

# A Homeowner's Guide to Spray Polyurethane Foam

High Performance Insulation for Comfort and Energy Savings



Visit [www.sprayfoam.org](http://www.sprayfoam.org)

## SPRAY POLYURETHANE FOAM (SPF) INSULATION

Spray Polyurethane Foam, or SPF, is a high-performance insulation material commonly used in homes and buildings of all types. SPF is particularly known for its ability to help improve the health, comfort, and energy efficiency of a home. Use of the material can dramatically reduce the energy costs associated with heating and cooling, while helping to keep the home interior comfortable year-round, even as the seasons change.

SPF has been used as insulation in homes and buildings for decades. As a new homeowner or prospective buyer, you may have questions about the material and how well it works. This guide will help you better understand why SPF is a leading choice of insulation by homeowners.

## BENEFITS OF SPRAY FOAM INSULATION

SPF acts as a single-material solution for thermal, air, vapor<sup>\*1</sup> and water\* vapor transmission through the home's building envelope, or enclosure. Think of the enclosure of the home as what a set of clothing is for the human body on a windy, damp winter day. A sweater (fibrous insulation) provides insulation (R-value) to retain body heat – but it does not stop wind (air movement) or control moisture. You would be very uncomfortable with just a sweater; you would be more comfortable adding a thin waterproof windbreaker (air barrier and vapor retarder). SPF insulation is the only insulation inside stud walls that can provide R-value, air barrier and vapor barrier in a *single product*.



## DID YOU KNOW?

**SPF is a type of polyurethane. Polyurethane was invented in the 1930s and, has since, become utilized widely and safely in several different applications. In fact, we all interact with polyurethanes daily. They are a preferred material used in furniture, mattresses, automobiles, airplanes, clothing, shoes, sporting and camping equipment. Additionally, rigid polyurethane foam is used to insulate refrigerators, freezers, coolers and hot water heaters. With so many uses for polyurethane, it is hard to imagine life without it.**

As a thermal insulator, SPF is one of the highest performing insulations available. Spray applied by professional installers, the material forms in-place. It fully adheres and initially expands to eliminate cracks and gaps that leak air or water vapor. It may also be applied in a continuous layer, eliminating most thermal bridges caused by framing. These thermal and air-sealing qualities of spray foam are what directly result in lower home energy bills. Closed-cell SPF, a denser and more rigid version of the material, also provides structural enhancement and can qualify as both a water vapor retarder, a water-resistant insulation and secondary water barrier. It may be applied on the interior of walls, as well as along exterior walls as continuous insulation – above or below grade.

<sup>1</sup> Only closed-cell SPF is a water-resistant vapor retarder material.



## WHY CHOOSE SPRAYFOAM?

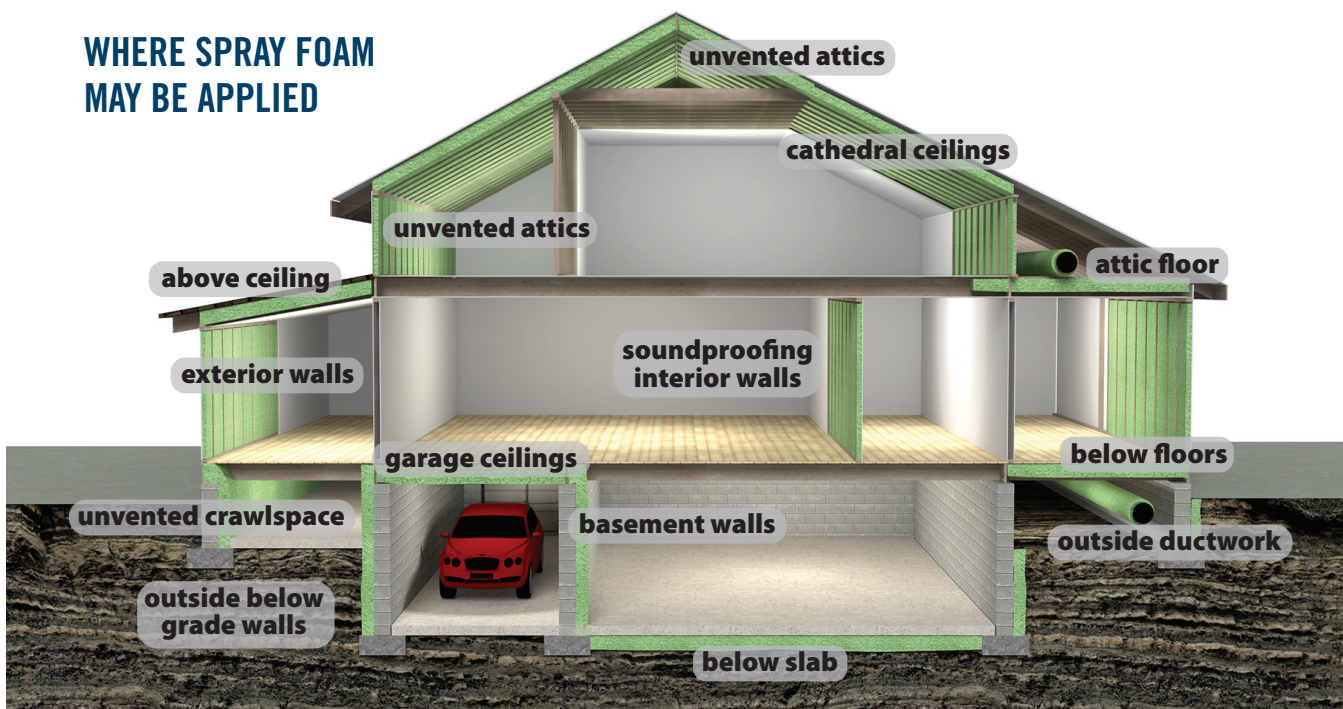
The properties of SPF insulation can help:

