



**Kumaran**  
**Shapes & Gasket**

## **Speciality High Temperature Insulation Products**

Ceramic Fiber

**COMPANY  
PROFILE**

**KSG Ceramic Fiber Shapes & Gasket is Manufactured from Alumina-Silica  
Fibers in a Vacuum Forming Process with a Binder System.**



# **Kumaran Shapes & Gasket**

**Ceramic Fibre Gasket | Ceramic Fibre Cone | Ceramic Fibre Board  
Ceramic Fibre Paper | Ceramic Fibre Shapes | Ceramic Fibre Cloth  
Ceramic Fibre Rope & Tape | Ceramic Fibre Sleeve**

Kumaran Shapes and Gasket is a leading manufacturer and supplier of high-temperature ceramic fiber insulation products. With a commitment to quality and innovation, we provide an extensive range of solutions designed to meet the demanding requirements of various industrial applications. Our products are engineered to deliver superior thermal performance, energy efficiency, and durability, ensuring optimal functionality and safety in high-temperature environments. With years of expertise, we have established ourselves as a trusted partner for industries including petrochemical, power generation, and manufacturing, delivering tailored insulation solutions that meet the unique needs of our clients.

At Kumaran Shapes and Gasket, we pride ourselves on our state-of-the-art manufacturing facilities and a dedicated team of professionals who strive for excellence in every project. Our customer-centric approach focuses on providing exceptional service, from product selection and customization to on-time delivery and technical support. By leveraging advanced technology and adhering to the highest industry standards, we continuously innovate to offer cutting-edge insulation products that help our clients enhance their operational efficiency and reduce energy costs. Our unwavering dedication to quality and customer satisfaction positions us as a leader in the high-temperature insulation industry.



01

### Ceramic Fibre Gasket



KSG Gasket is the name for the family of vacuum formed, semi-rigid products manufactured by Kumaran Shapes.

KSG Gasket products are manufactured using insulating fibres with a wide range of chemical and physical properties. Within the range there are two main product groups – with graphite layer and without graphite layer.

KSG Gasket normal materials exhibit excellent flexibility and compressibility and provide lightweight insulation and sealing in molten metal.

KSG flow graphite gasket uses a slightly different binder formulation to produce a material that is stiffer than KSG normal while maintaining excellent compressibility and flexibility. In addition, KSG graphite gasket has superior handling properties which make these products excellent for molten metal flow system.

Typical applications include: pre-formed flexible shapes, gasket, pre-cut shapes.

Ceramic fiber shapes are manufactured from refractory fibers. They are designed for use in application conditions requiring superior insulating properties combined with high rigidity and mechanical strength. The above shapes can be made to suit specific requirements as per the individual customer preferences.



## Ceramic Fibre Gasket

### Features & Applications

- Excellent insulating performance
- Excellent thermal stability
- Low heat storage
- Resistance to thermal shock
- Non wetting to Aluminum
- Molten Aluminum Handling applications
- Transfer ladles
- Die casting
- Pouring tubes
- Available in a following temperature 1260° C & 1425 ° C
- Sheet form or special shape
- Different flexibilities available
- Excellent as gasket media
- Low binder content
- Custom shapes for a perfect fit

### Main Properties

Physical Properties	NOR	HT
Classification Temperature	1260° C	1425° C
Chemical Composition (%) (IS:12107 / XRF)		
Al <sub>2</sub> O <sub>3</sub>	39-42%	28-33%
SiO <sub>2</sub>	57-61%	50-55%
ZrO <sub>2</sub>	-	14-18%
Loss on Ignition %	<10	<10
Density (Nominal) kg/m <sup>3</sup>	300	300
Color	Cream to Tan	White



02

## Ceramic Fibre Cone



Ceramic fibre cone is made by vacuum forming process using ceramic fiber. These cone are hard and slightly flexible helps to stop the flow of molten aluminium from the furnace. The advantage of this ceramic fiber cone is that it is easy to control the flow of liquid metal by plugging and removal operations it is not fragile. It makes the casting process easy and safe.

Ceramic cone are good thermal shock resistant and can be used in direct contact with flame.

