

Utilising Unground Oil Palm Ash in Producing Foamed Concrete and Its Implementation as an Interlocking Mortar-Less Block

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Abstract : In this study, the possibility of using unground oil palm ash (UOPA) for producing foamed concrete is investigated. The UOPA used in this study is produced by incinerating palm oil biomass at a temperature exceeding 1000°C. A semi-structural density of 1300kg/m³ was used with filler to binder ratio of 1.5 and preliminary water to binder ratio of 0.45. Cement was replaced by UOPA at replacement levels of 0, 25, 35, 45, 55 and 65% by weight of binder. Properties such as density, compressive strength, drying shrinkage and water absorption were investigated to the age of 90 days. The mix with a 35% of UOPA content was chosen to be used as the base material of a newly designed interlocking, mortar-less block system.

Keywords : foamed concrete, oil palm ash, strength, interlocking block

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