



**Town of Kent
Building Inspector Office
25 Sybil's Crossing
Kent Lake NY 10512**

2020 RCNYS Code Requirements for

RESIDENTIAL STAIRS

The following information sheet contains important excerpts from the 2015 IRC code

***R311.7.1 Width. ***

Stairways shall be not less than 36 inches in clear width at all points above the permitted handrail height and below the required headroom height. Handrails shall not project more than 4-1/2 inches on either side of the stairway and the clear width of the stairway at and below the handrail height, including treads and landings, shall be not less than 31-1/2 inches where a handrail is installed on one side and 27 inches where handrails are provided on both sides.

***R311.7.2 Headroom. ***

The headroom in stairways shall be not less than 6 ft. 8 inches measured vertically from the sloped line adjoining the tread nosing or from the floor surface of the landing or platform on that portion of the stairway.

***Exceptions: ***

1. Where the nosing of treads at the side of a flight extend under the edge of a floor opening through which the stair passes, the floor opening shall be allowed to project horizontally into the required headroom not more than 4-3/4 inches.
2. The headroom for spiral stairways shall be in accordance with Section R311.7.10.1.

R311.7.3 Vertical rise.

A flight of stairs shall not have a vertical rise larger than **151** inches between floor levels or landings.



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***R311.7.5 Stair treads and risers. ***

Stair treads and risers shall meet the requirements of this section. For the purposes of this section, dimensions and dimensioned surfaces shall be exclusive of carpets, rugs or runners.

***R311.7.5.1 Risers.* (NYS supplement)**

The riser height shall be **not more than 8-1/4 inches**. The riser shall be measured vertically between leading edges of the adjacent treads. The greatest riser height within any flight of stairs shall not exceed the smallest by more than **3/8 inch**.

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.

Open risers are permitted provided that the openings located more than **30 inches**, as measured vertically, to the floor or grade below do not permit the passage of a 4-inch-diameter sphere.

Exceptions:

1. The opening between adjacent treads is not limited on spiral stairways.
2. The riser height of spiral stairways shall be in accordance with Section R311.7.10.1.

***R311.7.5.2 Treads.* (NYS supplement)**

The tread depth shall be **not less than 9 inches**. The tread depth shall be measured horizontally between the vertical planes of the foremost projection of adjacent treads and at a right angle to the tread's leading edge. The greatest tread depth within any flight of stairs shall not exceed the smallest by more than 3/8 inch.



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R311.7.5.3 Nosings.

The radius of curvature at the nosing shall be not greater than 9/16 inch.

A nosing projection not less than 3/4 inch and not more than 1 -1/4 inches shall be provided on stairways with solid risers. The greatest nosing projection shall not exceed the smallest nosing projection by more than 3/8 inch between two stories, including the nosing at the level of floors and landings. Beveling of nosing shall not exceed 1/2" inch.

***Exception:** *A nosing projection is not required where the tread depth is not less than **11 inches**

R311.7.5.4 Exterior plastic composite stair treads.

Plastic composite exterior stair treads shall comply with the provisions of this section and Section R507.3.

***R311.7.6 Landings for stairways. ***

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. Landings of shapes other than square or rectangular shall be permitted provided that the depth at the walk line and the total area is not less than that of a quarter circle with a radius equal to the required landing width. Where the stairway has a straight run, the depth in the direction of travel shall be not less than **36 inches**.

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

R311.7.7 Stairway walking surface.

The walking surface of treads and landings of stairways shall be sloped not steeper than one unit vertical in 48 inches horizontal (2-percent slope).

R312.1 Guards. - Shall be provided in accordance with Sections R312.1.1 through R312.1.4.



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***R312.1.1 Where required.** Guards shall be located along open-sided walking surfaces, including stairs, ramps and landings, that are located more than 30 inches measured vertically to the floor or grade/ below at any point within 36 inches horizontally to the edge of the open side. Insect screening shall not be considered as a guard.

***R312.1.2 Height.**

Required guards at open-sided walking surfaces, including stairs, porches, balconies or landings, shall be not less than 36 inches in height, as measured vertically above the adjacent walking surface or the line connecting the leading edges of the treads.

Exceptions:

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

R312.1.3 Opening limitations.

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

Exceptions:

1. The triangular openings at the open side of stair, formed by the riser, tread and bottom rail of a guard, shall not allow passage of a sphere 6 inches in diameter.
2. Guards on the open side of stairs shall not have openings that allow passage of a sphere 4³/₈ inches in diameter.

***R312.1.4 - Exterior plastic composite guards.**

Plastic composite exterior guards shall comply with the requirements of Section R317.4.



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RESIDENTIAL HANDRAILS

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***R311.7.8 - Handrails** shall be provided on not less than one side of each continuous run of treads or flight with four or more risers.

***R311.7.8.1 Handrail Height** is, measured vertically from the sloped plane adjoining the tread nosing, or finish surface of ramp slope, shall be not less than 34 inches and not more than 38 inches.

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 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 inches.

R311.7.8.2 - Continuity.

Handrails for stairways 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.**

Handrails adjacent to a wall shall have a space of not less than 1-1/2" inches between the wall and the handrails.

Exceptions:

1. Handrails shall be permitted to be interrupted by a newel post at the turn.
2. The use of a volute, turnout, starting easing or starting newel shall be allowed over the lowest tread.



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R311.7.8.3 - Grip-size.

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

1. Type I. Handrails with a circular cross section shall have an outside diameter of not less than 1-1/4 inches and not greater than 2 inches. If the handrail is not circular, it shall have a perimeter dimension of not less than 4 inches and not greater than 6-1/4 inches with a cross section of dimension of not more than 2-1/4 inches. Edges shall have a radius of not less than 0.01 inch.
2. Type II. 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 not less than 5/16 inch within 7/8 inch below the widest portion of the profile.

This required depth shall continue for not less than 3/8 inch, to a level that is not less than 1-3/4 inches below the tallest portion of the profile. The width of the handrail above the recess shall be not less than 1-1/4 inches and not more than 2-3/4 inches. Edges shall have a radius of not less than 0.01 inch.

***R311.7.8.4 - Exterior plastic composite handrails** shall comply with the requirements of Section R507.3.

***R311.7.9 - Illumination.** *Stairways shall be provided with illumination in accordance with Section R303.7.