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Single Family Dwelling - Stairways Landings, Guards and Handrails

Stair Width

Stairways should be a minimum 36" wide measured to the finished wall. R311.7.1

Headroom

The minimum headroom is 6' – 8" measured from a plane at the nose of the stairs to the finished ceiling or any projection. R311.7.2

Risers and Treads

The maximum riser (vertical) height is 7 ¾". All of the risers should be the same height with a tolerance of 3/8" between the tallest to the shortest. The riser opening should be blocked off to prevent the passage of a 4" sphere. R311.7.5

The minimum tread (horizontal) depth is 10". The depth is measured from nosing to nosing. All of the treads should be the same depth with a maximum tolerance of 3/8" between the largest tread to the smallest. R311.7.5.2

The tread nosing (exposed edge) should stick out a minimum of ¾" but not more than 1 ¼". Beveling of nosing should not exceed ½". R311.7.5.3

Winder Treads

A tread with non-parallel edges is called a winder tread and these are permitted to be used in conjunction with traditional treads. The narrowest point of the winder tread should not be less than 6". The minimum depth of a winder tread is 10" measured 12" away from the narrowest point. R311.7.5.2.1

Landings

There should be a landing or floor on each side of each exterior door. The width of the landing should be not less than the width of the door and the depth should be not less than 36". The floor level on the inside of the doorway should be not more than 1 ½" lower than the top of the threshold. The landing on the exterior side can be a maximum of 7 ¾" lower than the top of the threshold if the door does not swing over the threshold. R 311.3

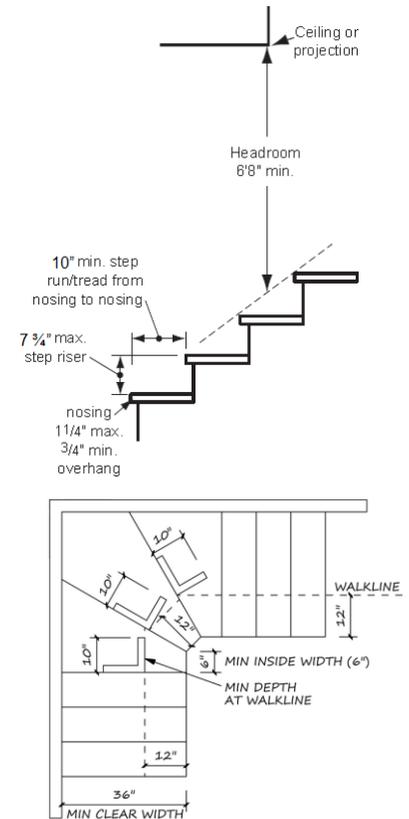
There should be a landing or floor at the top and bottom of each stairway. A floor or landing is not required for interior stairs, including stairs in an enclosed garage, provided a door does not swing over the stairs. R311.7.6

A flight of stairs shall not have a vertical rise of more than 12' without a floor or landing in between. R311.7.3

Glazing (Glass)

Safety glazing is required near stairs in the following locations R308.4

- When glazing is used in guards and railings
- Where the bottom edge of the glazing is less than 36" above the plane of the adjacent walking surface of stairways, landings or ramps
- When glazing is adjacent to the landing at the bottom of the stairs and is less than 36" above the landing and within 60" horizontally of the bottom tread.



Handrails – Provide a graspable surface along the stairs

If a stairway contains four (4) or more risers, handrails shall be provided on at least one side of each continuous run of treads or flight. R311.7.8

Handrail ends should return to the wall, terminate at a newel post, or end with a safety terminal. The handrail should be securely fastened in place and must resist a force of 200#. Table R301.5 & 311.7.8.2

Handrail height should be 34" to 38" measured vertically from a plane at the nose of the treads. R311.7.8.1

