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CODE OUTREACH PROGRAM

Issue 2019-04

Code Outreach Program – Wood Decks

This edition of the Code Outreach program is intended to summarize the prescriptive provisions of the [2015 International Residential Code](#) (2015 IRC) applicable to wood decks.

Design

The structural design and construction of decks is required to support all loads imposed, including but not limited to live and dead loads, flood, snow, wind, and seismic loads as well as vertical and lateral loads. Design criteria can be found in Section R301 of the 2015 IRC. Section R301 includes several paths to compliance including: a path using prescriptive provisions; an ‘alternative provisions’* path (see Section R301.1.1); and an ‘engineered design’ path (see Section R301.1.3). This edition will focus mainly on key prescriptive code-compliance provisions.

Key Prescriptive Code-Compliance Provisions of the 2015 IRC

Ledger. Decks which are supported by the exterior wall of a building must be positively anchored to that wall. Where a positive connection to the primary building structure cannot be verified during inspection, decks shall be self-supporting. Lumber used for ledgers must be rated for exterior use, and of a minimum nominal dimension of 2-inch by 8-inch. See Sections R507.1 and R507.2.

Footings. Exterior footings shall be placed a minimum of 12 inches below undisturbed ground surface per Section R403.1.4. Footings of decks anchored to a building wall as noted above, must also be frost-protected by one of the methods indicated in Section R403.1.4.1, however, according to exception 3, the footings of freestanding decks are not required to extend below the frost line. Regardless of depth, footings shall not be placed on frozen soil.

Posts. Posts shall be fastened to the beams per the requirements of Section R507.7.1 and restrained at the connection with the footing per Section R507.8.1.

Framing. Section 507 includes prescriptive tables to determine spans and spacing for deck joists and beams. The ends of joists and beams shall have adequate bearing on supports and shall also be fastened to them per Section R507.7.

Guards, Stairs. The requirements for guardrails of Section R312 are applicable to decks elevated 30-inches or more above the grade or floor below. The stair requirements of Section R311.7 are also applicable.

Materials. Lumber used for structural members, decking and guard rails shall be approved for exterior use according to Section R317, and fasteners should be corrosion resistant. While connector manufacturers often allow the use of either nails or screws, Section 507.1 states that attachment shall not be accomplished by the use of nails subject to withdrawal.

Composite Materials. Composite materials used for decking, stair treads, guards and handrails shall bear a label indicating compliance with ASTM D 7032 and the allowable spans determined by the testing standard. Combustible composite deck materials shall also be decay and termite resistant and have a flame spread index of 200 or less, when tested according to ASTM E84. Biodegradable materials shall be decay and termite resistant in accordance with ASTM D 7032.

**One of the standards listed under “alternative provisions” is the ‘Wood Frame Construction Manual for One- and Two-family Dwellings’ (WFCM). The 2015 version is incorporated by reference in the Uniform Code, and it is available from the [American Wood Council \(AWC\)](#). The AWC also publishes the ‘[Prescriptive Residential Wood Deck Construction Guide](#)’, which contains useful structural details including, but not limited to, lateral load connections. However, it is not enforceable and should only be used as a guide; compliance with the ‘Design Criteria’, as put forth in Section R301 of the 2015 IRC, is still required. **

The provisions contained in this document are intended as a summary and not as a comprehensive checklist. Additional provisions apply to decks, and in particular, to those constructed in seismic zones or floodplains.

Please look for our next edition of the Code Outreach Program at the beginning of next month.

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If you have questions pertaining to the Code Outreach Program, email us at COP.codes@dos.ny.gov

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