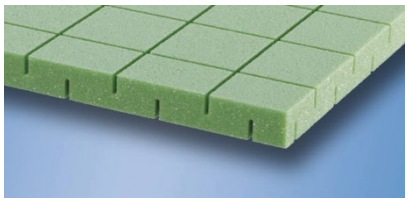
AIREX® C70

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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AIREX

3A COMPOSITES CORE MATERIALS

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 or 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.

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3A COMPOSITES CORE MATERIALS

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 (¾") except tensile properties 10 mm (⅜") and compressive modulus 40 mm (1 ½")
[2)] Half-size plane sheets or thickness <= 9 mm (0.354") 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.