

Why Insulate With Foam?

Why insulate with foam insulation? It's a good question, in these days of soaring energy costs and uncertain supplies, there is an obvious answer. We believe you should harness the insulating power of foam insulation for use in your home. Not only is it a wise decision, but it is also practical to accomplish with a 21st Century state-of-the-art product called **Spray Foam Insulation**. You already know how effective foam insulates some common products that we use on a regular basis:

The Foam Coffee Cup...



...Just 1/8" of Foam with an R-value of Less Than One.

Go to your favorite fast food restaurant or 7-11 store and buy a cup of coffee. Hold the foam cup in one hand and pour yourself a cup of steaming hot coffee with the other hand. Go ahead...you won't burn your hand. The foam cup will only be warm to the touch. In fact, if the foam was a bit thicker, it is doubtful you would feel whether the coffee was hot or cold. Only the steam would give it away. In this example, we think you'll agree that just 1/8" of foam is a pretty effective insulator.

The Foam Picnic Chest...



...Just 1/2" of Foam With an R-value of Only About Two.

This is the classic example of the insulating power of foam and a great illustration of the importance of air sealing the area you want to heat or cool. Consider your experience with a foam picnic chest. You can learn a great deal about insulating your house from it's performance. You buy one at a local store for a couple of dollars and you entrust it to keep your beverages cold for the weekend. Put in the drinks and a bag of ice on Saturday morning, and put the lid down tight, and it's likely that you'll still have ice left on Sunday night. (Whether or not there are drinks left is another question!) You have just proven the insulating power of about a half inch of foam with a relatively low R-value (resistance to heat flow) of only about an R-2. (Frankly, if your house was as efficient as this foam picnic chest, you'd be ecstatic!)

HERE'S AN AGE OLD RIDDLE ABOUT INSULATION.

Q. Which is More Important... Obtaining a Higher R-Value or Stopping Air Infiltration?

This is an extremely important question. Let's say, for example, that you put the sodas and ice in the foam picnic chest above, but didn't put the lid down tight. The ice would only last a few hours at best, and your drinks would probably be lukewarm (or hot) by mid-day on Saturday. What happened? The R-value didn't change...it's still an R-2! So why did the ice melt? **Because you allowed air to leak into the picnic chest!**

What should we learn from this example? The efficiency of the picnic chest does depend on the insulating power of the foam (its R-value), but its insulating ability is somewhat irrelevant if you don't also control air infiltration

The answer to the riddle, in our example, is that **CONTROLLING AIR INFILTRATION HAD MORE TO DO WITH KEEPING THE DRINKS COLD THAN THE R-VALUE DID!**

What does all this have to do with your new home? We think the same is true for your home and we believe that your experience with a foam picnic chest is the most convincing argument that you should insulate your new home with foam.

Why? Because foam not only insulates extremely well, but it will also stop air infiltration far better than fiberglass products.

OK! OK! You've Convinced Us To Insulate at the Same Time. So Tell Us More About Spray Foam Insulation

Now that you are gaining an appreciation for the benefits of foam, let's see how applying it in your home can make it so much more efficient? You've just seen how well 1/8" of foam insulates. And you've seen a dramatic example of how well 1/2" of foam can both insulate and airseal. **Here's the good news, in your home, we propose foam from seven to eleven times thicker than the foam in a picnic chest.** Imagine the efficiency you can achieve with that much foam, both to insulate *and* to prevent excess air infiltration. The result? A home that will be more comfortable and efficient and affordable to operate. A home well prepared to cope with the energy uncertainties we are certain to face in the years to come.

The following are some of the questions we've been asked about Spray Foam Insulation

What Is Soft Open Cell Spray Foam?

Open Cell Foam is an insulation and air sealing system that is ideal for residential applications. An application of **Spray Foam** combines both a material and a service. The material is a lightweight foam compound called polyurethane. The service is custom installation in each stud cavity or rafter cavity of a building directly on the construction site by trained installers. **Spray Foam Insulation** is much more than just another insulation by virtue of its low permeability to air infiltration, its adhesion to other building materials and its flexibility. It provides good air leakage control, moisture control and sound control; as well as great insulator. All these qualities in a single application.

