SHYTI CONSULTING

Start-up

Procedure for pre-heating of SAF

Starting procedure of the SAF and commissioning

1. Introduction

After completed every control of equipment of the SAF (transformer, cooling system,ect) the furnace needs to be preheating before it is officially put into production. The so-called oven is an operation in which the furnace lining and electrodes are gradually adapted to the feeding and smelting by means of heating. The main purpose is to dry the lining and roast the electrode or in our case, preheating the electrode gradually. The quality of the SAF not only affects the service life of the furnace lining, but also affects whether the electric furnace can be put into production smoothly. For example, poor baking of the furnace lining will reduce the service life of the furnace body and affect the opening of the furnace and delay the entire smelting process. If the electrode is poorly baked in a submerged arc furnace, it will not only delay the smelting process, but also bring about the operation. It is difficult to maintain normal smelting. The oven of the electric furnace should be carried out in strict accordance with the oven schedule under normal circumstances. The duration of preheating time for reach 85-90% of nominal active power of the SAF depends mainly on the size of the oven, the type of lining, the type of ferroalloy and shut down time. The whole oven process is divided into two stages: the first stage is wood baking, oil baking or coke baking, the purpose of which is to bake the electrode and lining , so that the electrode has a certain ability to withstand current; the second stage is electric baking and gradually increasing of the power, and the purpose is to further the electrodes are baked, the furnace lining is dried, and the furnace lining reaches a certain temperature to adapt to the feeding and smelting.

2. Preparations of SAF before the start up

I. All equipment must be fully inspected and put into service (e.g.

- conductive system (contact clamp function)
- Isolation of electrode column
- Installation of fans for each electrode
- Check the secondary copper busbars and vicinity with steel carpentry
- water cooling system,
- electrode suspension system,
- dosing system
- electrode lifting system,
- electrode pressure release system
- gas purification system, etc.).
- Preparation all tools for charging and stocking
- Preparation car and ingot under tapping spout
- Preparation