

ABSTRAK

Penelitian ini bertujuan untuk menganalisis stabilisasi tanah lempung dengan menggunakan campuran kapur alam terhadap nilai uji pemadatan dan nilai kuat geser. Metodologi penelitian meliputi pengumpulan data primer dan sekunder, serta analisis data menggunakan berbagai uji laboratorium seperti uji kadar air, uji pemadatan, uji Triaxial UU dan uji UCS. Hasil penelitian menunjukkan bahwa penambahan kapur alam pada tanah lempung meningkatkan nilai kuat geser dan memperbaiki sifat pemadatan tanah. Nilai kuat geser tertinggi diperoleh pada campuran kapur 10%, yaitu sebesar 19.521 Ø, sedangkan nilai kuat geser pada campuran kapur 20% dan 30% masing-masing sebesar 18.217 Ø dan 14.696 Ø. Berdasarkan nilai hasil pengujian UCS (unconfined Compressive Strength), Nilai q_u & q_{ur} tertinggi diperoleh pada campuran kapur 10% didapat nilai tanah undisturbed 3.444 (kg/cm^2), dan nilai untuk tanah remoulded 2.418 (kg/cm^2). sedangkan nilai q_u & q_{ur} pada campuran kapur 20% dan 30% masing-masing sebesar tanah undisturbed 2.477 (kg/cm^2), nilai untuk tanah remoulded 2.065 (kg/cm^2) dan tanah undisturbed 2.159 (kg/cm^2), nilai untuk tanah remoulded 1.746 (kg/cm^2). Maka, dapat disimpulkan bahwa tanah di kawasan Deltamas Cikarang Pusat, Kabupaten Bekasi merupakan tanah dengan konsistensi Very Stiff.

Kata Kunci : Tanah Lempung, Pemadatan, Triaxial UU, UCT Test.

ABSTRACT

This research aims to analyze the stabilization of clay soil using natural lime mixture on compaction test value and shear strength value. The research methodology includes primary and secondary data collection, and data analysis using various laboratory tests such as moisture content test, compaction test, Triaxial UU test and UCS test. The results showed that the addition of natural lime to clay soil increased shear strength values and improved soil compaction properties. The highest shear strength value was obtained in 10% lime mixture, which amounted to 19,521 Ø, while the shear strength value in 20% and 30% lime mixture amounted to 18,217 Ø and 14,696 Ø, respectively. Based on the value of the UCS (unconfined Compressive Strength) test results, the highest q_u & q_{ur} value was obtained in the 10% lime mixture obtained for undisturbed soil value of 3,444 (kg/cm²), and the value for remoulded soil was 2,418 (kg/cm²). While the q_u & q_{ur} values at 20% and 30% lime mixture respectively amounted to undisturbed soil 2,477 (kg/cm²), the value for remoulded soil 2,065 (kg/cm²) and undisturbed soil 2,159 (kg/cm²), the value for remoulded soil 1,746 (kg/cm²). So, it can be concluded that the soil in the Deltamas area of Central Cikarang, Bekasi Regency is a soil with Very Stiff consistency.

Keywords: Clay, Compaction, Triaxial UU, UCT Test.

