BALTEK® SBC

GM--TDS-097

Select Grade, Controlled Structural Balsa

new DATA SHEET 07.2025

DESCRIPTION

BALTEK® SBC is a structural core material made from select kiln-dried *Ochroma pyramidale* (balsa) wood in the 'end-grain' configuration, delivering exceptional strength-to-weight and stiffness-to-weight ratios. It offers outstanding compressive and shear properties, excellent fatigue resistance, and closed cell structure. It is ideal for vacuum infusion and compatible with all major resin systems.

It maintains technical integrity under high temperature processing, fire exposure, and contact with chemicals such as styrene. **BALTEK® SBC** is suitable for a wide range of static and dynamic load-bearing applications across marine, wind, transportation, and industrial sectors.

Sustainably grown in FSC®-certified plantations owned by 3A Composites Core Materials or controlled sources, **BALTEK® SBC** is fully traceable from seed to core. FSC® MIX certification is available in select markets.

CHARACTERISTICS

- Bio-based core material from sustainable forestry
- First-class, select grade lumber
- EPD-verified negative global warming potential (GWP)
- Broadest range of densities available
- Wide range of densities available to accommodate various load cases
- Excellent fatigue and impact resistance
- Certified for a range of applications by DNV including areas exposed to slamming
- Outstanding strength and stiffness to weight ratios
- Good sound and thermal insulation
- Fulfils most FST (flame, smoke, toxicity) requirements
- Extremely wide operating temperature range -212 °C to +163 °C (-414 °F to +325 °F)
- Controlled time from harvesting to kiln-drying: Optimized for vacuum infusion processes
- Full traceability and highest lumber quality due to strict process control from seedling to final product

APPLICATIONS

- **Wind energy**: Rotor blades (shear webs & shells), nacelles, spinners
- **Marine:** Hulls, decks, bulkheads, superstructures, interiors, tooling/molds
- **Road and Rail:** Floors, roofs, side skirts, front-ends, doors, interiors, covers
- **Industrial:** Tanks, containers, architectural panels, impact limiters, sporting goods
- **Aerospace:** Floors, cargo pallets, cargo containers, bulkheads, general aviation
- **Defense:** Naval vessels, containers, cargo pallets, shelters, ballistic panels

PROCESSING

- Vacuum infusion
- Adhesive bonding
- Compression molding
- Contact molding (hand/spray)
- Pre-preg processing (up to 180 °C, 355 °F)
- Resin injection (RTM)

www.3ACcorematerials.com

Europe | Middle East | India | Africa
Airex AG
5643 Sins, Switzerland
T +41 41 789 66 00
corematerials@3AComposites.com

North America | South America
Baltek Inc.
High Point, NC 27261, USA
T +1 336 398 1900
corematerials.americas@3AComposites.com

Asia | Australia | New Zealand
3A Composites (China) Ltd.
201201 Shanghai, China
T +86 21 585 86 006
corematerials.asia@3AComposites.com

MECHANICAL PROPERTIES						
Typical properties (RGD[4])		**Unit (metric)**	**BALTEK® SBC.50**	**BALTEK® SBC.80**	**BALTEK® SBC.100**	**BALTEK® SBC.150**
Nominal sheet density	ASTM C-271	kg/m³	109	132	148	285
Sheet density range	ASTM C-271	kg/m³	84 - 116	113 - 161	136 - 176	248 - 296
Compressive strength perpendicular to the plane[1]	ASTM C365	N/mm²	5.5	7.7	9.2	22
Compressive modulus perpendicular to the plane[1]	ASTM C365	N/mm²	1616	2187	2526	4428
Tensile strength perpendicular to the plane[2]	ASTM C-297	N/mm²	6	7.5	8.5	16.5
Tensile modulus perpendicular to the plane	ASTM C-297	N/mm²	1682	2337	3020	6604
Shear strength[3]	ASTM C-273	N/mm²	1.8	2.3	2.6	5.2
Shear modulus	ASTM C-273	N/mm²	136	166	187	362
Thermal conductivity at room temperature	ASTM C-177	W/m*K	0.048	0.059	0.066	0.084
Standard sheet rigid (RGD)	Width	mm ± 5	610	610	610	610
	Length	mm ± 5	1220	1220	1220	1220
	Thickness std[4]	mm +0.25 / -0.75	3.5 to 90	3.5 to 90	3.5 to 90	5 to 75
	Thickness PRE[4]	mm +/- 0.25	3.5 to 90	3.5 to 90	3.5 to 90	5 to 75
ContourKore (CK)	Thickness	mm +0.25 / -0.75	3.5 to 63.5	3.5 to 63.5	3.5 to 63.5	3.5 to 45

Please specify Lamprep surface treatment or AL600 coating (decreases porosity and increases bond strength) when ordering (refer to BALTEK® Processing Guidelines for more information). Mechanical properties for ContourKore may differ. Perforations (breather holes), grooves and other finishing options are also available. Other sheet sizes are available on request.

