

Use of Insulation Helps To Make Better Homes

Wide Range of Insulation Materials Available. Supply Warmth, Comfort, Decoration to the Home or Other Building. Some Technical Details in Regard to Insulation.

(From The Canada Lumberman)

There are several types of insulation in use, and the selection of the proper one to meet the requirements of each individual job often creates some perplexity. The various types may be confined to six or seven classes, among them being air spaces, wall fillers, insulating wall board, semi-rigid insulating lumber, insulating blocks and insulating quilts or blankets. Many retail lumber dealers carry a representative stock, and while they may recommend a certain type, they allow the builder or home owner to make the final personal choice.

Now that the spring season is on, quite a number of firms have featured insulation materials. Displays are made showing the effect of insulation on the modern house, in order that the people may be impressed with the one thought of home insulation. Local newspapers have also been used to acquaint the trade with the advantages of the various materials. All dealers feel that as soon as the people appreciate the value of insulation in buildings, particularly in a climate as varied in character as Canada's, they will be only too anxious to have their homes insulated, realizing that the outlay, which on the average home runs from \$50 up to \$150, is a paying investment. Thick insulation, say up to 4 inches, between the ceiling and the roof is most generally favored as being the least expensive and most satisfactory in the long run.

Regarded as Investment

Various firms in advertising have used the phrase "Remember you pay for insulation whether you use it or not." Most dealers advise the customer in building a new house to insulate thoroughly both walls and attic, and point out that this is not really an added cost, but an investment which pays big dividends. Of course, the central argument is, and always will be, that the insulated home is more

comfortable both in winter and summer, and it is generally the opinion that if people become more educated to the use of insulation, it is bound to go forward each year, and that no barrier can check its ever-increasing sale and appreciation.

Another dealer reports that he thinks more attention should be directed to this subject among the farmers. He says that he is stressing insulation in all classes of building, and affirms that in due time its worth will be recognized in every branch of construction.

Air Spaces

Air spaces are probably the oldest and best known means of preventing loss of heat through walls. The most efficient heat insulator is undoubtedly a vacuum but practical constructional difficulties render it impractical of use for houses. Second in efficiency is a gas, such as air in a completely still state, but it must not be supposed that the air in a simple air space, as for example, between two walls, is in such a condition. In a hollow house wall the air next the warm inside becomes heated and rises to the top of the air space, finally imparting most of its heat to the cold outer wall, and sinks again. The cycle of movement, termed convection currents, which is set up by the difference in temperature of the walls, destroys much of the insulating value credited to still air. It is true, of course, that air spaces prevent heat loss by conduction, but to obtain maximum insulation they must be confined, vertically at least, at one-foot intervals.

In balloon frame construction air spaces are best broken up by nailing in filler blocks at frequent intervals which provide at the same time a valuable fire stop.

Wall Fillers

The function of wall fillers is first to subdivide the air space into cells so minute that convection, though not entirely prevented, ceases to be impor-

tant, and second, to prevent heat loss by direct radiation.

As the name implies, these materials are used for filling air spaces in walls, roofs and floors. Light, porous materials are best because of the great number of contained air cells, preference being accorded to those odorless substances most immune to moisture, vermin, decay, settling and fire.

Wall fillers of vegetable origin in common use include planer shavings, granulated cork and eel grass. Other materials of a similar nature, either used to a small extent or proposed are moss, peat, charcoal, cellular or expanded rubber, kapok, lyxhayr waste fibre from the eucalyptus tree, cottonseed hulls and sawdust.

Wall fillers of mineral origin most generally used as mineral wool, a gypsum powder impregnated with chemicals which on mixture with water produces a porous honey-combed mass, heat treated vermiculite (an altered mica which exfoliates and expands to 15 times its original volume on heating) asbestos fibre and slag. Other mineral fillers include pumice, diatomaceous earth, magnesia, coke dust and sand.

Some of these materials, such as kapok, lyxhayr and charcoal, are not much used for insulation because of their extreme inflammability and others such as sawdust and cottonseed hulls settle very rapidly and are subject to destruction by fire and decay.

In using granulated cork, planer shavings are sometimes added to reduce the cost. If planer shavings are used alone as a wall filler, they should be mixed with air slaked lime in the proportions of one pound of lime to ten pounds of shavings to exclude vermin and decay. Shavings are also sometimes treated with creosote to preserve them. Eel grass, cork and the mineral fillers do not require treatment with preservatives.

Balloon Frame Structures

In balloon frame structures the usual wood or wall board sheathing forms a containing wall on the outside of the studs for wall fillers. On the inside various materials, such as wood sheathing, wall boards or expanded metal lath are usually applied to the studs for an enclosing medium. The wall fillers are either poured or packed tightly into the space provided, which may be enlarged by using 6-inch studs if a greater thickness of insulation is deemed necessary.

In hollow brick or monolithic con-

crete structures, wall fillers are similarly used to fill the air spaces. They are also frequently utilized to advantage in the hollow spaces of concrete and cinder block or hollow tile walls.

Wall fillers are also applicable for insulating the upper part of a house. If the attic is to be used for living quarters, sheathing or wall board is first nailed to the under side of the rafters and the resultant space is packed with a wall filler, otherwise the insulating material is placed between the joists in the upper floor. Wall fillers are also packed between the joists or lower floors to provide warmth and sound deadening.

The most important point to bear in mind, when insulating with wall fillers, is that a certain amount of settlement is bound to occur, leaving a space uninsulated. To provide for this contingency a removable cover should be provided at the top of the air space to facilitate refilling operations. It is also essential that the materials used as a filler are odorless, do not decay or harbor vermin.

This type of insulator, which has been aptly designated man-made lumber, is produced from material of vegetable origin, such as wood pulp, waste wood, sawdust, planer shavings, coarse pulp screenings and bagasse (sugar cane waste).

The usual method of manufacture comprises the complete disintegration of the raw material in disintegrators, the elimination of juices and resins in digesters and finally the production of a compact board by felting the fibres on a screen or subjecting them to hydraulic pressure. In some cases the fibres are chemically treated to resist vermin and moisture prior to the felting or moulding process.

Insulating lumbars are said to possess many of the characteristics of ordinary lumber. They may be sawed and nailed and possess considerable structural strength, which is increased by the large size of the manufactured sheets. Manufacturers claim that these boards do not warp or crack, and possess from three to four times the insulating value of wood.

Insulating Lumbars

When properly sized they take stains, paints and wallpaper and provide an excellent appearance when panelled with baten strips. Hence they are much in demand as both an interior and exterior finish. In balloon frame structures they are frequently applied

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a message

TO PEOPLE PLANNING TO BUILD

Your first consideration, when you decide to build is to engage the services of a reliable contractor. A consultation with D. Martin before you plan your building will no doubt prove to your advantage, and save you much time and expense

Dave Martin is well acquainted with builders in the North Country, having planned some of the larger most recent structures in Timmins. With this wide experience as a contractor, he is fully qualified to handle your plans for building, regardless of how large they may be.

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