

### DESCRIPTION



**AIREX® C71** is a closed cell, cross-linked polymer foam especially formulated to maintain its stability also at higher processing or service temperatures.

It 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® C71** is ideally suited as a core material for a wide variety of sandwich structures subjected to both static and dynamic loads, and exposed to elevated temperatures. Thanks to its unique lightness (properties vs. density) C71 is the material of choice for applications where lightweight is a priority.

### CHARACTERISTICS

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

### APPLICATIONS

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

### PROCESSING

- Contact molding (hand/spray)
- Resin injection (RTM)
- Adhesive bonding
- Pre-preg processing (up to 140 °C, 285 °F)
- Vacuum infusion
- Thermoforming
- Press molding

<b>MECHANICAL PROPERTIES</b>					
Typical properties for AIREX® C71		Unit (metric)	Value <sup>1)</sup>	C71.55	C71.75
Density	ISO 845	kg/m <sup>3</sup>	Average <i>Typ. Range</i>	60 54 - 69	80 72 - 92
Compressive strength perpendicular to the plane	ISO 844	N/mm <sup>2</sup>	Average <i>Minimum</i>	0.95 0.85	1.5 1.3
Compressive modulus perpendicular to the plane	DIN 53421	N/mm <sup>2</sup>	Average <i>Minimum</i>	70 60	102 85
Tensile strength in the plane	ISO 527 1-2	N/mm <sup>2</sup>	Average <i>Minimum</i>	1.5 1.0	2.2 1.4
Tensile modulus in the plane	ISO 527 1-2	N/mm <sup>2</sup>	Average <i>Minimum</i>	42 30	60 40
Shear strength	ISO 1922	N/mm <sup>2</sup>	Average <i>Minimum</i>	0.93 0.70	1.35 1.10
Shear modulus	ASTM C393	N/mm <sup>2</sup>	Average <i>Minimum</i>	21.5 18	30 25
Shear elongation at break	ISO 1922	%	Average <i>Minimum</i>	25 15	32 20
Thermal conductivity at room temperature	ISO 8301	W/m.K	Average	0.031	0.036
Standard sheet	Width	mm ± 5		1120	1005
	Length	mm ± 5		2400	2150
	Thickness	mm ± 0.5		5 to 70	3 to 70
Color				light red	light yellow

Finishing Options, other dimensions and closer tolerances upon request

<sup>1)</sup> Statistical minimum values; test sample thickness 20 mm except tensile properties (10 mm) and compressive modulus (40 mm)

The data provided gives approximate values for the nominal density and minimum values based on statistics.

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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<b>MECHANICAL PROPERTIES</b>					
<b>Typical properties for AIREX® C71</b>		<b>Unit (imperial)</b>	<b>Value<sup>1)</sup></b>	<b>C71.55</b>	<b>C71.75</b>
Density	ISO 845	lb/ft <sup>3</sup>	Average <i>Typ. Range</i>	3.7 3.4 – 4.3	5.0 4.5 – 5.7
Compressive strength perpendicular to the plane	ISO 844	psi	Average <i>Minimum</i>	140 123	220 189
Compressive modulus perpendicular to the plane	DIN 53421	psi	Average <i>Minimum</i>	10'100 8'700	14'790 12'325
Tensile strength in the plane	ISO 527 1-2	psi	Average <i>Minimum</i>	218 145	319 203
Tensile modulus in the plane	ISO 527 1-2	psi	Average <i>Minimum</i>	6'092 4'350	8'700 5'800
Shear strength	ISO 1922	psi	Average <i>Minimum</i>	135 102	196 160
Shear modulus	ASTM C393	psi	Average <i>Minimum</i>	3'118 2'610	4'400 3'625
Shear elongation at break	ISO 1922	%	Average <i>Minimum</i>	25 15	32 20
Thermal conductivity at room temperature	ISO 8301	BTU.in/ft <sup>2</sup> .hr.°F	Average	0.21	0.25
Standard sheet	Width	in ± 0.2		44.1	39.6
	Length	in ± 0.2		94.5	84.6
	Thickness	in ± 0.02		0.2 to 2.8	1/8 to 2.8
Color				light red	light yellow

Finishing Options, other dimensions and closer tolerances upon request

<sup>1)</sup> Statistical minimum values; test sample thickness 20 mm (¾") except tensile properties 10 mm (⅜") and compressive modulus 40 mm (1 ½")

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