### Size Availability

Length	Diameter	Thickness	Density
50 mm to 300mm	50mm to 300mm	5 mm to 25 mm	300 to 400 (kgs/m <sup>3</sup> )

Non-Standard size will supply based on request

### Specification

Colour	Brown
Loss on Ignition	<15%
Hardness	50 on shore scale
Shrinkage at 1000° C	<3%
Classification Temperature	1260° C
Chemical Composition	-
Al <sub>2</sub> O <sub>3</sub>	40-45%
SiO <sub>2</sub>	54-57%

03

## Ceramic Fibre Board



KSG Board products is a rigid ceramic fiber product made from Ceramic fiber by vacuum forming process .

The ceramic fibre board is made in sizes of width 500mm and length 1000mm can be used up to 1260 degree centigrade. The board has high insulating properties and good thermal shock resistant and can be cut to required sizes, Ceramic fibre board can reduce the energy cost and reduce the cycle time and improve the efficiency of the process.

KSG Boards once installed, they can help reduce energy costs and cycling times due to their high insulating capability, as well as serving to protect refractory surfaces from thermal shock. They are also well-suited for applications experiencing vibration, mechanical stress and strong erosive forces. The excellent rigidity and modulus of rupture possessed by these boards makes them strong and self-supporting.

### Availability

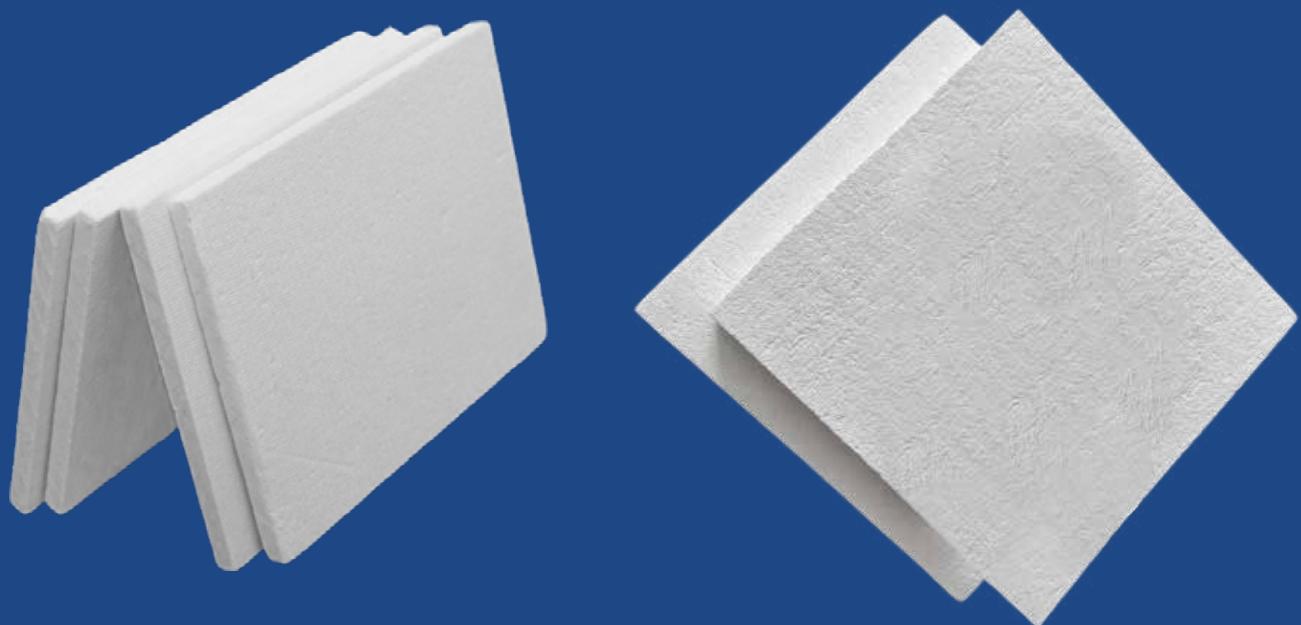
Grade	Width Available (mm)	Length Available(mm)	Density (kgs/m <sup>3</sup> )
STD 1260° C	500, 1000	1000	Min 260
HT Board 1425° C	500, 1000	1000	Min 260
HS 45 Board 1260° C	500, 1000	1000	Min 600

