

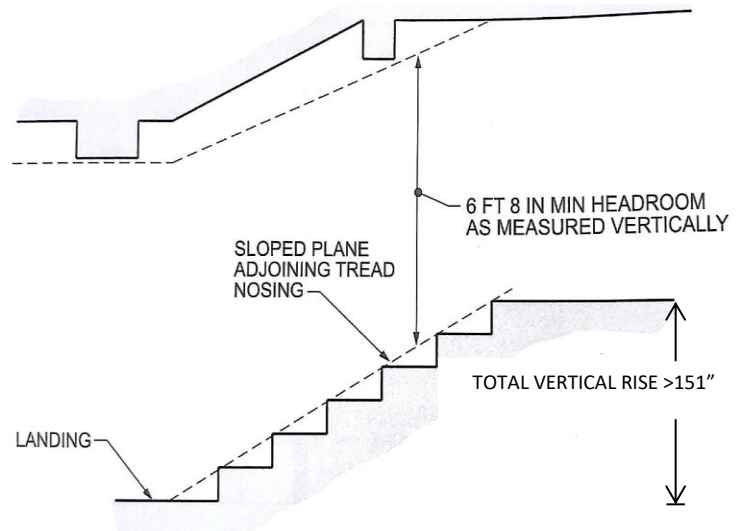
Residential Stairways, Handrails and Guards
 2019 California Residential Code Section R311.7 and R312

The following is a list of general requirements for residential stairways, guards, and handrails based on the 2019 California Residential Code. This handout is intended as a general guide, it does not include spiral stairs; contact the building department for additional information about your specific project.

Headroom

CRC R311.7.2

- Headroom in stairway shall be a minimum of 6 feet 8 inches.
- The vertical measurement shall be taken from the sloped line connecting the tread nosing.
- Headroom height for spiral staircase is 6 feet 6 inches.



Vertical Rise

CRC R311.7.3

- The maximum vertical distance between floor levels or landings is 151 inches.

Width

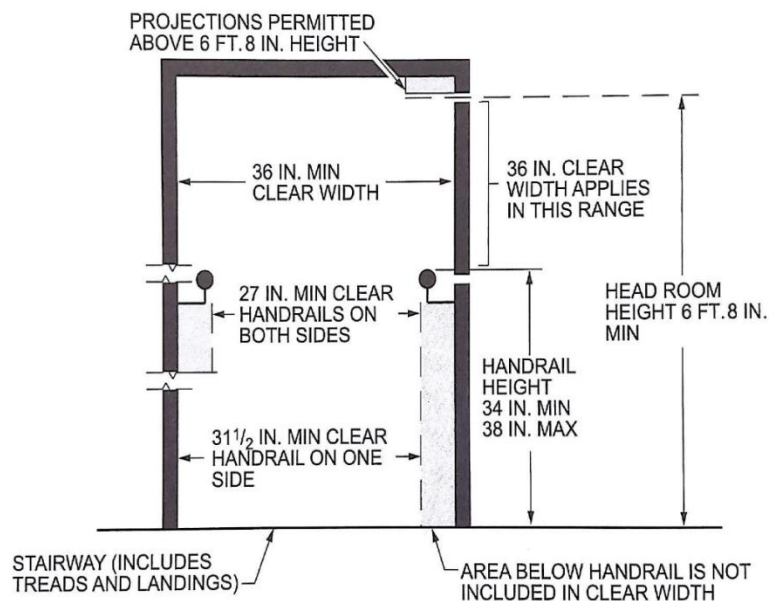
CRC R311.7.1

- Stairways shall have 36 inches minimum in clear width above the handrails.
- Handrails are allowed to project 4-½ on either side.
- The clear width at and below the handrails is 31-½ inches clear with one handrail, 27 inches clear with two handrails.

