

Chance® Tieback Anchor System

MR-MANUFACTURER

Manufactured by A.B. Chance Company, an ISO 9001 company, headquartered in Centralia, Missouri. With more than 80 years of earth-anchor research and development experience, Chance also markets to electric utilities, telecommunications and pipeline industries worldwide.

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UA-USES, APPLICATIONS

The Chance® tieback anchor system employs screw anchors to remove the performance uncertainties and associated costs of grouted anchors when used in loose sandy soils and clay soils of low shear strength. When placed in the soil, the screw anchor acts as a bearing device. This is a fundamental difference compared to a grouted anchor which is formed in the soil and relies on friction between the soil and the grout. Ultimate tensile capacity ranges as high as 200,000 lb. per screw anchor.

Unique advantages of helical anchors have led to a growing number of other applications for tension and compression loads. Predictable holding capacities at economical installed costs match various power-installed screw anchor types and sizes to such permanent and temporary uses as:

Building foundation-repair underpinning, new-foundation reinforcement (including seismic-loading resistance by incorporating tieback anchors), transmission-tower anchors, foundations for refinery equipment, and hold-downs for pipelines.

PP-PRODUCT PRESENTATION

Chance® tieback anchors include square shafts (1-3/8" to 2-1/4" solid high-strength steel). Single- or multiple-helix configurations and diameters (typically from 8" to 14") are combined with the shaft sizes to match loads. Special techniques and tools derived through experience and engineering expertise give Chance helical anchors advantages not easily duplicated:

- True helices penetrate soils with minimal disturbance,
- Round-cornered square shafts and precise helix pitches assure both installation ease and capacities as bearing-plates.

To increase product life in aggressive soils, hot-dip galvanizing to ASTM specifications is normally supplied.

AI-ASSEMBLY, INSTALLATION

The small-diameter shafts simply penetrate the expansive zone without significant disturbance. Torque required to drive the helical anchor correlates to bearing capacity of strata below and so indicates depth necessary for the structural load. Torque monitoring also provides a means of control during installation. This is valuable where subsurface conditions significantly differ from those anticipated and such detection helps prevent overstressing anchor components.

Lower installed costs for screw anchors can be attributed to several factors:

- Faster to install. Drilling and spoils removal are not required. Typical installing time is 20 to 30 minutes.
- Grouting is eliminated. Testing can proceed immediately after installation.

- Screw anchors can be withdrawn and reused.

Installed in sections, Chance helical piers can get into low-headroom situations. They install quickly by available contractor power tools. They may be installed with conventional rotary drilling equipment used in grouted-anchor tieback construction. Installing equipment also may be a utility truck, caisson drill, backhoe, skid-steer loader or hand-held rotary tool.

For sites where soil creeps, helical piers can be installed both vertically and at an angle opposing the downhill creep.

To assist design engineers in applying helical piers for tieback applications, Chance provides upon request:

TS-TECHNICAL SUPPORT

1. Chance Bulletin 31-9006,
“Typical Engineering Specifications for Tieback Anchor System;”
2. Chance Bulletin 31-8802,
“Chance Helical Anchors, Application and Design Criteria;”
3. Chance Bulletin 31-8902,
“The Use of Helical Tieback Anchors for a Permanent Retaining Wall.”