

Table 7-4 is a quick reference guide for the design professional. It relates ASTM D1586 SPT “N₆₀” values for cohesive and non-cohesive soils to the expected load capacity of various CHANCE Type Square Shaft (SS) and Round Shaft (RS) Helical Piles. It is intended to be used as a reference guide to enable the designer to quickly determine which helical pile systems to use for project specific soil conditions and load requirements.

Table 7-4: CHANCE® Helical Pile/Anchor Load Capacity Table

Soil Type		Product Family		Axial Compression / Tension Capacity*	
“N ₆₀ ” - Value** Cohesive	“N ₆₀ ” - Value** Non-Cohesive	Helical Pile Shaft Size Inches (mm)	Torque Rating Ft-lb (N-m)	Ultimate Capacity [P _u] Kip (kN)	Allowable Capacity [P _a = 0.5 P _u] Kip (kN)
25 – 35	25 - 30	SS5 1-1/2 (38)	5,700 (7,730)	57 (254)	28.5 (127)
25 - 40	25 - 35	SS150 1-1/2 (38)	7,000 (9,500)	70 (312)	35 (156)
35 - 50	35 - 40	SS175 1-3/4 (44)	10,500 (14,200)	105 (467)	52.5 (234)
50 - 70	40 - 60	SS200 2 (51)	16,000 (21,700)	160 (712)	80 (356)
70 - 90	60 - 80	SS225 2-1/4 (57)	21,000 (28,475)	210 (934)	105 (467)
20 - 25	15 - 20	RS2875.203 2-7/8 (73)	5,500 (7,500)	49.5 (220)	24.75 (110)
25 - 35	20 - 30	RS2875.276 2-7/8 (73)	8,000 (10,850)	72 (320)	36 (160)
35 - 40	30 – 35	RS3500.300 3-1/2 (89)	13,000 (17,600)	91 (405)	45.5 (202)
35 – 40	30 – 35	RS4500.337 4-1/2 (114)	23,000 (31,200)	138 (614)	69 (307)

* Based on Torque Rating – Axial Compression / Tension Capacity = Torque Rating x K_t. Well documented correlations with installation torque are recognized as one method to determine capacity per IBC Section 1810.3.3.1.9. “Default” K_t for Type SS = 10 ft⁻¹ (33 m⁻¹). “Default” K_t for Type RS2875 Series = 9 ft⁻¹ (30 m⁻¹); for Type RS3500.300 = 7 ft⁻¹ (23 m⁻¹); for Type RS4500.337 = 6 ft⁻¹ (20 m⁻¹).

** “N₆₀” Values or Blow Count from the Standard Penetration Test per ASTM D1586.

NOTES:

- The table above is given as a guideline only. The capacity of CHANCE Helical Pile/Anchors may vary depending on, but not limited to, water table elevation and changes to that elevation, changes in soil conditions and soil layer thicknesses.
- Achievable capacities could be higher or lower than stated in the table depending on:
 - Site specific conditions
 - On-site testing verification
 - HELICAL PULLDOWN® Micropiles can achieve higher capacities in compression. On-site testing should be performed to verify additional pile capacity.
 - This chart is to be used for preliminary design assessment only. Capacities should be verified on per project, site-specific basis by a registered design professional.
- The above chart represents the hardest or densest soil conditions that the helical pile can be installed into. The helical pile will likely achieve its torque rating quickly upon encountering the highest N values indicated above.