

Technical Bulletin: Insulation Grading

Residential New Construction Program



BUILDING A SMARTER ENERGY FUTURESM

Homes receiving the whole-home incentive in the Duke Energy RNC Program must receive pre-drywall (rough) and final inspections to qualify. During these inspections, the quality of the insulation is assessed and graded. At rough inspections, the exterior walls, knee walls, and garage walls are inspected in detail for compression. This Technical Bulletin is intended to help newer raters better understand insulation grading per RESNET guidelines.

As noted on [ANSI/RESNET/ICC 301-2014 Addendum F-2018 Normative Appendix A](#), the requirements for Grade I, II, and III for batt or loose fill insulation are listed below.

Grade I

- The insulation needs to uniformly fill each cavity side-to-side and top-to-bottom, without substantial gaps or voids around obstructions and split or fitted tightly around wiring and other services in the cavity.
- Air barriers encapsulate the entire six sides of the insulation with substantial contact with the exterior or interior sheathing.
- No more than 2% of the insulated area contains voids or be compressed more than $\frac{3}{4}$ ".

Grade II

- Like grade I, insulation needs to have complete six side encapsulation with substantial contact to the exterior or interior sheathing.
- No more than 15% of compression or voids with no areas where compression exceeds $\frac{3}{4}$ ".

Grade III

- Grade III insulation has substantial gaps and voids and does not have full six side encapsulation. If any part of the wall has insulation missing or more than 15% of compression, the insulation has a Grade III installation.

Often, raters will look at just the surface appearance of insulation to assess the installation quality. However, insulation should be spot checked to assess any areas with compressions or voids. The following pictures highlight seemingly well installed insulation with a close-up picture of problem areas.



Grade II

- Insulation is installed with 2-15% of the area compressed.
- Insulation is NOT split around the electrical wire

Technical Bulletin: Insulation Grading

Residential New Construction Program



BUILDING A SMARTER ENERGY FUTURESM



Grade II

- Insulation is installed with 2-15% of the area compressed
- Insulation IS split around the electrical wire but NOT split around the bug line and purlin.



Grade I

- Insulation is installed with <2% of the area compressed
- Insulation is split around the electrical wire.



Grade II

- Insulation is installed with 2-15% of the area compressed.
- Insulation is cut too long and rolled or stuffed at the bottom of each cavity.