Attic Insulation

Train the Trainer

Key Terminology

R-value

Thermal envelope

Section Transition

Learning Objectives (Slide #2)

By attending this session, participants will:

- Learn the importance of following cost-effectiveness guidelines when insulating attics.
- Recognize that proper attic treatment can save up to 20% of home heating and cooling bills.
- Understand that, combined with air sealing, attic insulation reduces the likelihood of structural damage due to condensation on the roof deck.
- Learn the process for insulating attics with blown-in cellulose.

Cost-Effective Insulation Levels (Slide #3)

- Heat rises, and in many homes it rises quite freely right out of the attic.
- Insulating the attic helps maintain the ***thermal envelope*** of the home.
- EPA estimates that just by air sealing a home and adding proper levels of insulation, households can cut their heating and cooling costs by 20%—about 10% of the entire energy bill for many people.
- In addition to saving money, proper attic air sealing and insulation reduces structural damage and IAQ issues resulting from condensation in the attic.
- This table shows the cost-effective levels. Attics range from R-30 to R-60, depending on the region and heating fuel and equipment.
- Savings from cooling equipment aren't as high as from heating equipment. This is why the southern regions have lower recommended ***R-values***.

Not Enough Insulation (Slide #4

Too little insulation means the heating and cooling equipment has to work harder and the energy bills remain high.

Too Much Insulation (Slide #5)

Too much insulation will never pay back.

- Energy saved from insulation above recommended levels would never equal the cost of installing that insulation.

Measuring Blown-In Insulation (Slide #6)

Blown-in insulation works well, but it's not as simple as rolling out batts and knowing the installed R-value. Follow these guidelines for quality installation:

- Staple rulers like this one on the right every 15 feet or so around the attic to keep track of the depth.
- Staple them so they face your exit.
- Blow in from the far end and work backwards.

Properly Insulated Attic (Slide #7)

- Lights and juncture boxes are marked.
- Chimney has a dam to keep the cellulose at the proper clearance.
- Insulation is even and of the proper depth all the way across.

Dos and Don'ts (Slide #8)

Do

- Install per manufacturer instructions.
- Cover every spot.
- Blow in insulation at the proper density (no "fluffing").

Don't

- Install insulation in a leaky attic where it will get wet.
- Ignore existing problems.
- Compress or leave voids.
- Get too close to high-temperature fixtures (e.g., can lights) or chimneys.

Summary (Slide #9)

- Insulating and air sealing attics can reduce home heating and cooling costs by 20%.
- Insulation provides the thermal envelope or boundary around conditioned living space.
- Follow cost-effective guidelines to determine the target for the installed R-value.
- Maintain appropriate clearances from high-temperature building components.
- Mark electrical boxes and fixtures before insulating.
- Use rulers stapled to rafters to measure the depth of blown-in attic insulation.
- Cover every spot.
- Do not install insulation where it will get wet.