International J.of Multidispl.Research & Advcs. in Engg.(IJMRAE),
ISSN 0975-7074, Vol. 4, No. II (April 2012), pp. 195-200

IMPROVEMENTS IN MODULUS OF ELASTICITY OF SAND CUSHION USING SINGLE LAYER OF GEOTEXTILE

V. J. SHARMA[a], S. A. VASANVALA[b] AND C. H. SOLANKI[c]
[a]Research Scholar, Applied Mechanics Department, SVNIT, Surat-395007, India
[b]Associate Professor, Applied Mechanics Department, SVNIT, Surat-395007, India
[c]Associate Professor, Applied Mechanics Department, SVNIT, Surat-395007, India

Abstract

In the system of composite piled raft, the short piles made of flexible materials are used to strengthen the shallow soft soil, while the long piles made of relatively rigid materials are used to reduce the settlements and the cushion beneath the raft is used to redistribute and adjust the stress ratio of piles to sub soil. In this paper modulus of elasticity of sand cushion have been increased. An experimental test is developed to study the improvement in E of sand cushion with inclusion of reinforcement. The reinforcement used is geotextile. First E of unreinforced sand is determined which is compared with E obtained after inclusion of single layer of geotextile . For single layer of geotextile the increase in E for geotextile of minimum tensile strength was 195% where as 360% for geotextile of higher tensile strength with respect to unreinforced E.

Keywords : Composite piled Raft, Geotextile, Modulus of elasticity, LVDT.