



**SOME BASIC ATTIC  
DETECTIVE WORK CAN  
UNCOVER LOTS OF WAYS TO  
REDUCE YOUR ENERGY BILL.**

**READ ON!**

**B**ecause warm air naturally rises, the attic or roof area of your home is your first priority for insulating. Insulation reduces the upward flow of heat, keeping it inside your home longer. That means you'll stay warmer, and your heating system will not come on as often—reducing your utility costs!

In Montana's cold climate, insulating existing attics to an R-value of at least .38 is recommended. R-value is the measure of an insulation material's ability to resist heat flow. It's measured per inch of material. For example, glass fiber batt or blanket insulation has an R-value of around 3.2 per inch, and the R-value of loose-fill cellulose is about 3.7 per inch.

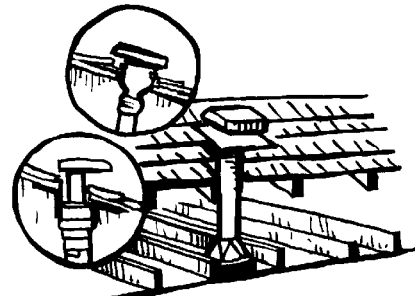
Both of these insulation types are commonly used to insulate attics. Twelve inches of the glass fiber batt insulation achieves R-38, and about 10 1/2 inches of cellulose will do the trick. How much insulation is in your attic?

### Attic/Roof Types

How your attic should be insulated depends on how your roof is built. Common attic/roof types are:

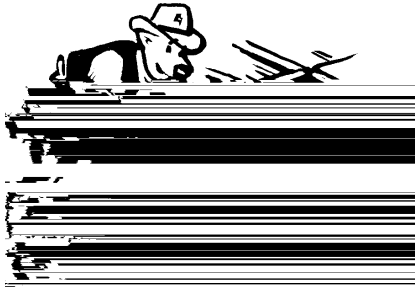
**1. Unfinished Attic.** In these homes, the attic is not part of the living space. You can often get into the attic by ladder through a hatch usually located in a hallway or closet ceiling. Unfinished attics are generally the easiest type to insulate; the insulation goes between the framing members (joists) of the attic floor, which is also your living area's ceiling. Capable do-it-yourselfers can tackle this job with advice from a professional. Rolls of glass fiber or loose-fill cellulose have been the insulation of choice for most do-it-yourself jobs. This brochure primarily deals with steps you can take to add insulation to your unfinished attic.

**2. Finished Attic.** A portion of these attics are living spaces. As a result, insulation should be placed in the exterior walls (called kneewalls), the entire ceiling and the outer floor areas—those not part of the living space. An experienced professional should be called upon for this job since it often requires the use of several insulation products and use of special insulation blowing equipment.



**BATHROOM AND KITCHEN VENTS SHOULD  
BE VENTED THROUGH THE ROOF—  
NOT INTO THE ATTIC.**

**3. Flat, Vaulted or Cathedral Ceilings.** These types of ceilings don't have attics above them, and due to little or no space to add insulation, it may be impossible to add insulation to this roof type. If there is space, the insulation must be blown or placed between the interior ceiling and the exterior roof. It's very important that these construction types be well-ventilated and sealed to prevent moisture problems. They, too, usually require the expertise of a contractor.



**WEATHERSTRIP YOUR ATTIC HATCH DOOR AS  
YOU WOULD ANY OUTSIDE DOOR.**

### Adding Insulation to Your Unfinished Attic

Here are the steps either you or a weatherization contractor should take to insulate or add insulation to your unfinished attic:

**1. Be an Attic Detective.** Go up into your attic with a flashlight and a dust mask to investigate. **CAUTION! If you find vermiculite insulation in your attic, DO NOT PROCEED. Since Vermiculite may contain asbestos, always have it tested before continuing.** Construct a makeshift walkway by laying boards on top of the joists because the ceiling below won't support your weight. Measure the amount of insulation present and determine its type—it's most likely mineral or rock wool, glass fiber or cellulose fiber. You can take a sample to your Extension office or building materials supplier if you are unsure. If there is already insulation up there and it's dry and evenly spread out, you can leave it alone and add more insulation on top if needed. You can put batt insulation over existing

loose-fill or vice versa. Just make sure that the new insulation doesn't have a vapor barrier, which would trap moisture inside the old insulation. (More on that later.)

If the existing insulation is or has been wet, find and correct the moisture problem. It could be a leaky roof, or it may be caused by too much air leaking up from your liv-

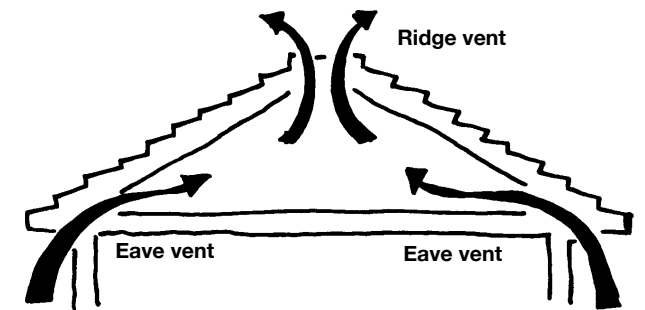


**IF YOU INSTALL ADDITIONAL INSULATION,  
IT SHOULD BE UNFACED—OR USE A KNIFE TO  
FREELY SLASH THE VAPOR-BARRIER TYPE.**

tion with a kraft paper or foil vapor barrier attached. Be sure to install this type of vapor barrier closest to your living space. If there is already insulation in your attic with no vapor barrier under it, you can paint your ceilings with vapor barrier paint—especially in high-moisture rooms such as kitchens and bathrooms. If some insulation already exists, it is important that new insulation not have a vapor barrier. Preferably, the new insulation should be unfaced—manufactured without a barrier attached. If unfaced insulation is not available, use the vapor-barrier type but remove the barrier or slash it free with a knife.

