

# Effect of Zinc Composite Coating on Corrosion Resistance at High Temperature

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## Abstract

The compositions of zinc composite coating, which shows good heat resistance and high corrosion resistance was investigated with the use of different coatings coated on electrogalvanized steel with various coating solutions containing different kind of metal chloride compounds. Corrosion performance of the respective coatings was evaluated by salt spray test after heating. As a result, the coating with magnesium compound showed highest corrosion resistance after heat treatment at 300°C for 5 hours. Further, the relationship between heat resistance and solubility of compound of chromium, magnesium, and aluminum in the acid solution was investigated. It was found that the change in chemical property of magnesium salt on porous zinc coating showed excellent heat and corrosion resistance.

Also it was confirmed that the dried composite coating impregnation with the solution of magnesium salt on porous zinc coating showed excellent heat and corrosion resistance.

Keywords: zinc composite coating, corrosion resistance, heat resistance, chromium, magnesium, aluminum, porous zinc coating

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