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Strengthening the Self Compacting Concrete by Recycled Aggregate

G. Hymavathi[1], Dr. K. Chandramouli[2], A. Medhasri Mrunalini[3], J. Sree Naga Chaitanya[4], S. Kavya Ganga Bai[5]
Assistant Professor, Department of Civil Engineering[1,3&4]
Professor and Head, Department of Civil Engineering[2]
UG Scholar, Department of Civil Engineering[5]
NRI Institute of Technology, Visadala (V), Medikonduru (M), Guntur, Andhra Pradesh, India

Abstract: *Concrete is the most generally utilized substance after water and more than six billion tons of cement is created every year. At present study for new development of concrete and also to reduce aggregate waste, an experimental investigation was conducted on self -compacting concrete with different percentages of coarse recycled concrete aggregate. The main objective was to study suitability and effect of coarse recycled aggregate in new generation concretes. In the recent years the demand for construction materials has grown tremendously, so has the amount of construction and demolition waste, putting huge pressure on the environment. This has encouraged the use of recycled aggregate in concrete which not only allows for a more efficient life cycle of natural resources but also contributes to environmental protection leading to sustainable development. In this study coarse recycled aggregate (RCA) are used in the production of self -compacting concrete (SCC) of 50grade in varying percentage replacements of natural coarse aggregate (NCA) from 0% to 100% with increment of 20%. To achieve flow characteristics of SCC Super-plasticizer is added at a dosage by cement weight The various test performed were compressive strength, split tension test at the age of 28,56,90 days. It is observed that up to 40% recycled aggregate can be effectively used in the production of SCC without any significant reduction in strength and durability.*

Keywords: Recycled aggregate Self- compacting concrete, super plasticizer

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