



Contribution ID: 76

Type: **Oral Presenter**

Enzymatic Stabilization of Expansive Soil

Tuesday 3 April 2018 10:20 (20 minutes)

Expansive soils are problematic soils and are not suitable for infrastructure construction due to their down-graded properties like low shear strength, low bearing capacity and high shrink and swell potential. Soil stabilization is an effective and useful technique used to enable expansive soils for the construction purpose. Microbial geo-technology deals with the application of biological products on soil to make the soil more feasible for infrastructural construction. Some of these biological products are terrazyme, permazyme, urease, fujibatone, etc. Soil used in this research was taken from Gujranwala region. And the enzyme used in this research was terrazyme. Soil was treated with three different dosages of terrazyme. For optimization of enzyme content unconfined compressive strength test was performed. For compaction characteristics of soil modified proctor test was performed. Increase in optimum moisture content and maximum dry density was observed in treated soil. Atterberg's limit test was performed and decrease in liquid limit and plasticity index was noted in treated form. Unconfined compressive strength test was performed to check the strength characteristics of soil. UCS test was performed for both soaked and unsoaked conditions. In unsoaked conditions 6 times improvement was observed in soaked conditions improvement was more than 25 times. One dimensional swell potential was noted and decrease in swell potential was observed and in treated form swell potential was decreased to 0.73 percent from 5.1 percent. Increase in soaked CBR was almost 5.5 percent.

Author: Mr LIAQAT , Nabeel (Swedish college of engineering and technology wah cantt)

Co-authors: Mr KHAN, Nasir Ayaz (Swedish college of engineering and technology wah cantt); Mr AHMED, Khattak (Swedish college of engineering and technology wah cantt); Mr KHAN, Muhammad Aftab (Swedish college of engineering and technology wah cantt); Mr UMAR, Muhammad (Swedish college of engineering and technology wah cantt); Mr BASIT, Abdul (Swedish college of engineering and technology wah cantt)

Presenter: Mr LIAQAT , Nabeel (Swedish college of engineering and technology wah cantt)

Session Classification: Geological Engineering and Geosciences

Track Classification: Geological Engineering