

**SUMMARY**  
**Coursework**  
**discipline "Heat foundry"**  
**Student groups FL-32**  
**Bagi Josef**  
**On "crucible induction melting furnace"**

In the course work was designed crucible induction melting furnace. Course work contained 36 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 Crucible melting furnace.

The first section of the explanatory note is determined by the required amount of carbon in the metal dump, the number of pig iron in metal dump, 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 thermal conductivity costs through the wall, 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 power 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) capacity  $C1 = 62,20 \text{ uF}$ . For permanent circuit of

capacitive choose capacitors GOST 18689-81 mark-ЭSVP 0.8-1.0 capacity as  $C1 = 62,20 \mu\text{F}$ . It should be 16 capacitors in battery.

In the sixth section was designed cooling inductor. inductor made of copper tubes of circular cross section. The water temperature at the input inductor  $tV1 = 20 \text{ }^\circ\text{C}$ , and the output of the inductor  $tV2 = 35 \text{ }^\circ\text{C}$ . Daily movement of water in the inductor turbulent.

**Keywords:** FURNACE INDUCTION MELTING, INDUCTOR, CRUCIBLE