

Oyster shell waste as a concrete ingredient: A review

*Hanis Nadiah Ruslan, Khairunisa Muthusamy, Sharifah Maszura Syed Mohsin, Rajan Jose,
Roslina Omar*

Universiti Malaysia Pahang, Lebuhraya Tun Razak, 26300 Gambang, Malaysia

ABSTRACT

The increasing use of concrete in the ongoing construction industry worldwide demands for growing extraction of raw materials such as limestone, sand and stone from the earth which further destroy the natural environment. Realization on the destructive impact of this activity on flora and fauna as well as mankind, approach of utilizing by-product from any industry as partial substitution of mixing ingredient of concrete would reduce the consumption of natural resources and promote cleaner environment. In relation to that, oyster shell from fisheries industries which disposed as waste that pollutes the environment is seen as potential material to be incorporated in concrete. Thus, the utilization of oyster shell waste as cement and sand replacement in concrete research is reviewed in this paper. The paper presents the oyster shell's properties, processing method prior to its use and the mechanical performance concrete upon the integration of oyster shell as cement and partial fine aggregate replacement respectively. On overall, utilization of oyster shell at suitable proportion able to enhance concrete strength. Further researcher needs to be conducted to explore the potential use of this material in high volume for high performance concrete production.

KEYWORDS

Oyster shell waste; Pollution; Sustainable concrete; Mixing ingredient; Mechanical properties

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