

Experimental Research on Concrete by using Red Mud, Foundry Sand, Conplast SP430 -as a Partial Replacement of Fine Aggregates

**S.Vivek^{1*}, C.M. Dharmalingam², S.Srinivasan³, S.Swathi⁴, K.Janani⁵,
M.Divyadharsini⁶**

^{1,3,4,5,6}Department of Civil Engineering, Sri Eshwar College Of Engineering, Coimbatore,
Tamil Nadu, India.

²Dharmalingam Associates, Coimbatore, Tamil Nadu, India.

Abstract: Improved compaction around congested reinforcement. Potential to enhance durability through improved compaction of cover concrete. Improved build ability (e.g.: concreting deep elements in single lifts). Elimination of vibration leading to environmental, health and safety benefits. Quicker and easier concrete placement. The field of concrete technology has seen miraculous changes due to the invention of various admixtures. The admixtures modify the properties of fresh concrete and offer many advantages to the user. The main aim of this experimentation is to find out the effect of addition of red mud, which is a waste product from the aluminum industries, and foundry waste sand, which is a waste product from foundry, on the properties of self-compacting concrete containing two admixtures.

It has been observed that the compressive strength of self compacting concrete produced with the combination of admixtures such as (SP+VMA) goes on increasing up to 2% addition of foundry waste and red mud sand. After 2% addition of foundry waste sand and red mud, the compressive strength starts decreasing, i.e. the compressive strength of self compacting concrete produced with (SP+VMA) is maximum when 2% foundry waste red mud a sand is added. The percentage increase in the compressive strength at 2% addition of foundry waste sand and red mud. Thus, it can be concluded that maximum compressive strength of self compacting concrete with the combination of admixtures (SP+VMA) may be obtained by adding 2% foundry waste sand which is a waste material of ferrous industry (foundry) and red mud.

Keywords: Concrete, Red Mud, Foundry Sand, Conplast SP430 -as a Partial Replacement of Fine Aggregates.