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Environmental & Thermal Technology

FERRO-ALLOY PLANT

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SAC

Beyond Passion, Make New Value

SAC

Since 1983, we, SAC, have developed technologies and know-how in the field of Ferro – alloy plant with endless endeavors to meet customer's requirements and satisfaction. These lead us to provide products of high quality and reliability. Our set goals are to provide plant designed in an environmentally friendly and economical (energy saving) manner keeping up with the trend of industry.

SAC Headquarter, KOREA

INTRODUCTION

Submerged Arc Furnace (SAF) for ferro-alloy produces various kinds of ferro-alloy such as Fe-Mn, Fe-Ni, Si-Mn, Fe-Si and MG-Si by melting raw materials down with electrical power. To make ferro-alloy of high-purity, which is produced by Submerged Arc Furnace (SAF), Electric Arc Furnace (EAF) and Refining Furnace (RF) provides high efficiency of work with improved process.We execute EPCC (Engineering, Procurement, Construction and Commercial) projects successfully. Moreover, supply all the auxiliary utilities required for ferro-alloy plant.

BASIC PROCESS DIAGRAM OF FERRO – ALLOY PLANT

FERRO-ALLOY PLANT

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SUBMERGED ARC FURNACE

Overview

Submerged arc furnace(SAF) produces Various kinds of Ferro-alloys such as Fe-Mn, Si-Mn, Fe-Si, MG-Si and etc. with electrical Power.

Features

- Electrode column controlled by hydraulic system
- Tapping by automatic tapping/mud-gun machine
- Automatic/manual material charging system can be selected by client order
- Various electrical composition (Single phase or 3-phase TR)

Advantages

- Available for EPC (Engineering, Procurement & Construction)
- Flexible design & installation by client request
- Guarantee of equipment quality
- Simple and safe maintenance
- High process efficiency at low energy level
- Drawing in 3D design to examine all parts

Raw Material Handling System

Gas Cleaning Plant

Tapping

Electrode column

ELECTRIC ARC FURNACE

Overview

Electric Arc furnace (EAF) of prebaked type is used to Reheat slag or molten metal.

Features

- Electrode column (mast) controlled by hydraulic system
- Swing cover & tilting shell type

Advantages

- Simple & compact facility
- Outstanding durability
- Safe & convenient electrode replacement
- Drawing in 3D design to examine all parts

Pouring the molten into the ladle

Opened cover

REFINING FURNACE

Oxygen Refining Process

Ladle Furnace

Overview

Refining furnace produces low carbon Molten metal from high carbon molten Metal by supplying high pressure oxygen.

Features

- Tilting device by hydraulic system
- Automatic material charging system
- Water cooled hood

Advantages

- Excellent stability on operation
- Guarantee of high efficiency
- Drawing in 3D design to examine all parts

