

Mechanical properties of concrete using eggshell ash and rice husk ash as partial replacement of cement

Abstract

This research was carried out to determine the optimum percentage of eggshell ash and rice husk ash (RHA) as partial cement replacement. The samples were tested for its mechanical properties by using concrete grade G30 with cube mould (100 mm x 100 mm x 100 mm) and prisms (100 mm x 100 mm x 500 mm). The samples were mixed with eggshell ash and RHA admixture with different proportions (2%:8%, 4%:6%, 6%:4%). Several types of test were conducted towards the samples, which are the slump test, compressive and flexural test. Based on previous researches, the strength of concrete reduced as replaced with eggshells. Most of the researches show the similar trend when partial cement is replaced using eggshell ash. Thus, to increase the strength, an admixture which has pozzolanic reactivity called rice husk ash (RHA) is introduced into mix design which has been proved can help to improve the strength of concrete