

Experimental Study on Partial Replacement of Aggregate by using Plastic Waste

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Abstract: A substantial growth in the consumption of plastic is observed all over the world in recent years that has led to dumping of huge quantities of plastic related wastes in the environment. Recycling of plastic waste to produce construction material like concrete appears as one of the best solutions for the disposal of plastic waste. This paper involves a partial replacement of waste plastic as fine aggregates from 5% to 25% with 5% increment. The main objective of this study is to reduce the wastage of plastic and to improve the eco-friendly environment. Many investigations were taken for plastic so far, that has led to current research for using pulverized plastic which passes through 2.36 mm sieve and retained in 1.18 mm sieve in concreting material. The investigation was done and the mechanical properties of concrete were discussed in the present study. The experiment was done with M30 grade concrete for a curing of 7 days, 14 days and 28 days from which its compressive strength, tensile strength, flexural strength were taken and compared with the conventional concrete. The compressive strength has increased for 5%, 10 %, 15 % and gradual decrement is obtained for 20% and 25% of partial replacement. The tensile strength and flexural strength has been increased for all percentage of waste plastic replacements.

Keywords: Recycling Pulverized Plastic Compressive Strength Tensile Strength and Flexural Strength.

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