ABSTRACT

STUDY OF CORAL POWDER USE INFLUENCE AS POZZOLAN MATERIAL IN BLOCK PAVING MADE FROM SAND AND CLAY

By

SYAHRIZAL ADRI LATIEF

Block paving is a concrete product and commonly used for pavement. Increasing use of block paving today, encourages researches to improve block paving quality. One of the quality improvement efforts is using pozzolan material available in nature in form of coral powder. Coral powder contains of amorphous hydrated silica active substance which can be hydrated with cement to improve block paving or concrete qualities.

In this research, subjects were rectangular square block paving with ± 6 cm thickness. Subjects were classified into 2 types of different block paving; block paving made from sand and clay raw materials. Each type of block paving was made with 1:4 ratio between raw material and cement. Variations of added coral powder were 0%, 5%, 10% and 15%. Subjects were tested with compression strength and water absorption tests.

The results showed that block paving made from sand produced B quality with 22.17 Mpa compression strength and block paving made from clay produced D quality with highest compression strength was 11.73 Mpa. The water absorption test results showed that sand block paving produced B quality with lowest water absorption of 4.92% and clay block paving produced D quality with lowest water absorption of 9.24%. The results showed that coral powder is able to improve compression strength of block paving and reduce water absorption at optimal level of 5%-10%. However, 15% coral powder content resulted in decreasing compression strength value and improving significantly water absorption and these altogether decreasing block paving quality.

Keywords: Block Paving, Coral Powder, Compression Strength, Water Absorption