

Expertise Experience Solutions Service Results



Established in 1955, Nicholson Construction Company is a full-service geotechnical construction company specializing in earth retention, slope stabilization, structural support and underpinning, and dam remediation.

Nicholson offers innovative, efficient and cost-effective solutions to complex geotechnical problems throughout North America. Whether you need ground improvement, ground treatment or structural support, we have the expertise, experience, solutions, service and track record to solve your problem.



Expertise. We bring together the people, technology and equipment necessary to get the job done right and on time. As a Rodio Group company, Nicholson shares technology, staff and project experience with its sister company, Rodio, S.p.A. and provides leading ground-related engineering and construction solutions to clients, contractors and owners worldwide.

Experience. Our insight comes from the practical knowledge of our engineering and construction professionals. In fact, each of our engineers is a highly-trained specialist with extensive field experience in foundation design and construction.

Solutions. We work in a wide range of industries — manufacturing, commercial building, petrochemical, power generation, transportation and public works. Solving problems unique to these highly-specialized industries and meeting the demands of their diverse operating environments is a Nicholson trademark. So whether your world includes bridges, dams, tunnels, buildings, transit systems or roads, call us for a consultation

when you're in the planning stage. We offer world-class technology to stabilize slopes and excavations, support tunnel excavations, cut off ground water, build foundation systems and fix foundation settlement problems.

Service. Our experience shows that optimal and economical decisions are made by working with clients as soon as a special situation is identified. As a member of the project team, we provide valuable input on complex issues while remaining sensitive to existing design criteria and plans. In the end, we deliver solutions that work. We also offer a complete turnkey service; your engineers specify the performance criteria and Nicholson provides the design and constructs the foundation.

Results. Our track record of successful projects, award-winning installations and satisfied customers is evidence that we can fulfill all of your requirements. We're proud that so many of our customers are repeat customers. Our success is due to an investment in lasting relationships — with our customers, partners, and employees. Ultimately, that's the business we're in — building partnerships and delivering lasting solutions, from the ground up.

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Cement Grouting

Chemical Grouting

Jet Grouting

Rock and Soil Anchors

PIN PILESsm

Diaphragm Walls

Slurry Walls

Soil Mixed Walls

Anchored Walls

INSERT WALLSsm

Soil Nails

Vibro Compaction

Stone Columns

Vibrated Concrete Columns

Drains

NICHOLSON

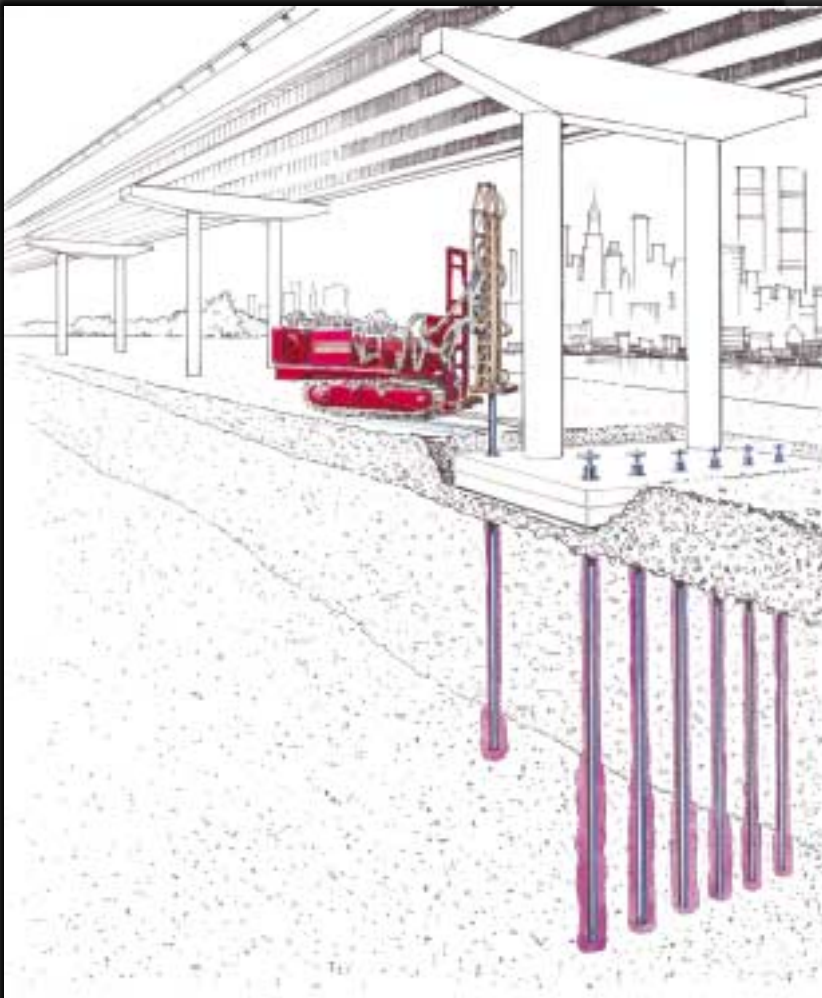
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PIN PILESSM

