

3A Composites Core Materials AIREX® R82.80 High Performance Structural Foam

Category : Other Engineering Material , Composite Core Material , Polymer , Thermoplastic

Material Notes:

AIREX® R82 is a closed-cell, thermoplastic polymer foam that combines fire resistance with low smoke and toxicity, along with good dielectric properties. It has a good strength to weight ratio, very low moisture absorption, is thermoformable and ductile. AIREX® R82 is a core material for use in structural lightweight applications that demand high fire resistance, radar transparency or operation in extremely hot or cold environments. Characteristics: Fulfills most stringent fire requirements; Operating temperature from -194°C to +160°C (-317° F to +320 °F); Remains ductile at cryogenic temperatures; Excellent dielectric properties (radar transparent outstanding); Very low moisture absorption; Good fatigue resistance; High impact resistance (non-brittle failure mode); Thermoformable; Good sound and thermal insulation. Applications: Aircraft and Aerospace: Interiors, cockpit doors, cryogenic tanks, insulating panels, radomes, helicopter rotor blades, general aviation (fuselage and wing); Road and Rail: Front-ends, side skirts, roof panels, interiors; Marine: Fast-ferries, fire resistant interiors, radomes; Defense: Naval superstructures, antennas, combat communication systems; Industrial: High-temperature tooling, radomes, x-ray tables

Order this product through the following link:

http://www.lookpolymers.com/polymer_3A-Composites-Core-Materials-AIREX-R8280-High-Performance-Structural-Foam.php

Physical Properties	Metric	English	Comments
Density	0.0800 g/cc	0.00289 lb/in ³	average; ISO 845
	0.0720 - 0.0950 g/cc	0.00260 - 0.00343 lb/in ³	typical range; ISO 845

Mechanical Properties	Metric	English	Comments
Tensile Strength	>= 1.70 MPa	>= 247 psi	in the plane; ISO 527 1-2
	2.00 MPa	290 psi	average; in the plane; ISO 527 1-2
Elongation at Break	>= 15 %	>= 15 %	shear; ISO 1922
	23 %	23 %	average; shear; ISO 1922
Tensile Modulus	>= 0.0500 GPa	>= 7.25 ksi	in the plane; ISO 527 1-2
	0.0540 GPa	7.83 ksi	average; in the plane; ISO 527 1-2
Compressive Strength	>= 0.900 MPa	>= 131 psi	perpendicular to plane; ISO 844
	1.10 MPa	160 psi	average; perpendicular to plane; ISO 844
Compressive Modulus	>= 0.0560 GPa	>= 8.12 ksi	perpendicular to plane; DIN 53421
	0.0620 GPa	8.99 ksi	average; perpendicular to plane; DIN 53421

Shear Modulus Mechanical Properties	≥ 0.0200 GPa Metric	≥ 2.90 ksi English	ASTM C393 Comments
	0.0230 GPa	3.34 ksi	average; ASTM C393
Shear Strength	≥ 0.900 MPa	≥ 131 psi	ISO 1922
	1.10 MPa	160 psi	average; ISO 1922
Charpy Impact, Notched	0.130 J/cm ²	0.619 ft-lb/in ²	DIN 53453

Thermal Properties	Metric	English	Comments
Thermal Conductivity	0.0370 W/m-K	0.257 BTU-in/hr-ft ² -°F	ISO 8301

Descriptive Properties	Value	Comments
Color	off white	

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