FOUNDATION REPAIR AND UPGRADE

TYPICAL APPLICATIONS

- SETTLING FOUNDATIONS
- BUILDING ADDITIONS
- REPURPOSING FOUNDATIONS
- FOUNDATION CRACKS
- INTERIOR/EXTERIOR CRACKS
- WINDOW GAPS

RESIDENTIAL, COMMERCIAL, AND INDUSTRIAL APPLICATIONS

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WHAT IS A HELICAL PILE?

Often referred to as a helical pile, helical pier, and screw pile, to name a few. A helical pile consists of a lead containing one or multiple helices, extensions, and a pile cap. Extensions with helices may also be used.

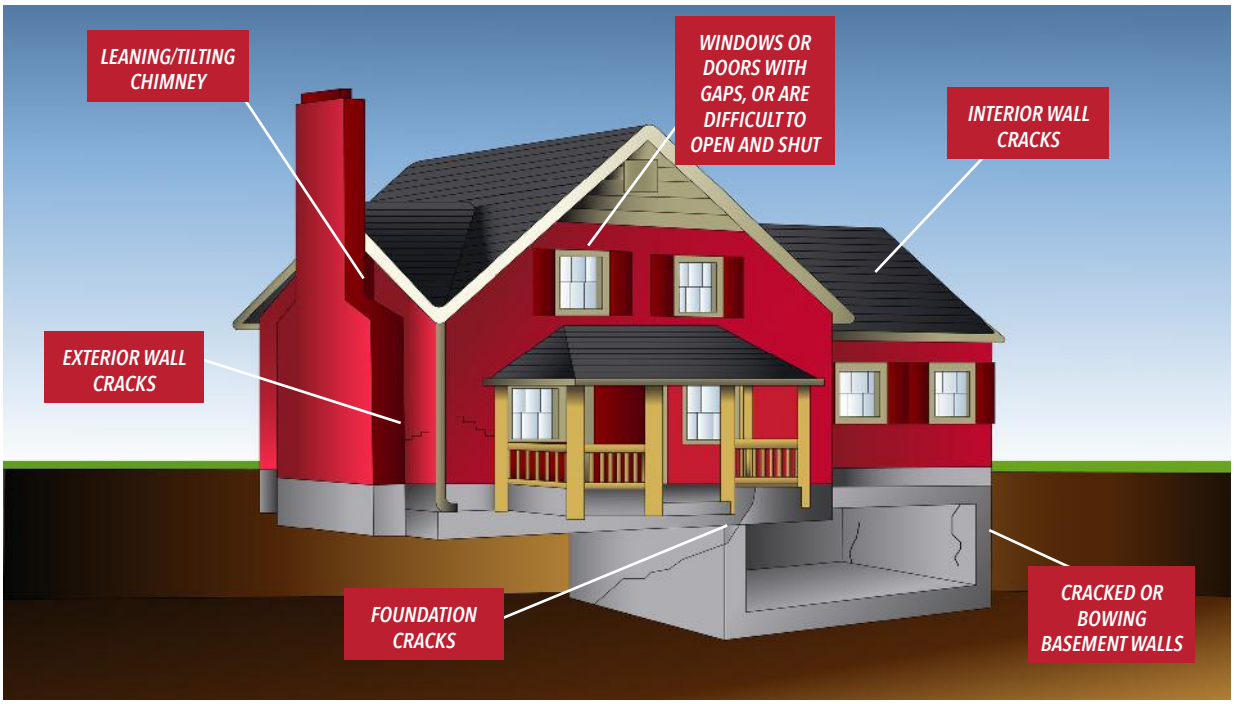
BEFORE YOU BEGIN

For the preliminary design of a helical pile foundation, the following information should be collected:

- Axial and Lateral loading conditions at the pile locations
- SPT soil borings detailing the soil characteristics throughout the site
- Identify conditions that may inhibit or affect the installation. e.g. high water table, cobbles/bolders, etc.
- Determine site specific factors that may inhibit pile installation. e.g. limited site access, low head room, etc.

COMMON CAUSES OF FOUNDATION SETTLEMENT

WARNING SIGNS OF FOUNDATION SETTLEMENT



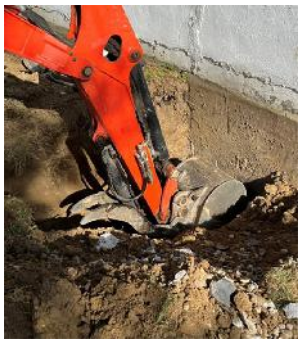
PILE INSTALLATION STEPS

01.

Plan out pile locations on either side of the settling area or uniformly around the pile cap.

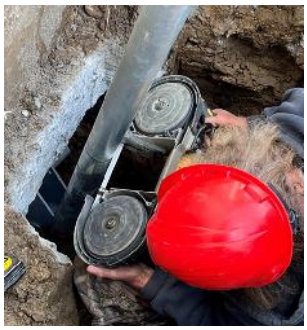
02.

Excavate the foundation and chip away the concrete as needed so the bracket will be in full contact.



03.

Install the piles to the preplanned depth and torque. Cut the top of the pile to the appropriate elevation.



04.

Test fit the bracket to locate and drill the anchor bolts.

05.

Non shrink grout should be placed on the bracket to allow for full contact with the existing concrete.

