

Ultrasonic Pulse Velocity Investigation of Polypropylene and Steel Fiber Reinforced Concrete

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Abstract : Ultrasonic pulse velocity (UPV) method has been shown for some time to provide a reliable means of estimating properties and offers a unique opportunity for direct, quick and safe control of building damaged by earthquake, fatigue, conflagration and catastrophic scenarios. On this investigation hybrid reinforced concrete has been investigated by UPV method. Hooked end steel fiber of length 50 and 30 mm was added to concrete in different proportion 0, 0.25, 0.5, and 1 % by the volume of concrete. On the other hand, polypropylene fiber of length 12, 6, 3 mm was added to concrete of 0.1, 0.2, and 0.4 % by the volume of concrete. Fifteen different mixture has been prepared to investigate the relation between compressive strength and UPV values and also to investigate on the effect of volume and type of fiber on UPV values.

Keywords : compressive strength, polypropylene fiber, steel fiber, ultrasonic pulse velocity, volume, type of fiber

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