



EXPERIMENTAL STUDY ON SELF COMPACTING CONCRETE CONTAINS PARTIALLY MANUFACTURED SAND AND RECYCLED CLAY ROOF TILE

Jagadeesh. M, Bhuvaneswari. R

PG Scholar, Civil Engineering Department,
Karpagam University, Coimbatore India – 641021

Preethiwini.B

Assistant Professor, Department of Civil Engineering,
Karpagam University, Coimbatore – 641021

Magudeaswaran. P

Senior Assistant Professor, Department of Civil Engineering,
Sri Ramakrishna Institute of Technology, Coimbatore, Tamil Nadu, India

ABSTRACT

Construction is a non-stop process throughout the world due to the population growth with the requirements of their need of structures. The concrete takes a vital role in consumption, strength and quantity wise. The developments in the concrete are vast and continuing. Considerably, the old buildings are demolished and replaced with new concrete buildings. Demolition of buildings are creates waste related problems and environmental issues. From the demolished buildings the wastes can be used for new construction. Self Compacting Concrete (SCC) is suitable for placing in congested reinforcement without vibration and to consolidate under its own weight. The concrete contains major quantity of fine aggregate and coarse aggregate. The depletion of these two materials, the alternative is required to minimise the use of this materials. For the fine aggregates Manufactured sand also known as M-sand can be use partially. For the coarse aggregates, broken clay roof tiles can be use partially. The admixture is also added to gain the property of workability and strength. The concrete grade M20 is considered because, uses widely and in large quantity. The fine and coarse aggregates are replaced by 10%, 20% and 30% each. The basic concrete mix design grade of concrete M20 was arrived as per the Indian Standard Concrete mix proportion-Guidelines IS 10262: 2009. The experiments carried out in fresh concrete are slump flow, T50, V-funnel and T5 minutes, J-ring, L-Box, and U-box tests. For hardened concrete the tests conducted are for compressive strength and split tensile strengths on 7, 14 and 28 days.