ABSTRACT

The utilization of recycled materials is one of the seven principles of sustainable construction. Recycled materials such as recycled concrete aggregate or recycled brick aggregate from construction and demolition waste, waste glass from municipal waste or recycled waste gypsum from gypsum boards are able to be used as replacement of primary raw materials such as coarse aggregates in concrete production. This use of recycled materials in concrete production helps reduce the raw materials required and thus reduce the depletion of resources in the environment. However, replacement in concrete leads to changes in mechanical properties that may adversely or positively affect the concrete's inherent purpose. This paper reviews and compares the effect of Partial replacement of coarse aggregates with recycled concrete and brick aggregates in concrete production on the concretes mechanical properties. The experiment was undertaken by collection of samples of both recycled concrete aggregates and recycled brick aggregates. Which were crushed washed and impurities removed. The recycled aggregates were then apportioned and used to prepare concrete with partial replacement of natural coarse aggregates in the following percentages 10%, 15% and 20%. These concrete samples were then used to conduct mechanical tests that is compressive, tensile split tests and workability tests being slump test and compaction factor. The results were analyzed, discussed and conclusions inferred.