CYNTECH©

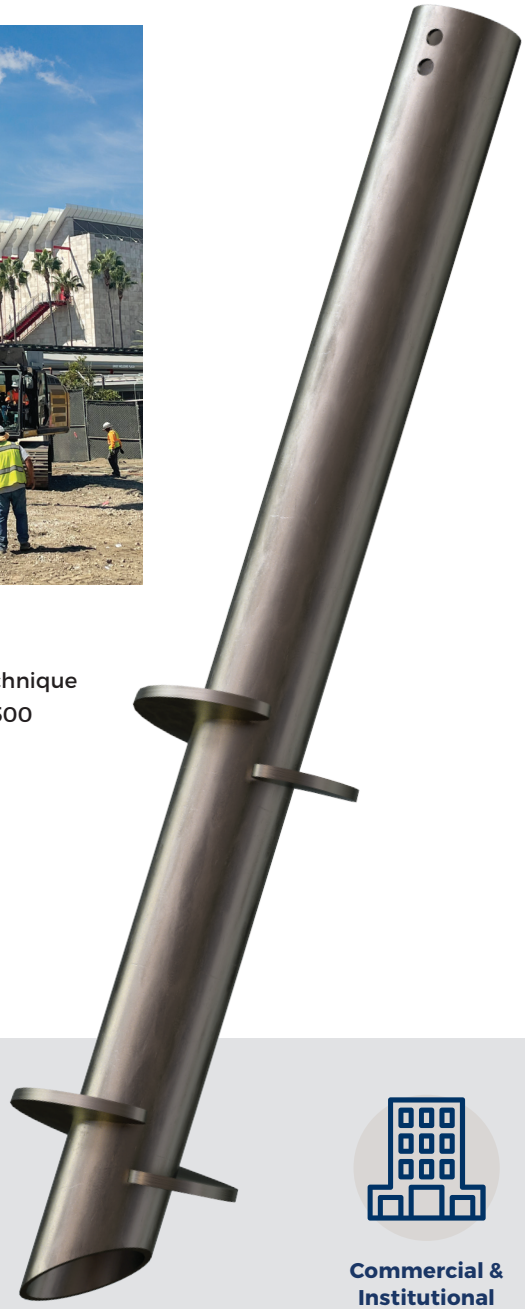
FIRST IN FOUNDATIONS,
ANCHORED IN EXPERIENCE.™

Helical Piles

A faster, lower-cost, more efficient high-capacity deep foundation technique

Since 1981, Cyntech's high-capacity helical pile foundations have been used to permanently support aboveground structures for the energy, power, industrial and commercial construction industries. We took what was once viewed as a novel method of underpinning a home's cracked foundation and, through extensive engineering, research, development, and trial and error, advanced the technology to what it is today—a faster, lower-cost, more efficient high-capacity deep foundation technique that provides significant load capacity (greater than 1,000 kips or 4500 kN) with less impact to your jobsite and the environment.

Whether you need a stable foundation for an aboveground storage tank, a new refinery expansion, or 1,000 miles of electrical transmission line, think of Cyntech to provide safe, efficient, high-capacity helical pile foundation designs.



Comparison

Typical applications for Cyntech's helical pile system include foundations for:

- Pipe racks / Bridges
- Skid-mounted equipment & buildings
- Modular facilities
- Electrical transmission structures & substations
- Solar modules / Battery storage
- Warehouses / Data centers / Commercial buildings
- Sites with access restriction, contaminated soils, vibration concerns
- or to replace any deep foundation method that is being considered

Helical PIle Advantages:

- Installation in all weather and site conditions
- Efficient installation = reduced schedule
- No spoil removal or disposal = cost savings
- No vibrations
- Can be installed in congested areas or in low overhead applications
- Small construction footprint = reduced costs
- Solutions to sites with high water tables or seismic concerns
- Instant confirmation of load resistance, immediate use
- A less expensive alternative

Markets

Cyntech Group has experience in nearly all markets throughout the construction industry and understands the unique challenges and requirements associated with each project.

Commercial & Institutional

Industrial & Manufacturing

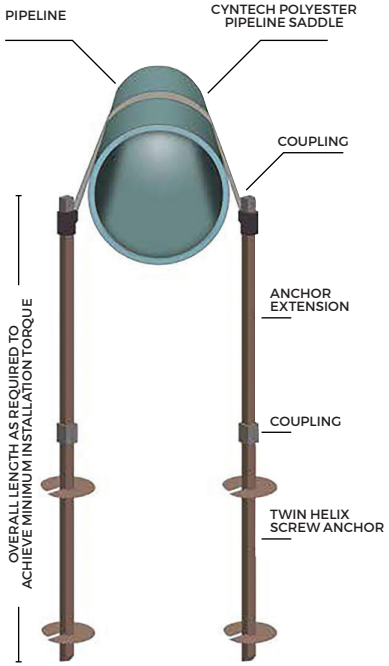
Power & Renewable

Oil, Gas & Chemical

Pipeline Anchors

Advanced technology for pipeline buoyancy control

We've built a solid reputation as the world leader in the design and manufacturing of pipeline anchor systems and accessories. Our anchor systems have been proven to hold up under field conditions in numerous installations by leading corporations in the pipeline industry. Over 115,000 Cyntech anchor sets are currently in service on operating pipelines around the world.