Non-Standard size will supply based on request

## Ceramic Fibre Board

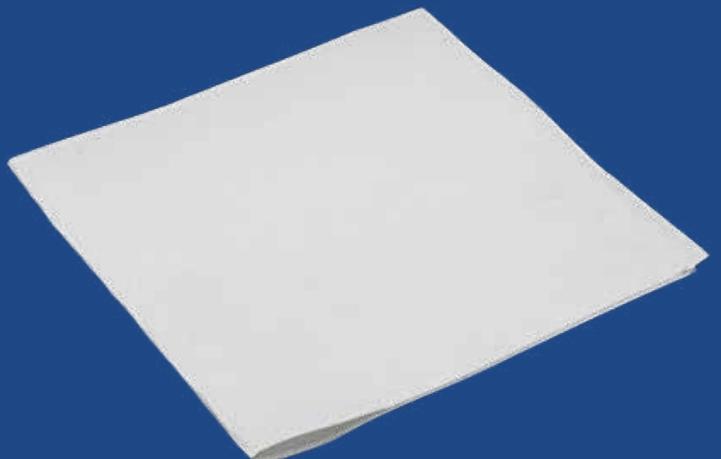
### Technical Properties

Specifications	STD 1260° C Board	HT Board 1425° C	HS 45 Board
Hardness Shores scale	>45	>45	>60
Busting Strength Kgs/cm <sup>2</sup>	15min	15 min	30min
Linear Shrinkage at 1000 C	>3%	>3 %	>3%
Classification Temperature	1260° C	1425° C	1260° C
Continuous Usage Temperature	1150° C	1300 ° C	1150° C
Thickness	6 to 50mm	6 to 50mm	10 to 50mm
Density	300-400kgs/m <sup>3</sup>	300-400kgs/m <sup>3</sup>	600to 700 kgs /m <sup>3</sup>
Loss on Ignition	<10%	<15%	<10%
Chemical Composition Al <sub>2</sub> O <sub>3</sub> %	40-45	35-37	49-54
SiO <sub>2</sub> %	54-57	47- 49	33-37
ZrO <sub>2</sub> %	-	14 -18	-
CaO %	-	-	9-12%



04

## Ceramic Fibre Paper



Ceramic fiber paper is produced from ceramic fiber. These paper can withstand up to a temperature of 1200 degree centigrade .The organic additives are removed while heating above 300 deg centigrade The thickness and the uniform distribution of ceramic fibre helps in insulating thin areas most effectively The good flexibility, advantage of cutting the ceramic fiber paper into exact size requirement and extremely thermal shock resistant .

Applications include Cold face insulations, Gaskets , expansion joints , Thermal barrier for exhaust in vehicle, Furnace and boiler cold face insulations.

KSG specialized paper making process is statistically controlled to form uniform, lightweight, flexible sheets. By blending different fibers, binders, and additives to develop a unique flexible products.

KSG now produces a variety of KSG paper products for a wide range of applications. KSG papers exhibit excellent chemical stability, resisting attack from most corrosive agents. Exceptions are hydrofluoric, phosphoric acids and concentrated alkalis.

KSG papers are wet by water or steam, all thermal and physical properties are completely restored upon drying. No water of hydration is present in most KSG paper grades. Our papers have good dielectric strengths. KSG papers, with the exception of the inorganic series, will generate small amounts of smoke and trace element outgassing during the initial exposure to temperatures above 300° C.

### Ceramic Fibre Paper

#### Availability

Thickness	Width	Length
3MM TO 10MM	500MM TO 1000MM	500MM TO 1000MM

Non-Standard size will supply based on request

#### Specifications

Density	150-250 (kgs/m <sup>3</sup> )
Loss on ignition	10-15%
Linear shrinkage	< 2% at 1000° C
Chemical composition	-
Al <sub>2</sub> O <sub>3</sub>	43-46%
SiO <sub>2</sub>	54-57%



05

## Ceramic Fibre Shapes



KSG Ceramic Fibre Shapes are available in a wide variety of shape configurations. These shapes are processed from alumina silica fibers for applications at temperature up to 1400°C. To match ceramic fiber special shapes to specific applications, material compositions can be varied with different fillers and chemicals to produce special characteristics such as high strength, density and molten metal non-wetability. These shapes are manufactured based on customer drawing.

