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Insulating wood frame walls

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Quick Facts

- Insulation that is to be added to wood-frame walls of a home that is already built is usually in the form of blown-in glass fiber or pressure-applied foam.
- Both types of insulation usually are installed by a contractor; therefore, it is wise to choose a reputable, experienced contractor to do the work.
- Once a contractor has been selected, the contract should be in writing and should be signed only when you are satisfied that it details everything you want done.
- The homeowner should agree on the desired R-value (insulating value) of the insulation to be installed before the job begins.
- Consumers have the responsibility to check to see that they are getting the R-value that they are paying for.
- Financing help is available from commercial banks, savings and loan associations, mutual savings banks, credit unions and other financial institutions.

Normally, the best way to insulate wood-frame walls is to install the insulation as the home is being built. However, in many cases homeowners or others may want to add insulation to an older home or increase the amount of insulation that is presently in the walls.

Insulating material of glass fiber usually is blown into the spaces in a wood-frame wall through holes drilled from the outside or the inside of the structure. An alternate procedure uses plastic foam to fill the stud spaces. This ureaformaldehyde foam is installed under slight pressure. After installation it hardens to form insulation. Quality of application to date has been very inconsistent. It is very important to choose a reputable, experienced contractor to do the insulation work.

Choosing a Contractor

If a person decides that a particular home improvement he or she wants to make should be done by a contractor, there are some things to know about finding the right contractor for the job. The large majority of contractors take pride in their business, are conscientious and honest. But some time and effort should be spent in selecting a qualified, reputable, reliable contractor, and once the choice is made, in clearly defining the job.

A person may begin looking for a contractor in the Yellow Pages under "Insulation Contractors—Cold and Heat." Don't be suspicious of the small operation, even just a carpenter and helper. Insulation is a fairly small project and often a small business can do an excellent job.

The local chapter of the National Association of Home Builders or Home Builders Association can be helpful in recommending contractors.

A person also can check with the local Better Business Bureau, Chamber of Commerce, consumer affairs agency, suppliers to contractors or local banks for recommendations. It is in a banker's interest to recommend someone who will do a good job if the bank is loaning the money to do the work. Also, local government offices for government funded or non-profit operated home improvement assistance centers may be able to assist you in selecting a contractor. They don't exist everywhere but the ones that do are usually interested in helping, and they usually maintain files on contractors that they recommend.

From these sources, you can establish a list of three or four contractors from which to select.

Ask each contractor for a list of past customers and check their satisfaction with the contractor's work. Then find out how long each contractor has been in business—in general, the longer the better. You may want to call the Better Business Bureau to ask if there have been any complaints against any of the contractors on the list.

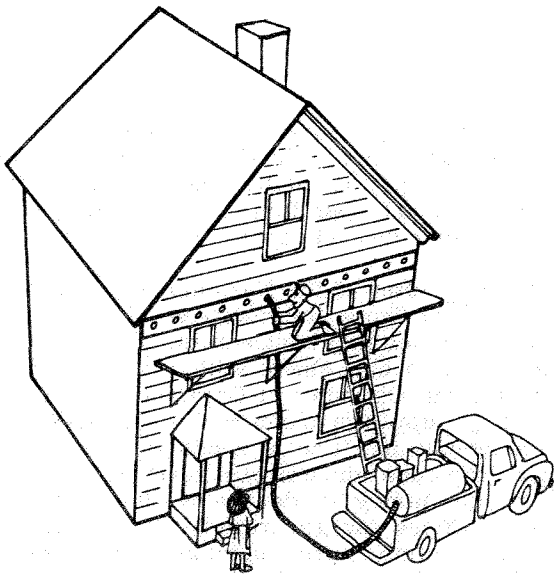
Then you should get a written bid from each contractor so you can make accurate comparisons. Both the price and what the contractor is offering should be compared; the lowest bid is not always the best.

