Application of Secant Piles for Deep Excavation Support: Postprint

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Abstract

In building foundation and substructure construction, ensuring safe production requires enhancing deep foundation pit support to control deformation, collapse, and cracking of pit walls and slopes, thereby preventing safety accidents. The application of secant piles in deep foundation pit support construction represents an innovation built upon technologies such as cast-in-place piles, waterproof curtains, and row pile systems for deep foundation pit and slope retention. Piles interlock with one another to form a robust underground wall that satisfies the waterproofing and earth-retaining requirements of various soil layers in deep foundation pit structures. Furthermore, the utilization of secant piles in deep foundation pit support construction fully exploits the advantages of mechanized and modern construction techniques, delivering high production efficiency and safety standards while exhibiting excellent ecological and environmental protection capabilities.

Full Text

Discussion on the Application of Interlocking Piles in Deep Foundation Pit Support Construction

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Abstract

In the construction of building foundations and substructures, ensuring safe production requires enhanced support and protection for deep foundation pits. This measure controls deformation, collapse, and cracking of pit walls and slopes to prevent safety accidents. The application of interlocking piles in deep foundation pit support construction represents an innovation built upon technologies such

as cast-in-place piles, waterproof curtains, and row piles for deep foundation pits and slope protection.

The piles interlock with each other to form a robust underground wall, accommodating the water stopping and earth retaining functional requirements of various deep foundation pit structures across different soil layers. Furthermore, the application of interlocking piles in deep foundation pit support construction fully leverages the advantages of mechanized and modern construction techniques, delivering high production efficiency and safety levels while demonstrating favorable ecological and environmental performance.

Keywords: construction engineering; interlocking pile technology; deep foundation pit support; application discussion

Note: Figure translations are in progress. See original paper for figures.