



High Temperature Insulation and Refractory Materials Overview



DARCO INDUSTRIES

Darco Industries has accumulated a lot of experiences in refractory and insulation materials for steel plant, boiler, cement, ceramics, aluminum, petrochemical and metallurgy industries as well as other relevant thermal treatment industries. We have a professional team for R&D, QOC, Marketing and Post Services to our customers, distributors and partners all over the world.

We are committed to providing one-stop services from how-to-choose to final construction with varieties of refractory and insulation materials ranging from 500 °C to 2000 °C.

Our products have been highly praised by our customers from USA, UK, Italy, Germany, Turkey, India, UAE, Brazil, etc. We are always striving to provide customers with comprehensive, one-stop and most suitable "energy saving" schemes to build a green-energy system.



Our products

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Why US?

We know what you exactly need:

We have accumulated richful experience on supplying.

Fast Delivery Time:

We can supply most of them from our stock, and we are going to build a new big stock for rapid delivery.

Technical Support:

We can provide professional technical support.

Reasonable Price:

We are targeting on a long-term business cooperation with all the customers and partners, so competitive price will always offer as a support.

Our Vision

We are striving to provide customers with comprehensive, most suitable "energy-saving" solutions.

We are striving to provide partners and customers with all around services and supports

We are striving to provide our colleagues with promising life.

We are striving to provide shareholders with substantial payback.



Ceramic Fiber Products (RCF)

Ceramic fiber products also called as Refractory Ceramic Fiber (RCF) and Aluminium Silicate Fiber, with different physical configuration, it presents in different categories.





Application:

- ✓ Kiln Car filling
- ✓ Chimney filling
- ✓ Kiln roller filling
- ✓ High temperature filter medium
- ✓ Expansion joint filling
- ✓ Feedstock blanket, board, paper and textile.
- ✓ Feedstock for fiber spraying, castables and coatings

Ceramic Fiber Bulks

Ceramic Fiber Bulks are manufactured to be used as feedstock in manufacturing processes or other applications made of high purity composite raw materials, melted in the resistance furnaces and processed by blowing or spinning technology.

Features:

- ✓ Low thermal capacity
- ✓ Low thermal conductivity
- ✓ Excellent thermal stability
- ✓ Heat resistance
- ✓ Chemical resistance
- ✓ Excellent sound absorption



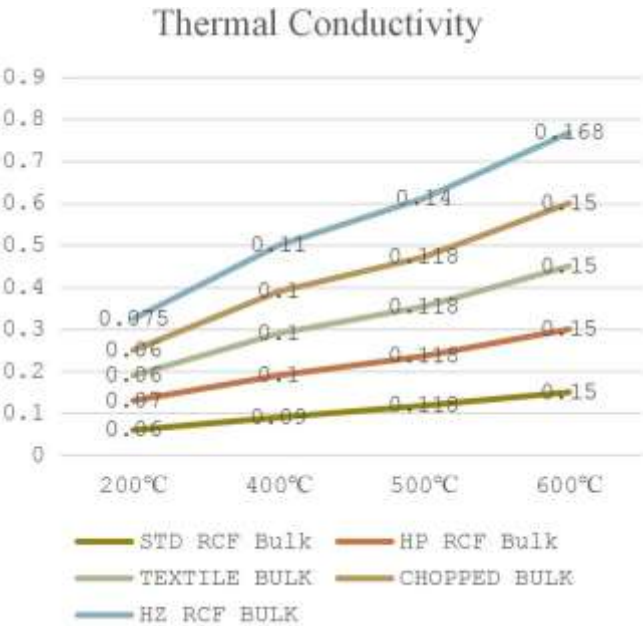
Classification Temperature: 1050°C, 1260 °C, 1360°C, 1400°C, 1430 °C



Specifications and packaging

All kinds of fiber bulk are shipped in 20kg carton or 60-80kg package, and can also be packed in compression

Items	STD	HP	TEXTILE	CHOPPED	HZ
	RCF Bulk	RCF Bulk	BULK	BULK	RCF BULK
Fiber Diameter (mm)	3~5				
Shot content($\Phi\geq0.212\text{mm}$) (%)	≤15	≤15	≤12	($\Phi\geq100\text{mesh}$) ≤10	≤12
Chopped Length mm(inch)	203(8)	203(8)	203(8)	203(8)	203(8)
Al ₂ O ₃	≥44	≥45	≥45	≥45	≥34
Al ₂ O ₃ +SiO ₂	≥96	≥99	≥99	≥99	≥84
ZrO ₂					≥15
Fe ₂ O ₃	<0.5	<0.5	≤0.3		≤0.3
Na ₂ O+K ₂ O+Fe ₂ O ₃	<0.9	<0.9	<0.9	<0.9	<0.9
Classification Temperature (°C)	1260	1260	1260	1260	1430
Melting Temperature (°C)	1425	1575	1575	1575	1750
Thermal conductivity (W/m.k)					
200°C	0.06	0.07	0.06	0.06	0.075
400°C	0.09	0.10	0.10	0.10	0.11
500°C	0.118	0.118	0.118	0.118	0.14
600°C	0.150	0.150	0.150	0.150	0.168
Color	White/even				
Packaging	Plastic bag inside, woven bag outside or with Vacuum bag				





Ceramic Fiber Blanket

Ceramic Fiber Blanket is made from bulk fibers, produced by the most modern spinning needling and thermal forming processes.

Ceramic Fiber Blanket consist of a group of thermally efficient high temperature insulating materials that combine the advantages of both low heat storage and complete resistance to thermal shock.

Offering a broad range of thermal capabilities and physical characteristics, Ceramic Fiber family provides proven and effective solutions to a variety of heat processing applications.

Classification Temperature: 1050°C, 1260 °C, 1360°C, 1400°C, 1430 °C

Features:

- ✓ Heat resistance
- ✓ Low thermal conductivity
- ✓ Thermal shock resistance
- ✓ Excellent chemical stability
- ✓ Low shot content
- ✓ Low heat storage
- ✓ High tensile strength

Application:

- ✓ Industrial furnace lining
- ✓ High temperature pipes heat preserve
- ✓ Heat resistant sealing gasket
- ✓ Glass tank furnace thermal insulation
- ✓ Power boiler and nuclear heat insulation
- ✓ Ceramics kilns thermal insulation
- ✓ High temperature filter materials

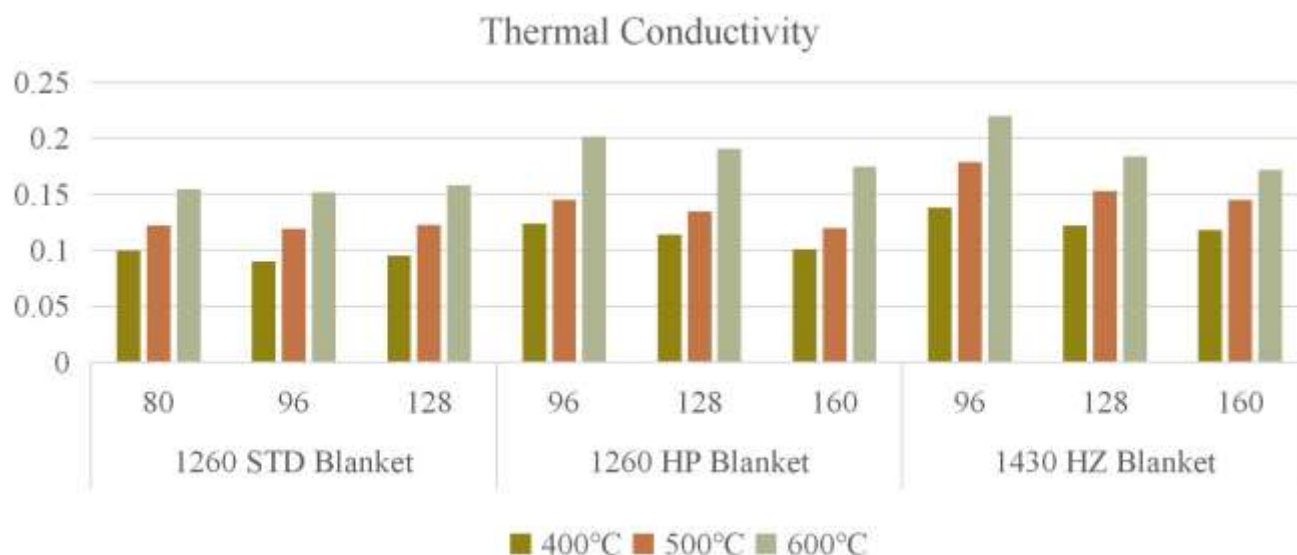
Specifications and packaging

Length(mm)	Width(mm)	Thickness(mm)
3660	610(1220)	50
4880	610(1220)	38
7320	610	6
7320	610(1220)	25
9760	610(1220)	19
14640	610(1220)	13

Other thickness, width and length can be customized.

Packing: Carton and woven bag packaging

Item	1260 STD Blanket			1260 HP Blanket			1430 HZ Blanket		
Chemical Composition（%）									
Al2O3	44			≥45			≥34		
Al2O3+SiO2	≥96			≥98			≥85		
ZrO2	-			-			≥15		
Al2O3+SiO2+ZrO2	-			-			≥99		
Fe2O3+RTiO2	1.0			≤0.5			≤0.5		
K2O+Na2O	1.0			≤0.2			≤0.2		
Density（Kg/M3）	80	96	128	96	128	160	96	128	160
Classification Temperature（℃）	1260			1260			1430		
Shot Content(%)	≤15			≤15			≤12		
Fiber Diameter（mm）	3.5			3.5			3.5		
Permanent Heating Linear Change（%）				1100℃X24h≤-2.5			1350℃X24h≤-2.5		
Thermal Conductivity（W/m.k）									
400℃	0.100	0.090	0.095	0.124	0.114	0.101	0.138	0.122	0.118
500℃	0.122	0.119	0.123	0.145	0.135	0.120	0.179	0.153	0.145
600℃	0.155	0.152	0.158	0.202	0.191	0.175	0.220	0.184	0.172
Tensile Strength（Mpa）	0.040	0.040	0.050	0.050	0.060	0.075	0.050	0.060	0.075
Specifications（mm）	Length X Width: 14400/7200/3600X1220/610;Thickness: 6~60mm								
Packing	Plastic bag inside, carton box outside or with pallet or woven bags Can be customized by specific requirement.								
Quality Certificate	ISO9001-2008 ISO14001-2004								





Ceramic Fiber Low Density Board

Ceramic Fiber Low Density Board is a kind of lightweight and flexible refractory fiber insulation material made from Bulk Fibers, processed by vacuum forming. Ceramic Fiber Low Density Board is a multi-functional products combines excellent tensile and strength together, which is widely used in various furnaces and boilers wall lining and back lining.

Specifications and packaging

The packaging of fiber Low Density Board is carton packaging, which is placed on the pallet and then wrapped in plastic wrap.

RCF Low Density Board Specification	
Length(mm)	900, 1200
Width(mm)	600, 900
Thickness(mm)	6-25



Classification Temperature: 1050°C, 1260 °C, 1360°C, 1400°C, 1430 °C

Features:

- ✓ Low thermal storage, low thermal conductivity
- ✓ Excellent chemical stability
- ✓ Excellent thermal stability and thermal shock

Application:

- ✓ Industrial furnace lining^[SEP]
- ✓ Heating equipment wall lining and back lining
- ✓ Ceramics kilns thermal insulation^[SEP]
- ✓ Molten metal thermal insulation, etc...

Items	LNTX -1050F	LNTX -1260F	LNTX -1260HPF	LNTX -1360F	LNTX -1400F	LNTX -1430F
Permanent Heating Linear Change(%)	950°CX24h ≤-4	1000°CX24h ≤-4	1100°CX24h ≤-4	1200°CX24h ≤-4	1250°CX24h ≤-4	1350°CX24h ≤-4
Thermal Conductivity (Average 500°C) W/(m.k)	≤0.153					
Water Content (%)	≤1					
Organic Content (%)	≥7					
Density (Kg/M3)	180~250					
Al ₂ O ₃	≥40	≥43	44-47	51-53	43-45	
Al ₂ O ₃ +SiO ₂	≥95	≥96	≥98	≥99	≥90	
Al ₂ O ₃ +SiO ₂ +ZrO ₂						≥99
ZrO ₂					5~7	15~17
Fe ₂ O ₃	<0.5	<0.5	≤0.3		≤0.3	≤0.2
Na ₂ O+K ₂ O+Fe ₂ O ₃	<0.9					
Product specifications(mm)	Length: 900/1000/1200/2400 Width: 500/600/1000 Thickness: 10~25mm All sizes can be customized made					
Packaging	Carton Box outside or with pallet					
Quality Certificate	ISO9001-2008 ISO14001-2004					

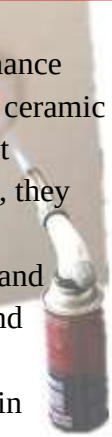


Ceramic Fiber Board



Ceramic Fiber Boards are high performance insulation products manufactured from ceramic fiber bulk and binders, with unique shot removing and vacuum forming process, they offer low thermal conductivity, high temperature stability, uniform density, and excellent resistance to thermal shock and chemical attack.

Ceramic Fiber Boards are widely used in various high temperature applications in furnaces, kilns etc. Additional hardness and strength can be reached with post treatments. Available in variety of compositions, densities, sizes and post treatments combinations.



