

RISE = 9 1/2"

SECTION 313 RAMPS

~~313.1 Maximum slope.~~ All egress ramps shall have a maximum slope of one unit vertical in eight units horizontal (12.5-percent slope).

~~313.2 Handrails required.~~ Handrails shall be provided on at least one side of all ramps exceeding a slope of one unit vertical in 12 units horizontal (8.33-percent slope).

~~313.3 Landing required.~~ A minimum 3-foot-by-3-foot (914 mm by 914 mm) landing shall be provided at the top and bottom of ramps, where doors open onto the ramp, and where the ramp changes direction.

314.5 Spiral stairs. Spiral stairways are permitted, provided the minimum width shall be 26 inches (660 mm) with each tread having a 7¹/₂-inch (190 mm) minimum tread width at 12 inches (305 mm) from the narrow edge. All treads shall be identical, and the rise shall be no more than 7³/₈ inches (197 mm). A minimum headroom of 6 feet 6 inches (1982 mm) shall be provided.

314.6 Circular stairways. Circular stairways shall have a minimum tread depth and a maximum riser height in accordance with Section 314.2 and the smaller radius shall not be less than twice the width of the stairway. The minimum tread depth of 10 inches (254 mm) shall be measured from the narrower end.

314.7 Illumination. All stairs shall be provided with illumination in accordance with Section 303.4.

SECTION 314 STAIRWAYS

314.1 Width. Stairways shall not be less than 36 inches (914 mm) in clear width at all points above the permitted handrail height and below the required headroom height. The minimum width at and below the handrail height shall not be less than 32 inches (813 mm) where a handrail is installed on one side and 28 inches (711 mm) where handrails are provided on both sides.

314.2 Treads and risers. The maximum riser height shall be 7³/₄ inches (197 mm) and the minimum tread depth shall be 10 inches (254 mm). The riser height shall be measured vertically between leading edges of the adjacent treads. The tread depth shall be measured horizontally between the vertical planes of the foremost projection of adjacent treads and at a right angle to the tread's leading edge. The walking surface of treads and landings of a stairway shall be sloped no steeper than one unit vertical in 48 units horizontal (2-percent slope). The greatest riser height within any flight of stairs shall not exceed the smallest by more than ³/₈ inch (9.5 mm). The greatest tread depth within any flight of stairs shall not exceed the smallest by more than ³/₈ inch (9.5 mm).

314.2.1 Profile. The radius of curvature at the leading edge of the tread shall be no greater than ⁹/₁₆ inch (14.3 mm). A nosing not less than ³/₄ inch (19 mm) but not more than 1¹/₄ inches (32 mm) shall be provided on stairways with solid risers. Beveling of nosing shall not exceed ¹/₂ inch (12.7 mm). Risers shall be vertical or sloped from the underside of the leading edge of the tread above at an angle not more than 30 degrees from the vertical.

Exception: A nosing is not required where the tread depth is a minimum of 11 inches (279 mm).

314.3 Headroom. The minimum headroom in all parts of the stairway shall not be less than 6 feet 8 inches (2032 mm) measured vertically from the sloped plane adjoining the tread nosing or from the floor surface of the landing or platform.

314.4 Winders. Winders are permitted, provided that the width of the tread at a point not more than 12 inches (305 mm) from the side where the treads are narrower is not less than 10 inches (254 mm) and the minimum width of any tread is not less than 6 inches (153 mm). The continuous handrail required by Section 315.1 shall be located on the side where the tread is narrower.

SECTION 315 HANDRAILS AND GUARDRAILS

315.1 Handrails. Handrails having minimum and maximum heights of 30 inches and 38 inches (762 mm and 965 mm), respectively, measured vertically from the nosing of the treads, shall be provided on at least one side of stairways of three or more risers. Spiral stairways shall have the required handrail located on the outside radius. All required handrails shall be continuous the full length of the stairs. Ends shall be returned or shall terminate in newel posts or safety terminals. Handrails adjacent to a wall shall have a space of not less than 1¹/₂ inches (38 mm) between the wall and the handrail.

Exceptions:

1. Handrails shall be permitted to be interrupted by a newel post at a turn.
2. The use of a volute, turnout or starting easing shall be allowed over the lowest tread.

315.2 Handrail grip size. Handrails shall have either a circular cross section with a diameter of 1¹/₄ inches (32 mm) to 2 inches (51 mm), or a noncircular cross section with a perimeter dimension of at least 4 inches (102 mm) but not more than 6¹/₄ inches (159 mm) and a largest cross-section dimension not exceeding 2¹/₄ inches (28.6 mm). Edges shall have a minimum radius of ¹/₈ inch (3.2 mm).

315.3 Guardrail details. Porches, balconies or raised floor surfaces located more than 30 inches (762 mm) above the floor or grade below shall have guardrails not less than 36 inches (914 mm) in height. Open sides of stairs with a total rise of more than 30 inches (762 mm) above the floor or grade below shall have guardrails not less than 34 inches (864 mm) in height measured vertically from the nosing of the treads.

315.4 Guardrail opening limitations. Required guardrails on open sides of stairways, raised floor areas, balconies and porches shall have intermediate rails or ornamental closures which do not allow passage of an object 4 inches (102 mm) or more in diameter.

Exception: The triangular openings formed by the riser, tread and bottom rail of a guard at the open side of a stairway may be of such a size that a sphere 6 inches (153 mm) cannot pass through.