AN EVALUATION ON THE PERFORMANCE OF THE STABILIZED SILTY SOIL USING LIME AND RICE HUSK ASH

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DECLARATION

I Rahayu Binti Daud, 2004335586 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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ABSTRACT

Malaysia is moving towards a developed country status by year 2020. It's about 65% of soil in Malaysia consisting of fine soil such as clay, peat, silt and organic soil.Civil engineering projects such as highways, airfields, embankments and filling of plinth etc., involving construction over weak soil can create enormous problems during and after construction. These soils can only used after proper treatment. Generally lime, cement and bitumen have been used for soil stabilization.

The study focused on the performance of the chemical and waste material as a soil stabilization agent on the fine soil. The soil was collected at the Kampung Permatang Pauh, located nearby University Teknologi MARA, Pulau Pinang. Lime is used in the silt soil as stabilizer agent. Rice husk ash, the waste from paddy is mixing with the highly compressible soil reinforced in different proportions. The mix was subjected to some standards tests like compaction, liquid limit and unconsolidation undrained. Stabilization is done I combination of soil-chemical and soil –waste material by the weight of dry soil. The curing periods is 7 and 14 days.

The result shows that by using lime as the stabilizer agent, the strength of the soil increased compared to untreated soil. While using the waste material which is rice husk ash, the strength is decreases. As the time curing periods increase, the strength of the treated soil increase too especially in lime stabilization such as that for 7 days the strength is 125 kPa and for 28 days the strength increased to 526 kPa.

Key words: Soft soil, Chemical and Waste Material Stabilization, Unconsolidation Undrained Test

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