

**PROPOSED STUDY OF SAW DUST AND STEEL SLAG
AS AGGREGATES IN CONCRETE**

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ABSTRACT

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The study was conducted to determine the capacity of combined sawdust and steel slag as aggregate in the production of concrete. Specifically, the study aimed to determine the effect of these materials in the compressive strength, workability and cost of concrete. The study used five different treatments which are Treatment 1, the ordinary control mixture and the other four treatments were consisted of sawdust and steel slag with corresponding percentages of 25, 50, 75 and 100 respectively. Class A mixture was used for the entire treatments with various amounts of water/cement ratios of 0.65, 0.715, 0.78, 0.845 and 0.91 respectively. Slump test and compression test were done to evaluate and determine the effects of sawdust and steel slag as aggregate in producing concrete.

Every treatment was analyzed individually according to the proportion of sawdust and steel slag with different water-cement ratio. The results of the slump test were observed to be decreasing. This implies that the concrete became less workable when the percentage of sawdust, steel slag and water content was increased per treatment. Likewise, the compressive strength of the concrete cylinders for every treatment decreased when the amount of combined materials increased. From 7 days up to 28 days age of concrete curing, the compressive strength increases, however when it comes to per treatment it decreases when the percentage of sawdust, steel slag and water content became higher.

In terms of cost, the commercial concrete is less expensive as compared to concrete with sawdust and steel slag. This means that the concrete become more expensive as the saw dust and steel slag content increases.

Based from the results of the study, the researchers recommended the following:

- (1) addition of admixture to concrete with sawdust and steel slag that would aid the reduction of moisture absorption and the increase of compressive strength of concrete;
- (2) make the water/cement ratio constant for all the treatments
- (3) further study on proportioning of sawdust and steel slag.

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