

Engineering Properties U.S. and Metric Equivalent

Technical Engineering Properties

Reynobond® Composite Materials consist of a thermoplastic compound core faced with two sheets of aluminum. There are two varieties, a Polyethylene (PE) core and a Fire-Retardant (FR) core.

PROPERTY		UNITS	RB120PE – 3mm	RB160FR – 4mm	Solid Al ⁽¹⁾
THICKNESS		in mm	0.118 3.0	0.157 4.0	0.197 5.0
WEIGHT		lb/ft ² kg/m ²	0.94 4.59	1.55 7.57	2.78 13.57
BOND INTEGRITY	MIN. BOND STRENGTH ASTM D1781	in-lb/in Nm/m	22.5 100	22.5 100	-
	FLATWISE SHEAR ASTM D1002	lb/in ² MPa	1.297 8.94	92.8 6.4	-
ALLOWABLE BENDING STRESS		lb/in ² MPa	11,500 79.3	11,500 79.3	11,500 79.3
COEFF. OF EXPANSION ASTM E228		in/in/°F mm/mm/°C	1.31x10 ⁻⁵ 2.36x10 ⁻⁵	1.31x10 ⁻⁵ 2.36x10 ⁻⁵	1.31x10 ⁻⁵ 2.36x10 ⁻⁵
STIFFNESS (EI) ASTM D393		lb-in ² /in MPa-cm ⁴ /m	807 9.1x10 ⁴	1,133 1.28x10 ⁴	6,434 7.4x10 ⁴
FLEXULAR MODULUS (E) ASTM C393		lb/in ² MPa	8.3x10 ⁶ 5.7x10 ⁴	5.9x10 ⁶ 4.14x10 ⁴	10x10 ⁶ 6.9 x10 ⁴
MOMENT OF INERTIA (I)		in ⁴ /in cm ⁴ /m	0.97x10 ⁻⁴ 0.159	1.89x10 ⁻⁴ 0.310	6.37x10 ⁻⁴ 1.042
SECTION MODULUS		in ³ /in cm ³ /m	1.65x10 ⁻³ 1.065	2.41x10 ⁻³ 1.555	6.47x10 ⁻³ 4.167
TENSILE YIELD		lb/in ² MPa	8,300 57.23	6,367 43.90	19,000 130.0
FLATWISE TENSILE ASTM C297		lb/in ² MPa	1,483 10.22	961 6.62	-
“R” THERMAL RESISTANCE		ft ² hr° F/BTU m ² K/w	0.034 6.0x10 ⁻³	0.026 4.5x10 ⁻³	-
MAXIMUM WIDTH		in mm	62 1,575	62 1,575	-
MAXIMUM LENGTH		in mm	243 6,172	243 6,172	-
FIRE PERFORMANCE ⁽²⁾		ASTM E84 ASTM D635	Class A CC1	Class A CC1	-

⁽¹⁾ Solid aluminium properties are based on alloy 3105-H25

⁽²⁾ For a complete list of Fire Tests and results, contact manufacturer

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