tread, in line with the face of the riser at the forward edge of the tread.
- (h) Stairrail systems and handrails shall be so surfaced as to prevent injury to employees from punctures or lacerations, and to prevent snagging of clothing.
- (i) Handrails shall provide an adequate handhold for employees grasping them to avoid falling.
- (j) The ends of stairrail systems and handrails shall be constructed so as not to constitute a projection hazard.
- (k) Handrails that will not be a permanent part of the structure being built shall have a minimum clearance of 3 inches (8 cm) between the handrail and walls, stairrail systems, and other objects.
- (l) Unprotected sides and edges of stairway landings shall be provided with guardrail systems. Guardrail system criteria are contained in chapter 296-155 WAC, Part C-1, Fall protection requirements for construction.

[Statutory Authority: RCW 49.17.010, .040, .050, and .060. 13-04-073 (Order 06-08), § 296-155-477, filed 02/04/13, effective 04/01/13. Statutory Authority: Chapter 49.17 RCW. 96-24-051, (Order 96-05), § 296-155-477, filed 11/27/96, effective 02/01/97. 95-10-016, § 296-155-477, filed 4/25/95, effective 10/1/95; 91-24-017 (Order 91-07), § 296-155-477, filed 11/22/91, effective 12/24/91.]