

Chapter 1: Attic Insulation

A joint effort of the Alberta Real Estate Association, the Alberta Real Estate Foundation and the Pembina Institute.



Alberta REALTORS® Advocates for Residential Energy Efficiency

About our project

Homeowners in Alberta are becoming more conscious of the value of energy efficiency, and because of this, buyers and sellers alike are adding home efficiency upgrades to their “must have” or “to do” list.

With funding from the Alberta Real Estate Foundation, AREA, in partnership with the Pembina Institute, has embarked on a mission to empower Alberta’s REALTORS® by providing information that will enhance client relationships and enable REALTORS® to act as a catalyst in Alberta’s energy transition.

REALTORS® have a unique opportunity to add value to their services by educating their clients on the current efficiency features of a property and assisting their clients in identifying efficiency opportunities that may contribute to a properties comfort and future-value. This series of tools and resources are designed to help REALTORS® identify these cost effective efficiency upgrades that can improve their client’s home value and comfort, and decrease its environment impact at the same time.



Attic Insulation

As Albertans, we know our winters can get chilly. Colder climates like ours can lead to drafty homes, higher than usual expected utility bills, and increased greenhouse gas emissions. In each of these situations, the attic is an area where some of the smallest improvements can lead to the largest homeowner savings opportunities. Upgrading the insulation in the attic is an inexpensive, but highly efficient way to combat the effects of winter on a home, and on its homeowners.

Common symptoms that a home may need upgraded attic insulation are cold or drafty rooms, high heating or cooling bills, and uneven temperature between rooms. Even without these symptoms, homeowners can simply check the state of their own attic insulation by following a few easy steps, at no cost.

Types of Insulation

Fibreglass

Fibreglass is primarily composed of glass, is used in a wide variety of applications, and is predominantly employed as a residential and commercial thermal insulator. Fiberglass can also be used to create a wide variety of products as such as automobile bodies, boat hulls, arrows, roofing, shower curtains, and tent poles. As an insulator, it slows the transfer

What is an “R” Value?

An insulating material's resistance to conductive heat flow is measured or rated in terms of its thermal resistance or R-value - the higher the R-value, the greater the insulating effectiveness. The R-value depends on the type of insulation, its thickness, and its density.

To find the R-value of the existing insulation in your attic, multiply the number of inches of insulation by the R-value for your chosen insulation type. In Alberta, Ideal R-Values range from R49-R60, which is between 14” and 25” depending on your insulation type.

from hot to cold, as well as sound in structures, cars and aircraft. By trapping pockets of air, it keeps rooms warm in the winter and cool in the summer, and thereby serves as a convenient method to increase energy efficiency. Fiberglass is an attractive choice for home insulation because it poses little to no hazard to residents.

Cellulose

Cellulose is a plant-based insulator and is the oldest form of home insulation. At different times, it has been produced from sawdust, cotton, straw, hemp, and other plant materials with low thermal conductivity. Today, it is produced from recycled newspapers that are treated with chemicals that reduce its likelihood to ignite. Cellulose became popular in the 1970s due to the oil crisis, although it faced competition from fiberglass insulation as a result of fire-standards lobbying efforts by the fiberglass and mineral companies. Cellulose is inexpensive and significantly reduces the airflow throughout a home.



Do it yourself fibreglass insulation installation

Vermiculite

Vermiculite is a mica-like mineral mined around the world and used in a variety of commercial and consumer products; including attic insulation in homes, because it is fire-resistant and has good insulation qualities.

Some vermiculite produced before 1990 may contain asbestos fibres. To be safe and in the absence of evidence to the contrary, it is reasonable to assume that if your building has older vermiculite-based insulation, it may contain some asbestos.

Although the amount of asbestos in bulk vermiculite can be very low, the airborne risks can increase if the material is disturbed. Asbestos poses health risks only when fibres are present in the air that people breathe. If you suspect your client has vermiculite insulation in their home, direct them to this Health Canada website for more information.

Identifying Efficiency Opportunities

Buying or Selling? Make sure that the home is optimized for comfort, savings, and environmental impact. To do so, Keep an eye on:

- **Constant Fluctuation in Indoor Temperatures**
If the indoor temperature of the home is constantly changing, that's a sure sign that your crawl space and attic insulation may need to be replaced. Oftentimes, this is due to insulation that has shifted in the attic areas and is allowing cold air or heat

into the home, sabotaging the heating and cooling system's attempts at regulating the indoor temperature. Simply adding additional insulation can sometimes solve the issue. However, in many cases, replacement is required.

- **High Energy Bills**

High energy bills are a symptom of poor attic or crawl space insulation. Inadequate or a complete lack of insulation in the attic and crawl space areas causes the outdoor weather temperatures to sneak into the home. In summer, the air conditioner must work twice as hard. In winter, the heater must clock overtime hours to keep the home at a comfortable temperature. In both of these cases, energy costs rise dramatically.

- **Indoor Drafts**

There are occasions where, especially in the case of attic insulation, a poor insulation job can allow drafts to enter the home. When there isn't enough blockage between the outside air and the inside atmosphere, cold drafts can infiltrate the house. If you notice that there are drafts, even after you've closed all of the doors and windows, it's a good time to check out your crawl space or attic insulation.

- **Wet or Damp Insulation**

If the insulation become moist, damp, or sopping wet, there is no salvaging the material. It must be replaced. Blocked vents, a leaky roof, a basement flood, or the absence of vapor barriers can cause crawl space or attic insulation to get wet. Not only can wet insulation grow mold that releases dangerous mycotoxins into the air, but the moisture causes the insulation to become ineffective. The tiny air pockets that are instrumental in trapping the air and maintaining the temperature are plugged with water, rendering the insulation useless.

This Information on attic insulation is the first part of a series of energy efficiency educational tools for Alberta's REALTORS® and their clients. Look for more guides in the near future.

If your clients are interested in a full home energy audit, visit Natural Resources Canada for a list of licensed energy advisors in their area.

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