



Town of Topsham, Maine
 100 Main Street
 Topsham, Maine 04086
www.topshammaine.com
 Codes Enforcement Office
 PH (207) 725-1723/ FX (207)725-1737

Deck Code Requirements

Code requirements are from the 2009 IRC as amended by MUBEC. If your deck is free – standing (not supported by the building), some requirements may not be applicable.

R403.1.1 Minimum size of Footing The size of footings supporting piers and columns shall be based on the tributary load and allowable soil pressure in accordance with Table R401.4.1. (*Note: Unless supported by bedrock, the minimum footing size is 12”W x 6”D. Positive mechanical connection other than nailing is required from the footing to the deck to resist uplift*)

R502.2.2 Decks. 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 as applicable. 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.

R502.2.2.1 Deck ledger connection to band joist. For decks supporting a total design load of 50 pounds per square foot (2394 Pa) [40 pounds per square foot (1915 Pa) live load plus 10 pounds per square foot (479 Pa) dead load], the connection between a deck ledger of pressure-preservative-treated Southern Pine, incised pressure-preservative-treated Hem-Fir or *approved* decay-resistant species, and a 2-inch (51 mm) nominal lumber band joist bearing on a sill plate or wall plate shall be constructed with 1/2-inch (12.7 mm) lag screws or bolts with washers in accordance with Table R502.2.2.1. Lag screws, bolts and washers shall be hot-dipped galvanized or stainless steel.

TABLE R502.2.2.1 FASTENER SPACING FOR A SOUTHERN PINE OR HEM-FIR DECK LEDGER AND A 2-INCH NOMINAL SOLID-SAWN SPRUCE-PINE-FIR BAND JOIST^{c, f, g}
 (Deck live load = 40 psf, deck dead load = 10 psf)

JOIST SPAN	6' and less	6'1" to 8'	8'1" to 10'	10'1" to 12'	12'1" to 14'	14'1" to 16'	16'1" to 18'
Connection details	On-center spacing of fasteners^{d, e}						
1/2 inch diameter lag screw with 15/32 inch maximum sheathing ^a	30	23	18	15	13	11	10
1/2 inch diameter bolt with 15/32 inch maximum sheathing	36	36	34	29	24	21	19
1/2 inch diameter bolt with 15/32 inch maximum sheathing and 1/2 inch stacked washers ^{b, h}	36	36	29	24	21	18	16

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm. 1 pound per square foot = 0.0479kPa.

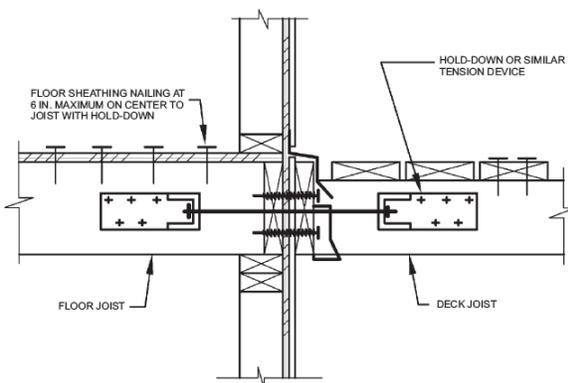
- The tip of the lag screw shall fully extend beyond the inside face of the band joist.
- The maximum gap between the face of the ledger board and face of the wall sheathing shall be 1/2".
- Ledgers shall be flashed to prevent water from contacting the house band joist.
- Lag screws and bolts shall be staggered in accordance with Section R502.2.2.1.1.

- e. Deck ledger shall be minimum 2×8 pressure-preservative-treated No.2 grade lumber, or other approved materials as established by standard engineering practice.
- f. When solid-sawn pressure-preservative-treated deck ledgers are attached to a minimum 1 inch thick engineered wood product (structural composite lumber, laminated veneer lumber or wood structural panel band joist), the ledger attachment shall be designed in accordance with accepted engineering practice.
- g. A minimum $1 \times 9\frac{1}{2}$ Douglas Fir laminated veneer lumber rim board shall be permitted in lieu of the 2-inch nominal band joist.
- h. Wood structural panel sheathing, gypsum board sheathing or foam sheathing not exceeding 1 inch in thickness shall be permitted. The maximum distance between the face of the ledger board and the face of the band joist shall be 1 inch.

R502.2.2.1.1 Placement of lag screws or bolts in deck ledgers. The lag screws or bolts shall be placed 2 inches (51 mm) in from the bottom or top of the deck ledgers and between 2 and 5 inches (51 and 127 mm) in from the ends. The lag screws or bolts shall be staggered from the top to the bottom along the horizontal run of the deck ledger.

R502.2.2.2 Alternate deck ledger connections. Deck ledger connections not conforming to Table R502.2.2.1 shall be designed in accordance with accepted engineering practice. Girders supporting deck joists shall not be supported on deck ledgers or band joists. Deck ledgers shall not be supported on stone or masonry veneer.

