

N1102.2.2

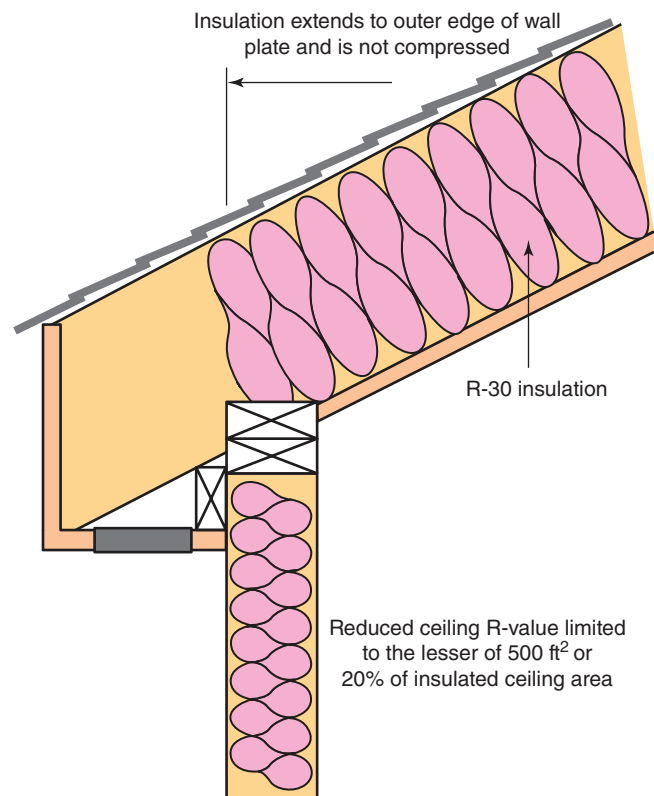
Reduction of Ceiling Insulation

CHANGE TYPE: Modification

CHANGE SUMMARY: When applying the exception for insulation in ceilings without attics, the insulation must extend to the outside of the top plate.

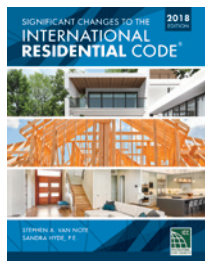
2018 CODE: N1102.2.2 (R402.2.2) Ceilings without attic spaces. Where Section N1102.1.2 would require insulation levels R-values above greater than R-30 in the ceiling and the design of the roof/ceiling assembly does not allow sufficient space for the required insulation, the minimum required insulation R-value for such roof/ceiling assemblies shall be R-30. Insulation shall extend over the top of the wall plate and shall not be compressed. This reduction of insulation from the requirements of Section N1102.1.2 shall be limited to 500 square feet (46 m²) or 20 percent of the total insulated ceiling area, whichever is less. This reduction shall not apply to the U-factor alternative approach in Section N1102.1.4 and the Total UA alternative in Section N1102.1.5.

CHANGE SIGNIFICANCE: The IRC offers two exceptions to the prescriptive ceiling insulation requirements. The first, in Section N1102.2.1, Ceilings with Attic Spaces, recognizes the effectiveness of energy (raised heel) trusses. The increased height at the exterior wall plate allows for the full thickness of ceiling insulation throughout and the code accordingly allows a reduction in the required R-value. The second exception, in Section N1102.2.2, Ceilings without Attic Spaces, recognizes the difficulty of



Reduced R-value for vaulted ceiling

achieving the full required thickness of insulation in vaulted or cathedral ceilings framed with solid-sawn dimension lumber rather than trusses. In this case, the code allows a reduction in R-value to R-30 for a maximum area of 500 square feet. Depending on the Climate Zone, this is a reduction from R-38 (Zones 2 and 3) or R-49 (Zones 4 through 8). The changes to this section for the 2018 IRC are primarily editorial. For clarification, “greater than” replaces “above” in reference to the R-30 baseline value. The concern was that the phrase “above R-30” could be read as physically above (higher) or providing a higher level of insulation. The term “greater than R-30” reflects the intent and is consistent with other provisions in the IRC. A new sentence emphasizes that in order to take advantage of this exception, the insulation needs to maintain that minimum R-value of R-30 over the entire area of the ceiling, including extending to the outer edge of the top plate at the exterior wall. Compression of the insulation at any point reduces the R-value and is less effective at conserving energy. While many code users have inferred that the intent was to maintain the R-value to the outside of the exterior wall, the code previously did not explicitly require it.



This excerpt is taken from *Significant Changes to the International Residential Code®*, 2018 Edition.

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