

Can I Depend On R-Values When Comparing Insulations?

Yes - and No.

R-values tell only part of the story. Unfortunately, they don't tell you how well the insulation will perform in your home. R-value is a laboratory measurement that measures only one heat transfer mechanism (conduction) and does not effectively measure all 3 methods of heat transfer that occur in your home: convection, conduction, and radiation.

"...conduction, radiation, and convection are the primary mechanisms [of heat transfer]."

-U.S. Department of Energy

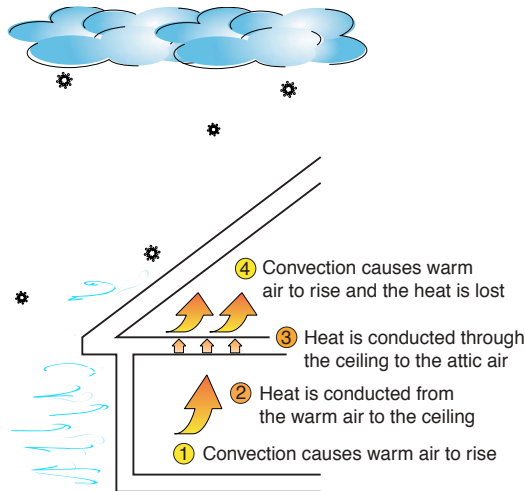
Problem #1: We can not base our choice of insulation on R-value alone.

Your Home Loses and Gains Heat in 3 Ways

Convection

Definition: The transfer of heat by moving air.

Example: Warm air rises and transfers heat to the ceiling



Conduction

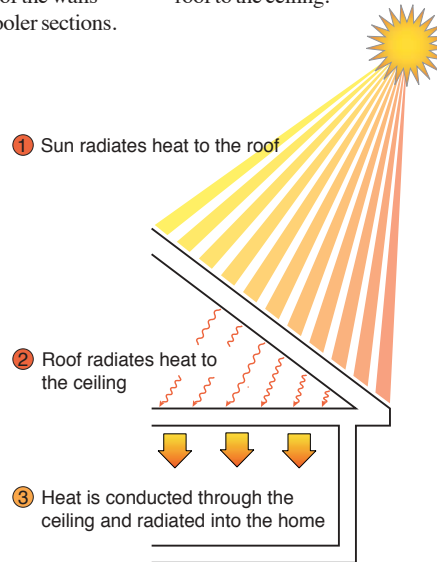
The transfer of heat through a solid material.

Heat is transferred from warmer sections of the walls and ceilings to cooler sections.

Radiation

The transfer of heat in the form of electromagnetic waves.

Heat is transferred from the roof to the ceiling.



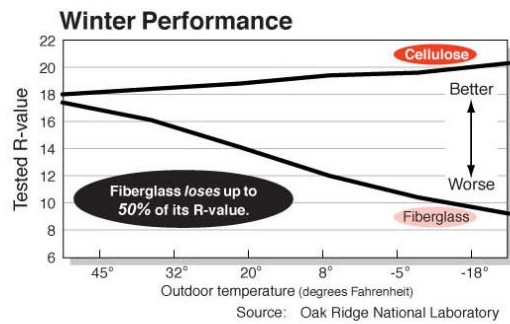
R-value is a narrowly focused laboratory measurement. For a comfortable, energy efficient home, insist on insulation that effectively controls all 3 methods of heat transfer: convection, conduction, and radiation.

Will My Choice of Insulation Really Effect My Monthly Heating & Cooling Bills?

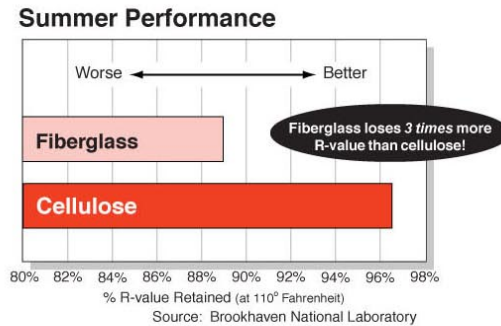
Yes!

Different insulations are made from fundamentally different materials. Tests at Oak Ridge and Brookhaven National Laboratories and the University of Illinois reveal that insulations with the same laboratory R-values *do not* perform equally in real homes. Researchers found that the effective R-value of blown fiberglass plunges during cold weather, while the effective R-value of cellulose actually increases. The researchers also discovered that summer temperatures offer no relief for fiberglass, since its effective R-value withers then, too.

