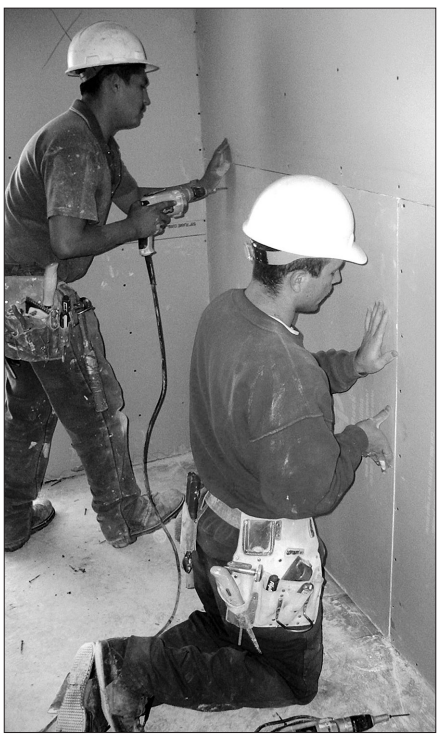
Soundproof Your Walls For Peace and Savings



Soundproofing board is installed on the outside walls of a room addition.
Photo courtesy of Quiet Solution

To ask a question, write to **James Dulley**, Energy Report, 6906 Royalgreen Dr., Cincinnati, Ohio 45244, or check his Web page, **www.dulley.com**.

Q: *Our house walls need more insulation for efficiency and better soundproofing. We also plan to add a bedroom. Will insulation make the existing rooms quieter and the new room more soundproof?*

A: Adding wall insulation can be expensive and above the skill level of most do-it-yourselfers. In older houses, particularly with masonry wall, there is little space inside the walls for more insulation. It may be worthwhile to spend more on insulation with the highest R-value per inch, which measures how well insulation resists transfer of heat.

Any insulation you add to save energy will help soundproof walls, but you need additional improvements for significant noise dampening because sound travels mostly through the wall studs.

For your room addition, carefully installing fiberglass batt insulation boosts your home's energy efficiency. The key word is "carefully" because fiberglass batts don't provide protection from gaps at the wall joists. You have to make sure spaces are caulked or spray foamed before insulating. Every crack and gap reduces overall efficiency of the new wall. It is hard to eliminate all of the air gaps in existing walls, but injecting foam insulation fills in spaces to eliminate leakage.

If your windows are old, installing new ones results in the greatest savings and outdoor noise blockage. The airtight quality helps, but most new windows also use heavy inert gases in the gap between the panes to further reduce sound.

Simply caulking and weatherstripping old windows can dramatically reduce noise and improve efficiency.

When planning a new bedroom, do some research regarding the sound transmission class (STC) rating for types of wall construction. A typical uninsulated interior wall with drywall on each side of 2-by-4 framing has an STC of about 34.

If there are common heating ducts and holes for electrical outlets and phone jacks, the STC of that interior wall may be only 25. Those openings can mean drafty rooms, so using an inexpensive outlet insulation kit is a way to improve efficiency. Adding insulation inside the wall increases the STC just a little. Normal conversation would still be easily heard. At the other extreme, with an STC of 66, yelling is barely audible in adjacent rooms.

The first step to interior-wall soundproofing is to seal gaps in the walls and at joints. It won't help efficiency much, but it does block vibrations that create sound.

What type of noise do you want to block? If it's normal sounds and voices, many standard soundproofing methods are effective. If you want to block deep bass vibrations from music or a home theater, a thicker wall is best. Create that by installing two layers of drywall or using high-density wallboard. If using drywall, nail the sheets tightly together or leave them slightly separated for decoupling.

Decoupling the two surfaces of a wall is critical to block sound transmission. That means drywall on one side is not attached to the same wall studs as the drywall on the adjacent wall. One way is to install a second layer of drywall over the existing one. Don't screw it into the wall studs or very tightly to the existing drywall so it stays decoupled. This increases wall thickness to block bass vibrations.

The following companies offer wall soundproofing products:

- Acoustic Sciences
  (800) 272-8823
  www.asc-soundproof.com
- Certainteed
  (800) 782-8777
  www.certainteed.com
- Homasote
  (800) 257-9491
  www.homasote.com
- Owens Corning
  (800) 438-7465
  www.owenscorning.com
- Serious Energy
  (800) 797-8159
  www.quietrock.com. ■