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Product Information Bulletin

ASTM C578 - PlastiSpan® Insulation Material Properties

PlastiSpan® expanded polystyrene (EPS) insulation conforms to ASTM C578, ***Standard Specification for Rigid, Cellular Polystyrene Thermal Insulation***, as detailed below. PlastiSpan insulation has also been evaluated for conformance with the requirements of ICC-ES AC12, Acceptance Criteria for Foam Plastic Insulation per ICC-ES Evaluation Report ESR-1587 (see Plasti-Fab Product Information Bulletin No. 269 for additional information).

Material Property		Units	ASTM C578					
			XI	I	VIII	II	IX	XIV
Nominal Density		pcf (kg/m^3)	0.75 (12)	1.00 (16)	1.25 (20)	1.50 (24)	2.00 (32)	2.50 (40)
Density *Minimum*		pcf (kg/m^3)	0.70 (12)	0.90 (15)	1.15 (18)	1.35 (22)	1.80 (29)	2.40 (38)
R-value (RSI)[1] *Minimum per inch (25.4 mm)*	75 ºF (24 ºC)	ft^2•hr•°F/Btu (°C•m^2/W)	3.1 (0.55)	3.6 (0.63)	3.8 (0.67)	4.0 (0.70)	4.2 (0.74)	4.2 (0.74)
Design R-value (RSI)[2] *per inch (25.4 mm) thickness*	40 ºF (4.4 ºC)	ft^2•hr•°F/Btu (°C•m^2/W)	3.4 (0.60)	4.2 (0.73)	4.3 (0.75)	4.6 (0.80)	4.8 (0.84)	4.8 (0.84)
	75 ºF (24 ºC)	ft^2•hr•°F/Btu (°C•m^2/W)	3.2 (0.57)	3.9 (0.68)	3.9 (0.69)	4.2 (0.73)	4.4 (0.77)	4.4 (0.77)
Compressive Resistance *Minimum @10% deformation*		psi (kPa)	5.0 (35)	10.0 (69)	13.0 (90)	15.0 (104)	25.0 (173)	40.0 (276)
Water Vapor Permeance *Maximum*		Perm (ng/Pa•s•m^2)	5.0 (287)	5.0 (287)	3.5 (201)	3.5 (201)	2.5 (143)	2.5 (143)
Flexural Strength *Minimum*		psi (kPa)	10.0 (70)	25.0 (173)	30.0 (208)	35.0 (240)	50.0 (345)	60.0 (414)
Dimensional Stability *Maximum*		% linear change	2.0	2.0	2.0	2.0	2.0	2.0
Water Absorption[3] *Maximum*		% by volume	4.0	4.0	3.0	3.0	2.0	2.0
Oxygen Index *Minimum*		volume %	24	24	24	24	24	24

[1] Thermal resistance values are minimum requirements per C578 at mean temperature of 75 ºF (24 ºC).
[2] Design thermal resistance values are provided at mean temperatures of 40 ºF (4.4 ºC) and 75 ºF (24 ºC).
[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.