

SINGLE FAMILY DWELLING STAIRWAYS, GUARDS HANDRAILS

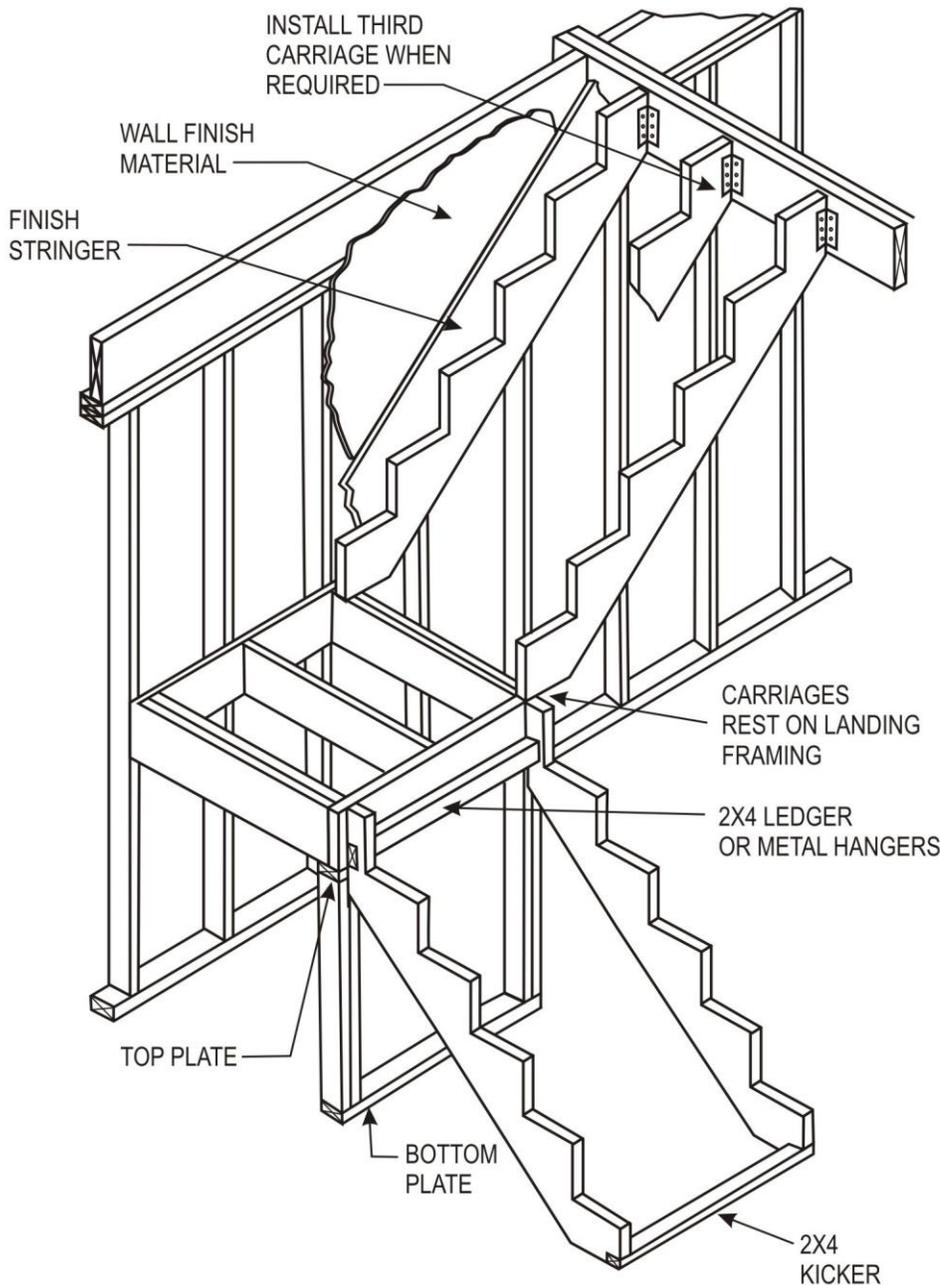
INFORMATION
GUIDELINE

19

January 2017

CITY OF ESCONDIDO • BUILDING DIVISION • 201 N. BROADWAY, ESCONDIDO, CA 92025 • (760) 839-4647

PLEASE NOTE: THIS GUIDELINE IS INTENDED FOR USE IN SINGLE-FAMILY DWELLINGS ONLY. REQUIREMENTS DIFFER FOR OTHER OCCUPANCIES AND SOME STAIRWAY TYPES ARE NOT ALLOWED.



