



01 / DEEP FOUNDATIONS

Helical piles

Steel shafts with helical bearing plates, installed by rotation in connected sections.

How the technique works

A compact excavator drives a hydraulic rotary head. The helical lead penetrates by rotation; plain shaft extensions connect above grade as installation advances. The helices stay on the same original lead and move deeper with every section.

What transfers the load

The helix plates develop bearing resistance in the ground. The shaft, couplings, plates and final cap or bracket form the structural load path. Compression, uplift, lateral loading and buckling require assessment for the selected system and soil profile.

Where it applies

New foundations, additions, underpinning and selected industrial or infrastructure supports. Sectional installation can help where access, headroom or proximity to existing structures limits conventional equipment. Resolve the load-transfer detail for existing foundations before work.

What it offers

Rotational installation can reduce vibration compared with impact driving and typically produces little spoil. Installed length can be extended to meet the specified termination criteria. These benefits depend on compatible ground, equipment and the approved system.

Each section remains 7 ft

The illustration uses a 7 ft lead plus four 7 ft extensions: 35 ft installed length. Shaft OD: 2 7/8 in. Helix diameter: 14 in. These illustrated dimensions are not a capacity rating.

CONSTRUCTION METHOD

Construction sequence

General procedure. Geometry and parameters follow the approved project.

01 Preparation and setting out

Review the geotechnical report, pile layout, loads, utilities, access and platform. Verify system identification, rotary equipment, torque measurement, connection components and the planned test program.

02 Install the 7 ft lead

Position and align the lead. Start rotation with controlled crowd; the arm and rotary head descend as the lead penetrates. Monitor alignment, advance per revolution, ground response and torque without exceeding system limits.

03 Connect each 7 ft extension

Leave the installed pile fixed, raise the arm and connect the next plain shaft section using the approved coupling. Inspect the connection before rotation resumes. Four extensions advance the same lead to illustrated depths of 14, 21, 28 and 35 ft.