Classification Temperature: 1050°C, 1260 °C, 1360°C, 1400°C, 1430 °C

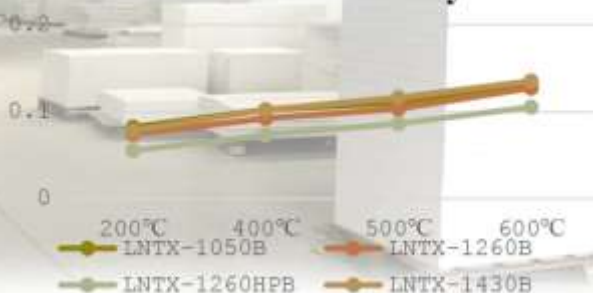
Features:

- ✓ High temperature stability
- ✓ Low thermal conductivity
- ✓ Low heat storage
- ✓ Non-wetting to molten Aluminium
- ✓ Close tolerance with excellent surface finish
- ✓ Easy to cut, drill or saw

Applications:

- ✓ Furnace linings
- ✓ Kiln furniture
- ✓ Hot gas duct linings
- ✓ Launder insulation
- ✓ General molten metal contact
- ✓ Glass tank side and wall insulation
- ✓ Combustion chamber insulation
- ✓ High temperature gasket and seals

Thermal Conductivity



Description	LNTX-1050B	LNTX-1260B	LNTX-1260HPB	LNTX-1430B
Permanent Heating Linear Change (%)	950°CX24h≤-4	1000°CX24h≤-4	1100°CX24h≤-4	1350°CX24h≤-4
Thermal Conductivity(Average 500°C) W/(m.k)	≤0.165			
Water Content (%)	≤-1.5			
Organic Content (%)	≥-6			
Density (Kg/M3)	250~300	280~320	300~320	300~320
Al2O3	≥40	≥43	44-47	
Al2O3+SiO2	≥95	≥96	≥98	
Al2O3+SiO2+ZrO2				≥99
ZrO2				≥15
Fe2O3	<0.5	<0.5	≤0.3	≤0.2
Na2O+K2O+Fe2O3	<0.9			
Thermal Conductivity(W/m.k)				
200°C	0.082	0.074	0.055	0.078
400°C	0.102	0.092	0.073	0.102
500°C	0.110	0.103	0.086	0.116
600°C	0.133	0.127	0.105	0.135
Cold Crushing Strength (Mpa)	0.2	0.2	0.15-0.2	0.12
Product Specifications	Length: 900/1000/1200/2400mm; Width: 500/600/1000/1200mm; Thickness: 3~125mm All sizes can be customized made			
Packaging	Carton Box outside or with pallet			
Quality Certificate	ISO9001-2008 ISO14001-2004			

Specifications and packaging

The packaging of fiber board is carton packaging, which is placed on the pallet and then wrapped in plastic wrap.

Other sizes and capacities can be produced according to customer requirements.

board (mm)				
1200x1000	900x600	1000x600	1200x1000	900x600
Thickness: 6-50mm				Thickness: 10-25mm



Ceramic Fiber Paper

Ceramic Fiber Paper is manufactured from high-grade ceramic fiber formed into flexible sheet. It offers high temperature resistance, very low thermal conductivity, chemical corrosion resistance and thermal shock stability.

Ceramic Fiber Paper can be widely used in the applications where purity, cracking resistance and heat resistance are highly required. It provides excellent heat resistance and thermal insulation in a rather limited space.



Classification Temperature: 1050°C, 1260 °C, 1360°C, 1400°C, 1430 °C

Features:

- ✓ High temperature stability
- ✓ Low thermal conductivity
- ✓ Low heat storage
- ✓ Close tolerance with excellent surface finish
- ✓ Easy to cut, drill or saw

Applications:

- ✓ High temperature gasket
- ✓ Ingot mould liner
- ✓ Refractory back up insulation
- ✓ Heat shield and silencer insulation
- ✓ Hot top lining
- ✓ Molten metal splash and spark protection

Specifications and packaging

The standard volume and high-dimensional paper has 610mm, 1200mm width, thickness and length listed in the following table. Special thickness, width and length can also be customized and supplied.

Thickness(mm)	Length(mm)
0.5	60
1	60
2	30
3	20
4	15
5	12
6	10

Description	STD Paper	HA Paper	HZ Paper
Chemical Composition (%)			
Al ₂ O ₃	47	≥52	≥34
SiO ₂	≥52	≥47	≥50
ZrO ₂	-	-	≥15
Fe ₂ O ₃	5	≤0.5	≤0.5
Na ₂ O		≤0.2	≤0.2
Tensile Strength (MPa)	≥0.3	≥0.3	≥0.3
Water Content (%)	≤2		
Loss of Ignition (%)	≤10		
Organic Content (%)	≤9	≤8	≤8
Density (Kg/M ³)	190~250		
Product Specifications	Length X Width : 40000/30000/20000/10000X1220/610/Thickness: 0.5~6mm THE SIZE CAN BE CUSTOMIZED HERE		
Packaging	Plastic bag inside, carton box outside or with specific requirement		
Certificates	ISO9001-2008;ISO14001-2004		





Ceramic Fiber Module

Ceramic Fiber Modules are made from ceramic fiber blanket stacked with cut edges exposed, and anchor systems to enable quick, easy and efficient installation in most furnace linings. These prefabricated modules are designed to meet the thermal insulation requirements of high temperature furnaces. Generally, based on different requirements, there are three regular types available:

- A. Stack Bonded (flat surface)
- B. Convoluted Module
- C. Module with Anchors

Classification Temperature: 1050°C, 1260 °C, 1360°C, 1400°C, 1430 °C

Features:

- ✓ Heating furnace and cracking furnace in Petrochemical industry
- ✓ Heating furnace, Annealing furnace and Roller hearth furnace in Metallurgical industry
- ✓ Soaking furnace, homogenizing furnace in Aluminum industry
- ✓ Tunnel kiln, intermittent kiln and Calcining kiln in Ceramics industry
- ✓ Waste gas recovery, Combustion Chamber

Supply specifications and packaging:

Fiber modules are usually supplied with specifications of 305x305 blocks. Thickness 100x305mm. Made of 25mm thick fiber blanket. Other sizes and capacities can be produced according to customer requirements.

Description	STD RCF	HP RCF	HZ RCF
	MODULE	MODULE	MODULE
Chemical composition (%)			
Al ₂ O ₃	≥43	44-47	
Al ₂ O ₃ +SiO ₂	≥96	≥98	
Al ₂ O ₃ +SiO ₂ +ZrO ₂	-	-	≥99
ZrO ₂	-	-	≥15
Fe ₂ O ₃	≤0.5	≤0.3	≤0.2
Na ₂ O+K ₂ O	≤0.5	≤0.2	≤0.2
Classification Temperature(°C)	1260	1260	1430
Permanent Heating Linear Change(%)	1000°CX24h≤-2.5	1100°CX24h≤-2.5	1350°CX24h≤-2.5
Density (Kg/M ³)	160~240		
Thermal Conductivity(W/m.k)			
400°C	0.090	0.100	0.118
500°C	0.119	0.120	0.149
600°C	0.152	0.175	0.172
Product Specifications	300X300X125mm;300X300X300mm All sizes can be customized made by requirement		
Packaging	Plastic bag inside, carton box outside		





Ceramic Fiber Vacuum Formed Shapes

Vacuum Formed Shapes are produced from slurry of ceramic fiber. The shapes are made to exact customer specifications and the flexibility of the process allows for a wide range of profiles and sizes in assorted grades and densities.

Applications:

- ✓ Industrial furnace lining
- ✓ Heating equipment wall lining and back lining
- ✓ Ceramics kilns thermal insulation
- ✓ Molten metal thermal insulation, etc..

Specifications and packaging

The vacuum molded products can be packed in carton, and the specific size can be produced according to the requirements of the customer drawings.



Classification Temperature: 1050°C, 1260 °C, 1360°C, 1400°C, 1430 °C

Features:

- ✓ Lightweight
- ✓ High definition
- ✓ Resistant to hot gas erosion
- ✓ Resistant to chemical attack
- ✓ Asbestos free
- ✓ Resistant to thermal shock



Items	LNTX- 1050VF	LNTX- 1260VF	LNTX- 1260HPVF	LNTX- 1360VF	LNTX- 1400VF	LNTX- 1430VF
Permanent Heating Linear Change(%)	950°CX24h≤-4	1000°CX24h≤-4	1100°CX24h≤-4	1200°CX24h≤-4	1250°CX24h≤-4	1350°CX24h≤-4
Thermal Conductivity (Average 500°C)W/(m.k)	≤0.153					
Water Content (%)	≤1					
Organic Content (%)	≥7					
Density (Kg/M3)	180~250					
Al2O3	≥40	≥43	44-47	51-53	43-45	
Al2O3+SiO2	≥95	≥96	≥98	≥99	≥90	
Al2O3+SiO2+ZrO2						≥99
ZrO2					5~7	15~17
Fe2O3	<0.5	<0.5	≤0.3		≤0.3	≤0.2
Na2O+K2O+Fe2O3	<0.9					
Product specifications(mm)	According to specific drawings provided					
Packaging	Carton Box outside or with pallet					
Quality Certificate	ISO9001-2008 ISO14001-2004					





Ceramic Fiber Textile Family



Ceramic Fiber Cloth



Ceramic Fiber Tape



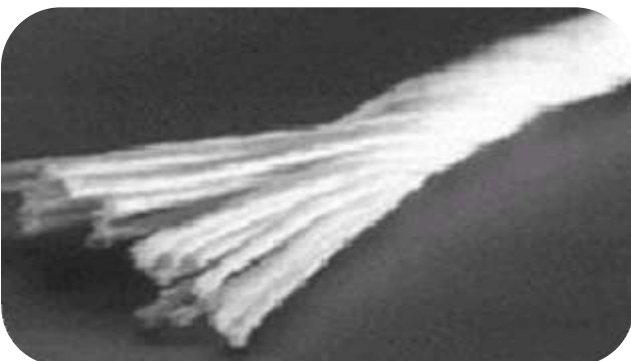
Ceramic Fiber Ladder Tape



C.F. Round Braided Rope



C.F. Square Braided Rope



C.F. Twisted Rope



Ceramic Fiber Yarn



Ceramic Fiber Yarn

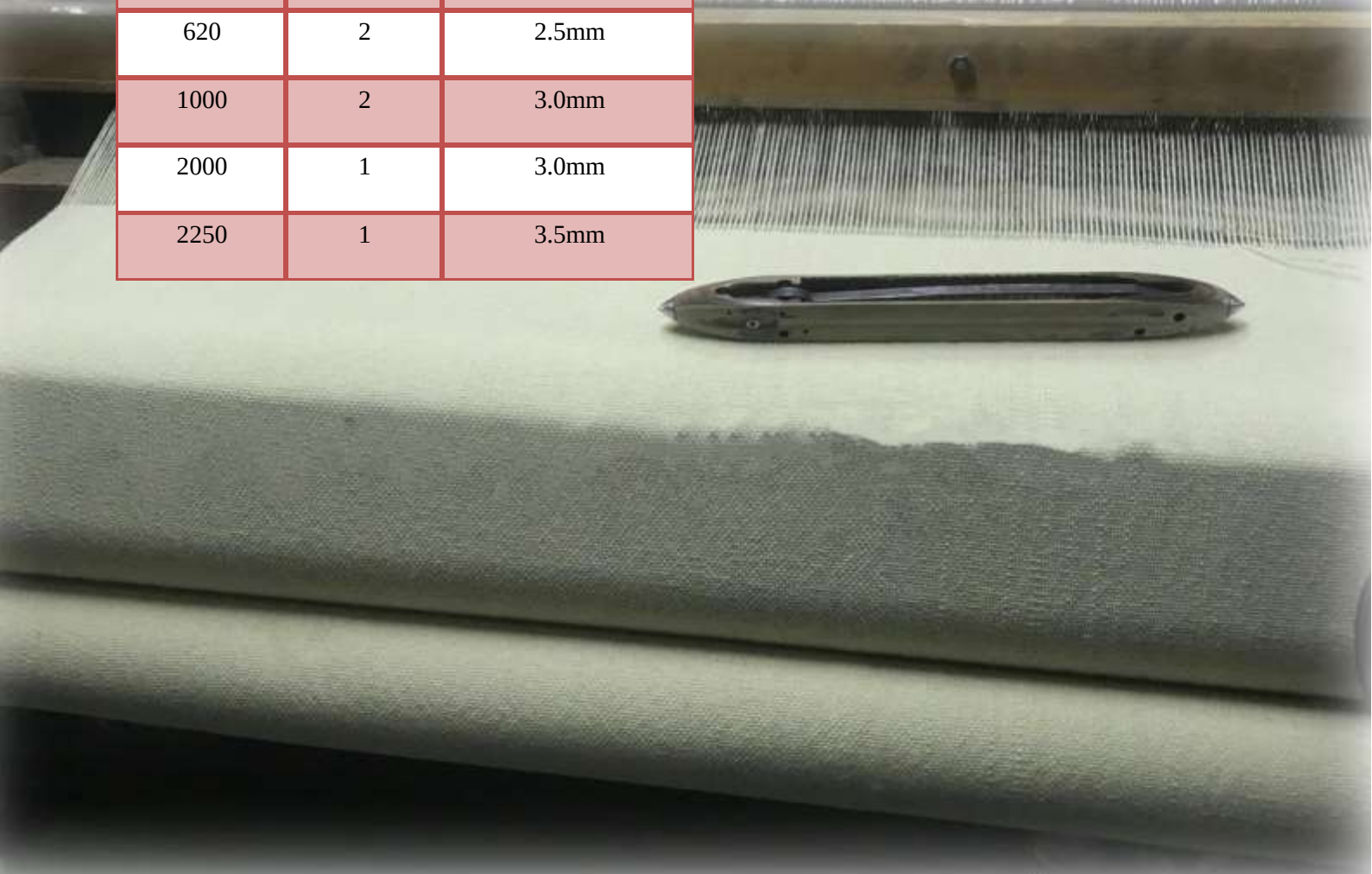
Ceramic Fiber Yarn is manufactured from high quality spun fiber 1260 °C , and has been mechanically twisted to give it tensile strength. The yarn is available with E-glass, stainless steel wire or high temperature alloy wire reinforced yarn from 525 Tex up to 2500 Tex in single, two or three plies of single yarn twisted together in order to form a heavier yarn or higher strength.

