

September 2015 EnergyWiseSM Tip: R-value

While you might expect “R-value” to be the level of appreciation a pirate has for buried treasure, with winter coming, you might want to consider your own “R-value”. The "R" refers to the resistance of heat flow and, in particular, is associated with the insulation in your home.

Insulation acts like a blanket on your home. When properly installed, it keeps the heat inside your home during winter, and the cool air inside during the summer. On average, about half of the energy used in Nebraskan homes is used to keep the home warm or cool. Unfortunately, many homes either have insufficient or improperly installed insulation.

According to a 2003 study by the Harvard School of Public Health 2003, if your home is as little as five to 10 years old, you likely have one of the 46 million under-insulated homes in the U.S. The good news is that adding insulation is often one of the easiest and lowest cost options for improving the energy efficiency of your home.

All insulation has an R-value -- the higher the R-value, the greater the insulating effectiveness. The R-value will vary depending on the type of insulation, its thickness, and its density. You can increase your R-value in areas by adding insulation, even if there is already insulation in a particular area. Your new R-value is calculated by adding the R-value of the new insulation to the R-value of the existing insulation.

As mentioned, there are many types of insulation. Insulation batts and blankets are made of fiberglass or mineral wool and are most commonly used in new construction or unconfined areas, like unfinished attics, roofs, and under floors. Batts and blankets often have an R-value of 2.9 to 4.0 per inch of thickness.

Blown-in loose fill insulation is one of the easiest forms to install. Commonly made of cellulose, glass fiber, mineral wool, perlite or vermiculite, it can be blown or spread into areas needing insulation. Equipment for blowing insulation into walls or attics can be rented, or contractors with their own equipment can be hired to do the job. Loose fill insulation usually has an R-value of 2.2 to 3.8 per inch of thickness.

Rigid boards are plastic foams or fibrous materials pressed or extruded into board-like forms. Common materials include polystyrene, urethane or glass fiber. Polystyrene and urethane have superior insulating qualities with R-values of 3.2 to 5.0 per inch of thickness.

Foam insulation, usually urethane, can be injected into wall cavities or sprayed onto roof or floors. Once applied, it expands and sets in about a minute. After it sets, it shrinks slowly for several weeks. Properly applied, shrinkage is less than five percent. Like rigid boards, foam insulation has the advantage of a high R-Value per inch.

The Nebraska Energy Office recommends the following R-values in the following home areas:

Attic – R-45 to R-60

Exterior walls – R-20 to R-30

Floors over unheated spaces – R-30

Basement walls and concrete slabs – R-10

Obviously, attics are places where it can really pay to have the right amount of insulation. If your home has six inches or less, and you use primarily electricity to heat it, there is an EnergyWiseSM program to help you if you add an R-value of at least 19 or six inches of blown-in insulation. By participating in the residential EnergyWiseSM attic insulation program, customers are eligible for an incentive of \$.15 per square foot insulated with a maximum incentive amount of \$300 per existing residential dwelling. New construction and/or additions do not qualify.

Your local utility and Nebraska Public Power District want to help you make the most of your energy dollar by cutting the cost of heating and cooling your home. For more information on insulation or ideas on how you can make your home or business EnergyWiseSM, along with possible energy efficiency financial incentives, contact your local utility or visit www.nppd.com.