

BALTEK® VBC

GM--TDS-069

Engineered Structural Balsa

INFORMATION SHEET 09.2019 – Replaces 02.2019

DESCRIPTION



BALTEK® VBC is an engineered core material produced from kiln-dried and oriented balsa wood layers coming from controlled cultivation from 3A Composites Core Materials plantations. The optimal alignment of various layers obtains its unique mechanical properties and process ability.

BALTEK® VBC is an ideal, sustainable core material made of renewable resources with an extensive range of use.

VBC is lightweight and sustainable as a matter – like all **BALTEK®** products.

CHARACTERISTICS

- Optimized mechanical properties
- Excellent fatigue resistance (e.g. +/-45° damage tolerance)
- Improved density distribution
- Homogeneous structure, easy to machine; stable even at thin panel thickness
- Excellent damping properties
- Ecological product from controlled 3A Composites Core Materials plantations
- Superior skin adhesion
- Excellent fire behaviour

APPLICATIONS

- **Marine:** Hulls, bulkheads, superstructures
- **Road and Rail:** Floors, roofs, side skirts, front-ends, doors, covers
- **Wind energy:** Shear webs
- **Building and construction:** Composite bridge decks, platforms, concrete forms, temporary shelters
- **Industrial:** Sporting goods, Ski & Snowboard
- **Aerospace:** Floors, general aviation
- **Defense:** Blast protection

PROCESSING

- Adhesive bonding
- Hand lamination / spray lay-up
- Pre-preg processing (up to 180 °C)
- Resin injection (RTM)
- Vacuum infusion

3A Composites Core Materials owns and manages several thousand hectares of FSC®-certified balsa wood plantations (FSC-C019065) and (FSC-C125018)



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MECHANICAL PROPERTIES			
Property	Standard	Unit	0°/90°
Drawing			
Design description			Alternating layers in 0 / 90° grain orientation
Nominal sheet density	ASTM C-271	kg/m ³	156
Minimum sheet density	ASTM C-271	kg/m ³	136
Compressive strength perpendicular to the plane	ISO 844	N/mm ²	4.5
Compressive modulus perpendicular to the plane	ISO 844	N/mm ²	1000
Shear strength along bond lines	ASTM C-273	N/mm ²	2.2
Shear modulus along bond lines	ASTM C-273	N/mm ²	161
Shear strength across bond lines	ASTM C-273	N/mm ²	1.7
Shear modulus across bond lines	ASTM C-273	N/mm ²	105
Standard width		mm	1220
Standard lengths		mm	2440, 3050
Sheet tolerances	Width	mm	+/- 10
	Length	mm	+/- 10
	Thickness	mm	+0.25 / -0.75

Remark: all mechanical properties determined at 20mm thickness

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.

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MECHANICAL PROPERTIES			
Property	Standard	Unit	0°/90°
Drawing			
Design description			Alternating layers in 0 / 90° grain orientation
Nominal sheet density	ASTM C-271	lb/ft ³	9.74
Minimum sheet density	ASTM C-271	lb/ft ³	8.49
Compressive strength perpendicular to the plane	ISO 844	psi	653
Compressive modulus perpendicular to the plane	ISO 844	psi	145038
Shear strength along bond lines	ASTM C-273	psi	319
Shear modulus along bond lines	ASTM C-273	psi	23351
Shear strength across bond lines	ASTM C-273	psi	247
Shear modulus across bond lines	ASTM C-273	psi	15229
Standard width		ft	4
Standard lengths		ft	8, 10
Sheet tolerances	Width	in	+/- 0.39
	Length	in	+/- 0.39
	Thickness	in	+0.01 / -0.03

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