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MECHANICAL PROPERTIES OF VERY HIGH VOLUME FLY ASH CONCRETE WITH POLYPROPYLENE FIBER

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ABSTRACT: Concrete is the broadly used and unavoidable construction material in the construction industry. The cement is the most important ingredient of concrete. Limestone is the primary source for the production of ordinary Portland cement during the production of one ton of cement roughly one ton of carbon dioxide released to the atmosphere, which is a menace to environment. Also, the concrete is relatively strong in compression and weak in tension as well as brittle in nature. To address the above two problem, the concrete is investigated with very high volume fly ash and polypropylene fiber. This paper aims to present the effect of polypropylene fiber on very high volume fly ash concrete with various proportions. To achieve this aim the very high volume fly ash concrete samples were prepared and tested at various ages7, 14, 28 and 60 days. An experimental test were carried out to explore the effect of polypropylene fiber on very high volume fly ash concrete such as compressive strength, split tensile strength and flexural tensile strength. The results revealed that the split and flexural tensile strength of very high volume fly ash concrete with polypropylene fiber was significantly increased in the maximum range of 30-45% when compared to conventional and very high volume fly ash concrete.

Keywords: *Very High Volume Fly Ash Concrete, Polypropylene Fiber, Tensile Strength, Flexural Strength, Mechanical Properties*