

Recycled Concrete: Sustainable Solutions for Construction and Waste Reduction

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Abstract: *This paper reviews the utilization of recycled aggregate sourced from construction and demolition waste for concrete production. The use of recycled aggregate has been adopted in numerous construction projects across Europe, America, Russia, and Asia. This research, however, indicates that recycled Aggregates derived from concrete specimens can produce high-quality concrete. Concrete waste from demolished structures is collected, and coarse aggregates in varying percentages are used to produce fresh concrete. In this study, for the 28th day cube compressive strength using OPC was evaluated for 0%, 50%, and 100% RCA and compared with nominal concrete. The study summarizes the results of workability, water absorption, dry density, and compressive strength of HPC made with RA as reported in previous studies. The paper also discusses the microstructure and durability performance of concrete. This study demonstrates that the strength of concrete is influenced by the addition of RCA.*

Keywords: Demolished, Sustainable, Recycled, Concrete waste, Green concrete, New concrete