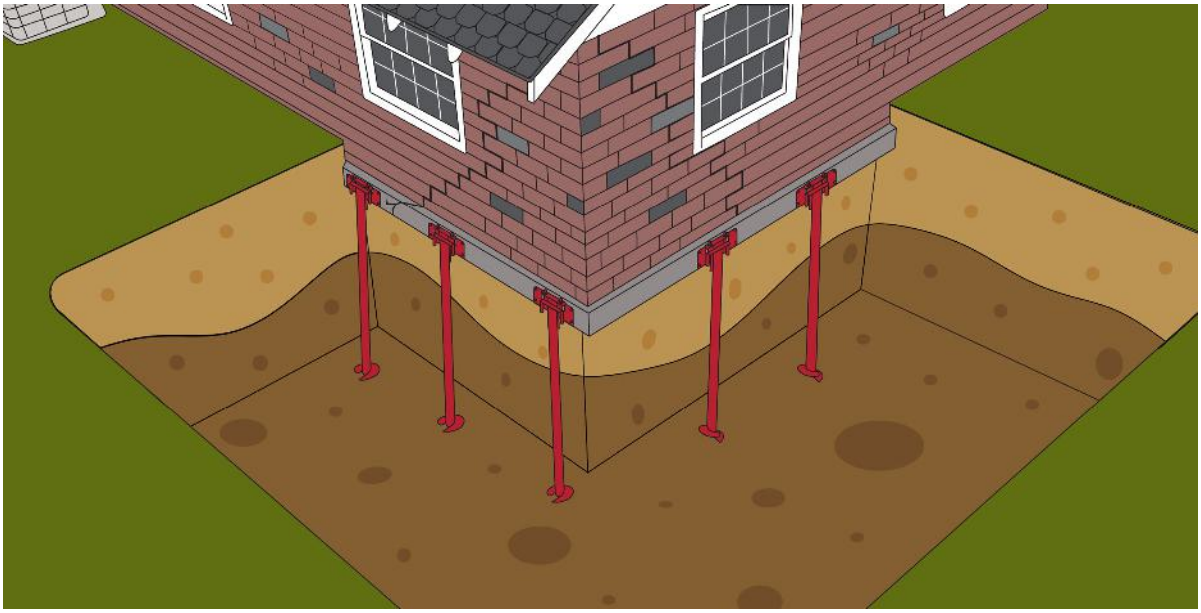
06.

Repeat this process for all pile locations.

07.

Use a hydraulic jack/manifold with a pressure gauge to transfer the foundation load to the helical piles.

Care should be taken when jacking the foundation. Attempting to raise the foundation may lead to additional problems.



Bracing both sides of the settled area is crucial to minimize the risk of future settlement.

PILE SELECTION

MPS OFFERS A FULL LINE OF ICC ACCREDITED PRODUCTS

Your local distributors can assist you with selecting the correct pile type to best fit the requirements of your project. Extra consideration is taken for laterally loaded piles.

Pile Types

Pile Dimensions	Designation	Torque Rating (ft-lbs)	Capacity (lbs)
1.5" Square Bar	D6	5,500	68,000
High Strength 1.5" Square Bar	D7	7,000	70,000
1.75" Square Bar	D10	10,400	100,000
2" Sqaure Bar	D15	15,000	150,000
2.875" X 0.203" Pipe	P28	7,500	70,000
2.875" X 0.276" Pipe	P28H	8,000	90,000
3.5" X 0.216" Pipe	P35	11,400	100,000
3.5" X 0.300" Pipe	P35H	15,000	120,000
4.5" X 0.237" Pipe	P45	20,000	130,000
4.5" X 0.337" Pipe	P45H	26,000	180,000

Capacities may be limited by soil conditions and installation torque.

BRACKET SELECTION

We offer a wide range of brackets to support and strengthen existing foundations and repair basement walls.

Bracket Types

Bracket Description	Designation	Capacity (lbs)
Standard Underpinning Bracket	DIXIE350	110,000
Underpinning Bracket for 4.5" Piles	DIXIE450	120,000
Light Duty Underpinning Bracket	N6401-0168	10,000
Concrete Slab Bracket for D10	CSBD10	8,000
Concrete Slab Bracket for D6/7	N6401-0029	8,000
Side Mount Bracket for D6/7	SMVB20	10,000*
Basement Wall Plate Termination Assembly	N6401-0002	36,000*

*Tension capacity. All other capacities are for compression.

COMBINATION PILES

MPS is the only manufacturer producing combo piles that do not require additional specialty parts thanks to our innovative Strength Squared coupling system. Combo piles feature a solid square helical lead followed by pipe extensions, giving you the following benefits:

- Solid square lead can penetrate tougher soils
- Pipe extensions provide superior lateral and buckling capacity
- Larger helical bearing surface area
- Lower required minimum installation torque

Seamlessly couple square bar leads to pipe extensions

STRENGTH SQUARED COUPLING SYSTEM

Our innovative Strength Squared square coupling system makes coupling on additional pile segments a breeze. Simply bottom out the square coupling and assemble the connecting hardware - no more tedious adjustments to line up cross holes.

The socket connection formed by the square couplers transfers the torque away from the bolts and through the coupler itself. This eliminates the potential of bolt hole elongation which can make it difficult to remove the connecting hardware and couple on subsequent pile sections and in extreme cases negatively affect the pile's performance.

Strength Squared Coupler Benefits

- Higher torque capacity with no bolt hole deformation
- Time savings - no more tedious adjustments to line up bolt holes
- No extra parts for combo piles
- Eliminates pinch points
- Eliminates bolt hole deformation which can affect pile performance
- Eliminates coupler 'slop/play' leading to cleaner installations and easier load tests

Competitor's pipe sleeve coupling

MPS's Strength Squared Coupling System

REACH OUT TO US

FOR MORE INFORMATION ON HELICALS, GROUTED PILES OR OTHER MPS CIVIL PRODUCTS

Find our Distributor Locations near you

More Information on Helical Anchors and Piles

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