

KAWASAKI STEEL TECHNICAL REPORT

No.40 ( May 1999 )

*Steinless Steel and Steel Plate*

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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  $\gamma$ -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  $\gamma$ -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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**The body can be viewed from the next page.**

# Development of Steel Plate Manufacturing

Technology at Kawasaki Steel\*  
[Redacted]

*Synopsis:*

Attached edge



Detector of v-ray

Process

computers



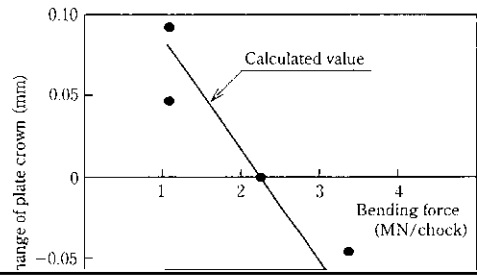
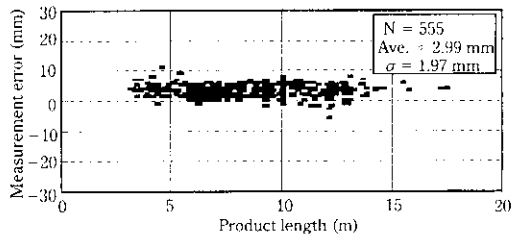


Fig 7 Accuracy of shear cutting by new plate

Fig 8 Comparison of cutting force between old and new plate

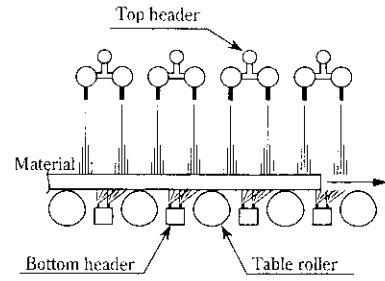
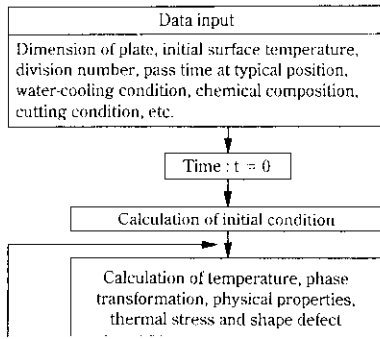


Fig. 12 Water-cooling device (ACC, #4 zone)

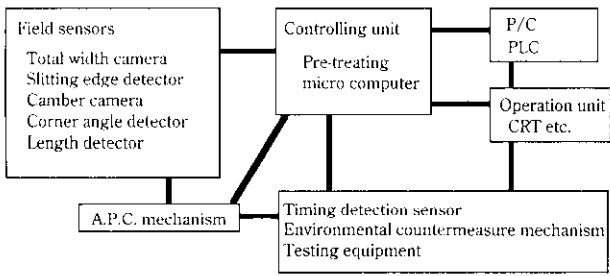


Fig 14 System configuration of the plan view

Table 2 Comparison of inspection methods

Inspection item	Conventional method	New method
Thickness	2-head $\gamma$ -ray thickness gauge	3-head $\gamma$ -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

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