AIREX BALTEK BANOVA

DATA SHEET

07.2015 (replaces 02.2015)

AIREX® T92

Easy Processing Structural Foam

CHARACTERISTIC

- Easy to process with all types of resin and lamination processes
- High process temperature up to 150 °C (302 °F)
- Outstanding fatigue strength
- Best-in-class resin uptake
- Very high chemical stability
- Good adhesion (skin-to-core bond)
- Excellent long term thermal stability up to 100 °C (212 °F)
- No water absorption, after expansion nor out-gassing
- Recyclable and recycled material
- Highly consistent material properties
- Comprehensive material traceability (machine-readable batch information on each foam sheet)

APPLICATIONS

- **Wind energy**
  Blades (shear webs & shells), nacelles
- **Marine**
  Hulls, decks, superstructures, bulkheads, transoms, interiors stringers
- **Industrial**
  Covers, containers, local reinforcements, x-ray tables, sporting goods

PROCESSING

- Contact molding (hand/spray)
- Vacuum infusion
- Resin infusion / injection (VARTM / RTM)
- Adhesive bonding
- Pre-preg processing
- Compression molding (GMT, SMC)
- Thermoforming

AIREX® T92 is a closed-cell, thermoplastic and recyclable polymer foam with very good mechanical properties and an outstanding price / performance ratio.

It has an extraordinary resistance to fatigue, is chemically stable, UV-resistant and has negligible water absorption. It is thermally stable during high temperature processing and post curing without after expansion or out-gassing. T92 is designed for easy use with all resin systems and processing technologies.

AIREX® T92 is ideally suited as a core material for a wide variety of lightweight sandwich structures subjected to static and dynamic loads and/or exposed to elevated temperatures during manufacturing.

3A COMPOSITES

Europe | Middle East | India | Africa

Airex AG
5643 Sins, Switzerland
T +41 41 789 66 00 | F +41 41 789 66 60
corematerials@3AComposites.com

North America | South America

Baltek Inc.
High Point, NC 27261, USA
T +1 336 398 1900 | F +1 336 398 1901
corematerials.americas@3AComposites.com

Asia | Australia | New Zealand

3A Composites (China) Ltd.
201201 Shanghai, China
T +86 21 585 86 006 | F +86 21 338 27 298
corematerials.asia@3AComposites.com

AIREX BALTEK BANOVA

Typical properties for AIREX® T92		Unit (metric)	Value[1]	T92.80	T92.100	T92.110	T92.130	T92.200	T92.320 [3]
Density	ISO 845	kg/m³	Average *Typ. range*	85 *80 - 90*	100 *95-110*	110 *105-115*	135 *127 - 143*	210 *200 - 220*	320 *310 - 330*
Compressive strength perpendicular to the plane	ISO 844	N/mm²	Average *Minimum*	1.0 *0.8*	1.4 *1.2*	1.8 *1.45*	2.4 *2.1*	3.5 *3.2*	7.1 *6.5*
Compressive modulus perpendicular to the plane	DIN 53421	N/mm²	Average *Minimum*	70 *50*	90 *65*	110 *80*	140 *110*	180 *150*	280 *240*
Tensile strength perpendicular to the plane	ASTM C297	N/mm²	Average *Minimum*	1.9 *1.4*	2.3 *1.5*	2.4 *1.8*	2.6 *2.0*	3.1 *2.5*	4.5
Tensile modulus perpendicular to the plane	ASTM C297	N/mm²	Average *Minimum*	90 *80*	110 *90*	145 *100*	175 *130*	230 *190*	420
Shear strength	ISO 1922	N/mm²	Average *Minimum*	0.65 *0.55*	0.9 *0.75*	1.05 *0.9*	1.3 *1.1*	2.0 *1.6*	3.5 *3.0*
Shear modulus Parallel to welding lines Across welding lines *Across welding lines*	ISO 1922	N/mm²	 Average Average *Minimum*	 20 17 *14*	 24 21 *18*	 26 23 *20*	 34 30 *25*	 55 50 *45*	 110 110 *90*
Shear elongation at break	ISO 1922	%	Average *Minimum*	30 *20*	20 *10*	15 *10*	12 *8*	6 *4*	5 *3*
Thermal conductivity at room temperature	ISO 8301	W/m.K	Average	0.034	0.034	0.035	0.036	0.041	tbd
Standard sheet	Width[2]	mm ± 5		610	610	610	610	610	610
	Length[2]	mm ± 5		1220	1220	1005	1220	1220	1220
	Thickness	mm ± 0.5		5 à 100	5 to 100	5 to 100	5 to 100	5 to 100	5 to 50

