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STUDY OF USE OF GONGGONG SHELL AS FINE AGGREGATE ADDITION MATERIALS IN MIXED CONCRETE

NPM: 1511003
HILDA VIRGINIA PUTRI

ABSTRACT

Riau Islands province is growing rapidly, especially in concrete construction with the use of technology. This causes the concrete used for the construction of buildings, bridges, docks and others. A large number used of concrete in construction resulted in an increased need for concrete material, so that the need for resources to meet the needs of alternative materials in the manufacture of concrete. This study used shells gonggong as a fine aggregate enhancer alternative to replace part of fine aggregate (sand) in the manufacture of concrete. For comparison it needs to know the strength of concrete without Shells Gonggong compressive strength of concrete using shells howl as certain additives to reduce the use of fine aggregate (sand).

This research method begins with planning a quality concrete mix with 20.75 MPa, then continued by crushing shells gonggong until sieve numbers 4, 8, 16, 30, 40, and 100. Samples mix concrete shell gonggong with a percentage of weight variation fine aggregate (sand) is 0%, 2.5%, 5%, 7.5% and 10%. Preparation of the samples using a mold cube with a size of 15cm x 15cm x 15cm. Number of samples made four (4) pieces for each age of the sample.

Based on data and analysis of the results of laboratory tests. The results of research concerning the use of certain additives shells gonggong as fine aggregate in the concrete mix can be seen that the use of certain additives shell gonggong as fine aggregate in the concrete impact on the reduction of significant compressive strength and influence on the mechanical properties of concrete. The addition of each mix concrete content percentage of 2.5%, 5%, 7.5%, and 10% of the aggregate weight of fine produce at levels of 0% to the age of 7 to 28 days of normal concrete increased by 20, 22%. At levels of 2.5% to the age of 7 to 28 days of normal concrete increased by 11.58%. At the 5% level for the age of 7 to 28 days of normal concrete increased by 5.56%. At levels of 7.5% to the age of 7 (seven) to 28 (twenty eight) days of normal concrete increased by 9.39%. At levels of 10% to the age of 7 (seven) to 28 (twenty eight) days of normal concrete increased by 8.05%.

Keywords: *Civil engineering, Shells Gonggong, Aggregate Smooth, Strong Press, Concrete*