

Abstract

Concrete is a function of its constituent materials consisting of hydraulic cement (portland cement), coarse aggregate, fine aggregate, water and added materials (admixture or additive). In this study using coconut shell charcoal for concrete mixture $f_c = 25$ as a substitute for fine aggregate to weight percentage, variations of 5%, 10% and 15% which aims to determine how much compressive strength is after mixing coconut shell charcoal.

The research stages started from material preparation, testing of coarse aggregate, fine aggregate, after meeting the specifications carried out making normal concrete mixtures and making concrete using coconut shell charcoal, testing compressive strength, data analysis, then conclusions and suggestions.

The research procedure was divided into two stages, namely the initial research to determine the compressive strength of normal concrete and the second study to determine the compressive strength of concrete using a mixture of 5%, 10% and 15% coconut shell charcoal by weight of fine aggregate.

The results showed the average compressive strength of normal concrete was 28.40 MPa, after the use of 5% coconut shell charcoal the average compressive strength was 14.63 MPa, then the use of 10% coconut shell charcoal obtained an average compressive strength of 15.76 MPa, on the use of coconut shell charcoal 15% the average compressive strength is 13.76 MPa. Based on the results of these studies indicate a decrease in the value of normal concrete. This value did not reach the planned concrete compressive strength of 25 MPa. It can be concluded that coconut shell charcoal is not recommended for concrete mixtures because it causes the compressive strength of the concrete to decrease.

Keywords: ***Concrete, Coconut Shell Charcoal, Compressive Strength***