

Oil Palm Shell Ash: Cement Mortar Mixture and Modification of Mechanical Properties

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Abstract : The waste agriculture materials cause environment pollution, recycle of these materials help sustainable development. This study focused on the impact of used oil palm shell ash on the compressive and flexural strengths of cement mortar. Two different cement mortar mixes have been designed to investigate the impact of oil palm shell ash on strengths of cement mortar. Quantity of 4% oil palm shell ash has been replaced in cement mortar. The main objective of this paper is, to modify mechanical properties of cement mortar by replacement of oil palm ash in it at early age of seven days. The results have been revealed optimum quantity of oil palm ash for replacement in cement mortar. The deflection, load to failure, time to failure of compressive strength and flexural strength of all specimens have significantly been improved. The stress-strain behavior has been indicated ability of modified cement mortar in control stress path and strain. The micro property of cement paste has not been investigated.

Keywords : minerals, additive, flexural strength, compressive strength, modulus of elasticity

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