

ABSTRACT

The concept of partial replacement of cement which is capable for sustainable development is characterized by application of industrial wastes to reduce consumption of natural resources and energy and pollution of the environment. A presently large amount of Ground Granulated Blast furnace Slag (GGBS) is a by-product of manufacturing of pig iron with an important impact on environment and humans. This research work describes the feasibility of using the GGBS in self compacting concrete production as partial replacement of cement. GGBS can be used as filler and helps to reduce the total voids content in self compacting concrete. Constant level of Fly ash is also used in all set of mix proportion to increase the powder content for achieve the Workability. The cement has been replaced by GGBS accordingly in the range of 0%, 10%, 20% and 30%, by weight of cement for M-30mix. After iterative trial mixes the water/cement ratio (w/c) was selected as 0.40. Self compacting Concrete mixtures produced, tested and compared in terms of compressive and split tensile strength with the conventional concrete for 7,28 days. It is found that, 20% of GGBS are better in strength in comparable to the conventional concrete.