



NICHOLSON

# COMPACTION GROUTING



## COMMON USES:

- Improve soft, compactable soils.
- Provide stability in sink-hole prone geology
- Stabilize or re-level existing structures.
- Stabilize existing underground structures such as pipes, tunnels and subways.
- Install compaction grouted piles as structural elements.
- Reduce water seepage through the densification of water bearing soils.

**N**icholson is a leader in a wide range of grouting techniques. We utilize our capabilities to produce the highest quality and most cost-effective compaction grouting solutions for a wide variety of applications. From increasing the bearing capacity of soils under slabs and spread footings, to reducing liquefaction potential, arresting foundation settlement, lifting and leveling structures, providing pre-construction site improvement, and controlling settlement over tunnels or sinkholes, Nicholson is a leader in the use of compaction grouting techniques.

Compaction grouting is a method of ground treatment that involves injecting a very stiff homogeneous grout mix, under relatively high-pressures, and at low injection rates to subsurface locations in pre-designed patterns in order to displace and compact soils. The injected grout pushes the soils to the side as it forms a grout column or bulb.

The soil becomes increasingly dense as water and/or air are forced out and soil particles are rearranged by the incoming grout. Grout injections can be continued until grout forces overcome overburden or containment pressures and lift occurs. If lift is a desired result, the process can be continued on a controlled basis until lift requirements have been achieved. Compaction grouting requires close coordination between the following: soil properties, grout injection rates, grout mix designs, in-situ soil conditions, and equipment capabilities.