Standard specifications:

Tex (g/km)	Ply	Thickness
525	2	2.0mm
620	2	2.5mm
1000	2	3.0mm
2000	1	3.0mm
2250	1	3.5mm

Applications:

- ✓ High temperature gasket
- ✓ Production of textiles
- ✓ Sewing thread for high temperature textiles





Ceramic Fiber Cloth

Ceramic Fiber Cloth is a cost-effective industrial cloth manufactured from ceramic fiber yarn, reinforced by a core of glass filament or stainless steel wire for high strength retention at elevated temperatures, ideal for most high temperature applications up to 1000° C.

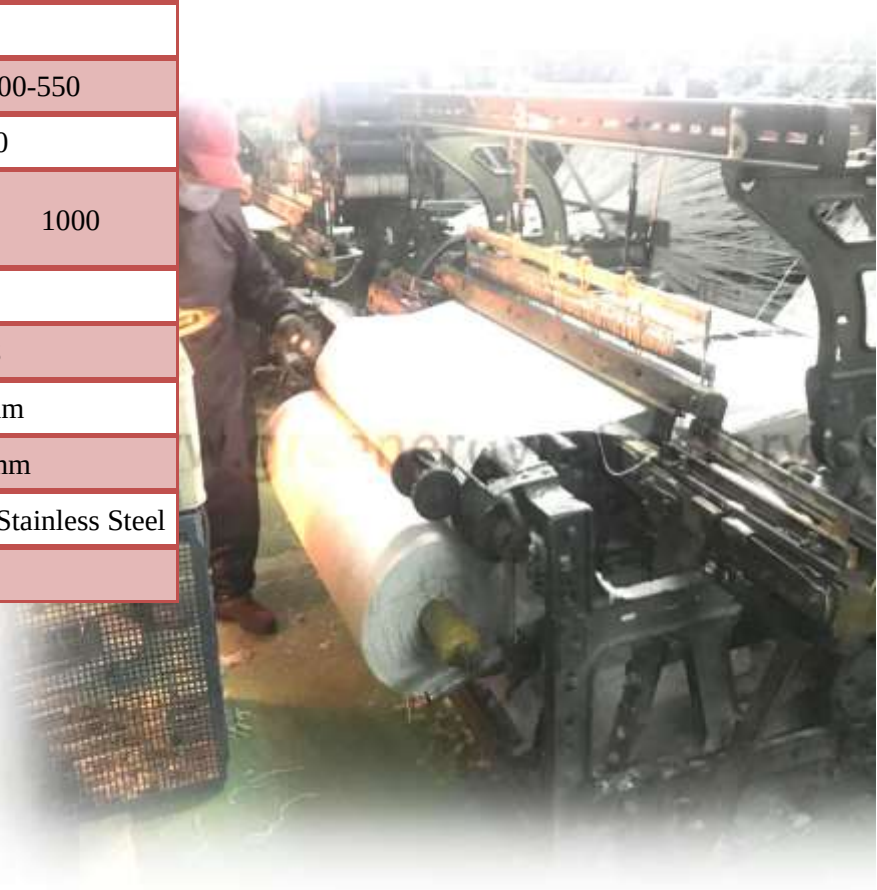
Ceramic Fiber Cloth contains Approximately 18% organic fiber which burns out at high temperatures, causing some smoking, but the cloth retains enough strength to be used as effective insulating cloth at high temperatures.

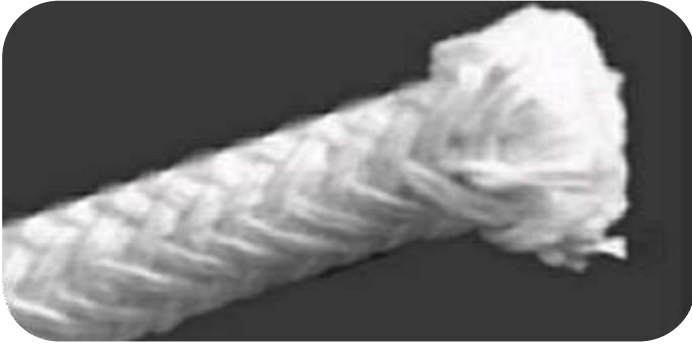
Description	FG Cloth	SS Cloth
Al ₂ O ₃ (%)	45-46	
SiO ₂ (%)	52-53	
Al ₂ O ₃ +SiO ₂ (%)	98	
Fe ₂ O ₃ (%)	0.85	
Fiber length(mm)	75	
Fiber diameter(um)	5.2	
Density (Kg/M3)	500-550	500-550
Classification temperature (°C)	1260	
Maximum Service Temperature (°C)	500-600	1000
Water Content (%)	≤1	
Organic Content (%)	≤18	
Thickness(mm)	1~6mm	
width(mm)	1000mm	
Reinforced Material	Fiberglass	Stainless Steel

FG: Fiberglass; SS: Stainless steel;

Applications:

- ✓ Furnace Curtains
- ✓ High temperature insulation
- ✓ High temperature electronics insulation
- ✓ Combustion pipes protection
- ✓ Lining cloth for welding
- ✓ Fireproof rolling curtain
- ✓ Lining sleeves for industrial gas pipes



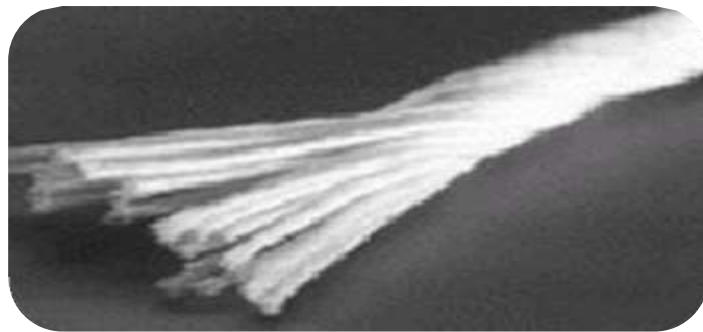


Ceramic Fiber Rope

Ceramic Fiber Round Braided Rope is dense, resilient, high performance ceramic fiber material fabricated from ceramic fiber yarn braided around a core of ceramic fiber rope to form a packing in round section. It is widely used for a broad variety of high temperature gasket, packing and sealing application.



Ceramic Fiber Square Braided Rope (square packing) is dense, resilient, high performance ceramic fiber material plaited from E-glass, stainless steel wire or high temperature alloy wire inserted ceramic fiber yarn to form a packing in square section.



Ceramic Fiber Twisted Rope is fabricated from ceramic fiber yarn twisted left hand/right hand together to form a rope of specified diameters ranging from 3 mm to 50 mm, with glass filament, stainless steel wire or high temperature alloy wire inserted to provide high strength at elevated temperature.

Applications:

- ✓ Wrapping insulation and refractory
- ✓ Sealing for different kinds of furnaces and doors
- ✓ High temperature gasket
- ✓ Lamp wick for burning equipment
- ✓ Replacement for Asbestos



Description	FG	SS	FG	SS	FG	SS
	R-Rope	R-Rope	S-Rope	S-Rope	T-Rope	T-Rope
Al2O3（%）	45-46					
SiO2（%）	52-53					
Al2O3+SiO2(%)	98					
Fe2O3（%）	0.85					
Density (Kg/M3)	500-650					
Classification temperature (°C)	1260					
Maximum Service Temperature (°C)	500-600	1000	500-600	1000	500-600	1000
Water Content (%)	≤1					
Organic Content（%）	≤18					
Specifications	According to specific requirement					
Reinforced Material	Fiberglass			Stainless Steel		
FG: Fiberglass; SS: Stainless steel; R-Rope: Round Rope, S-rope: Square Rope, T-rope: Twisted Rope						



Supply specifications and packaging:

Product specification		
Yarn (Tex)	fineness: 420x2, 525x2, 625x2, 630x2, 830x2, 2000x1, 2000x2, 2250x2	
Cloth (mm)	thickness: 2、3、5、6	width: 1000~1500
Tape (mm)	thickness: 2、3、5、6	width: 15、25、50、75、100、120、150
Rope (mm)	diameter: 3、4、5、6、8、10、12、13、14、16、18、20、25、30、35、40、50	
Aramid pan-gen (mm)	diameter/side length: 6、8、10、12、14、16、18、20、25、30、35、40、50	
Aluminum foil coated fiber cloth (mm)	thickness: 0.3, 0.5, 2.0, 3.0	width: 1000
Coated fabric (mm)	thickness: 0.2~2.0	width: 1000~1500



Ceramic Fiber Tape

Ceramic Fiber Tape is a cost-effective insulating tape made from ceramic fiber yarn, reinforced by a core of glass filament or stainless steel wire for high strength retention at elevated temperatures, ideal for most high temperature applications up to 1000° C.

Description	FG Tape	SS Tape
Al ₂ O ₃ (%)	45-46	
SiO ₂ (%)	52-53	
Al ₂ O ₃ +SiO ₂ (%)	98	
Fe ₂ O ₃ (%)	0.85	
Fiber length(mm)	75	
Fiber diameter(um)	5.2	
Density (Kg/M ³)	500-550	500-550
Classification temperature (°C)	1260	
Maximum Service Temperature (°C)	500-600	1000
Water Content (%)	≤1	
Organic Content (%)	≤18	
Thickness (mm)	1~6mm;can be customized made	
Reinforced Material	Fiberglass	Stainless Steel

FG: Fiberglass; SS: Stainless steel;





Bio Soluble Fiber (AES)

“Fraunhofer, German laboratory certified”

Bio Soluble fiber, also called as Mg-Cal-Si Fiber and Alkaline Earth Soluble fiber, due to its special biodegradability, is becoming more and more popular in the market. Bio soluble fiber presently has three main products with continuous service temperature below 1100 °C.



Availability

- ✓ Bulk spun fiber
- ✓ Chopped fiber
- ✓ Lubricant free

Description	Bio Soluble Fiber Bulk
Code	GBSF-1260M
Chemical Composition	
SiO2	55-65%
CaO	23-35%
MgO	5-10%
Others	≤1%
Physical Properties	
Fiber Diameter(um)	3-5
Shot Content(%)	12
Linear Shrinkage after Heating (%)	1000°C*24h ≤2.5

Bio Soluble Fiber

Bio Soluble Fiber Bulk is lightweight insulating products made from high quality raw materials, which are eletro-melted, fiberized by spun process. Bio Soluble Fiber Bulk offer high temperature resistance, superior insulating performance, and flexibility. This unique vitreous fiber has very high solubility in body fluids, so has no hazard classification.

Application

- ✓ Boiler insulation
- ✓ Chimney fill
- ✓ Fire seal
- ✓ Heater insulation
- ✓ Wood burning stove
- ✓ Domestic cooker insulation



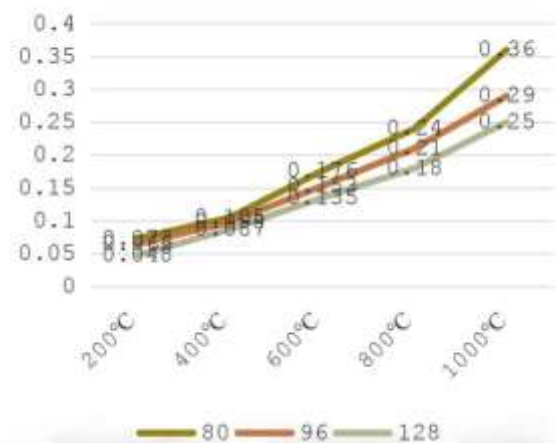


Bio Soluble Blanket

Bio Soluble Fiber Blankets are a kind of strong, lightweight, flexible insulating products manufactured by using advanced spinning technology, display very low thermal conductivity, super thermal shock resistance, low heat storage and the excellent sound absorption. This unique vitreous fiber has very high solubility in body fluids, so has no hazard classification.

Description	Bio Soluble Fiber Blanket		
Code	GBSF-1260T		
Chemical Composition (%)			
SiO2	55-65		
CaO	23-35		
MgO	5-10		
Al2O3	≤1.3		
Fe2O3	≤0.15		
Density	80	96	128
Color	Light Blue and White		
Tensile Strength(Mpa)	0.03	0.04	0.05
Fiber Diameter(um)	3.50		
Shot Content(%)	12		
Linear Shrinkage After Heating	1000°CX24h≤2.5%		
Thermal Conductivity (W/m.k)			
200°C	0.073	0.065	0.048
400°C	0.105	0.098	0.087
600°C	0.176	0.153	0.135
800°C	0.240	0.210	0.180
1000°C	0.360	0.290	0.250

Thermal Conductivity

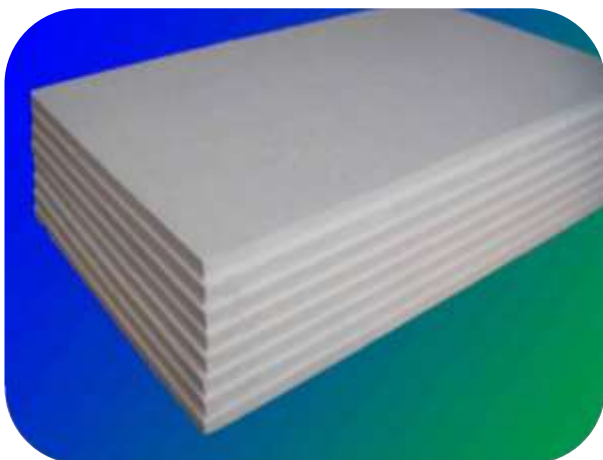


Features

- ✓ Low thermal conductivity
- ✓ Low thermal capacity
- ✓ Excellent resistance to thermal shock
- ✓ Bio solubility

Applications

- ✓ Boiler insulation
- ✓ Fire seal
- ✓ Heater insulation
- ✓ Domestic cooker insulation
- ✓ Building expansion joints
- ✓ Fire production column and beam wrap



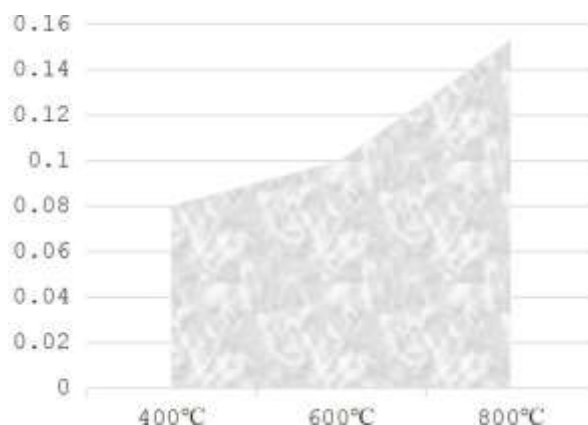
Bio Soluble Board

Bio Soluble Fiber Board is manufactured from unique vitreous fiber which has very high solubility in body fluids hence has no hazard classification. With Darco's advanced vacuum forming technology, Bio Soluble Fiber Board provides excellent thermal insulation and high tensile strength.

