عنوان مقاله:
Bearing Capacity of Tapered and Step-tapered Piles Subjected to Axial Compressive Loading

محل انتشار:
هفتادمین همایش بین المللی سواحل، بنادر و سازه های دریایی (سال:1385)

تعداد صفحات اصل مقاله: ۶ صفحه

نویسندگان:
Mahmoud Ghazavi - Associate Professor, Civil Engineering Department, K.N. Toosi University of Technology, Tehran, Iran
Arash Alimardani Lavasan - PhD Student, Civil Engineering Department, K.N. Toosi University of Technology, Tehran Iran

خلاصه مقاله:
In this paper the bearing capacity of cylindrical, tapered and stepped piles under vertical static loads has been investigated using finite difference method based on the commercially available code, FLAC 3D (Fast Lagrangian Analysis of Continua). The pile is assumed to have linearly elastic. The main objective of the paper is to investigate whether a tapered pile can be idealized as some prismatic segments connected rigidly at nodes. The soil failure is assumed to obey Mohr-Coulomb criterion. The soil-pile interaction has been modeled using interface elements. Such elements allow the pile to slip from the soil when necessary. A cylindrical pile of the same volume and length has also been analyzed. This facilitates to compare load carrying capacity of prismatic, uniformly tapered, and step-tapered piles of the same volume and length. To ensure the accuracy of the constructed numerical model of piles, the results obtained from numerical analysis have been compared with those obtained from experimental and theoretical approaches. This comparison indicates a very good agreement. It will be shown that a uniformly tapered pile cane be confidently idealized as a number of prismatic segments which are connected to each other. This is an interesting finding and enables users to apply simple one dimensional numerical analysis for determination of pile capacity.

کلمات کلیدی:
-Finite difference method, pile foundations, tapered pile, bearing capacity, Mohr coulomb criterion.

لینک نتیجه نهایی مقاله در سیویلیکا:
https://www.civilica.com/Paper-ICOPMAS07-ICOPMAS07_192.html

این صفحه به محتویات ناپایدار نمایه مقاله در سیویلیکا استثنایی سیویلیکا می باشد. در هر لحظه به منشور ناپایید اصلاح این گواهی می توانید وضعیت نتیجه نهایی را از طریق لینک فوق به صورت آنلاین کنترل
نمایید.