Finishing Options, other dimensions and closer tolerances upon request

[1] Minimum values acc. DNV definition; test sample thickness 20 mm except compressive modulus (40 mm)
[2] Alternative width 1220 mm (1005 mm for T92.110), alternative length 2440 mm
[3] Preliminary data

AIREX BALTEK BANOVA

Typical properties for AIREX® T92		Unit (imperial)	Value[1]	T92.80	T92.100	T92.110	T92.130	T92.200	T92.320 [3]
Density	ISO 845	lb/ft³	Average *Typ. range*	5.3 *5.0 – 5.6*	6.2 *5.9 – 6.9*	6.9 *6.6 - 7.2*	8.4 *7.9 - 8.9*	13 *12.5 -13.7*	20 *19.4-20.6*
Compressive strength perpendicular to the plane	ISO 844	psi	Average *Minimum*	145 *116*	200 *174*	260 *210*	350 *305*	508 *464*	1'030 *943*
Compressive modulus perpendicular to the plane	DIN 53421	psi	Average *Minimum*	10'150 *7'250*	13'050 *9'425*	15'950 *11'600*	20'310 *15'950*	26'100 *21'750*	40'610 *34'810*
Tensile strength perpendicular to the plane	ASTM C297	psi	Average *Minimum*	275 *203*	330 *218*	348 *261*	377 *290*	450 *360*	653
Tensile modulus perpendicular to the plane	ASTM C297	psi	Average *Minimum*	13'050 *11'600*	15'950 *13'050*	21'030 *14'500*	25'380 *18'850*	33'360 *27'550*	60'920
Shear strength	ISO 1922	psi	Average *Minimum*	94 *80*	130 *109*	150 *131*	190 *160*	290 *230*	508 *435*
Shear modulus Parallel to welding lines Across welding lines *Across welding lines*	ISO 1922	psi	 Average Average *Minimum*	 2'890 2'470 *2'030*	 3'470 3'045 *2'610*	 3'800 3'335 *2'900*	 4'960 4'350 *3'625*	 7'975 7'250 *6'525*	 15'950 15'950 *13'050*
Shear elongation at break	ISO 1922	%	Average *Minimum*	30 *20*	20 *10*	15 *10*	12 *8*	6 *4*	5 *3*
Thermal conductivity at room temperature	ISO 8301	Btu.in/ hr.ft².F	Average	0.236	0.239	0.243	0.250	0.284	tbd
Standard sheet	Width[2]	in ± 0.2		48	39 ½	48	48	48	48
	Length[2]	in ± 0.2		96	96	96	96	96	96
	Thickness	in ± 0.02		1/8 to 4	1/8 to 4	1/8 to 4	1/8 to 4	1/8 to 4	0.2 to 2

Finishing Options, other dimensions and closer tolerances upon request

[1] Minimum values acc. DNV definition; test sample thickness 20 mm ($^3/_4$") except compressive modulus 40 mm (1 ½")
[2] Alternative width 24", alternative length 48" (39½" for T92.110)
[3] Preliminary data

The data provided gives approximate values for the nominal density and DNV minimum values according to DNV type approval certificate. 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.

.