عنوان مقاله:

Experimental and Numerical Parametric Studies on Inclined Skirted Foundation Resting on Sand

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خلاصه مقاله:

Skirted foundation behavior is enhanced due to the increase in skirt angle. The bearing capacity of the inclined skirted foundations resting on sandy soil is influenced by the soil parameters and skirting systems. Finite element analyses were carried out using Plaxis-3D software to find out the influence of the relative density, the internal friction angle of the supported soil, and the additional skirts on the bearing capacity of the inclined skirted foundations. The experimental work on a small physical scale was also carried out to support the numerical findings, which give an acceptable agreement. The findings revealed that the increase in relative density resulted in a significant increase in the bearing capacity of the inclined skirted foundation. In the same way, as the internal friction angle increases, the bearing capacity is affected by this increase, which improves the bearing capacity value. The effect of the additional skirts on the bearing capacity is observed to be neglected, and, in some cases, it causes a negative effect. The findings of this study contribute to a greater comprehension of the behavior of inclined skirted foundations and can assist in the future design of more efficient and effective foundation systems. Doi: 10.28991/CEJ-2023-09-07-017 Full Text: PDF

کلمات کلیدی:

Inclined-Skirted Foundation; Bearing Capacity; Sand; Internal Friction Angle; Relative Density; Additional Skirt.

لینک ثابت مقاله در پایگاه سیویلیکا:

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