

## 3A Composites Core Materials AIREX® R82.110 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 outstanding fire resistance with low smoke and toxicity, along with excellent 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. CharacteristicsFulfils most stringent fire requirementsOperating temperature from -194°C to +160°C (-317° F to +320 °F)Remains ductile at cryogenic temperaturesExcellent dielectric properties (radar transparent outstanding)Very low moisture absorptionGood fatigue resistanceHigh impact resistance (non-brittle failure mode)ThermoformableGood sound and thermal insulationApplicationsAircraft 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, interiorsMarine: Fast-ferries, fire resistant interiors, radomesDefense: Naval superstructures, antennas, combat communication systemsIndustrial: High-temperature tooling, radomes, x-ray tables

Order this product through the following link:

[http://www.lookpolymers.com/polymer\\_3A-Composites-Core-Materials-AIREX-R82110-High-Performance-Structural-Foam.php](http://www.lookpolymers.com/polymer_3A-Composites-Core-Materials-AIREX-R82110-High-Performance-Structural-Foam.php)

Physical Properties	Metric	English	Comments
Density	0.110 g/cc	0.00397 lb/in <sup>3</sup>	average; ISO 845
	0.0990 - 0.126 g/cc	0.00358 - 0.00455 lb/in <sup>3</sup>	typical range; ISO 845

Mechanical Properties	Metric	English	Comments
Tensile Strength	>= 1.90 MPa	>= 276 psi	in the plane; ISO 527 1-2
	2.20 MPa	319 psi	average; in the plane; ISO 527 1-2
Elongation at Break	>= 10 %	>= 10 %	shear; ISO 1922
	18 %	18 %	average; shear; ISO 1922
Tensile Modulus	>= 0.0540 GPa	>= 7.83 ksi	in the plane; ISO 527 1-2
	0.0640 GPa	9.28 ksi	average; in the plane; ISO 527 1-2
Compressive Strength	>= 1.20 MPa	>= 174 psi	perpendicular to plane; ISO 844
	1.40 MPa	203 psi	average; perpendicular to plane; ISO 844
Compressive Modulus	>= 0.0600 GPa	>= 8.70 ksi	perpendicular to plane; DIN 53421
	0.0830 GPa	12.0 ksi	average; perpendicular to plane; DIN 53421

Shear Modulus Mechanical Properties	$\geq 0.0250$ GPa Metric	$\geq 3.63$ ksi English	ASTM C393 Comments
	0.0300 GPa	4.35 ksi	average; ASTM C393
Shear Strength	$\geq 1.15$ MPa	$\geq 167$ psi	ISO 1922
	1.40 MPa	203 psi	average; ISO 1922
Charpy Impact, Notched	0.140 J/cm <sup>2</sup>	0.666 ft-lb/in <sup>2</sup>	DIN 53453

Thermal Properties	Metric	English	Comments
Thermal Conductivity	0.0400 W/m-K	0.278 BTU-in/hr-ft <sup>2</sup> -°F	ISO 8301

Descriptive Properties	Value	Comments
Color	off white	

## Contact Songhan Plastic Technology Co.,Ltd.

Website : [www.lookpolymers.com](http://www.lookpolymers.com)

Email : [sales@lookpolymers.com](mailto:sales@lookpolymers.com)

Tel : +86 021-51131842

Mobile : +86 13061808058

Skype : lookpolymers

Address : United North Road 215,Fengxian District, Shanghai City,China