

Operation of the Shaft Type Fe-Mn Smelting Furnace

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:
60 24
(10) 0.7t/d m³
61 93.5
10

Synopsis :

At Mizushima Ferro Alloy Co., Ltd. the shaft type Fe-Mn smelting furnace (SF) was blown in on 24 June 1985 and have been continuing smooth operation. Up to this time we realized high productivity of more than 0.7 (t/d m³) in November 1985 at an oxygen enrichment factor of 10%. We tried fully mixed ore-coke charging operation with success. Based upon the establishment of these operational techniques, the manganese yield reached to 93.5%, the world highest level, in September 1986. Furthermore Si-Mn alloy was successfully produced at SF in October 1986. The production cost of high carbon Fe-Mn alloy has been decreased to a lower level than the expected cost because of better operational results than the planned ones.

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フェロマンガン堅型製錬炉の操業*

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要旨

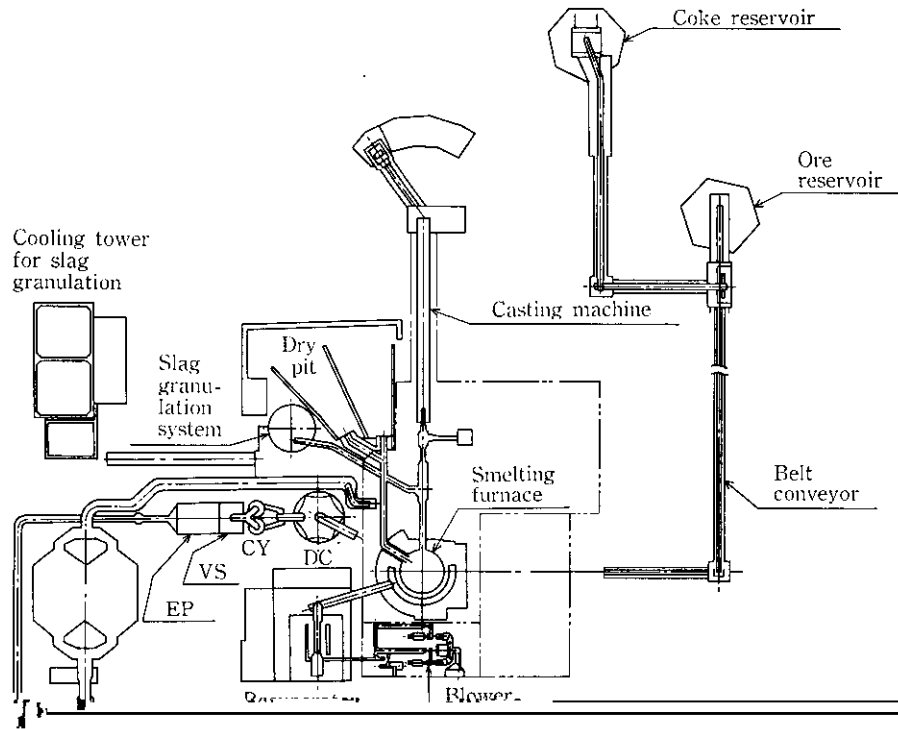


Fig. 1 Layout of SF

3 操業計画

計画された操業諸元を Table 1 に示す。マンガンの還元は、下記の (1)~(4) の反応式で示される。

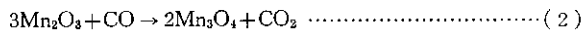
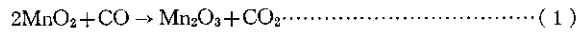
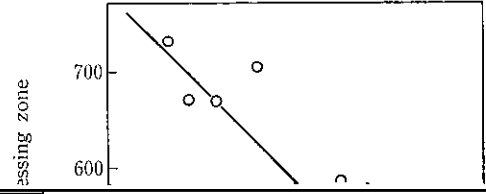
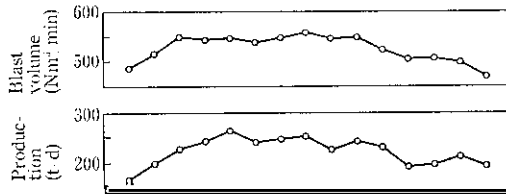


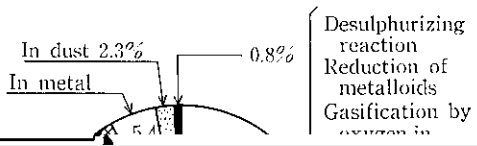
Table 1 Operational conditions for designing of SF

Items	Specification
Inner volume	398 m ³
Production	230 t/d
Blast volume	450 Nm ³ /min
Oxygen enrichment	7~8%

今回、A. Rist の操業線図³⁾をマンガン製鉄に適用し³⁾ 基本的な操

Transition





4.4 ニューベルレストップによる装入物分布制御

今回採用されたPW-IHI-KSC式センターフィード型カルダン式ベルレス炉頂装入装置（以下ニューベルレストップと称す）と、従

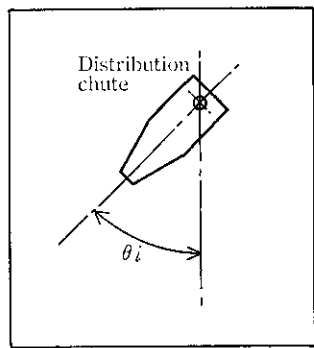


Fig. 9 Inclination angle of a chute

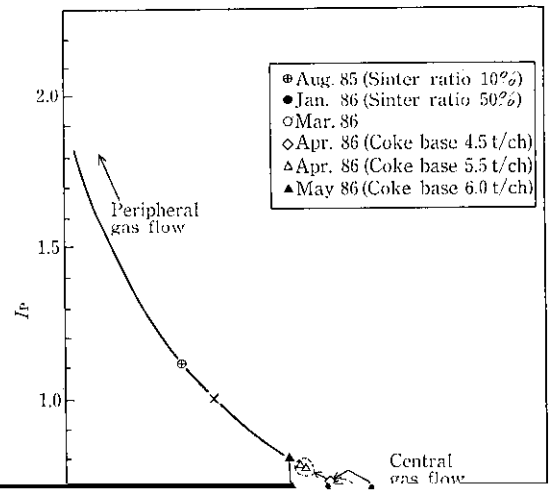


Table 5 Recent operational results

る。

(2) 上記の如く、炉内温度の差による影響が、