

**STUDY ON THE PERFORMANCE OF CEMENT STABILIZED
SILTY SOIL**

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**B. Eng (Hons) (Civil)
UNIVERSITI TEKNOLOGI MARA
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SILTY SOIL**

By

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Report submitted as the requirement for the degree of
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DECLARATION

I, Rabbiatul A'dawiyah Bt. Rosli, 2003362114, confirm that the work is my own and that appropriate credit has been given where reference has been made to the work of others.

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(Rabbiatul A'dawiyah Bt. Rosli)

30th November 2006

ACKNOWLEDGMENT

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This whole experience had been new for me, and I had the chance to enjoy myself during this thesis, I have gained a new knowledge and guidance about this study. I hope this complete thesis will provide more guidance and information to all individual about the soil stabilization.

Lastly, for the entire individual, which I not mentioned above, I wish upon God for them to have successful life and happiness. All their sacrifice will remain in my heart.

Thank you.

ABSTRACT

In Malaysia, silty soil deposit poses a difficult problem in civil engineering project. The low shear strength and high compressibility of silty soil have caused difficulties in excavation and construction of foundation. Chemical soil stabilization is an extensive method that has been used for improving the properties of soft soil. Cement is the most widely used additive for soil stabilization due to its high strength and availability. The primary objective of this study is to examine the effectiveness and performance of cement as a soil stabilization agent on fine soil (silty). This study will focus on the shear strength characteristic of silty soil treated with cement. Silty soil was taken from a site at Jalan Sungai Biawak, Permatang Pauh. The shear strength of the silty soil-cement was study in the laboratory. Other variable include in the study were cement content and curing period. The test result showed that the undrained shear strength of silty soil was improved with addition of cement. The plastic limit increase while liquid limit and plasticity index is decrease as increase the cement content. The optimum moisture content decrease and the maximum dry density is increase as increasing the percentage of cement. The Portland cement used as the stabilizing agent. The percentages of cement used in this study are 1%, 5% and 10% and curing for 1-day, 3-days, and 7-days. Curing day play an importance role in strength of treated soil, because strength increases with the age.