Application of Almond Shell as Lightweight and Waste Coarse Aggregate in Structural Concrete

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Abstract

This paper tries to introduce type of concrete that is proper in BS8110 standard limit of Mechanical characterizes and its Cost is less than other types of concrete. This paper presents part of the experimental results of an on-going research project to produce structural lightweight concrete using solid waste, Almond shell (AS), as a coarse aggregate. Reported in the paper are the compressive strength, bond strength, modulus of elasticity, and flexural behavior of AS concrete. It was found that although AS concrete has a low modulus of elasticity, full-scale beam tests revealed that deflection under the design service loads is acceptable as the span deflection ratios ranged between 252 and 263, which are within the allowable limit provided by BS 8110. Laboratory investigations show encouraging results and it can be summarized that AS has good potential as a coarse aggregate for the production of...