

Utilization of Waste Crushed Tile as Coarse Aggregate in Concrete

Authors : Harkaranjit Singh, Arun Kumar

Abstract : Depletion of natural resources is a common phenomenon in developing countries like India due to rapid urbanization and industrialization involving construction of infrastructure and other amenities. In view of this, people have started searching for suitable other viable alternative materials for concrete so that the existing natural resources could be preserved to the possible extent for the future generation. In this process, different industrial waste materials such as fly ash, blast furnace slag, quarry dust, tile waste, bricks, broken glass waste, waste aggregate from demolition of structures, ceramic insulator waste, etc. have been tried as a viable substitute material to the conventional materials in concrete and has also been succeeded. This paper describes the studies conducted on strength characteristics of concrete made with utilizing of crushed tiles as a coarse aggregate. The waste crushed tiles can be used as coarse aggregates with the replacement ratio of 0, 50, 75 and 100% were used. Mechanical and physical tests were conducted on specimens. It was found that, the concrete made of waste ceramic tile aggregate produced more strength in compression, and flexure.

Keywords : compressive strength, flexural strength, waste crushed tile, concrete

Conference Title : ICMSAPE 2014 : International Conference on Materials Science, Applied Physics and Engineering

Conference Location : Los Angeles, United States

Conference Dates : September 29-30, 2014