Once you have selected a contractor, put it in writing. Have the contractor write up a specific contract for the job. Check the contract carefully for work content and warranty. The best way to do this is to make a list of all the things you feel should be done during the course of the job. Then check what you know should be included against what is in the contract.

The contract should be signed only when you are fully satisfied that it details everything you want done. Insisting on a detailed contract doesn't mean that you don't trust the contractor. But once you have a contract, each of you knows the limit of your responsibility before the job begins.

^{1/}Lloyd Walker, CSU research associate, agricultural engineering; fact sheet adapted from "In the Bank... or up the Chimney," U.S. Department of Housing and Urban Development (revised 3/1/79)

For more information about selecting a contractor, signing a work contract and working with a contractor, see Service in Action sheet 9.923, Home remodeling—doing the work.



What the Contractor Will Do

The contractor will measure the area that is to be insulated to determine how much material will be needed and to estimate the cost. To install the insulation, the contractor must be able to fill all the spaces in the wall. For each space, a hole must be drilled, usually in the outside wall, after removing the finished layer which usually is siding or shingles. This always amounts to a lot of holes, but once the job is complete, a good contractor will leave no traces behind.

If the house has a brick veneer on the exterior, the procedure is much the same, except that it may be cheaper to install the insulation from inside the house.

Once the holes in the wall have been made, the contractor then is ready to install the insulation. The insulation is inserted by blowing the insulating material under pressure through a large flexible hose into the wall spaces. Bags of insulating material are fed into a blowing machine that mixes the insulation with air and forces it through the hose into place.

If the contractor is using foam, it will be pumped into the wall spaces through a flexible hose with an applicator. With either method, each space will be completely filled and the siding replaced when the installation is completed.

Consumer Responsibility

Before any agreement is signed with the contractor, the homeowner should define what is being purchased

and make sure that it is spelled out in the contract. You should agree on what the R-value (insulating value) is to be with the contractor before the job begins. Next, check a bag of the type of insulation that will be used (there will be bags with mineral fiber or cellulosic fiber only).

On the bag, there will be a table which will indicate how many square feet of wall space that bag is meant to fill while giving your house the desired R-value. The information may be in different forms (number of bags per 1,000 square feet or number of square feet per bag), so you may have to do some simple division to use the number correctly.

Knowing this information and the area of the walls to be insulated, you should be able to figure out about how many bags should be installed to give the desired R-value.

There is no good way to check the quantity of foam that is to be applied, but the density of foam insulation is the single factor that can vary the most and have the greatest effect on the insulating value of the foam. How well the foam is installed also will have a bearing on the insulation qualities of the finished job.

The density of the foam mix can be checked by squirting some foam on a sheet of plastic, letting it harden and then cutting out and weighing a 4-inch (10-centimeter) cube. The foam mixture then can be regulated until a sample cube comes up to the desired weight. This weight usually is expressed in grams per 4-inch (10-cm) cube. A weight of 30 to 35 grams per cube will result in an R-value of about 11 for a standard 4-inch (10-cm) exterior wall. Denser foam will provide better R-value: 50 grams per 4-inch (10-cm) cube should result in an R-value of around 18.

The R-value of the insulation to be installed should be agreed upon between you and the contractor before the job is begun. While the job is in progress be sure the correct amount is being installed. There is nothing wrong with having the contractor save empty bags so you can count them—four or five bags, more or less, than the amount you agreed on is an acceptable difference from the estimate.

Consumers have the responsibility to check to see that they are getting the R-value they are paying for.

Getting Financing

If a homeowner decides not to pay for an energy fix-up program out of savings, and a better interest rate is desired than either a loan on a credit card or refinancing the present mortgage will give, a loan with a commercial bank, savings and loan, mutual savings bank or credit union may be a better arrangement.

For more information on financing a home improvement or remodeling project, see Service in Action sheet 9.924, Home remodeling—financial and business considerations.

For more information on door-to-door sales, see Service in Action sheets 9.117 and 9.118.