

RESIDENTIAL **STAIRWAYS / HANDRAILS / GUARDS / LANDINGS**

SECTION R314 STAIRWAYS:

R314.1 WIDTH:

Stairways shall not be less than 36 inches (914mm) in clear width at all points above the permitted handrail height and below the required headroom height. Handrails shall not project more than 4.5 inches (114mm) on either side of the stairway and the minimum clear width of the stairway at and below the handrail height, including treads and landings, shall not be less than 31.5 inches (787mm) where a handrail is installed on one side and 27 inches (698mm) where handrails are provided on both sides.

R314.2 TREADS AND RISERS:

The maximum riser height shall be 8 ¼ inches (210mm) and the minimum tread depth shall be 9 inches (229). 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 the 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 1 unit vertical in 48 units horizontal (2% slope). The greatest riser height within any flight of stairs shall not exceed the smallest by more than 3/8 of an inch (9.5mm). The greatest tread depth within any flight of stairs shall not exceed the smallest by more than 3/8 of an inch (9.5mm).

R408.30519

R314.2.1 PROFILE:

The radius of the curvature at the leading edge of the tread shall be no greater than 9/16 inch (14.3mm). A nosing not less than ¾ inch (19.1mm) but more than 1 ¼ inch (32mm) shall be provided on stairways with solid risers. The greatest nosing projection shall not exceed the smallest nosing projection by more than 3/8 inch (9.5mm) between two stories, including the nosing at the level of floors and landings. Beveling or nosing shall not exceed ½ inch (12.7mm). Risers shall be vertical or sloped from underside of the leading edge of the tread above at an angle not more than 30 degrees from the vertical. Open risers are permitted, provided that the opening between treads does not permit the passage of a 4-inch-diameter (102mm) sphere.

Exceptions:

1. A nosing is not required where the tread depth is a minimum of 11 inches (279mm).
2. The opening between adjacent treads is not limited on stairs with a total rise of 30 inches (762mm) or less.

R314.3 HEADROOM:

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

R314.7 ILLUMINATION:

All stairs shall be provided with illumination in accordance with Section R303.4.

SECTION R315 HANDRAILS:

R315.1 HANDRAILS:

Handrails that have a minimum and maximum height of the 34 inches and 38 inches (864mm and 965mm), respectively, measured vertically from the nosing of the treads, shall be provided on a least one side of the stairways. All required handrails shall be continuous the full length of the stairs with 3 or more risers from the point directly above the top riser of a flight to a point directly above the lowest riser of the flight. 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 1.5 inches (38mm) 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. R408.30520**

R315.2 HANDRAIL GRIP SIZE:

The handgrip portion of handrails shall have a circular cross section of 1 ¼ inches (32mm) minimum to 2 5/8 inches (67mm) maximum. Other handrail shapes that provide an equivalent grasping surface are permissible. Edges shall have a minimum radius of 1/8 inch (3.2mm).

SECTION R316 GUARDS:

R316.1 GUARDS REQUIRED:

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

R316.2 GUARD OPENING LIMITATIONS:

Required guards on open sides of stairways, raised floor areas, balconies and porches shall have intermediate rails or ornamental closures that do not allow passage of a sphere 4 inches (102mm) in diameter. Required guards shall not be constructed with horizontal rails or other ornamental pattern that results in a ladder effect.

EXCEPTION: The triangular openings formed by the riser, tread and bottom rail of a guard at the open side of a stairway are permitted to be of such a size that a sphere 6 inches (152mm) cannot pass through.

SECTION R312 LANDINGS

R312.1.11 LANDINGS FOR STAIRWAYS:

There shall be a floor or landing at the top and bottom of each stairway.

EXCEPTION: At the top of an interior flight of stairs, if a door does not swing over the stairs. A stairway between the garage and dwelling is defined as an interior stairway. **R408.30517**

R312.1.2 LANDING AT DOORS:

There shall be a floor or landing on each side of exterior door. **EXCEPTION:** At the exterior side of sliding doors.

The floor landing at a door shall not be more than 1.5 inches (38mm) lower than the top of the threshold.

EXCEPTION: The landing at an exterior doorway shall not be more than 8 inches (197mm) below the top of the threshold, provided that the door, other than an exterior storm or screen door, does not swing over the landing.

R312.2 SIZE:

The width of each landing shall not be less than the stairway or door served. Every landing shall have a minimum dimension of 36 inches (914mm) measured in the direction of travel.