A COMPARISON BETWEEN DIFFERENT CRITERIA IN EVALUATING THE BEARING CAPACITY OF A BORED PILE IN BHGHDAD CITY

Abstract:
There are a number of criteria used to determine the bearing capacity of piles, some of which depend on mathematical relations and the others depend on statistical studies including testing a number of piles and derivations of the relations from interpolation of the load-settlement relations obtained from load tests of piles. It is known that some criteria may be useful for a type of piles such as driven piles and not suitable for other types such as bored piles.

In this paper, a comparison is made between different criteria for evaluation of the bearing capacity of a bored pile constructed in Baghdad city. The pile is (40 m) long and (1.5 m) in diameter. The American standard ASTM D1143 was followed during the standard pile load test. The criteria used included the tangent graphical method, Chellis method, Poulos and Davis method, Goodman and Karol method, the method of load-settlement curve, Cheng and Evett (1981) method, Terzaghi method, Chin-Kondner method, and others.

It was found that some criteria are very conservative like Chellis method while the Chin-Kondner extrapolation method, the method of ultimate load by Hansen (1963) and the method of logarithm of the load versus logarithm of the settlement gave high estimations of the bearing capacity, and it is thought that these methods are not suitable