BEST: International Journal of Management, Information Technology and Engineering (BEST: IJMITE)
ISSN (P): 2348-0513, ISSN (E): 2454-471X,
Vol. 4, Issue 4, Apr 2016, 75-82

CALCULATION THE UPLIFT OF ISOLATED PILES FOUNDED IN SWELLING SOIL

BAHEDDI MOHAMED[1], DJAFAROV MEKHTI[2] & CHARIF ABDELHAMID[3]

[1]Professor, Department of Civil Engineering, laboratory L.R.N.A.T., University of Banta, Algeria

[2]Professor, Laboratory of Soil Mechanics, Azerbaijan Civil Engineering University, Baku, Azerbaijan

[3]Professor, College of Engineering, King Saud University, Riyadh Saudi Arabia

ABSTRACT

Swelling soils are found in many regions throughout the word. The state of the practice in this area has been changing over the past decades. Design of foundations for expansive soils is an important challenge faced by engineers. The methods and principles currently used for the design of foundations on swelling soils involve important problems due to non-uniform deformations of these soils when subjected to structural loads. In situ and laboratory tests were used to investigate the most fundamental aspects. This article analyses the behaviour of a pile in a swelling soil when it is moistened. The tendency that develops at the present time, for the design of a pile in a swelling soil, consists in verifying the calculation of the bearing capacity of piles, taking into account the reduction of the resistance induced by the swelling soil on the lateral surface of the piles. This situation leads to an upward displacement of the pile, and, in case of excessive humidity the characteristic of the rigidity as well as the bearing capacity charge, which in this case decreases. An analytical approach of introducing a contribution, proposed method consists in calculating the rise of the pile, based on the study of the influence of a swelling clay type and the length of the pile.

KEYWORDS: Swelling Soil, Piles, Uplift, Tension