

# 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 <sup>(1)</sup>
THICKNESS		in mm	0.118 3.0	0.157 4.0	0.197 5.0
WEIGHT		lb/ft <sup>2</sup> kg/m <sup>2</sup>	0.94 4.59	1.55 7.57	2.78 13.57
BOND IN-TEGRITY	MIN. BOND STRENGTH ASTM D1781	in-lb/in Nm/m	22.5 100	22.5 100	-
	FLATWISE SHEAR ASTM D1002	lb/in <sup>2</sup> MPa	1.297 8.94	92.8 6.4	-
ALLOWABLE BENDING STRESS		lb/in <sup>2</sup> 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 <sup>-5</sup> 2.36x10 <sup>-5</sup>	1.31x10 <sup>-5</sup> 2.36x10 <sup>-5</sup>	1.31x10 <sup>-5</sup> 2.36x10 <sup>-5</sup>
STIFFNESS (EI) ASTM D393		lb-in <sup>2</sup> /in MPa-cm <sup>4</sup> /m	807 9.1x10 <sup>4</sup>	1,133 1.28x10 <sup>4</sup>	6,434 7.4x10 <sup>4</sup>
FLEXULAR MODULUS (E) ASTM C393		lb/in <sup>2</sup> MPa	8.3x10 <sup>6</sup> 5.7x10 <sup>4</sup>	5.9x10 <sup>6</sup> 4.14x10 <sup>4</sup>	10x10 <sup>6</sup> 6.9 x10 <sup>4</sup>
MOMENT OF INERTIA (I)		in <sup>4</sup> /in cm <sup>4</sup> /m	0.97x10 <sup>-4</sup> 0.159	1.89x10 <sup>-4</sup> 0.310	6.37x10 <sup>-4</sup> 1.042
SECTION MODULUS		in <sup>3</sup> /in cm <sup>3</sup> /m	1.65x10 <sup>-3</sup> 1.065	2.41x10 <sup>-3</sup> 1.555	6.47x10 <sup>-3</sup> 4.167
TENSILE YIELD		lb/in <sup>2</sup> MPa	8,300 57.23	6,367 43.90	19,000 130.0
FLATWISE TENSILE ASTM C297		lb/in <sup>2</sup> MPa	1,483 10.22	961 6.62	-
“R” THERMAL RESISTANCE		ft <sup>2</sup> hr <sup>2</sup> F/BTU m <sup>2</sup> K/w	0.034 6.0x10 <sup>-3</sup>	0.026 4.5x10 <sup>-3</sup>	-
MAXIMUM WIDTH		in mm	62 1,575	62 1,575	-
MAXIMUM LENGTH		in mm	243 6.172	243 6.172	-
FIRE PERFORMANCE <sup>(2)</sup>		ASTM E84 ASTM D635	Class A CC1	Class A CC1	-

<sup>(1)</sup> Solid aluminium properties are based on alloy 3105-H25

<sup>(2)</sup> For a complete list of Fire Tests and results, contact manufacturer

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