

Vuulcan Sparking a future of refractories

PREHEATING INSULATION
MATERIAL



Sparking a future of
refractories

vuulcan

CERAMIC FIBER BOARD

Ceramic fiber board is a lightweight refractory material processed with alumina-silica fibers for applications at temperatures up to 1430C. It is manufactured and designed for the thermal applications requesting high demands on rigidity, the thermal insulation properties and abrasion resistance of ceramic fiber board have been further improved due to the higher density. Ceramic fiber board is a vacuum formed product that resists higher gas velocities than ceramic fiber blanket. It is ideal for furnace, boiler duct and stack lining thanks to its low thermal conductivity and low heat storage, which makes the shorter cycles times and quicker access for maintenance in the industrial furnaces possible.

Features Of Ceramic Fiber Board

- Smooth surface
- Average density and thickness
- Excellent mechanical strength and structural strength
- Low thermal conductivity, low shrinkage, low density
- Excellent thermal capacity

Applications Of Ceramic Fiber Board

- Lining of high temperature industrial kilns and furnaces
- Combustion chamber liner boiler and heater
- Backup insulation for monolithic refractories
- Transfer of nonferrous metal furnace
- Barrier against flame
- Fireproof board

Specifications Of Ceramic Fiber Board

- Alumina contents range from 40% to 45%
- Widely used throughout metallurgical industry

ABOUT VUULCAN

Our mission is clear: to become the leading manufacturer of refractory materials in China, with a global outlook. Our international operations team is composed of world-class talent, equipped with the expertise and vision to serve clients worldwide. We pride ourselves on delivering comprehensive, high-quality services that meet the diverse needs of our global customers.

Just as fire has fueled human advancement throughout history,

Vuulcan is committed to driving innovation in the refractory industry. Our products not only protect the industries and infrastructures that drive the global economy but also symbolize a commitment to sustainable practices and technological progress. Vuulcan stands at the intersection of tradition and innovation, providing unmatched protection for the future.

Product Data

Properties	ST BOD	GCBOD	HZ BOD	TP64 BOD	TP74 BOD	
Specification Temp (°C)	1260	1260	1430	1600	1700	
Working Temp (°C)	1000	1100	1350	1450	1550	
Bulk Density (kg/cm ³)	280-400	280-400	280-400	400-500	450-500	
Linear Shrinkage after Heating (%)	-3 (1000°C) @24H	-3 (1100°C) @24H	-3 (1350°C) @24H	-2 (1450°C) @8H	-2 (1550°C) @8H	
Thermal Conductivity (w/m.k)	0.085(400°C)	0.085(400°C)	0.085(400°C)	0.135(400°C)	0.185(400°C)	
	0.132(800°C)	0.132(800°C)	0.132(800°C)	0.182(800°C)	0.232(800°C)	
	0.190(1000°C)	0.190(1000°C)	0.180(1000°C)	0.230(1000°C)	0.280(1000°C)	
Tensile strength (MPa)	0.2	0.2	0.2	0.3	0.3	
Chemical Composition (%)	Al ₂ O ₃	38	42	34	64	75
	Al ₂ O ₃ +SiO ₂	96	98	-	99	99
	ZrO ₂	-	-	15-17	-	-
	Fe ₂ O ₃	1.0	0.5	0.2	0.2	0.2
	Na ₂ O+K ₂ O	0.5	0.3	0.2	0.2	0.2
Size(mm)	Length*Width*Thickness 900*600*20/25/30/40/50, 1000*500*20/25/30/40/50, 1000*600*20/25/30/40/50, 1200*1000*20/25/30/40/50, 1200*600*20/25/30/40/50					

CERAMIC FIBER BULK

As the crucial and staple materials for producing ceramic fiber blanket, board, module and other formed products, ceramic bulk fiber is normally manufactured from high purity raw materials-alumina powder, silica sand through unique production techniques of spun or blowing, these bulks are loose, long and flexible with fine thermal properties, at present, the chopped fibers are vacuum formed production, the lubricated bulk fibers are the fiber for textiles are all available. Ceramic bulk fibers serve as an ideal filler for various types of refractory lining and insulation tools.

