

Connection between cast-in-place pile and photovoltaic bracket

Can photovoltaic support steel pipe screw piles survive frost jacking?

To study the frost jacking performance of photovoltaic support steel pipe screw pile foundations in seasonally frozen soil areas at high latitudes and low altitudes and prevent excessive frost jacking displacement, this study determines the best geometric parameters of screw piles through in situ tests and simulation methods.

What are the different types of photovoltaic support foundations?

The common forms of photovoltaic support foundations include concrete independent foundations, concrete strip foundations, concrete cast-in-place piles, prestressed high-strength concrete (PHC piles), steel piles and steel pipe screw piles. The first three are cast-in situ piles, and the last three are precast piles.

Are cast-in-place concrete piles a research object?

This article focuses on the production of actual cast-in-place concrete piles as the research object. It provides a detailed description of the production process for pile foundation reinforcement cages and quality control methods for reinforcement cages.

Can a connection design develop adequate pile moment capacity without special reinforcements?

This study focuses on a thorough understanding of the connection design capable of developing adequate pile moment capacity (while remaining essentially rigid) without providing for any special reinforcements by just relying on a simple plain pile embedment depth.

What is the Frost jacking of the photovoltaic pile?

Considering the thawing settlement of the pile body, within the 25-year service period of the photovoltaic power project, the frost jacking of the pile is approximately 144.68 mm. anti-frost jacking measures are recommended to reduce the impact of frost heaving.

What is the axial force of a cast-in-place pile?

Most of the pile shaft is subjected to compression, with a maximum axial force of 980 kN occurring at the pile bottom. The overall axial force values satisfied the design requirements. Figure 18 shows the horizontal displacement of the cast-in-place pile at the bottom of the foundation pit.

Concrete cast-in-place pile needs to wait for concrete hardening, which is a long process. But screw pile is not used, after screwing in can bear the load immediately, reduce the waiting ...

Comparative Analysis for Micro Cast-in-place Pile Foundation of PV Support Designed by Chinese and American Codes. ??? PDF. ?? ?? ?? ?? ?????????? ...

Pile foundations are widely used all over the world. The thermal characteristics of some pile foundations have

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been of concern, including those of energy piles (Rotta Loria and ...

excavated rock-socketed cast-in-place piles through on-site static compressive load tests. Under the condition of satisfying the bearing characteristics of the pile foundation, the scientific and ...

time the pile was unloaded. The pile was then reloaded to a maximum of 1000 tons without demonstrating any sign of geotechnical failure. A plot of applied load vs. pile-head deflection ...

First, the borehole cast-in-place piles on the outside of the foundation pit are connected by transverse waist beams to form a whole, which bears the lateral soil pressure ...

This study investigated analytically and experimentally the pile-cap connection of a full-scale prestressed high-strength concrete pile considering three different connection ...

connection details between cast-in-place piles and cast-in-place pile caps is limited. This paper aims to analyze the structural performance of the cast-in-place pile-to-pile cap connection ...

In recent years, the advancement of photovoltaic power generation technology has led to a surge in the construction of photovoltaic power stations in desert gravel areas. However, traditional equal cross-section ...

Drive piles are usually found in larger projects. The pile consists of galvanized steel I-beams, channel steel or columns. Use special heavy machinery to drive the pile into the ground. ...

This study has comprehensively investigated the bearing characteristics of three types of photovoltaic support piles, serpentine piles, square piles, and circular piles, in desert ...

The invention belongs to the field of foundation basis engineering, and particularly relates to a sleeve connection device for bored cast-in-place pile construction. The invention is particularly ...

In this paper, the thermal characteristics of a cast-in-place pile foundation in a warm ($>-1\ ^\circ\text{C}$) permafrost region on the interior QTP were studied via field observations and ...

In order to solve the design and application problems of photovoltaic bracket foundation under red clay geological conditions in the southwest karst area, in this paper, a micro cast-in-place pile ...

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