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AN EXPERIMENTAL INVESTIGATIONS ON THE PARTIAL REPLACEMENT OF FINE AGGREGATES BY PET PLASTIC WASTE IN CONCRETE

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ABSTRACT: Concrete is a combination of cement, aggregates and water. Due to enormous growth in concrete, aggregates are facing crisis. Apart from this, growth of plastic has provoked the methods to solve environmental issues caused by plastic. The objective of this research is to investigate the effectiveness of using waste plastic as fine aggregate replacement in concrete mixtures. The compressive, tensile and flexural strengths of various concrete specimens were tested to determine how the incorporation of recycled plastic as a replacement for fine aggregate would affect the development of strength in the mixes. The strength properties of M40 grade concrete are studied with different plastic percentage proportions. The various plastic proportions are 5%, 10%, 15% & 20% by weight. The strength properties of these mixes are studied. It is noted that there is decrease in compressive strength when the ratio of plastic to aggregate was increased. The mix for which compressive strength was least, taken and enhanced it by silica fume of 5%, 10% & 15% by weight of cement. The strength properties were again studied and the results were compared.

Keywords: *PET, Plastic Waste, Silica Fume, M sand, Compressive Strength*