

Physical Properties of STYRO-FLEX EPS

Nominal Density, pcf			0.75	1.00	1.25	1.50	2.00	2.50	3.00
Specification Reference: ASTM C578-01			Type XI	Type I	Type VIII	Type II	Type IX	Type XIV	Type XV
Property	Units	ASTM Test							
Density, Minimum	pcf	C303 or D1622	0.70	0.90	1.15	1.35	1.80	2.40	2.85
Thermal Resistance (R-Value)	at 25°F	Per inch thickness C177 or C518	3.90	4.35	4.54	4.76	5.00	5.05	5.10
	at 40°F		3.50	4.17	4.25	4.55	4.76	4.85	5.05
	at 75°F		3.20	3.85	3.92	4.17	4.35	4.50	4.60
Thermal Conductivity (K factor)	at 25°F	BTU/(hr.) (sq.ft.)(°F) per inch thickness C177 or C518	.290	0.230	0.220	0.210	0.200	.198	.196
	at 40°F		.303	0.240	0.235	0.220	0.210	.206	.198
	at 75°F		.323	0.260	0.255	0.240	0.230	.222	.217
Strength Properties									
Compressive 10% Deformation	Min. psi	D1621	5	10	13	15	25	40	60
Flexural	Min. psi	C203	10	25	30	35	50	60	75
Tensile	psi	D1623	14-18	16-20	17-21	18-22	23-27		
Shear	psi	D732	11-13	18-22	23-25	26-32	33-37		
Shear Modulus	psi	-	190-230	280-320	370-410	460-500	600-640		
Modulus of Elasticity	psi	-	110-150	180-220	250-310	320-360	460-500		
Moisture Resistance									
Water Vapor Transmission (WVT)	Max. perm/inch	E96	5.0	5.0	3.5	3.5	2.5	2.5	2.5
Absorption	Max. vol. %	C272	4.0	4.0	3.0	3.0	2.0	2.0	2.0
Capillarity	-	-	none	none	none	none	none	none	none
Coefficient of Thermal Expansion	in./(in.)(°F)	D696	0.000035	0.000035	0.000035	0.000035	0.000035	0.000035	0.000035
Dimensional Stability	Max. % change	D2126	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Maximum Service Temperature									
Long Term	°F	-	167	167	167	167	167	167	167
Intermittent	°F	-	180	180	180	180	180	180	180
Oxygen Index	Min. vol. %	D2836	24.0	24.0	24.0	24.0	24.0	24.0	24.0
Flame Spread		E84	Less than 25 for all densities						
Smoke Development		E84	Less than 450 for all densities						



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