



ChemTech

International Journal of ChemTech Research

CODEN (USA): IJCRGG, ISSN: 0974-4290, ISSN(Online):2455-9555

Vol.10 No.8, pp 74-80, 2017

Experimental Study on Partial Replacement of Coarse Aggregate with Ceramic Tile Wastes and Cement with Glass Powder

B.Kavitha*, M. Lenin Sundar

Department of Civil Engineering, Sri Krishna College of Technology, Coimbatore, India

Abstract : This present world is very much depends on the concrete for the construction of various infrastructural activities. Concrete has become a basic need for every structure nowadays. The increasing population of the world puts a lot of pressure on the civil engineer to develop a cost effective as well as an eco-friendly structure according to the need of human beings. Concrete is a heterogeneous mixture of binding material (cement or lime), coarse aggregates, fine aggregates (sand) and water. Fine and coarse aggregates are obtained from quarrying of large rocks which leads to a great destruction to the environment. And further the disposal of the huge amount of demolition waste was another problem. The objective of this research is to study the utilization of glass powder and ceramic waste as partial replacement of cement and coarse aggregate in concrete. The properties such as flexural strength and compressive strength of concrete incorporating glass powder and ceramic waste in partial replacement of cement and coarse aggregate were examined and compared. The flexural strength and compressive strength was determined at the age of 7 days and 28 days. Cubes for compressive strength as dimensions 150x150x150mm and for flexural beams of dimension 500x100x100mm were casted adopting weight batching and hand mixing. The mix were designated as a mix with varying percentage of ceramic waste such as 0 percent,5 percent,15 percent,25 percent and 35 percent to evaluate various properties. The research has been conducted on M30 mix grade. The results which come out from the research work are shows that the strength developed in concrete is increased, it can be equated to higher strength concrete and it can be easily used as construction material in construction work.

Keywords : Ordinary Portland Cement, Waste Ceramic Tiles, Waste Glass Powder.

B.Kavitha *et al* /International Journal of ChemTech Research, 2017,10(8): 74-80.
