



# Insulation

EAC2 | Possible 2 points

## Intent

Design and install insulation to minimize heat transfer and thermal bridging.

## Requirements

### Prerequisites

2.1 **Basic insulation.** Meet all the following requirements:

1. Install insulation that meets or exceeds the R-value requirements listed in Chapter 4 of the 2004 International Energy Conservation Code. Alternative wall and insulation systems, such as structural insulated panels (SIPs) and insulated concrete forms (ICFs), must demonstrate a comparable R-value, but thermal mass or infiltration effects cannot be included in the R-value calculation.
2. Install insulation to meet the Grade II specifications set by the National Home Energy Rating Standards (**Table 1**). Installation must be verified by an qualified energy rater or Verification Team conducting a predrywall thermal bypass inspection, as summarized in **Figure 1**.

*Note: For any portion of the home constructed with SIPs or ICFs, the rater must conduct a modified visual inspection using the ENERGY STAR Structural Insulated Panel Visual Inspection Form.*

### Credits

2.2 **Enhanced insulation** (2 points). Meet the following requirements:

1. Install insulation that exceeds the R-value requirements listed in Chapter 4 of the 2004 International Energy Conservation Code by at least 5%. Alternative wall and insulation systems, such as structural insulated panels (SIPs) and insulated concrete forms (ICFs), must demonstrate a comparable R-value, but thermal mass or infiltration effects cannot be included in the R-value calculation.
2. Install insulation to meet the Grade I specifications set by the National Home Energy Rating Standards (**Table 1**). Installation must be verified by an qualified energy rater or Verification Team conducting a predrywall thermal bypass inspection as summarized in **Figure 1**.

*Note: For any portion of the home constructed with SIPs or ICFs, the rater must conduct a modified visual inspection, using the ENERGY STAR Structural Insulated Panel Visual Inspection Form.*

**Table 1 Summary of HERS Installation Guides**

Grade	Description
I	Meet the requirements of Grade II (below), but allow only very small gaps, and compression or incomplete fill amounts to 2% or less.
II	Moderate to frequent installation defects, gaps around wiring, electric outlets, etc. and incomplete fill amounts to 10% of less. Gaps running clear through the insulation amount to no more than 2% of the total surface area covered by the insulation. Wall insulation is enclosed on all six sides and in substantial contact with the sheathing material on at least one side (interior or exterior) of the cavity.

**Figure 1 ENERGY STAR Thermal Bypass Inspection Checklist**



[ENERGY STAR thermal bypass inspection checklist](#)