

Usage of Palm Oil Industrial Wastes as Construction Materials

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Abstract : Palm oil industry produces millions of tonnes of industrial wastes and these wastes create huge storage and environmental problems. In order to solve these problems various research works have been performed for past decades. The commonly available wastes are Oil palm shells (OPS) and Palm oil fuel ash (POFA). These materials have already acquired well recognition as alternate of conventional construction materials. OPS has been used as coarse aggregate and compressive strength was found up to 56 MPa for 56-day. It is said that 30 grade Oil Palm shell concrete (OPSC) is possible without adding any cementitious materials. The maximum modulus of elasticity for OPSC was found 18.6 GPa. The Oil palm shell concrete (OPSC) are used in country areas and nearby areas where the palm oil factories are located for houses, road-kerbs, drain blocks, etc. In case of superstructure like beams and slab are also produced by utilizing OPS. Many experimental works have been performed to establish POFA as a substituting binding material in replace of Ordinary Portland cement (OPC). Throughout the research it has been showed that up to 20% of cement by mass can be replaced by POFA. POFA is one of the most enriched pozzolanic materials. The main purpose of this review is to discuss the usage and opportunity of the palm oil industrial wastes as construction materials following the previous experimental research work.

Keywords : construction materials, oil palm shells (OPS), palm oil fuel ash (POFA), aggregates

Conference Title : ICCESE 2015 : International Conference on Civil, Environmental and Structural Engineering

Conference Location : Kuala Lumpur, Malaysia

Conference Dates : February 12-13, 2015