



WORKING HOT



Thermal Insulation, Heating Elements & Furnace Accessories

A Guide to selecting the right insulation for your thermal process application.

The purpose of this guide is to provide useful, easy-to-understand information to help you select the best insulation that meets your high temperature needs.

What is your application?

The possibilities are virtually limitless, from the common to the out-of-the-ordinary.

Some applications include:

Questions?

Please feel free to call ZIRCAR Ceramics at 845-651-6600 or fax us at 845-651-0441. Our Engineers and Staff are experts who will gladly answer your questions and recommend sound solutions.

- Thermo - Chemical Enhancement of Advanced Materials
- Fiber Optic Consolidation & Drawing
- Nuclear Energy Research
- Laboratory Furnace Construction
- Arc Chute Lining
- IR Heating Equipment
- Aluminum Sheet Casting Consumables
- Heat Treating of Metals
- Oxide Crystal Growth
- Rapid Thermal Semiconductor Processing
- Solid Oxide Fuel Cells
- Scientific Analytical & Test Equipment
- Injection Molded Metal Powder Sintering
- Specialty Glass Manufacturing
- Government, Corporate and Academic R & D
- Electronic Ceramics Production

ZIRCAR Ceramics manufactures precision engineered high temperature thermal insulation, heating elements and a host of accessory products for these and many other complex applications. We specialize in providing solutions that improve your productivity.

What Is Your Process Temperature?

Maximum Use

Temperature

Continuous Use

Temperature

Intermittent Use

Temperature

ZIRCAR Ceramics is one of the original pioneering companies in the field of fibrous ceramic insulation materials. When we specify a maximum - use temperature for our products we mean maximum continuous use. We could specify intermittent temperatures, but we don't.



An insulation product's maximum continuous use temperature is the temperature where not more than 3% linear shrinkage is observed after soaking the insulation at temperature for 24hrs. ZIRCAR Ceramics offers insulation materials suitable for continuous use from 300°C to 1825°C-in air.

Atmospheres

Oxidizing

Inert

Reducing

What is Your Process Environment?

If all thermal processes required an oxidizing or inert atmosphere, the issue of process environment would not be of much concern. The world is not so simple. Fortunately ZIRCAR Ceramics offers high quality insulation products which are suitable for use in a variety of industrial environments. Our SiO₂ bonded products provide the highest temperature rating and dimensional stability of all compositions-when used in an oxidizing or inert atmosphere. For reducing atmospheres, which dissolves SiO₂ at temperatures over 1200°C, our

Vacuum

"AA" Al₂O₃ - bonded products contain virtually no free SiO₂. Even though all ceramic fiber products are hygroscopic and want to absorb H₂O from the atmosphere our alumina bonded and specially processed AL-30AAH has so little relative surface area that once its atmospheric moisture is driven off its vacuum suitability is established.

Binder	Temperature Use Range	Atmosphere	Products
None	300°C to 1800°C	All	Alumina Blanket & Bubbles
SiO ₂	Cryogenic to 1825°C	Oxidizing, Inert	SALI, ZAL, AL-25/1700, CRYSTAL-18, ASH, AX, UNIFORM
Al ₂ O ₃	300°C to 1700°C	Reducing, Vacuum, Inert	ZAL-AA, AL-30AA, ECO-20AA

Boards:

As Large As
36"x48"x6" &
30"x96"x4"

How Large Is Your Process?

High performance and cost efficiency is not limited to small sizes. In addition to producing some pretty large boards, cylinders and shapes, ZIRCAR's Ceramic Engineers and Staff are happy to work with you to select the most appropriate insulation material, the most appropriate construction design and the most appropriate hanger, anchor and mounting system for your application. Check out our website for more information on building an insulation system for you.

Cylinders:

As Large As
24" OD x 60"L



Staved Cylinders:

As Large As You need

Tight Tolerances:

In Some Cases +/- .005"!
Uniformly Bound
Products
Organic Free
Compositions

How Special is Your Application?

