

ABSTRACT

THE STUDY OF SOFT CLAY SOIL BEARING CAPACITY USING ECOMIX ADDITIVE MATERIAL AND CEMENT

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Soil condition in a particular area will not have the same soil properties with other areas. Some soil has good bearing capacity while some others not. This is influenced by the conditions of the type of the soil itself, so that in a construction project, a good knowledge analysis on soil behavior, physical property, and mechanics is required.

In this research, the soil to test is soft clay soil from Rawa Sragi area of Belimbing Sari village, in Jabung sub district of East Lampung regency, Lampung province. The soil properties were as the following: specific gravity 2.546; water content 50.64%, liquid limit 61.26%, plasticity limit 30.77%, plasticity index 30.49%, and material sieve passing no. 200 was 90.42%. Additive material to use was Ecomix. There were three treatments of ecomix mixtures of 3 gr, 4 gr, and 5gr with 0.4 kg cement and 6 kg soft clay soil samples. The mixture samples were letting aside for 7 days and soaked for 4 days.

The results showed that the ecomix addition to mixture or cement and soft clay soil was able to improve the soil mechanical and physical properties. The physical test results such as specific gravity, optimal water content, and plasticity index tests showed decreasing results after soil stabilization. The maximum CBR value was obtained in mixture of 34.49% in non-soaked condition, while the lowest CBR value was 8.2% soaked condition. The CBR test results showed that the soil mixture of ecomix additive material and cement can be used for road construction subgrade because the CBR value was $\geq 6\%$.

Keywords : Ecomix, stabilization, soft clay soil, CBR