- Save 30% or more on heating and cooling costs.
- Keep your home cooler in summer & warmer in winter.
- Control your indoor air quality.
- Increase your indoor comfort in all rooms.
- Reduce pollutants, allergens & pests entering your home.

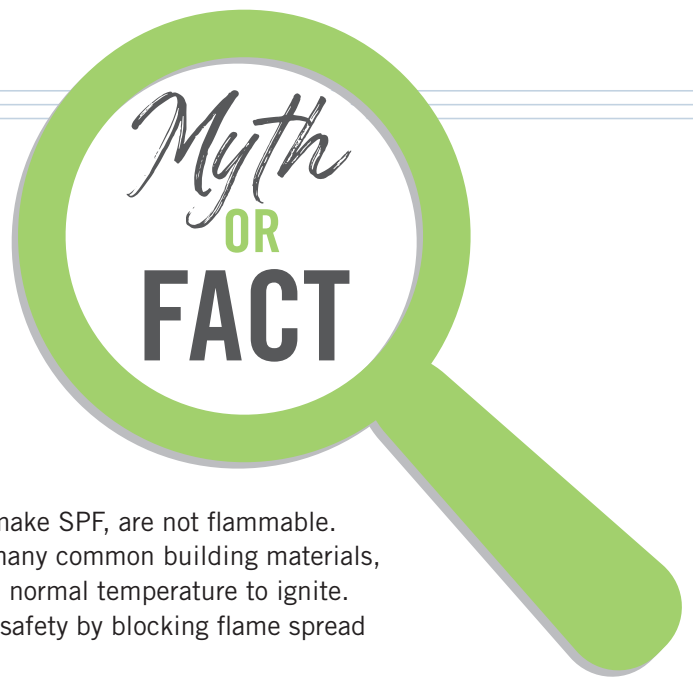
## OPEN-CELL OR CLOSED-CELL SPRAY FOAM?

SPF insulation comes in two types, and both products can be used in any climate zone. Both products provide air sealing and insulation. The R-value of closed-cell Spray Foam is almost twice as that of open-cell Spray Foam installed to the same thickness. Closed-cell foam may also provide vapor-retarder and water resistance performance, as well as help strengthen the walls and roofs of a home.

## WHERE SPRAY FOAM MAY BE APPLIED



## Check out our SPRAY FOAM MYTHBUSTER:



### **MYTH #1: SPF is flammable.**

**False...**Cured SPF and the chemicals used to make SPF, are not flammable. They are considered 'combustible', which like many common building materials, including wood, means it requires a higher than normal temperature to ignite. And in some cases spray foam can improve fire safety by blocking flame spread inside frame walls.



### **MYTH #2: SPF emits toxic chemicals.**

**False...**Following proper installation and curing, SPF does not outgas toxic chemicals. The SPF can help prevent unwanted infiltration of pollutants, allergens and moisture. Combined with proper mechanical ventilation, SPF can improve indoor air quality. Installers wear protective equipment mainly because of short-term chemical hazards during and within a few hours after application.



### **MYTH #3: SPF creates a home envelope that doesn't allow a building to 'breathe'.**

**True...**which is good. SPF prevents the infiltration of unwanted moisture and exfiltration of conditioned air which, in turn, can reduce condensation that causes mold, mildew, poor indoor air quality, rot or corrosion of the home. A properly designed spray foam home will also include controlled ventilation to bring in small amounts of outside air to displace odors from normal homeowner activity while minimizing energy loss.



### **MYTH #4: SPF increases termite infestations.**

**False...**SPF is not a food source for wood-destroying organisms like termites. SPF seals cracks and gaps in the home, reducing paths for entry of insects and other pests. SPF also controls infiltration of unwanted moisture, which termites need to thrive. When properly applied, SPF can be installed to allow for regular visual termite inspections by pest management professionals, providing no greater risk to termite damage than any other cavity insulation.



#### **About the SPFA**

Founded in 1987, the Spray Polyurethane Foam Alliance (SPFA) is the voice, and educational and technical resource for the spray polyurethane foam industry. The Alliance is a 501(c)6 trade association comprised of contractors, manufacturers, and distributors of polyurethane foam, related equipment, and protective coatings, inspections, surface preparations, and other services. The organization supports the best practices and the growth of the industry through a number of core initiatives, including: educational programs and events; a Professional Certification Program; technical services and publications; federal and state advocacy; and networking opportunities.

Visit [www.sprayfoam.org](http://www.sprayfoam.org)