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Experimental Study on Polypropylene Fiber Reinforced Self Compacting Concrete

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Abstract :Self compacting concrete (SCC) was first developed in 1988 in Japan to achieve durable concrete structures. Conventional concrete tends to present a problem with regard to adequate consolidation in thin sections or areas of congested reinforcement, which leads to a large volume of entrapped air voids and compromises the strength and durability of the concrete. Self-compacting concrete (SCC) can eliminate the problem, since it was designed to consolidate under its own mass. This paper experimental study on mechanical performance of polypropylene fiber reinforced concrete (PFRC) under compression, split tensile and flexural loading. The cube compressive strength, cylinder split tensile strength and prism flexural strength of polypropylene fiber reinforced concrete was determined in the laboratory. The M30 grades of concrete mixes and polypropylene fibers of length 30 mm at volume fractions of 0.5%, 1.0%, 1.5% and 2.0% were used in the research. All specimens were tested at curing age of 7th and 28th days.

Keywords :Polypropylene fiber, mechanical properties, self compacting concrete.

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