



# Properly Installed Insulation

## Improves Comfort While Saving Energy

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Insulation is one of the keys to a comfortable, energy-efficient home. But simply having the right amount of insulation is not enough. If insulation is not properly installed, a home can have excessive heat gain during the summer and heat loss in the winter—forcing the heating and cooling systems to work overtime.

Properly installed insulation will completely blanket the home—exterior walls, ceiling, and floors—without gaps, voids, or compressions, and it will be in full contact with the interior air barrier (for example, drywall). Continuous sealing of the air barrier along the insulation is also critical to protecting against moisture damage that can be caused by warm air flow through the insulation to colder surfaces where it can condense. Expect ENERGY STAR qualified homes to have insulation that meets or exceeds the latest national code requirements, providing year-round comfort while reducing utility bills.

### **BENEFITS OF PROPERLY INSTALLED INSULATION**

- **Enhanced Comfort.** Properly installed insulation minimizes temperature variability indoors and helps keep rooms warmer in the winter and cooler in the summer.
- **Lower Utility Bills.** More than 40 percent of the energy consumed in a typical household goes to heating and cooling. By preventing heat loss in the winter and heat gain in the summer, a properly installed insulation barrier reduces utility bills year round.
- **Improved Durability.** When insulation is properly installed, the potential for condensation that can lead to decay of building materials is reduced, helping to improve the durability of your home.
- **Better Resale Position.** The improved comfort, lower utility bills, and improved durability of a properly installed insulation barrier can translate into higher resale value compared to less efficient homes.

## TYPES OF INSULATION

Builders have many choices for the types of insulation they use. All insulation can be effective if it is properly installed and coupled with a continuous air barrier. Insulation materials are rated according to their ability to resist heat flow. This thermal resistance rating is commonly known as an “R-value.” The higher the R-value, the better the material is at resisting heat flow. ENERGY STAR qualified homes can include one or more of the following types of insulation:

**Batt Insulation** is typically made from mineral fiber (fiberglass or rock wool) and manufactured in blankets of various sizes and thicknesses. Batt insulation is typically fitted between studs, joists, and beams and should fill the wall, floor, or ceiling cavity without any gaps, voids, or compression.

**Blown-in Insulation** is typically made from fiberglass or cellulose and is literally blown into the walls and attic through a large hose. Blown-in insulation should completely fill the wall cavities and be an even thickness throughout the attic.



*Blown-in attic insulation*

**Sprayed or Injected Foam Products** are typically made from polyurethane or similar products and are injected or sprayed into cavities where they expand to the desired thickness.

**Rigid Insulation** is typically made from polystyrene, polyurethane, or polyisocyanurate foam, which is expanded or formed into large sheets. Rigid insulation can be used to provide a continuous thermal barrier in basements, crawlspaces, and on exterior walls.

## A BETTER FUTURE

ENERGY STAR is a voluntary partnership between the government and more than 8,000 organizations, including more than 2,500 of the nation’s home builders. Together with home buyers and their families, we are working to achieve a common goal—protecting the environment for future generations by changing to more energy-efficient practices and products today.

ENERGY STAR is the government-backed symbol for energy efficiency. It identifies new homes and more than 40 types of products that are energy efficient and offer the features, quality, and performance that today’s consumers expect. Products that can earn the ENERGY STAR include windows, heating and cooling equipment, lighting, and appliances. To learn more about ENERGY STAR, visit [www.energystar.gov](http://www.energystar.gov).