

How "Green" Is SPF?

By Don Schumacher, Director of Marketing and Sales, Specialty Products, NCFI

What are the "green" benefits of spray foam insulation? How can marketing SPF as "green" help your business? How can it address the needs of a public increasingly concerned about how resource consumption and high prices will impact their lives?

What Is "Green"?

The recent dramatic increases in petroleum, natural gas, and renewable raw material prices have had both direct and indirect effects on our society and the environment. There is a very immediate impact on what we pay daily for transportation, whether that consists of short errands in a hybrid car or working in a diesel truck, both of which are essential to our livelihood.

But there are also many indirect effects due to the new energy crisis. Whether affected by increased transportation costs or higher raw material costs, many of the goods and services that we have enjoyed over the past two decades are now costing us more. The cost of everything is going up.

This mega-trend of increased energy costs – which is unlikely to reverse itself in the near future – is having the positive result of causing people to reconsider how much energy or natural resources they consume. Conservation has become the new way – not driven by shortages as we experienced in the last "energy crisis" in the late 1970s, but by economic necessity. Added to that are concerns for the long-term effects of our high resource consumption on the environment. What we're left with is global warming, increased poverty, and the flood of jobs to low-cost countries.

The "green movement" is now no longer just the concern of a few well-meaning if not over-zealous fringe individuals. There is now a popular upsurge in concern for the environment, driven by economic necessity more than ecological idealism. As marketers, we look for such popular trends with an eye to understanding what people's real needs are. We then develop our products and our marketing messages to inform our audience of the benefits of our products and services that meet those needs. Now, how can we apply this to spray polyurethane foam?



A "Green" SPF

Residential insulation is a real concern to any American who has paid utility bills since the oil crisis of the mid-1970s. Thanks to the leadership of the fiberglass industry, we were introduced to the concept of the R-value – a measurement of insulation's thermal performance. With R-values, more is better – meaning the higher the value, the better your insulation.

Today, many design, building, and code professionals understand the basic concepts of building science. Heat movement, measured by R-value, is not the only factor that needs to be considered in designing a structure. Unless the effects of air infiltration and moisture drive in the design of a home are considered, the result may be poor insulation performance at best and degradation and mold issues at worst.

What's one more reason your clients should use SPF? Tell them spray polyurethane foam insulation would appear to be the "greenest of the green."

The most outstanding environmental benefit of spray polyurethane foam for residential insulation is that it is a very effective and reliable insulation. Both open- and closed-cell spray foam insulations provide a tight air seal for the home. This prevents undesirable air infiltration. This is especially true when there is high wind or a large temperature difference between the outside and inside of the building.

But how does a more effective insulation make a product "green," especially when there is no standard definition of what "green" means in general or, specifically, in construction? There are three approaches to evaluating whether spray foam insulation is "green," all of which have validity.

The Functional Approach

Any product defined as "green" is assumed to function in a way that has less of an environmental impact than a "non-green" product. In the case of SPF, this applies foremost because of the increase in energy efficiency it provides. A product that reduces energy use and the pollution required to produce that energy is generally considered "green."

Another functional aspect involves improving the indoor air quality of the home itself. The National Association of Home Builders (NAHB) GREEN Homebuilding Guidelines reiterate this point: "After energy efficiency, the quality of a home's indoor air is often cited as the most important feature of green homes." Among consumers, energy efficiency and indoor air quality are far and away the most important criteria.

The Content Approach

A second aspect of defining "green" involves the content of the material being used. One of the criteria used by the Partnership for Advancing Technology in Housing (PATH) in determining a "green" product is that it is "made from reused, recycled, rapidly renewable, and preferably local materials."

While this approach does not have a significant functional value, the content of a "green" product is of primary concern to many people. Some, in fact, see this as the primary attribute of "green." Again, SPF meets this need as most products are based on some level of various renewable resources and recycled materials. SPF has been effectively marketed as being "green" because of this renewable content.

The Comprehensive Approach

A third aspect of the "green" issue involves looking at the total impact a product has on the environment, from manufacturing through disposal. This is termed "Life Cycle Analysis," or LCA. The LCA of a building product covers its environmental impacts from "cradle to grave"; the material's "embedded" energy, from raw material acquisition to processing and transportation; its energy effect on the entire home building process; home operation; home demolition; and product reuse, recycling, or disposal.

The truth is that having an environmentally beneficial LCA



is not a concern of the average consumer, even for some who identify themselves as "environmentalists." There are also very few products for which a comprehensive LCA has been done. The National Renewable Energy Laboratory has begun to collect LCA data on many materials, including some of the raw materials used in SPF. Because of that tremendous energy savings, the LCA of spray foam is expected to be quite favorable considering the average 60-year life of a residence.

Related indirectly to LCA is the concept of "total cost of ownership." Because SPF has a high installed cost in relation to other less effective insulations, many consumers elect to choose other "upgrades" when designing or selecting their new homes. But after initial insulation costs, there are significant financial savings realized with an SPF-insulated home, with reports of up to 60 percent savings. Once the homeowner considers his/her total monthly costs — mortgage, insurance, utilities, and all other operational expenses — large savings can be realized when selecting spray foam.

Conclusion

As more and more consumers seek to buy "green" homes, a clearer definition of "green" will need to be established. Any "green" home, however, will need to be well-insulated. Some insulations are "greener" than others, including cellulose, cotton or wool fiber, eco-friendly fiberglass, and spray polyurethane foam. Determining which of these insulations is the "greenest" may be impossible, given the difficulty of doing a "life cycle analysis" on any one product. Ultimately, whatever its content, the insulation will be in the home for decades, and its long-term impact will be in the energy it saves and the health benefits it provides.

If one chooses to define "green" by such things as recycled content or use of natural materials, cellulose or cotton/wool fiber could be considered the "greenest." However, comparing the various "green insulations" in more quantifiable terms, such as R-value at similar thicknesses, overall energy savings and effect on indoor air quality may be the most accurate way to assess their "greenness." By those criteria, spray polyurethane foam insulation would appear to be the "greenest" of the "green." **SF**