Features Of Ceramic Fiber Bulk

- Good springiness for fiber
- Excellent strength and resistance to blowing
- Excellent chemical stability, resistance to erosion
- Low thermal conductivity
- Low thermal shrinkage
- Excellent sound absorption

Applications Of Ceramic Fiber Bulk

- Filling insulation and joint sealing
- Back-up lining for industrial furnaces
- Fireproof materials for construction
- High temperature materials for filtration

Specifications Of Ceramic Fiber Bulk

- Alumina contents range from 40% to 45%
- Widely used throughout metallurgical industry

Product Data

Properties	STD BULK	HP BULK	HZ BULK	
Chemical Composition (%)	Al ₂ O ₃	≥44	≥45	≥34
	SiO ₂	≥52	≥54	≥50
	Fe ₂ O ₃	≤1.0	≤0.5	≤0.5
	ZrO ₂	-	-	≥15
	Na ₂ O	≤1.0	≤0.2	≤0.2
Specification Temp (°C)	1260	1260	1430	
Shot content (%)	≤15	≤15	≤12	
Fiber Diameter (μm)		3.5		

CERAMIC FIBER MODULE

Ceramic fiber modules are made from compressed ceramic fiber blanket. These modules are specially designed to meet or improve the thermal insulation requirements of industrial furnaces in some special thermal conditions. The fiber modules are produced with various anchoring systems to enable quick, easy and efficient installation in most furnace linings. Modules have the reliable thermal maintenance and long time treatment. Module linings prevent heat loss, increasing the furnace productivity and reducing maintenance costs.

Features Of Ceramic Fiber Module

- Excellent chemical stability
- Excellent thermal stability
- Excellent flexibility, the module is in pre-compression state, after the lining masonry
- The Expansion of modules enable seamless lining, fiber lining can be compensated to improve
- Insulation performance of Fiber lining, and the overall performance is good
- Ceramic fiber module can be installed quickly, and anchors set in the wall lining, which can lower the requirement of anchor material

Specifications Of Ceramic Fiber Module

- Alumina contents range from 40% to 55%
- Widely used throughout metallurgical industry

Applications Of Ceramic Fiber Module

- Furnace lining and insulation of furnace in Petrochemical industry
- Furnace lining and insulation of furnace in Metallurgical industry
- Furnace lining and insulation of furnace in Ceramics, glass and other built-in materials industry
- Furnace lining and insulation of heat treatment furnace in heat treatment circle
- Insulation performance of Fiber lining, and the overall performance is good
- Excellent thermal stability and thermal shock resistance
- Ceramic fiber module can be installed quickly, and anchors set in the wall lining, which can lower the requirement of anchor material



Product Data

Properties	STD Module	HP Module	HZ Module	
Chemical Composition (%)	Al ₂ O ₃	≥44	≥45	≥34
	SiO ₂	≥52	≥54	≥50
	Fe ₂ O ₃ +TiO ₂	≤1.0	≤0.5	≤0.5
	ZrO ₂	-	-	≥15
	Na ₂ O+K ₂ O+Fe ₂ O ₃	≤1.0	≤0.2	≤0.2
Bulk Density (kg/m ³)	220	220	220	
Specification Temp (°C)	1260	1350	1430	
Linear Shrinkage after Heating (%)	1000°C×24h≤2.5	1000°C×24h≤2.5	1000°C×24h≤3.5	
	400°C	0.090	0.101	0.118
	500°C	0.119	0.120	0.149
Thermal Conductivity (w/m.k)	600°C	0.152	0.175	0.172

CERAMIC FIBER BLANKET

Ceramic fiber blanket is manufactured by refractory ceramic fibres, providing effective solutions to a wide range of thermal management problems. Utilizing our proprietary high output blowing and spinning techniques, these products supply superior insulating performance, flexibility and resilience.



