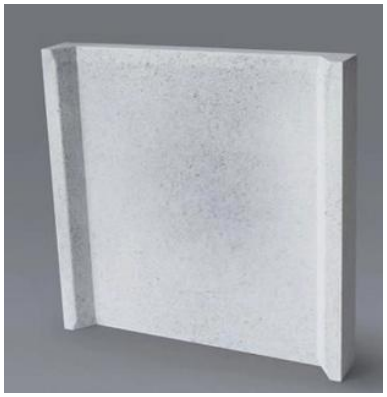
SHANDONG TAIRAN IMPORT AND EXPORT CO.,LTD

Address:NO. 3, Yanhe Road, Boshan, Zibo, Shandong, China
Email:wp@cnjingganrefractory.com/sdwenping@163.com
Contact:Rose Tel/Wechat:+86-13275332819
Tel:86-533-4188518 Fax:86-533-4188518

Silicon Nitride Bonded Silicon Carbide Brick For Electrolytic Aluminum



Silicon nitride bonded silicon carbide brick is widely used in industries such as sidewall of electrolytic aluminum bath, lining of copper smelting furnace, other non-ferrous metal smelting furnaces, steel making, iron making and so on because of its high density, high strength, good thermal shock stability, high load softening point, good thermal conductivity, high resistivity, especially its excellent corrosion resistance and oxidation resistance to melting of cryolite, aluminum fluoride, sodium fluoride, calcium fluoride and so on.

1,Description of Silicon nitride bonded silicon carbide brick

Silicon nitride bonded silicon carbide brick for electrolytic aluminum is a green body formed by mixing fine powder Si and SiC with silicon nitride as the binder and fired at about 1450 ℃ in a nitriding kiln. The product has high density, high strength, good thermal conductivity, high resistivity, and strong corrosion resistance to cryolite and fluoride.

The oxidation resistance of our silicon nitride bonded silicon carbide brick is better than that of foreign products. The oxidation rate of foreign products is 0.78-1.62, and that of our products is 0.1-0.5. The product is buried in cryolite medium. After constant temperature of 1050 ℃ for 20 hours, the volume expansion rate is very low. It is kept warm until 100h, and there is no change again. This shows that the product has strong cryolite corrosion resistance and is widely used as the side wall material of electrolytic aluminum cell.

Compared with traditional carbon block products, silicon nitride bonded silicon carbide brick for electrolytic aluminum:

1) It has strong corrosion resistance to cryolite, fluoride, etc., and good oxidation resistance, which improves the service life

2) High mechanical strength, reduced lining thickness and increased working volume
3) Reduce power consumption and save energy

2.Main properties of silicon nitride bonded silicon carbide brick for electrolytic aluminum

Item	Unit	Value
SI3N4	%	18-23
SIC	%	72-75
SI	%	＜0.5
Density	g/cm3	2.65-2.70
Cold crushing strength	Mpa	180-200
Bending strength at room temperature	Mpa	40-50
Coefficient of thermal expansion	1000℃*10^{-6}/℃	4.15-4.50
Thermal conductivity	800℃ w/m.k	＞18
Antioxidant rate	%	0.1-0.5
Apparent porosity	%	≤16

3. Main characteristics of the product

1) It has strong corrosion resistance to cryolite and fluoride and good oxidation resistance
2) High thermal conductivity and good energy saving effect
3) Good thermal shock stability, low thermal expansion coefficient and good volume stability
4) High temperature mechanical and thermal properties, high mechanical strength
5) Compared with traditional carbon block products, the service life is improved

4. Main uses of the product

It is mainly applied to the side wall of electrolytic aluminum cell, the lining of aluminum ladle, the lining of copper and zinc smelting furnace and iron smelting blast furnace.

5,Good feedback of product use effect,the products have been exported to South Korea, Japan,Pakistan

6,We are a professional supplier, who can provide customers with free product technology, use and other issues

Do you want to find a professional supplier of Silicon nitride bonded silicon carbide brick?

Do you want to find a stable and credible supplier?

Then please contact with us

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Contact me:

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Rose:+86-13275332819(wechat/whatsapp number)