

Experimental Study on Weak Cohesion Less Soil Using Granular Piles with Geogrid Reinforcement

Authors : Sateesh Kumar Pisini, Swetha Priya Pisini

Abstract : Granular piles are becoming popular as a technique of deep ground improvement not only in soft cohesive soils but also in loose cohesionless deposits. The present experimental study has been carried out on granular piles in sand (loose sand and medium dense sand i.e. relative density at 15% and 30%) with geogrid reinforcement. In this experimental study, a group of five piles installed in sand (at different spacing i.e $s = 2d, 3d$ and $4d$) the length and diameter of the pile ($L = 0.4$ m and $d = 50$ mm) kept as same for all series of experiments. Geogrid reinforcement is provided on granular piles with a limited number of laboratory tests. It has been conducted in laboratory to study the behavior of a granular pile with reinforced geogrid layers supporting a square footing at different s/d ratios. The influence of geogrid layers providing on granular piles investigated through model tests. In this paper the experimental study carried out results in significant increase in load carrying capacity and decrease in settlement reduction of the weak cohesionless soil. Also, the behavior of load carrying capacity and settlement with changing the s/d ratio has been carried out through a parametric study.

Keywords : granular piles, cohesionless soil, geogrid reinforcement, load carrying capacity

Conference Title : ICCGGE 2016 : International Conference on Civil, Geomechanical and Geotechnical Engineering

Conference Location : Zurich, Switzerland

Conference Dates : July 21-22, 2016