### Main Properties

Physical Properties	NOR	HT
Classification Temperature	1260°C	1400°C
Chemical Composition (%) (IS:12107 / XRF)		
Al <sub>2</sub> O <sub>3</sub>	>40	>28
SiO <sub>2</sub>	<60	<53
ZrO <sub>2</sub>	-	>14
Loss on Ignition %	<10	<10
Density (Nominal) kg/m <sup>3</sup>	300	300
Color	Cream to Tan	White



06

## Ceramic Fibre Cloth



KSG Ceramic Fibre Cloth / Tape are woven from ceramic fibre yarn reinforced with Fiberglass yarn/SS wire. Ceramic Fibre Cloth / Tape can be used in wide range of industrial, high temperature sealing and insulation application. Cloths are reinforced with fibre glass yarn can be used up to 850°C and reinforced with SS wire can be used up to 1100°C.

It can be used as expansion joints, safety cupboards, cabinets, welding cupboards, protective and insulating cupboards, shields, gaskets, cord or tube binding, insulate hot tubes, etc.

### Availability

Thickness	Width	Length
2MM TO 6MM	1000MM	10 Meters

Non-Standard size will supply based on request

Maximum usage temperature 1000°C

### The composition

Al <sub>2</sub> O <sub>3</sub>	40- 45%
SiO <sub>2</sub>	54-58%
Weight	1 (kg/m <sup>2</sup> )
Loss in Ignition	<25%

07

## Ceramic Fibre Rope & Tape



KSG ceramic fibre rope is a round braided rope. It is made from high quality KSG ceramic fibre reinforced with fiberglass or stainless steel wire for high temperature use.

Ceramic Fiber Tape is a narrow woven fabric manufactured from high temperature alumino-silicate based ceramic fiber reinforced with high temperature fiberglass. Gaskets, tadpole gasket and other high temperature insulation seal.

### Availability of Rope

Sizes	Diameter	Reinforcement
4mm to 50mm		Stainless Steel, Fiber Glass,

Non-Standard size will supply based on request

### Availability of Tape

Thickness	Width	Length
2MM TO 6MM	25mm to 250mm	1 meter to 100 meters

### Technical Properties

Physical Properties	Twisted Rope	Braided Rope	Tape
Classification Temperature	1260° C	1260° C	1260° C
Chemical Composition			
Al <sub>2</sub> O <sub>3</sub> %	39-42%	42-46%	39-42%
SiO <sub>2</sub> %	53-55%	52-55%	53-55%
Loss on Ignition %	<25%	<2%	<25%
Density (kg/m <sup>3</sup> )	400-500	200	400-450

08

## Ceramic Fibre Sleeve



Ceramic fibre sleeves are made by vacuum forming process using high purity ceramic fiber. The sleeves are used for metal pouring for casting process for runner and riser sleeves. Sleeves can be used for protection in metal pipe lining as thermal insulations. For insulation joints It acts as thermal barrier for the flow hot liquid metals and hot flue gasses advantages include low thermal conductivity resistant to direct flame attack and thermal shock resistant.

### Availability

Inner Diameter	Outer Diameter	Height	Thickness
10MM TO 300MM	25MM TO 300MM	50MM TO 1000MM	5MM TO 50MM

Non-Standard size will supply based on request

### Technical Specifications

Classification Temperature	800 to 1425° C
Density	300-600 (kgs/m <sup>3</sup> )
Loss on Ignition	< 10%
Color	Off white yellow and brown
Al <sub>2</sub> O <sub>3</sub>	35- 41%
SiO <sub>2</sub>	40-55%

# Take a look at our clients



RHI MAGNESITA



Jindal Aluminium



Vikram Sarabhai  
Space Centre

**TAG**  
**ELECTROCASTING**





# Kumaran

## Shapes & Gasket

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