

AIREX® C70

GM--TDS-106

Universal Structural Foam

DATA SHEET 04.2020 - Replaces 01.2020

DESCRIPTION



AIREX® C70 is a closed cell, cross-linked polymer foam that combines excellent stiffness and strength to weight ratios with superior toughness.

It is non-friable, contains no CFC's, has negligible water absorption, and provides an excellent resistance to chemicals. The fine cell structure offers an excellent bonding surface.

Compatible with most resins and manufacturing processes **AIREX® C70** is ideally suited as a core material for a wide variety of sandwich structures subjected to both static and dynamic loads. Thanks to its unique lightness (properties vs. density) C70 is the material of choice for applications where lightweight is a priority.

CHARACTERISTICS

- Outstanding strength and stiffness to weight ratios
- Good impact strength
- Low resin absorption
- High fatigue resistance
- Good fire performance (self-extinguishing)
- High sound and thermal insulation
- Good styrene resistance

APPLICATIONS

- **Marine:** Hulls, decks, bulkheads, superstructures, interiors
- **Road and Rail:** Roof panels, interiors, floors, doors, partition walls, side skirts, front-ends
- **Wind energy:** Rotor blades, nacelles, turbine generator housings
- **Aircraft and Aerospace:** Interiors, radomes, galley carts, general aviation (fuselage and wing)
- **Recreation:** Skis, snowboards, surfboards, wakeboards, canoes, kayaks
- **Industrial:** Tooling, tanks, ductwork, containers, covers

PROCESSING

- Contact molding (hand/spray)
- Vacuum infusion
- Resin injection (RTM)
- Adhesive bonding
- Pre-preg processing
- Thermoforming

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MECHANICAL PROPERTIES							
Typical properties for AIREX® C70		Unit (metric)	Value ¹⁾	C70.55	C70.75	C70.90	C70.130
Density	ISO 845	kg/m³	Average Typ. range	60 54 - 69	80 72 - 92	100 90 - 115	130 120 - 150
Compressive strength perpendicular to the plane	ISO 844	N/mm²	Average Minimum	0.90 0.75	1.45 1.10	2.0 1.7	3.0 2.6
Compressive modulus perpendicular to the plane	DIN 53421	N/mm²	Average Minimum	69 55	104 80	130 110	170 145
Tensile strength in the plane	ISO 527 1-2	N/mm²	Average Minimum	1.3 1.0	2.0 1.6	2.7 2.2	4.0 3.0
Tensile modulus in the plane	ISO 527 1-2	N/mm²	Average Minimum	45 35	66 50	84 65	115 95
Shear strength	ISO 1922	N/mm²	Average Minimum	0.85 0.70	1.2 1.0	1.7 1.4	2.4 2.1
Shear modulus	ASTM C393	N/mm²	Average Minimum	22 18	30 24	40 34	54 45
Shear elongation at break	ISO 1922	%	Average Minimum	16 10	18 10	23 12	30 20
Thermal conductivity at room temperature	ISO 8301	W/m.K	Average	0.031	0.033	0.035	0.039
Standard sheet	Width	mm ± 5		1150	1020	950	850
	Length	mm ± 5		2450 ²⁾	2180	2050	1900
	Thickness	mm ± 0.5		5 to 70	3 to 68	3 to 60	5 to 50

Finishing Options, other dimensions and closer tolerances upon request

¹⁾ Minimum values acc. DNV-GL definition; test sample thickness 20 mm except tensile properties (10 mm) and compressive modulus (40 mm)

²⁾ Half-size plane sheets for thickness ≤ 9 mm ex-Sins; full-size sheets ex-China

The data provided gives approximate values for the nominal density and DNV-GL minimum values according to DNV-GL 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.

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MECHANICAL PROPERTIES							
Typical properties for AIREX® C70		Unit (imperial)	Value ¹⁾	C70.55	C70.75	C70.90	C70.130
Density	ISO 845	lb/ft³	Average Typ. range	3.7 3.4 - 4.3	5.0 4.5 - 5.7	6.2 5.6 - 7.2	8.1 7.5 - 9.4
Compressive strength perpendicular to the plane	ISO 844	psi	Average Minimum	130 109	210 160	290 247	435 377
Compressive modulus perpendicular to the plane	DIN 53421	psi	Average Minimum	10'000 7'975	15'080 11'600	18'850 15'950	24'650 21'025
Tensile strength in the plane	ISO 527 1-2	psi	Average Minimum	190 145	290 232	390 319	580 435
Tensile modulus in the plane	ISO 527 1-2	psi	Average Minimum	6'530 5'075	9'600 7'250	12'200 9'425	16'680 13'775
Shear strength	ISO 1922	psi	Average Minimum	123 102	175 145	247 203	348 305
Shear modulus	ASTM C393	psi	Average Minimum	3'190 2'610	4'350 3'480	5'802 4'930	7'830 6'525
Shear elongation at break	ISO 1922	%	Average Minimum	16 10	18 10	23 12	30 20
Thermal conductivity at room temperature	ISO 8301	BTU.in/ft².hr.°F	Average	0.21	0.23	0.24	0.27
Standard sheet	Width	in ± 0.2		45.3	40.2	37.4	33.5
	Length	in ± 0.2		96.5 ²⁾	85.8	80.7	74.8
	Thickness	in ± 0.02		0.2 to 2.8	³ / ₈ to 2.7	³ / ₈ to 2.4	0.2 to 2

Finishing Options, other dimensions and closer tolerances upon request

¹⁾ Minimum values acc. DNV-GL definition; test sample thickness 20 mm (³/₄" except tensile properties 10 mm (³/₈") and compressive modulus 40 mm (1 ¹/₂")

²⁾ Half-size plane sheets for thickness <= 9 mm (0.354") ex-Sins; full-size sheets ex-China

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