

OTCR Technical Bulletin

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Subject: The use of Helical Piles per the 1968 and 2008 NYC Building Code
Effective: Immediately

Helical piles are not addressed by implication or direct reference in the 1968 Building Code or 2008 NYC Construction Codes and thereby must be evaluated as an alternate material. Per the Administrative code of the 1968 and 2008 Building Code alternative materials shall be approved by the Department. Consequently, the Office of Technical Certification and Research is in the process of reviewing and evaluating helical piles for equivalency in quality, strength, effectiveness, durability and safety. Until the OTCR review is complete the use of helical piles is limited to the following:

Helical piles used as foundations – The installation of helical foundations are prohibited within New York City due to the following considerations:

- OTCR is unaware of existing national standards for helical foundations.
- ICC-ES AC 358, "Acceptance Criteria for Helical Foundation Systems and Devices" evaluates the use of helical piles for equivalency to IBC code prescribed materials and methods. The criteria specify limitations on the acceptance of helical piles. More specifically, helical foundations are recognized for low to moderate seismic classifications: Seismic Design Categories (SDC) A, B or C or Seismic Zones 0, 1 or 2. As a result, helical foundations would be prohibited in areas with a soft soil profile for the majority of buildings (2008 NYC Building Code Site Class E), and stiff soils for Essential Facilities (2008 NYC Building Code Site Class D).
- AC 358 limits the use of helical foundation systems to specific soil conditions that are "not indicative of potential pile deterioration or corrosion..." OTCR has reservations about the durability of helical piles and corrosion of the helix material which functions as a bearing surface for load transfer.
- The 1968 Building Code (section 27-693) requires a minimum shaft diameter of 8". Most helical piles would not meet the qualifications since their shaft diameters are smaller than the specified minimum.
- A recent proposal for the inclusion of helical piles in the IBC was rejected by the IBC Structural Committee at the 2007/2008 ICC Code Development Hearing.

Helical Piles used as Tie Back Systems – The Department permits the use of helical piles when used as a tie back system (helical tiebacks) for resisting lateral tension forces when an acceptable research report, based on AC 358, has been submitted. The installation of helical foundation systems is subject to the controlled and special inspection requirements of the applicable code. These products do not require approval from the Department.

The Office of Technical Certification and Research (OTCR) will continue to evaluate the use of helical piles within the framework of our codes. As part of our investigation, OTCR is in contact with the Deep Foundations Institute's (DFI) Committee on Helical Foundations and Tiebacks, and is making contact with other industry experts for assistance with the evaluation. A subsequent Technical Bulletin will be issued at the conclusion of this process.

SUPERSEDED BY
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