

## Zircar Zirconia ZYFB-3 Zirconia Boards, Discs, and Cylinders Insulation

Category : Ceramic , Machinable Ceramic , Oxide , Zirconium Oxide

### Material Notes:

Type ZYFB Boards, Discs and Cylinders are rigid, refractory structures composed of yttria-stabilized zirconia fibers that do not undergo the usual phase transitions associated with pure zirconia. Type ZYFB is ideally suited for thermal insulation applications under conditions of ultra-high temperatures and in a variety of severe environments. ZYFB is fired at a high temperature to impart good dimensional stability up to 1650°C and can be used at higher temperatures where some additional sintering can be tolerated. It has good hot strength up to 1400°C and can be used as a self supporting setter for loads equal to twice its own weight up to this temperature. ZYFB is available in two densities. ZYFB-3 has a bulk density of 30 pcf and possesses extremely low thermal conductivity. ZYFB-6 has a bulk density of 60 pcf and is stronger than ZYFB-3. Both are zirconia bonded and have exceptional resistance to oxidizing and reducing atmospheres at high temperatures. Zirconia does, however, lose a small amount of oxygen at very high temperatures in vacuum and inert or reducing atmospheres. This reaction results in a color change from white to gray while most other properties remain essentially unchanged and insulation effectiveness is not impaired. ZYFB has exceptional resistance to most corrosive environments. It undergoes little attack by molten alkali metal chlorides and carbonates at temperatures up to 700°C and withstands aqueous solutions of alkali metal hydroxides at temperatures as high as 230°C. ZYFB will also tolerate exposure to inorganic acids at their boiling point for short lengths of time. Features: Rigid and Machinable High Purity Zirconia Bonded Two Densities Available 30 pcf & 60 pcf Extreme High Temperature Stability Fibers Stabilized with ~10 wt% Yttria Low Thermal Conductivity Can be Cemented with Zircar Zirconia Cement Type ZR-CEM Can be Surface Hardened with Zircar Zirconia Rigidizer Type ZR-RIG Pre-fired and Organic Free Information provided by Zircar Zirconia.

Order this product through the following link:

[http://www.lookpolymers.com/polymer\\_Zircar-Zirconia-ZYFB-3-Zirconia-Boards-Discs-and-Cylinders-Insulation.php](http://www.lookpolymers.com/polymer_Zircar-Zirconia-ZYFB-3-Zirconia-Boards-Discs-and-Cylinders-Insulation.php)

Physical Properties	Metric	English	Comments
Bulk Density	0.480 g/cc	0.0173 lb/in <sup>3</sup>	
Porosity	92 %	92 %	
Outgassing - Total Mass Loss	0.00 %	0.00 %	In vacuum

Mechanical Properties	Metric	English	Comments
Flexural Strength	0.600 MPa	87.0 psi	Parallel to thickness
Compressive Yield Strength	0.290 MPa	42.1 psi	Parallel to thickness @ 10% compression

Thermal Properties	Metric	English	Comments
CTE, linear	10.7 $\mu\text{m}/\text{m}\cdot^\circ\text{C}$	5.94 $\mu\text{in}/\text{in}\cdot^\circ\text{F}$	
	@Temperature 20.0 - 1180 °C	@Temperature 68.0 - 2160 °F	
Thermal Conductivity	0.0800 W/m-K	0.555 BTU-in/hr-ft <sup>2</sup> -°F	
	@Temperature 400 °C	@Temperature 752 °F	

Thermal Properties	Metric W/m-K	English TU-in/hr-ft <sup>2</sup> -°F	Comments
	@Temperature 800 °C	@Temperature 1470 °F	
	0.140 W/m-K	0.972 BTU-in/hr-ft <sup>2</sup> -°F	
	@Temperature 1100 °C	@Temperature 2010 °F	
	0.190 W/m-K	1.32 BTU-in/hr-ft <sup>2</sup> -°F	
	@Temperature 1400 °C	@Temperature 2550 °F	
	0.240 W/m-K	1.67 BTU-in/hr-ft <sup>2</sup> -°F	
	@Temperature 1650 °C	@Temperature 3000 °F	
Melting Point	2590 °C	4690 °F	
Maximum Service Temperature, Air	1950 °C	3540 °F	
Softening Point	1180 °C	2160 °F	Dilatometric @ 10psi
Shrinkage	1.20 %	1.20 %	perpendicular to thickness
	@Temperature 1650 °C, Time 3600 sec	@Temperature 3000 °F, Time 1.00 hour	
	2.80 %	2.80 %	perpendicular to thickness
	@Temperature 1650 °C, Time 86400 sec	@Temperature 3000 °F, Time 24.0 hour	

Component Elements Properties	Metric	English	Comments
HfO2	1.0 - 2.0 %	1.0 - 2.0 %	
Y2O3	10 %	10 %	
ZrO2	88 - 89 %	88 - 89 %	

## 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