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STUDIES ON THE FRESH AND HARDENED PROPERTIES OF BINARY BLENDED GREEN CONCRETE BY USING FLY ASH

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ABSTRACT

The February 2007 report issued by the international panel on climate change (IPCC) has stated in no uncertain terms that global warming is no longer an issue that has to be debated. According to the report, global warming is here, and drastic actions are needed for the long term sustainability of our environment. It is in this context that this paper discusses the roll of supplementary cementing materials as partial replacements for cement in concrete for reducing green house gas emissions. Due to growing interest in sustainable construction, engineers and architects are motivated to choose the materials which are more sustainable. Green concrete capable for sustainable construction is characterized by application of industrial wastes to reduce consumption of natural resources and energy and pollution of the environment. Replacement of materials over nominal concrete is what makes green concrete more environmental friendly concrete. Marble sludge powder, quarry rocks, crushed concrete and fly ashes are some of the materials used for making green concrete, a sustainable construction. Now a day's OPC is widely used and it is the costly ingredients in the production of concrete. The manufacture of OPC is expensive and skill intensive process, besides polluting the environment heavily production is associated with the emission of carbon dioxide which is a significant source of global warming. Pozzolanic materials are widely used in concrete and mortars for various reasons particularly for reducing the amount of cement required for making concrete which lead to a reduction in construction cost. In the present experimental investigation an attempt is made to study the workability and strength properties of M30 grade green concrete by using supplementary cementing materials (SCMs) as partial replacement of cement.

KEYWORDS: Compressive Strength, Fly Ash, Green Concrete, Superplastisicer, Workability