



Building Standards and Codes

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TECHNICAL BULLETIN

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Source Document: 19NYCRR 1220 - Residential Construction
19NYCRR 1221 - Building Construction²

Topic: Determination of Ground Snow Load

This document provides clarification on the requirements for establishing minimum ground snow loads for buildings and structures regulated by the Uniform Code.

For buildings and structures regulated by the 2015 International Residential Code (2015 IRC), as amended by the 2017 Uniform Code Supplement (2017 UCS), requirements for determining ground snow loads can be found in Section R301 of the 2015 IRC. For buildings and structures regulated by the 2015 International Building Code (2015 IBC), as amended by the 2017 UCS, refer to Section 1608 of the 2015 IBC.

Section R301.1 of the 2015 IRC requires that buildings and structures be constructed to safely support all loads. Code-compliant design paths include prescriptive methods as provided in the 2015 IRC; alternative methods including the *AF&PA Wood Frame Construction Manual*, *AISI Standard for Cold-Formed Steel Framing - Prescriptive Method for One- and Two-Family Dwellings* (AISI S230), and *ICC Standard on the Design and Construction of Log Structures* (ICC 400); as well as engineered design methods such as those found in the 2015 IBC.

Regardless of the design option selected, Section R301.6 of the 2015 IRC requires roofs to be designed for either “*the live load indicated in Table R301.6 or the snow load indicated in Table R301.2(1), whichever is greater.*” According to section R301.2 the Authority Having Jurisdiction (AHJ) shall establish the criteria set forth in Table R301.2(1), which includes ground snow load. The pertinent footnote to Table R301.2(1), as added by the 2017 UCS, further provides that:

The ground snow loads to be used in determining the design snow loads for roofs are given in Figure R301.2(5) for sites at elevations up to 1000 feet. Sites at elevations above 1000 feet shall have their ground snow load increased from the mapped value by 2 psf for every 100 feet above 1000 feet.

These additional values should be rounded up to the nearest 100 feet. For example, an elevation of 1,101 feet would be rounded to 1,200 feet equating to an additional 4 psf.

For those buildings and structures regulated by the 2015 IBC, Section 1608.2, as modified by the 2017 UCS, requires that the ground snow load to be used in determining the design snow loads for roofs be determined in accordance with either ASCE 7, Figure 1608.2, or site-specific case studies.

The 2017 UCS replaces both Figure R301.2(5) and Figure 1608.2 with ground snow load maps specific to New York State. Using these maps, the AHJ should establish the ground snow load for their jurisdictions. While the values provided

¹ The “Code Effective Date” for this Technical Bulletin is October 31, 2017, which is the effective date of the current version of the New York State Uniform Fire Prevention and Building Code (the Uniform Code).

² The 2015 International Residential Code (2015 IRC) is a publication incorporated by reference in 19 NYCRR Part 1220, and the 2015 International Building Code (2015 IBC) is a publication incorporated by reference in 19 NYCRR Part 1221.

The 2017 Uniform Code Supplement is a publication incorporated by reference in 19 NYCRR Parts 1219 through 1228. The 2015 IRC and IBC, as amended by the 2017 Uniform Code Supplement, are part of the Uniform Code.

in the Figures depict the ground snow load for different regions of the State, it may be difficult to determine the values for municipalities that fall on or near the lines separating the regions. It is recommended for those municipalities that either fall directly on a line and for those who have difficulty determining the value for their region, to select the more restrictive of the two values. For example, in a municipality where the Figure values can be read as either 40 or 50 pounds, the 50 pounds value is more restrictive and should be used for the entire municipality. Then, each individual building site within the municipality should have its elevation evaluated and an additional 2 psf added per 100 feet or fraction above the 1000 feet elevation as noted above.

Please note, in addition to the use of engineered design in accordance with Section R301.1, Section R301.2.3 also indicates that *“buildings in regions with ground snow loads greater than 70 pounds per square foot (3.35 kPa) shall be designed in accordance with accepted engineering practice.”* In this case, the prescriptive provisions of Chapters 5, 6, and 8 of the 2015 IRC would not apply. When using the engineered design of the 2015 IBC, only those provisions related to engineered design of the buildings *structural* system would need to conform to the provisions of the 2015 IBC. All other design and construction of the building is permitted to comply with all applicable provisions of the 2015 IRC or, in the alternative, with all applicable provisions in the 2015 IBC.

The information contained in this bulletin is not intended to cover all the requirements pertaining to ground snow loads or engineered design. Other provisions of the Uniform Code apply.

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