

# FONTENOT CONTRACTING COMPANY

## **INSULATION**

Investing in properly insulating one's home can result in reductions in monthly heating and cooling bills by ten to thirty percent. Foam insulation, batt insulation, and blown-in insulation are three types of insulation we recommend having installed and explain each below. They are also broken up into different material types:

- Foam Insulation
  - Icynene
- Batt Insulation
- Blown In Insulation
  - Cellulose
  - Fiberglass

### **Foam Insulation**

#### Icynene

Icynene is a type of foam insulation that utilizes a mixture of carbon dioxide and water. The water is used in its application instead of ozone depleting chemicals that are used with other insulation types. It has an R-value of 3.6 per inch. This is a lower insulation rating than that of other foam insulations but it also does not use hydrochloro-fluorocarbons that are detrimental to the environment and found in other insulations. Additionally, it does not shrink, sag or settle. Another advantage to icynene is that it has a relatively low flammability.

#### **Foam Insulation Pros and Cons List**

<b>PROS</b>	<b>CONS</b>
Can fill wall cavities in finished walls without tearing the walls apart (as required with batts)	The cost can be high compared to traditional insulation.
Provides acoustical insulation (like loose-fill, but superior)	Most of all, with the exception of cementitious foams, release toxic fumes when they burn
Blocks airflow by expanding and sealing off leaks, gaps and penetrations.	Depending on usage and building codes, most foams require protection with a thermal barrier such as drywall on the interior of a house. For example a 15-minute fire rating may be required.

Can serve as a vapor barrier with a better permeability rating than plastic sheeting vapor barriers and consequently reduce the build up of moisture, which can cause mold growth.	Most foams require protection from sunlight and solvents.
Expands while curing, filling bypasses, and providing excellent resistance to air infiltration (unlike batts and blankets, which can leave bypasses and air pockets, and superior to some types of loose-fill. Wet-spray cellulose is comparable.).	It is difficult to retrofit some foams to an existing building structure because of the chemicals and processes involved.
Increases structural stability (unlike loose-fill, similar to wet-spray cellulose).	

## **Batt Insulation**

Batt is precut flexible insulation that is made from mineral fibers. It is available with a flame-resistant facing in various widths for basement walls where the insulation is to be left exposed.

<b>PROS</b>	<b>CONS</b>
Batts offer an advantage in R value (resistance to heat flow) in comparison to that of blown-in fiberglass. R-value is usually 3.1 to 4.2 (blown in- 2.3 to 2.8)	Can leave holes and gaps where air can circulate or where condensation can occur, therefore reducing the R-value.
Fire resistant	More difficult process to install than other types of insulation, especially in irregular spaces (around electrical outlets, etc)- may result in less effective heat performance
Faced batts can insulate and open stud wall	Will not settle over time if properly installed
Economical and well-known product	
Provides a dependable thickness of uniform density	

## **Blown-In Insulation**

Blown-in insulation includes cellulose and fiberglass. This type of insulation can be used in wall cavities, unfinished attic floors, in irregularly shaped spaces, and for filling in obstructions. In the open wall cavities of a residence, cellulose and fiberglass fibers can also be sprayed after mixing the fibers with an adhesive or foam to make them resistant to settling.

### Cellulose

Cellulose is one of the best examples of recycled material use in insulation. It is typically composed of about eighty percent recycled newspapers by weight and the rest is made of fire resistant chemicals and occasionally acrylic binders. A potential disadvantage with cellulose insulation is loss of the fire resistant chemicals. Since borates are water soluble, they can filter out if the insulation gets wet. Cellulose is denser and more resistant to air flow than fiberglass.

-Dense-packed cellulose is very resistant to air infiltration and can be installed into an open wall cavity using nets or temporary frames, or it can be retrofitted into finished walls. Additionally, as with batts and blankets, warm, moist air will still pass through, unless there is a continuous near-perfect vapor barrier.

-As with all other sprayed or blown insulations, it can be installed into wall cavities through a series of small holes drilled in the wall, resulting in minimal disturbance during the construction process.

-Loose-fill cellulose usually costs 25 percent less than fiberglass, though installation may cost more. Wet-spray or dense-pack installations usually costs more than fiberglass.

### Fiberglass

Fiberglass is a soft wool-like insulation material that is typically pink, yellow or white. It was originally used as a safe substitute for asbestos. However, there are some health problems associated with fiberglass, namely that it can cause skin allergies.

-Does not absorb very much water, though will lose effective when moist

-From an environmental perspective- the largest fiberglass insulation manufacturers use at least 20 percent recycled glass in their insulation materials to fulfill the US Environmental Protection Agency's recycled-content guidelines

-Cellulose retains its insulating value no matter what the temperature is. Fiberglass, on the other hand, has proven to lose some of its insulating value as the temperature drops.

### **Blown-In Insulation Pros and Cons List:**

<b>PROS</b>	<b>CONS</b>
Blow-in insulation can fit anywhere, even inside wall gaps of only a couple of inches.	Doesn't seal bypasses as well as closed-cell foams do, though wet-spray applications come close
It is less messy than a foam spray.	Will settle over time, losing some of its effectiveness. Dry-spray (but not wet-spray) cellulose can settle 20% of its original volume. However, the expected

	settling is included in the stated R-Value. T
Fire resistant (Cellulose insulation has a chemical added as a fire retardant.)	May absorb moisture
Blown insulation is excellent for enclosed cavities, such as walls or for unenclosed spaces, such as attics. It also disturbs any existing finishes very little, since it can be blown into small spaces.	R-values stated on packaging are based on laboratory conditions; air infiltration can significantly reduce effectiveness, particularly for fiberglass loose fill. Cellulose inhibits convection more effectively.
Will not only add significantly to the R value but also will provide some noise reduction.	