Does Spray Foam Insulation Have Building Code Approvals?

Yes! **Spray Foam** has approval of all four major building codes in the United States and the Canadian building code. In fact, it is one of the most extensively tested insulation products ever. Concern in the 1970's over the excessive off-gassing of an early foam product called urea formaldehyde, and related concerns in subsequent years over the health effects of other insulating products, specifically asbestos and fiberglass, have resulted in some of the most thorough and sensitive emissions testing of a new building product to date. Based upon the results of this stringent testing, **Spray Foam** meets the requirements of the building codes and subsequent re-certifications as required on a periodic basis.

What Are The Advantages Of Foam?

The major advantage of **Spray Foam** is that it does more than just insulate. It also windproofs wall and ceiling cavities from air movement, with a 3 1/2" sample of foam proving to be about 24 times less permeable to air infiltration than a similar thickness of fiberglass batt. In addition, the insulating power of **Spray Foam** is not diminished by lower temperatures or by air movement. Its R-value consistently performs as stated. By contrast, some building experts state that an R-13 fiberglass batt in the presence of a 10 mile per hour breeze (the real world) diminishes the insulating power of a batt to an R-5! Hardly the kind of protection from heat and cold you were hoping to arrange for your family.

What Is Spray Foam Insulation Made Of?

Spray Foam is an organic material developed from products of the petrochemical industry. It is a two component system that is sprayed like paint. The chemical constituents are similar to those used in the manufacturing of many products already in your home, such as upholstery foam and the foam used for pillows and mattresses---although the properties of the foam are different.

Spray Foam is an environmentally friendly urethane in which the ozone-robbing CFC's have been replaced with air and water.

How Long Does It Take To Cure?

The foam is created within seconds after spraying. You can watch it expand within seconds to 120 times its original volume, literally before your eyes. It completely cures within a few minutes.

Does Open Cell Foam Absorb Water?

No! Although it looks like a sponge it is actually hydrophobic (i.e. it repels water). If placed in water it will float, and on removal, it will dry rapidly with no loss of

insulating properties. If you ever have a roof leak or plumbing leak in your home which would soak the insulation, the water will ultimately settle out of **Spray Foam Insulation** and it will not damage the foam. *We can't say the same for other insulations. Water breaks down the glue in a fiberglass batt so the batt is destroyed and loses its effectiveness. Water also turns cellulose (ground newspaper) to mush and it dries out VERY slowly (have you ever tried to dry out a wet newspaper?). The cellulose settles into a lump leaving a large un-insulated cavity in the wall. Of course, if it remains wet long enough, it can cause wood to rot and foster mold or mildew growth within your walls.*

Does Open Cell Foam Entrap Water?

No. As stated above, **Spray Foam** is an open cell foam which is ideal for architectural purposes. The foam breathes slowly, and any moisture in the building's concrete or lumber can escape through the foam as the building dries out, thus eliminating any risk of lumber rot or mildew usually associated with materials that trap moisture.

How Long Does Spray Foam Last? Does It Change Physically?

Aging is not an issue with **Spray Foam**. It is inert and its physical and insulating properties are constant.

Environmentally Speaking, Is There Anything To Worry About?

No. **Spray Foam** has been thoroughly tested. Once it has aged for 30 days it is a stable product and no longer has any detectable emissions. **Spray Foam** has been used in many of the American Lung Association "Health Homes" being built around the United States.

Are There Glass Fibers or Formaldehyde in Spray Foam?

No to both. Glass fibers have been listed as a suspected carcinogen by the EPA and most fiberglass batt manufacturers now print a warning label on the packaging. Formaldehyde was present in earlier types of commercial foam called urea formaldehyde which was also used in residential applications in the early 1970's. **Spray Foam** today is free of both glass fibers and formaldehyde and is a great choice for insulating your new home.