

CORROSION OF STEEL REINFORCEMENT IN SULFUR CONCRETE.

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Abstract: It has been recognized that sulfur concrete (SC), due to its high early strength and good chemical resistance, can be used as an alternate to conventional portland cement concrete (PC) in those types of construction where PC has performed poorly. This includes acid-resistant floors and sewer pipes. The developmental work on SC has reached the stage where it is felt that the behavior of steel-reinforced SC should be investigated to assess its suitability for use as load carrying structural members. This would dictate the need of studies to evaluate performance of reinforced SC in terms of its reinforcement corrosion. The findings of an investigation of performance of steel reinforced SC in terms of corrosion of rebars as compared with the performance of steel reinforced PC under similar environmental conditions are presented. A total of 324 reinforced test specimens and 216 plain test specimens were cast in this test program for corrosion monitoring and determination of strength and absorption properties. The effects of chloride ions, permeability, and aggregate quality have been found to be very significant in this study.