Nicholson Construction Company has built its business and reputation on its ability to support and retain structures. For more than 25 years, Nicholson's high-capacity PIN PILESM System has been providing foundation support for new and renovated structures. Nicholson PIN PILESSM cost-effectively replace and strengthen deteriorated foundation systems, provide extra support during renovation, support adjacent structures during excavation and support new structures.



PIN PILESSM are high capacity drilled piles usually in the range of 5 to 12" diameter. They are also called micropiles or minipiles.

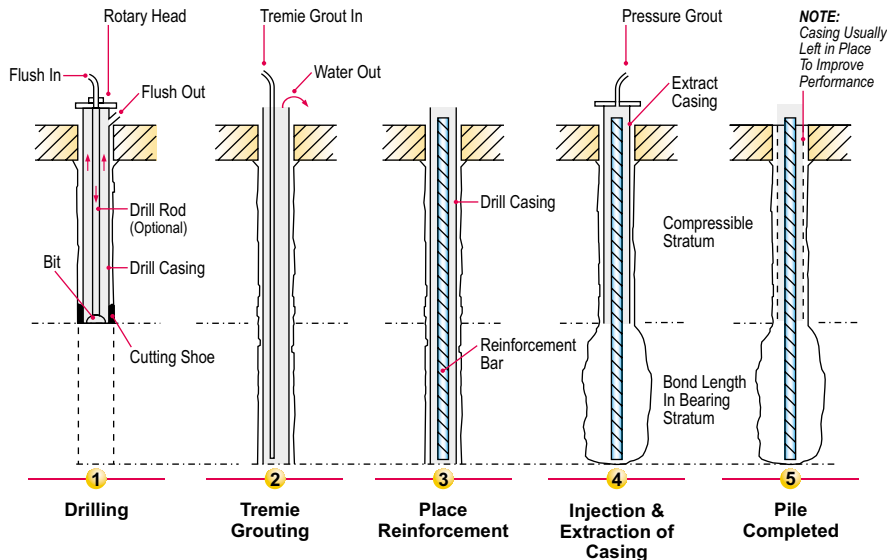
Pile depths can extend to 200 feet and achieve working loads over 200 tons, depending on pile size and ground conditions. Reinforcing elements — either high strength steel bars or tubing — are secured in place with durable cement grout. Various methods of grout placement are used to optimize bond with the surrounding ground. This can include gravity, pressure or multiple stages of post-grouting.

Despite their advanced design, PIN PILESSM are constructed with conventional materials and installed using proven drilling and grouting equipment.

PIN PILESSM



The Williamsburg Bridge Rehabilitation project in New York City represents the largest use of PIN PILESSM for a bridge foundation system to date in this country. For the NYCDOT, Nicholson installed 1620 PIN PILESSM totaling over 100,000 lineal feet under the South Roadway and Transit piers, and an additional 850 PIN PILESSM under the North Roadway piers.



Typical construction steps for PIN PILESSM in soil

Common Uses of PIN PILESSM

- To replace deteriorating foundation systems.
- To provide extra support for structures during renovation.
- To provide pile foundations where access, geology or environment prevent the use of other methods.
- To support structures affected by adjacent excavation, tunneling or dewatering activities.
- To provide a fast, effective alternative to more traditional underpinning methods.

Benefits of PIN PILESSM

- Can be installed through virtually any ground condition, obstruction and foundation and at any inclination.
- Ensure minimum vibration or other damage to foundation and subsoil.
- Can be installed in as little headroom as 6' and close to existing walls.
- Allow facility operations to be maintained during construction.
- Resist compressive, tensile or lateral loads, or combinations of all three.
- Provide impressively high load capacity at extremely low total and permanent settlement.
- Simple and economical connection to existing and new structures.
- Can be preloaded to working load before connecting to particularly sensitive structures.

Established in 1955, Nicholson Construction Company is a full-service geotechnical construction company specializing in earth retention, slope stabilization, structural support and underpinning, and dam remediation. Nicholson offers a diverse product line which includes drilling and grouting, jet grouting, rock and soil anchors, PIN PILESSM, diaphragm walls, soil mixed walls and INSERT WALLSSM.

For more information on Nicholson PIN PILESSM or any other specialty techniques, please call 412.221.4500 or visit our web site at www.nicholson-rodio.com

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