



Certified Installers/Exclusive Dealers - CA, NV, AZ

4-1/2 inch Round Shaft Helical Anchors

Earth Contact Products (ECP), the leading U.S. manufacturer of round shaft helical ground anchor products. Our Engineering, Design and Production capabilities of helical piles and anchors has made ECP helical piers and piles the industry standard.

ECP offers 4-1/2" LW Round Helical Anchors for:

- New Construction
- Foundation Repair
- Tower Support
- Temporary Bracing
- Shoring
- Solar Panels
- Boardwalks
- Slab Repair
- Underpinning



ECP helical piles, also known as screw piers, screw anchors and torque anchors are ideal for deep foundation applications where there is a need to resist both tension and axial compressive forces. Examples of these include expansive clay soils, solar panel foundations, utility towers and shoring. ECP 4-1/2" round helical anchors are easy to install, can be installed in limited spaces and can be loaded or tested immediately upon installation making them very unique to the deep foundation industry.

The available helical anchor lead shaft lengths are 60", 84" and 120", however, other lengths may be specially fabricated. Because helical screw anchors are considered deep foundation elements; they are usually installed into the soil to a depth greater than just the length of the typical lead section. Extensions of various lengths are available and are supplied with couplings and hardware for attachment to the lead or other extensions allowing the ECP helical anchor assembly to reach the desired depth.

Helix shaped plates may also be installed on the extensions where the length of the lead is not sufficient to allow for the proper interval between plates. The number of the plates per Helical Torque Anchor™ is limited only by the capacity of the shaft to transmit the torque required to advance the Helical screw anchor into the soil.

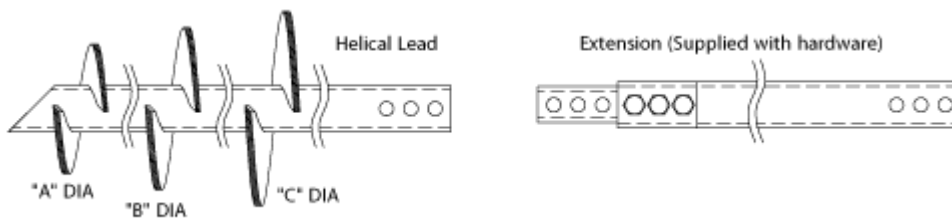


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ECP 4-1/2 inch Helical Piers may terminate with a pier cap that will be embedded into a concrete foundation. In other applications such as tieback anchors, a transition is made from the anchor shaft to a continuously threaded rod. Various beams, wall plates, etc. can be attached to the threaded bar for wall support, and to restore or to simply stabilize walls or other structure from overturning forces. In foundation restoration repair and stabilization applications, foundation brackets are available that attach between the Helical Anchor and the foundation beam or footing.



Standard Torque Anchor™ Lead Configurations					
Product Designation	Plate Diameter-inches			Plate Area sq. ft.	Length
	"A"	"B"	"C"		
TAF-450-84 (10-12-14)	10	12	14	2.07	84"
HTAF-450-120 (10-12-14)	10*	12*	14*	2.07	120"

Standard Torque Anchor™ Extensions			
Part Number			
36"	60"	84"	120"
TAE-450-36	TAE-450-60	TAE-450-84	TAE-450-120

Note: Products Listed Above Are Standard Items And Are Usually Available From Stock. Other Specialized Configurations Are Available As Special Order – Allow Extra Time For Processing.

All Helical Plates Are Spaced At Three Times The Diameter Of The Preceding Plate
 Extensions are Supplied with an Internal Coupling and Hardware.
 All Product Hot Dip Galvanized Per ASTM A123 Grade 100.
 Shaft Weight per Foot – TAF-350 - 10.2 lb; TAF-450 – 15.4 lb



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* “H” before part designation indicates helical plate thickness of 1/2 inch instead of standard 3/8”

Table 2. Capacities of Helical Torque Anchors™					
Shaft Size	Installation Torque Factor (k)	Axial Compression Load Limit	Ultimate-Limit Tension Strength	Useable Torsional Strength	Practical Load Limit Based Torsional Strength
1-1/2" Square Bar	9 - 11	70,000 lb.	70,000 lb.	7,500 ft-lb	Load limited to the rated capacity of the attachments and the lateral soil strength against the shaft
1-3/4" Square Bar	9 - 11	100,000 lb.	100,000 lb.	11,000 ft-lb	
2-1/4" Square Bar	10 - 12	200,000 lb.	200,000 lb.	23,000 ft-lb	
2-7/8" Tubular – 0.203" Wall	8 - 9	60,000 lb.	60,000 lb.	5,500 ft-lb	44,000 lb
2-7/8" Tubular – 0.262" Wall	8 - 9	100,000 lb.	100,000 lb.	9,500 ft-lb	80,000 lb
3-1/2" Tubular – 0.300" Wall	7 - 8	115,000 lb.	120,000 lb.	13,000 ft-lb	97,000 lb
4-1/2" Tubular – 0.337" Wall	6 - 7	160,000 lb.	160,000 lb.	22,000 ft-lb	143,000 lb

The designer should select a product that provides adequate additional torsional capacity for the specific project and soil conditions.

IMPORTANT NOTES:

The capacities listed for Axial Compression, Tension and Torsion in Table 2 are mechanical ratings. One must understand that the actual installed load capacities for the product are dependent upon the actual soil conditions on a specific job site. The shaft “Useable Torsional Strengths” given here are the maximum values that should be applied to the product. Furthermore, these torsional ratings assume homogeneous soil conditions and proper alignment of the drive motor to the shaft. In homogeneous soils it might be possible to achieve up to 95% or more of the “Useable Torsional Strength” shown in Table 2. In obstruction-laden soils, torsion spikes experienced by the shaft may cause impact fractures of the couplings or other components. Where impact loading is expected, reduce shaft torsion by 30% or more from “Useable Torsional Strength” depending upon site soil conditions to reduce chance of fracture or damage. Another advantage of selecting a torsional rating below the values shown in Table 2 is that one may be able to drive the pile slightly deeper after the torsional requirements have been met, thus eliminating the need to cut the pile shaft in the field.

The load transfer attachment capacity must be verified for the design. Standard attachments and ratings are shown on the following pages. Special configurations to fit your project can be fabricated to your specifications upon request.

ECP Helical Piles are a top choice for foundation contractors and foundation design engineers. For more technical information about the ECP helical pier products, visit the ECP Engineering section.



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