

sprayfoam 411

Spray Polyurethane Foam (SPF) comes in many different formulations with varying degrees of physical property characteristics. It is important to understand exactly which type of SPF provides the physical characteristics and benefits that best suit each particular application.



BASIC SPF SAFETY

Most applications of SPF are not do-it-yourself (DIY) solutions. There can be health and safety hazards involved with handling and the application of SPF if not properly handled and installed. Just like many other construction products and building trades, SPF also requires properly trained individuals with experience to avoid these issues and assure a properly installed and effective product. [CLICK](#) to read more.

OPEN CELL vs. CLOSED CELL

Both open and closed-cell Spray Foam share the same high standard in insulation, energy efficiency and structural integrity. However, it is important to understand a few basic differences between the two when making a decision about a particular project.

The first major disparity, as the names suggest, concerns the structure of the tiny cells within the Spray Foam material. The cells in open-cell (OC) foam are not completely closed, thus allowing air to fill the remaining space inside the material. OC foam expands around 150 times the original volume when applied and leaves the foam soft and more malleable to the touch. Closed-cell (CC) foam differs in that the tiny cells within the material are closed and packed tightly together. CC foam expands between 35-50 times its original volume and takes on the denser resistance of a hard object.

Density is an important factor in that the higher the density, the heavier and stronger the foam will be. Open-cell foam typically has a density of 0.5 pounds per cubic foot, while

closed-cell insulation foams typically weigh in at 1.7 - 2.0 lb./cu.ft., and closed-cell roofing foams at 2.8 - 3.0 lb./cu.ft. Closed-cell foam also boasts a higher R-value, which measures resistance to heat flow. The lightweight open-cell foam has an R-value of 3 per inch; conversely, closed-cell foam has an R-value of 6.

Obviously, closed-cell spray foam holds advantages in regards to density (strength) and R-value (insulating power). However, with these advantages comes a larger price tag which can be a consideration when choosing one over the other. However, specific use and application should be the driving factor as both types are not suited for every application.

Open-cell spray foam has its own advantages as well. For example, open-cell foam has superior sound absorbing qualities, so if the ultimate goal of a project is to provide better sound insulation, then open-cell foam would not only perform better but cost less as well. Therefore, decisions should always be made on a case-by-case basis.