Effect of "A Polyurethane Mastic" on Shear Strength of Gypsiferous Soil

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Abstract

The importance of decreasing the cost of soil structures due to the budget constraints makes engineers avoid handling large volumes of soil, thus making maximum use of local materials. Soil performance change in order to improve engineering applications of soil is called soil stabilization. Soil stabilization methods can be mechanical, electrical, thermal, chemical, etc. Gypsiferous soil including soils used in civil affairs and special structures in the vicinity of water needs to be established. This study is conducted to evaluate changes of shear strength of gypsiferous soil, using chemical method by addition of "A polyurethane Mastic". The studied gypsiferous soil was prepared from 3km north-west of Ramhormoz in Khuzestan province. Soil samples containing 0%, 1%, 2%, 3%, 5% and 7% of the said material additive were compressed with optimum moisture content obtained from standard Procter test, and finally, were tested under the direct shear test at shear rate of 0.5 mm per minute. After achieving cohesion parameters of soil, the best mix of the additive "A polyurethane Mastic" was found to be 5%.

Keywords: Gypsiferous soil, A polyurethane Mastic, Shear strength, Optimum moisture.

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