ABSTRACT

The suitability of replacement of natural aggregate (NA) with recycled aggregate (RA) mainly depend on the properties of recycled aggregates. This experimental study provides the mechanical properties of recycled aggregate concrete (RAC) as compared to those of the conventional normal aggregate concrete (NAC). This study focuses on developing eco-friendly concrete by using recycled coarse aggregates (RCA), to reduce waste and conserve natural resources. Different proportions of RCA were tested to evaluate their effects on the strength, durability, and workability of concrete, and comparing results with traditional concrete.The development of cube compressive strength, cylinder split tensile strength, prism flexural strength at 28 days are reported. Therefore, with optimal replacement of RA, the mechanical properties of concrete mixtures can be improved, reducing the detrimental effects of RA from the environment. The concrete with RCA showed enhanced mechanical properties and reduced environmental impact, promoting sustainable construction practices.