

Matters needing attention when lining construction of submerged arc furnace with long furnace age

Keyword: furnace lining、RKEF、laying

Description:

Introduction to Refractories Commonly used in the masonry of submerged arc furnaces

Related Product: [Magnesia Carbon Brick](#)

In addition to the construction according to the drawings, special attention should be paid to the following aspects when building the lining of the submerged arc furnace:

1/Mark the position of each layer on the corresponding sides of the furnace wall according to the drawings, especially the position of the furnace mouth.

2/From the low temperature zone of the furnace bottom and the furnace wall to the high temperature zone of the furnace, the materials used are asbestos board, aluminum silicate fiber felt, elastic expansion layer, clay brick, high alumina brick, carbon ramming material, carbon brick and carbon The protective layer.

3/One layer of asbestos board, thickness 10mm; two layers of aluminum silicate fiber felt, thickness 40mm, single layer 20mm, two layers should be staggered and stacked.

4/The thickness of the elastic expansion layer is 30mm at the bottom and 40~60mm at the side. It is filled with 4~6mm high-aluminum aggregate with an aluminum content of more than 75%, the bottom is leveled, and the side is tamped with an air pick.

5/Lay 2 layers of clay bricks on top of the expansion layer, dry-laying, and then laying clay bricks vertically. The top 300~500mm is built with secondary high-alumina bricks layer by layer. After each layer is built, use high-alumina cooked powder to repeatedly seam the algae.

6/The carbon material at the bottom of the furnace adopts four layers of cold

paste (coarse) paste and three layers of carbon bricks. The thickness of each layer of cold tamping paste is 50, 30~50, 30~50, 100~200mm, respectively. The rough seam paste is heated with a mixing heating pot at a temperature of about 120 degrees, and the heating capacity is about 500kg each time. over. The thickness of the cold ramming paste on the side is 60~100mm, and it should be constructed in sections, generally no more than 600mm at a time. The height of the electrode should be about 10mm. Main tools for pasting: tamping machine, plate vibrator, air pick, manual ramming, etc. After the cold ramming is done, the sintered density should reach about 1.5g/cm³, and the strength should reach 14.7MPa.

7/The carbon bricks should be manufactured and processed according to the design of the carbon factory, marked after pre-assembly, and constructed according to the markings on site. The carbon bricks are laid flat in three layers, and the carbon bricks of each layer are placed at a staggered 30~45°, and the angle of the top layer should be consistent with the angle of the outlet. Except for the top and bottom surfaces of each carbon brick, 5*5mm grooves are laid in the middle of the other surfaces, and the height of each groove is the same, which is used for rough seam paste knotting. The cold ramming paste is sintered into one body to prevent the carbon brick from floating up due to iron infiltration. The furnace mouth carbon brick is made of prefabricated and processed nitrided silicon carbide carbon brick, the width is generally 500~600mm, the length is 1200~1400mm, and the bottom, left and right sides are reserved for 100mm width during masonry, and the high temperature resistant corundum castable is used for casting. knot, pay attention to the insulation of the carbon brick and the furnace shell.