

Metallurgical equipment. Steelmaking equipment. Electric arc furnaces

ELECTRIC ARC FURNACE EAF -50

The electric arc furnace (EAF) is designed to make steels of various grades in the production line with the Ladle Furnace Unit and the VD-VOD vacuum degassing unit followed by casting with billet continuous casting machine and is used to produce liquid semi-product from steel scrap.



Basic characteristic features of EAF are as follows:

- high quality of melted steel;
- high capacity;
- high reliability;
- high efficiency.

The main tasks being solved are as follows:

- a wide grade range of steel melting;
- full technological cycle of melting, including the following:
- burden preparation;
- preparation of alloying and slag-forming materials;
- steel melting in furnace;
- heat tapping and weighing in ladle;
- process gases recovery;
- operation using any grade of burden (crap, hot briquetted iron, iron-rich pellets, pig and liquid iron).

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Technical characteristics

Parameter	Value
Capacity as for liquid steel, t	55-57
Electrode dia., mm	508
Pitch circle diameter, mm	1000
Furnace body volume, m ³	55
Max. electrode current, kA	50
Number of live wires	3
Voltage taps change-over	At load
Current limiting reactor	In-built
Number of inductance steps	6 - 8
Inductance steps change-over	At load
Average heat size, t	50
Liquid residuum, t	5-7
Duration of heat, min.	60
Tapping temperature, °C	1650
Steel yield ratio, %	90
Metal charge bulk density, t/m ³	0,8-1,2
Установленная Furnace transformer preset power with in-built current limiting reactor, MVA	40+12%
Number of buckets per heat, pcs	2
Furnace capacity, t/h	50
Tapping method	Eccentric bottom tapping EBT
Charging bucket volume, m ³	40
Bottom blowing system	Channel plugs
Materials consumption, kg/t: - coal along bulk route - injected coal - lump lime - ferro alloys into ladle at heat tapping	12 10 40 20
Average content of FeO in slag, %	26
Oxygen consumption, nm ³ /t	38
Natural gas consumption, nm ³ /t	5,6
Electric energy consumption for tapped steel, kW.h/t	400