

COLUMN FOR MARCH 2, 2016

HEADLINE: INSULATION; BATTS VS BLOWN

A reader wrote recently asking about improving the insulation in his attic. Most Canadian homes use two main kinds of insulation in walls and ceilings; loose fill or blown, as it's also called, and batt or roll insulation. There are benefits to spray foam. If closed cell is used it also becomes the air barrier and for difficult areas or cathedral ceilings it's hard to compare with conventional insulation. While spray foam insulation is making serious inroads in certain applications, it remains expensive in comparison to insulation batts or loose fill.

Blown cellulose is produced from recycled paper and borates. Borates are fire retardant and are comprised of two chemicals, borax and boric acid. These common chemicals are often found in soap and cosmetics. Cellulose, which comes packaged in large bags, is a loose fill insulation. It can be hand poured or installed by blowing into attics and wall cavities. The blown application for attics is the most common, as it allows for better consistency and more even coverage. Cellulose forms itself to the cavity. If installed correctly, this generally eliminates any voids or air pockets. It can also be blown into walls using a water based suspension agent that dissipates after installation. The latter requires a professional installer.

Fibreglass, made from sand, boron and recycled glass materials, is available in either loose fill or batt form. Since the batt form is cheaper than blown, most new homebuilders install it in the wall framework. The largest issue with batts is that they are meant to be installed as an evenly placed, friction fit. If they do not fill the cavity properly or the installer shoves them in with limited care, heat loss and, in some cases, entrapment of moisture can become an issue. Blown installations have pretty much taken over in attics. Both types are fire retardant and will not rot or decay. When sprayed in, fibreglass does not settle like cellulose.

Fibreglass gets its insulation value from the dead air space it traps, whereas cellulose gets its thermal value from the density of the product. This speaks to why we recommend cellulose in an older home. As a general rule, blown insulation of either kind does a better job of insulating around wiring and plumbing vents in an attic than does batts or roll insulation.

With batt insulation, my bias leads me to recommend a brand called "Roxul." Manufactured from basalt rock and recycled slag, it is a very stable batt insulation. The Roxul company makes two popular products. The first, Comfort Batt, is for exterior walls and the other, Safe'n'Sound, for interior walls. From my experience, this fire resistant, water repellent insulation cuts very easily and holds its shape better than fibreglass. As well, unlike fibreglass, which can settle over time, Roxul has limited settlement activity.

There are a number of natural fibre insulations available. Unfortunately, they are often limited by region and, in some instances, by cost. The first is cotton insulation, which contains 85% recycled cotton and 15% recycled plastic fibres, making it one of the few

truly reclaimed/recycled insulation products on the market today. Recycled blue jean material is used by one company. It is non-toxic for those with allergies and is treated with the same fire retardant and insect repellent as cellulose. The catch is that this insulation can cost over 20% more at retail, compared to other batt insulation. Sheep's wool insulation and some straw panels are manufactured in small quantities in some regions, mainly in the US.

I suggest that anyone who is planning to add insulation, get three quotes from reputable insulation contractors. Take the time to study the quotes and pay special attention to the square footage area being insulated and the number of bags or batts to be installed. Ask the installer to insure the original insulation is fitted tight in the cavity. Unscrupulous installers can install some insulation at a lower density by adding air, thus allowing water to collect. Improper drying can cause a list of problems to the home. The new insulation can be installed right over most existing material. An exception would be in the case where your attic contains vermiculite insulation. Vermiculite may have asbestos within its content and is generally removed before any newer insulation is added. If this material is found, your installer should get it tested for content before proceeding.

I often get asked which insulation has the highest insulation value or "R" value, as it is known. The commonly accepted rule of thumb for a foot of insulation is around R40. In actual fact, a foot of cellulose, correctly installed, is closer to R45. Twelve inches of fiberglass, either in blown or batt material, correctly installed, is closer to R46. Comparative Roxul insulation batts, by thickness, are very similar in R value.

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