



Want to Have a Warmer House and Cooler Energy Bill?

By Tom Lienhard, PE, CEM

Have you ever wondered why the snow melts from your rooftop faster than your neighbors or why the family dog has a favorite place he likes to rest? Lack of insulation or the presence of infiltration might be the issue.

In winter, the cost of heating a home makes up about 40-60 percent of an energy bill and more if your home lacks adequate insulation. So, if you're looking for the most cost-effective ways to save on your energy bill – insulate and seal.

If your roof melts snow at a feverish pace, then your attic may have poor insulation, leaky or un-insulated ducts, or no insulation at all. A variety of materials are available to insulate your home. Generally, materials such as fiberglass, mineral wool, cellulose fiber and foam are used to make insulation blankets and batts. Rigid boards, loose fill and blow-in insulation are also commonly used in residential construction and renovations.

All insulating material has an R-value which indicates how well that particular insulation resists the transfer or flow of heat. The higher the R-value, the better it will keep heat inside your home in the winter and hot weather out in the summer. Buying insulation by its R-value will let you know how well it will do the job of insulating.

Children and animals love comfort, and they can help us find possible heat loss in and around our homes. If there are areas around single pane windows, doors or vents that your kids avoid, consider checking for heat loss. Conversely, if you find the family dog or other living creatures living on the periphery of your home, it might indicate significant heat-loss coming from your floor into your crawlspace, which can translate to lost energy dollars.

Besides preventing heat transfer to the out of doors, insulation also has other positive properties such as acting as a sound barrier. If you hear the wind whistling around your windows or you can hear road noise, check that area for missing insulation. A quarter ($\frac{1}{4}$) inch gap around a door is the same as a 4 square inch hole in the wall – and as we like to say in the energy efficiency world, “caulk is cheap.”

People who are interested in taking a low or no-cost approach to keeping cold winter air from entering their home should consider the following:



- Check caulking and weather stripping around windows and doors. If you see cracks, light or feel a draft, make repairs where needed. Securely wrap ductwork exposed to outside temperatures with insulation. Joints and connections should be sealed with insulation tape or joint compound.
- Common duct tape is good for many things, but not for use on ducts. Install foam insulation covers behind light switches and outlets on exterior walls. For additional infiltration resistance, insert plastic outlet covers commonly used for child safety.

Equipment Rebates and Incentives

Some electric and natural gas utilities offer rebates and incentives for customers making energy efficiency upgrades to their home or business. It could pay to find out what your energy provider offers.

Tax Credits

Also, find out how the new stimulus packet has affected Federal Tax Credits for Energy Efficiency at energystar.gov

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