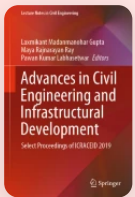


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# Investigate the Temperature Effects on Curing of Reactive Powder Concrete Containing Silica

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## Abstract

There is a burgeoning use of reactive powder concrete unsettled to the outstanding mechanical properties and resilience. Reactive powder concrete structural elements can resist chemical paroxysm, impact loading from vehicles and vessels, and sudden kinetic loading due to earthquakes. In addition, the lower maintenance requirements result in significant economic detriment. Moreover, in the composition of reactive powder concrete, a fractional substitution of cement by silica fume (which is a waste by-product of silicon alloy) results in less cement consumption (and hence less greenhouse gas emission). In this experimental investigation study, the material performance of reactive powder concrete (RPC) with two different curing techniques, normal water

curing of 25 °C and accelerated steam curing at 60 °C, and 60% relative humidity, was studied experimentally. This paper also remits the investigation, application, and different preparation of silica fume in reactive powder concrete at transformed temperature. The silica fume was substituted with the cement and the dosage which bequeathed the maximum strength was used for further addition of silica sand and steel fibers. Steam curing is effective process to achieve high early strength, and in this narrative, the compressive strength at the age of 3, 7, and 28 days was determined for further compared with normal cured water. Also find split tensile test to see the performance of concrete cylinder under tension. To reduce the water content, super plasticizer may be used as an admixture. Thus, results are interpreted for different combination to achieve maximum compressive stress as well as tensile stress.

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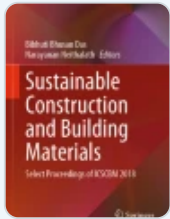
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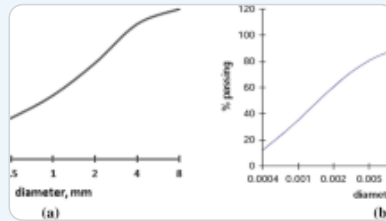
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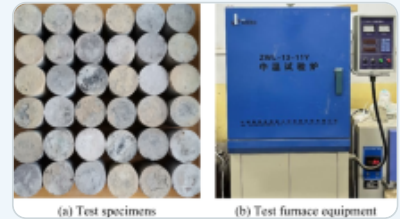
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