

Cumulative Effect of Crumb Rubber and Steel Fiber on the Flexural Toughness of Concrete

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Concrete properties, such as toughness and ductility, are enhanced to resist different impacts or blast loads. Rubberized concrete, which could be considered a green material, is produced from recycled waste tires grinded into different crumb rubber particle sizes and mixed with concrete. In this study, the behavior of rubberized steel fiber-reinforced concrete is investigated. Flexural performance of concrete beams (400×100×100 mm) manufactured from plain, steel fiber, crumb rubber and combination crumb rubber and steel fiber are also evaluated. Similarly, concrete slabs (500×500×50 mm) are also tested under flexural loading. Flexural performance of the SFRRRC mixtures was significantly enhanced. The toughness and maximum deflection of specimens with rubber were considerably improved. Steel fiber/crumb rubber-reinforced concrete can be used for practical application, which requires further studies.