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**FEASIBILITY OF CONCRETE CONTAINING RECYCLED CONCRETE
AGGREGATES**

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ABSTRACT

As the result of economic and industrial growth globally, construction and demolition (C&D) waste has been an inevitable by-product which severely affects the ecology and sustainability of environment. Among C&D waste, concrete waste normally dumped in landfills which consume large space, and becoming a threat due to the increasing of rehabilitation of existing civil structures and infrastructures. In addition, the resources of Natural Aggregates (NA) are abundant but finite. Challenges may develop in construction due to depletion and scarcity of the sources, restrictions on opening new sources and the increased production cost, as well as strict environmental regulations. Using recycled concrete aggregate (RCA) may help to address some of these limitations. In this study, feasibility of using RCA as coarse aggregate in concrete was experimentally investigated. Coarse aggregate was replaced by RCA in relation of the mass of total coarse aggregates with different mass percentage of 0% to 80%. The characteristics of concrete was investigated by testing the workability, compressive strength, water absorption, and density analysis. Outcomes exhibit that the RCA replacement ratio is a significant factor affecting the workability, mechanical and durability characteristics of resulting concrete. In addition, increasing content of RCA reduces the workability, mechanical and durability characteristics while showing 40% acceptable aggregate replacement.

Keywords: Concrete waste, Recycled concrete aggregates, Concrete containing recycled concrete aggregates