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Features of Manufacturing Ultra-heavy Steel Plates

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:

95t 5300mm

Synopsis :

Heavy steel plates are incresingly demmanded by many industrial sectors, and the quality requirements for reliabilty are getting more stringent. In order to meet these requirements, Kawasaki Steel Corp. has developed manufacturing techniques for ultra-wide and heavy steel plates up to 5300mm in width and 95 tons in unit product weight through the establishment of techniques for removing phoshorus, sulfur, and hydrogen, as well as the study of optimum shape of mold for large ingot.

1980

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極厚大単重鋼板の製造技術の概要

Features of Manufacturing Ultra-heavy Steel Plates

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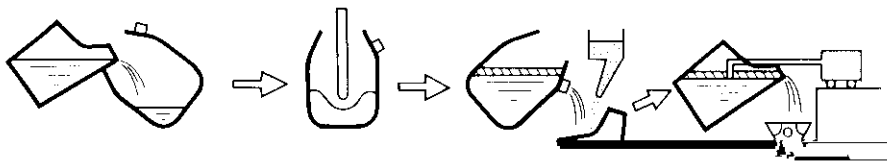
Synopsis:

Manufacturing process	Facilities or conditions
Desulfurizing	Desulfurization of molten pig iron
LD refining / EF refining	LD (180t, 250t/heat) EF (30t/heat)



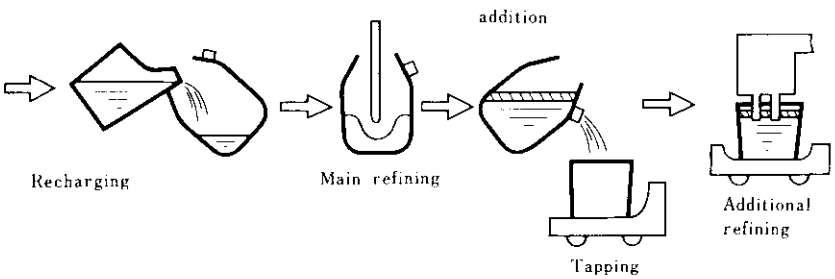


Fig. 2 An outline of the double slag refining in a LD converter

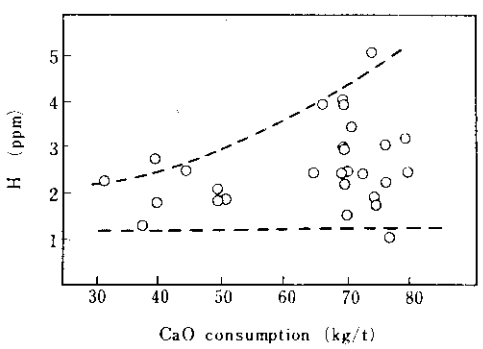


Fig. 3 Effect of CaO consumption in LD converter on hydrogen content in molten steel at blow

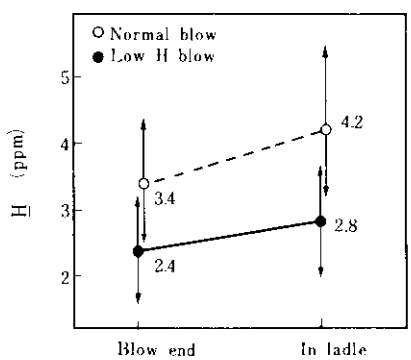


Fig. 4 Effectiveness of low hydrogen LD blowing

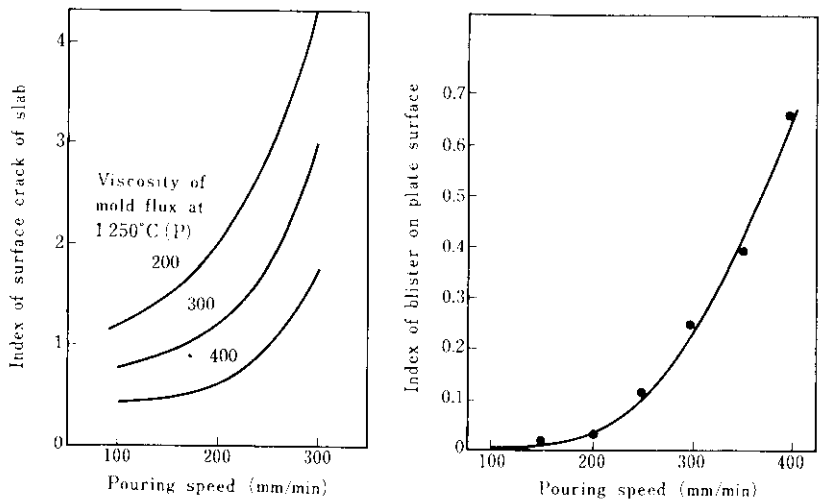
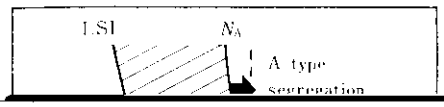


Fig. 7 Effect of bottom pouring speed on surface quality of low-silicon steel slab

いて特に重視される。精錬段階で達成された低水素レベルがそのまま維持されれば，多くの場合次工程での脱水素処理は不要となる。鋳込中の水素

ても，軸心部のザクは最後まで未圧着で残留しやすい。この軸心部のザクを定量的に評価するため，



た。このうち40～45 t 用新・旧型鋳型に鋳込んだ0.19%C鋼の鋼塊軸心部におけるC偏析率を**Fig. 9**

冷完了後 200°C 以下に下げることなく熱処理炉に

製品長さについては，各ミルメーカーとも，現状の

Table 3 Outline of plate rolling facilities for heavy plates at Mizushima Works

Facilities	Specifications
Reheating furnace	Type : One way top firing Space : 4 950w × 6 550l × 2 900h (mm) Fuel : LPG + BF gas

2) 岡野，ほか：鉄と鋼，64 (1978)，S675
3) 北岡，ほか：鉄と鋼，64 (1978)，S160
4) 中川：鉄と鋼，64 (1978) 12，113
5) 平居，ほか：鉄と鋼，59 (1973) 11，S441
7) 川和，ほか：鉄と鋼，62 (1976) 13，1668
8) 木下，ほか：65 (1979) 13，1868
9) 江本，ほか：川崎製鉄技報，6 (1974) 2，152