Applications

- ✓ Refractory lining for industrial furnaces
- ✓ Chimney lining
- ✓ Back-up insulation for bricks and monolithic refractories
- ✓ Transfer of molten aluminum and other non-ferrous metal
- ✓ Domestic cooker insulation
- ✓ Fire door infill [SEP]
- ✓ Hot gas duct linings
- ✓ Launder insulation
- ✓ Fire protection systems
- ✓ Expansion joint material

Thermal Conductivity



Description	Bio Soluble Fiber Board
Code	GBSF-1260B
Chemical Composition	
SiO ₂	55-65%
CaO	23-35%
MgO	5-10%
Solubility(mg/l)	≥200
Moisture Content (%)	≤1
Organic Content (%)	≤6
Density (Kg/M ³)	280—380
Tensile Strength(Mpa)	≥0.1
Linear Shrinkage after Heating(%)	1000°C*24h ≤2.5
Thermal Conductivity (W/m.k)	
400°C	0.080
600°C	0.100
800°C	0.153
Specifications (mm)	900X600/1000X500/1200X1000X25/50mm
Packaging	Plastic bag inside, carton box outside or with pallet



Alumina HT Fiber

Alumina High Temperature Fiber specializes in high temperature thermal insulation solutions whose classification temperature ranging from 1430 °C to 1800 °C



Alumina HT Fiber Bulk

Alumina High Temperature Fiber Bulk is referred to the refractory fiber with alumina content more than 72%, whose service temperature can reach 1600°C (2912°F). With high alumina content and less shot, Alumina High Temperature Fiber Bulk products possess low thermal conductivity and low thermal linear shrinkage and superior thermal stability and corrosion proof, which have a longer service life in the harsh high temperature, even corrosion atmosphere.

Applications

- ✓ Boiler insulation
- ✓ Chimney fill
- ✓ Filling materials for high temperature equipment
- ✓ Feedstock for high temperature refractory vacuum formed board

Features

- ✓ Low thermal conductivity
- ✓ Low thermal linear shrinkage
- ✓ Superior thermal stability
- ✓ Corrosion proof

Description	LN-1600M
Color	White
Classification Temperature (°C)	1600
Molten Point (°C)	1760
Long time service temperature (°C)	1500
Chemical composition(%)	
Al ₂ O ₃	73
SiO ₂	≤27
Al ₂ O ₃ +SiO ₂ +Cr ₂ O ₃	100%
Shot Content(%)	≤12
Fiber Diameter(um)	3.5
Fiber Length(mm/inch)	203/8; 178/7(chopped)



Alumina HT Fiber Blanket

Alumina High Temperature Fiber Blanket is made from high purity alumina bulk fibers whose alumina content reach 72%. With high alumina content and less shot, alumina fiber blanket possesses low thermal conductivity and low thermal linear shrinkage and superior thermal stability and corrosion proof, which have a longer service life in the harsh high temperature, even corrosion atmosphere.

Description	LN-1600T	
Color	White	
Classification Temperature (°C)	1600	
Molten Point (°C)	1870	
Long time service temperature (°C)	1500	
Fiber Diameter(um)	3	
Density(Kg/M3)	96	128
Tensile Strength(Mpa)	0.35	0.50
Reheating Linear Change	1400°CX24h ≤1.0	
Chemical composition(%)		
Al ₂ O ₃	72%	
SiO ₂	≤28	
Al ₂ O ₃ +SiO ₂	99.8	
Others	≤0.2	
Thermal Conductivity (W/m.k)	0.35	
Average		
800°C	0.190	
1000°C	0.260	
1200°C	0.350	
Specifications	7200/3600X1220/610 X (20-50) mm	

Features

- ✓ Heat resistance
- ✓ Low thermal conductivity
- ✓ Thermal shock resistance
- ✓ Excellent chemical stability
- ✓ Low shot content
- ✓ Low heat storage
- ✓ High tensile strength

Applications

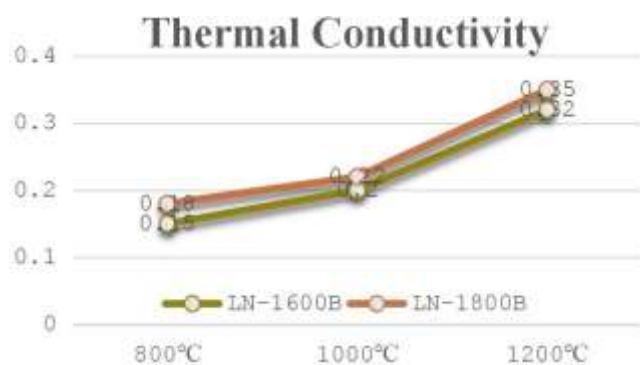
- ✓ Industrial furnace lining
- ✓ High temperature pipes heat preserve
- ✓ Heat resistant sealing gasket
- ✓ Glass tank furnace thermal insulation
- ✓ Power boiler, steam turbine, nuclear heat insulation
- ✓ Ceramics kilns thermal insulation
- ✓ High temperature filter materials





Alumina HT Fiber Board

High Temperature Alumina Fiber Board is made from supreme alumina bulk fibers, processed by special forming technology and treatment which has excellent high temperature resistance, excellent chemical stability, and low thermal conductivity. Meanwhile, different compositions, densities, specifications and post treatment processes are available. Post treatment process can meet additional requirements for hardness, strength, etc.. This depends on specific requirement.



Features

- ✓ High temperature stability
- ✓ Low thermal conductivity
- ✓ Low heat storage
- ✓ Non-wetting to molten aluminum
- ✓ Close tolerance with excellent surface finish
- ✓ Easy to cut, drill or saw
- ✓ High tensile strength

Applications

- ✓ Kiln furniture and lining
- ✓ Refractory backup insulation
- ✓ General molten metal contact
- ✓ Glass tank side and wall insulation
- ✓ Combustion chamber insulation
- ✓ High temperature gasket and seals



Description	LN-1600B	LN-1800B
Color	White	White
Classification Temperature (°C)	1600	1800
Molten Point (°C)	1870	1870
Maximum service temperature (°C)	1500	1650
Density(Kg/M3)	300-600	500-700
Tensile Strength(Mpa)	0.50	0.50
Reheating Linear Change	1500°CX24h ≤1.0	1600°CX24h ≤0.8
Chemical composition		
Al ₂ O ₃	72%	83
SiO ₂ +Al ₂ O ₃	99	99
Others	≤1%	≤1%
Thermal Conductivity (W/m·k) Average		
800°C	0.15	0.18
1000°C	0.20	0.22
1200°C	0.32	0.35
Specifications	1200/1000/900X1000/600/500X(6-100)mm	

Polycrystal Veneering Module

Veneering Modules are made from high purity polycrystal mullite fiber which can be directly bonded to other refractory material surfaces by high temperature adhesives to improve the thermal insulation performance of furnace lining.

Veneering Modules can be applied in 1600°C high temperature atmosphere which can still maintain excellent thermal insulation and superior chemical stability.

Applications

- ✓ Heating furnace lining
- ✓ Heat treatment furnace lining
- ✓ Tunnel Kiln lining
- ✓ Shutter kiln lining

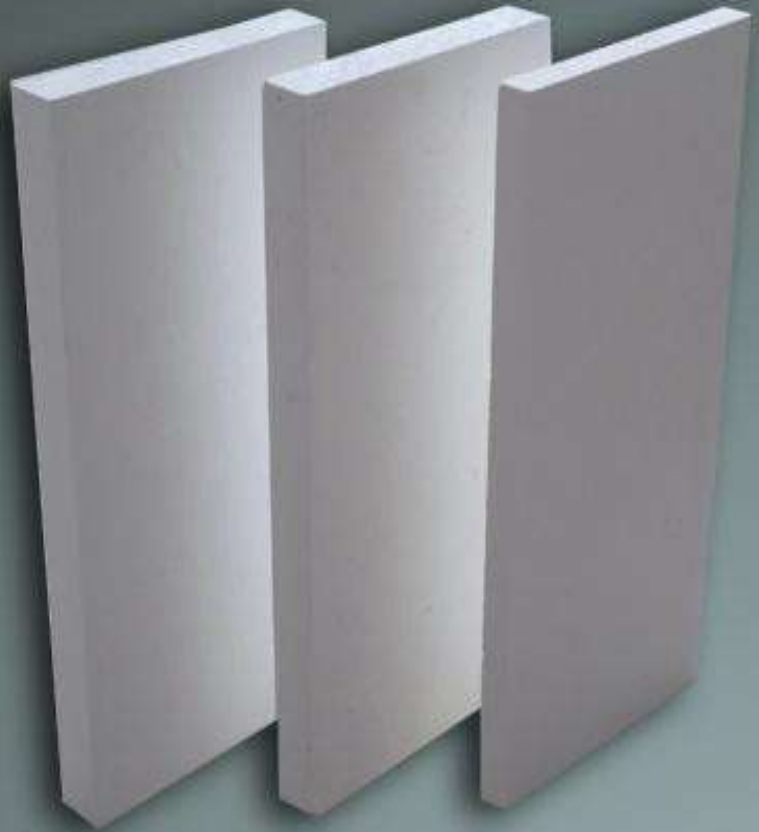
Features

- ✓ Low heat storage
- ✓ Low thermal conductivity
- ✓ Resistance to thermal shock
- ✓ Excellent sound-absorbing capacity
- ✓ Excellent chemical stability
- ✓ Ability to withstand gas flow



Calcium Silicate Board & Shapes

Calcium Silicate board is also known as gypsum composite board, is a variety of materials, generally by natural gypsum powder, white cement, glue, glass fiber composite. It has the properties of fire prevention, damp proof, sound proof and heat insulation.





650

Calcium Silicate Board

650 Calcium Silicate Board is a new type board which mainly comprises silica and calcium materials, and manufactured by pulping, molding, steam curing, drying and post processing. Performed board is anti-tread, fireproof, waterproof, damp-proof, radiation resistance, resistance to climate change. This product has excellent performance of light weight, high strength, fire insulation and good processing etc.

Length (mm)	Width (mm)	Thickness (mm)
400	250	25-120
500	500	25-120
600	300	25-120
900	600	25-120
1000	500	25-120
1050	850	25-120
1080	950	25-120
1220	1220	25-120

Features

- ✓ Excellent waterproof performance
- ✓ No oil absorption, no water absorption, maintain the stability of the insulation performance.
- ✓ Non asbestos, no toxic and harmless to human body.
- ✓ High strength.
- ✓ Excellent corrosion resistance
- ✓ Excellent sound insulation

Application

- ✓ Applied for industrial pipeline, heat supply pipe network system in the fields of electric power, petroleum chemistry, metallurgy, building and shipping etc.
- ✓ Wall lining and back lining of industry furnace and heating device.

Physical Properties		UNIT	ASTM C533	GB 10699	GREETEC
Density		Kg/m ³	≤250	≤220	≤250
Service Temperature		°C	650	650	650
Thermal Conductivity	(50°C)	W/m.k	≤0.060	•	≤0.052
	(93°C)		≤0.065	≤0.065	≤0.0535
	(100°C)		•	≤0.065	•
	(149°C)		≤0.072	•	≤0.054
	(200°C)		≤0.079	≤0.077	≤0.056
	(260°C)		≤0.087	•	≤0.0757
	(300°C)		•	≤0.088	•
	(371°C)		≤0.102	•	≤0.0923
	(400°C)		•	≤0.106	•
	(500°C)		•	≤0.127	≤0.098
	(538°C)		≤0.111	•	≤0.1002
Linear shrinkage after heating		%	≤2.0	≤2.0	≤1.3
Bending Strength		Mpa	≥0.344	≥0.30	≥0.36
Tensile Strength		Mpa	≥0.689	≥0.45	≥0.85
Heating Surface Properties		CM	≤0.635 (Non cracking)	•	≤0.635 (Non cracking)
Surface Combustion Properties	Flame Spread Index	•	0	•	0
	Smog Index	•	0	•	0
Water content		%	≤20	•	≤4
Flammability		•	Nonflammable	Nonflammable	Nonflammable



Application

- ✓ Applied for industrial pipeline, heat supply pipe network system in the fields of electric power, petroleum Chemistry, metallurgy ,building and shipping etc.
- ✓ Wall lining and back lining of industry furnace and heating device.