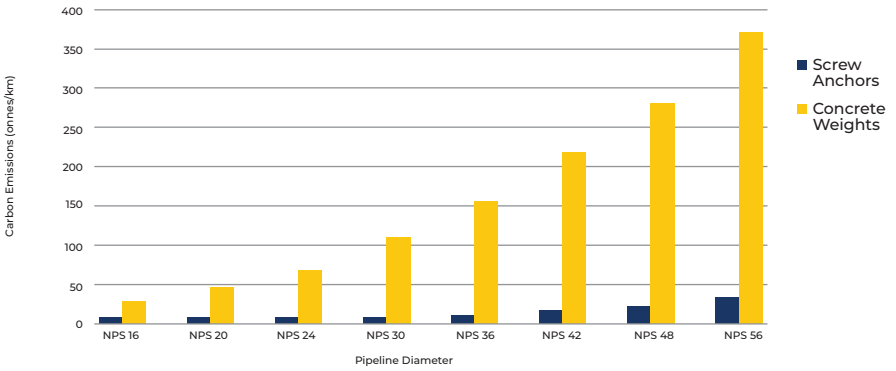


An anchor system can be custom designed for your specific application and our professional engineers and technicians will work with you to specify the optimum anchor system for your project. Our advanced anchor designs, combined with our patented, non-corroding, low stress polyester pipe saddles, provide unparalleled performance and longevity, regardless of the installation environment.

	PIPELINE ANCHORS	CONCRETE WEIGHTS
Design	Cyntech's anchor system is designed to provide a hold-down capacity of 2.5 times the buoyant force of the empty pipeline	Concrete weights typically provide a weight of 1.1 times the buoyant force of the empty pipeline
Spacing	Typical spacing for NPS-24 pipeline is 108.3 ft (33 m)	Typical spacing for NPS-24 pipeline is 18.4 ft (5.6 meters)
Storage	Pipeline anchor materials for 6.2 mi (10 km) of NPS-24 pipeline would require 98.4 ft2 (30 m2) of storage space	Concrete weights for 6.2 mi (10 km) of NPS-24 pipeline would require 2,800 ft2 (260 m2) of storage space
Transportation	Pipeline anchor materials for 6.2 mi (10 km) of NPS-24 pipeline would require 3 truckloads	Concrete weights for 6.2 mi (10 km) of NPS-24 pipeline would require 199 truckloads
Installation	A typical anchor installation crew would consist of an excavator with hydraulic drive unit, an operator and two laborers	A typical concrete weight installation crew would consist of an excavator, an operator and two laborers

Comparison

Social Cost Comparison



Solutions In Comparison

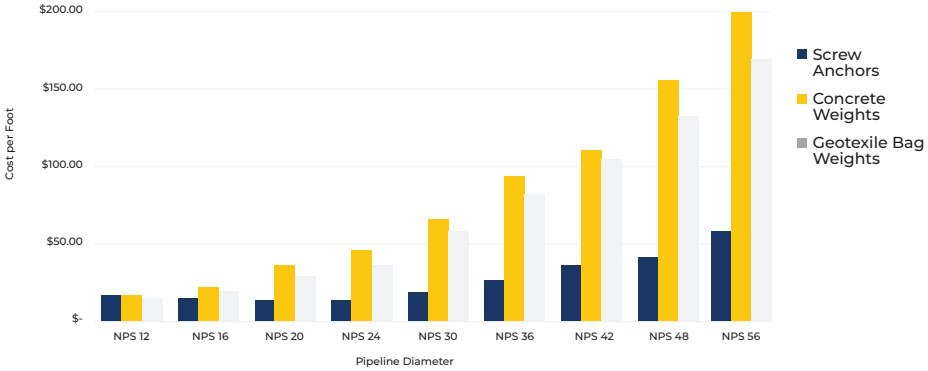
Set-On Concrete Weights
4.5 ton at 5m Spacing

Bolt-On Concrete Weights
4 ton at 4.5 spacing

Geotextile Bag Weights
3 ton at 3m spacing

Cyntech Pipeline Anchors
0.1 ton at 22m spacing

Buoyancy Control Cost Comparison



Reduce Costs

Installation requires less manpower, equipment, and time.

