

Special High Alumina Brick Versatile And Durable Refractory

Our Product Introduction

Basic Information

- Place of Origin: Zhengzhou, China
- Brand Name: Rongsheng Xinwei
- Certification: ISO9001
- Model Number: Special High Alumina Brick
- Minimum Order Quantity: 1 Ton
- Price: 200-800 USD
- Packaging Details: Packed on wooden pallets, with water-proof cover, and tightened with plastic/steel bandages
- Delivery Time: 10-20 Days
- Payment Terms: TT; L/C
- Supply Ability: 2000tons /month



Product Specification

- Highlight: Durable High Alumina Brick,
Special High Alumina Brick, High Alumina Brick

Product Description

LZ-85 Special High Alumina Brick

LZ-85 special high alumina brick exhibits excellent thermal stability, with a refractoriness above 1770°C. It is a neutral refractory material containing approximately 85% alumina. It is widely used as checker bricks for open-hearth regenerative furnaces, stoppers in casting systems, and nozzle bricks.

LZ-85 high alumina brick is manufactured from bauxite or other raw materials with high alumina content through molding and calcination. It features high thermal stability and a refractoriness exceeding 1770°C. Moreover, it is classified into standard high alumina bricks (T-type bricks), special-shaped high alumina bricks, and blast furnace bricks (G-type bricks).



Raw Materials for LZ-85 High Alumina Brick

Depending on resource availability and product requirements, the following raw materials may be used:

High alumina bauxite minerals composed mainly of hydrous aluminum oxides (gibbsite, boehmite, etc.).

Sillimanite group minerals (including kyanite, andalusite, and sillimanite).

Artificially synthesized materials, such as industrial alumina, synthetic mullite, and fused corundum.

China is rich in high-quality high alumina bauxite resources, primarily found in provinces such as Shanxi, Henan, Hebei, Guizhou, and Shandong. These bauxite materials are mainly mixtures of gibbsite ($\alpha\text{-Al}_2\text{O}_3\cdot\text{H}_2\text{O}$) and kaolinite.

Key Features of LZ-85 High Alumina Brick

High Thermal Stability: Refractoriness above 1770°C.

Good Slag Resistance: Suitable for linings in steel-making electric furnaces, glass melting furnaces, and cement rotary kilns.

Minimal High-Temperature Creep: Strong resistance to erosion and excellent thermal shock stability.

Mineral Composition and Properties

The mineral composition of high alumina bricks is determined by the bauxite used. Typically, the composition includes mullite, corundum, and a vitreous phase:

Mullite: Its theoretical composition is Al_2O_3 71.8% and SiO_2 28.2%, with a melting decomposition temperature of 1840°C. Featuring needle-like crystals in an interwoven structure, mullite provides high strength at elevated temperatures.

Corundum: Present as $\alpha\text{-Al}_2\text{O}_3$ with a melting point of 2050°C and a Mohs hardness of 9. It forms granular or columnar crystals with excellent chemical stability, offering resistance to acidic and basic slags.

Manufacturing Considerations

Soft clay is often used as a binder in the production of high alumina refractory bricks due to its good plasticity. However, a secondary mullitization reaction occurs between free SiO_2 in the clay and free Al_2O_3 in the bauxite clinker at 1200°C, leading to significant volume expansion, increased porosity, and reduced strength. Therefore, the addition of clay powder in the mixture should not exceed 5%.



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