

## **ABSTRACT**

### **COMPRESSIVE STRENGTH AND SHEAR STRENGTH CORRELATION ON CLAY SUBSTITUTED WITH A VARIETY OF SAND MIXTURE**

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This research aims to determine the compressive strength and shear strength on clay which is substituted with a mixture of sand variations. Soil tested in this study is derived from clay Belimbing Sari Village, Jabung District, East Lampung. This is done because if you set up a structure on top of the clay will cause some problems, among others, the small value of compressive strength and shear strength of the soil. To see the behavior of soil structure is then done mixing sand with varying levels of mixing sand.

To determine the effect of mixing clay with sand on the compressive strength and shear strength, it is done by varying the mixing of sand by 10%, 20%, 30%, 40%. Testing was conducted on the physical properties testing undisturbed clays and clay that is mixed with sand and doing mechanical testing which is test of direct shear and compressive strength testing by compaction using standard proctor.

From the test results it is obtained that the increase in the value of maximum shear strength of 0.7534 kg / cm<sup>2</sup> and a decrease in cohesion value of 0.10 kg / cm<sup>2</sup> at mixing the sand as much as 40%. In the compressive strength reaches a maximum value at 30% of the mixing done 4 variation is equal to 0.4996 kg / cm<sup>3</sup>. The greater the level of sand were added then the lesser the value of the soil cohesion, shear angle and the compressive strength will increase although the maximum compressive strength value in mixing 30% sand.

Keywords: Clay, Sand, Soil Compressive Strength, Soil Shear Strength