

Durability of Lightweight Concrete Material Made from Date Palma Seeds

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Abstract : Libya is one of the largest producers of dates from date palm, generating about 60000 tonnes of date palm seeds (DPS) annually. This large amount of seeds led to studies into the possible use as aggregates in lightweight concrete for some special structures. The utilization of DPS as aggregate in concrete provides a good solution as alternative aggregate to the stone aggregate. It has been recognized that, DPS can be used as coarse aggregate in structural lightweight concrete industry. For any structure member, the durability is one of the most important considerations during its service life. This paper presents the durability properties of DPS concrete. These include the water permeability, water absorption, sorptivity and chloride penetration. The test results obtained were comparable to the conventional lightweight concrete.

Keywords : date palm seeds, lightweight concrete, durability, sustainability, permeability of concrete, water absorption of concrete, sorptivity of concrete

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