ACCEPTABILITY OF DEMOLISHED CONCRETE WASTE AGGREGATE IN MAKING HIGH STRENGTH SELF COMPACTING CONCRETE

MEHTAB ALAM[1], GAURAV SINGH[2], BESH BAHAA[3] & MOHAMMAD NASIM SAHAR[4]

[1]Professor, Department of Civil Engineering, Faculty of Engineering and Technology, Jamia Millia Islamia, New Delhi, India

[2,3,4]Students, B. Tech (Civil), Department of Civil Engineering, Faculty of Engineering and Technology, Jamia Millia Islamia, New Delhi, India

ABSTRACT

This paper is an attempt to establish the acceptability of demolished concrete waste aggregate to make self compacting concrete of very high strength and desirable properties. It addresses experiments on two types of self compacting concrete – one with fresh coarse and fine aggregates while the other with 100% replacement of fresh coarse aggregate with recycled one. Results showed that the fresh and hardened properties of both the concretes were comparable. The stigma with recycled aggregates concrete is that they are of inferior quality and can only be used as sub base course and in non structural concrete but the experiments revealed otherwise. A strength up to 85 MPa has been achieved in the SCC made up of 100% recycled coarse aggregate by using a mineral admixture - ground granulated blast furnace slag (GGBS). Also an improving trend in rheological properties and strength was found with the increase in GGBS quantity.

KEYWORDS: Ground Granulated Blast Furnace Slag (GGBS), Recycled Aggregate, Rheological Properties, Self Compacting Concrete, Structural Concrete