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EXPERIMENTAL INVESTIGATION FOR EFFECT OF TEMPERATURE ATTACK ON THE STRENGTH PROPERTIES OF SILICA FUME CONCRETE PRODUCED WITH HYBRID FIBERS

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Abstract

Silica Fume Concrete (SFC) produced with hybrid Fibres is a relatively new and advanced material of construction. In a typical SFC with Hybrid Fibers mixture consist of absence of coarse aggregate replaced by fine sand in conventional concrete. The Portland cement plays the role of fine aggregate and the silica fume that of the cement. SFC has no large aggregate and contains small steel Fibers that provides additional strength and in some cases can replace traditional reinforcement. The strength and ductility characteristics of SFC may be improved by using hybrid Fibers. The different combinations of hybrid Fibers like (Steel + galvanized iron) (Steel + polypropylene) (Steel + Waste coiled steel Fibers) (Steel + HDPEF) can improve the characteristics properties of SFC. In this paper, the experimental investigation has been made to study effect of temperature attack on the strength properties of SFC using Hybrid Fibers like Compressive Strength, Tensile Strength, Flexural Strength and Impact Strength. Results are compared with strength properties of SFC without Fibers and SFC with Mono Fibers.

Keywords : SFC, Steel Fibers (SF), Galvanized Iron Fibers (GIF), Waste Coiled Steel Fibers (WCSF) High Density Polyethylene Fibers (HDPEF), Polypropylene Fibers (PPF), Mono Fibers, Hybrid Fibers, Compressive Strength, Tensile Strength, Flexural Strength, Impact Strength