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IMPROVING THE SHEAR STRENGTH BEHAVIOUR OF SOIL USING RUBBER TYRE WASTE

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ABSTRACT: Construction of engineering structures on weak or soft soil is considered as unsafe. Improvement of load bearing capacity of the soil may be undertaken by a variety of ground improvement techniques. In the present investigation, powdered rubber from waste has been chosen as the stabilizing material and cement as binding agent which was randomly included into the soil at different percentages of rubber tyre content, i.e. 2% 4% 6% 8% and 10% by weight of soil. The tyre waste used in this study was metal strip removed. The investigation has been focused on the strength and CBR behavior of soil with randomly included powdered rubber. Initially the Virgin Soil is tested for Index Properties to Classification of Soil. By conduction Soil Classifications test, it is categorized as High Plasticity Clay (CH). Then the Virgin soil and stabilized samples were tested for California bearing ratio and Unconfined compression tests. The test results obtained are compared with virgin samples and inferences are drawn towards the usability and effectiveness of rubber tyre waste. The low strength and high compressible soft clay soils were found to improve by addition of powdered rubber and cement. It can be concluded that powdered rubber tyre can be considered as a good stabilizing material.

Keywords: High Plasticity Clay, Rubber Tyre Waste, Soil Stabilization, Shear Strength and CBR

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