Applegate cellulose helps keep your home warmer in the winter,



cooler in the summer,



blocks air infiltration, and saves you money!

Test after test demonstrates that cellulose insulation significantly outperforms fiberglass.

Properly Insulating Saves You Money

Poor insulation allows air to escape, drives up utility bills and costs you more money.

28% of heating loss in one-story homes can be eliminated with proper attic insulation.

Your utility bills could be going through the roof if your home is not properly insulated!

Poor insulation allows your heating and cooling to escape through your roof, walls, and floor, forcing these systems to work overtime to replace the lost air. This drives up your energy usage and leads to higher utility bills and more money lost.

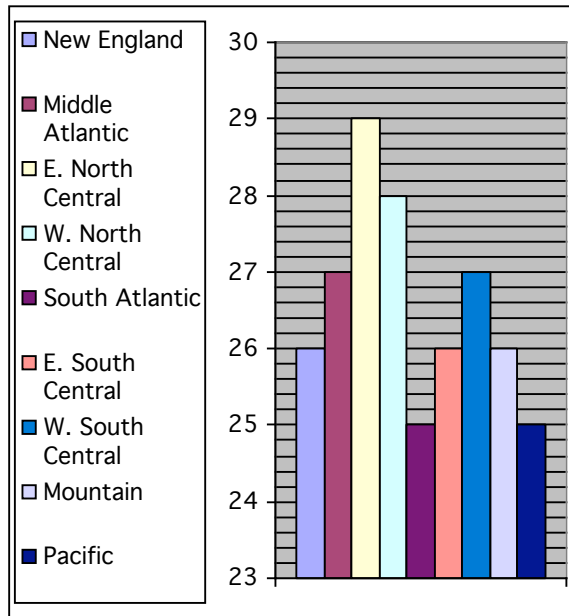
Improperly insulated attics are a major source of heat loss.

In fact, 28% of the heating loss in one story homes and 17% of the heating loss in two story homes can be eliminated with proper attic insulation.

Poor Insulation is a Common Problem

Improper insulation is a common problem across the country.

This chart shows the average amount of attic insulation found in homes across the country.



Amount of Insulation and R-Value

Don't take our word for it:

R-38 is the standard attic insulation in most parts of the country.

Depending on the climate in your area, more insulation may be required.

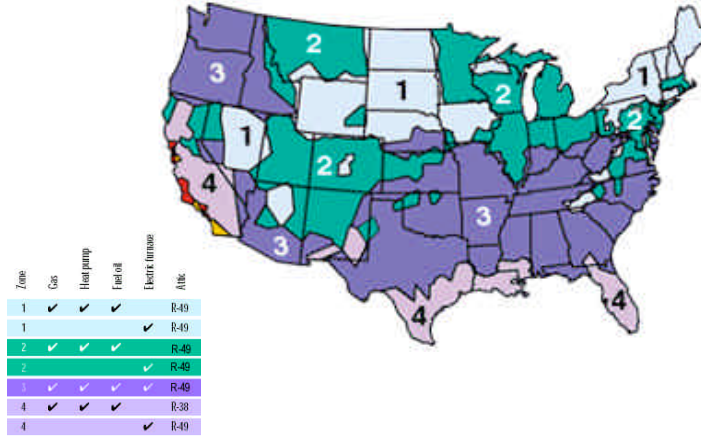
You can refer to the map to determine the most recent guidelines for homes in your part of the country.

Source: US Department of Energy

How is insulation effectiveness measured?

One way is by the R-value, the measure of resistance to heat flow. As the R-value increases, so does the insulation effectiveness. You must have the appropriate amount of insulating material to receive the effective amount of insulation.

Recommended R-Values



What is your R-Value?

Type of Insulation	Number of Inches	R-value per inch	Existing R-value
Fiberglass batts		3.2	
Fiberglass loose-fill		2.5	
Cellulose loose-fill		3.5	
Rockwool		2.8	
Polystyrene beads		2.9	
Formaldehyde foam		4.5	
Insulation board		3.3	

Attic: Square Feet: _____

R-Value: _____

of Bags installed: _____

Walls: Square Feet: _____

R-Value: _____

of Bags installed: _____

Insulation has been installed in the home of:

Name: _____

Address: _____

City, State, Zip Code: _____

Insulation has been installed by:

Name of Installer: _____

Address of Installer: _____

City, State, Zip Code: _____

Date Installed: _____

Signature: _____