

The Wrong Insulation Can Cost You Money

All existing homes have similar insulation don't they?

No, in fact like snowflakes, they are all different. For U.S. homes built before the early 1900s, insulation was an afterthought for most climate zones. In the arctic or in the desert the mass of the walls was the main approach to dealing with containing or keeping out heat. Someone figured out that it was less drafty if mud and/or paper/straw was shoved into cracks. By colonial American times, curtains were hung to cut down on drafts and to insulate the living space from the surface temperatures of the outside walls. By the early 1900s, some buildings had insulation in the walls and ceilings. However, adding insulation was still mainly comfort driven and sealing drafts was still the main concern. Adding insulation wasn't that much of a concern until electricity and fuel costs started rising in the late 1950s. The insulation industry grew along with the fuel and electrical costs. Now, no home builder can build a new home without meeting minimum insulation targets.

I have an older home; how can I tell if my insulation is adequate?

Traditionally, only engineers were capable of doing heat loss analysis on buildings. Those engineers used numerous formulas to calculate total heat losses for a building. The formulas predicted how fast or slow a wall, door, window, etc. let's heat pass through it based on density, conductivity, and other variables. Today your professional HVAC contractor can easily calculate your winter heat losses or summer heat gains by doing a Manual J load calculation on your home. The load calculation can be used to determine if adding more insulation is worthwhile.

Why would I call an HVAC contractor to evaluate my insulation?

Most people probably wouldn't think to call the HVAC contractor first unless they had a problem with their HVAC equipment. Traditionally, professional HVAC contractors evaluated the existing insulation before

installing a new HVAC system. How else would the HVAC contractor know if the equipment was sized properly? What if the homeowner had already upgraded the insulation or replaced the windows and doors? What if no heating and cooling load calculations were done originally and the existing HVAC system sizing was based on guesstimate? Your professional HVAC contractor determines existing home insulation values on a daily basis. Additionally, many HVAC industry leaders have become HVAC/Home Performance contractors and can tell you how upgrading insulation can decrease your heating and cooling bills.

What is the best insulation upgrade?

That is a complicated question, because it depends on what you mean by best. Most homeowners consider the payback associated with any insulation upgrade to decide what is best for them. Since there are various methods of improving insulation, the best solution will vary based on an individual customer's needs. Insulation can be added to outside walls under new siding, laid down in the attic ceiling, sprayed into existing walls, or applied in another fashion. One or more of these methods might be your best option. For example, for the most bang for the buck in your home, you may simply need to have a batt type of insulation rolled out in your attic.

Batts in the attic sounds bad to me

Batts in this case are simply rolls of insulation and can be made of various materials such as fiberglass, cotton, and rock-wool. Other options that can be used in attics, or can be added to existing walls such as loose fills and spray foam insulating materials, may also be good solutions for your unique home application. Regardless of the type of insulation to be added, the overall R-value increase will increase your home's resistance to heat loss. One advantage of having a professional HVAC/Home Performance contractor evaluate

your insulation is the evaluation will be based on R-values, not what specific type of insulation is used. Many insulation contractors believe that their specific product is the best solution for everyone. Thus, when they are called out, their recommendation becomes predictable regardless of the home.

Everyone talks about R-value, what exactly is it?

R-value is an industry recognized measured value for thermal resistance used in the building industry. HVAC Manual J load calculations are based on math formulas that utilize the R-values for varied types of construction. The total insulating value is determined by calculating the resistance values in a typical wall design. Most wall types can be thought of as R-value sandwiches. Each layer of the sandwich has an R-value that must be included into the total. That total value is then used to evaluate how the whole wall system will perform.

How can I find out if my insulation needs improving?

Your professional HVAC/Home Performance contractor will be able to provide you with cost effective options based on your individual needs. Working together as a team, you and your professional HVAC/Home Performance contractor can develop a plan for updating your insulation and your HVAC system at the same time. The result will be increased comfort and energy savings long into the future.

You snuck in HVAC system updating, why?

Often when insulation is upgraded, an existing home can be comfortably heated and cooled with a smaller HVAC system. This means the HVAC equipment will be slightly less expensive to purchase. More importantly, in the long run, it means it will operate more economically too. The benefit for most homeowners is they will enjoy enhanced thermal comfort in their homes.

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