**Wall Insulation Strategies**

There are three ways to insulate the exterior walls of an existing home:

1. **Fill existing above-ground wall cavities with insulation.**

   - **Wooden Stud Walls:** These are the most exposed. If they are empty, however, additional insulation may be added. If they already have insulation in them, it may be too difficult or may not be cost-effective to add more. If they are empty, however, your house is a good candidate for wall insulation.

2. **Apply insulation to the exterior of the walls before re-framing.**

   - **Rigid Polystyrene Board:** This option is generally used for unfinished basement walls. The R-value of rigid polystyrene board has an R-value of 4.5 to 5.5 per inch.

3. **Add insulation to the interior surface of the walls and finish with sheetrock.**

   - **Glass-Fiber or Mineral Wool Loos-fill Insulation:** This option is generally used for unfinished basement walls. The R-value of loose-fill cellulose is about 3.7 per inch, and the R-value of insulation has an R-value of around 3.2 per inch; the material's thickness, and the higher the R-value, the better the insulating ability.

   - **Contact your local utility and your local Human Resources Development Council for details. This service is particularly valuable for wall insulation projects since it should be done by experienced contractors rather than do-it-yourselfers.**

   - **What to Expect:**

     Before insulating your above-ground, wooden stud walls, the contractor or weatherization crew will first inspect them to make sure the interior walls will support the pressure of adding insulation and are free of moisture damage. Once your walls are approved for insulation, weatherization crews can start preparations for adding insulation into the wall cavities using special blowing equipment. The work typically takes place outside, so it can't disrupt your living space and interior walls.

   - **Another Option:**

     - **Installing in the Attic:** If you own your home and live in a home that has attics that can be accessed and they are not insulated, consider having them insulated. It may be possible for a contractor to add loose-fill insulation down into the cavities from the attic or other opening. Cellulose or glass-fiber insulation works well in these cases. Again, it’s important to make sure the cavities are fully filled.

**Wall Variations**

Other types of walls require different insulating techniques. Below are some variations you may encounter:

- **Brick or Stone Walls:** Some of these wall types also have an open cavity within the wall. If yours does, it may be possible for a contractor to add loose-fill insulation down into the cavities from the attic or other opening. Cellulose or glass-fiber insulation works well in these cases. Again, it’s important to make sure the cavities are fully filled.

- **Solid Walls:** Brick or stone walls and walls made of poured concrete or concrete block contain no cavities. In these cases, a layer of insulation must be added to either the interior or exterior of the walls. On the inside, your options include putting up wooden studs and filling the cavities with fiberglass batts or installing rigid board insulation such as extruded or expanded polystyrene. Rigid board insulation can also be glued to existing wall surfaces.

Regardless of the route you choose, make sure the insulation is placed on the outside (on the cold side) of all pipes to prevent them from freezing. Then cover the insulation with a vapor barrier such as polyethylene plastic (unless the vapor barrier’s part of the insulation) before finishing the wall with sheetrock board or paneling. Rigid board insulation must be covered with a fire resistant material like half-inch sheetrock board.

If you want to put the insulation on the outdoor side of a concrete wall, rigid board insulations work well because they can be installed right over the concrete or existing siding and then covered with new siding or with stucco-like finish. Because rigid board insulations will not readily allow...
When insulating open side walls, be sure to place insulation between pipes and outside walls.

Adding insulation to solid walls is a difficult job no matter where the insulation is placed. It often involves readjusting door and window frames and extending electrical outlets and switches to accommodate the added insulation. It also requires careful attention to air-sealing and moisture control. These projects require the skills of a professional as well, and they may not be cost-effective unless you need new exterior siding or you’re considering an interior remodeling project that involves some wall modifications.

For More Information
To learn more about insulation in general, obtain a copy of Power Bill’s Home Insulation Choices brochure. Other brochures are available on insulating your attics and floors, controlling condensation and on other energy conservation topics. For additional information, contact your local utility, the Human Resources Development Council, the tribal weatherization office, or the MSU Extension office in your county.

For the HRDC or tribal weatherization office nearest you, call 1-800-332-2272.

2,000 copies of this public document were published at an estimated cost of 30¢ per copy, for a total of $600.

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Printed on Recycled Paper. July 2005 GM