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INFLUENCE OF DIFFERENT TYPES OF FIBERS ON STRENGTH PROPERTIES OF NORMAL CONCRETE

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Abstract

To take advantages of different types of fibers, fiber reinforced concrete by adding fibers of different geometry and materials are considered. In the present paper, the benefits in terms of flexural strength and shear strength of concrete are evaluated by adding different types of fibers such as steel fiber, polyester fiber and polypropylene fiber. The fibers are incorporated at different fiber volume fraction for the range of 0 to 2% in increment of 0.5%. The flexural properties were studied using three-point bending tests. The test results of different fiber-reinforced concrete show that the additions of fiber to normal concrete indicate superior performance. The performance of various fiber reinforced concrete specimens was compared with that of plain concrete. Empirical expressions for predicting the strength property of different fiber reinforced concrete are proposed based on regression analysis.

Keywords: Concrete; Steel fibers; Flexural strength, Shear strength, Regression analysis

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