

Product Information Bulletin

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ENERGREEN® Insulation - ASTM C578 Material Properties

ENERGREEN® insulation is a rigid, closed-cell foam plastic insulation that meets requirements for ASTM C578¹ expanded polystyrene (EPS) insulation types as indicated in the table below. The addition of a laminated film to the top and bottom surfaces of **ENERGREEN** insulation provides a more durable product that is less susceptible to handling damage.

Material Properties	Units	ENERGREEN Insulation – ASTM C578 Types							
		XI	I	VIII	II	IX	XIV	XV	
Nominal Density	pcf	0.75	1.00	1.25	1.50	2.00	2.50	3.00	
Compressive Resistance ² <i>Minimum @10% deformation</i> ASTM D1621	psi	5.0	10.0	13.0	15.0	25.0	40.0	60.0	
R-value ³ <i>per inch thickness at mean temperature</i> ASTM C518	40 °F	ft ² •hr•°F	3.4	4.2	4.3	4.6	4.8	4.8	4.9
	75 °F	Btu	3.2	3.9	3.9	4.2	4.4	4.4	4.5
Water Vapor Permeance ⁴ <i>Maximum</i> ASTM E96	Perm	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Flexural Strength <i>Minimum</i> ASTM C203	psi	10	25	30	35	50	60	75	
Dimensional Stability <i>Maximum</i> ASTM D2126	% linear change	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Water Absorption ⁵ <i>Maximum</i> ASTM C272	% by volume	4.0	4.0	3.0	3.0	2.0	2.0	2.0	
Oxygen Index <i>Minimum</i> ASTM D2863	volume %	24	24	24	24	24	24	24	
Density <i>Minimum</i> ASTM C303 or D1622	pcf	0.70	0.90	1.15	1.35	1.80	2.40	3.00	
Flame Spread Index ASTM E84		<25	<25	<25	<25	<25	<25	<25	
Smoke-Developed Index ASTM E84		<450	<450	<450	<450	<450	<450	<450	

¹ **ENERGREEN** insulation material properties are third party certified to ASTM C578, **Standard Specification for Rigid, Cellular Polystyrene Thermal Insulation**, under a quality listing program administered by Intertek.

² Compressive resistance measured at 10 percent strain is not intended for use when **ENERGREEN** insulation will be used to support long-term compressive loads. Contact your Plasti-Fab technical representative for additional information.

³ For additional information on thermal resistance requirements refer to ASTM C578.

⁴ The vapor permeance value provided above is a composite value for **ENERGREEN** insulation with laminated films. Where water vapour permeance is a design issue, contact Plasti-Fab technical services for additional information.

⁵ 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.