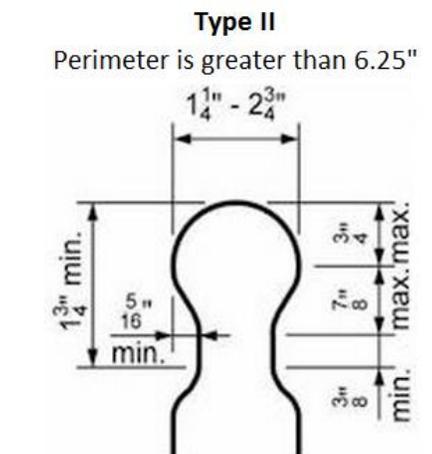
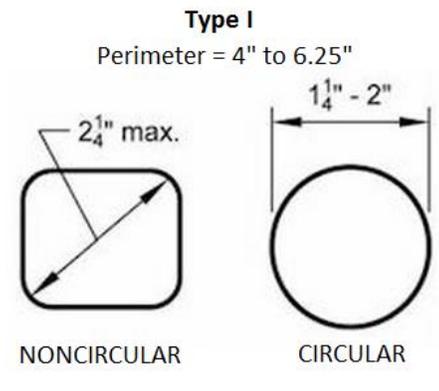
A minimum 1 1/2" gap is required between the wall and handrail. The handrail cannot project more than 4 1/2" into the stairway. R311.7.8.2 & 311.7.1

Type I Handrail

- A round handrail should be 1 1/4" to 2" in diameter
- If the handrail is not round it should have a perimeter dimension of at least 4 inches but less than 6 1/4". The maximum cross section diameter should be 2 1/4". R311.7.8.3

Type II Handrail

- Handrails with a perimeter greater than 6 1/4", such as a vertical 2X4 or 2X6, require a graspable finger recess on both sides. A stock 2X4 or 2X6 will not meet the handrail requirements. R311.7.8.3



Guards – Fall Protection from an elevated walking surface

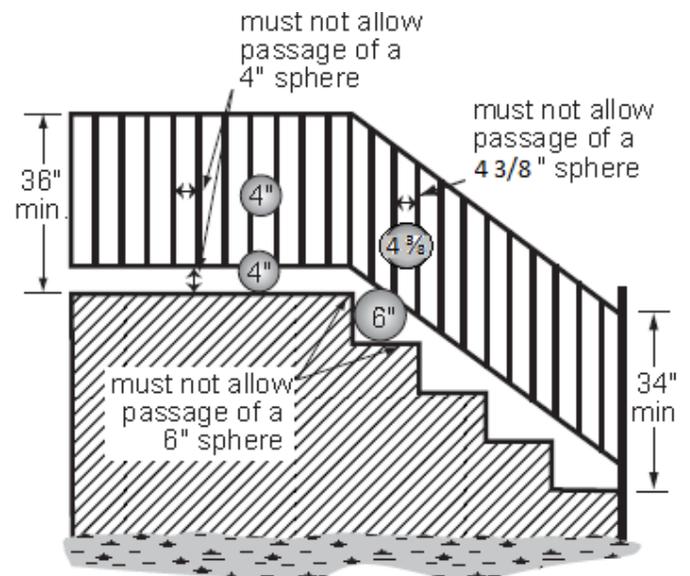
A guard should be installed along walking surfaces such as; stairs, landings, ramps and decks that are located more than 30" measured vertically above the floor or grade, measured 36" horizontally to the edge of the open side. R312.1.1

Guards shall not have openings which allow the passage of a 4" sphere. Guards on the open side of stairs shall not allow passage of a 4 3/8" sphere. R312.1.3

The triangle formed by a tread, riser and bottom of guard shall not allow passage of a 6" sphere. R312.1.3

Guards shall be a minimum of 36" high except at stairs where they can be 34" high measured vertically from the nosing. Where fixed seating such as benches are installed the measurement is made from the seating height. R312.1

Guards should be securely fastened in place and resist a force of 200# at the top. The infill components should resist a load of 50#. R301.5



Illumination

Interior stairways should be provided with a means to illuminate (1 foot candle) the stairs and landings. A switch should be provided at each floor level if there are more than five risers. R303.7

Exterior stairs should be provided with a light fixture located in the immediate vicinity of the bottom of the landing. The illumination of exterior stairways shall be controlled from inside the dwelling unit. R303.7, R30.7.1