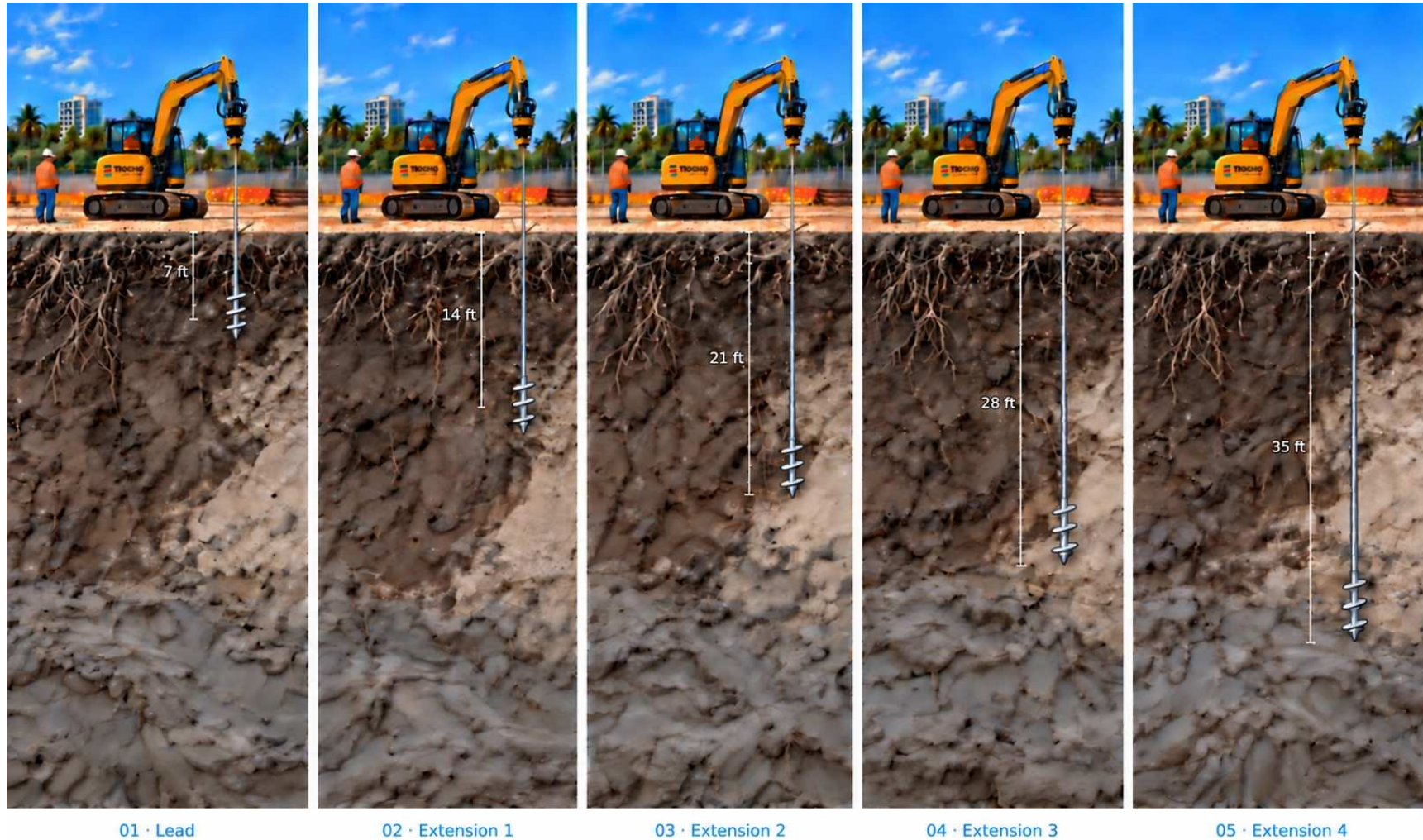
04 Confirm termination

Apply the engineer-defined depth and torque requirements together with the approved system procedure. Unexpected refusal, very low advance or torque outside limits requires review; do not infer bearing conditions from resistance alone.

05 Completion and traceability

Trim or finish to the specified elevation and install the designed cap or bracket. Record pile ID, system, connections, installed length, torque history, final level and any incidents. Complete the specified test and acceptance process.

Helical piles



7 ft per section · shaft OD 2 7/8 in · helix diameter 14 in

The installation procedure follows the approved project design. Illustrated profiles do not replace the geotechnical report.



SELECTION AND SITE CONDITIONS

Application criteria

Evaluate the ground, equipment and restrictions together.

Ground and variability

Florida sites may contain root-rich topsoil, soft soils, wet silts, mud and sand. Assess the actual stratigraphy, groundwater and obstructions from site investigation. Neither shallow resistance nor the illustrated layers establishes the intended bearing zone.

Torque and system limits

The relationship between installation torque and resistance is system-specific. Use the applicable evaluated system, manufacturer procedure and project criteria. A single torque value is not a universal proof of capacity; shaft torsional limits also apply.

Soft soils and groundwater

Assess shaft stability, buckling, durability and the depth needed to reach suitable support. Groundwater and corrosive exposure influence design and materials. Specify the protection and service-life assumptions for the project.

Access and existing structures

Confirm equipment reach, platform stability, headroom and utility clearance. Plan pile spacing, proximity to existing footings and any controlled load-transfer or lifting operation. Underpinning requires an engineered bracket and execution sequence.

Information for your project

Send location, geotechnical report, foundation plans and sections, compression/uplift/lateral loads, settlement criteria, access and headroom, groundwater information and schedule.

QUALITY AND TRACEABILITY

Installation controls

One traceable record per pile or test, from setting out to acceptance.

Before installation

Verify the approved drawings, system identification, steel condition, lead geometry, couplings and measuring equipment. Confirm inspection, acceptance and contingency procedures.

Rotation and advance

Record installed depth, alignment, penetration and torque by depth at the specified intervals. Monitor unusual ground response and compare observations with the geotechnical assumptions.

Connections and termination

Inspect each specified coupling or splice and preserve traceability. Apply the approved depth and torque criteria without exceeding the shaft or equipment limits; document changes and engineer review.

Test piles and load tests

Techno Piling offers test piles and load testing for helical piles. Agree the test objective, loading direction, reaction system, instrumentation and acceptance criteria with the project engineer. Keep the installation record linked to the test pile.

Safety and closure

Control utilities, working-platform stability, rotating components, lifting and exclusion zones. Complete final elevation and the cap/bracket detail; provide installation records, incidents and test results.

Discuss your project

WhatsApp / phone +1 954 669-4169
estimates@technopiling.com · Florida, USA

Applicable project references: ASTM D1143/D1143M (compression), D3689/D3689M (tension), D3966/D3966M (lateral).