Features Of Ceramic Fiber Blanket

- High tensile strength
- Excellent mechanical strength and structural strength
- Low thermal conductivity, low shrinkage, low density
- Excellent thermal capacity
- Good sound absorption
- Good thermal shock resistant

Applications Of Ceramic Fiber Blanket

- Annealing furnaces
- Furnace door linings and seals
- Soaking pit covers and seals
- Furnace hot face repairs
- Reheating furnace and ladle covers

Specifications Of Ceramic Fiber Blanket

- Alumina contents range from 40% to 55%
- Widely used throughout metallurgical industry

Product Data

Properties	STBLT	GCBLT	HABLT	HZBLT	PCBLT	
Specification Temp (°C)	1260	1260	1360	1430	1600	
Working Temp (°C)	1050	1100	1200	1350	1500	
Bulk Density (kg/cm ³)	64-160	64-160	64-160	64-160	96-128	
Linear Shrinkage after Heating @24H(%)	-3 (1000°C)	-3 (1100°C)	-3 (1250°C)	-3 (1350°C)	-1 (1400°C)	
Thermal Conductivity (w/m.k)	0.09(400°C)	0.09(400°C)	0.09(400°C)	0.09(400°C)	0.16(600°C)	
	0.17(800°C)	0.17(800°C)	0.13(600°C)	0.76(600°C)	0.28(1000°C)	
	0.32(1000°C)	0.31(1000°C)	0.22(1000°C)	0.22(1000°C)	0.45(1400°C)	
Tensile strength (MPa)	0.05	0.05	0.06	0.06	0.08	
Chemical Composition (%)	Al ₂ O ₃	43	44	51	35	71
	Al ₂ O ₃ +SiO ₂	96	98	99	-	-
	ZrO ₂	-	-	-	13-15	-
	Fe ₂ O ₃	1.0	0.5	0.2	0.2	0.2
	Na ₂ O+K ₂ O	0.5	0.3	0.2	0.2	0.2
Size(mm)	Length*Width*Thickness 7200*610/1220*25, 3600*610/1220*50, 4800*610/1220*38 7200*610/1220*6, 14400*610/1220*12.5, 28800*610/1220*6.38				Thickness 10-25	

CERAMIC FIBER PAPER

Insulation ceramic fiber paper is a lightweight refractory material processed from a blend of high purity alumina-silica fibres into a highly flexible, uniform sheet. It is recommended for classification temperatures up to 1430C. made of a bulk ceramic fibre and organic binder. It is necessary for gaskets to be used in high temperatures due to their excellent workability and ductility.

Features Of Ceramic Fiber Paper

- Low thermal capacity
- Low thermal conductivity
- Excellent electrical insulation properties
- Excellent machining performance
- High strength, tear resistance
- High flexibility

Applications Of Ceramic Fiber Paper

- Asbestos paper replacement
- Investment cast wrap insulation
- One time consumable insulating applications
- Back up lining for metal troughs
- Hot top lining
- Thermal and electrical insulation

Specifications Of Ceramic Fiber Paper

- Alumina contents range from 40% to 45%
- Widely used throughout metallurgical industry

Product Data

Properties	DK-1260	DK-1350	DK-1430	
Specification Temp (°C)	1000	1100	1300	
Bulk Density (kg/cm ³)	200	200	200	
Tensile strength (MPa)		0.4		
Organic matter content (%)		≤8		
Thickness (mm)		0.5-10mm		
Width (mm)		610mm 1220mm		
Chemical Composition (%)	Al ₂ O ₃	47	48	40
	SiO ₂	52	51	15-17 ZrO ₂
	Fe ₂ O ₃	0.5	0.5	0.2
	NaO ₂	0.2	0.2	0.2

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