

Investigation of Zinc Corrosion in Tropical Soil Solution

Authors : M. Lebrini, L. Salhi, C. Deyrat, C. Roos, O. Nait-Rabah

Abstract : The paper presents a large experimental study on the corrosion of zinc in tropical soil and in the ground water at the various depths. Through this study, the corrosion rate prediction was done on the basis of two methods the electrochemical method and the gravimetric. The electrochemical results showed that the corrosion rate is more important at the depth levels 0 m to 0.5 m and 0.5 m to 1 m and beyond these depth levels, the corrosion rate is less important. The electrochemical results indicated also that a passive layer is formed on the zinc surface. The found SEM and EDX micrographs displayed that the surface is extremely attacked and confirmed that a zinc oxide layer is present on the surface whose thickness and relief increase as the contact with soil increases.

Keywords : soil corrosion, galvanized steel, electrochemical technique, SEM and EDX

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