Length(mm)	Width(mm)	Thickness(mm)
400	250	25-120
500	500	25-120
600	300	25-120
900	600	25-120
1000	500	25-120
1050	850	25-120
1080	950	25-120
1220	1220	25-120

1000

Calcium Silicate Board

1050 STD Microporous Calcium Silicate Board is a kind of white, hard new thermal insulation material, it has the performances of light weight, low thermal conductivity, bending resistance, high tensile strength, high temperature resistance, corrosion resistance, nontoxic, nonflammable, can be sawed, easy to processing, not corrode pipeline and equipment etc. Has been widely used as thermal insulation, heat preservation, fireproofing and sound insulation, it is the new type of hard insulation materials which is welcomed by the departments of electric power, petroleum, Chemical industry and metallurgy.

Features

- ✓ Excellent waterproof performance
- ✓ Excellent stability
- ✓ Easy to cut and processing
- ✓ High strength.
- ✓ Excellent corrosion resistance
- ✓ Excellent sound insulation

Physical Properties	UNIT	GREETEC1000 STD				ASTM C533	JIS A9510	GBT 10699
		GR-170	GR-200	GR-220	GR-250			
Bulk Density	Kg/m3	170 (±10)	200(±10)	220 (±10)	250 (±10)	≤352	≤220	≤270, ≤220
Highest Temperature	°C	1000						
Rupture Strength	Mpa	≥0.25	≥0.35	≥0.50	≥0.55	≥0.344	≥0.30	≥0.30
Thermal Conductivity	W/m.k	≤0.048+0.00011t				≤0.078(93°C	≤0.060 (70°C	≤0.060 (100°C
Linear shrinkage after heating 1000°CX16hrs	%	≤2.0						
“t” is the average temperature of working surface and cold surface								



1100 Calcium Silicate Board

1100 Microporous Calcium Silicate Board is based on GREETEC 1000 STD Microporous Calcium Silicate Board to Improve the temperature from 1000 °C to 1100 °C, which can meet the service requirement of high temperature part of industrial furnace.

Features

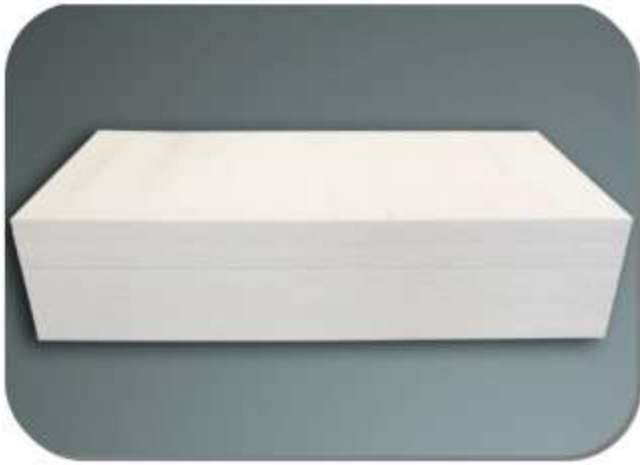
- ✓ Excellent waterproof performance.
- ✓ No oil absorption, no water absorption, maintain the stability of the insulation performance.
- ✓ Non asbestos, no toxic and harmless to human body.
- ✓ High strength.
- ✓ Excellent corrosion resistance.
- ✓ Excellent sound insulation.

Length (mm)	Width (mm)	Thickness (mm)
400	250	25-120
500	500	25-120
600	300	25-120
900	600	25-120
1000	500	25-120
1050	850	25-120
1080	950	25-120
1220	1220	25-120

Physical Properties	UNIT	GREETEC
Density	Kg/m ³	250±10%
Service Temperature	°C	1100
Linear shrinkage after heating (1050°CX3hrs)	%	≤2
Bending Strength	Mpa	≥0.36
Tensile Strength	Mpa	≥0.90
Heating Surface Properties	CM	≤0.660 (Non cracking)
Thermal Conductivity	W/m.k	≤0.058+0.00011t
Water Content	%	≤4
Flammability	●	Nonflammable
“t” is the average temperature of working surface and cold surface		

Application

- ✓ Applied for industrial pipeline, heat supply pipe network system in the fields of electric power, petroleum Chemistry, metallurgy ,building and shipping etc.
- ✓ Wall lining and back lining of industry furnace and heating device.



Features

- ✓ Excellent waterproof performance
- ✓ No oil absorption, no water absorption, maintain the stability of the insulation performance.
- ✓ Non asbestos, no toxic and harmless to human body.
- ✓ High strength.

Physical Parameters	UNIT	GREETEC
Density	Kg/m ³	800-1000
Service Temperature	°C	1000
Linear shrinkage after heating (1000°CX3hrs)	%	≤2
Rupture Strength	Mpa	≥7
Tensile Strength	Mpa	13
Thermal Conductivity	W/m.k	0.13
Flammability	●	Nonflammable
Specification	(2300-2500) X1220X (25~50) mm All size can be customized made	

1100 HD Calcium Silicate Board

HD High Strength Calcium Silicate Board is mainly for steel and glass industry, this board has excellent performance of large size, high strength, heat resistance and fireproofing. It can be widely used for heat insulation, heat preservation of industrial kilns, fireproofing of steel structures, fireproof flues and fireproof pipes, etc.

Application

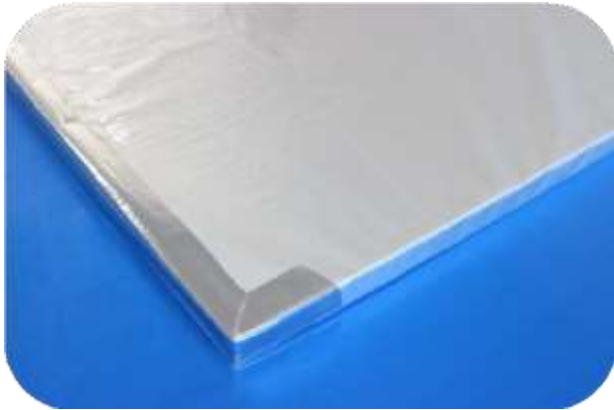
- ✓ Applied for industrial pipeline, heat supply pipe network system in the fields of electric power, petroleum Chemistry, metallurgy ,building and shipping etc.
- ✓ Wall lining and back lining of industry furnace and heating device.



Microporous Board

Microporous Nano thermal insulation board is a kind of new type thermal insulating material, due to its excellent performance of thermal insulation, it can be applied in all fields of high temperature industrial furnaces, metallurgical industry, high temperature pipeline, nonferrous metals, household appliances and building fire protection. As a new type energy conservation and environmental protection Nano thermal insulation material, its thermal conductivity is even lower than air, under high temperature, its heat insulation performance is 3~4 times better than traditional thermal insulation materials. It is a premium thermal insulating material that can replace most of traditional thermal insulation materials.





950 TT Eco Classic Board

Applications

- ✓ High temperature furnace lining
- ✓ Nonferrous metals: smelting furnace, electrolytic cell, holding furnace
- ✓ Electron battery: electric appliance, fuel cell Communication and transportation: automobile, steamship, automobile
- ✓ Household appliance: electric stove, energy storage electric radiator
- ✓ Aeronautics and Astronautics: airplane, universe spacecraft

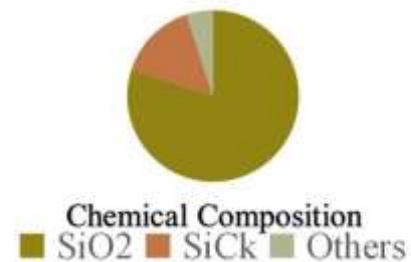
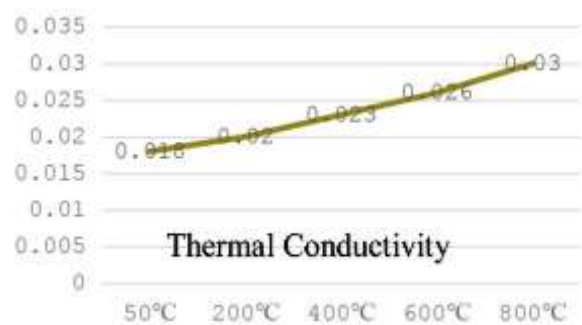
Features

- ✓ Low thermal capacity, low thermal conductivity
- ✓ Good elasticity, long service life
- ✓ Excellent chemical stability
- ✓ Excellent thermal stability and thermal shock

Description		950 TT Eco Test Standards and Classic Board	
Color		Grey	
Classification temperature (°C)		950	
Melting point		>1200	
Bulk density (Kg/M3)		250±10%	GB/T17911-2006
Specific heat 800°C (KJ/Kg K)		0.8	YB /T4130-2005
Tensile strength (Mpa) Compress10%		0.50	GB/T 13480-1992
Linear Shrinkage 850°C (%)		≤2.0	GB/T17911-2006
Chemical Composition (%)	SiO2	80	GB/T17911-2006
	SiCk	15	
	Others	5	
Thermal Conductivity (W/m.k)	50°C	0.018	YB/T4130-2005
	200°C	0.020	
	400°C	0.023	
	600°C	0.026	
	800°C	0.030	
Production Specification		Length X Width: 1000X650; 650X500Thickness: 10~50mm All sizes can be customized by Requirements.	

Packaging

The production forms are in board form, the external protection materials can be PE heat shrink age film, aluminum foil, fiberglass cloth and other forms of covering materials which can be customized as specific requirements.





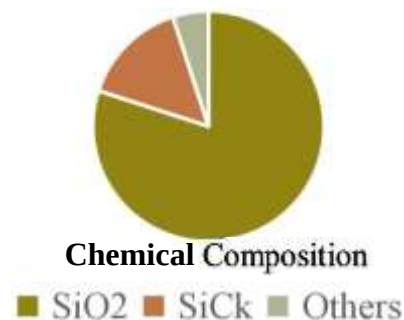
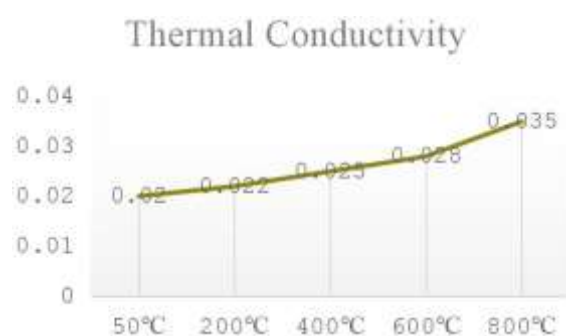
950 TT Flex Felt

950 TT Nano thermal insulation felt is a new product developed by the newest nanotechnology with specific inorganic fire-proof Nano powder, the thermal conductivity coefficient of the felt is lower than still air. In the high temperature condition, under high temperature, its heat insulation performance is 3~4 times better than traditional thermal insulation materials. Among current refractories and insulation materials, its heat insulating property is outstanding. On the high-temperature equipment restricted by space and weight, 950 Nano thermal insulation material is the optimal choice, has been applied to all kinds of complicated thermal equipment, and has helped to solve many worldwide problems of thermal insulation.

Description		GREENTEC 950 Nano Thermal Insulation Felt
Color		Grey
Classification temperature (°C)		950
Melting point		>1200
Bulk density (Kg/M3)		350±10%
Specific heat 800°C (KJ/Kg K)		0.8
Tensile strength (Mpa) Compress10%		1
Linear Shrinkage 850°C (%)		≤2.0
Chemical Composition (%)	SiO ₂	80
	SiCk	15
	Others	5
Thermal Conductivity (W/m.k)	50°C	0.020
	200°C	0.022
	400°C	0.025
	600°C	0.028
	800°C	0.035
Production Specification		Length X Width: 1000X650; 650X500Thickness: 5~50mmAll sizes can be customized by requirements

Packaging

The production forms are in board form, the external protection materials can be PE heat shrinkage film, aluminum foil, fiberglass cloth and other forms of covering materials which can be customized as specific requirements





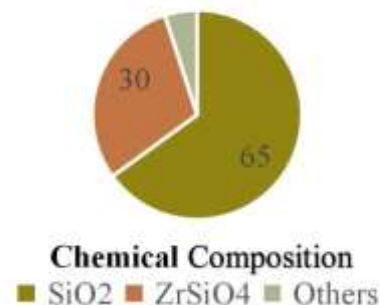
TT 1050 Classic

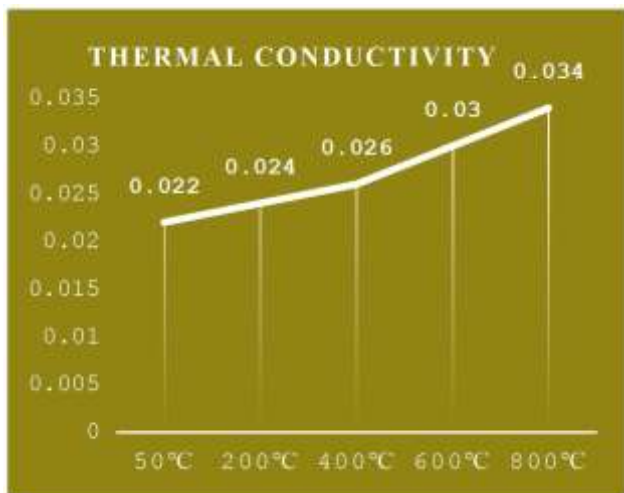
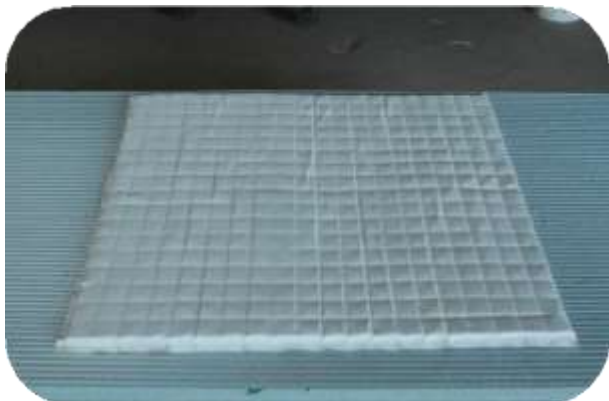
TT 1050 Nano thermal insulation felt is a new product developed by the newest nanotechnology with specific inorganic fire-proof Nano powder, the thermal conductivity coefficient of the felt is lower than still air. In the high temperature condition, under high temperature, its heat insulation performance is 3~4 times better than traditional thermal insulation materials. Among current refractories and insulation materials, its heat insulating property is outstanding. On the high-temperature equipment restricted by space and weight, TT 1050 Nano thermal insulation material is the optimal choice, has been applied to all kinds of complicated thermal equipment, and has helped to solve many worldwide problems of thermal insulation.

