

Zircar Ceramics Alumina Mat

Category : Ceramic , Oxide , Aluminum Oxide

Material Notes:

A layered, low density flexible mat made of 100% polycrystalline alumina fiber (non-RCF) designed for use to temperatures as high as 1650°C (3002°F). Shot free low density mat used as fill between rigid insulation materials as well as a source for making folded fiber modules. Information provided by Zircar Ceramics.

Order this product through the following link:

http://www.lookpolymers.com/polymer_Zircar-Ceramics-Alumina-Mat.php

Physical Properties	Metric	English	Comments
Density	0.0350 g/cc	0.00126 lb/in ³	
Loss On Ignition	0.000 % @Temperature 800 °C, Time 7200 sec	0.000 % @Temperature 1470 °F, Time 2.00 hour	
Filament Diameter	3.0 - 3.5 µm	3.0 - 3.5 µm	Median Fiber Diameter
Thickness	35100 microns	1380 mil	

Mechanical Properties	Metric	English	Comments
Hardness, Mohs	6.0	6.0	
Tensile Strength, Ultimate	1500 MPa	218000 psi	Perpendicular to Thickness
Modulus of Elasticity	320 GPa	46400 ksi	

Thermal Properties	Metric	English	Comments
Specific Heat Capacity	1.05 J/g-°C	0.250 BTU/lb-°F	
Thermal Conductivity	0.0700 W/m-K @Temperature 315 °C	0.486 BTU-in/hr-ft ² -°F @Temperature 599 °F	parallel to thickness; ASTM C177-76
	0.0900 W/m-K @Temperature 540 °C	0.625 BTU-in/hr-ft ² -°F @Temperature 1000 °F	Parallel to Thickness; ASTM C177-76
	0.130 W/m-K @Temperature 760 °C	0.902 BTU-in/hr-ft ² -°F @Temperature 1400 °F	Parallel to Thickness; ASTM C177-76
	0.170 W/m-K @Temperature 980 °C	1.18 BTU-in/hr-ft ² -°F @Temperature 1800 °F	parallel to thickness; ASTM C177-76
	0.230 W/m-K	1.60 BTU-in/hr-ft ² -°F	Parallel to Thickness; ASTM C177-76

Thermal Properties	@Temperature 1200 °C Metric	@Temperature 2190 °F English	Comments
	0.300 W/m-K	2.08 BTU-in/hr-ft²-°F	Parallel to Thickness; ASTM C177-76
	@Temperature 1425 °C	@Temperature 2597 °F	
Melting Point	2036 °C	3697 °F	
Maximum Service Temperature, Air	1650 °C	3000 °F	
Shrinkage	0.00 %	0.00 %	Perpendicular to Thickness
	@Temperature 1200 °C	@Temperature 2190 °F	
	2.20 %	2.20 %	Perpendicular to Thickness
	@Temperature 1425 °C	@Temperature 2597 °F	
	3.0 %	3.0 %	Perpendicular to Thickness
	@Temperature 1535 °C	@Temperature 2795 °F	
	4.00 %	4.00 %	perpendicular to thickness
	@Temperature 1650 °C	@Temperature 3000 °F	

Component Elements Properties	Metric	English	Comments
Al2O3	95 - 97 %	95 - 97 %	
Other	<= 0.50 %	<= 0.50 %	Including Sodium and Calcium
SiO2	3.0 - 5.0 %	3.0 - 5.0 %	

Descriptive Properties	Value	Comments
Color	White	
Shot content	Negligible	Non Fibrous Material

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