

Test of inhibitors for preventing corrosion of steel reinforcement in concrete

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Abstract. Concrete is more widely used than any other manmade material. The objective of this paper is to investigate the behavior of reinforced cement when migration corrosion and guar gum inhibitors are used. The concrete samples were exposed in aggressive media H₂SO₄ 1 M and in the presence of 1·10⁻³ M Cl⁻. Electrochemical measurements such as half-cell potential, polarization resistance and Tafel extrapolation methods were performed in order to obtain information on the corrosion behavior of the reinforcing steel in cement mortar. Results demonstrate high resistance polarization and low corrosion rate for concrete sample with inhibitor. The corrosion rate decreases approximately 95% in presence of locust bean gum and 80% in presence of migration inhibitor.

Keywords: green inhibitor; migration inhibitor; locust bean gum; amino acid; amino alcohol.

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