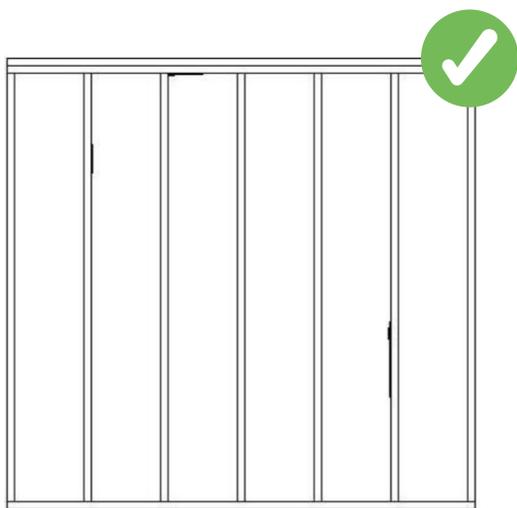


Residential New Construction Insulation Grading Reference

Insulation keeps buildings comfortable and running efficiently. The performance of insulation depends not only on the insulation type and thickness, but also on the quality of the installation – poorly installed insulation can substantially reduce its effectiveness.

Efficiency Vermont uses the grading standards developed by RESNET, which assigns Grade I, II or III using two parameters: missing insulation and compression & incomplete fill.¹ This guide highlights the differences between Grades I and II. Grade III is the lowest quality and is not covered here. To ensure that all homes are peak performers, Efficiency Vermont's Residential New Construction program requires Grade I on all projects.



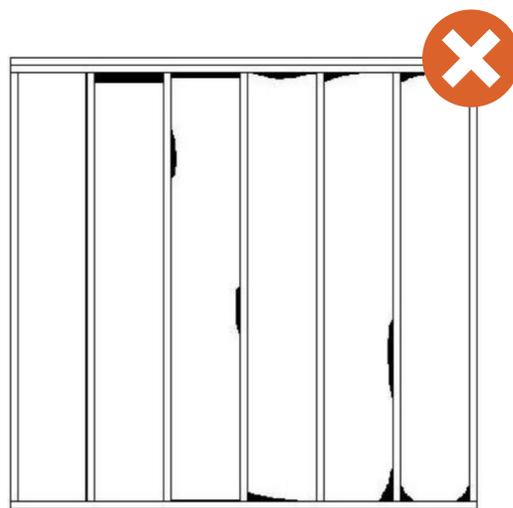
Grade I: Ideal

Missing insulation:

Occasional very small gaps are acceptable. If any exterior sheathing is visible through the insulation, it is not Grade I

Compression and incomplete fill:

Up to 2% total area can be compressed, or incompletely filled, by as much as 30%



Grade II

Missing insulation:

Up to 2% missing insulation

Compression and incomplete fill:

Up to 10% total area can have compression or incomplete fill

Grade I example: If a wall measures 8'x20' (160 square feet), Grade I permits some small gaps (but no visible exterior sheathing) and up to 3.2 square feet of area where insulation is compressed by up to 30% (e.g. behind blocking or wiring).

See reverse for examples of installation in Vermont homes that are acceptable or problematic.

¹ Grading and images are from 2013 National Mortgage Industry Home Energy Rating Systems Standards, available at <http://www.resnet.us/professional/standards/mortgage>

Avoid



Insulation compressed behind electrical box

Accept



No gaps, proper cutouts around electrical boxes



In addition to not having complete fill, the dense-pack fill is not dense enough which means it will settle even more over time



Complete fill, no edge gaps, clean seam



Highly compressed insulation throughout cavity, and missing altogether in some areas



Well-detailed fiberglass, caulk/foam between narrow stud gaps