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Low Carbon Footprint mortar from Pozzolanic Waste Material

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Nowadays, Portland cement clinker leads to emission of CO_2 into the atmosphere and therefore causes greenhouse effect. Incorporating of Palm Oil Fuel Ash (POFA) and Pulverized Fuel Ash (PFA) as partial cement replacement materials into mix of low carbon mortar decreases the amount of cement use and reduces high dependence on cements compared to ordinary mortar. The result of this research supported use of the new concept in preparing low carbon mortar for industrial constructions. Strength of low carbon mortar with POFA and PFA replacement in cement was affected and changed by replacing percent finesse, physical and chemical properties and pozzolanic activity of these wastes. Waste material replacement instead of Ordinary Portland Cement (OPC) was used in this study. This in turn was useful for promoting better quality of construction and innovative systems in
construction industry, especially in Malaysia. This study was surely a step forward to achieving quality products which were affordable, durable and environmentally friendly. Disposing ash contributes to shortage of landfill space
in Malaysia. Besides, hazard of ash might be another serious issue for human health. The ash disposal area also might create a new problem, which is the area's sedimentation and erosion.