R502.2.2.3 Deck lateral load connection. The lateral load connection required by Section 502.2.2 shall be permitted to be in accordance with Figure R502.2.2.3. Hold-down tension devices shall be installed in not less than two locations per deck, and each device shall have an allowable stress design capacity of not less than 1500 pounds (6672 N). **Note: R502.2.2 requires all decks to be designed for applicable lateral loads; a code prescribed lateral load is wind and seismic forces. This means an engineered design for lateral resistance is *always* required *unless* the prescriptive connectors in figure R502.2.2.3 are used; the prescriptive devices in this figure are the exception to engineering.**



R502.6 Bearing. The ends of each joist, beam or girder shall have not less than 1.5 inches (38 mm) of bearing on wood or metal and not less than 3 inches (76 mm) on masonry or concrete. **R502.6.2 Joist framing.** Joists framing into the side of a wood girder shall be supported by *approved* framing anchors or on ledger strips not less than nominal 2 inches by 2 inches (51 mm by 51 mm).

R502.9 Fastening. Floor framing shall be nailed in accordance with Table R602.3(1). Where posts and beam or girder construction is used to support floor framing, positive connections shall be provided to ensure against uplift and lateral displacement. (*Note: Positive connection means something other than nails alone*)

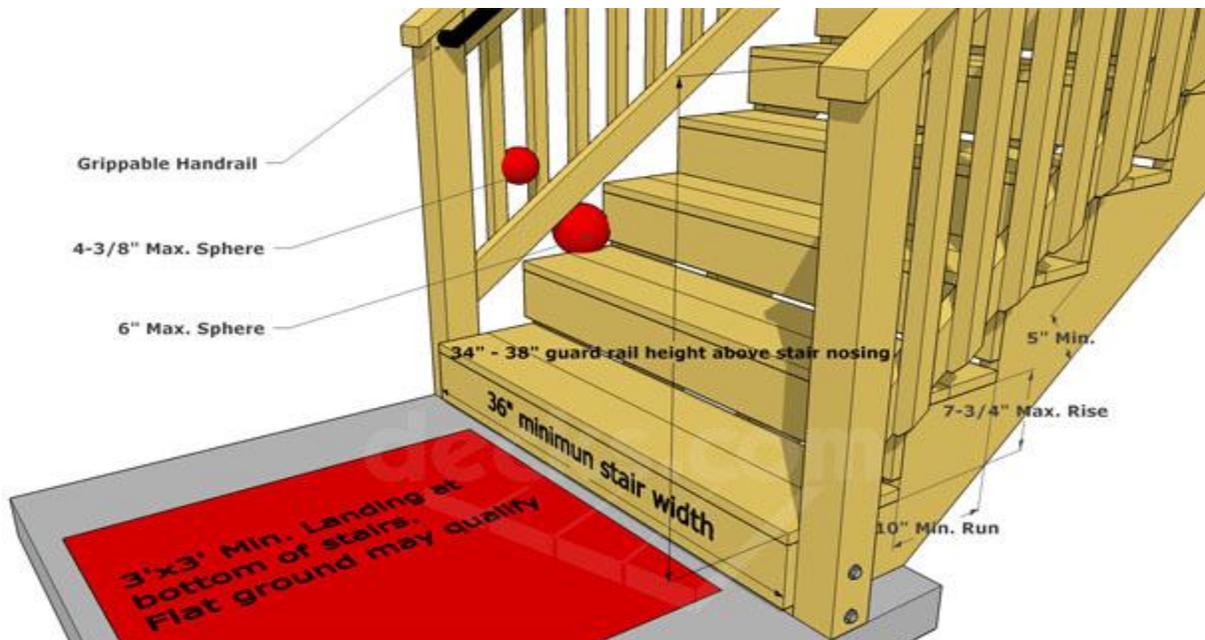
Deck Stair Code Requirements

(For information only, consult the IRC 2009 as amended by MUBEC for specific requirements)

R311.7 Stairways. The minimum width for stairs is 36". The maximum riser height is 7-3/4" and the minimum rise is 4". The minimum stair tread depth measured from nosing to nosing (also the stringer rough cut) is no less than 10". The tread width and riser height shall not exceed the smallest by more than 3/8". This means you will have to plan ahead to make sure each and every one of your stairs measurements are the same.

Stairs with 4 or more risers must have a **handrail** located above all portions of the treads, between 34" and 38" above the tread nosing, continuous between floors, with ends terminating at wall or newel post so as not to snag clothing. Circular handrails must be between 1.25" and 2" in diameter. Other shapes with a perimeter dimension between 4" and 6.25" with no cross sectional dimension greater than 2 1/4" are acceptable. Rails with a perimeter greater than 6.25" must have a finger grip routed in both sides. Handrails must extend from the top to bottom riser

R312 Guards on Stairs. Open sides of stairs with over 30" rise above the adjacent floor or ground must have a **guardrail** at least 34" high measured vertically from a line connecting the leading edge of the stair treads. Required guards shall have balusters or other members arranged so that a 4 3/8" sphere cannot pass through them, except that the triangular opening formed by the guard, tread, and riser can be such that a 6" sphere cannot pass through it. Open risers are permitted by code with a catch because they may not be large enough to permit the passage of a 4" sphere.



R312 Guards on Decks. Decks with over 30" rise above the adjacent floor or ground must have a **guardrail** at least 36" high measured vertically above the deck or fixed seating. Openings shall not allow passage of a sphere 4" in diameter

More Information is Better!

Include as much detailed construction information with your application as you can. When the application is reviewed, any item not to code can be noted before it is built into the deck.

