

1 GENERAL

1.1 Definitions

- .1 Techno Metal Post helix system: pile with one or more helical shaped steel helix attached to a central steel shaft connected to the structure with a steel bracket.

1.2 System Design

- .1 Design requirements: helical piles have to be designed by a professional engineer experienced in the design of this work and licensed in the Country, province or state where the project is located.
- .2 Based on the geotechnical report, the experienced professional engineer must design the helical piles (i.e., diameter of the central shaft, helix size, penetration depth, etc.), depending on the load requirements.

1.3 Documentation to be submitted

- .1 Shop drawings: Submit shop drawings showing profiles and product components, including helix and accessories.
- .2 Provide a CCMC Evaluation Report that demonstrates compliance of the product with the National Building Code 2010.
- .3 Provide the following information: each helical pile location, helical piles shaft diameter and length, helix diameter, installation angle below the horizontal (as required) and the extension in the axis of the shaft length; the final installation torque on all helical piles and the final torque.

1.4 Quality Assurance

- .1 The installers must be trained and certified by the helical pile manufacturer experienced and specialized in the installation of similar structures to those required for this project. For each installer who will work on the jobsite, provide a certificate or a card showing that the installer is trained and certified by the manufacturer.
- .2 Provide a manufacturer's certificate confirming that the manufacturer has a quality control system. This document must confirm the quality of raw materials (central shaft and steel helix) by metallurgical certificates and quality control tests of the welds.

2. PRODUCTS

2.1 Manufactured Components

- .1 Helical piles: Use the following components designed by the manufacturer or an approved equivalent:
 - 1. Techno Metal Post (Techno Pieux)**
- .2 Components
 - 2. The piles and components must be fabricated with steel conforming to ASTM A 500 Grade C and/or CAN/CSA G40.21.
 - 3. According to the requested lifetime by the client, protects the components with an increased thickness of the shaft OR protected by a hot dip galvanization coating conforming to ASTM A-123-13 OR an approved anode protection system (sacrificial or impressed current system).

3. EXECUTION

3.1 Installation

- .1 The installation must be completed by a certified installer.
- .2 Do not damage surrounding structures.
- .3 Provide installation equipment capable of positioning the helical pile to the desired resistance and angle. The installation equipment must be equipped with a device that provides torque readings during the installation. On request, provide access to the torque reading data to the engineer, inspector or the owner.
- .4 Layout the helical pile locations as designed on the drawings and ensure that the location of each pile is within the prescribed limits of the project. Establish appropriate angle, if required, at the beginning of the installation.
- .5 Monitor the torque readings during the installation and record the final torque reading values for each helical pile. Ensure that the torque is gradual and constant in the last meter of installation. Remove all obstructions encountered or relocate and adjust screw piles as required. The installer must ensure that the helix of the pile is embedded into undisturbed soil.
- .6 If necessary, provide and install extensions to the lead section to make sure the pile is screwed in at the required depth or torque readings. The extensions are either welded or bolted using couplings.

3.2 On-site Quality Control Requirements

On-site test: Monitor the torque readings during the entire installation process and record the final torque readings values.