Reference List

No.	ITEM	CLIENT	QTY	DATE	SPEC			APPLICATION
					CAPA (/ 1 LOT)		TEMP'	
1	REFINING SYSTEM	AML	1	2014.09	33,000	Ton/year	1550℃	FeSi
2	RMHS (Raw Material Handling System)	AML	2	2014.09	300	Ton/hr		Mn-Ore etc.
3	33MVA SAF (Submerged arc furnace)	AML	2	2013.04	150	Ton/day	1650℃	SiMn
4	33MVA SAF (Submerged arc furnace)	AML	1	2013.04	60	Ton/day	1650℃	FeSi
5	33MVA SAF (Submerged arc furnace)	AML	3	2013.04	85	Ton/day	1650℃	FeMn
6	REFINING FURNACE	AML	2	2013.04	178	Ton/day	1550℃	FeMn
7	ROTARY KILN	AML	1	2013.04	10	Ton/day	900℃	Mn-Ore
8	STEEL STRUCTURE	AML		2014.12				FURNACE, RMHS REFINING FURNACE ROTARY KILN
9	300KVA SAF (Submerged arc furnace)	DONGBU METAL	1	2012.12	2	Ton/day	1650℃	LAB
10	REFINING FURNACE	DONGBU METAL	1	2012.12	0.3	Ton/ch	1650℃	LAB
11	MINERAL WOOL SAF (Submerged arc furnace)	KCC	1	2012.04	8	Ton/hr	1550℃	ENGINEERING
12	12.5MVA SAF (Submerged arc furnace)	NEO PLANT	2	2012.04	6,000	Ton/year	1650℃	ENGINEERING
13	PRODUCT HANDLING SYSTEM	DONGBU METAL	1	2011.11	50	Ton/hr		FeMn, SiMn
14	350KVA SAF (Submerged arc furnace)	POSCO	1	2011.05	4	Ton/year	1650℃	FeMn
15	PRODUCT HANDLING SYSTEM	DONGBU METAL	1	2011.05	50	Ton/hr		FeMn, SiMn
16	20MVA SAF (Submerged arc furnace)	SIMPAC METAL	2	2011.10	150	Ton/day	1650℃	
17	REFINING FURNACE	POSHIMETAL	1	2011.10	25	Ton/ch	1650℃	FeMn, SiMn
18	40MVA FeMn SAF (Submerged arc furnace)	POSHIMETAL	1	2011.09	260	Ton/day	1650℃	
19	30MVA SiMn SAF (Submerged arc furnace)	POSHIMETAL	1	2011.09	200	Ton/day	1650℃	
20	IMPELLER PRECAST & DRY EQUIPMENT	DONGBU METAL	1	2010.12	1	Ton/ch	500℃	
21	HOLDING FURNACE (EAF)	DONGBU METAL	2	2011.10	60	Ton/ch	1600℃	ULPC

Reference List

No.	ITEM	CLIENT	QTY	DATE	SPEC			APPLICATION
					CAPA (/ 1 LOT)		TEMP'	
22	LADLE FURNACE (L/F)	DONGBU METAL	2	2011.1	10	Ton/ch	1600℃	ULPC
23	40MVA CASTING MACHINE	DONGBU METAL	2	2011.1	50			FeMn
24	50MVA SAF (Submerged arc furnace)	DONGBU METAL	2	2010.11	280	Ton/day	1650℃	FeMn
25	50MVA SAF (Submerged arc furnace)	DONGBU METAL	1	2010.08	160	Ton/day	1650℃	SiMn
26	50MVA CASTING MACHINE	DONGBU METAL	2	2011.1	50			FeMn
27	20MVA SAF (Submerged arc furnace)	DONGIL INDUSTRIES	1	2009.10	150	Ton/day	1650℃	FeMn
28	REFINING FURNACE	DONGBU METAL	1	2008.10	15	Ton/ch	1650℃	SiMn
29	COOLING HOOD & DUCT	DONGBU METAL	1	2008.08				
30	40MVA SAF (Submerged arc furnace)	DONGBU METAL	1	2008.07	240	Ton/day	1650℃	FeMn
31	20MVA SAF (Submerged arc furnace)	DONGIL INDUSTRIES	1	2008.06	150	Ton/day	1650℃	FeMn
32	DUST MELTING PLANT	DONGBU METAL	1	2008.05	19,800	Ton/year	1650℃	FeMn
33	15MVA SAF (Submerged arc furnace)	SIMPAC ANC	1	2008.05	36,000	Ton/year	1650℃	FeMn
34	TAPPING EQUIPMENT	DONGBU METAL	1	2006.07				FeMn
35	TAPPING EQUIPMENT	DONGBU METAL	1	2005.09				FeMn
36	20MVA SAF (Submerged arc furnace)	DONGBU METAL	1	2005.06	150	Ton/day	1650℃	FeMn
37	REFINING FURNACE	DONGBU METAL	1	2003.05	160	Ton/ch	1550℃	FeMn
38	REFINING FURNACE	DONGBU METAL	1	1995.12	15	Ton/ch	1550℃	FeMn
39	REFINING FURNACE	DONGBU METAL	1	1995.12	5	Ton/ch	1550℃	SiMn
40	7.5MVA SAF (Submerged arc furnace)	DONGBU METAL	1	1989.03	50	Ton/day	1650℃	FeSi
41	6MVA SAF (Submerged arc furnace)	DONGBU METAL	1	1983.05	50	Ton/day	1650℃	FeMn
42	HOLDING FURNACE (EAF)	DONGBU METAL	2	2011.10	60	Ton/ch	1600℃	ULPC