Single Family Dwellings

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Stairways Guards & Handrails

SINGLE FAMILY DWELLING

Stairways/Guards/Handrails

Width

Stairways shall not be less than **36** inches wide. The handrail may project a maximum of **4 ½** inches into this dimension. **2016 CRC R311.7.1.**

Dimensional Tolerances

The largest tread depth or riser height within any stairway shall not exceed the smallest by more than **3/8** inch. **2016 CRC R311.7.5.1.**

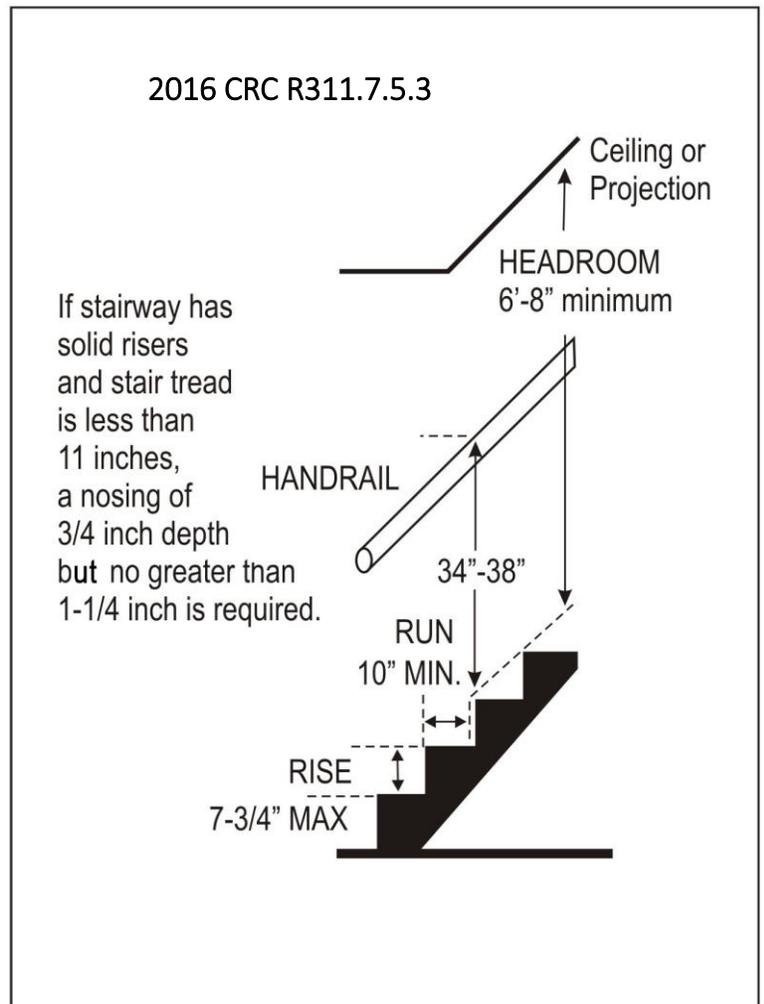
Risers & Treads

If you are building a new standard residential stairway (not a spiral), each step (or riser) shall not be more than **7 ¾** inches high. Treads are the flat surfaces that you step onto. For new stairs, the treads shall be a minimum of **10** inches deep from front to back (not counting the part underneath the nosing of the tread above). The exposed edge of the tread is called nosing. The nosing must project at least **¾** inch, but not more than **1 ¼** inches.

The steps in a flight of stairs need to be uniform to avoid tripping. The code allows only **3/8**-inch difference between the largest and the smallest rise, and only **3/8**-inch difference between the largest and smallest tread measured from front to back. **2016 CRC R311.7.5.(1)(2).**

Headroom

Every stairway shall have a headroom clearance of not less than **6 feet 8** inches. This is measured vertically from the sloped plane adjoining the tread nosings or from the floor surface of the landings.



