

# Attic Insulation

Proper attic insulation is a key element for a more comfortable and energy efficient home. It is important to have a continuous boundary of insulation between the conditioned space and the unconditioned space. This boundary is referred to as the “thermal envelope”. Any gaps, voids, or uneven areas can cause major deficiencies in the effectiveness of your insulation.

## Why is attic insulation important?

Heating and cooling accounts for approximately 45 percent of your home's energy usage. Inadequate insulation and air leakage are the leading cause of energy waste in most homes. Attics are often the easiest and most cost-effective place to insulate because most attics provide easy access for improvements. Attic insulation helps keep the home warm in the winter and cool in the summer.

## What does attic insulation improve?

1. Conserves energy by slowing down heat loss and heat gain
2. Enhances comfort inside the home
3. Reduces the size of heating and cooling equipment needed
4. Prevents condensation from occurring
5. Reduces electric and gas bills

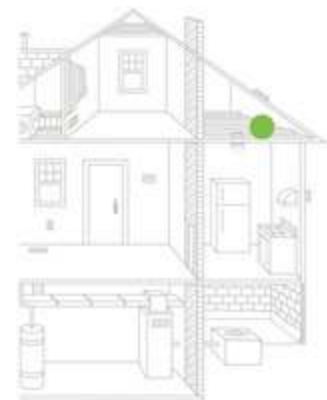
## How much attic insulation should I add?

Insulation levels are specified by R-values that measure the insulation's ability to resist heat flow. The higher the R-value, the better the thermal performance of the insulation. The recommended level for most attics is to insulate to approximately R-38 or about 10 inches to 14 inches, depending on insulation type.



## How much money could I save?

Properly insulating your home can save up to 20 percent on your energy bills.



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Subject to TVA Installation Requirements (see reverse side).

Homes with unvented combustion appliances that are the primary heat source for the home are not eligible for program upgrade installations.

For more details, call 1-855-2eScore (1-855-237-2673) or go to [www.2eScore.com](http://www.2eScore.com)

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# TVA Installation Requirements for Attic Insulation\*

## Safety and preparation requirements before adding insulation:

- Quality Contractor Network (QCN) member shall complete all preparation work involving existing insulation, including insulation dams around heat-dissipating devices and enclosing unprotected electrical wiring.
- Customer is responsible for other preparation work, such as ceiling repairs, water leaks, vent leaks, removal of stored objects, etc.
- Live knob and tube wiring shall be replaced with new wiring by a licensed electrician.
- Existing kneewall insulation shall be adequately supported.
- Range hoods, clothes dryers, and bathroom exhaust fans shall be vented outside the building envelope.
- All insulation and insulation dams shall be kept at least 3" away from non-IC rated heat sources unless insulation dam is rated for contact; do not install insulation on top of non-IC rated heat sources.
- Insulation shall not block combustion air; allow minimum 3" clearance.
- Exposed rigid foam or spray foam insulation shall have a fire barrier or be rated for exposure without a fire barrier per local code requirements; foam shall not be exposed to any heat-producing device.
- QCN member shall advise participant to install a working carbon monoxide (CO) monitor if the home has any gas appliances or an attached garage.

## Insulation must be installed correctly, per the following requirements, in order to maintain an effective thermal boundary:

- Attic hatch or pulldown stairs shall have a cover with minimum R-10 insulation.
- Insulation shall be installed to a minimum R-38 (unless restricted by space) without gaps, voids, or compressions, and in direct contact with air barrier.
- Loose-fill insulation shall be installed to a level condition; QCN member shall leave one empty bag of insulation at the residence.
- If kneewall has less than R-11 or if adding insulation, then insulate kneewall to a composite R-18. Insulation shall be adequately supported.
- Insulation depth markers shall be installed every 300 square feet, facing the attic access, throughout the attic space.

\* This sheet is not a substitute for the TVA Standards.



## RECOMMENDED BEST PRACTICES

- Air seal attic plane, including recessed lights, attic access openings, and other penetrations before adding insulation.
- Install rigid foam insulation on attic side of kneewall.
- Assume light fixture to be non-IC rated if it is not possible to determine fixture type.
- Use dense pack insulation if attic floor is decked.
- If loose-fill insulation is installed on top of existing insulation, use the same type of material as existing insulation.
- Install non-powered attic ventilation to remove moisture and heat from attic spaces.
- Ducts in attic should be sealed and insulated to R-8 before adding attic ventilation.

## MINIMUM REQUIRED R-VALUES

- R-38 Attic Floor
- R-18 Kneewalls
- R-10 Attic Access