ABSTRACT

CORRELATION OF SHEAR STRENGTH PARAMETERS USING TRIAXIAL TEST AND DIRECT SHEAR TEST ON CLAY SUBSTITUTION ON SAND

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This study aims to get the relationship (correlation) between the shear strength parameters obtained from unconsolidated undrained triaxial test and direct shear test. The test results were analyzed using multiple linear regression analysis between the results of unconsolidated undrained triaxial tests, the results of direct shear test, and physical properties of the soil mixture to obtain a simple equation to estimate the shear strength parameters based on the results of unconsolidated undrained triaxial test, results of direct shear test, and physical properties of the mixed soil.

By using multiple linear regression analysis, correlation shear strength parameters (c and ϕ) between the results of triaxial, direct shear test, and physical properties of soil tests is obtained. The Cohesion value of triaxial test results are bigger 1.1 to 1.3 kg/cm2 than the value of cohesion direct shear test for wet conditions with an average difference of 1,26kg /cm2 and 0.7 – 0,9kg/cm2 for dry conditions with average differences 0,892kg/cm2. While the value of the angle of internal friction of direct shear test results for wet conditions are bigger 24^o - 42^o than the angle of internal friction of triaxial test with average differences $35,138^o$ and for dry conditions is bigger 1,7-19,7^o than the angle of internal friction of triaxial test with an average difference of $11,56^o$.

Keywords: triaxial, direct shear, correlation, shear strength