

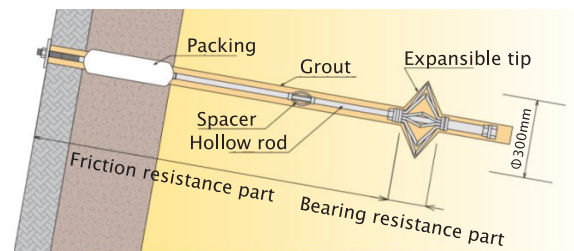
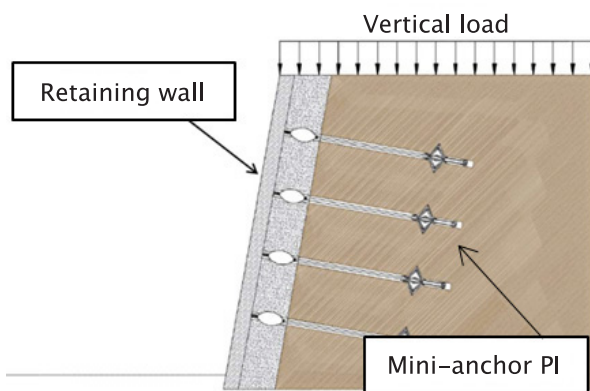
Mini-anchor PI

(PI = Pressure Grout Injection)
NETIS HK-170012-A

Overview

The ongoing aging of retaining walls in Japan creates a need for repair and seismic reinforcement, along with a requirement to address leakage from the permeable layer at their reverse side with pressurized injection of grout in the process of retaining-bar soil reinforcement. DNC has developed mini-anchor PI technology for such reinforcement based on its mini-anchor DO, with an expanding tip to increase resistance.

Mini-anchor PI application involves the placement of a packer in the permeable layer at the back of retaining walls to prevent grout dissipation and deterioration of drainage performance. Simultaneous pressurized injection of stabilizing grout further improves filling performance and enhances reinforcement effects.



Mini-anchor PI



Mini-anchor PI expansion

Improved part

- ① Fabric-based packers are used in retaining walls to prevent drainage function loss caused by grout leakage at the rear.

■ Fabric packer

Draining function loss is prevented by installing grout-filled fabric-based packers.

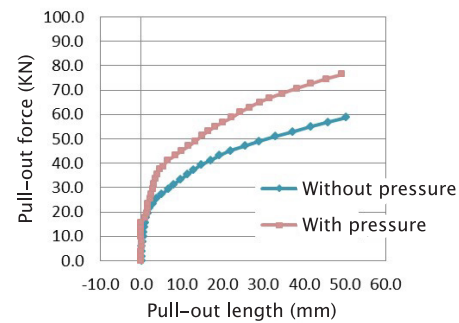


- ② Performance is optimized by injecting grout from the top of reinforcements via a hollow rod. Pressure injection improves grout filling via an expansible tip, also increasing grout/ground surface friction resistance and helping to prevent pull-out of reinforcement material.

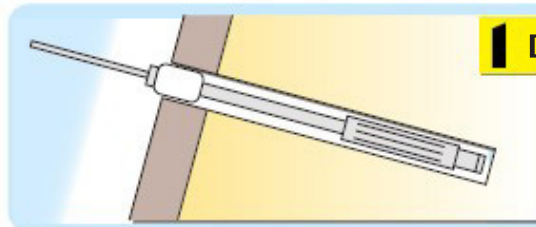


Mini-anchor PI excavated from the ground

Comparison of cases with and without pressure injection

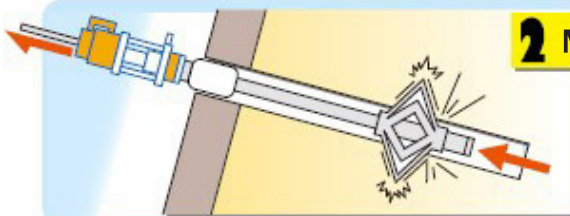


Construction procedures



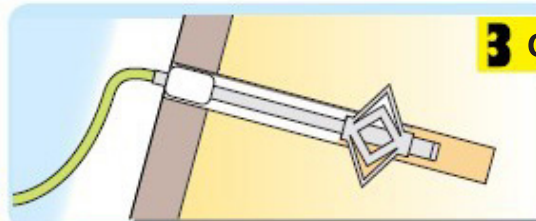
1 Drilling/mini-anchor insertion

Drilling is performed with rotary percussion or other tools, and mini-anchors with attached PC steel rods are inserted.



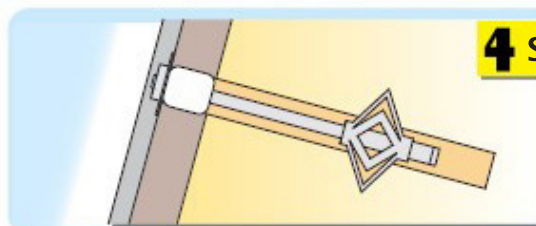
2 Mini-anchor expansion

Mini-anchor tips are expanded using a center-hole jack after insertion.



3 Grout injection

Grout is injected via the mini-anchor hollow with application of packing as necessary.



4 Surface protection

After head finishing, surface protection is applied to the slope surface.