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

NYS- IRC Code Requirements for

RESIDENTIAL DECKS, PORCHES and Stairs

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

SECTION R507 EXTERIOR DECKS *

*R507.1 Decks.- Wood-framed decks shall be in accordance with this section or Section R301 for materials and conditions not prescribed herein. Where supported by attachment to an exterior wall, decks shall be positively anchored to the primary structure and designed for both vertical and lateral loads.

Such attachment shall **not** be accomplished by the use of toenails or nails subject to withdrawal. Where positive connection to the primary building structure cannot be verified during inspection, decks shall be self-supporting. For decks with cantilevered framing members connections to exterior walls or other framing members shall be designed and constructed to resist uplift resulting from the full live load specified in Table R301.5 acting on the cantilevered portion of the deck. *

R507.2.1 Ledger details.
Deck ledgers installed in accordance with Section R507.2 shall be a minimum 2" x 8" inch nominal, pressure-preservative-treated southern pine, incised pressure-preservative-treated Hem-fir, or approved, naturally durable, No. 2 grade or better lumber. Deck ledgers installed in accordance with Section R507.2 shall not support concentrated loads from beams or girders. Deck ledgers shall not be supported on stone or masonry veneer. *

Lag screws or bolts shall be staggered from the top to the bottom along the horizontal run of the deck ledger.

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R507.3 Plastic composite deck boards, stair treads, guards, or handrails.
Plastic composite exterior deck boards, stair treads, guards and handrails shall comply with the requirements of ASTM D 7032 and the requirements of Section 507.3.

*R507.3.1 Labeling. *
Plastic composite deck boards and stair treads, or their packaging, shall bear a label that indicates compliance to ASTM D 7032 and includes the allowable load and maximum allowable span determined in accordance with ASTM D 7032. Plastic or composite handrails and guards, or their packaging, shall bear a label that indicates compliance to ASTM D 7032 and includes the maximum allowable span determined in accordance with ASTM D 7032.

R507.3.2 Flame spread index.
Plastic composite deck boards, stair treads, guards, and handrails shall exhibit a flame spread index not exceeding 200 when tested in accordance with ASTM E 84 or UL 723 with the test specimen remaining in place during the test.

Exception: Plastic composites determined to be noncombustible.

R507.3.3 Decay resistance.
Plastic composite deck boards, stair treads, guards and handrails containing wood, cellulosic or other biodegradable materials shall be decay resistant in accordance with ASTM D 7032.

R507.3.4 Termite resistance.
Where required by Section 318, plastic composite deck boards, stair treads, guards and handrails containing wood, cellulosic or other biodegradable materials shall be termite resistant in accordance with ASTM D 7032.

507.3.5 Installation of plastic composites.
Plastic composite deck boards, stair treads, guards and handrails shall be installed in accordance with this code and the manufacturer's instructions.

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R507.4 Decking.
Maximum allowable spacing for joists supporting decking shall be in accordance with Table R507.4. Wood decking shall be attached to each supporting member with not less than (2) 8d threaded nails or (2) No. 8 wood screws. *

R507.5.1 Lateral restraint at supports.
Joist ends and bearing locations shall be provided with lateral restraint to prevent rotation. Where lateral restraint is provided by joist hangers or blocking between joists, their depth shall equal not less than 60 percent of the joist depth. Where lateral restraint is provided by rim joists, they shall be secured to the end of each joist with not less than (3) 10d (3-inch × 0.128-inch) nails or (3) No. 10 ×3-inch long wood screws. *

*R507.7 Deck joist and deck beam bearing. *
The ends of each joist and beam shall have not less than 1-1/2 inches of bearing on wood or metal and not less than 3 inches on concrete or masonry for the entire width of the beam. Joist framing into the side of a ledger board or beam shall be supported by approved joist hangers. Joists bearing on a beam shall be connected to the beam to resist lateral displacement. *

R507.8 Deck posts.
For single-level wood-framed decks with beams sized in accordance with Table R507.6, deck post size shall be in accordance with Table R507.8. *

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TABLE R507.8 DECK POST HEIGHT - (a)

DECK POST SIZE*	MAXIMUM HEIGHT
4 × 4	8'
4 × 6	8'
6 × 6	14'

a. Measured to the underside of the beam.

R507.8.1 Deck post to deck footing.*
Posts shall bear on footings in accordance with Section R403 and Figure R507.8.1. Posts shall be restrained to prevent lateral displacement at the bottom support. Such lateral restraint shall be provided by manufactured connectors installed in accordance with Section R507 and the manufacturers' instructions or a minimum post embedment of 12 inches in surrounding soils or concrete piers.

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

*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.

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*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 4"3/8 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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Stairs

*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 147 inches (3734 mm) between floor levels or landings.

*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.

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.

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*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).

2015-IRC Code - SECTION R311 - HANDRAILS

*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.

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*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.

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