

## ***Plug Air Leaks Before Insulating***

It is important to weatherize your home before adding insulation. Check for air leaks and block the leaks in these areas:

- Top openings of interior partition wall cavities: staple a plastic sheet over the opening and seal it around the edges with a high quality caulking material.
- Around the chimney: pack gaps around an insulated chimney with unfaced rock wool or unfaced fiber glass insulation. Do not insulate bare, hot flue pipes. **DO NOT USE COMBUSTIBLE PRODUCTS, SUCH AS CELLULOSE INSULATION OR PLASTIC FOAMS IN THIS AREA.**
- Around the attic trap door or entry door: weatherstrip the edges.
- Areas above staircase ceilings and dropped ceilings: staple a plastic sheet over the opening and seal it around the edges with a high quality caulking material.
- Around pipes (look under your sinks and behind your toilets) and ducts penetrating a wall or attic floor: pack insulation tightly into the gap. Fill area around them with spray polyurethane foam.

### **Insulation Priorities**

It is most important to:

- Insulate your attic, including the attic door, or hatch cover.
- Insulate under floors above unheated spaces, around walls in a heated basement or unventilated crawl space.
- Insulate exterior walls for new house construction. When remodeling or residing, consider using higher levels of insulation.

*Some community action agencies provide energy audits and funding for weatherization programs to qualifying applicants.*

*For more information, contact the federal Department of Energy.*

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**Be energy smart**

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## **INSULATION & WEATHERIZATION**

*More Insulation?*



South Dakota Public Utilities Commission

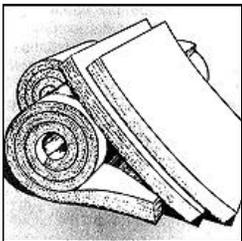
## How much insulation do you currently have?

First, measure the depth of the current insulation. Check the attic, walls and floors adjacent to an unheated space like a garage or basement. In these places, the ceiling joists or wall framing boards are often exposed, making it easy to measure the thickness of the insulation.

Next, measure the thickness of insulation in the interior walls. This can be done by shutting off the power, removing the cover to an outlet, then shining a flashlight into the crack around the outlet box. You may need to pull a small amount out to determine the type and thickness of material.

If there is less than 7 inches of fiber glass or rock wool insulation or less than 6 inches of cellulose, you could probably benefit by adding more insulation.

## What type of insulation should you buy?

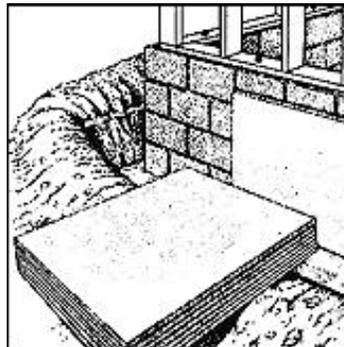


**BLANKETS**, in the form of batts or rolls, are flexible products made from mineral fibers. They are available in widths suited to standard spacings of wall studs and attic/floor joists. Continuous rolls can be trimmed to fit a space. They are available with or without vapor retarder facings. Batts with a special flame-resistant facing are available for basement walls where insulation will be left exposed.

**BLOWN-IN**, loose-fill insulation includes loose fibers or fiber pellets that are blown into building cavities or attics using special equipment. Another form includes fibers that are co-sprayed with an adhesive to make them resistant to settling. The blown-in material can provide additional resistance to air infiltration if the insulation is sufficiently dense.



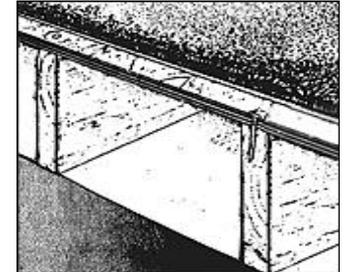
**FOAMED-IN-PLACE** polyurethane foam insulation can be applied by a professional applicator using special equipment to meter, mix, and spray into place. Polyurethane foam can also help to reduce air leaks.



**RIGID INSULATION** is made from fibrous materials or plastic foams and is pressed into board-like forms and molded into pipe coverings. These provide thermal and acoustical insulation, strength with low weight, and coverage with few heat loss paths. Such boards may be faced with a reflective foil that reduces heat flow when next to an air space.

## REFLECTIVE INSULATION SYSTEMS

are fabricated from aluminum foils with a variety of backings such as kraft paper, plastic film, polyethylene bubbles, or cardboard. The resistance to heat flow depends on the heat flow direction, and this type of insulation is most effective in reducing downward heat flow. Reflective systems are typically located between roof rafters, floor joists, or wall studs. If a single reflective surface is used alone and faces an open space, such as an attic, it is called a **RADIANT BARRIER**. Radiant barriers are sometimes used in buildings to reduce summer heat gain and winter heat loss. They are more effective in hot climates than in cool climates.



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