Handrails

Required at four or more risers.

The top shall be placed not less than **34** inches, nor more than **38** inches above the nosing of the treads. Ends shall be returned or terminated in newel posts or safety terminals.

All required handrails shall be continuous for the full length of the stairs from a point directly above the top riser.

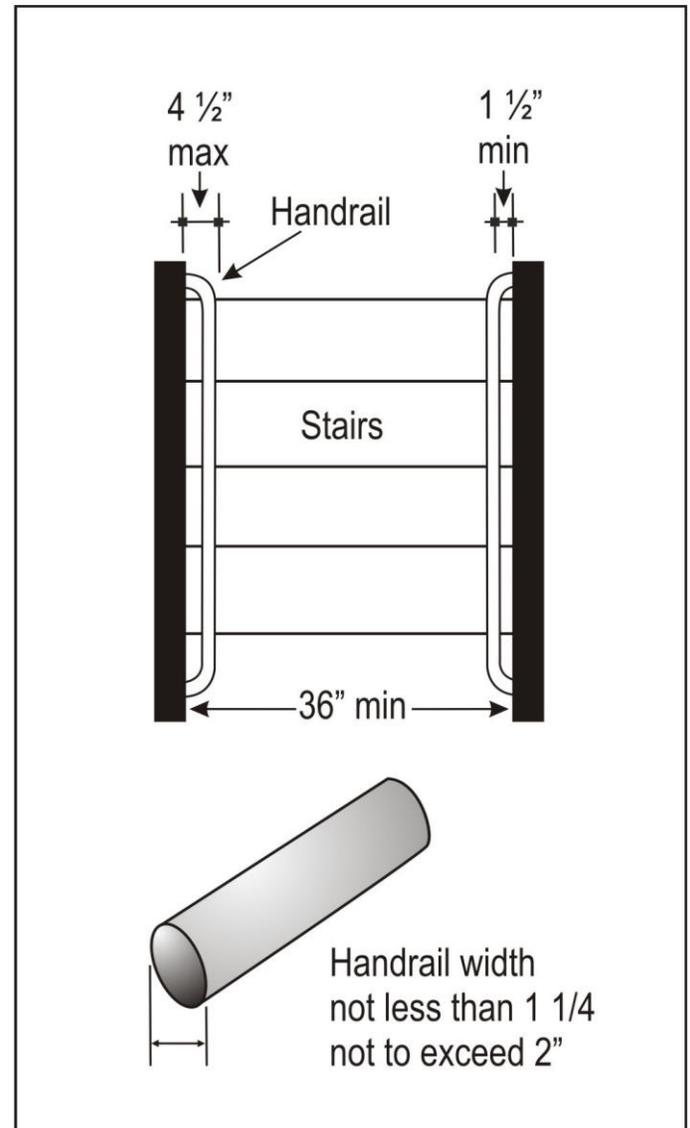
Exceptions:

- Handrails may be interrupted by a newel post at a turn.

Summary:

- Stairways shall have a handrail if the stairway has four or more risers.
- Handrails may project over stairs by **4 ½** inches maximum on each side of the stairway.
- Handrails shall be continuous for the full length of the stairs. They must return into the wall or butt into a post, or be continuous into an adjacent stair flight.
- Handrails attached to the wall shall have a space between the wall and the rail of at least **1 ½** inches to provide a graspable surface.
- Handrails on the open side of a stairway shall meet guard requirements. **2016**
- **CRC R312.1.** For occupancies in Group R-3 guards whose top rail also serves as a handrail shall have height not less than **34** inches and not more than **38** inches measured vertically from the leading edge of the stair tread nosing.
- The height of handrails is measured vertically from the nosing of the tread to the top of the handrail. A handrail along a wall must be between **34** to **38** inches high.
- A round handrail shall have a diameter no smaller than **1 ¼** inch and no larger than **2** inches, so that it can be easily and securely gripped. Other handrail shapes are allowed if the perimeter dimension is at least 4 inches and not more than **6 ¼** inches, with a cross section dimension not more than **2 ¼** inches.

