

Increase Energy Efficiency During Heating Season

Fiber Glass Insulation Is an Easy Way to Improve Thermal Performance

As a northern country with notoriously long, cold winters, Canada has very high per capita energy consumption when compared to many other countries. Commercial buildings, according to the National Research Council of Canada, account for more than 30 percent of Canada's national energy consumption. Heating a large building can really burn up energy.

A COMMON SOURCE OF ENERGY DRAIN

This excessive energy consumption can often be traced to inefficiencies in the thermal control strategy of the building envelope that permit the leakage of heated interior air to the cold exterior. The seasonal flow of heat into and out of a building is a prime factor in determining its comfort level and operating cost. Heat has a natural tendency to flow from an area of high temperature to one of lower temperature, and the greater the temperature difference, the more the heat flows through a wall assembly. For example, in the winter months, thermally inefficient buildings are likely to lose heat to their colder exteriors.

With continuously rising fuel costs and growing support for environmental conservation, many building owners are working to reduce energy consumption by making their buildings more energy efficient.

INCREASING ENERGY EFFICIENCY WITH THERMAL INSULATION

One of the best ways to do this is to impede natural heat flow and air leakage through walls by placing obstacles in their paths. These obstacles, collectively known as insulation, increase a building's energy efficiency by maintaining the desired temperature of enclosed spaces to minimize heat transfer.

The thermal performance of insulation materials is rated in terms of their resistance to heat flow. Material performance can be rated according to thermal conductivity (k), thermal conductance (C) and thermal resistance (R-Value). When measuring the thermal properties of building materials, the standard is ASTM C518, where a heat flow apparatus measures heat transfer through homogeneous materials, such as insulation. Several material properties, including thermal resistance, conductance and conductivity, can be determined from temperature, heat flux, area and thickness data.

Fiber glass batt and roll insulation has long been the most common and practical insulation choice for commercial applications.

FIBER GLASS INSULATION

Fiber glass batt and roll insulation has long been the most common and practical insulation choice for commercial applications, as it has a lower installed price than many other types of insulating materials. For equivalent thermal resistance, it is generally the lowest cost option when compared to cellulose or sprayed polyurethane foam (SPF) insulation systems. It also has a high level of recycled content, is very moisture resistant,

FEATURED PRODUCTS

Fiber glass batt and roll insulation

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Fiber glass batts are available in R-Values ranging from R-8 to R-40.

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With more than 20 years experience in construction and construction products manufacturing, Lucas Hamilton's background includes research and development for construction materials as well as building performance computer simulations.



Application of [fiber glass batts](#) in an attic.

is noncombustible and provides superior sound absorption. It is rare to find any one insulation material that performs well in all these areas.

Available in pre-made R-Values ranging from R-8 to R-40, fiber glass insulation offers thermal design flexibility for the architect. By adding fiber glass insulation in certain sections of a building, overall thermal efficiency is increased and areas with lower thermal values, such as windows and doors, are compensated for. Fiber glass insulation is also available in a wide range of R-Values, giving architects more options for meeting provincial and national energy code requirements. And since it is inert and does not settle, properly installed fiber glass insulation maintains its R-Value over a long period of time.

MORE FIBER GLASS INSULATION = HIGHER ENERGY EFFICIENCY

A well-insulated building is a thermally efficient building, and when used with appropriately sized heating systems and air barriers, insulation is a strong factor in improving overall energy efficiency. It minimizes the loss of valuable heat during the winter season, which in turn reduces utility costs for building owners, conserves non-renewable fuel sources used in heating, lowers greenhouse gas emissions and provides greater occupant comfort. These are just a few of the many contributions extra insulation can make in retrofit projects to create a significantly more sustainable structure.

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