

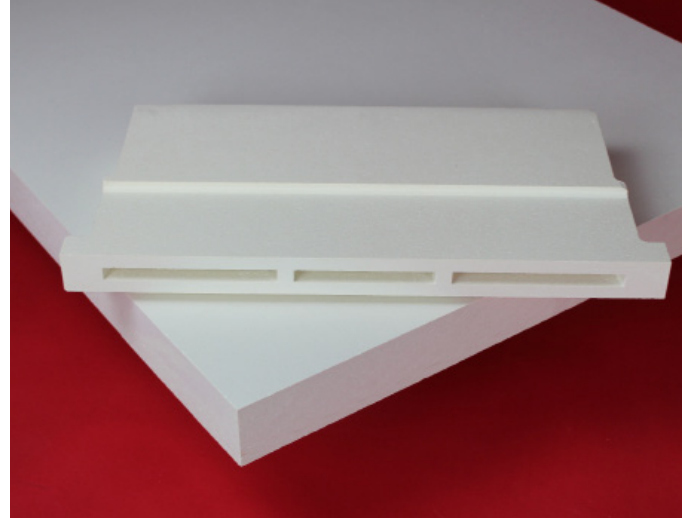


## Alumina-Silica Type Z-500

### General Information

ZIRCAR Ceramics' Alumina-Silica Type Z-500 is a unique high-strength rigid combination of specially processed refractory ceramic fiber (RCF), low-surface-area ceramic fillers and inorganic binders. Z-500 is uniformly rigidized and hard throughout its entire thickness, facilitating its precision machining into complex shapes and configurations. No re-rigidizing is required after machining. Z-500 exhibits a fine open-pore structure with excellent thermal insulating properties, superior hot strength and dimensional stability beyond 1000°C (1832°F).

Z-500 is pre-fired, contains no organic binders and will produce no smoke or odors when heated. It has excellent resistance to chemical attack and is not affected by oil or water. It can, however, be affected by hydrofluoric acid, phosphoric acid and strong alkalis.



### Characteristics & Properties

Color	White
Density, g/cc (pcf)	0.72 (45)
Typical Composition, %	
Al <sub>2</sub> O <sub>3</sub>	68
SiO <sub>2</sub>	32
Organic Content	0
Maximum Use Temperature*, °C (°F)	1093 (2000)
Melting Point, °C (°F)	1815 (3300)
Shrinkage‡, %	
24 hr. 982°C (1800°F)	1.8
24 hr. 1093°C (2000°F)	3
Modulus of Rupture**, MPa (psi)	5.2 (750)
Compressive Strength**, MPa (psi)	
at 10% compression	4.1 (600)
at 20% compression	6.9 (1000)
Arc Resistance, second, ASTM-D495	>420
Volume Resistivity, ohm /cm, ASTM D-257	2.2 x 10 <sup>8</sup>
Surface Resistivity, ohms, ASTM D-257	4.6 x 10 <sup>7</sup>

The data presented herein is intended to help the user to determine the appropriateness of this material for their application.

This data is a nominal representation of this product's properties and characteristics and therefore should not be used in preparing specifications.

\* Maximum use temperature is dependent on variables such as stresses, both thermal and mechanical, and the chemical environment that the material experiences. \*\* Properties expressed parallel to thickness. ‡ Properties expressed perpendicular to thickness.

### ZIRCAR Ceramics, Inc.

PO Box 519

100 N. Main St., Florida, NY 10921-0519

Telephone: (845) 651-6600

E-mail: sales@zircarceramics.com

Technical Data Bulletin

Alumina-Silica Type Z-500

[www.zircarceramics.com](http://www.zircarceramics.com)

Page 1 of 2

# Alumina-Silica Type Z-500

## Suggested Applications

Primary thermal insulation in low-mass furnaces and thermal process systems operating to 1000°C (1832°F).

Non-ferrous metal casting nozzle and transport refractory.

High-temperature setters, supports and process fixtures, baffles.

Electrical insulation in systems operating at elevated temperatures as well as heating element supports.

Thermal insulation in hot appliances and scientific analytical instrumentation

## Availability of Standard Boards

ITEM #	DESCRIPTION
A41050	Z-500, 24"W x 36"L x 1.0"T
A41055	Z-500, 24"W x 36"L x 2.0"T

## To Order

**Standard boards:** order online or specify quantity, item # and description.

Standard boards are available for immediate shipment from stock.

**Standard tolerances** for boards are +/- 1/8" on length and width and +/- 1/16" on thickness.

**Custom shapes:** our state-of-the-art tight-tolerance machining techniques allow a wide variety of sizes and shapes to be made.

**Surface treatments** including rigidization with colloidal alumina (AL-R/H) or colloidal silica (SI-RIG) or coating with alumina cement (AL-CEM) are all available.



## ZIRCAR Ceramics, Inc.

PO Box 519

100 N. Main St., Florida, NY 10921-0519

Telephone: (845) 651-6600

E-mail: [sales@zircarceramics.com](mailto:sales@zircarceramics.com)

[www.zircarceramics.com](http://www.zircarceramics.com)

Revision Date June 23, 2017