عنوان مقاله:

Numerical and Theoretical Study of Plate LoadTest to Define Coefficient of Subgrade Reaction

محل انتشار:

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خلاصه مقاله:

One of the important parameters required to evaluate the behaviorof soils under loading condition is coefficient of subgrade reaction(Ks), which is being used widely to determine the kind offavorable foundation. There are many theoretical and laboratoryapproaches that released some relations to achieve the value of Ks.One of the most effective and fastest in-situ procedures to find Ksis plate load test (PLT). In this test a plate with 30 to 45 cmdiameter is loaded through incremental multi-stage and thecorresponding soil settlement is monitored stage by stage. Inrecent years numerical methods have been significantly used tosimulate some geotechnical tests. This paper presents the threedimensional simulation of PLT, investigated by using finiteelement code, and compares the results obtained from site studieswith the results of the numerical modelling. During verification, itwas found that a constant number must be used to be multiplied inthe modulus of elasticity as an input of finite element code(ABAQUS). This constant is estimated to be 3. Then, the obtainedconstant was used to estimate the Ks of another site. The resultsshow that the relation has sufficient accuracy in soft soils but itcannot be reliable in coarse one. Also, the goal of this researchwas to explore the ability of numerical modeling to evaluate thevalue of Ks without performing some plate load tests, .wasachieved

کلمات کلیدی:

Numerical analysis, plate load test, settlement, coefficient of subgrade reaction