ABSTRACT

LOADING AND UNLOADING BEHAVIOR OF ORGANIC SOIL SUBSTITUTED WITH ROUGH GRADATION MATERIAL (SAND)

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Soil in the field in a certain depth had undergone maximum effective pressure because of soil weight above it. This maximum effective overburden pressure may be equal to or less than overburden pressure when the organic soil sample was taken. When the organic soil sample was taken, it was released from its overburden pressure so that the sample will expand. When the total burden given at the experiment is bigger than the maximum effective overburden pressure it had ever undergone, the change of pore value will be bigger. Base on that thing it need to conduct a test by weighting the soil sample over the maximum overburden pressure or named as loading, then the weight lifted (unloading) and given another weight (reloading).

In this experiment, it conduct a chemical soil characteristic test and physical soil properties, also consolidation on organic soil test that substituted by hard degradated material by seeing and comparing soil behaviour when its being given the weight (loading) and without the weight (unloading). The consolidation procedure test by doing the weighting started to see the consolidation coefficient (Cv) that happens and the repetation compression index (Cr) from three samples which is sample A, B, and C with each sand mixture percentage of 5%, 10%, and 15%.

On the test procedure, from this three samples gets the result that on sample B which is sand mixture of 10% have the lowest compression index (Cc) and repetation compression index (Cr), while the consolidation coefficient test (Cv) sample B has the fastest consolidation time. This things can be seen from the connection of sand percentage and Cv variation diagram and get the result of 1,1 cm^2/second. The best result in this test is the sample with the fastest consolidation process speed and the lowest consolidation value on sample with the lowest Cv, Cc, and Cr value.

Keywords: Organic soil, Loading Unloading, Soil Consolidation