

Engineering Properties

U.S. and Metric Equivalent

Typical Engineering Properties

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

Property	Units	RB120PE-3 mm	RB160PE-4 mm	RB240PE-6 mm	RB160FR-4 mm	Solid Aluminum ⁽¹⁾
Thickness	Inches	0.118	0.157	0.236	0.157	0.197
	mm	3.0	4.0	6.0	4.0	5.0
Weight	lb/ft ²	0.94	1.12	1.49	1.53	2.78
	Kg/m ²	4.59	5.47	7.28	7.48	13.57
BOND INTEGRITY Min. Bond Strength ASTD 1781	in-lb/in	40	40	40	22.5	—
	Nm/m	178	178	178	100	—
Flatwise Shear ASTM D1002	lb/in ²	1,297	1,221	2,055	92.8	—
	MPa	8.94	8.42	14.7	6.4	—
Allowable Bending Stress	lb/in ² MPa	11,500 79.3	11,500 79.3	11,500 79.3	11,500 79.3	11,500 79.3
Coefficient of Expansion ASTM E228	in/in/°F	1.31x10 ⁻⁵	1.31x10 ⁻⁵	1.31x10 ⁻⁵	1.31x10 ⁻⁵	1.31x10 ⁻⁵
	mm/mm/°C	2.36x10 ⁻⁵	2.36x10 ⁻⁵	2.36x10 ⁻⁵	2.36x10 ⁻⁵	2.36x10 ⁻⁵
Stiffness (EI)	lb in ² /in	807	1,140	1,896	1,262	6,434
	MPa cm ³ /m	9.1x10 ³	12.8x10 ³	21.4x10 ³	14.3x10 ³	74.1x10 ³
Flexural Modulus Aged per ASTM C393	lb/in ²	8.3x10 ⁶	6.0x10 ⁶	4.0x10 ⁶	6.7x10 ⁶	10x10 ⁶
	MPa	57.2x10 ³	41.4x10 ³	27.6x10 ³	46.2x10 ³	68.9x10 ³
Moment of Inertia	in ⁴ /in	0.97x10 ⁻⁴	1.89x10 ⁻⁴	4.58x10 ⁻⁴	1.89x10 ⁻⁴	6.37x10 ⁻⁴
	cm ⁴ /m	0.159	0.310	0.751	0.310	1.042
Section Modulus	in ³ /in	1.65x10 ⁻³	2.41x10 ⁻³	3.88x10 ⁻³	2.41x10 ⁻³	6.47x10 ⁻³
	cm ³ /m	1.065	1.555	2.503	1.555	4.167
Tensile Yield ASTM D638	lb/in ²	8,300	6,405	5,314	6,367	19,000
	MPa	57.23	44.16	36.64	43.90	130.0
Flatwise Tensile ASTM C297	lb/in ²	1,483	1,371	1,099	961	—
	MPa	10.22	9.45	7.58	6.62	—
"R" Thermal Resistance (core only)	Ft ² hr ² F	0.034	0.051	0.086	0.026	—
	BTU w	6.0x10 ⁻³	9.0x10 ⁻³	15.1x10 ⁻³	—	—
STC Sound Transmission Coefficient ASTM E90	—	—	26	—	—	—
	—	—	—	—	—	—
Maximum Width	Inches	62	62	62	62	—
	mm	1,575	1,575	1,575	1,575	—
Maximum Length	Inches	243	243	243	243	—
	mm	6,172	6,172	6,172	6,172	—

¹ Solid aluminum properties are based on Alloy 3105-H25.

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