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STUDY ON UTILIZATION OF WASTE PET BOTTLE FIBER IN CONCRETE

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ABSTRACT

Waste plastic bottles are major reason of solid waste disposal. Polyethylene Terephthalate (PET) is usually used for carbonated beverage and water bottles. The waste plastic bottles are difficult to biodegrade and involves processes either to recycle or reuse. The construction industry is in require of finding cost effective materials for increasing the strength of concrete structures. In this paper deals with the possibility of using the waste PET bottles as the different aspect ratio of 17, 33, 50, size of fibre added in to the concrete with 0.5%, 1%, and 1.5% PET bottle fibres for fine aggregate were produced and compared against control mix with no replacement. Cube specimens, cylinder specimens of 27 numbers each were cast cured and tested for 3 day, 7 day and 28 days strength. Compression test, splitting tensile test and flexural strength tests were done and the results were compared with control specimens.

Finally, optimum dosages of PET fiber volume fractions, such as 1% to attain maximum compressive strength and maximum tensile strength were found for the mix.

KEYWORDS: Plastic Bottles, Polyethylene Terephthalate, Biodegrade, Fibre