

Cellulose Insulation Compared to Spray Foam Insulation

Spray foam insulation is considered by many to be the highest performing of all insulating materials. It is available in open, semi-open and closed cell applications. Unfortunately, installation issues, fire safety and environmental issues can make this a riskier insulation option.

Foam insulation is made from petroleum products, is very energy intensive to produce (18,000 – 30,000 btu/lb) and typically has a low recycled content. In comparison, Nature-Tech's ProFiber cellulose insulation is manufactured from over 85% recycled cardboard and requires substantially less energy to manufacture (750 btu/lb).

For spray on applications, the spray foam is mixed on site and applied by an applicator in a protective suit. There are numerous variables involved in the proper application of this product including: chemical mixing ratios, temperature, moisture content and cleanliness of the surface being insulated, thickness of the insulation being applied, and the installers ability to see what they're insulating. Application issues are quite common, and improper mixing can lead to large bubbles (voids), off gassing and unpleasant odors after curing. Pull back and poor air sealing performance from cold surface temperature, burn out from too thick of an insulation layer being applied at one time, and missed insulation from the installer not being able to maneuver his protective suit into tight spaces can all happen because of the nature of spray foam and how it is installed. Most foam manufactures now recommend 24 to 48 hours between installation and occupants, including all pets, returning to the building, to allow for out-gassing of the unhealthy blowing agents during the curing process. After curing, in open cell foam applications, the excess foam is cut off resulting in substantial waste.

Cellulose on the other hand, tends to be much easier to install in and less weather dependent. After installation, no out-gassing occurs from the cellulose insulation and in spray applied application; any excess material scrubbed off is recycled by the installer and reused. Dense pack installation behind fabric contains the cellulose resulting in minimal product loss.

Foam needs to be protected with a 15-minute thermal barrier when installed in the interior of a building. This is because when exposed to a fire, the foam insulation produces thick, toxic combustible smoke making occupant egress extremely difficult and poses a safety concern to firefighting personnel. Cellulose insulation is a class A/1 material that can be used as an ignition barrier over foam, is code recognized as a fire block and produces very little smoke when exposed to a fire making it a much more fire safe material than foam.

The higher installed density of cellulose in enclosed cavities also offers better air born sound control. Cellulose insulation offers a cost effective, high performance, environmentally friendly option to spray foam insulation.

For further information, please contact our VP of Insulation Technology Bill Hulstrunk at bhulstrunk@nature-tech.com.