Description		TT 1050 Classic
Color		White
Classification temperature (°C)		1050
Melting point		> 1200
Bulk density (Kg/M3)		350±10%
Specific heat 800°C (KJ/Kg K)		0.8
Tensile strength (Mpa) Compress10%		1
Linear Shrinkage 850°C (%)		≤2.0
Chemical Composition (%)	SiO ₂	65
	ZrSiO ₄	30
	Others	5
Thermal Conductivity (W/m.k)	50°C	0.022
	200°C	0.024
	400°C	0.026
	600°C	0.030
	800°C	0.034
Production Specification		Length X Width: 1000X650;650X500 Thickness: 5~50mm All sizes can be customized by requirements

Packaging

The production forms are in board form, the external protection materials can be PE heat shrinkage film, aluminum foil, fiberglass cloth and other forms of covering materials which can be customized as specific requirements.



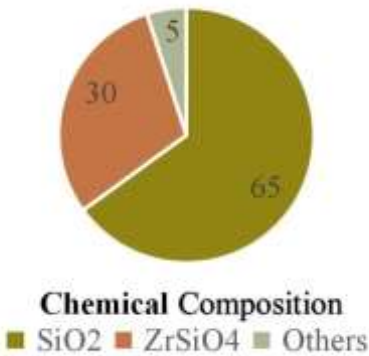


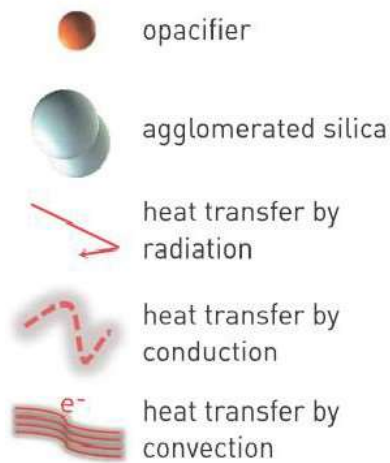
Packaging

The production forms are in felt form, the external protection materials can be PE heat shrinkage film, aluminum foil, fiberglass cloth and other Forms of covering materials which can be customized as specific requirements.

TT 1050 Flex Felt

Description		TT 1050 Flex Felt
Color		White/Grey
Classification temperature (°C)		1050
Melting point		>1200
Bulk density (Kg/M3)		350±10%
Specific heat 800°C (KJ/Kg K)		0.8
Tensile strength (Mpa) Compress10%		1
Linear Shrinkage 850°C (%)		≤2.0
Chemical Composition (%)	SiO2	65
	ZrSiO4	30
	Others	5
Thermal Conductivity (W/m.k)	50°C	0.022
	200°C	0.024
	400°C	0.026
	600°C	0.030
	800°C	0.034
Production Specification		Length X Width: 1000X650; 650X500.Thickness : 3,5,7,10mm All sizes can be customized by requirements





Theory of Microporous Board

There are three transmission routes of heat: conduction heat transfer, convection heat transfer and radiation heat transfer, the unique property of Nano thermal insulation materials comes from its unique Nano scale Microporous structure. The nonporous structure, which has been scientifically and rationally designed, has been optimized in the following three ways.

Radiation heat transfer

The effect of radiation heat transfer is very huge, the Nano thermal insulation material is added with heat resisting anti-infrared ray fines, such anti-infrared additive causes infrared ray be farthest blocked and reflected back to heat resource occurred place, thus the radiation heat transfer effect of thermal insulation materials is very small.

In conclusion, the Nano scale micropore structure and additive of Nano thermal insulation materials developed by newest Nano technology lead to the three routes of heat transfer changed radically, the heat transfer effect in the role of Nano scale micropore goes into minimum value, so the Nano micropore thermal materials with excellent thermal insulation performance are made.

Conduction heat transfer

The powder particles of Nano thermal insulation materials are very small, the primary particles are about 7nm, the contact area of solid particles are very small, so make the effective thermal resistance through the conduction heat transfer very large, which leads to very low effect of conduction heat transfer.

Convection heat transfer:

The Nano particles of Nano thermal insulation materials are aggregate, the micropore diameter formed inside of materials is around 20nm, however the thermal motion free range of gas molecules retained in the materials is about 60nm at room temperature, so each gas molecule is locked inside the individual pore and cannot collide with other gas molecules, the convective heat transfer of gas molecules generated from this way is also limited at minimum value, so that the convective heat transfer inside the Nano thermal insulation materials is almost negligible.

Special Shapes



Thicknes s s (mm)	Hot surface temperature (°C)											1000°C Radiating W/m ²
200	300	400	500	600	700	800	850	900	950	1000		
3	85	117	146	175	210	239	269	288	308	319	339	9489
5	68	91	115	138	161	184	215	223	240	257	265	5849
7	58	77	95	116	136	155	176	190	197	212	227	4394
10	50	65	79	94	112	128	146	158	164	177	183	2999
15			64	75	87	103	117	122	132	137	147	2087
20				65	74	85	96	104	113	117	126	1604
25					66	75	85	92	95	103	111	1305
30						68	76	83	86	93	96	1025
35							70	76	78	85	87	887
40								70	73	78	81	781
45									68	73	76	698
50										69	71	632

Tip: Thermal calculation condition: even surface, environmental temperature 20°C, wind speed 0 cold surface radiation coefficient 0.9, hot surface temperature of thermal insulation materials°C (density 300kg/m³)



Aerogel

High Performance Insulation
Blanket for Industrial
Applications and Building &
Construction Sector.



Characteristics and Benefits

- ✓ Superior Insulation Performance
- ✓ 2~5 times better insulation performance than traditional materials, achieving same and even better insulation performance with minimum insulation thickness
- ✓ Hydrophobic but Vapor Permeable
- ✓ Water repellency and vapor permeability help to prevent Corrosion Under Insulation(CUI)
- ✓ Compression Resistant yet Resilient
- ✓ Compression resistance and bounce-back allow recovering thermal performance after being compressed
- ✓ Inorganic and Inflammable Profile
- ✓ Enables stable performance over long term while providing fire protection to objects
- ✓ Easy for Handling and Installation
- ✓ Can be cut on site easily with conventional cutting tools to fit any specific shape or geometry
- ✓ Less Volume for Storage and Transportation
- ✓ Less volume needed for insulation materials, sharply reducing volume and cost for storage and transportation
- ✓ Environmentally Safe
- ✓ No respirable fiber content, directly landfill disposable

GR06 Series

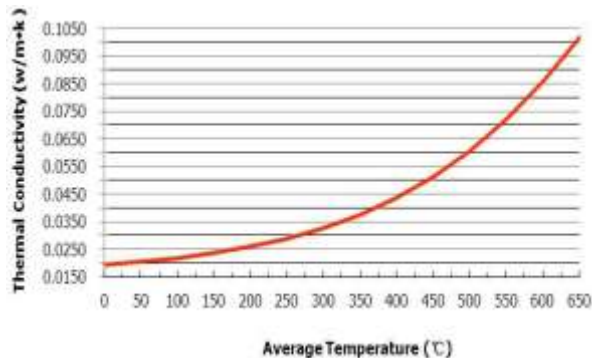
GR06 Series Aerogel Blanket is a high performance insulation blanket composed of silica aerogel, which is the lowest thermal conductor in the world, and of glass fiber needled mat, suitable for the applications between -50 °C to +650 °C in industry and in building & construction sector.

Being super low thermal conductive, hydrophobic yet vapor permeable, compression resistant and resilient, inorganic and inflammable profile, easy processing with reduced volume, and environmentally safe, DRT06 Series Aerogel Blanket is the state-of-art product which is the perfect choice for those in need of the best insulation performance with minimum thickness while achieving minimum energy consumption.

Applications

- ✓ Steam pipelines in petroleum exploitation, pre-insulated pipes
- ✓ Power plants, petrochemical plants, chemical plants
- ✓ Tanks and containers
- ✓ Ovens and furnaces
- ✓ Trains and vehicles
- ✓ Buildings and constructions

Physical Properties



Applications

- ✓ Steam pipelines in petroleum exploitation, pre-insulated pipes
- ✓ Power plants, petrochemical plants, chemical plants
- ✓ Tanks and containers
- ✓ Ovens and furnaces
- ✓ Trains and vehicles

Thermal Conductivity

Package Form	Roll
Standard Thickness	3mm, 6mm, 10mm
Max Width	1500mm
Thermal Conductivity	0.020w/m·k (at 25°C)
Max Use Temperature	650°C
Density	200 ± 30 kg/m ³
Hydrophobic	Yes

GR10 Series

GR10 Series Aerogel Blanket is a high performance insulation blanket composed of silica aerogel, which is the lowest thermal conductive solid in the world, and of special high temperature fiber needled mat, suitable for the applications between 0 °C to +1000 °C in industry.

Being super low thermal conductive, hydrophobic(only suitable for hydrophobic version) yet vapor permeable, compression resistant, inorganic and inflammable profile, easy processing with reduced volume, and environmentally safe, GR10 Series Aerogel Blanket is the state-of-art product which is the perfect choice for those in need of the best insulation performance with minimum thickness while achieving minimum energy consumption.

Characteristics and Benefits

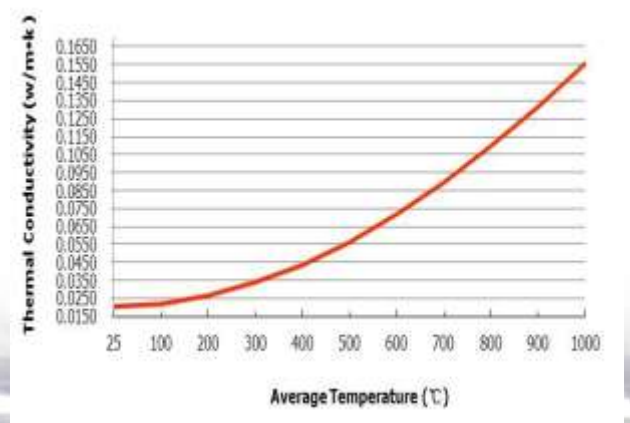
Being super low thermal conductive, hydrophobic(only suitable for hydrophobic version) yet vapor permeable, compression resistant, inorganic and inflammable profile, easy processing with reduced volume, and environmentally safe, GR10 Series Aerogel Blanket is the state-of-art product which is the perfect choice for those in need of the best insulation performance with minimum thickness while achieving minimum energy consumption.

- ✓ Superior Insulation Performance
- ✓ 2~5 times better insulation performance than traditional materials, achieving same and even better insulation performance with minimum insulation thickness
- ✓ Vapor Permeable
- ✓ Water repellency(only suitable for hydrophobic version) and vapor permeability help to prevent Corrosion Under Insulation(CUI)
- ✓ Compression Resistant yet Resilient
- ✓ Flexibility and bounce-back allow recovering thermal performance after being compressed
- ✓ Inorganic and Inflammable Profile
- ✓ Enables stable performance over long term while providing fire protection to objects

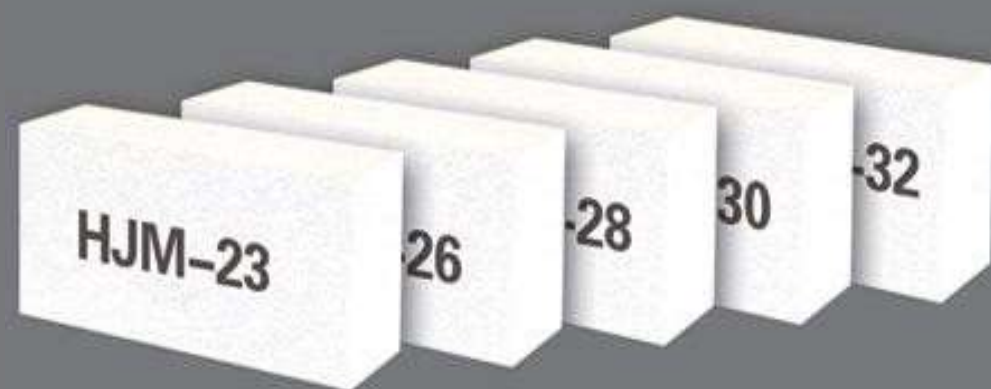
Thermal Conductivity

Package Form	Roll
Standard Thickness	6mm
Max Width	1200mm
Thermal Conductivity	0.020w/m.k (at 25°C)
Max Use Temperature	1000°C
Density	220 ± 20 kg/m3
Hydrophobic	No or Yes

Physical Properties



- ✓ Easy for Handling and Installation
- ✓ Can be cut on site easily with conventional cutting tools to fit any specific shape or geometry
- ✓ Less Volume for Storage and Transportation
- ✓ Less volume needed for insulation materials sharply reducing volume and cost for storage and transportation
- ✓ Environmentally Safe
- ✓ No resperable fiber content, directly landfill disposable



Insulating Firebrick(IFB)

Light refractory bricks have been widely used in heat treatment equipment because of their characteristics such as small density, high porosity, small thermal conductivity, good thermal insulation and certain compressive strength.

