

AIREX[®] C70



GM--TDS-094

Universal Structural Foam

DATA SHEET 08.2022 - Replaces 03.2022

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 <i>Typ. range</i>	60 54 - 69	80 72 - 92	100 90 - 115	130 120 - 150					
Compressive strength perpendicular to the plane	ISO 844/ ASTM C365	N/mm²	Average <i>Minimum</i>	0.90 <i>0.75</i>	1.45 1.10	2.0 1.7	3.0 2.6					
Compressive modulus perpendicular to the plane	ISO 844/ DIN 53421	N/mm²	Average <i>Minimum</i>	69 55	104 <i>80</i>	130 <i>110</i>	170 145					
Compressive modulus perpendicular to the plane	ASTM C365	N/mm²	Average <i>Minimum</i>	58 45	84 67	110 93	145 123					
Tensile strength in the plane	ISO 527 1-2	N/mm²	Average <i>Minimum</i>	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 <i>Minimum</i>	45 35	66 50	84 65	115 95					
Shear strength	ISO 1922	N/mm²	Average <i>Minimum</i>	0.85 0.70	1.2 1.0	1.7 1.4	2.4 2.1					
Shear modulus	ISO 1922	N/mm²	Average <i>Minimum</i>	19 <i>16</i>	26 21	35 29	47 39					
Shear modulus	ASTM C393	N/mm²	Average <i>Minimum</i>	22 18	30 24	40 34	54 <i>4</i> 5					
Shear elongation at break	ISO 1922	%	Average <i>Minimum</i>	16 <i>10</i>	18 <i>10</i>	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 +10/-5		2450	2180	2050	1900					
	Thickness	mm ± 0.5		3 to 70	3 to 68	3 to 60	3 to 50					

Finishing Options, other dimensions, and closer tolerances upon request.

¹⁾ Minimum values acc. DNV-GL definition; density and compressive properties are measured with a specimen of at least 40 mm thickness (from center position of a block).

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.





MECHANICAL PROPERTIES											
Typical properties for AIREX [®] C70		Unit (imperial)	Value ¹⁾	C70.55	C70.75	C70.90	C70.130				
Density	ISO 845	lb/ft ³	Average <i>Typ. range</i>	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 / ASTM C365	psi	Average <i>Minimum</i>	130 <i>10</i> 9	210 <i>160</i>	290 247	435 377				
Compressive modulus perpendicular to the plane	ISO 844 / DIN 53421	psi	Average <i>Minimum</i>	10'000 7'975	15'080 <i>11'600</i>	18'850 <i>15'</i> 950	24'650 <i>21'025</i>				
Compressive modulus perpendicular to the plane	ASTM C365	psi	Average <i>Minimum</i>	8'400 6'500	23'180 <i>9'700</i>	15'950 <i>13'480</i>	21'000 <i>17'840</i>				
Tensile strength in the plane	ISO 527 1-2	psi	Average <i>Minimum</i>	190 <i>14</i> 5	290 232	390 <i>319</i>	580 <i>435</i>				
Tensile modulus in the plane	ISO 527 1-2	psi	Average <i>Minimum</i>	6'500 <i>5'075</i>	9'600 7'250	12'200 9'425	16'680 <i>13'</i> 775				
Shear strength	ISO 1922	psi	Average <i>Minimum</i>	123 102	175 <i>145</i>	247 203	348 <i>305</i>				
Shear modulus	ISO 1922	psi	Average <i>Minimum</i>	2'750 2'320	3'770 3'050	5'050 4'200	6'800 5'600				
Shear modulus	ASTM C393	psi	Average <i>Minimum</i>	3'190 <i>2'610</i>	4'350 3'480	5'802 <i>4'</i> 930	7'830 6'525				
Shear elongation at break	ISO 1922	%	Average <i>Minimum</i>	16 10	18 <i>10</i>	23 12	30 20				
Thermal conductivity at room temperature	ISO 8301	BTU.in/ft ² .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 +0.4 / -0.2		96.5	85.8	80.7	74.8				
	Thickness	in ± 0.02		0.12 to 2.8	0.12 to 2.7	0.12 to 2.4	0.12 to 2				

Finishing Options, other dimensions, and closer tolerances upon request.

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