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Development of Steel Plate Manufacturing Technologies at Kawasaki Steel

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Synopsis :

The development of steel plate manufacturing technologies at Kawasaki Steel since 1987 is described. A proximate -ray thickness gauge at a distance of 2 m from the finishing mill, a remodeled hydraulic AGC, and head and tail end thickness control systems were developed as the constituents of the advanced methods for plate thickness control. A shape control system composed of work roll bending force control based on data from a shape meter, an improvement on accelerated cooling device control for uniform cooling, and the renewal of hot leveller improved flatness. A milling machine and a new plate length meter on the shearing line achieved highly accurate edge cutting. A 3-head -ray thickness gauge, a flatness meter, and a plan view shape meter were installed on the shearing line as automatic inspection devices.

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Synopsis:

The development of steel plate manufacturing tech-


Attached edger
Detector of γ-ray
Process computers

Head and tail and thickness control system

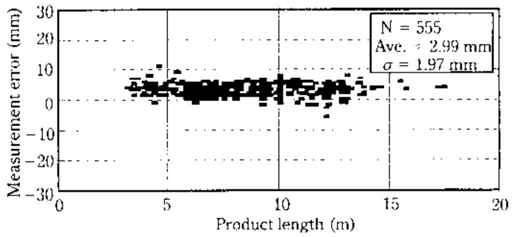
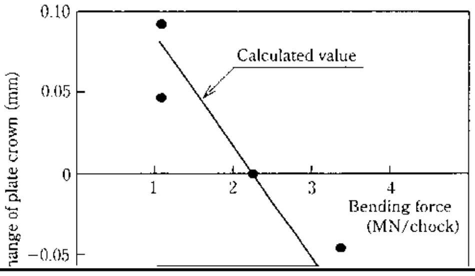
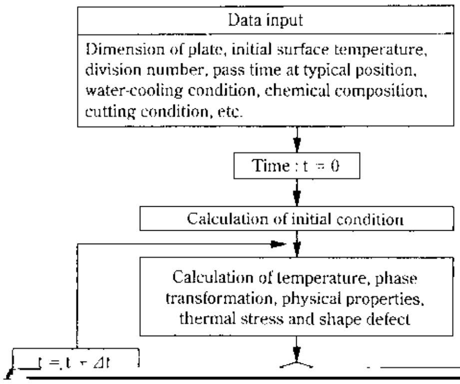


Fig. 7 Accuracy of shear cutting by new plate





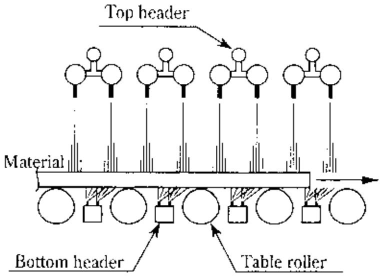


Fig. 12 Water-cooling device (ACC, #4 zone)

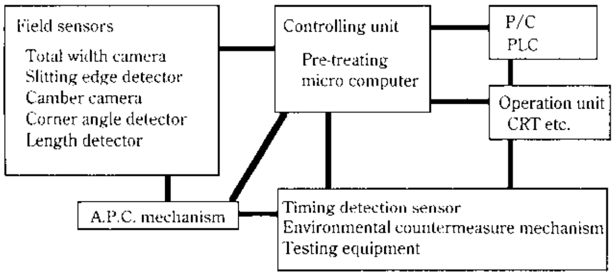


Fig. 14 System configuration of the plan view

Table 2 Comparison of inspection methods

Inspection item	Conventional method	New method
Thickness	2-head γ-ray thickness gauge	3-head γ-ray thickness gauge
Width	Shearing device Plan view meter for as-rolled plate Inspection by operator	Plan view shape meter
Length	Shearing device Inspection by operator	Plan view shape meter

shape meter

N. Katayama: *Kawasaki Steel Giho*, **20**(1988)3, 183–188
6) N. Hirai, S. Ebata, S. Tezuka, M. Tanaka, C. Shiga and R

Tetsu-to-Hagané, **70**(1984), S373

7) N. Katayama, J. Yamasaki, K. Baba, I. Okamura, T. Ogawa, and M. Inoue: *CAMP-ISIJ*, **1**(1988), 512
8) Y. Yuge, T. Yoshizato, H. Nishizaki, A. Shibata, K. Ochi, and

M. Yoshii: *CAMP-ISIJ*, **7**(1994), 1392
9) T. Takahashi, T. Kawashima, K. Ishikawa, Y. Yuge, T. Yoshizato, and I. Okamura: *CAMP-ISIJ*, 7(1994), 1393
10) Y. Yuge, T. Takahashi, D. Onoda, M. Yoshii, and T. Yoshizato: *CAMP-ISIJ*, **8**(1995), 1186–1189

16) H. Shigeta, S. Nishida, I. Okamura, T. Kawashima, M. Yoshii, and K. Omori: *CAMP-ISIJ*, **5**(1992), 586

17) [illegible]

I. Okamura: *CAMP-ISIJ*, **5**(1992), 1567
18) M. Yoshii, T. Yoshizato, and I. Okamura: *Kawasaki Steel Giho*, **28**(1996)2, 76–81

19) T. Itou, M. Kurimoto, A. Shibata, M. Yoshii, H. Yoshida, and T. Tamari: *CAMP-ISIJ*, **7**(1994), 412–415
20) T. Itou, T. Orita, T. Takahashi, K. Ochi, M. Yoshii, and D. Onoda: *CAMP-ISIJ*, **9**(1996), 325
21) [illegible]