Walkline

CRC R311.7.4

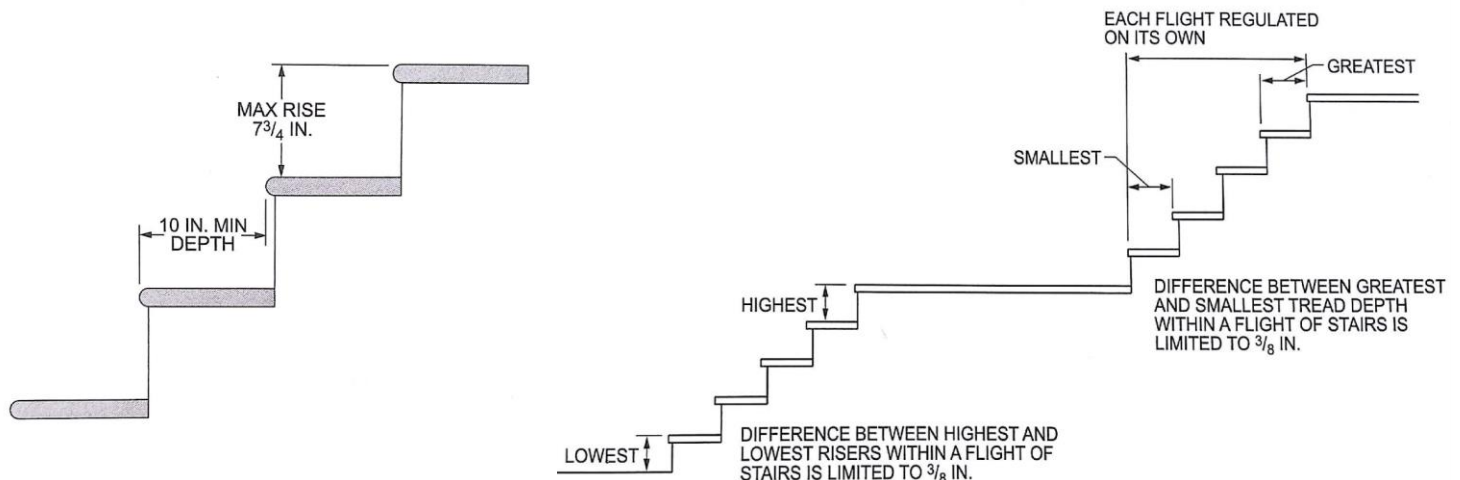
- The walkline across winder treads shall be concentric to the curve and parallel to the direction of travel through the turn and located 12 inches from the side where the winders are narrower.
- The 12 inch dimension shall be measured from the widest point of the clear stair width at the walking surface of the winder.



Risers, Treads & Nosing

CRC R311.7.5

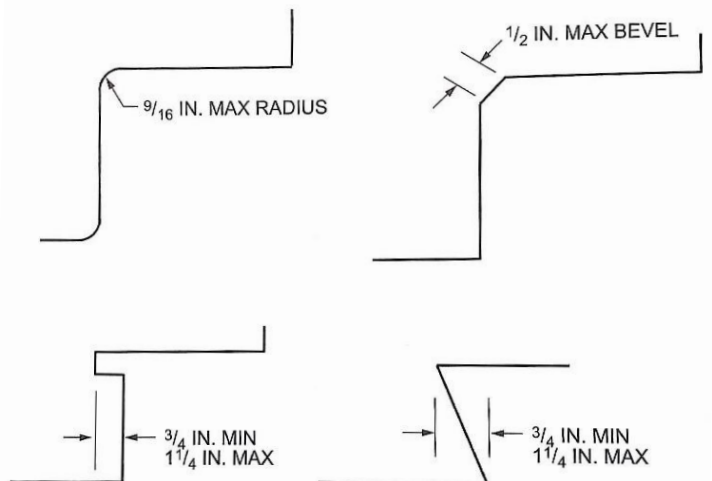
- **Riser** height shall be not more than 7-¾ inches.
- Risers shall be vertical or sloped from the underside of the nosing of the tread above at an angle not more than 30 degrees from the vertical.
- The difference between the greatest and smallest riser height within a flight of stairs shall not exceed 3/8 inch (risers must be uniform to avoid tripping).
- Open risers more than 30 inches above floor or grade shall not permit the passage of a 4 inch sphere.
- **Tread** depth shall be not less than 10 inches.
- The difference between the greatest and smallest tread depth within a flight of stairs shall not exceed 3/8 inch (treads must be uniform to avoid tripping).



- **Nosings** at treads, landings and floors of stairways shall have a projection of not less than ¾ inch and not more than 1-¼ inches.

Exception: a nosing is not required when the tread depth is 11 inches or greater.

- Nosings shall have a radius of curvature at the nosing not greater than 9/16 inch or a bevel not greater than 1/2 inch.
- The difference between the greatest nosing projection and the smallest shall not exceed 3/8 inch.



Landings for Stairways

CRC 311.7.6

- There shall be a floor or landing at the top and bottom of each stairway. The **width** perpendicular to the direction of travel shall be not less than the width of the flight served.

Exception: A floor or landing is not required at the top of an interior flight of stairs, including stairs in the garage, provided that the door does not swing over the stairs.

- If the stairway has a straight run, the **depth** in the direction of travel shall be not less than 36 inches.

Handrails

CRC 311.7.8

- Handrails shall be provided on at least one side of each flight of stairs with four or more risers.
- Handrail height shall be not less than 34 inches and not more than 38 inches measured vertically from the imaginary sloped line connecting the nosings.

Exception: the transition or bend fitting between handrail and guard, or used at the start of a flight, shall be allowed to be greater than 38 inches.

- Projection shall not exceed 4-½ inches on either side of the stairway.
- Wall mounted handrails shall have a space not less than 1-½ inches between the wall and handrail.
- Handrails shall be continuous for the full length of the flight, from bottom riser to top riser.
- Handrails shall be returned or shall terminate at newel post or safety terminals.

