UNIVERSITY INTERNATIONAL BATAM

Undergraduate Thesis
Bachelor of Civil Engineering Program
even Semester 2018/2019

ANALYSIS OF CONCRETE QALITY PRESS USING ADDITIONAL MATERIALS OF CERAMIC SOLID WASTE AS A REPLACEMENT OF RUDE AGGREGATES

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ABSTRACT

At present the construction of buildings in Indonesia in the field of infrastructure is experiencing very rapid development. This is evidenced by the large number of infrastructure developments such as roads, buildings, irrigation channels, dams etc. With significant developments in the field of infrastructure, the need for concrete has increased as a building construction material, because concrete is the main material and is very important for construction. Along with the development of the construction world, it is necessary to use waste to mix concrete as an added material in concrete mix which aims to improve the quality of concrete, elasticity, and workability of concrete.

In this research, the author will conduct experiments in the form of variations of concrete mixtures using added material in the form of ceramic waste that is used as a substitute for coarse aggregate in K-250 quality concrete with 0%, 5%, 7.5%, 10%, and 12.5% by weight coarse aggregate / gravel, each type consists of six (6) samples and divided for testing the compressive strength at the age of seven (7) days, fourteen (14) days, and twenty-eight (28) days, with each test done twice.

The results of the test show that the compressive strength of concrete using ceramic waste as a substitute for some coarse aggregate at 28 days produces an average compressive strength of 5% is 42.65 kg/cm^2, 7.5% is 95.555 kg/cm^2, with levels of 10% is 128.17 kg/cm^2, 12.5% is 170.55 kg/cm^2. So with these results it can be concluded that the average compressive strength is still far below the planned compressive strength.

Keywords: *concrete quality, elasticity, compressive strength of concrete, ceramic waste, concrete slump*