HJM Series



HJM insulating firebrick is manufactured from high grade refractory powder and materials in good purity. During the process of production, some organic and multiple filling materials are added according to the specific requirement proportion. By compressed in vacuum and sintered under high temperature, the brick has typical advantages including low thermal conductivity, good thermal shock resistance, low heat capacity and low iron content as well as outstanding mechanical flexibility which has extensive applications in variety of industrial markets.

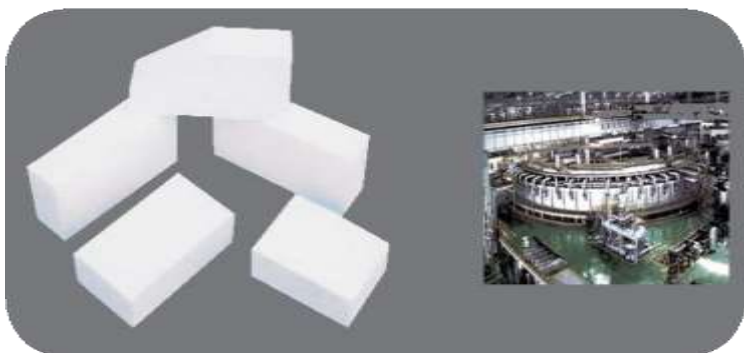
Applications

- ✓ Cracking furnace
- ✓ Conversion furnace
- ✓ Heating equipment
- ✓ Refining equipment
- ✓ Hot Blast Stove
- ✓ Ceramics kiln

Features

- ✓ Low thermal capacity,
- ✓ low thermal conductivity
- ✓ Excellent thermal stability
- ✓ High purity and low iron content
- ✓ Excellent thermal resistance
- ✓ Direct access to fire
- ✓ Accurate dimension and easy cutting

Description	HJM-23		HJM-26			HJM-28	HJM-30	HJM-32
	23C	23	25	26	26A			
Chemical content(As Received Basis):								
Al ₂ O ₃	37	38	42	42	48	64	71	78
SiO ₂	47	59	54	54	48	33	26	20
Fe ₂ O ₃	0.5	1.1	1	0.9	0.9	0.75	0.6	0.4
CaO+MgO	13.8	/	/	/	/	/	/	/
Na ₂ O+K ₂ O	1.5	/	/	/	/	/	/	/
Physical properties								
Density (g/cm ³)	0.49	0.60 (37.5pcf)	0.80 (49.9pcf)	0.80 (49.9pcf)	0.80 (49.9pcf)	0.9 (56.2pcf)	1.03 (64.3pcf)	1.3 (81.2pcf)
Classification Temperature(°F)	2300	2300	2500	2600	2600	2800	3000	3200
Cold Rushing Strength (Mpa)	1.5	1.0 (145psi)	2.4 (348psi)	2.4 (348psi)	2.4 (348psi)	2.5 (363psi)	2.5 (363psi)	4.0 (581psi)
Modulus of Rupture (Mpa)	1.0	0.7 (102psi)	1.5 (218psi)	1.5 (218psi)	1.5 (218psi)	1.5 (218psi)	1.8 (361psi)	2.0 (290psi)
Permanent Linear Change(%)	1230°C (2250°F) X24h -0.1	1230°C (2250°F) X24h -0.2	1350°C (2462°F) X24h -0.5	1400°C (2552°F) X24h -1	1400°C (2552°F) X24h -0.6	1510°C (2750°F) X24h -0.6	1630°C (2948°F) X24h -0.8	1730°C (3146°F) X24h 0.8
Thermal Conductivity (W/m.k)								
400°C (752°F)	0.14	0.18 (1.25**)	0.27 (1.87**)	0.28 (1.94**)	0.27 (1.87**)	0.31 (2.15**)	0.42 (2.91**)	0.50 (3.46**)
600°C (1112°F)	0.16	0.20 (1.39**)	0.30 (2.08**)	0.31 (2.15**)	0.30 (2.08**)	0.34 (2.36**)	0.43 (2.98**)	0.51 (3.53**)
800°C (1472°F)	0.18	0.23 (1.60**)	0.33 (2.29**)	0.35 (2.42**)	0.33 (2.29**)	0.37 (2.56**)	0.44 (3.05**)	0.53 (3.67**)
1000°C (1832°F)	0.21	0.26 (1.81**)	0.37 (2.56**)	0.39 (2.70**)	0.36 (2.49**)	0.40 (2.77**)	0.48 (3.33**)	0.56 (3.88**)



Features

- ✓ Thermal stability
- ✓ Low thermal conductivity
- ✓ High porosity
- ✓ High refractoriness under load
- ✓ Low thermal linear change

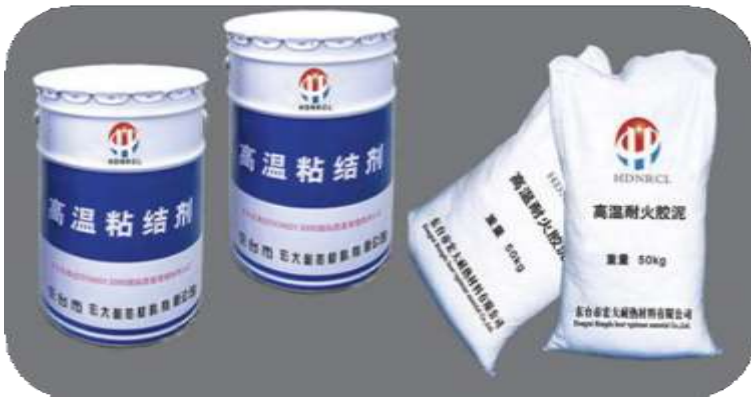
Corundum Mullite Brick

Alumina bubble brick is made from alumina bubbles and alumina powders, together with other adhesives, burnt by 1750°C. It belongs to the super high temperature thermal insulation material which is widely used as the industrial furnace lining under 1800 °C . Since its high porosity, it cannot be applied to the part that contacts slag, or it will be damaged by the slag permeation. Also if used as the furnace lining, the temperature rising rate cannot be too sharp, or it will crack and reduce its service life.

Applications

- ✓ Metallurgy induction furnace lining
- ✓ Petrochemical industrial
- ✓ gas furnace
- ✓ Thermal insulation lining
- ✓ Reaction Furnace lining

Items		Alumina Bubble Bricks	
Classification Temperature (°C)		1800	1700
Density (g/cm3)		1.2-1.6	1.2-1.6
Permanent Linear Change (°C×hr.%)		1800×4≤0.3	
Cold crushing Strength(Mpa)		15	16
Modulus of Rupture (Mpa)		60-70	60-70
Thermal Conductivity 350°C±20°C (w/m.k)		0.6-0.9	0.6-1.0
Refractoriness under load (°C)		1750	1650
Thermal shock resistance °C times		1100 Times >20	15
	Al2O3≥	98.5	85
Chemical composites(%)	Fe2O3≤	0.1	0.1
	SiO2	0.2	15



Applications

Apply to masonry insulating bricks and special quality bricks to prevent the invasion for brickwork by air and hot air, and the corrosion for connection joint by puddle and chemical air.

Refractory Mortars Binder

HJM refractory mortars are specially developed for HJM insulating firebricks are usually supplied in dry state, which can be directly used by mixing certain amount of water.

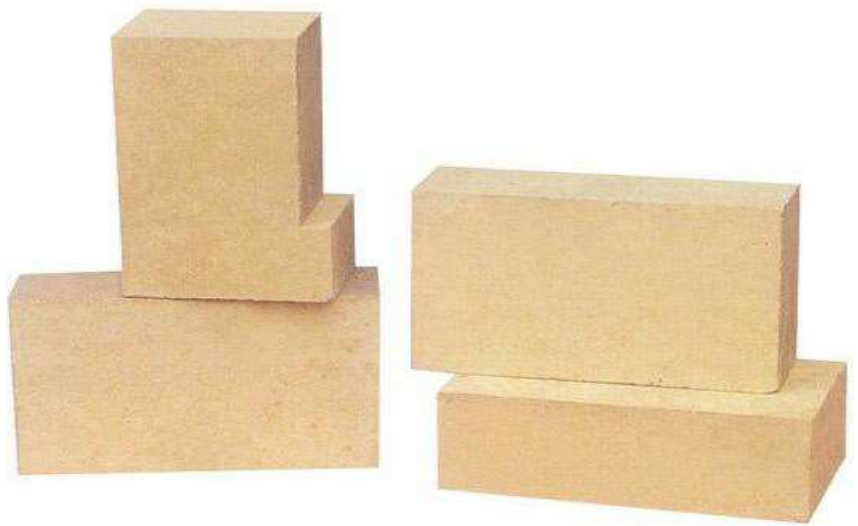
HJM refractory binders are in wet state which can be directly used to the application. In natural dry state, both can generate great strength and formulate the binding joint and help the bricks to form the monolithic masonry. Usually, they are used together with bricks.

Item		HJM2600	HJM2800	HJM3300
Classification Temperature(°C)		1430	1650	1760
Room condition (23°C/ relative humidity 50%)				
Density (Delivery condition)		1750 kg/m3	1850 kg/m3	2000 kg/m3
Breaking Tenacity 110°C		10-12	18-20	22-26
Chemical Composite (%)	Al ₂ O ₃ ≥	35	45	56
	Fe ₂ O ₃ ≤	61	52	40
KGS Needed for 1000 PCS Bricks		200	200	200

Fireclay Bricks

High Alumina Bricks

Light refractory bricks have been widely used in heat treatment equipment because of their characteristics such as small density, high porosity, small thermal conductivity, good thermal insulation and certain compressive strength.





Fire Clay Brick

Fire clay bricks are typically used as linings for kilns, furnaces and boilers they possess mechanical strength and can be subjected to extreme thermal cycling and thermal shock. Fire clay bricks also have a high thermal mass which ensures they retain heat and provide excellent energy efficiency.

Fire clay bricks are made by firing a clay based composition until partly vitrified and for specialist applications can also be produced with a glazed finish. Normally fire clay bricks contain 40-50% alumina depending on the maximum operating temperatures.

Main	Properties		
Grade	SK30	SK32	SK34
Al ₂ O ₃	35	36	40
Fe ₂ O ₃	2.5	2.5	2.0
Refractoriness °C	1650	1670	1730
Refractoriness under load 0.2Mpa (°C)	1250	1300	1350
Apparent Porosity(%)	22-26	22-26	22-24
Bulk Density(g/cm ³)	2.0	2.1	2.15
Cold Crushing Strength(Mpa)	20	22	25
Thermal Expansion at 1000°C	0.8	0.6	0.6



High Alumina Bricks

High alumina bricks are produced with selected bauxite chamotte as main raw material, fired at 1450-1470 °C by advanced process with strict quality control.

High alumina bricks have great features like high temperature performance, great corrosion and wear resistance, high bulk density, low iron content, etc.

High Alumina bricks are extensively used in mining, metallurgy, cement, chemical and refinery and refractory industries.



Main	Properties		
Grade	SK36	SK38	SK40
Al ₂ O ₃	55	75	80
Fe ₂ O ₃	2.0	2.0	2.0
Refractoriness °C	1770	1790	1790
Refractoriness under load 0.2Mpa (°C)	1470	1520	1530
Apparent Porosity(%)	22	23	21
Reheating Liner Change(%)	-0.4~0.1	-0.4~0.1	-0.4~0.1
Cold Crushing Strength(Mpa)	44	54	65



Mgo & Mgc Bricks

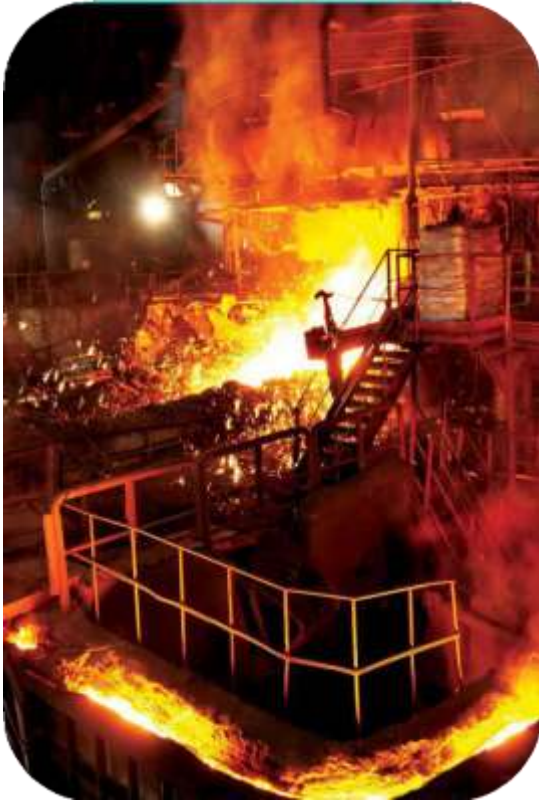
Products whose main mineral components are magnesia. Compared with other refractory bricks, magnesia bricks have higher refractoriness, up to more than 2000, higher load-softening temperature, greater mechanical strength at high temperature, and good resistance to chemical erosion of basic slag containing iron oxide and calcium oxide.



Magnesium Brick

Magnesium brick is made from periclasite with alkaline refractory products as raw material, it has good refractoriness performance, good refractory under load and high temperature machinery strength and corrosion resistance. It can be applied in metallurgy (EAF, Converter, Mixer furnace), non - ferrous (Smelting furnace) industries and high temperature tunnel kiln, sintered magnesite kiln, cement rotary kiln, glass kilns, new type lime kiln, soaking furnace, heating furnace, etc.

