

Title: Effect Of Potassium-Chromate And Sodium-Nitrite On Concrete Steel-Rebar Degradation In Sulphate And Saline Media.

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Outlet: Construction and Building Materials (2014) volume 50 pages 448–456

Date: 2014

Abstract: In this paper, effect of potassium-chromate (K_2CrO_4) and sodium-nitrite ($NaNO_2$) on concrete steel-rebar degradation in sulphuric-acid and in sodium-chloride media were studied. Electrochemical monitoring of open circuit potential and compressive strength effect of the different concentrations of these admixtures in steel-reinforced concretes immersed in the acidic/marine-simulating environments were analysed for detailing admixture performance. Results subjected to ASTM C876 interpretations showed that concrete admixed with 0.145 M potassium-chromate exhibited optimum inhibition effectiveness with good compressive strength improvement in the acidic medium. In the saline medium, the concrete admixed with 0.679 M sodium-nitrite exhibited optimal inhibition performance, but with reduction in concrete compressive strength.