ABSTRACT

THE CORRELATION OF LIQUID LIMIT AND PLASTICITY INDEX OF CLAY THAT SUBSTITUTED BY SAND TO COHESION VALUE ON DIRECT SHEAR TEST

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The Clay has a low shear force properties, large density, small permeability coefficient and has a low bearing capacity. To increase the bearing capacity of the clay can be used a mixture of sand. In this study, the test is done by using the Direct Shear test, which will be a reference in relation of liquid limit and plasticity index to the value of cohesion (c) of each soil sample that has been substituted with sand.

Soil samples used an original soil samples and disturbed soil of clay that comes from three locations: the area Margakaya Jati Agung South Lampung, Palputih Karang Anyar South Lampung, and Belimbing Sari Jabung East Lampung. Clay will be mixed with sand No.40 sieve (0.43 mm) in accordance with the required percentage of the variation in sand content of 0%, 5%, 10%, and 15%.

Based on AASHTO classification system, the three of soil include to the class of ordinary clay soil up to bad as subgrade material. The addition of sand mixture into three types of clay causing decreased shear strength. The greater the addition of sand content, then the value of cohesion (c), liquid limit and plasticity index of the soil will decrease and shear angle will increase.

Keywords: shear force, Atterberg limits, Clay, Sand.