

ABSTRACT

A STUDY OF VANE SHEAR DEVICE BASED ON VARYING HEIGHTS OF VANE

by

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There are some methods to determine soil shear strength such as direct shear strength test, triaxial test, unconfined compression test, vane shear test. Each testing results in different test result for the same object of test. This is possibly because of different test procedures, different test device mechanisms, and different target of test result from each test device in determining soil parameters. Therefore, a careful soil examination is required especially to find out parameter and characteristic of soil shear strength within vane shear test in the field.

The object test in this research was soft clay soil from Rawa Sragi region in Belimbing Sari village, Jabung, Eastern Lampung district. Test was directly conducted in the field with 50 points of tests with different depths according to vane shaft abilities to penetrate soil and maximum reading at torsi meter dial. The vane shear device to use contained of standard and height modified vane eyes.

The results showed that the average shear values of standard vane shear and modified vane shear devices were 0.54 kg/cm^2 and 0.48 kg/cm^2 respectively. Therefore, a decrease of 9.84% in 30 cm depth was obtained. In the 60 cm depth, the shear values of of standard vane shear and modified vane shear devices were 1.12 kg/cm^2 and 1.14 kg/cm^2 respectively. Therefore, an increase of 1.10% was obtained. There was a difference percentage value between graphic of 30 cm deponth and 60 cm depth because the performance of the device was not maximum. The device was in fact to use for turf soil, but it was used in clay soil.

Keywords : *Field Vane Shear Test, Clay Soil.*