



Advantages of Polyurethane over Polystyrene

Polyurethane is a relatively new product, roughly around 35 years. EPS has been with us for around 50 years. Polyurethane was produced to replace the shortfalls of expanded polystyrene. Below you will see a detailed difference between polyurethane, and expanded polystyrene.

R- Value - Polyurethane is the highest rated insulation in the world. You will find it in most all of your refrigerators, freezers, and even in your personal carry about coolers. Per inch of insulation it has no equal. The walk-in coolers and freezers that we manufacture for use thought the country are made of polyurethane. That is why we think R-value is important. EPS has a value of R-2 to R-5 per inch. POLYURETHANE HAS AN R-VALUE OF R-7 TO R-8 PER INCH.

Moisture Resistance - With all the problems of mold and mildew, moisture resistance is today a very important factor. Polyurethane has one of the lowest moisture Permeability ratings of any product manufactured for the building industry today. The permeance rating on our polyurethane is 1.2. The permeance rating on EPS is 2.0 to 5.0. This difference in a high humidity area would warrant another moisture barrier for EPS panels. In calculating R-values, some EPS manufactures use these additional moisture barriers in their calculations.

Fire Resistance - The polyurethane that we use is a UL Class 1 rated foam. This means that our polyurethane is not a source for fire. On its own, our polyurethane will not burn. When left on its own, it will extinguish itself. A Class 1 rating is the highest rating a building product can obtain. Also, polyurethane is a thermal-set plastic. This means, that it will not melt. Our polyurethane is not affected until temperatures reach 1000 degrees and at that time it will only char. EPS on the other hand is not a thermal-set plastic and will begin to soften at temperatures of 180 degrees and melt at temperatures of 240 degrees. Polyurethane has a distinct advantage.

Density - The density of a product will determine the strength of it. EPS has a density of 1 lb. The polyurethane that we use has a density of 2.2lb. Advantage polyurethane.

Chemical Resistance - Polyurethane is resistant to most counter chemicals. EPS react violently to petroleum-based products. PL 400 and liquid nail will literally burn thru EPS.

Manufacturing - Probably the biggest difference between Polyurethane and EPS is in the manufacturing of these panels. In the bonding of the foam, Polyurethane is one of the best glues used in the industry today. When it comes to adhering, the use of polyurethane gives us both an excellent R- value and the strongest bond in the industry. EPS panels use glue spread on both sides of the skin, and then the skin is match together with the EPS, and mechanically held in place and under pressure until the glue is dried.

One can understand why there are more EPS manufacturers than Polyurethane. We feel that the investment made equals the quality of product made. We believe that there is no comparison between our panels, and those of EPS manufacturers. We by far offer a better product hands down.

The age-old proverb is still true today. **YOU GET WHAT YOU PAY FOR.**