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Effect of Waste Bottle Chips on Strength Parameters of Silty Soil

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Abstract : Laboratory consolidated undrained triaxial (CU) tests were carried out to study the strength behavior of silty soil reinforced with randomly plastic waste bottle chips. Specimens mixed with plastic waste chips in triaxial compression tests with 0.25, 0.50, 0.75, 1.0, and 1.25% by dry weight of soil and tree different length including 4, 8, and 12 mm. In all of the samples, the width and thickness of plastic chips were kept constant. According to the results, the amount and size of plastic waste bottle chips played an important role in the increasing of the strength parameters of reinforced silt compared to the pure soil. Because of good results, the suggested method of soil improvement can be used in many engineering problems such as increasing the bearing capacity and settlement reduction in foundations.

Keywords : reinforcement, silt, soil improvement, triaxial test, waste bottle chips
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