Polystyrene/Organoclay Nanocomposites as Anticorrosive Coatings of C-Steel

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In the first part of this study, polystyrene/organoclay nanocomposites (PCN) were successfully prepared at different weight percentages of organoclay (OC) and were labelled 1-10% NC. This study investigates the use of these nanocomposites as anticorrosive coatings for C-steel in a 3.5% NaCl solution. Testing the anticorrosive properties of these nanocomposites was performed using the open circuit potential, Tafel method and electrochemical impedance spectroscopy. The 3% NC was observed to provide excellent corrosion protection and best film adhesion. Calculation of water permeation showed that the 3% NC also showed a much lower water absorption compared with that reported in other studies.

Keywords: Nanocomposite; C-steel; Film Adhesion; Electrochemical Impedance; Tafel; Water Permeation.

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