Items	MgO Brick Series				
	MZ-90	MZ-92	MZ-95	MZ-96	MZ-97
Mgo %	≥90	≥92	≥95	≥96	≥97
SiO ₂ %	≤5.5	≤4.5	≤2.0	≤1.80	≤1.0
CaO %	≤3.0	≤2.0	≤2.0	≤1.80	≤1.0
Apparent Porosity(%)	≤19	≤18	≤18	≤17	≤16
Bulk Density (g/cm ³)	≥2.90	≥2.92	≥2.95	≥3.00	≥3.05
Cold Crushing Strength (Mpa)	≥55	≥60	≥60	≥65	≥70
High temperature reheating strength (1650 °CX2hrs)Mpa	0~0.5	0~0.4	0~0.3	0~0.3	0~0.2
Refractoriness under load (0.2 Mpa) °C	≥1550	≥1580	≥1640	≥1660	≥1680



Magnesia Carbon Brick

Magnesia Carbon Brick is a basic refractory material made from graphite and periclasite. It has good performances of high temperature resistance, good slag resistance, good thermal shock stability, high strength under high temperature, etc. It is mainly used in Converter, EAF, Refining Ladle, Common Ladle etc.



Items	MgC Series				
	MT-10A	MT-14A	MT-14B	MT-18A	MT-18B
MgO %	≥80	≥76	≥74	≥72	≥70
C %	≥10	≥14	≥14	≥18	≥18
CaO %					
Apparent Porosity(%)	≤4	≤4	≤5	≤3	≤4
Bulk Density (g/cm ³)	≥2.90	≥3.00	≥2.95	≥3.00	≥3.00
Cold Crushing Strength (Mpa)	≥40	≥40	≥35	≥40	≥35
High temperature bending strength (1400 °CX30min) Mpa	≥6	≥10	≥8	≥9	≥7

Graphite Electrodes

It is mainly made with petroleum coke and needle coke as raw materials and coal and bitumen as the binding agent through Calcining, batching, mixing, pressing, roasting, graphitization and machining. It is the conductor that releases electric energy in electric arc furnace to heat and melt furnace materials.



Graphite Electrodes



Items			Unit	Nominal Diameter				
				Smelting Standard YB/4089-2000		Inner Quality Standard		
			200-400	450-500	200-300	350-500	550-600	
Electrical Resistivity	Electrode	μΩ•m	≤7	≤7.5	≤5.0	≤6.5	≤7.0	
	Joint		≤6.5	≤6.5	≤5.5	≤6.0	≤6.0	
Rupture Strength	Electrode	Mpa	≥10.5	≥9.5	≥11.0	≥10.0	≥15.0	
	Joint		≥14.0	≥14.0	≥15.0	≥15.0	≥15.0	
Elasticity Modulus	Electrode	Gpa	≤12.0	≤12.0	≤12.0	≤12.0	≤12.0	
	Joint		≤16.5	≤15.0	≤14.0	≤14.0	≤14.0	
Bulk density	Electrode	g/cm3	≥1.60	≥1.60	≥1.64	≥1.65	≥1.64	
	Joint		≥1.70	≥1.70	≥1.75	≥1.75	≥1.74	
Ash content	Electrode		≤2.4	≤2.4	≤2.0	≤2.2	≤12.2	
	Joint		≤2.2	≤2.2	≤2.0	≤2.0	≤2.0	
Thermal expansivity	Electrode	10-6/℃	≤0.3	≤0.3	≤0.2	≤0.3	≤0.3	
	Joint							
		YB/Y4089-2000		Inner Quality Standard				
Nominal Diameter	Sectional Area	Permissible	Ampere Density	Electric melting furnace		Finery		
		Current Load		Permissible Current Load	Ampere Density	Permissible Current Load	Ampere Density	
In	mm	cm²	A	Acm2	A	Acm2	A	Acm2
8	200	314	5500-9000	16-25	5000-9000	22-30	8500-10000	27-37
9	225	397	5500-10000	16-25	8000-11000	20-27	10000-1400	25-34
10	250	495	6000-13000	16-25	10000-13000	20-27	12500-15000	25-34
12	300	715	13000-17400	17-24	13500-15000	18-25	17000-22500	23-31
14	350	973	17400-24000	17-24	17500-24000	16-25	22000-31000	23-31
15	400	1275	21000-31000	15-24	21000-31000	17-24	25000-30000	21-34
16	450	1622	25000-40000	15-24	26000-33000	16-24	32500-49000	20-30
20	500	2002	30000-46000	15-24	33000-45000	16-24	40000-50000	20-30
22	550	2427	-	-	36000-55000	15-23	45000-55000	19-29
24	600	2892	-	-	44000-61000	15-23	55000-64000	19-29



Monolithics and Castables

Granular and powdered materials made of refractory materials and combined with a certain amount of binder and water. With high fluidity, the amorphous refractory which can be hardened without heating can be constructed by pouring.



Conventional Dense Castables

Conventional Dense castables is mixed by high quality bauxite, flint clay as aggregate, Silica Powder, α -alumina powder as micro powder, refractory cement as binder.

Formulas are changed according to different applications.

GRCD series products are specially designed to use for steel industry, boiler furnaces, incinerators and other industrial furnaces.

Item	GRGC60	GRGC75	GRGC80	GRGC85
Service Temp°C	1550	1600	1650	1700
Bulk Density (g/cm3)	2.2	2.4	2.5	2.7
CCS 110°C	30	40	50	70
(Mpa) 1100°C	25	35	40	60
1500°C	40	55	60	85
MOR 110°C	8	9	11	12
(Mpa) 1100°C	7	8	10	11
1500°C	9	10	12	14
Max Grain Size (mm)	5	5	5	5
Chemical Analysis(%)	60	75z	80	8.5
Al2O3	2.6	2.5	2.0	1.8
Fe2O3				
Rebound Rate(%)	8-10	8-10	8-10	8-10

Features

- ✓ Good abrasion resistance
- ✓ Good thermal shock resistance
- ✓ Good high-temperature resistance
- ✓ Anti-corrode

Applications

- ✓ Boiler (CFB, Chain Boiler,etc)
- ✓ Steel Industrial
- ✓ Pizza Oven



Features

- ✓ Excellent abrasion resistance
- ✓ Excellent high-temperature resistance
- ✓ Excellent Crushing Strength
- ✓ Anti-corrode

Applications

- ✓ Steel Industrial (Ladle, Tundish, Induction Furnace, etc.)
- ✓ Incinerators
- ✓ Aluminium
- ✓ Cement Industrial



High Alumina Castables

High Alumina castables are mixed by high quality bauxite, mullite, andalusite or Corundum as aggregate, Silica Powder, α -alumina powder as micro powder, refractory cement as binder, also some additive to make better performance.

Formulas are changed according to different applications.

Comparing to conventional dense castables, high alumina castables can be used in the area that have higher temperature and also have higher cold crushing strength.

Item	GRHA75	GRHA80	GRHA85	GRHA95
Service Temp $^{\circ}$ C	1600	1650	1700	1750
Bulk Density (g/cm 3) (Dried at 110 $^{\circ}$ C)	2.5	2.6	2.7	3.0
CCS 110 $^{\circ}$ C (Mpa) 1100 $^{\circ}$ C 1500 $^{\circ}$ C	65 55 80	70 60 85	90 80 100	95 85 110
MOR 110 $^{\circ}$ C (Mpa) 1100 $^{\circ}$ C 1500 $^{\circ}$ C	10 9 11	11 9 12	12 10 13	13 12 15
Max Grain Size (mm)	6	6	6	6
Chemical Analysis(%)				
Al $_2$ O $_3$	75	80	85	95
Fe $_2$ O $_3$	2.5	2.0	1.8	1.2
Application Guidelines				
Mixer	P	P	P	P
Placement	V	V	V	V
Water/Mixer Temp $^{\circ}$ C	20 $\pm$ 5	20 $\pm$ 5	20 $\pm$ 5	20 $\pm$ 5
Mixing Time(Min): Dry/Wet	2/5	2/5	2/5	2/5
Water % (Typical)	7-9	7-9	6-8	6-7



Low Cement Castables

Low cement castables is based on the use of low calcium aluminate cement content, and they are used in many applications that require high refractoriness, corrosion resistance and abrasion resistance. They possess a uniform structure with low porosity; have high temperature strength throughout the low and intermediate temperature range.

The content of CaO of low cement castables is usually less than 3%, so it insures the castables have a good strength in mid-temperature.

Features

- ✓ Low Content of CaO
- ✓ Excellent Mid-Temp Crushing Strength
- ✓ Excellent High Temp Resistance
- ✓ Excellent Wear Resistance

Application

- ✓ Cement Industrial
- ✓ Rotary Kiln
- ✓ Steel Industrial
- ✓ Furnace
- ✓ CFB Boiler
- ✓ Foundry Industrial

Item	GRLC 75	GRLC 80	GRLC 85	GRLC 95
Service Temp°C	1650	1700	1750	1780
Bulk Density (g/cm ³) (Dried at 110°C)	2.55	2.6	2.7	3.0
CCS 110°C (Mpa) 1100°C 1500°C	65 75 80	70 80 85	80 90 100	90 95 110
MOR 110°C (Mpa) 1100°C 1500°C	9 10 11	10 11 12	11 12 13	13 14 15
Max Grain Size (mm)	6	6	6	6
Chemical Analysis(%) Al ₂ O ₃ Cao Fe ₂ O ₃	75 2-3 2.4	80 2-3 2.0	85 2-3 1.8	95 2-3 1.5
Application Guidelines Mixer Placement Water/Mixer Temp °C Mixing Time(Min): Dry/Wet	P V 20±5 2/5	P V 20±5 2/5	P V 20±5 2/5	P V 20±5 2/5
Water % (Typical)	7-9	7-9	6-8	6-7


Perlite

Vermiculite

Light weight mullite

Bubble Alumina

Insulating Castables

The material basis of insulation castables can be Perlite, Vermiculite, Light weight clay, Light weight mullite or Bubble alumina according to the different working temperatures. We can supply insulating castables with working temperature from 800 °C to 1700 °C while the density from 0.8-1.5g/cm³.

Item	GRIN08	GRIN12	GRIN14	GRIN15
Service Temp°C	800	1100	1400	1700
Bulk Density (g/cm ³) (Dried at 110°C)	0.8	1.2	1.4	1.5
CCS 110°C (Mpa)	10 /	15 10	25 20	35 30
MOR 110°C (Mpa)	3 /	4 3	5 4	6 5
Max Grain Size (mm)	6	6	6	6
Chemical Analysis(%)				
Al ₂ O ₃	25	30	45	83
Fe ₂ O ₃	3.5	2.8	1.5	1.0
Application Guidelines				
Mixer	P	P	P	P
Placement	V	V	V	V
Water/Mixer Temp °C	20±5	20±5	20±5	20±5
Mixing Time(Min): Dry/Wet	1/3	1/3	1/3	1/3

Applications

- ✓ Furnace/Back-up lings
- ✓ Other insulating linings

Features

- ✓ Low density
- ✓ Low heat thermal conductivity



Plastic Castables

Plastic Castables are Phos-bonded, bauxite, mullite or corundum-based refractory. They are unsurpassed resistance to acid and neutral as well as basic slags allow it survive the corrosive environments. The plastic castables does not require forms during installation where anchors are present except for flat arch constructions. Usually the binder of plastic castables are liquid Aluminium dihydrogen phosphate, the plasticity can be adjusted when you are doing the installation. We can also supply the plastic castables with powder binder, and plastic castables ready for use (packed in cartons).

Item	GRPC65	GRPC75	GRPC80	GRPC95
Service Temp°C	1550	1600	1650	1700
Bulk Density (g/cm3)	2.4	2.5	2.6	2.8
CCS (Mpa)	110°C	30	35	40
	1100°C	45	45	50
	1500°C	50	50	60
MOR (Mpa)	110°C	8	9	10
	1100°C	9	10	11
	1500°C	10	11	12
Max Grain Size (mm)	5	5	5	5
Chemical Analysis(%)				
	Al ₂ O ₃	65	75	80
	Fe ₂ O ₃	2.0	2.0	1.8
Maxing liquid	Shall be supplied with the castables powder			

Features:

- ✓ Excellent Plasticity
- ✓ Excellent high Temperature Resistance
- ✓ Excellent Wear Resistance
- ✓ Excellent Corrosion Resistance

Applications

- ✓ Boiler
- ✓ Steel Industrial
- ✓ Cement Industry
- ✓ Furnace Repairing

Gunning Castables



Gunning castables utilize specially selected raw materials including specific aggregate sizing, clays, cement and additives to ensure ease of placement by gunning methods. it can highly reduce installation time, cost and provide performance as good as refractory bricks and casting type castables.

The gunning castables is a tendency in the future, it can highly save the construction time because you do not need to wait for the cooling of the operating area.

Applications

- ✓ Steel industrial (Blast Furnace, Tundish, etc.)
- ✓ Boilers
- ✓ Cement industry
- ✓ Other high temp area need to be rush repaired

Item	GRGC60	GRGC75	GRGC80	GRGC85
Service Temp°C	1550	1600	1650	1700
Bulk Density (g/cm3)	2.2	2.4	2.5	2.7
CCS 110°C	30	40	50	70
(Mpa) 1100°C	25	35	40	60
1500°C	40	55	60	85
MOR 110°C	8	9	11	12
(Mpa) 1100°C	7	8	10	11
1500°C	9	10	12	14
Max Grain Size (mm)	5	5	5	5
Chemical Analysis(%)	60	75z	80	8.5
Al2O3	2.6	2.5	2.0	1.8
Fe2O3				
Rebound Rate(%)	8-10	8-10	8-10	8-10

Features

- ✓ Easy installation
- ✓ Low rebound rate
- ✓ High temp resistance
- ✓ Excellent corrosion resistance

Specifications

Plastic bucket (Iron bucket)

package

20kg/bucket

Applications



Roller kiln



Tunnel kiln



Transfer ladle



Resistance furnace



Kiln car



Aluminum Smelting furnace



Steel ladle



Rotary kiln

Applications



Cement Industry



Power Plant



Ceramics Industry



Glass Industry



Petrochemical Industry



Metallurgy Industry

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