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The Effect of Replacement of Natural Sand by Manufactured Sand on the Properties of the Concrete

By: Nadimalla, A (Nadimalla, Altamashuddinkhan)^[1]; Masjuki, SAB (Masjuki, Siti Aliyyah Binti)^[1]; Khan, SA (Khan, Sher Afghan)^[2,3]; Akshatha, BA (Akshatha, B. A.)^[2,3]

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Abstract

The natural sand which excavated from river bed is used to produced conventional concrete. Depletion of natural sand cause the environmental problem and hence sand excavating is restricted by government which resulted in shortage and drastically increase in its cost. In order to fulfil the necessity of fine aggregates, an alternative material like M sand can be used in concrete. M sand is obtained by crushing the rocks. In this paper, conventional mix 1:2.32:2.82 (M20) with water to binder ratio is maintained as 0.55 was used in this present study. Here the River Sand is partially and fully replaced with M Sand with different percentages like 0%, 45%, 50%, 55% and 100% Fresh and hard concrete properties were studied with natural sand substitute by M-Sand. Properties of concrete in fresh state such as workability and in hardened state such as compression test, split tensile test and flexural test were considered in this study.

Keywords

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Author Information

Reprint Address: Nadimalla, A (reprint author)

 Int Islamic Univ Malaysia, Dept Civil Engr, Kuala Lumpur 53100, Malaysia.

Addresses:

 [1] Int Islamic Univ Malaysia, Dept Civil Engr, Kuala Lumpur 53100, Malaysia

 [2] IUUM, Dept Mech Engr, Kuala Lumpur 53100, Malaysia

[3] BIT, Dept Civil Engr, Mangalore, India

E-mail Addresses: altamashk1987@gmail.com

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