

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 must 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) You must install stairs between 30 degrees and 50 degrees from horizontal.

(c) In all buildings or structures two or more stories or 24 feet or more in height or depth, you must install suitable permanent or temporary stairways.

(d) You must provide stairways, ramps or ladders at all points where a break in elevation of 18 inches or more occurs in a frequently traveled passageway, entry or exit.

(e) You must provide a minimum of one stairway for access and exit for buildings and structures to 3 stories or 36 feet; if more than 3 stories or 36 feet, you must provide two or more stairways. Where two stairways are provided and work is being performed in the stairways, you must maintain one clear for access between levels at all times.

(f) **Wood frame buildings.**

(i) You must complete the stairway to a second or higher floor before studs are raised to support the next higher floor.

(ii) You must provide roof and attic work areas of all buildings with a safe means of access and egress, such as stairways, ramps or ladders.

(iii) You must nail cleats to studs to provide access to and egress from roof or other work areas.

(g) **Steel frame buildings.** Stairways must 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 must 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 3 floors.

(i) Riser height and tread depth must 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 must not be over 1/4-inch (0.6 cm) in any stairway system.

(j) Where doors or gates open directly on a stairway, you must provide a platform, and the swing of the door must not reduce the effective width of the platform to less than 20 inches (51 cm).

(k) You must secure metal pan landings and metal pan treads, when used, in place before filling with concrete or other material.

(l) All parts of stairways must be free of hazardous projections, such as protruding nails.

(m) You must eliminate slippery conditions on stairways before the stairways are used to reach other levels.

(n) You 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 70 degrees or less.

(ii) The stair must be capable of withstanding a minimum uniform load of 100 pounds per square foot with a design factor of 1.7, and the treads must be capable of carrying a minimum concentrated load of 300 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.

(o) Due to space limitations, when a permanent stairway must be installed at an angle above 50 degrees, such an installation (commonly called an inclined or ship's ladder) must have treads, open risers and handrails on both sides.

(p) Where ladders are permitted for access under subsection (1) of this section, you must provide means 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. You must replace such temporary treads and landings 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 must be made of wood or other solid material, and must be installed the full width and depth of the stair.

(3) **Stair rails and handrails.** The following requirements apply to all stairways as indicated:

(a) Stairways having 4 or more risers or rising more than 30 inches (76 cm), whichever is less, must be equipped with:

- (i) At least one handrail; and
- (ii) One stair rail system along each unprotected side or edge.

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

(b) Winding and spiral stairways must 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 stair rails must be as follows:

(i) Stair rails installed after the effective date of this standard, must be not less than 36 inches (91.5 cm) from the upper surface of the stair rail system to the surface of the tread, in line with the face of the riser at the forward edge of the tread.

(ii) Stair rails installed before the effective date of this standard, must be not less than 30 inches (76 cm) nor more than 34 inches (86 cm) from the upper surface of the stair rail system to the surface of the tread, in line with the face of the riser at the forward edge of the tread.

(d) You must provide midrails, screens, mesh, intermediate vertical members, or equivalent intermediate structural members, between the top rail of the stair rail system and the stairway steps.

(i) You must locate midrails, when used, at a height midway between the top edge of the stair rail system and the stairway steps.

(ii) Screens or mesh, when used, must 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 must be not more than 19 inches (48 cm) apart.

(iv) You must install other structural members, when used, such that there are no openings in the stair rail system that are more than 19 inches (48 cm) wide.

(e) Handrails and the top rails of stair rail systems must be capable of withstanding, without failure, a force of at least 200 pounds (890 n) applied within two 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 must 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 stair rail system also serves as a handrail, the height of the top edge must be not more than 37 inches (94 cm) nor less than 36 inches (91.5 cm) from the upper surface of the stair rail system to the surface of the tread, in line with the face of the riser at the forward edge of the tread.

(h) Stair rail systems and handrails must be so surfaced as to prevent injury to employees from punctures or lacerations, and to prevent snagging of clothing.

(i) Handrails must provide an adequate handhold for employees grasping them to avoid falling.

(j) The ends of stair rail systems and handrails must be constructed so as not to constitute a projection hazard.

(k) Handrails that will not be a permanent part of the structure being built must have a minimum clearance of 3 inches (8 cm) between the handrail and walls, stair rail systems, and other objects.

(l) You must provide unprotected sides and edges of stairway landings 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**, **49.17.040**, **49.17.050**, **49.17.060**. WSR 16-09-085, § 296-155-477, filed 4/19/16, effective 5/20/16. Statutory Authority: RCW **49.17.010**, **49.17.040**, **49.17.050**, **49.17.060** and 29 C.F.R. 1926, Subpart M, Fall Protection. WSR 13-04-073, § 296-155-477, filed 2/4/13, effective 4/1/13. Statutory Authority: RCW **49.17.040**, [49.17.]050 and [49.17.]060. WSR 96-24-051, § 296-155-477, filed 11/27/96, effective 2/1/97. Statutory Authority: Chapter **49.17** RCW. WSR 95-10-016, § 296-155-477, filed 4/25/95, effective 10/1/95; WSR 91-24-017 (Order 91-07), § 296-155-477, filed 11/22/91, effective 12/24/91.]