Exception: a volute, turnout, or start easing shall be allowed to terminate over the lowest tread.

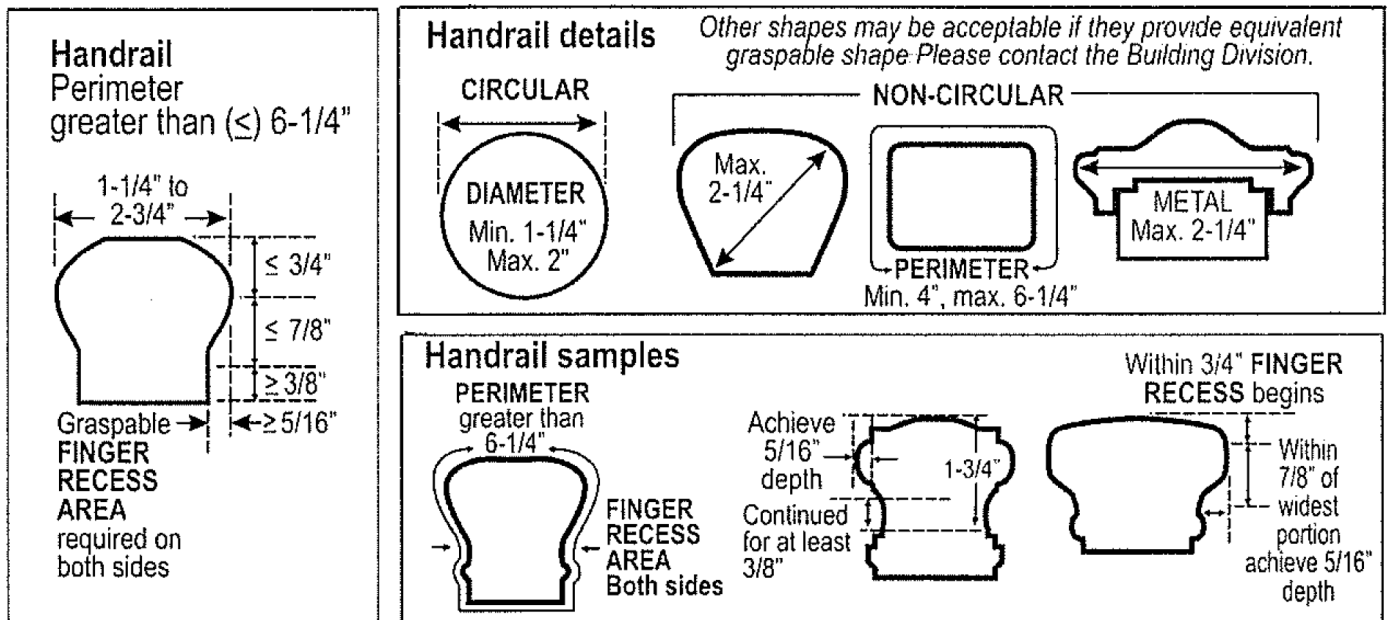
- Grip size shall be of one of the following types:

Type I:

- Circular cross section with an outside diameter not less than 1-¼ inches and not greater than 2 inches.
- If not circular, it shall have a perimeter of not less than 4 inches and not more than 6-¼ inches and a cross section of not more than 2-½ inches.

Type II:

- Handrails with a perimeter greater than 6-¼ inches shall have a graspable finger recess on both sides.
- The finger recess shall begin within ¾ inch from the top.
- The finger recess shall have a depth of not less than 5/8 inch within 7/8 inch below the widest portion.
- The depth shall continue for not less than 3/8 inch to a level that is not less than 1-¾ inches below the tallest portion.
- The width above the finger recess shall be not less than 1-¼ inches and not more than 2-¾ inches.



Guards

CRC R312.1

- Guards shall be provided for open sided walking surfaces including stairs, ramps, landings, porches, balconies etc. that are located more than 30 inches vertically above the floor or grade within 36 inches horizontally from the open side.
- The height of required guards at open walking surfaces is 42 inches.

Exceptions:

1. Guards on the open side of stairs shall have a height of not less than 34 inches measured vertically from the imaginary line connecting the nosing.
2. Where the top of the guard serves as a handrail on the open side of stairs, the top of the guard shall be not less than 34 inches and not more than 38 inches measured vertically from the imaginary line connecting the nosing.

- Openings in a guard shall not allow the passage of a 4 inch diameter sphere.

Exceptions:

1. The triangular openings at the open side of a stair formed by the riser, tread, and bottom rail of the guard, shall not allow the passage of a 6 inch diameter sphere.
2. Guards on the open side of stairs shall not allow the passage of a sphere 4-3/8 inches in diameter.

