DATA SHEET

XERABOND – KF
Sialon bonded Silicon Carbide

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Xerabond – KF is a sialon bonded silicon carbide manufactured from high purity raw materials for a product and has exceptional properties and performance.

Xerabond – KF is a unique patented formulation, which is at least 20% stronger and 20% more wear resistant than the best conventional silicon nitride bonded silicon carbide.

Xerabond – KF has a high density and is homogeneous throughout. The development of the bonding phase during the firing cycle results in a very fine pore size and a narrow pore size distribution. These impart very high strengths and excellent thermal properties. The hardness and chemical stability of the product gives excellent resistance to wear, corrosion and extreme service conditions.

A second firing may be used to produce a protective oxide skin for excellent oxidation resistance with greatly reduced open porosity. This oxide layer is self-healing in service.

Typical Applications

Xerabond – KF has a reliable and long service life for the fast firing of porcelain, bone china and other pottery products. It has an excellent strength to weight ratio for kiln furniture applications and, as a result, the amount of ware being fired can be greatly increased and, in some cases doubled. This in turn improves the thermal efficiency by up to 50%, thus reducing the energy consumption and carbon footprint.

Xerabond – KF can be made into a wide range of shapes and sizes, including batts, beams, supports and many other complex shapes.

Xerabond – KF is suited to extreme atmospheres and abrasive conditions e.g. chutes, pipe linings, burners, cyclone and hydro-cyclones liners and parts and for lining incinerators.

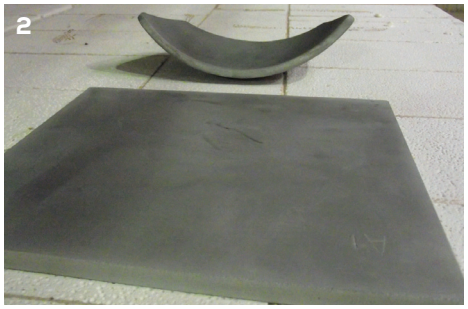
Other applications include engineering applications, severe acid or alkaline atmospheres, contact with molten non-ferrous metals and thermocouple sheaths.

Xerabond – KF is versatile in manufacture and can be made to new innovative and bespoke designs.

Typical Properties

Chemical Analysis:	
SiC	68%
Sialon	30%
Other	2%
Physical Data:	
Bulk Density	2.80 g/cm^3
Total Porosity	10-12%
Apparent Porosity (2nd Firing)	1-3%
MOR at 20°C	200 MPa
MOR at 1400°C	200 MPa
MOE at 20°C	260 GPa
Thermal Expansion	4.5 x 10^{-6} K
Thermal Conductivity at 1000°C	20 W/mK
Abrasion Resistance	12-15
Oxidation Resistance at 900°C (2nd Firing)	0.1% wt gain
Max Operating Temperature	1550°C

(The maximum operating temperature is atmosphere dependent)
All data quoted are determined following BS EN Standard Test Methods



Warning: Xerabond – KF may absorb water from rain, condensation etc which may cause ceramic parts to explode during rapid heat up in a kiln. It is important, if any components have been in contact with moisture, they are thoroughly dried before use.

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Image 1 Variety of Shapes for Armour Applications

Image 2 Ceramic Kiln Furniture Tiles