

## Mechanical Properties of a Soil Stabilized With a Portland Cement

**Authors :** Ahmed Emad Ahmed, Mostafa El Abd, Ahmed Wakeb, Moahmmed Eissa

**Abstract :** Soil modification and reinforcing aims to increase soil shear strength and stiffness. In this report, different amounts of cement were added to the soil to explore its effect on shear strength and penetration using 3 tests. The first test is proctor compaction test which was conducted to determine the optimal moisture content and maximum dry density. The second test was direct shear test which was conducted to measure shear strength of soil. The third experiment was California bearing ratio test which was done to measure the penetration in soil. Each test was done different amount of times using different amounts of cement. The results from every test show that cement improve soil shear strength properties and stiffness.

**Keywords :** soil stabilized, soil, mechanical properties of soil, soil stabilized with a portland cement

**Conference Title :** ICSMGE 2022 : International Conference on Soil Mechanics in Geotechnical Engineering

**Conference Location :** Dubrovnik, Croatia

**Conference Dates :** October 06-07, 2022