

ABSTRACT

DINI AZMI HANIFAH. *The Utilization of Glass Powder as A Replacement for Majority of Cement in Making Paving Block*. Essay, Jakarta: Department of Civil Engineering, Faculty of Engineering, State University of Jakarta, October, 2016

This study aims to take advantage of an alternative that is the powder of glass that can be used to replace the most cement. The idea of the early based on the idea that the elements of chemicals are there in the same as some of them are there in cement, namely silica (SiO_2). This study using the powder as material added to replace the most of the weight of cement.

This study using five of variants percentage of additional powder glass are 0%, 10%, 20%, 30%, and 50% with the number of samples every variants are 15 samples. Testing done three the tests are compressive strength, wear resistance, and water absorption as qualified to know the quality of in accordance with the SNI 03-0691-1996 about the brick of concrete paving block. Paving block were tested after a period of treatment of 28 days.

From the results of the study showed that the use of powdered glass in paving blocks are decreasing in value - average compressive strength test than paving blocks without glass powder. But the percentage of 30 % by value - average compressive strength and the wear resistance is 40.18 MPa and 0.068 mm / min still belongs to the same quality as the percentage of powdered glass paving blocks 0 % which are quality A. For water absorption in the percentage of 30 % glass powder is a variant of the value - average absorption of water , including the most good , namely 4.12% including into quality B. Then the variance percentage 30 % glass powder is a glass powder variant is best for partial replacement of alternative materials in cement on the manufacture of paving blocks.

Keywords : *Glass Powder, Paving Block, Compressive Strength, Wear Resistance, Water Absorption*