

EFFECT OF GEOGRID REINFORCEMENT ON INTERFACE FOR A STRATIFIED EMBANKMENT

Danny Useche Infante^{1,2}, Gonzalo Aiassa Martinez¹, Pedro Arrúa¹ and Marcelo Eberhardt¹

¹ Facultad Regional Córdoba, Universidad Tecnológica Nacional, Argentina; ² Doctoral Fellow CONICET, Argentina

ABSTRACT: Reinforced granular embankments are often placed on soft soil strata for an efficient and economical transfer of superstructure load. This paper describes laboratory tests on circular footing supported on unreinforced and geogrid-reinforced granular soil. Two types of geogrid layer, uniaxial and biaxial geogrid, were placed at the interface of sub-base soil and granular base of an embankment formed on soft ground to support shallow foundations. Load test were conducted with the aim to determine the performance improvement of the circular footing due to the provision of both types of geogrid reinforcement in the soil. Also studied the effect produced by anchoring geogrid layer at the edge of the mold sample. The results showed that the inclusion of a geogrid layer at the interface of sub-base soil and granular base increase the magnitude of the footing bearing capacity and decreases the settlement of the system. The study shows that the type of geogrid used has direct influence on stress-strain behavior of soil-geogrid system and better results occurred when the geogrid was anchored to test mold.

Keywords: Shallow Foundations, Geogrid, Reinforcement, Bearing Capacity Ratio, Settlement