## ■ Introduction of reaction bonded Silicon carbide ceramic beam：

Reaction bonded silicon carbide ceramic beams are a type of advanced ceramics used in high-temperature applications such as furnace and kiln construction. Reaction bonded Silicon carbide ceramic beam are made by a process called reaction bonding, where a mixture of silicon carbide and carbon is placed in a mold and heated to a high temperature, causing a reaction to occur between the silicon carbide and carbon. This reaction creates a strong, dense ceramic material with excellent mechanical and thermal properties.

## ■ Technical data sheet of reaction bonded Silicon carbide ceramic beam:

| Item | Unit | Data |
|---|---|---|
| **Temperature of application** | ℃ | 1380℃ |
| **Density** | G/cm3 | ＞3.02 |
| **Open porosity** | % | ＜0.1 |
| **Bending strength** | Mpa | 250 (20℃) |
| | MPa | 280 (1200℃ ) |
| **Modulus of elasticity** | GPa | 330 (20℃) |
| | GPa | 300 ( 1200℃ ) |
| **Thermal conductivity** | W/m.k | 45 (1200℃ ) |
| **Coefficient of thermal expansion** | K-1 ×10-6 | 4.5 |
| **Rigidity** | / | 13 |
| **Acid-proof alkaline** | / | excellent |

## ■ Advantages of reaction bonded Silicon carbide ceramic beam :

(1) The resulting Silicon carbide beam are resistant to high temperatures, thermal shock, and chemical corrosion.
(2) Silicon carbide kiln furniture beam have high strength and stiffness, making them ideal for supporting heavy loads in furnace and kiln applications.
(3) Silicon carbide kiln furniture beam also have low thermal expansion and excellent thermal conductivity, allowing for efficient heat transfer and uniform temperature distribution.
(4) Reaction bonded silicon carbide ceramic beams are used in a wide range of industries, including aerospace, automotive, chemical processing, and semiconductor manufacturing. They are often used in applications where high temperature and harsh environments are present, such as in furnace and kiln components, heat exchangers, and refractory linings.

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