

## KAWASAKI STEEL TECHNICAL REPORT

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### Development of Ozone Water Treatment Technology for Industrial Circulating Water

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#### Synopsis :

Industrial cooling water posed problems in water quality due to bacterial trouble. To solve these problems, the bactericidal chlorine method was generally used. However, this chlorine method and problems of increasing corrosion of the machine and rusting of products by accumulation of chemicals. We have developed a bactericidal ozone method to eliminate the harmful influence of chemicals in the chlorine method. In this paper the disinfecting effect of ozone in water and its attenuation characteristics have been investigated, and the optimum conditions of ozonation such as the quality, interval, and points of shooting ozone have been clarified. This ozone method is now applied to the roll coolant system of the cold rolling mill at Chiba Works with satisfactory results.

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# Development of Ozone Water Treatment Technology for Industrial Circulating Water\*

This report presents results of fundamental experiments conducted to clarify the disinfecting effects of

Therefore, the accumulation of chloride ions occurs in the circulating water system.

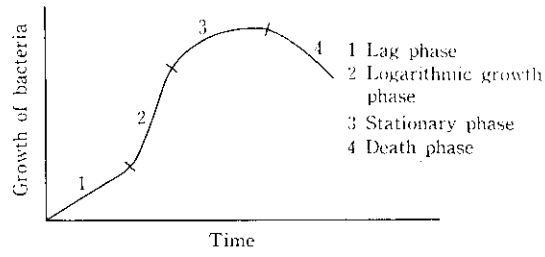
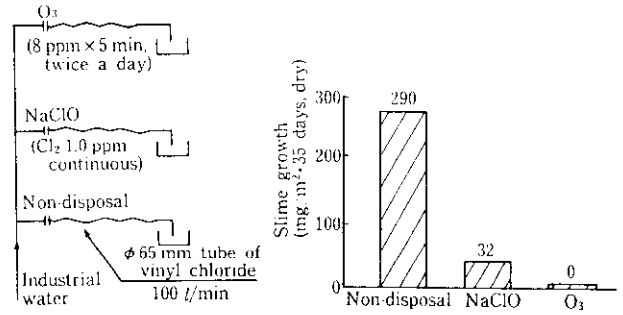


Fig. 1 Growth curve of bacteria (Yoshiharu Eto)<sup>6)</sup>



(a) Diagram of experiment

(b) Result of slime growth

Fig. 3 Effect of intermittent ozonation on slime growth

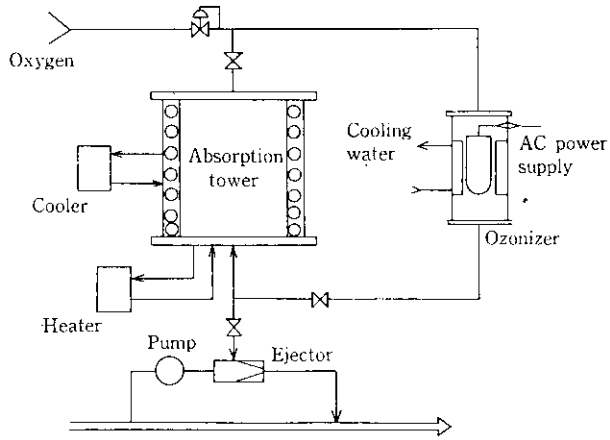
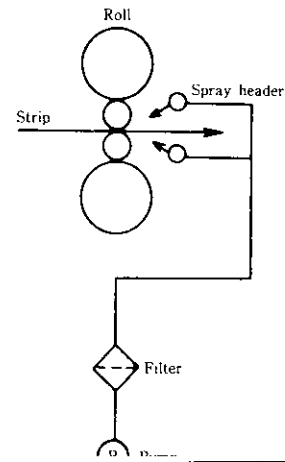
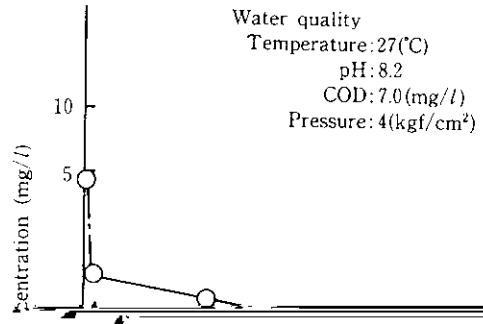
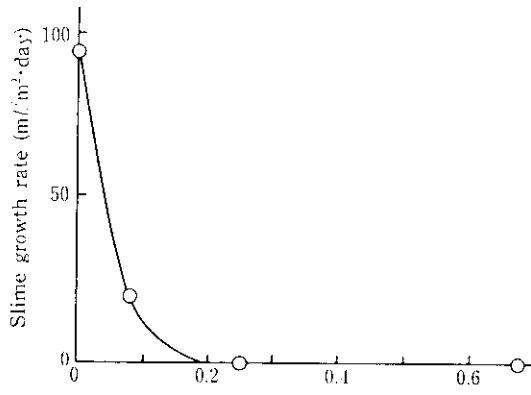


