Stairway Width (R311.7.1)
Stairways shall not be less than 36 inches wide. The handrail may encroach a maximum of 4-1/2 inches into this dimension. If placing two handrails on a stairway, maintain a minimum clear width of 27 inches.

Dimensional tolerances (R311.7.5.1)
The largest tread depth or riser height within any stairway shall not exceed the smallest by more than 3/8 inch.

Headroom (R311.7.2)
Every stairway shall have a headroom clearance of not less than 6 feet 8 inches. The minimum headroom in all parts of the stairway may not be 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.

Guards (R312)
Guards shall be located along open-sided walking surfaces that are located more than 30 inches measured vertically to the floor or grade below. Guard shall be not less than 36 inches high measured vertically above the adjacent walking surface, adjacent fixed seating or the line connecting the leading edges of treads and shall not have openings which allow passage of a sphere 4 inches in diameter.

Ramps (R311.8)
Ramps shall have a maximum slope of one in twelve. It shall have a min. 3'x 3' landing at the top and bottom of the ramp, where the door opens onto the ramp and where the ramp changes direction. Handrails shall be provided on at least one side. Handrails shall be continuous for the full length of the ramp. Rail ends shall terminate into newel posts or return into the wall.

Illumination (R311.7.9)
All interior and exterior stairways must be illuminated.

Under stair protection (R302.7)
Enclosed accessible space under stairs shall have walls, faces and soffits protected on the enclosed side with 1/2 inch min. gypsum board.

Stair treads and risers (R311.7.5)
Maximum riser height shall be 7-3/4 inches. Open risers are permitted, provided that the opening between treads is less than 4 inches when located more than 30 inches above the floor or grade. The minimum tread depth shall be 10 inches.

Stairway Landings (R311.7.6.1)
There shall be a floor or landing at the top and bottom of each stairway. Every landing shall have a minimum dimension of 36 inches measured in the direction of travel.
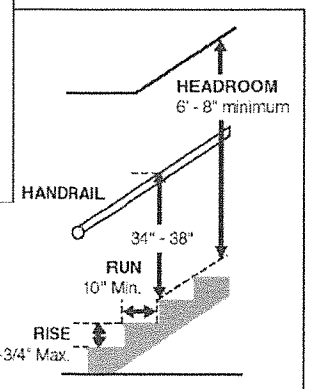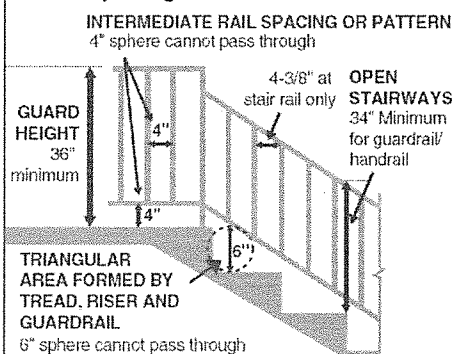
Handrails (R311.7.8)
Required on at least one side of stairs with four or more risers. The top shall be placed not less than 34 inches, no more than 38 inches, above the nosing of the treads. Ends shall be returned or terminated in newel posts or safety terminals. All required handrails shall be continuous for the full length of the stairs from a point directly above the top riser of the flight to a point directly above the lowest riser of the flight.
Exceptions:
1. Handrails may be interrupted by a newel post at a turn.
2. A volute, turnout or newel post is allowed over the lowest tread. Handrail grips shall be of Type I or Type II, or provide equivalent graspability.
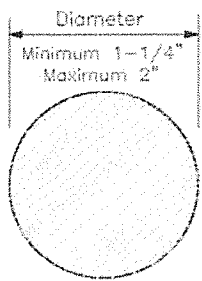

Guard opening limitations
INTERMEDIATE RAIL SPACING OR PATTERN
4" sphere cannot pass through
GUARD HEIGHT 36" minimum
4-3/8" at stair rail only
OPEN STAIRWAYS 34" Minimum for guardrail/handrail
TRIANGULAR AREA FORMED BY TREAD, RISER AND GUARDRAIL
6" sphere cannot pass through
HEADROOM 6' - 8" minimum
HANDRAIL
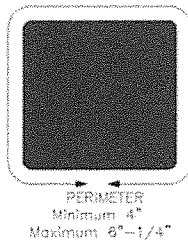34" - 38"
RUN 10" Min.
RISE 7-3/4" Max.

Type 1 Residential Handrails

Handrails with a circular cross section shall have an outside diameter of at least 1-1/4 inches and not greater than 2 inches. If the handrail is not circular, it shall have a perimeter dimension of at least 4 inches and not greater than 6-1/4 inches with a maximum cross section of dimension of 2-1/4 inches. Edges shall have a minimum radius of 0.01 inch.
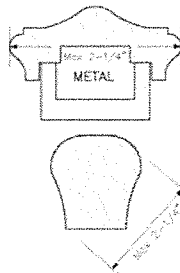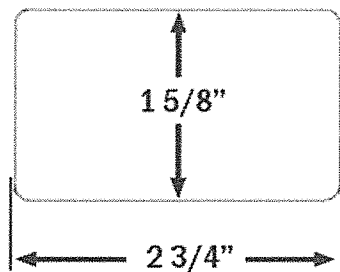
Examples

Circular

Diameter
Minimum 1-1/4"
Maximum 2"

Non-Circular

METAL
Max 2-1/4"

PERIMETER
Minimum 4"
Maximum 6"-1/4"

Non-Compliant

1 5/8"

2 3/4"

Type 2 Residential Handrails

Handrails with a perimeter greater than 6-1/4 inches shall have a graspable finger recess area on both sides of the profile. The finger recess shall begin within a distance of 3/4 inch measured vertically from the tallest portion of the profile and achieve a depth of at least 5/16 inch within 7/8 inch below the widest portion of the profile. This required depth shall continue for at least 3/8 inch to a level that is not less than 1-3/4 inches below the tallest portion of the profile. The minimum width of the handrail above the recess shall be 1-1/4 inches to a maximum of 2-3/4 inches. Edges shall have a minimum radius of 0.01 inch.

Examples

PERIMETER GREATER
THAN 6-1/4"

FINGER
RECESS AREA
BOTH SIDES

ACHIEVE 5/16"
DEPTH

TALLEST PORTION

CONTINUED FOR
AT LEAST 3/8"

TO A POINT
NOT LESS THAN
1-3/4" FROM
TOP OF HANDRAIL

1-3/4"

1-1/2"

5/16"
min.

Less than
3/4"

7/8" max.

1-3/4" min.

3/8"
min.

2x

WIDTH ABOVE RECESS
Minimum 1-1/4"
Maximum 2-3/4"

EDGE MINIMUM
RADIUS 0.01"

WITHIN 3/4"
FINGER RECESS
BEGIN

TALLEST PORTION

WITHIN 7/8" OF
WIDEST PORTION

ACHIEVE
5/16" DEPTH