SUGAR PALM SHELL ASH AS SUPPLEMENTARY CEMENTITIOUS MATERIAL IN CONCRETE

Undergraduate Thesis
Submitted to the Faculty of the
College of Engineering and Information Technology
Cavite State University
Indang, Cavite

In partial fulfillment
of the requirements for the degree
of Bachelor of Science in Civil Engineering

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June 2018

ABSTRACT

BUSTAMANTE, IAN JORGE C. Sugar Palm Shell Ash as Supplementary Cementitious Material in Concrete. Undergraduate Thesis. Bachelor of Science in Civil Engineering. Cavite State University Indang, Cavite. June 2018. Adviser: Engr. Cene M. Bago.

The demand to find alternative materials to replace or enhance the existing typical ones and retaining its strength at the same time have inspired researchers to work and investigate on the possible materials that can substitute cement. The study "Sugar Palm Shell Ash as Supplementary Cementitious Material in Concrete" was conducted on October 2017 to April 2018. The study aimed to determine if the concrete mix with partial replacement of sugar palm shell ash to cement can be used. The concrete mixtures have been mixed with 10 percent (treatment B), 20 percent (treatment C), and 30 percent (treatment D) of sugar palm shell ash as partial replacement for cement and controlled specimens as treatment A that contains 100 percent cement. Forty concrete cylinders specimens were casted. It was cured and tested for compressive strength. Concrete cylinders were tested at the 7^{th}, 14^{th} and 28^{th} days of curing to determine its compressive strength.The highest compressive strength of 15.3 MPa (2250 psi)at 28^{th} day was recorded for mixture B at 28th day. Experimental results have indicated that the sugar palm shell ash being added, the compressive strength of the mixture decreases. From the results obtained, it can be concluded that sugar palm shell ash can be used as supplementary cementitious material but only up to the 90 percent -10 percent. It has the potential to be used to improve the strength of concrete.

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