

## Iron and Steel - Soaking furnaces



Soaking furnaces is a metallurgical industrial furnace used for heating steel ingots in the initial rolling mill process. It belongs to the intermittent variable-temperature furnace category. The process involves heating steel ingots after they are removed from the steelmaking plant and before they are sent to the initial rolling mill for roughing and rolling. The furnace chamber temperature can reach as high as 1350-1400°C. Reheating furnaces are typically pit-type furnaces, with dimensions such as 7900×4000×5000mm and 5500×2320×4100mm. Generally, 2 to 4 furnace pits are grouped together.



Due to the operating temperatures and characteristics of soaking furnaces, the furnace lining is often subjected to slag erosion, impact from steel ingots, and rapid temperature changes, especially in the furnace walls and the bottom of the furnace. Therefore, refractory materials with high refractoriness, mechanical strength, slag resistance, and thermal stability are commonly used for the furnace wall and bottom lining. CCEWOOL refractory fiber lining is only used for the insulating layer in the heat exchange chamber and the permanent heat-insulating layer on the cold side of the furnace pit.

Since the heat exchange chamber is designed for recovering waste heat, the maximum temperature inside the heat exchange chamber is approximately 950-1100°C. Therefore, CCEWOOL refractory fiber material is typically chosen as high-alumina or zirconia-alumina type material. When using a flat laying and fiber stacking structure, the flat laying layer often consists of CCEWOOL high-purity or standard-grade fiber material.

#### **Lining structure:**



The shape of the heat exchange chamber is mostly square. When lining the side walls and end walls with ceramic fiber, the composite structure of tiled-laying and fiber prefabricated components is often adopted, in which the stacking layer of fiber components can be fixed with angle iron anchors.

#### **Installation arrangement**

Considering the structure and characteristics of the angle iron fiber component anchors, in installation, the fiber components need to be arranged in the same direction along the folding direction in sequence, and the ceramic fiber blankets of the same material should be folded into a "U" shape between different rows to compensate for shrinkage.

