

On Line Measuring and Control Equipment for

Alloy Degree Control in Galvanizing Process*

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1 Introduction

Zn-Fe galvanized steel has excellent properties, including spot weldability, paint adhesion, and corrosion resistance. On the other hand, the coating layer has poor

process.

An alloy degree control system was developed at Kawasaki Steel using an alloy sensor which measures the alloying degree continuously. This paper describes the alloy sensor and the results of adoption of the alloy-

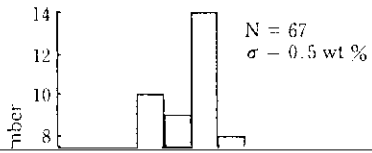
3 Alloy Sensor

The coating layer of galvanized steel contains various types of Fe-Zn intermetallic compounds, their struc-

(I_{BGR}) in order to estimate the value exactly. The alloying degree (Fe content) of the coating layer can be calculated by correlating the alloying degree and the intensity ratio of Γ to the background, as shown in Fig. 2.

ture depending on the Fe-Zn ratio of the layer. The Fe-Zn ratio in turn varies with the galvannealing treatment temperature, base steel chemical composition, coating weight, and so on.

sent to the process computer for use in alloy quality assurance and control. A comparison of the in-process measured data with the chemical analysis data for the Fe



5 Conclusion

An alloying degree control system was developed utilizing an improved alloying process.