

Product Information Bulletin

EnerSpan® EFS Insulation - USA Applications

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EnerSpan® EFS insulation is rigid, closed cell, silver-gray insulation that meets or exceeds requirements for expanded polystyrene (EPS) insulation manufactured to ASTM E2430¹ for use in exterior insulation and finish systems (EIFS). Plasti-Fab Product Information Bulletin #359 provides information regarding recommendations for handling, storage and installation of **EnerSpan EFS** insulation.

EnerSpan EFS insulation is manufactured using **Neopor® F5300 GPS Plus**, a graphite-enhanced expandable polystyrene (GPS) raw material provided by **BASF**. The graphite within the silver-gray cellular structure of **EnerSpan EFS** insulation reduces radiation heat transfer and results in an enhanced thermal resistance compared to standard white EPS insulation manufactured to ASTM C578.



Table 1 – EnerSpan EFS Insulation Properties

Material Properties	ASTM Test	Units	Values ²
Density, <i>minimum</i>	C303 or D1622	pcf	0.90
Thermal Resistance ³ , <i>minimum</i>	C177 or C518	ft ² ·hr·°F/BTU	75 °F 4.7
		ft ² ·hr·°F/BTU	40 °F 4.9
Water Vapour Permeance ⁴ , <i>maximum</i>	E96	perms	5.0
Dimensional Stability, <i>maximum</i>	D2126	% linear change	2.0
Water Absorption, <i>maximum</i>	C272	% by volume	4.0
Flexural Strength, <i>minimum</i>	C203	psi	25
Compressive Resistance, <i>minimum</i>	C165 or D1621	psi	10
Limiting Oxygen Index, <i>minimum</i>	D2863	% volume	24
Additional Material Properties for EnerSpan EFS Insulation			
Water Absorption, <i>maximum</i>	C272	% by volume	2.0
Dimensional Stability, <i>maximum</i>	D2126	% linear change	0.5
Tensile Strength, <i>minimum</i>	D1623	psi	15

¹ **EnerSpan EFS** insulation material properties are third party certified to requirements of ASTM E2430, **Standard Specification for Expanded Polystyrene (“EPS”) Thermal Insulation Boards for Use in Exterior Insulation and Finish Systems (“EIFS”)**, under a quality listing program administered by Intertek. Intertek Code Compliance Research Report CCRR-1033 confirms compliance with the 2009, 2012 and 2015 International Codes.

² Material properties meet or exceed requirements for ASTM C578, Type I.

³ Values are minimum per 1-inch of thickness at mean temperatures of 75 °F and 40 °F.

⁴ Values are maximum for 1-inch thick samples with natural skins intact. Lower values will result for thicker materials.

The dimensions, dimensional tolerances and block aging for **EnerSpan® EFS** insulation meet requirements specified in ASTM E2430 as detailed in Tables 2 and 3 below.

Table 2 - Dimensions and Dimensional Tolerances

Standard Dimension per ASTM E2430		
Length	48 inches	
Width	24 inches	
Thickness	3/4 inch to as specified	
Dimensional Tolerances ASTM E2430		
Length	±1/16 inch	
Width	±1/16 inch	
Thickness	Minimum: 3/4 inch	+1/16 inch
	Maximum: As specified	±1/16 inch
Squareness	When measured on the large flat face from one corner to the opposing corner, dimensional variations shall not exceed 1/32 inch in 12 inch	
Edge Trueness	When measured with a straight edge, edges shall not deviate more than 1/32 inch in 12 inch	
Face Flatness	When measured across the face with a straight edge, maximum deviation from the straight edge shall not exceed more than 1/32 inch	

Table 3 - Block Aging Requirements Prior to Cutting

Storage Condition	Average Temperature	Minimum Storage Period
Low Pentane (<4.5% pentane) Raw Materials and Vacuum Mould Technology		
Plant Aging	Ambient Temperature 68 °F (20 °C) and RH	12 Days
Full Pentane (nominal 6% pentane) Raw Materials and Vacuum Mould Technology		
Plant Aging	Ambient Temperature 68 °F (20 °C) and RH	18 Days
Full Pentane (nominal 6% pentane) Raw Materials and Non-Vacuum Mould Technology		
Plant Aging	Ambient Temperature 68 °F (20 °C) and RH	42 Days
Heat Aging	Elevated Temperature 140 °F (60 °C)	5 Days

The flame spread index and smoke developed index values provided in Table 4 below were determined in accordance with ASTM E84/UL723.

Table 4 - Flame-Spread Rating and Smoke Developed Classification

Material Properties	ASTM E84
Flame Spread Index	<25
Smoke Developed Index	<450