

ENGINEERING PROPERTIES FOR ALUCOBOND® PE MATERIAL

Standard Test Method*	Description	Category	3mm	4mm	6mm
ASTM D-635	Rate of Burning	Fire Performance Properties	–	CLASSIFIED CC1	–
ASTM D-1929	Ignition Temperature-Self	Fire Performance Properties	–	716°F	–
ASTM D-1929	Ignition Temperature-Flash	Fire Performance Properties	–	716°F	–
ASTM E-84	Surface Burning Characteristics (Flame Spread)	Fire Performance Properties	0	5	5
ASTM E-84	Surface Burning Characteristics (Smoke Development)	Fire Performance Properties	0	0	5
ASTM E-162	Surface Flammability Using Radiant Energy Source	Fire Performance Properties	0	0	0
ASTM C-365	Flatwise Compression Strength	Mechanical Properties	–	6277 psi	–
ASTM C-393	Flexural Stiffness	Mechanical Properties	1335 lbs-in ²	2566 lbs-in ²	4387 lbs-in ²
ASTM D-297	Flatwise Tensile Strength	Mechanical Properties	1972 psi	1625 psi	1448 psi
ASTM D-790	Flexural Strength	Mechanical Properties	18,350 psi	14,510 psi	10,490 psi
ASTM D-790	Flexural Modulus	Mechanical Properties	1695 ksi	1660 ksi	1525 ksi
ASTM D-638	Modulus of Elasticity	Mechanical Properties	1.98 psi x 10 ⁶	1.38 psi x 10 ⁶	0.87 psi x 10 ⁶
ASTM D-638	Elongation @ Yield	Mechanical Properties	5.6%	8.8%	10.9%
ASTM D-638	Tensile Strength (Ultimate)	Mechanical Properties	7820 psi	6400 psi	4590 psi
ASTM D-638	Tensile Yield	Mechanical Properties	7820 psi	5300 psi	4590 psi
ASTM C-177	Thermal Conductivity	Thermal Properties	2.86 Btu-in/hr ft ² °F	3.21 Btu-in/hr ft ² °F	2.46 Btu-in/hr ft ² °F
ASTM C-177	Thermal Resistance	Thermal Properties	0.0412 hr ft ² °F/Btu	0.0489 hr ft ² °F/Btu	0.096 hr ft ² °F/Btu
ASTM C-177	Thermal Conductance	Thermal Properties	24.3 Btu/hr ft ² °F	20.5 Btu/hr ft ² °F	10.5 Btu/hr ft ² °F
ASTM D-648	Deflection Temperature - Perpendicular	Thermal Properties	–	327°F	–
ASTM D-648	Deflection Temperature	Thermal Properties	>380°F	380°F	>450°F
ASTM C-273	Shear Test in Flatwise Plane	Bond Integrity Properties	990 psi	920 psi	890 psi
ASTM C-297	Tensile Bond Strength Test in Flatwise Plane	Bond Integrity Properties	1972 psi	1625 psi	1448 psi
ASTM D-1781	Bond Integrity	Bond Integrity Properties	–	172.38 N mm/mm	177.31 N mm/mm
ASTM E-90	Sound Transmission (STC)	Acoustical Properties	25	28	28
ASTM C-272	Water Absorption	Physical Properties	Nil	Nil	0.02%
ASTM D-696	Coefficient of Linear Thermal Expansion	Physical Properties	1.31 x 10 ⁻⁵ in/in °F	1.19 x 10 ⁻⁵ in/in °F	1.235 x 10 ⁻⁵ in/in °F

*The ASTM (American Society for Testing and Materials) Standard Test Method defines the way a test is performed and the precision of the result. The test method does not define pass/fail criteria. The result of the test is used to assess compliance with a Standard Specification.