[1] Properties are evaluated per ASTM C365 rev. 11. Values in older TDS may differ due to older test standards with different fixture configuration.
[2] Tensile strength values are using epoxy adhesive for testing. As density goes up, adhesive may fail before reaching core ultimate strength.
[3] All samples tested @ ¾" thick. Please apply appropriate shear strength reduction factors for greater thickness. Refer to the latest available DNV certificate to obtain the reduction factors at given thickness.
[4] Abbreviations: RGD = rigid material; std = standard; PRE = precision

Fire Performance[+]	Standard		50	100	150
Aircraft	FAR 25.853	Flammability Smoke density Toxicity Heat release	Passed Passed Passed Failed	Passed Passed Passed Failed	Not tested
Rail	ASTM E 162	Flame spread factor Heat Evolution factor Flame spread index	2.22 6.24 14	2.22 6.24 14	Not tested
Rail	ASTM E 662 (non-flaming mode)	Ds @ 90 sec Ds @ 4min	3 39	3 39	Not tested
Rail	ASTM E 662 (flaming mode)	Ds @ 90 sec Ds @ 4min	8 25	8 25	Not tested

[+] All samples tested with phenolic resin FRP skins.

The data provided gives approximate values for the nominal density. Due to density variations these values can be lower than indicated above. Minimum values to calculate sandwich constructions can be provided upon request. The information contained herein is believed to be correct and to correspond to the latest state of scientific and technical knowledge. However, no warranty is made, either expressed or implied, regarding its accuracy or the results to be obtained from the use of such information. No statement is intended or should be construed as a recommendation to infringe any existing patent.

GM--TDS-097

MECHANICAL PROPERTIES						
Typical properties (RDG[4])		**Unit (imperial)**	**BALTEK® SBC.50**	**BALTEK® SBC.80**	**BALTEK® SBC.100**	**BALTEK® SBC.150**
Nominal sheet density	ASTM C-271	lb/ft³	6.8	8.2	9.3	17.8
Minimum sheet density	ASTM C-271	lb/ft³	5.2 - 7.2	7.1 - 10.1	8.5 - 11	15.5 - 18.5
Compressive strength perpendicular to the plane[1]	ASTM C365	psi	798	1117	1336	3184
Compressive modulus perpendicular to the plane[1]	ASTM C365	psi	234400	317198	366200	642000
Tensile strength perpendicular to the plane[2]	ASTM C-297	psi	870	1088	1233	2393
Tensile modulus perpendicular to the plane	ASTM C-297	psi	243900	338954	438014	957800
Shear strength[3]	ASTM C-273	psi	267	334	378	761
Shear modulus	ASTM C-273	psi	19700	24076	27100	52600
Thermal conductivity at room temperature	ASTM C-177	BTU.in/ft².hr.°F	0.331	0.407	0.456	0.581
Standard sheet	Width	in ± 3/16	24	24	24	24
	Length	in ± 3/8	48	48	48	48
	Thickness std[4]	in +0.01 / -0.03	3/16 to 3 1/2	3/16 to 3 1/2	3/16 to 3 1/2	3/16 to 3
	Thickness PRE[4]	in +/- 0.01	3/16 to 3 1/2	3/16 to 3 1/2	3/16 to 3 1/2	3/16 to 3
ContourKore (CK)	Thickness	in +0.01 / -0.03	3/16 to 2 1/2	3/16 to 2 1/2	3/16 to 2 1/2	3/16 to 1 3/4

Please specify Lamprep surface treatment or AL600 coating (decreases porosity and increases bond strength) when ordering (refer to BALTEK® Processing Guidelines for more information). Mechanical properties for ContourKore may differ. Perforations (breather holes), grooves and other finishing options are also available. Other sheet sizes are available on request.

[1] Properties are evaluated per ASTM C365 rev. 11. Values in older TDS may differ due to older test standards with different fixture configuration.
[2] Tensile strength values are using epoxy adhesive for testing. As density goes up, adhesive may fail before reaching core ultimate strength.
[3] All samples tested @ ¾" thick. Please apply appropriate shear strength reduction factors for greater thickness. Refer to the latest available DNV certificate to obtain the reduction factors at given thickness.
[4] Abbreviations: RGD = rigid material; std = standard; PRE = precision

Fire Performance+	Standard		50	100	150
Aircraft	FAR 25.853	Flammability Smoke density Toxicity Heat release	Passed Passed Passed Failed	Passed Passed Passed Failed	Not tested
Rail	ASTM E 162	Flame spread factor Heat Evolution factor Flame spread index	2.22 6.24 14	2.22 6.24 14	Not tested
Rail	ASTM E 662 (non-flaming mode)	Ds @ 90 sec Ds @ 4min	3 39	3 39	Not tested
Rail	ASTM E 662 (flaming mode)	Ds @ 90 sec Ds @ 4min	8 25	8 25	Not tested

+ All samples tested with phenolic resin FRP skins.

The data provided gives approximate values for the nominal density. Due to density variations these values can be lower than indicated above. Minimum values to calculate sandwich constructions can be provided upon request. The information contained herein is believed to be correct and to correspond to the latest state of scientific and technical knowledge. However, no warranty is made, either expressed or implied, regarding its accuracy or the results to be obtained from the use of such information. No statement is intended or should be construed as a recommendation to infringe any existing patent.

GM--TDS-097