Anchors can be spaced up to 110 meters apart.

Reduce Emissions

Concrete production contributes at least 8% of global emissions. Anchors eliminate concrete.

Helical Rigid Inclusions (HRIs)

A GROUND IMPROVEMENT SYSTEM

Helical rigid inclusions (HRIs) are steel elements used to reinforce soft soils to reduce settlement and increase bearing capacity. They consist of a central shaft, at least one helix plate and a load transfer bearing plate at the top of the shaft.

DESIGN

Iterative design considering Soil-RI-LTP interaction requires Finite Element Modeling:

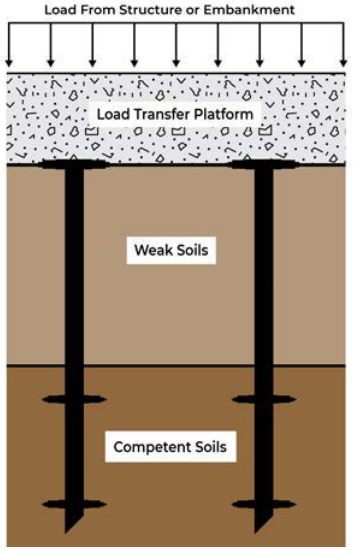
- Model how loads are transferred through weak strata to a competent bearing layer
- Soil/HRI/LTP/Structure interaction can be modeled and considered
- Designs are specific to the soil conditions, loads & settlement criteria
- Loads partly carried/transferred by weak soils
- HRI spacing, depth, number of helices, helix diameter, bearing plate diameter etc. can be varied to allow more efficient design
- A load transfer platform (LTP) is used to transfer load from the structure to the HRIs and to minimize 'dimpling' or excessive stresses in slab or footing. LTPs often consist of 1 to 5 feet of well compacted granular soil, may include 1 to 3 layers of embedded geogrid or steel mesh
- HRIs can be easily battered to resist high lateral forces
- In-house design software + PLAXIS

COMPARISON

HRIS VS. TRADITIONAL RIGID INCLUSIONS

A "traditional" RI is a grouted or cemented aggregate column installed either with a vibratory or displacement auger method.

- More cost effective
- Larger load transfer area equals greater spacing and thinner LTP
- Fast installation (1,200+ft per day)
- Can be installed before or after the LTP
- Reduced negative skin friction, or "down-drag"
- Greatly simplified QA & QC
- No specialized installation equipment, all rentable
- No grout equals no portable batch plant and no ready-mix trucks
- No vibration
- Smaller equipment (150,000 lbs vs. 50,000 lbs, working platform simplified or eliminated, no rig overturning)
- Less equipment equals reduced site congestion
- Vibratory rollers are acceptable for working platform compaction
- No ground heave
- No spoil removal or disposal
- Highly recycled materials, reduced carbon footprint and environmental impact
- Unlimited max. depth, not restricted to the height of the machine
- Can be installed in all weather conditions
- Immediate loading, no cure time
- Can be installed in congested areas and reduced headroom applications
- No cutting the tops – installed to the correct elevation the first time
- Instant confirmation of load resistance via constant torque monitoring
- Can be easily removed without mass excavation



Design

MANUFACTURING

For U.S. projects, we manufacture our helical piles, pile extensions and pile caps in our Houston (Plantersville), Texas facility. Our Calgary, Alberta location serves the Canadian and overseas markets. Our state-of-the-art facilities include CNC automated cutting, bending and welding to produce exact, uniform quality for all parts.

We produce all sizes and configurations of helical piles and pile caps, from 1.5 in. (38 mm) and 1.75 in. (44 mm) high strength solid square bar anchors, up to 48 in. (1,219 mm) diameter round shaft piles.

LOGISTICS

Transport of the products to your jobsite, laydown yard, railyard or port is an often overlooked detail of the overall process—one that Cyntech has proudly perfected in the nearly four decades we've been in the business. Our full-time logistics coordinators have the skills and experience needed to select the absolute best delivery option for your specific situation, ensuring the trucks will show up where and when you need them.

QUALITY CONTROL

Continuous installation torque monitoring provides instant confirmation of geotechnical conditions & load resistance. Other ground improvement techniques rely heavily on the accuracy of the geotechnical report's assumptions.

CYNTECH MODEL

Design

In-house engineering or bring your own design

Manufacturing

Calgary, Alberta or Plantersville, Texas

Installation & Testing

Your crew and equipment or your crew and Cyntech equipment

A Proven Supplier for the Energy, Power and Construction Sectors

Our company is a leading producer of helical pile foundations, pipeline anchors and helical rigid inclusions. We focus on collaborating with clients to provide innovative, cost-effective and reliable solutions.

