

Product Information Bulletin

DuroSpan® GPS Insulation - ASTM C578, Type I Material Property Data

DuroSpan® GPS insulation is a rigid, closed-cell expanded polystyrene (EPS) insulation with a silver-gray color that meets or exceeds requirements as per ASTM C578¹, Type I. **DuroSpan GPS** insulation has laminated films on the top and bottom surfaces which result in a more durable product that is less susceptible to handling damage.

DuroSpan GPS insulation is manufactured using **Neopor® F5300 GPS Plus**, a graphite-enhanced expandable polystyrene (GPS) provided by BASF. The graphite within the cellular structure of **DuroSpan GPS** insulation reduces radiation heat transfer resulting in enhanced thermal resistance compared to standard white EPS insulation.

Material Properties ²	Units	Values	
Nominal Density	pcf	1.00	
Compressive Resistance <i>Minimum @ 10% deformation</i> ASTM D1621	psi	10.0	
R-value <i>per inch at mean temperature</i> ASTM C518	$\frac{\text{ft}^2 \cdot \text{hr} \cdot ^\circ\text{F}}{\text{Btu}}$	@ 40 °F	4.9
		@ 75 °F	4.7
Flexural Strength <i>Minimum</i> ASTM C203	psi	25	
Water Vapor Permeance <i>Maximum</i> ASTM E96	Perm for 1-inch	5.0	
Water Absorption³ <i>Maximum</i> ASTM C272	% by volume	4.0	
Dimensional Stability <i>Maximum</i> ASTM D2126	% linear change	2.0	
Oxygen Index <i>Minimum</i> ASTM D2863	volume %	24	
Density <i>Minimum</i> ASTM D1622	pcf	0.90	
Surface Burning Characteristics ASTM E84	Flame Spread Index	<25	
	Smoke-Developed Index	<450	

¹. ASTM C578, **Standard Specification for Rigid, Cellular Polystyrene Thermal Insulation.**

² **DuroSpan GPS** insulation thermal resistance values in the table above exceed minimum requirements for EPS insulation manufactured to ASTM C578.

³ ASTM Test Method C272 water absorption requires 24 hours submersion of specimen under water. The water absorption values above are applicable to specific end-use design requirements only to the extent that the end-use conditions are similar to requirements stated in the test method.

Handling, Storage and Installation Recommendations for *DuroSpan GPS* Insulation

The following material handling, jobsite storage and installation recommendations have been provided by BASF for insulation material made from *Neopor*[®] F5300 GPS Plus graphite-enhanced expandable polystyrene (GPS) raw material.

Material Handling:

Material handling and the flow of materials from manufacturing site to job site is a significant part of the construction process. Precautionary measures taken in packaging, storage, transportation and installation of insulation products made of *Neopor* can help minimize the potential for damage to the products.

Jobsite Storage:

Precautions taken when storing insulation products on the jobsite can help minimize the potential for damage. Keep product tarped or covered to protect from weather. Do not use clear plastic covering film. If possible, store indoors. Care should be taken to keep exposed foam protected from reflective sunlight or prolonged solar exposure.

Installation:

Precautions taken during the construction process can help minimize the potential for damage. Care should be taken to keep exposed foam protected from reflected sunlight or prolonged solar exposure. If deformation of the insulation product occurs due to excessive heat transferred from reflected and concentrated sunlight, remove the reflective surface or shield the insulation product.

A secondary method to protect the foam from direct sunlight and heat is to install sunscreen or tarp on the outside of the scaffolding, much the same that is used on building construction that protects the public when it is necessary for them to pass by construction site underneath the scaffolding. This is only needed until the finish coat of the foam is applied.

