



Guardrails & Handrail Requirements

Planning Building & Transportation

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Hours: 7:30-3:30, Mon-Thur

CODE SECTION: CRC R308.4.4.1, R311.7.8, R312, CA Historic Building Code 8-504

Handrails CRC R311.7.8

Handrails shall be provided on not less than 1 side of each flight of stairs with ≥ 4 risers.

Exempted stairways:

1. Stairways not within or serving a building, porch or deck.
2. Stairways leading to nonhabitable attics.
3. Stairways leading to crawl spaces.

Height

Handrail height, measured vertically from the sloped plane adjoining the tread nosing, or finish surface of ramp slope, shall be 34 – 38”.

Exceptions:

1. The use of a volute, turnout or starting easing shall be allowed over the lowest tread.
2. Where handrail fittings or bendings are used to provide a continuous transition between flights, transitions at winder treads, the transition from handrail to guard, or used at the start of a flight, the handrail height at the fittings or bendings shall be permitted to exceed 38”.

Handrail Projection

Handrails shall not project $> 4 \frac{1}{2}$ on either side of the stairway.

Exception: Where nosing of landings, floors or passing flights project into the stairway reducing the clearance at passing handrails, handrails shall project not $> 6 \frac{1}{2}$ “ into the stairway, provided that the stair width & handrail clearance are not reduced to less than than required.

Handrail Clearance

Handrails adjacent to a wall shall have a space $\geq 1 \frac{1}{2}$ " between the wall & the handrail.

Continuity

Handrails shall be continuous for the full length of the flight, from a point directly above the top riser of the flight to a point directly above the lowest riser of the flight. Handrail ends shall be returned or shall terminate in newel posts or safety terminals.

Exceptions:

1. Handrail continuity shall be permitted to be interrupted by a newel post at a turn in a flight with winders, at a landing, or over the lower tread.
2. A volute, turnout or starting easing shall be allowed to terminate over the lowest tread.

Grip Size

Required handrails shall be of one of the following types or provide equivalent graspability.

Type I. Handrails with a circular cross section shall have an outside diameter of $1 \frac{1}{4}$ - 2". If the handrail is not circular, it shall have a perimeter of $4 - 6 \frac{1}{4}$ " & a cross section of $\leq 2 \frac{1}{4}$ ". Edges shall have a radius ≥ 0.01 ".

Type II. Handrails with a perimeter $> 6 \frac{1}{4}$ " shall have a graspable finger recess area on both sides of the profile. The finger recess shall begin within $\frac{3}{4}$ " measured vertically from the tallest portion of the profile & have a depth $\geq 5/16$ " within $7/8$ " below the widest portion of the profile. This required depth shall continue for not $< 3/8$ " to a level that is not $< 1 \frac{3}{4}$ " below the tallest portion of the profile. The width of the handrail above the recess shall be $1 \frac{1}{4}$ - $2 \frac{3}{4}$ ". Edges shall have a radius ≥ 0.01 ".

Alternating Tread Devices

Handrails shall be provided on both sides of alternating tread devices & shall comply with Sections R311.7.8.2 – R311.7.8.6. Handrails shall be uniform & 30 – 34" in height.

Ships Ladders

Handrails shall be provided on both sides of ships ladders & shall comply with Sections R311.7.8.2 – R311.7.8.6. Handrails shall be uniform & 30 – 34" in height.

Guardrails CRC R312

Where Required

Guards shall be provided for those portions of open-sided walking surfaces, including stairs, ramps & landings that are located > 30” measured vertically to the floor or grade below at any point within 36” horizontally to the edge of the open side.

Height

Required guards at open-sided walking surfaces, including stairs, porches, balconies or landings, shall be ≥ 42 ” in height as measured vertically above the adjacent walking surface or the line connecting the nosings.

Exceptions:

1. Guards on the open sides of stairs shall have a height ≥ 34 ” measured vertically from a line connecting the nosings
2. Where the top of the guard serves as a handrail on the open side of stairs, the top of the guard shall be 34 - 38” as measured vertically from a line connecting the nosings.

Opening Limitations

Required guards shall not have openings from the walking surface to the required guard height that allow passage of a 4” sphere.

Exceptions:

1. The triangular openings at the open side of stairs, formed by the riser, tread & bottom rail of the guard, shall not allow passage of a 6” sphere.
2. Guards on the open side of stairs shall not have opening that allow passage of a 4 3/8” sphere.

Structural Glass Baluster Panels

Guards with structural glass baluster panels shall be installed with an attached top rail or handrail. The top rail or handrail shall be supported by ≥ 3 glass baluster panels, or shall be otherwise supported to remain in place should 1 glass baluster panel fail.

Exception: An attached top rail or handrail is not required where the glass baluster panels are laminated glass with ≥ 2 glass plies of equal thickness and of the same glass type

Historic Railings & Guardrails CA Historic Building Section Code 8-504

The height of railings & guard railings & the spacing of balusters may continue in their historical height & spacing unless a distinct hazard has been identified or created by a change in use or occupancy.