

Evaluation of Shear Strength Parameters of Rudsar Sandy Soil Stabilized with Waste Rubber Chips

Authors : R. Ziaie Moayed, M. Hamidzadeh

Abstract : The use of waste rubber chips not only can be of great importance in terms of the environment, but also can be used to increase the shear strength of soils. The purpose of this study was to evaluate the variation of the internal friction angle of liquefiable sandy soil using waste rubber chips. For this purpose, the geotechnical properties of unmodified and modified soil samples by waste lining rubber chips have been evaluated and analyzed by performing the triaxial consolidated drained test. In order to prepare the laboratory specimens, the sandy soil in part of Rudsar shores in Gilan province, north of Iran with high liquefaction potential has been replaced by two percent of waste rubber chips. Samples have been compressed until reaching the two levels of density of 15.5 and 16.7 kN/m³. Also, in order to find the optimal length of chips in sandy soil, the rectangular rubber chips with the widths of 0.5 and 1 cm and the lengths of 0.5, 1, and 2 cm were used. The results showed that the addition of rubber chips to liquefiable sandy soil greatly increases the shear resistance of these soils. Also, it can be seen that decreasing the width and increasing the length-to-width ratio of rubber chips has a direct impact on the shear strength of the modified soil samples with rubber chips.

Keywords : improvement, shear strength, internal friction angle, sandy soil, rubber chip

Conference Title : ICSR 2018 : International Conference on Soil Reinforcement

Conference Location : Dublin, Ireland

Conference Dates : August 16-17, 2018