

Annotation
Coursework
discipline "Heat foundry"
student groups FL-32
Artem Koshil
On "electric arc furnace"

In the course work was designed arc steelmaking oven. Course work contained 41 pages of printed text, and other drawings A1.

Explanatory note consists of an introduction, six chapters, list of references and contains a figure. In the introduction disclosed the essence of the electric arc furnace.

The first section of the explanatory note is determined by the required amount of carbon in the metal zavaltsi, the number of pig iron in metal zavaltsi, during the melting of the charge, oxidation during melting, calculation of ore to oxidize contaminants calculation of ferroalloys for doping and deoxidation settled slag period melting and oxidation.

The second section provides calculation of the size of the working space of the furnace

The third section of the furnace thermal calculation, which includes calculations melting point of steel, energy efficiency, heat loss. Also designed heat conduction through the wall of spending, hearth, furnace cover, thermal radiation and total cost thermal costs.

The fourth section was determined power furnace that is 304 kW.

The fifth section was selected transformer type ЭОМР - 1600/10 potuzhnisty 0.63 - 0.63 - 0.11 mW * A 10 kV line voltage and line current kA 1,24-1,40-1,40 with natural oil cooling and switching without load. For variable capacitive circuit of capacitors selected GOST 18689-81 mark-ESV 0.8-1.0 (where 800 - the voltage at the terminals A, B, 1.0 - current frequency, kHz) yemnisty $C_1 = 62,20 \mu\text{F}$. For permanent circuit of capacitive choose capacitors GOST 18689-81 mark-ЭСVP 0.8-1.0 yemnisty as $C_1 = 62,20 \mu\text{F}$. It should be 16 capacitors in battery.

In the sixth section was designed cooling bath. inductor made of copper tubes of circular cross section. The water temperature at the input inductor $t_{V1} = 20 \text{ }^\circ \text{C}$, and the output of the inductor $t_{V2} = 35 \text{ }^\circ \text{C}$. Daily movement of water in the inductor turbulent.

Keywords: ELECTRIC ARC OVEN, ELECTRODE ARC