Fig. 2 Schematic diagram of intermittent ozonizer and injector

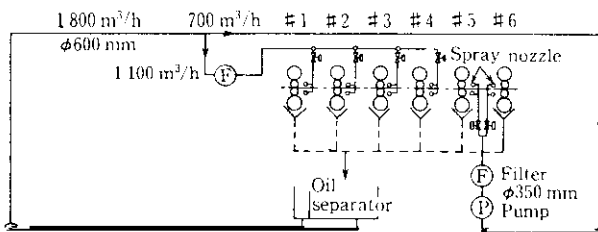




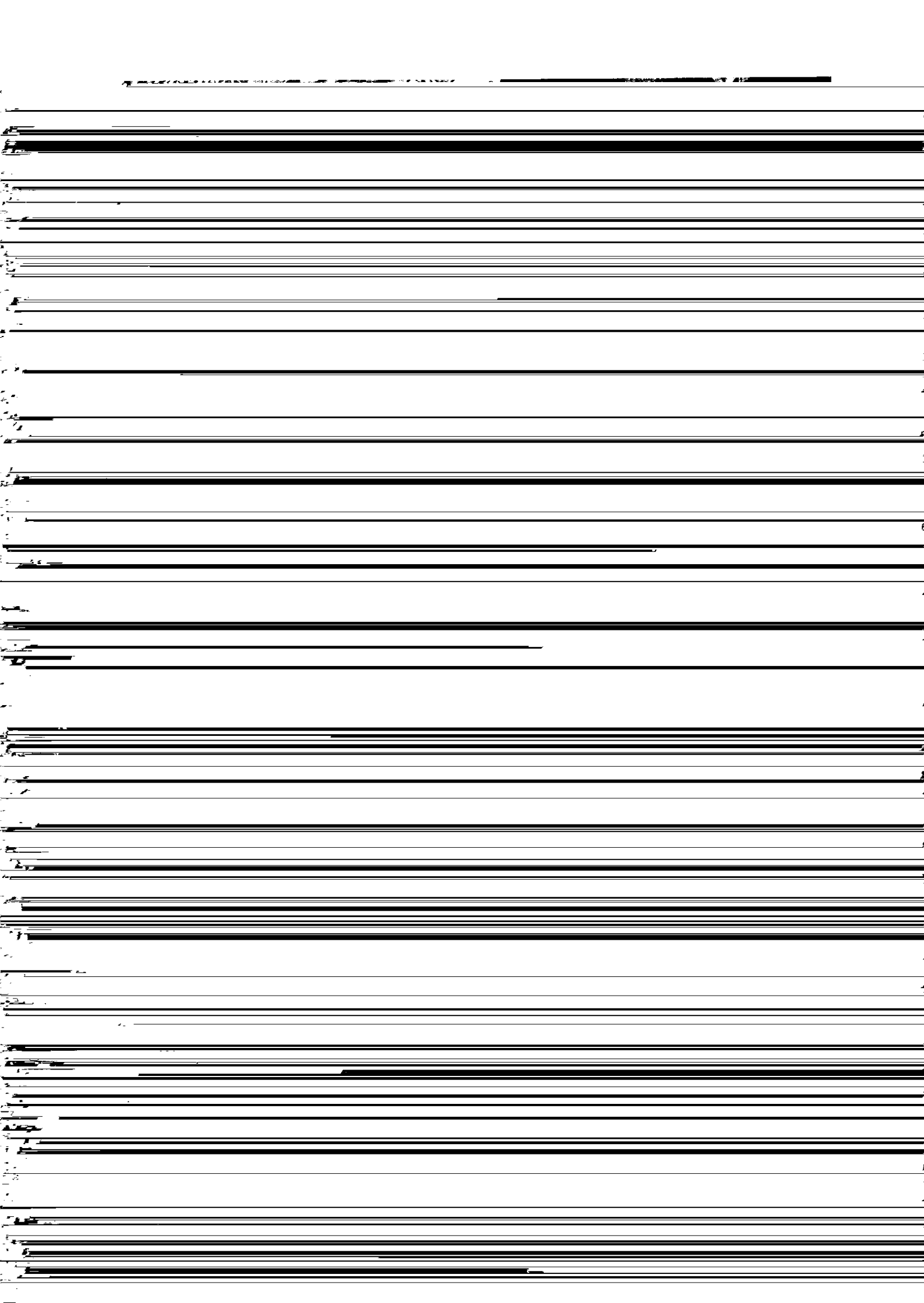
100

600

pH: 6.9  
COD: 5.5 mg/l



Cooling tower





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