

Effects of Sand of Dune and Granulated Slag on the Properties of Cement

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Abstract

Experimental investigation of the effects of partial substitution of cement by sand of dune and granulated slag {(5% sand of dune + 15% slag), (10% sand of dune + 15% slag) by weight cement } on the properties of ordinary Portland cement have been studied, setting time, compressive strength, water absorption by total immersion and permeability. The test results indicate that the substitution partial of cement by sand of dune and granulated slag at (5% sand of dune+15% slag) by weight cement has increased the compressive strength, at 90 days and give comparable compressive strength to ordinary Portland cement at 28, 60 days, the water permeability which is an essential characteristic of durability of concrete to be improved with the addition of sand of dune and granulated slag. The results obtained show increase in water absorption by total immersion with increasing addition of the content of sand of dune and granulated slag and on the other hand prolong setting time of cement.

Keywords : Granulated Slag, Sand of Dune, Setting Time, Compressive Strength, Water Absorption.

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