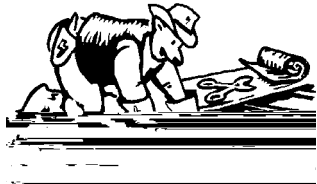
Check all wiring and electrical junction boxes to assure wiring is not exposed and boxes are covered. Many o-ylene plastic) on the attic floor before pouring in loose-fill

**5. Ensure Enough Ventilation.** Proper ventilation is another key to a successful attic insulation job. In order for your attic to breathe, ridding it of moisture in the winter and keeping it cooler in summer. If you install a vapor barrier, you need one square foot of free vent area for every 300 square feet of attic floor area. Without a vapor barrier, you need twice as much ventilation: one square foot of vent for every 150 square feet of floor.



**A COMBINATION OF RIDGE AND EAVE VENTS CREATES  
NATURAL CONVECTION CURRENTS, KEEPING YOUR ATTIC  
COOL AND MOISTURE-FREE.**

Vents should be located on opposite ends of the attic, with some near the top and others near the bottom to allow for good cross-ventilation. Talk with a contractor about which types of vents would be best for your attic.



### **6 Finally, the Insulation!**

Now you're ready to either roll out the batts or pour in the loose-fill. You

may want to use some of both, putting batts in the straight-always and loose fill in the nooks and crannies. Buy batts wide enough to just fit between the attic framing. First fill the joist spaces, and then roll out a second layer on top, perpendicular to the first. Be sure to place the batts as close together as possible.

If you opt for loose-fill insulation, pour it in and then level it with a rake or a board. If you plan to add loose-fill above the height of the joists, attach wooden sticks to the joists to serve as depth markers.

As you add insulation, it's important to not block any combustion air supply source or any ventilation openings, especially in the eaves. Ventilation chutes can be created during the insulation job to prevent vents from being blocked off. Also, keep insulation three inches away from recessed light fixtures, chimneys, fan motors and flues to reduce fire danger. Do this by surrounding the objects with a sheet metal barrier. Also, extend the barrier four inches above the finished insulation level. If you have a water heater, furnace or knob and tube wiring in your attic, consult a professional for information on insulating around these obstacles.

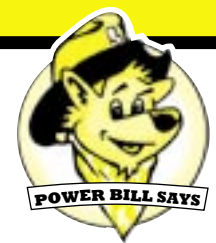
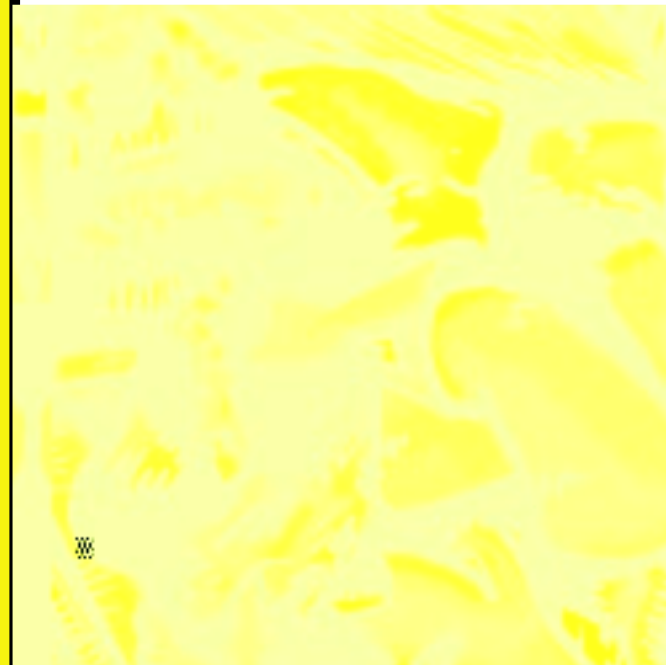
Whatever insulation type you choose, follow the manufacturer's directions carefully and don't unwrap the insulation until you get it up in the attic. Also, since you'll be spending time in a dusty space, wear a respirator dust mask, work gloves and protective clothing. It's a dirty job, but well worth the doing!

### **For More Information**

If you are on a limited income, you may qualify for a free attic/roof insulation job and other weatherization assistance. Contact your local utility and your local Human Resources Development Council for

more information on weatherization jobs in your area. Contact your local utility and your local Human Resources Development Council for

more information on weatherization jobs in your area.



**Put a lid on heating costs  
by installing  
ATTIC INSULATION**

**WAS**