

Product Family - **IDEAL**  
Subcategory - **ELEMENT**  
TIP Category - **DESIGN**  
Tags - **HELICAL**

### TIP Description:

Listed below is a glossary of terms related to helical design and helical installation.

#### List 1:

1. Anchor (Tie-back) – For resisting upward forces, lateral forces, and overturn movements. A helical unit in tension is an anchor or tie-back (A helical unit in compression is a pile or pier).
2. Axial Load – Load in line with axis of pile.
3. Batter Pile – Pile driven at an angle. Often to reduce lateral forces.
4. Bearing Stratum – Any soil layer which provides a significant portion of the axial load capacity by applying resistance to one or more of the helical plates.
5. Dead Load – The load of the structure with no outside forces acting on it.
6. Design Load – Dead Load plus Live Load. Also known as; Working Load, Allowable Load, and Service Load.
7. Effective Torsional Resistance – The average installation torque typically taken over a distance equal to the last three feet of installation or the last three diameters of penetration of the largest helix plate.
8. Fetch Up – Attaining specified torque with or without reaching glacial till/bedrock.
9. Flight Pitch – Distance from the top of the top end of a helix to the top of the bottom end.
10. Helix (pl. Helices) – A spiral-shaped steel plate extending out from the shaft at a 90-degree angle at all points and traveling one circumference of the shaft. (Plural form said he/less/seas).
11. KIP – 1,000 lbs of force.
12. Live Load – The forces not calculated in a Dead Load. These forces could include people, furniture, animals, cars, weather, machinery, etc.
13. Load Overview – Dead Load + Live (Active) Load = Design (Working or Allowable or Service) Load X Safety Factor (Usually 2 but don't assume) = Ultimate (Test) Load.

14. Mechanical Strength – The maximum load resisted by the structural elements of a helical pile without permanent deformation of the element.
15. Pier or Pile – To create a deep foundation where a shallow foundation is not adequate. For new or existing structures. A helical unit in compression is a pile or pier (A helical unit in tension is an anchor).
16. Post Grouted – Placing Grout inside and installed pile. Pile typically has a plugged leading end.
17. Post Tensioned to Load – Using force to load an anchor. Usually when there can be no movement under working conditions. Can be done on every anchor when no movement is critical.
18. Spin Out – Sitting on rock- end bearing- no real torque.
19. Static Load Test – Loading a pile under test conditions. Allowable movement is dictated by engineering or building department. Standard is ASTM D1143 for Compression. D3689 for Tension.
20. Torque Correlation – The relationship between the force required for installation and the Theoretical Ultimate capacity of the installed pile (kips).
21. Ultimate Load – Design (Working/Allowable/Service) Load multiplied by a safety factor which is often 2. This is the need-to-know number. – Sometimes called the Test Load or the Factored Load but be careful to get clarification of the phrase “Factored”. “Factored” load may refer to LRFD design philosophy which is not used for Helicals.
22. Value Engineering (VE) – Designing in a cost-effective manner. Often referring to a re-design with a more cost-effective solution.

### If you need more assistance...

Please reach out via email at [info@intechanchoring.com](mailto:info@intechanchoring.com) or at our Office Phone at 800.223.7015