Primary Clients

- Deep Foundation (Piling) Contractors
- Pipeline Contractors
- Ground Improvement Contractors
- Engineering Firms
- EPC Firms

Targeted Applications

- Petrochemical plants, LNG Terminals, and Refineries
- Pipeline Construction
- Energy - Transmission Lines & Substations
- Midstream Oil & Gas Facilities
- Transportation Infrastructure
- Tilt-wall Construction
- Rail
- Wastewater
- Commercial / Institutional
- Data Centers / Manufacturing Facilities
- Renewables
- Government infrastructure
- Airports
- Agricultural
- Mining

A Global Company with Deep Experience in Providing Project-Specific Solutions

Whether your project is large or small, we support you fully to help ensure a successful outcome. Our team takes time to ask questions and understand your challenges, then recommends tailored solutions to help you achieve your objectives.

ESTABLISHED IN **1981**

PROJECTS COMPLETED IN **22+** COUNTRIES

OVER **3500km** OF PIPELINES ANCHORED

SUPPLIED **110K+** HIGH-CAPACITY HELICAL PILES

MOTIONSTEEL

PART OF THE CYNTECH GROUP

SERVICES

Experience, Safety & Commitment

Motion Steel is a successful leader in structural steel and miscellaneous steel fabrication. Serving Calgary and the surrounding areas, we have built our company around a philosophy based on integrity and commitment to our clients.

Through experience, vision and skill we commit to providing our clients with the highest level of excellence by delivering and installing what we promise – on time – within budget – with value added.

At Motion Steel we offer a wide spectrum of complete industrial fabrication solutions in steel, aluminum and stainless steel.

Miscellaneous Steel Fabrication
Motion Steel fabricates various types of miscellaneous steel items, from mezzanines to platforms to railings, ladders, stairs, canopies & bridge rails.

Structural Steel Fabrication
The scope of our structural steel fabrications range from a single beam to steel framed buildings, pedestrian bridges or water and waste treatment plants. This includes steel trusses of various depths and length.

Field Installation
We have skilled, experienced iron workers and journeymen welders onsite, committed to assuring quality work is completed in the most professional, timely manner. Our field personnel are certified to operate aerial lift equipment.

ABOUT

Industry Experience
Through a vast array of standard or unique projects Motion Steel has delivered innovative fabrication solutions to a variety of industries. From residential, to commercial, to industrial, we have the experience to ensure both quality work and a superior, hassle-free customer experience.

Commitment To Safety
The owners and management of Motion Steel are committed to providing a safe, healthy work environment to benefit both staff and clients.

We have implemented an extensive health and safety program and strive to maintain an incident-free environment.

Commitment To Our Clients
Motion Steel's commitment to our clients has set our company apart in the industry. We believe that success is not achieved alone, and therefore we are committed to working collaboratively with our clients. We continually strive to provide superior solutions in order to meet the unique demands of each project.

We believe that providing our clients with the highest level of excellence is only achieved by delivering and installing what we promise – on time – within budget – with value added.

Serving Our Global Clients

Liberty View Harbor
Jersey City, NJ

Clean Fuels Project
Prince George, BC CA

Reficar Refinery
Cartagena, CO

Deep Conversion Project
Port Arthur, TX

Holly Frontier Refinery
Tulsa, OK

Western Alberta Tranmission Line (WATL)
Boston, MA

Aquaytia - Pucallpa 138kV Transmission Line
Peru

66 LPG Export Terminal
Freeport, TX

Advertising Sign Foundation
Boston, MA

Petrochemical Sump and Pipe Support
Deer Park, TX

Cactus II Pipeline Taft Station
Taft, TX

PSE&G Southern Reinforcement Project
Philadelphia, PA

Golden Pass LNG
Sabine Pass, TX

Baltic Pipeline
Denmark

OCP Pipeline
Ecuador

Provincial Pipeline
Thailand

Tesla Gigafactory
Austin, TX

Magna LNG
Utah

LACMA
Los Angeles, CA

Husky Refinery
Superior, WI

BP Whiting Refinery
Whiting, IN

GLNG Pipeline
Australia

Mozambique to Secunda Pipeline
Mozambique

Nam Con Son Pipeline
Vietnam

Pargerdewa - Grissik
Indonesia

Cross Island Expansion
Trinidad

5th Transmission
Thailand

TANAP
Turkey

Papan
Mexico

Sabah Sarawak
Malaysia

Athabasca Pipeline
Alberta, CA

Clean Fuels
Prince George, BC CA

IMTT
Louisiana

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