

動電位 陽極分極法에 의한 스테인레스鋼의 孔蝕에 관한 研究

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A Potentiokinetic Anodic Polarization Study of Pitting Corrosion on Stainless Steels

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Abstract

The potentiokinetic anodic polarization method was applied to study the effects of some factors on pitting potential of stainless steel in 0.1N sulfuric acid solution containing chloride ion. Pitting potentials were varied with the potential scan rate and the surface roughness of specimen. The slow scan rate and the rough surface shifted the pitting potential to active direction. Increase in chloride ion concentration in 0.1N sulfuric acid solution reduced the pitting potential. Sensitizing treatment at 650°C lowered pitting potential and made pitting initiation easy.

水道管의 冷凍에 관한 研究

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A Study of Refrigeration in Water Pipe Line

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초 록

액체질소 및 드라이아이스+아세톤을 냉매로 사용하여 수도관내의 물을 냉동시 냉매와 접하는 수도관의 길이, 수도관의 내경, 유속의 변화에 따르는 총괄열전달계수와 임계빙결유속을 조사 검토하고, 열전달 촉진장치를 연구 개발하였다. 수도관의 냉동효능은 유속, 냉매에 접하는 수도관의 길이 및 열전달 촉진장치등에 의하여 현저한 영향을 받는다.

ABSTRACT

A freezing characteristic of water in a pipe was investigated by using liquid nitrogen and dry ice plus acetone as refrigerant. In a given length of pipe in each refrigerant, inside diameter, velocity of water, the over-all heat transfer coefficient and the critical velocity of water for freezing were studied. An accelerator for heat transfer was devised. The freezing efficiency of water was affected considerably by the velocity of water, the length of water pipe in the refrigerant and the accelerator for heat transfer.