

Analysis of the causes of photovoltaic board pile foundation collapse

How inclination affect the deformation characteristics of PHC pile foundations?

The study assessed the inclination of the column top, ground displacement, and torsion to analyze the stress and deformation characteristics of PHC pile foundations. The deformation of PHC short pile foundations exhibited distinct phases. Torsional load reduced the column crack load by 30%.

Can a simulation of pile failure be used in seismic design?

The results of the simulations of pile failure for each loading direction provide a useful explanation of the observed damage to pile foundations. The proposed analysis method can be considered a practical approach to the seismic design of foundations subject to severe earthquakes.

What causes a pile foundation to fail?

Integrity test results reveal that improper bulb formation and shorter as-built length than the designed are the leading causes of failure. Different performance criteria (uplift, compressive, and lateral capacities) of the in-service pile foundation are estimated through extensive finite element analysis and conventional approaches.

Does pile foundation construction and settlement affect adjacent buildings?

And, the existing reference materials about the influence of pile foundation construction and settlement on adjacent buildings are relatively few, but in practical engineering, the influence of pile foundation construction and settlement on adjacent buildings has been paid more and more attention.

Can a foundation structure model simulate pile failure?

An analytical study was performed using a foundation structure model to simulate the distinctive pile failure modes observed during the 2011 off the Pacific coast of Tohoku earthquake. In the analysis model, a remarkably damaged frame was removed and used as a calculation model consisting of piles with soil springs.

How to measure the deformation and stress state of PHC piles?

However, due to the fact that the foundation part of PHC piles was buried in the soil, it was challenging to obtain the deformation and stress state through monitoring means. There was no direct test method available for measuring the deformation of short pile foundations beneath the ground.

According to the geological engineering investigation data, the typical geological profile under a borehole can be obtained and the strata under the site are simplified in ...

- ACI/CFA Piles - Barrette Piles o Marine Foundations o Special Piles DESIGN o Design Criteria - Policy - Technical - Environmental o SI Planning o Parameters Selection o ...

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2. Analysis of the Bearing Capacity Foundation Structural buildings in compressible soil locations are generally designed to use pile foundations to provide sufficient bearing capacity (Das, ...

In a global society, in which geotechnical projects are increasingly designed in a country other than the one where construction takes place, geotechnical risk management must be extended to cover infrastructure ...

As a reliable building foundation form, piles are driven into collapsible soil layers to ensure stability of foundations. Because of water immersion, significant subsidence occurs ...

vi. Identify possible collapse scenarios and rationalise conflicting facts or evidences vii. Determine the major contributory and triggering factors that cause the collapse viii. Conduct advanced ...

It is hoped that the guidelines for implementing risk-based bored pile work can be used by specialist contractors to minimize the impact of negative risks that may occur in the ...

Request PDF | On Oct 1, 2017, Yanhui You and others published Causes of pile foundation failure in permafrost regions: The case study of a dry bridge of the Qinghai-Tibet Railway | Find, read and ...

Keywords: Foundation; Failure; Forensic analysis; Causes of failure; Remedial measures. 1 Introduction Many structures are built with foundations that are not able to suit the soil ...

Pile foundation is widely used deep foundation for complex geologic conditions with kinds of load conditions, especially for soft soil foundation. Pile foundation has large bearing capacity, well stability and small differential settlement ...

This results in more complicated loading characteristics for the pile foundation. The pivotal aspect of pile foundation design encompasses the assessment of its horizontal load-bearing capacity, ...

The major problem concerning the seismic resistant design of pile foundations is the presence of liquefiable soils in the foundation region. Liquefiable soil layers alter the pile capacity and also ...

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