ProBalsa®

Technical Data

ProBalsa is a high quality composite core material made from end–grain balsa wood. The end grain, micro–honeycomb structure offers exceptional shear and compressive strength. In addition ProBalsa offers good fatigue properties, high thermal and sound insulation and low FST properties.

ProBalsa is best suited for dynamic structures where performance and efficiency are paramount. All Pro–Balsa core materials are particularly easy to work using conventional woodworking tools. They can be drilled, milled, turned and sawn to close tolerances. ProBalsa can be used in hand lay–up, vacuum bag and infusion applications. It is also suitable for elevated temperature cure prepreg systems. ProBalsa Plus is a premium version of ProBalsa where the surface is micro sanded and treated with a special surface primer to reduce resin absorption during lamination.

Technical Data for ProBalsa

Mechanical Properties					
Property	**Method**	**Unit**	**LD7 Light Weight**	**PB Standard**	**HW Heavy Weight**
Density	ASTM C 271	kg/m^3	90	155	220
		lb/ft^3	5.6	9.7	13.8
Compressive Strength [1]	ASTM C 365	MPa	5.4	12.7	21.9
		psi	783	1,842	3,176
Compressive Modulus [1]	ASTM C 365	MPa	1,850	4,100	6,840
		ksi	268	594	992
Tensile Strength [1]	ASTM C 297	MPa	7.0	13.5	20.6
		psi	1,015	1,958	2,987
Shear Strength [1]	ASTM C 273	MPa	1.6	3.0	4.5
		psi	232	435	653
Shear Modulus [1]	ASTM C 273	MPa	96	166	237
		ksi	14	24	34
Thermal Conductivity [2]	ASTM C 377	W/m K	0.052	0.064	0.086
		Btu·in/(ft^2·h·°F)	0.35	0.44	0.60
R–value	Based on +10° K factor	12 mm / 0.5 in	1.4	1.1	0.8
		25 mm / 1.0 in	2.9	2.3	1.7
		51 mm / 2.0 in	5.7	4.5	3.3
1) All values measured at +22°C (+72°F).					
2) Thermal conductivity at +10°C (+50°F).					

Nominal Moisture Content: 12 %

Coefficient of linear expansion (ASTM D–696):

Longitudinal	3.6 x 10^{-6} / °C	2.0 x 10^{-6} / °F
Radial	14.4 x 10^{-6} / °C	8.0 x 10^{-6} / °F
Tangential	21.6 x 10^{-6} / °C	12.0 x 10^{-6} / °F

Shrinkage and swelling of wood due to moisture changes will overshadow thermal expansion.

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