






The influence of coconut fibres and ground steel slag on strength and durability properties of recycled aggregate concrete: sustainable design of fibre reinforced concrete


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Abstract

This research work proposed an economic and eco-efficient idea to supplement the ductility and durability of concrete by the simultaneous incorporation of several processed waste materials i.e., ground blast furnace slag (GBFS), recycled coarse aggregate (RCA), and coconut fibre (CF). Two concrete families were produced containing 0% and 100% coarse RCA. GBFS was incorporated as by 25% replacement for cement. CF was used as a fibre reinforcement at 0.25% volume fraction. The results revealed that the recycled-aggregate concrete (RAC) modified with GBFS, CF, and modified plasticizer dosage can attain similar or higher mechanical performance than unmodified natural