



Insulation - An Idea to Add Comfort and Save Money on your Existing Home

One energy saving effort that can make a difference in both home comfort and savings on your energy bills is insulation between your living space and the outdoor environment (including roof and crawlspaces). This article cannot effectively explore all of the options you have for insulating your house and will focus on the attic area. However, similar principals apply to all areas that need insulation and there are some important things for you to know before selecting the proper insulation material(s).

First, it is advised to seal any air leaks before installing the insulation (Note: Sealing air leaks is one of the most cost effective things you can do for your home). Secondly, leaving voids significantly limit the effectiveness of your insulation project. Lastly, if you have no insulation, it is definitely recommended that you add the minimal recommended amount. However, increasing insulation past a certain point may not be cost effective, so consider costs when adding insulation over and above the minimum recommended value.

*Researchers and experts strongly emphasize that the manner that the insulation is installed is often more important than the type of insulation.*

**R-Values:** With any installation of insulation, you will need to know something about R-values, the thermal resistance unit for insulating materials. The greater the R-value, the greater the insulation and energy savings. To get a relative handle on R-values, consider that one inch of solid wool has an R-value of 1. Compare that with one inch of fiberglass insulation which has an R-value of 3.14-3.2<sup>1</sup> or an inch of blown cellulose in an attic with an R-value of 3.21-3.7. For example, a wall with 3.5 inches of fiberglass batting (sheet rolls) is estimated to have an R-value of R-11 with an overall R-value of R-14 due to the addition of siding and drywall. <sup>1. Range found looking at multiple web sties</sup>

**Checking your current insulation levels:** You can check your current insulation levels yourself, but be sure to use care and proper safety procedures when doing so. You will need a tape measure, flashlight/headlight, protective hat to keep from getting jabbed in the head by exposed nails, safety glasses, gloves, and dust mask. Also, if you are going into the attic, be sure to have boards to walk on if your insulation is the only thing between your foot and the ceiling below. Don't be like this writer and have your wife wondering what that leg is hanging from the living room floor! Now you are ready to begin checking insulation levels.



First, do a quick check of insulation in your attic. If the insulation is level with or below the level of your floor joists, you probably need to add insulation. If it is above the floor joists, it may not be cost effective to add any at this time. If you have batts (sheet rolls), you may be able to read the R-value on the printed material. Otherwise you will need to measure the existing depth of your insulating material using your tape measure. Once you have measured the depth of the insulation, multiply by the R-Value per inch of the insulation material ([read here](#)) for the most common types of insulation material and their R-values per inch).

**Recommended R-values for our zone are:**

1. Uninsulated attics - install R38 to R60
2. Insulated attics (with 3-4 inches of existing insulation) add R38
3. Uninsulated Floors - install R25-R30

**Do it yourself (DIY) or hire a contractor**

If you have determined that you need to add insulation, the final decision is whether to do this yourself or hire a professional. Unless you have a small and easily reachable area in your attic to lay down or blow insulation, doing this yourself is more than an easy task. There are many things to consider, including not covering over recessed lights or power boxes unless they are properly insulated or caged off, assuring adequate footing and coverage, breathing in fibers or getting fibers on your skin and clothes, etc.. So, if you are the DIY type, then you already know whether this is within your area of expertise, otherwise, hire a contractor and don't be afraid to look over their shoulder to assure it is done to your satisfaction. Here are two web sites to start educating yourself about insulating your home and things to watch and listen for when dealing with a contractor. A little knowledge can maximize your savings by assuring things are done properly.

[Attic Insulation Project at energystar.gov](http://energystar.gov)  
[Insulation at Energy.gov](http://energy.gov)

Thank you!