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The Relation of Compression Strength with Modulus of Rupture and UPV of Concrete Containing M - sand as Fine Aggregate (Article)

(Open Access)

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Abstract

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The impact of Manufacture sand on UPV , compression strength and modulus of rupture has been experimentally investigated and discussed in this paper. Concrete grade 30 (30Mpa) were produced with different percentage of M sand substitution ranging from 25%, 50%, 75% and 100% by volume were selected as concrete mix design in this project. The strength for different percentage of M - sand incorporation was measured by the destructive test which are compression strength test and modulus of rupture test and nondestructive test which is UPV test for curing ages of 90, 28 and 7 days. Furthermore, the highest compression strength of concrete and modulus of rupture was found on the 90th day containing a proportion of 75% of M - sand as a substitution for natural fine aggregate . A novel empirical equations 1 & 4 are proposed for the relation of compression strength with the modulus of rupture and UPV . © 2020 ASTES Publishers. All rights reserved.

SciVal Topic Prominence ⓘ

Topic: Compressive Strength | Concretes | Nondestructive Methods

Prominence percentile: 88.311



Author keywords

Compression strength

Manufactured Sand (M - sand)

Modulus of rupture

Ultrasonic Pulse Velocity (UPV)

Funding details

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Funding text

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