

ABSTRACT

THE INFLUENCES OF FLY ASH AS A PARTIAL SUBSTITUTE MATERIAL OF PAVING BLOCK MATERIALS TOWARDS COMPRESSIVE STRENGTH

By

Inas Liana Ria

Paving block is pavement construction material that was environmentally friendly, its had good compressive strength, and easy installation. Paving block made of a mixture of cement, water, and aggregates with or without other additives. In this research, the additional material was fly ash. The fly ash was the result of coal combustion waste in PT. Great Giant Pineapple Central Lampung.

This research used two kinds of mixture, there were 1: 3 and 1: 4 mixture, with weight ratio of sand and stone dust was 1:1. Each mixture used fly ash level at 0%, 10%, 20%, and 30%. Paving block used in this research was hexagonal shape with side length of 9.5 cm with thickness 6 cm and 8 cm. Compressive strength test performed at 14 days and 28 days.

The results showed that the optimum influence of fly ash level towards compressive strength acquired while at 20% level, meanwhile the optimal mixture variation of paving block while at ratio 1 : 4 with thickness of 8 cm. At the age of 14 days this paving block could withstand loads up to 267.2622 kg/cm² with a percentage increase in compressive strength of 76.5258% from the normal paving block. While at 28 days, this paving block could withstand the weight of 280.0566 kg/cm² with a percentage increase in compressive strength of 68.3761% from the normal paving block.

key words: paving blocks, fly ash, compressive strength, water absorption.