Preliminary Study on Properties of OPS Lightweight Concrete With Cockle Shell as Mixing Ingredient

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Abstract. Environmental pollution caused by the dumping of oil palm shell (OPS) from palm oil mill and cockle shell from cockle trade has initiated early exploration to discover the potential of these waste incorporated in concrete production. The present research investigates the effect of integrating crushed cockle shell as partial fine aggregate replacement on compressive strength and flexural strength of OPS lightweight aggregate concrete. A total of five mixes were prepared. OPS lightweight aggregate concrete containing 100% river sand was used as control specimen. Other mixes were produced by varying the percentage of crushed cockle shell by weight of sand. All specimens were water cured for 28 days before subjecting it to compressive strength and flexural strength. The finding shows the concrete exhibit strength increment when crushed cockle shell is added as partial fine aggregate replacement. Conclusively, crushed cockle shell has the potential to be used as mixing ingredient in OPS lightweight concrete production.

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