

Standard Physical Properties ASTM C-578

Properties	Units	ASTM Test	Type XI	Type I	Type VIII	Type II	Type IX	Type XIV	NA
ASTM Density	pcf (min.)	C303 or D1622	0.70	0.90	1.15	1.35	1.80	2.40	2.85
Common Designation	pcf (nom.)		0.70	1.00	1.25	1.50	2.00	2.40	3.00
Thermal Resistance	R-Value at 75°	C177 or C518	3.10	3.60	3.80	4.00	4.20	4.20	4.20
	R-Value at 40°	C177 or C518	3.30	4.00	4.20	4.40	4.60	4.60	4.60
	R-Value at 25°	C177 or C518	3.45	4.20	4.40	4.60	4.80	4.80	4.80
Compressive 10% Deformation	psi	D1621	5.00	10.00	13.00	15.00	25.00	40.00	50.00
Flexural Strength	psi	C203	10.00	25.00	30.00	35.00	50.00	60.00	75.00

Typical Physical Properties of High-Density Molded EPS

Property	Units	ASTM test	Density (pcf)					
			3.0	4.5	7.0	9.0	10.0	15.0
Thermal conductivity at 40F K factor at 75F	BTU/(hr.) (sq. ft.)(F/in.)	C518	.224 .235	.239 .242	.258 .267	.264 .272	.314 .316	.342 .341
Compression resistance at 10% deformation at 5% deformation at 2% deformation	psi	D1621	50-70 45-60 15-20	70-90 60-80 20-40	160-170 150-160 65-100	225-250 210-240 85-120	270-280 250-270 90-140	400-450 380-420 185-220
Flexural strength	psi	D790	90-120	130-200	250-280	405-450	420-465	520-580
Water absorption (by volume)	%	D570	2.0	1.7	.5	.5	.5	.1
Coefficient of linear expansion	in./(in.)F	D696	2.7x10-5	2.8x10-5	3.1x10-5	5.4x10-5	5.6x10-5	6.6x10-5
Shear strength	psi	D732	55	80	130	170	180	215
Tensile strength	psi	D1623	70-90	130-140	160-210	180-240	240-250	260-270
Water vapor transmission	perm-inch	C355	.86	.82	.44	.40	.38	.28