

HOME INSULATION: ACHIEVING GRADE 1 INSTALLATION

Providing a Grade 1 installation is important to delivering a quality, energy-efficient home. A Grade 1 designation means that the home insulation is properly installed and without any moderate or substantial defects. While Grade 1 installation should be the norm in the residential building industry, there are instances where it is not. The result of a sub-par installation is a home that doesn't perform to its potential—which unfortunately reflects poorly on builders, installers and insulation manufacturers alike.

What are the RESNET grading criteria?

The Residential Energy Services Network (RESNET) has outlined standards that define an insulation installation grading system for use by HERS raters in evaluating installation quality. When inspecting insulation, HERS raters are primarily looking for any missing insulation (voids), gaps or compression.

Summary of RESNET Grading Criteria:

Grade I – Minor Defects

Occasional very small gaps are allowed. Voids can't extend from the interior to the exterior (i.e. the full width of a wall cavity). The product is installed according to manufacturer's specification and cut to fit around electrical junction boxes and is split around wires and pipes. Compression or incomplete fill amounting to 2% or less, if the empty spaces are less than 30% of the intended fill thickness, are acceptable for Grade I.

Grade II – Moderate Defects

Can have minor compression and up to 2% missing insulation. Can also have moderate to frequent gaps around wiring, electrical outlets, plumbing and other intrusions. It's important to note that the grading system treats and assesses missing insulation differently than compressed insulation.

Compression/incomplete fill vs. missing insulation

Understanding the different uses of the “2% rule” and its impact on grading is essential.

- If 2% or less of the area is compressed or has incomplete fill it can still be considered Grade 1
- If 2% or less of the area has missing insulation it will be considered Grade 2

Grade III – Substantial Defects

Has substantial gaps and voids with missing insulation comprising more than 2% of total area. Installations not complying with the minimum installation requirements and Grade 1 or Grade 2 requirements above are a Grade 3 installation.

To read the full text from the RESNET Manual, [click here](#) and refer to Appendix A, pages A-11 through A-16.

Resources to get you a Grade 1 Installation

On this website we offer detailed instructions, as well as videos and visual guides, including:

- Preparing for installation. Our page on [installation considerations](#) will help you prepare for installation, giving you an overview of what needs to happen before installation can begin.

HOME INSULATION: ACHIEVING GRADE 1 INSTALLATION (CONTINUED)

- Proper installation techniques. These pages are mobile optimized to make them easy to use on a jobsite. In them, we provide location-specific installation images in a simple “do this, not that” format.
 - [Attic insulation and ceiling insulation](#)
 - [Wall and knee wall insulation](#)
 - [Floor insulation](#)
- Downloadable guides. If you'd prefer PDF guides to print or download, we offer the same installation guidance in our [downloadable pictorial guide](#). We also have a [Spanish version of the guide](#).
- Video series on proper batt installation. On our YouTube channel we [have playlists](#) with our three part installation video series, available in both English and Spanish.
- Video clips on proper batt installation. If you don't want the full videos and instead just want shorter clips, [this playlist](#) addresses a few specific areas that demand particular attention.

Also, the RESNET Manual specifically states that the following NAIMA publications may be used as references for proper installation:

- [Recommendations for Installing Mineral Fiber Insulation in Residential and Other Light-Frame Construction](#)
- [Recommendations for Installation in Residential and Other Light-Frame Construction: FiberGlass Loose Fill Insulation](#)

Ready to Start Installing?

[View our Tutorials to Begin](#)