

# FAQ: COMFORT FOAM®

## Residential Insulation and Air Barrier



### What is the COMFORT FOAM® insulating air barrier system?

COMFORT FOAM insulation is a closed-cell, spray-applied polyurethane foam insulation system that creates a seamless, insulating air barrier to improve the energy efficiency, comfort and durability of a home.

### How is it applied?

COMFORT FOAM insulation is a spray-applied, two-component product. During the application, there is a chain reaction between the two components. This chain reaction causes the material to foam up and create a bond to the substrate. It subsequently dries, cures and hardens within 3-5 seconds. This insulation system is always installed by a trained COMFORT FOAM insulation applicator and is not suitable for do-it-yourself projects.

### What is its insulation R-value?

COMFORT FOAM insulation is a closed-cell system with a superior effective R-value of over 6.0 per inch<sup>1</sup>.

### Can an insulation system add structural strength?

Spray-applied, closed-cell polyurethane foam adds structural integrity throughout the wall system. Testing conducted by the National Association of Home Builders (NAHB) Research Center shows that spray-applied polyurethane foam insulation between wood- and steel-stud wall panels increased rack and shear strength by two to three times when sprayed onto gypsum wallboard and vinyl siding, compared with standard stick-built components with glass-fiber insulation. The NAHB also found that the spray-applied, closed-cell polyurethane foam increased racking strength when sprayed onto oriented strandboard (OSB).

### What about mold?

Mold requires three things to grow: moisture, warm temperatures and a food source. COMFORT FOAM insulation has no nutritional value and is not considered a food source for mold. It eliminates condensing surfaces and, because it eliminates air movement within the wall cavity itself, reduces the potential to accumulate moisture. Other insulations are less successful at controlling air infiltration and at providing adequate insulation to eliminate condensing surfaces, thus increasing the likelihood of having an environment that is susceptible to mold.

BASF Polyurethane  
Foam Enterprises LLC

 **BASF**  
The Chemical Company

Insulating air  
barrier systems  
for energy-efficient  
homes.

Uncontrolled air leakage has been proven to account for significant energy loss in the home. The U.S. Department of Energy reports that up to 40 percent of the energy cost of heating and cooling a building is wasted by uncontrolled air leakage. In cold weather, the heated, moist air inside the home escapes through cracks, gaps and holes in the building to join the colder, dryer outside air. This causes your furnace to work harder to maintain your comfort. In warm weather, the hot, humid air enters the home through those same pathways, increasing the burden on your air conditioning system.

A residential study by Advanced Certified Thermography shows that COMFORT FOAM installations can help reduce energy costs by as much as 60 percent each year, compared to traditional insulation systems<sup>2</sup>.

### What are the differences between closed-cell and open-cell foams?

There are a couple of major differences. First, COMFORT FOAM insulation offers a closed-cell content of greater than 90 percent, while open-cell foam commonly used as insulation systems have approximately 60 percent open-cell content. The closed-cell foam technology offers far greater insulation (R-value) performance over the open-cell foam: closed-cell foam offers an R-value of over 6.0 per inch, while open-cell foams offer a rating of only between 3.0 and 3.6 per inch. Another significant difference is that closed-cell foam is virtually impermeable to air, which reduces the chance of mold growth, improves energy efficiency and lets you be more comfortable. Open-cell foam, on the other hand, allows far more air and vapor into the building interior, raising the cost of heating and cooling your home.

### Is COMFORT FOAM insulation an air barrier?

COMFORT FOAM insulation has been tested and is certified to be an air barrier at an application of 1.5-inch thickness. It is fully adhered and does not allow air to flow around, behind or through the insulation system. Most open-cell foams have not been tested and, therefore, do not qualify as air barrier systems. One open-cell foam manufacturer's product requires an application of 5.5 inches to pass the minimum requirements of the air barrier test.

The U.S. Department of Energy has shown that 15 percent of a traditional insulation material's effectiveness is lost due to convection loops through and behind board and within batt systems. COMFORT FOAM insulation eliminates this by forming a fully adhered, seamless insulation and air barrier system in one product.

### Is COMFORT FOAM insulation good for the planet?

COMFORT FOAM insulation uses a formaldehyde-free formula that emits no volatile organic compounds (VOCs) and uses ZONE3<sup>®</sup> zero ozone depleting blowing agent technology. The award-winning<sup>3</sup> BASF Eco-Efficiency Analysis assesses total cost and ecological impact over the product lifecycle to benchmark current performance and to gain insight for future improvements. The polyurethane foam insulating air barrier system outperformed traditional air barrier materials in eco-efficiency on its test scores.

### Can COMFORT FOAM insulation be used in a chemically sensitive environment?

Yes. COMFORT FOAM insulation does not emit volatile organic compounds (VOCs). It is an inert product. Off-gassing has been measured at 0.000 parts per million.

### Can it be used for cathedral ceilings?

Yes. In cathedral ceiling applications, COMFORT FOAM insulation does not promote deterioration of the existing roof sheathing because it does not allow condensation at the foam/deck interface. Some traditional insulation systems have high water absorption, and hold moisture against the underside of the sheathing. COMFORT FOAM insulation can be applied without roof ventilation because it is fully adhered and air impermeable. Moisture does not condense between the insulation and the sheathing.

### Are there any fire protection requirements?

COMFORT FOAM insulation meets Class 1 flame and smoke characteristics, meeting all major Building Codes, including the International Residential (IRC) and Building Codes (IBC). Once installed, it must be covered by a 15-minute thermal barrier or ignition barrier, depending on the application. Check with local Building Codes for final determination.

<sup>1</sup> R means resistance to heat flow. The higher the R-value, the greater the insulating power.

<sup>2</sup> Savings vary. Find out why in the seller's fact sheet on R-values. Higher R-values mean greater insulating power.

<sup>3</sup> 2005 awards include: the Design for Sustainability Award (Society of Plastics Engineers), the Presidential Green Chemistry Challenge Award (U.S. Environmental Protection Agency) and the Best Sustainable Practice Award in the Sustainable Research, Development, Construction Process and Demonstration (Sustainable Buildings Industry Council)

This fact sheet complies with the Federal Trade Commission labeling and advertising of home insulation rules and regulations, Federal Register, 16 CFR Part 460 Labeling and Advertising of Home Insulation: Trade Regulation Rule; Final Rule, Tuesday, May 31, 2005.

COMFORT FOAM<sup>®</sup> is a registered trademark of BASF Polyurethane Foam Enterprises LLC.

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