Abstract

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Project title Development of cement pots by waste eggshell

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This research objected to study the properties of mortar mixed with waste eggshell and replacement at ratio of portland cement : eggshell waste such as 1:3:0 1:1:2 1:0:3 and 1:0:1. The results showed that compressive strength of 5×5×5 cm sample after 1 and 28 day curing was the effect physical and mechanical properties namely compressive strength and followed phase after hydration reaction by techniques x-ray diffractiometry. After that, the study was morphology of mortar. The result found that sand replacement by eggshell waste at ratio 1:0:1 indicated high compressive strength mortar more than containing at ratio 1:3:0 after 1 and 28 day curing. The analysis of hydration reaction by technique XRD was calcium silicate hydrate and calcium hydroxide. After that, the development of cement pots by waste eggshell ratio of portland cement : eggshell waste such as 1:3:0 1:1:2 1:0:3 and 1:0:1 on physical property for example texture weight and shrinkage. The study found that ratio of 1:0:1, which had smooth texture nearby ratio of 1:3:0 but low weight and slightly shrinkage hence it waste eggshell replaced sand in huge amounts.

Keywords: Mortar, Eggshell, Cement pots