

# Inventarisasi Data Tanah DKI Jakarta Berdasarkan Hasil Pengujian Laboratorium Serta Pembuatan Korelasi Parameter Tanah = Jakarta Soil Data Based On The Result Of Laboratory Testing And Making Of Soil Parameter Correlations

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Abstrak

**ABSTRAK**

Penelitian ini bertujuan untuk mengetahui jenis tanah, korelasi parameter tanah dengan kedalaman, dan korelasi antar parameter tanah di wilayah DKI Jakarta berdasarkan hasil pengujian laboratorium di Laboratorium Mekanika Tanah Universitas Indonesia. Hasil penelitian ini menunjukkan bahwa jenis tanah DKI Jakarta dominan terdiri dari 2 (dua) jenis tanah yaitu MH (lanau dengan plastisitas tinggi) dan SM (pasir berlanau). Berdasarkan korelasi parameter tanah dengan kedalaman di wilayah DKI Jakarta maka didapatkan kadar air ( $W_c$ ) berkisar 19.7-133.5%, liquid limit (LL) berkisar 39-129%, plastic limit (PL) berkisar 28-77%, plasticity index (PI) berkisar 8-51.5%, density ( $\gamma$ ) berkisar 12.8-18.5 kN/m<sup>3</sup>, specific gravity ( $G_s$ ) berkisar 2.5-2.77, kohesi ( $c$ ) berkisar 0-69 kN/m<sup>2</sup>, sudut geser berkisar 0-31°, angka pori ( $e_0$ ) berkisar 0.4-3.1, tegangan overburden ( $P_o$ ) berkisar 15-144 kPa, tegangan pre-consolidated ( $P_c$ ) berkisar 37-358 kPa, indeks kompresi ( $C_c$ ) berkisar 0.09-1.51, dan indeks pemampatan kembali ( $C_r$ ) berkisar 0.01-0.32. Berdasarkan korelasi index properties dan engineering properties, yaitu korelasi antara  $C_c$  dengan PI,  $C_c$  dengan LL,  $C_c$  dengan  $e_0$ ,  $C_c$  dengan  $W_c$ ,  $e_0$  dengan  $W_c$ , dan  $e_0$  dengan  $\gamma$ ;, menghasilkan koefisien korelasi dengan tingkat hubungan kuat, kecuali korelasi antara  $C_c$  dengan PI dan  $C_c$  dengan LL pada Kelompok 1 dan Kelompok 2 kurang dapat diandalkan karena memiliki koefisien korelasi dengan tingkat hubungan rendah.

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**ABSTRACT**

This study aims to determine the type of soil, the correlation of soil parameters with depth, and the correlation between soil parameters in the DKI Jakarta region based on the results of laboratory testing at the University of Indonesia's Laboratory of Soil Mechanics. Statistical data processing uses Microsoft Excel to graph, linear equations, calculation of the coefficient of variance (COV) and correlation coefficients. The results of this study indicate that the type of soil in the DKI Jakarta area is dominant consisting of 2 (two) types of soil, namely MH (silt with high plasticity) and SM (silty sand) with high plasticity. Based on the correlation of soil parameters with depth in the DKI Jakarta area, the  $W_c$  was 19.7-133.5%, LL was 39-129%, PL was 28-77%, PI was 8-51.5%,  $\gamma$  was 12.8-18.5 kN/m<sup>3</sup>,  $G_s$  was 2.5-2.77,  $c$  was 0-69 kN/m<sup>2</sup>, friction angles was 0-31°,  $e_0$  was 0.4-3.1,  $P_o$  was 15-144kPa,  $P_c$  was 37-358kPa,  $C_c$  was 0.09-1.51, and  $C_r$  was 0.01-0.32. Based on correlation index properties and engineering properties, the correlation between  $C_c$  and PI,  $C_c$  with LL,  $C_c$  with  $e_0$ ,  $C_c$  with  $W_c$ ,  $e_0$  with  $W_c$ , and  $e_0$  with  $\gamma$ ;, produces a correlation coefficient with a strong level of correlation.