ABSTRACT

THE INFLUENCE OF SOIL TOWARD THE STRENGTH OF POST COMBUSTION PAVING BLOCK

By:

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Paving block is a road pavement construction material that is environmentally friendly, has good compressive strength properties, can withstand load within certain limits, and easy in installation work. Paving block is made of a mixture of portland cement or other kinds of hydrolysis adhesive material, water, and aggregates with or without other ingredients. In this study, on the manufacturing process the paving block will be tried to mix the soil with portland cement and sand to reduce the use of original materials with the goal of achieving SNI specifications paving block.

Soil samples that were examined in this study were clay, derived from Karang Anyar region, South Lampung. Content variation of the mixtures used were 6%, 8%, and 10% of cement, 5% of sand and the remaining was the percentage of soil with 7 days drying time and with or without combustion treatment of paving block samples. Based on the results of physical testing of the native soil, USCS classified soil samples as fine-grained soil and included in the CL group.

The results showed that the manufacturing of post-combustion paving block by using a mixture of 10% of cement +5% of sand +85% of soil had met SNI specification of paving block for neighborhood street. In general, the addition of cement to the soil can improve physical and mechanical properties of soil. This was proven by the increasing value of the optimum moisture content and density of the mixture. For the value of compressive strength of paving blocks with or without combustion process, the best result was shown by the addition of 10% mixture levels.

Keywords: Cement, sand, clay, compressive strength