

Sand Cement Brick Incorporating Palm Oil Clinker as Partial Replacement for Fine Aggregate

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ABSTRACT

Palm oil industry produces a significant quantity of waste such as palm oil clinker (POC) that can be utilized as fine or coarse aggregates. The POC will cause environmental issues due to improper landfilling at the palm oil mills. The primary goal of this study is to utilise the POC in building materials such as brick. Therefore, with the utilization of POC sand in brick production would assist to minimize the environmental issues around the palm oil mills. Four brick compositions were created using several percentages of POC sand ranging from 0%, 25%, 50% and 75% by volume of sand. All specimens were undergoing water curing process for 7 days and 28 days. The specimens were subjected to compressive strength test, flexural strength test and water absorption test. The utilization of 50% POC sand improves the compressive strength and flexural strength of the brick. The utilization of POC sand in brick leads to the creation of sustainable materials and the preservation of natural sand.

KEYWORDS

Sand cement brick, Fine aggregate replacement, Palm oil clinker, Water curing