ABSTRACT

THE INFLUENCES OF PAVING BLOCK SHAPE VARIATION ON PAVING BLOCK WITH FLY ASH AS THE SUBSTITUTE OF A NUMBER OF STACK MATERIALS

By

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The science’s development affects the improvement in construction field, for instance paving block development. Nowadays, there is a high demand of paving block with many different variations. Fly ash, which has an inexpensive selling price, is an industrial waste that the amount of it is accumulated continuously. The objectives of this research are to find out the volume weight of paving block, the optimum amount of fly ash, the optimum shape variation, and the water absorption value of paving block.

The object of this research was the three paving block variations, which were Trihex, Unipave, and Classic Type. The paving block used the mixture of fly ash which had the amount of 0%, 10%, and 20% from its stack material total weight. The amount of paving block’s experimental object was 54 and the experiment of compressive power had been conducted after the paving block attained the age of 14 and 28 days.
Based on the research, it can be concluded that (1) volume weight of paving block is affected by the compression in the making of testing object; (2) the optimum amount of fly ash is 20% from the paving block’s total volume, while the addition of 10% can decrease its compressive power; (3) the optimum shape variation of the form is the Classic Type which is capable of holding the load up to 289,8963 kg/cm2, the larger volume of paving block, the higher compressing strength of paving block; (4) the higher amount of fly ash, the lower its water absorption.

Key words: fly ash, paving block, volume weight, compressive power, water absorption