

عنوان مقاله:

Optimization of superposition of geogrid layers in lean clay

محل انتشار:

ششمین کنفرانس بین المللی پژوهش در علوم و مهندسی و سومین کنگره بین المللی عمران، معماری و شهرسازی آسیا (سال: 1400)

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خلاصه مقاله:

Geogrids are used to increase the ultimate bearing capacity (BC) of the foundation, and this requires excavation to the depth of placement of the last layer of geogrid, which economically changes the choice of the optimal arrangement of geogrids. In most studies, the optimal arrangement of geogrids in granular soil has been determined without considering the excavation depth criteria. In this research, different states of placement of geogrid layers in lean clay have been investigated and according to the excavation depth and ultimate BC of the foundation, the optimal state has been determined. For this purpose, a soil sample was collected from the western region of Kerman, Iran and its parameters were obtained through the necessary experiments. Then, various factors such as depth, number and distance of geogrids were tested under surface load using Plaxis finite element program. The results show that by placing and increasing the number of geogrid layers in lean clay, the BC of the foundation increases significantly. The magnitude of this effect is a function of the number, the distance of the first layer from under the foundation and their distances from each other. Also, the optimal arrangement of geogrids has been determined by considering the criteria of ultimate BC of foundation and excavation depth for a number of different layers.

کلمات کلیدی:

Bearing Capacity, Strip Foundation, Geogrid, Excavation Depth, Optimal Arrangement of Geogrid

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