We believe every customer's application is important. Very important. That's why we produce insulation materials that go to work for you in special ways. Tightly bound and uniform insulation such as our ZAL-45 and even SALI are frequently machined to the tightest of dimensional tolerances - sometimes to +/- .005".



The Ultimate In Consistency

Their pre-fired organic-free high dimensional stability and strength help ensure you get your toughest thermal process job done right.

Fabrication Equipment

4 CNC Router Tables

2 CNC Vertical Mills

48" Wide Belt Sander

24" Conventional Lathe

4 Radial Arm Saws

4 Band Saws

80% of ZIRCAR's Shipments are of custom products.

Standard Or Custom?



Standard in all of ZIRCAR Ceramics' products is the high quality and utility you would expect from our many years' experience working with and serving high temperature thermal process industries. We offer one of the widest varieties of thermal & electrical insulation, metallic resistance & MoSi₂ heating elements and low mass furnace building accessories available today. In addition to standard boards, cylinders, blankets, papers, cements, insulating bubbles and heating elements you can take advantage of our expertise customizing products for you on our forming systems or in our state of the art finishing shop. More than 80% of what we ship is customized to fit the demanding requirements of specific applications. This is a real commitment to you.

How can we be of service to you?

Our goals and mission include providing all customers with the highest performing & cost effective products available while maintaining an iron grip on our commitment to product quality and customer service. We want to work with you. Our website at www.zircarceramics.com provides you with complete technical information on all of the products we offer. Temperature ratings, densities, thermal conductivity's and strengths and, on stocked standard items, prices are all provided. What's more, you can even get the products you need via express delivery by placing orders online.

Dedicated to High Quality Products

Commitment to Excellence

The ultimate in Customer Service & Value

So when you are working hot and your application calls for the very best in high temperature thermal or electrical insulation, metallic resistance or MoSi₂ elements be assured that the results you need can be found with ZIRCAR Ceramics, Inc..

ZIRCAR Ceramics Insulation Applications			
Common Applications	Continuous Temperature	Atmosphere	Hot Face Insulation
Thermo-Chemical Enhancement	to 1800°C	Corrosive	SALI & SALI-2
Fiber Optic Consolidation	1550°C	Inert	SALI, AL-30AA, ALCAA
Crystal Growth	to 1825°C	Oxidizing	SALI-2, SALI, AL-30AA
High Temperature Furnaces	to 1700°C	Oxidizing	SALI, AL-25/1700
	to 1800°C	Oxidizing	SALI-2

IR Heating Equipment	to 1550°C	Oxidizing	ZAL-15
Powder Metal Sintering	1500°C	Reducing	ZAL-45AA
Hydrogen Reformation - Fuel Cell	1500°C	Reducing	AL-30AA, ZAL-15AA
Analytical Equipment	to 1550°C	Oxidizing	ZAL-15, ZIRPOR
Bright Annealing Furnace Insulation	1550°C	Reducing	ECO-20AA
Arc Chute Insulation	1260°C	Oxidizing	HASH-60
Molten Aluminum Processing	900°C	Oxidizing	ASQ, Z-450, Z-290
Semiconductor Processing	1300°C	Oxidizing	AXHTM, AXL
Back-Up Insulation	1400°C	Oxidizing	ASH, Z-MAG, ZIRPOR
Primary Thermal Insulation	1480°C	Oxidizing	AXHTM,
	1260°C	Oxidizing	ECO-1200, Z-MAG2300
Shown are a few of the thousands of applications that benefit from the use of ZIRCAR insulation materials.			

Effective Management of Thermal Processing Begins With Insulation

Many of the world's leading industrial companies, R&D labs and government agencies rely upon ZIRCAR Ceramics, Inc. for thermal insulation that either provides a competitive edge or helps to expand the "leading edge." Here, our team of experienced Ceramic Engineers and Sales Staff work closely with customers to optimize the selection of insulation they come to us to make. By providing this service your risks are kept to a minimum, your thermal process is optimized and you save time and money.

We look forward to being of service to you.