

Zircar Ceramics AL-30AA Alumina Insulation

Category : Ceramic , Oxide , Aluminum Oxide

Material Notes:

AL-30 and AL-30AA are rigid alumina fiber boards characterized by uniform open porosity and high machinability. Alumina bonded AL-30AA is used in fuel cell reformers. Information provided by Zircar Ceramics.

Order this product through the following link:

http://www.lookpolymers.com/polymer_Zircar-Ceramics-AL-30AA-Alumina-Insulation.php

Physical Properties	Metric	English	Comments
Density	0.480 g/cc	0.0173 lb/in ³	
Open Porosity	85 %	85 %	

Mechanical Properties	Metric	English	Comments
Flexural Strength	1.79 MPa	260 psi	Load applied normal to fiber plane, Strain = load deformation in mils; Three point bending, sample 0.5"*0.5"*4"
	@Strain 32.0 %	@Strain 32.0 %	
	1.83 MPa	265 psi	Load applied parallel to fiber plane, Strain = load deformation in mils; Three point bending, sample 0.5"*0.5"*4"
	@Strain 35.0 %	@Strain 35.0 %	
Compressive Yield Strength	0.0689 MPa	10.0 psi	Load applied parallel to fiber plane
	@Strain 2.00 %	@Strain 2.00 %	
	0.345 MPa	50.0 psi	Load applied normal to fiber plane
	@Strain 2.00 %	@Strain 2.00 %	
	0.689 MPa	100 psi	Load applied normal to fiber plane
	@Strain 9.00 %	@Strain 9.00 %	
	1.00 MPa	145 psi	Load applied parallel to fiber plane
	@Strain 9.00 %	@Strain 9.00 %	

Thermal Properties	Metric	English	Comments
CTE, linear	7.50 $\mu\text{m}/\text{m}\cdot\text{°C}$	4.17 $\mu\text{in}/\text{in}\cdot\text{°F}$	
	@Temperature 20.0 - 1000 °C	@Temperature 68.0 - 1830 °F	
Specific Heat Capacity	1.05 J/g·°C	0.250 BTU/lb·°F	
Thermal Conductivity	0.0900 W/m-K	0.625 BTU-in/hr-ft ² -°F	Parallel to Thickness; ASTM C177-76
	@Temperature 250 °C	@Temperature 482 °F	

Thermal Properties	Metric W/m-K	English TU-in/hr-ft ² -°F	Comments
	@Temperature 525 °C	@Temperature 977 °F	Parallel to Thickness; ASTM C177-76
	0.160 W/m-K	1.11 BTU-in/hr-ft ² -°F	Parallel to Thickness; ASTM C177-76
	@Temperature 800 °C	@Temperature 1470 °F	
	0.190 W/m-K	1.32 BTU-in/hr-ft ² -°F	Parallel to Thickness; ASTM C177-76
	@Temperature 1075 °C	@Temperature 1967 °F	
	0.230 W/m-K	1.60 BTU-in/hr-ft ² -°F	Parallel to Thickness; ASTM C177-76
	@Temperature 1350 °C	@Temperature 2460 °F	
	0.270 W/m-K	1.87 BTU-in/hr-ft ² -°F	Parallel to Thickness; ASTM C177-76
	@Temperature 1650 °C	@Temperature 3000 °F	
Melting Point	1870 °C	3400 °F	
Maximum Service Temperature, Air	1500 °C	2730 °F	Continuous
	1600 °C	2910 °F	Intermittent
Shrinkage	2.00 %	2.00 %	Perpendicular to Thickness
	@Temperature 1500 °C, Time 86400 sec	@Temperature 2730 °F, Time 24.0 hour	
	8.00 %	8.00 %	Perpendicular to Thickness
	@Temperature 1650 °C, Time 86400 sec	@Temperature 3000 °F, Time 24.0 hour	

Component Elements Properties	Metric	English	Comments
Al2O3	97 %	97 %	
SiO2	3.0 %	3.0 %	

Descriptive Properties	Value	Comments
Color	White	

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