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# Experimental Study for Pull-out Load of Reinforced Sand Soil with Geogrid

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**Abstract**—Geosynthetics have been widely employed to reinforce the soils over the last two decades. Pullout resistance and interface friction resistance of the geogrids are crucial design parameters for some geotechnical applications. In this study, the effects of pull-out resistance of geogrid material embedded in sand soil was examined by using simple shear test set-up with a little modification. Thus, a series of experiments carried on sand soil with different relative densities and gradations. In the tests, poor graded sand was reinforced with geogrid. The reinforcement material has 0,85 mm thickness and 1 cm grid aperture. It can be inferred from experiments that behavior of pull-out resistance had resemblance to classical load-displacement behavior of soil. Classically when displacement increases pull-out resistance increases until a certain displacement but after a certain pull-out resistance when displacement increases pull-out resistance decreases. The tests showed that, the increase in relative density led to increase in pull-out load. Due to the interlocking of soil grains with geogrid gaps, interface friction between soil and geogrid was also observed greater than internal friction of soil.

**Keywords**— Geogrid, sand, pull-out resistance, reinforced soil.

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