

## Single-Family Residential Stairs, Landings, Handrails, and Guardrails

Stairways must be constructed according to the requirements of the California Residential Code 2016 to insure a safe means of access and egress.

**Stairs:** A run of steps with two or more risers is a stairway.

**Alternate stairway types:** Spiral stairs and winding stairs are rarely used and therefore not discussed herein. Refer to the building code for information on these types of stairs.

**Materials:** Exterior stairways, when constructed of wood, shall be built with 2" nominal lumber. When exposed to the elements, they shall be constructed of pressure treated wood or wood with a natural resistance to decay (i.e., redwood free of sapwood).

**Width:** Stairways serving a single-family dwelling shall be a minimum of 36" in clear width at all points above the permitted handrail height. Handrails shall not project more than 4-1/2 inches on either side of the side of the stairway.

**Rise and Run:** For single family residential stairs, the maximum riser shall be 7-3/4 inch and the minimum run shall be 10 inches.

**The rise and run shall be uniform with a maximum tolerance, from the largest to the smallest riser or tread, of 3/8".**

When the top or bottom riser meets a sloping grade, the design riser height shall be maintained at the centerline of the stairway width.

**Headroom:** All stairways shall have minimum headroom of 6-feet 8-inches measured vertically from the line of the tread nosings to any soffit or projection above

**Loads:** Treads shall be capable of supporting a 300 lb. concentrated load applied at any point. The stringers shall be capable of supporting a 40-lb./sq. ft. uniform load.

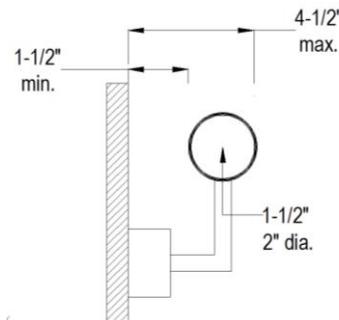
**Drainage:** Exterior steps and landings may be sloped not more than 1/4" per foot for drainage.

**Landings:** Each stairway shall have a landing at the top and bottom of the run of stairs. The landing dimension in the direction of travel shall not be less than 36".

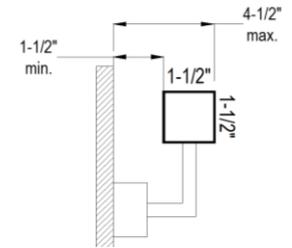
For Stairways with a straight run, having a total rise exceeding 12 feet, an intermediate landing shall be provided. Landings shall be at least as wide as the stairs.

**Handrails: A handrail shall:**

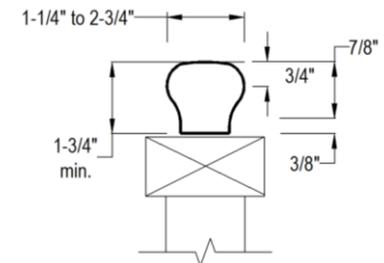
- Handrails are required on one side of each continuous run of treads or flight with four or more risers.
- Grip-size:
  - **Circular** cross section handrail grip shall have a minimum 1-1/2 inch to a maximum of 2 inch diameter.



- **Non-Circular** (square) handrail grip shall have a perimeter dimension of 4 inch and not greater than 6-1/4 inch. Maximum cross section dimension shall not be more than 2-1/4 inch.



- **Other than circular or square grip** shall have a graspable finger recess on both sides of the profile. The finger recess shall begin at  $\leq 3/4"$  measured from the top of grip.



- When projecting from a wall, a minimum 1-1/2" space between the wall and the rail is required.
- Be installed and not less than 34" nor more than 38" from the top of the rail to the line of the nosings of the stairs.
- Have returned ends or rounded terminations or bends.
- Be continuous the full length of each flight of stairs and shall extend, as a minimum, from the bottom riser to the top riser.

- Be so constructed that it is capable of supporting a 200 lb. load applied at any point along the rail in any direction
- Be required on one side only for stairways serving individual dwelling units.
- Not be required for stairways having less than four risers when serving individual dwelling units.

**Guardrails:** Guardrails are required along open sides of stairways, landings, balconies, porches, decks, floor openings, ramps, and roofs used for other than service of the building, which are more than 30" above grade.

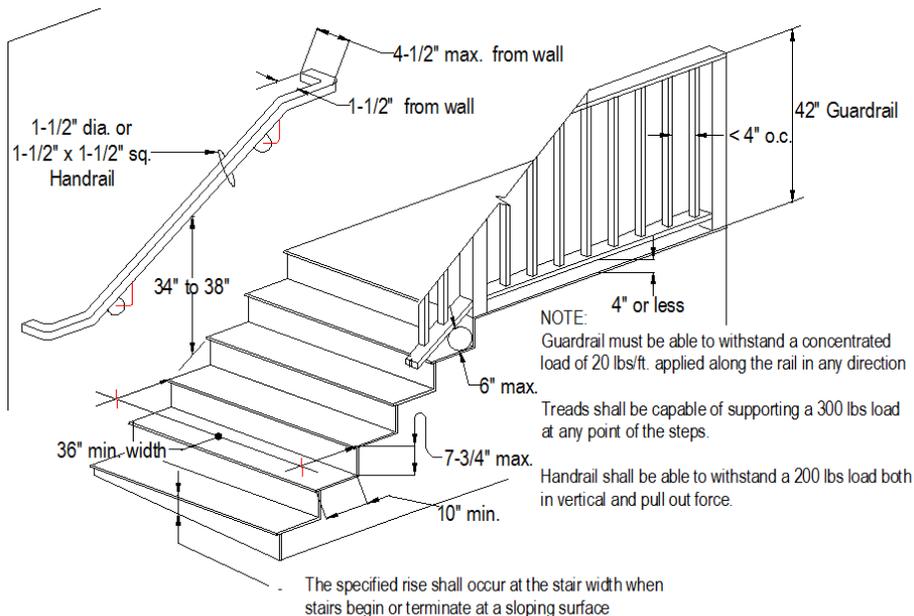
**Detailed guardrail requirements:**

- Guardrails are required at the sides of stairways, landings, ramps, porches, and balconies that are more than 30" above grade or the floor below.

- Guardrails shall have a 36" minimum height, 34" high along open sides of stairways. Guardrails must be able to withstand a load of 20 pounds per lineal foot applied horizontally at the top of the guardrail.
- Intermediate rails, panels or fillers, and their connections, shall be capable of withstanding a load of 25 pounds per square foot applied at right angles to the guardrail.
- Guardrails shall be designed so that a 6" diameter sphere cannot pass through the triangular space formed by the bottom of the rail, the riser and the tread.
- Balusters on a handrail or a guardrail shall be so spaced so that a 4" sphere cannot pass through.

If you would like additional information, please telephone the Building Division at (650) 991-8061.

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## Single-Family Residential

# STAIRS LANDINGS HANDRAILS GUARDRAILS



**BUILDING DIVISION**

**CITY OF DALY CITY  
(650) 991-8061**