



# TECHNICAL BULLETIN

## PERMIT AND RESOURCE MANAGEMENT DEPARTMENT

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B-9X

### Code Requirements For Residential Stairs

#### INTRODUCTION

The California Building Code provides basic requirements for residential stairs. However, variations and design configurations are often proposed which are not specifically regulated by the code. The purpose of this technical bulletin is to provide guidance so that review and inspection of these proposals are made consistently. These guidelines apply to residential stairways in Group R-3 or Group U Occupancies, or in individual dwelling units of Group R-1 occupancies.

#### TECHNICAL DETAILS

1. Flight of stairs - A flight of stairs consists of the stairs from one landing to the next, or between floors if there is no landing.
  - a. The steps in different flights of stairs may vary by more than 3/8 inch from the steps in another flight, but the steps in any individual flight may not vary from the steps in that flight by more than 3/8 inch.
  - b. Tread length is measured from the front nosing to the front of the adjacent nosing.
  - c. Note that winders do not constitute a landing.
2. Space between treads - The opening spacing requirements for a guardrail do not apply to the space between stair treads on open riser stairs.
3. Landscape stairs - Landscape stairs are stairs which do not form part of the means of egress, which is the path of exit travel from any occupied point in a building or structure to a public way.
  - a. Landscape stairs are not required to comply with the requirements of Chapter 10 of the CBC. All other stairs are required to comply with the code.
  - b. The following stairs are landscape stairs when less than 30 inches in height above adjacent grade:
    1. Stairs in paths on the property which simply connect parts of the property together.
    2. Stairs which are not attached to a structure and go to some feature on the property, such as a garden, field, woods, etc.
    3. Stairs which are not attached to a structure and go to another parcel, or to an ocean, park, lake, etc.
    4. Stairs which are not attached to a structure and do not form the most direct path from the main exit of the structure to the public way.
  - c. The following are not landscape stairs and must comply with the code.

1. Stairs forming the most direct path from the main exit of the structure to the public way.
  2. Stairs attached to the structure.
  3. Stairs from attached decks to grade.
  4. Stairs forming the path from a swimming pool to the public way or to the single family dwelling or pool house on the same parcel.
4. Winders - Winders must have the required width of run provided at a point 12 inches from the narrow side of the stairs, but in no case may the winder be less than 6 inches in width.
- a. Minimum run - Winders are not required to have the same width of run at 12 inches as the stairs above/or below them. They must have a run of at least 9 inches at this point.
  - b. Maximum run - At some point a winder becomes so large that it causes a hazardous variation in stride and actually becomes a noncomplying landing. Although the code is silent on this point, the policy of PRMD is that no winder shall have a run longer than 12 inches at a point 12 inches from the side of the stairway where the treads are narrower.
  - c. Rise - The rise of the winders and the stairs above and below the winders must not have a variation in rise of more than 3/8 inch. (See item 1 above, "Flight of Stairs.")
  - d. Uniform size and shape - The code requires that stair treads be of uniform size and shape and that rise and run not vary more than 3/8" in any flight. Winders must meet this requirement by not having a variation in run of more than 3/8 inch at a point 12 inches from the side of the stairway where the treads are narrower.
  - e. When treads are incorrectly constructed less than 6 inches in width at the narrowest point, the alternative often proposed is to use a newel post or other decorative feature to obtain the required 6 inch width. This correction is acceptable provided the minimum width of the stair is maintained, and provided that a continuous handrail is provided for the full length of the stairs.
5. Attic stairs - Stairs to attics, basements, etc. are covered in the Technical Bulletin, "Application of Building Code Provisions to Partially Developed Areas in Residential Construction."
6. Oblique stairs - Oblique stairs are stairs where the angle between the line of the front of the tread and the edge of the stair is not 90 degrees. On a curved stair this angle is measured from a line tangent to the curve at the point where the stair tread intersects the curved edge of the stair.
- a. In general, flights of oblique stairs are prohibited.
  - b. However, widening the bottom of a stair so that the wall and handrail are not 90 degrees to the tread is acceptable, provided that the treads vary from each other in a uniform ratio and are otherwise of uniform size and shape.
  - c. A configuration where the treads meet at an angle in the approximate center of the stair is acceptable, provided the minimum tread width is provided at either side of the meeting point.

7. Stair treads are required to withstand a minimum of 300 lbs concentrated load. 3/4 inch material requires a central stringer or other reinforcement to meet this requirement.
8. Gripping surface of handrails - Commercially made handrails which are more than 2 inches in cross-sectional dimension are acceptable, if they provide an equivalent gripping surface. Note that they cannot be less than 1-1/4 inches in cross sectional dimension.

## REFERENCES

California Building Code Section 1003.3.3

Effective 4/8/2005