- A volute, turnout or newel post is allowed over the lowest tread.



illumination

All interior and exterior stairways shall be illuminated. **2013 CRC R303.7**

Guards

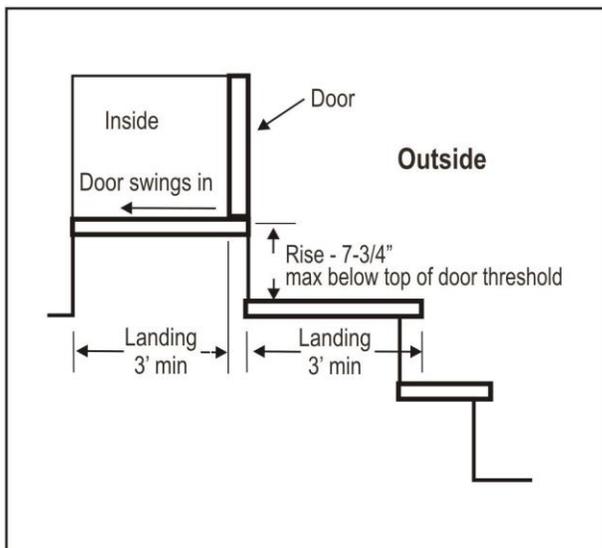
A guard is required to minimize the possibility of falling from a balcony, deck, landing, etc., more than **30** inches above the floor or ground below. Guards shall be at least **42** inches high, except that a guard may be **34** inches minimum and **38** inches maximum in R-3 occupancies where the top rail also serves as a stair handrail. **201 CRC R312.1.2(2)**

Guards on the open side of stairs in R-3 occupancies must have some kind of a pattern, so that a **4 3/8** inch sphere cannot pass through. However, all exterior guards along raised floors, landing, porches, decks, and balconies shall have intermediate rails or ornamental closures that do not allow passage of a **4** inch sphere.

At the bottom edge of a guard along a series of steps, the space between the tread, riser and the guard shall be small enough to prevent a **6** inch sphere from passing through.

Landings

Any exterior entry/exit door shall have a landing at least **3' x 3'** inside the door before a step occurs. The interior landing must not be more than **1 1/2** inch below the top of the threshold. On the outside of the door, the step down may be **7 3/4** inches before another **3' x 3'** minimum landing is required and the door does not swing over the stairs. After the landing there may be additional steps.



2016 CRC R303.7

Interior lighting shall be installed either over the stair (Points B) or over the landings (Points A).

Exterior stairs shall be lit at a minimum by the landing at the top of the stairway. The light control shall be provided within the dwelling unit or automatically controlled, e.g. motion detector light.

Guardrail with vertical pattern

Shall not allow passage of a 4" sphere

Shall not allow passage of a 4" sphere

42" min.

4"

4"

6"

Shall not allow passage of a 6" sphere

*Exterior stairs handrail shall be 34" minimum and 38" maximum.

42" min.

Guardrail with horizontal pattern

Shall not allow passage of a 4" sphere

Shall not allow passage of a 4" sphere

42" min.

4"

4"

6"

Shall not allow passage of a 6" sphere

*Exterior stairs handrail shall be 34" minimum and 38" maximum.

42" min.

Winder Stairs Spiral Stairs

Stairways that turn a corner, with treads that are narrow on one end and wider at the other, are called winder stairs. Winder stairs shall be at least 6 inches deep at their narrowest point. All treads shall be at least ten inches wide, measured 12 inches from where they are the narrowest. Although the tread size varies on winder stairs, there may not be more than 3/8 inch variation between the largest and smallest rise.

Spiral stairway treads shall be at least 7 1/2 inches deep measured 12 inches out from where they are the narrowest. The risers shall not be more than 9 1/2 inches high. The minimum width of a spiral stairway from the center pole to the outside edge of the tread is 26 inches. Each spiral stair tread shall be identical. Headroom may be 6 feet 6 inches minimum.

NOTE: REQUIRED HANDRAILS ARE NOT SHOWN

