

# The Performance Value of Spray Polyurethane Foam

Spray polyurethane foam (SPF) is more than just insulation: it can also be an air barrier and a vapor retarder. This multi-purpose building material has many performance properties. There are different types of spray foam, and each provides unique benefits. The chart below shows a few of the performance properties of each type of spray foam.

	Low Density or Open Cell SPF	Medium Density or Closed Cell SPF	Closed Cell Roofing SPF
<b>Thermal Performance: R-Value</b>	3.6-4.5 per inch	5.8-6.8 per inch	5.8-6.8 per inch
<b>Air Barrier</b>	X	X	X
<b>Vapor Retarder: Class II rating</b>			X

## Thermal Performance & R-Value

R-value measures a material's resistance to heat transfer. Higher R-values mean that the material is more resistant to heat passing through it, making the material a better insulator. R-values are often listed at 1-inch depth for ease of comparing insulation products. To find out the R-value for a specific insulation, refer to the product's label or technical data sheets, often available online.

Open cell foam, closed cell foam and roofing foam can all provide high R-values and act as effective insulations.

## Air Barriers & Permeability

SPF is also an air barrier, meaning it is impermeable to air. Air barriers are important considerations in building science because they can improve insulation performance and indoor air quality.

Ever wonder why leaving the refrigerator door or the top of your ice chest open significantly decreases its performance? The refrigerator or ice chest materials have not changed, but now you have introduced air flow into the equation. As warm air moves into a cold refrigerator or ice chest, it has the same effect as warm air moving into a home or building. The air flow impacts the climate, both inside your refrigerator and inside a building.

Air barriers also keep pollen, dust, insects and other undesirables from entering the home or building through cracks or crevices in the wall assemblies. Spray polyurethane foam adheres to the walls, boards and studs of your home, creating an air-tight seal.

## Vapor Retarder

Closed cell spray foam often qualifies as a Class II vapor retarder, as defined by the International Residential Code. A vapor retarder prevents moisture (water vapor) from easily passing through the building material. Good building design and practices include controlling the movement of moisture inside and outside of a home or building. Excessive moisture inside a building has the potential to allow mold growth and degrade building or home performance and building material service life.

## Spray Foam: More than Just Insulation

When you are considering different types of insulation, choose a product that offers more. Spray polyurethane foam can provide effective R-values, act as an air barrier, and prevent moisture infiltration. Learn more about the benefits of spray foam at [www.whysprayfoam.org](http://www.whysprayfoam.org)

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