

Dual-tube Double-packer Grouting System



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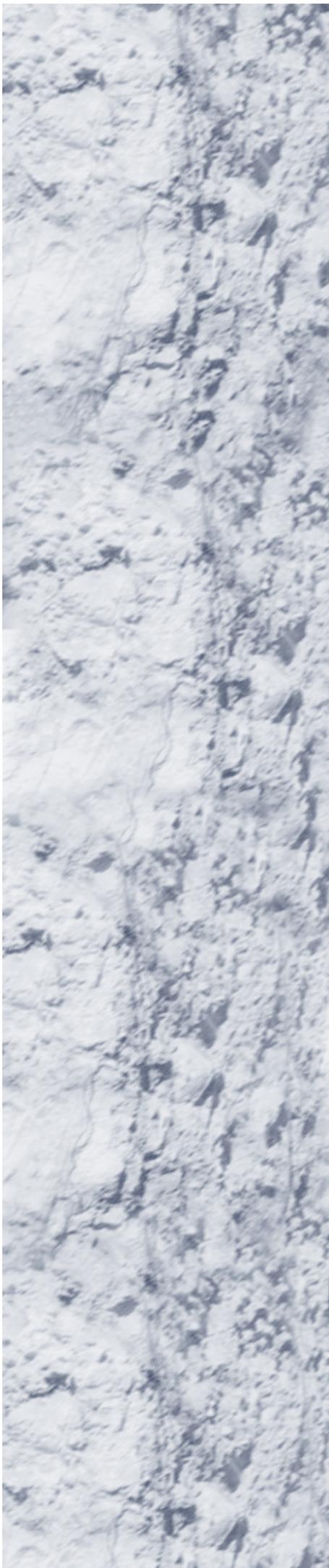
Dual-tube Double Packer Grouting System

The essence of Dual-tube Double Packer Grouting resides in the way to inject two different grout materials into the ground.

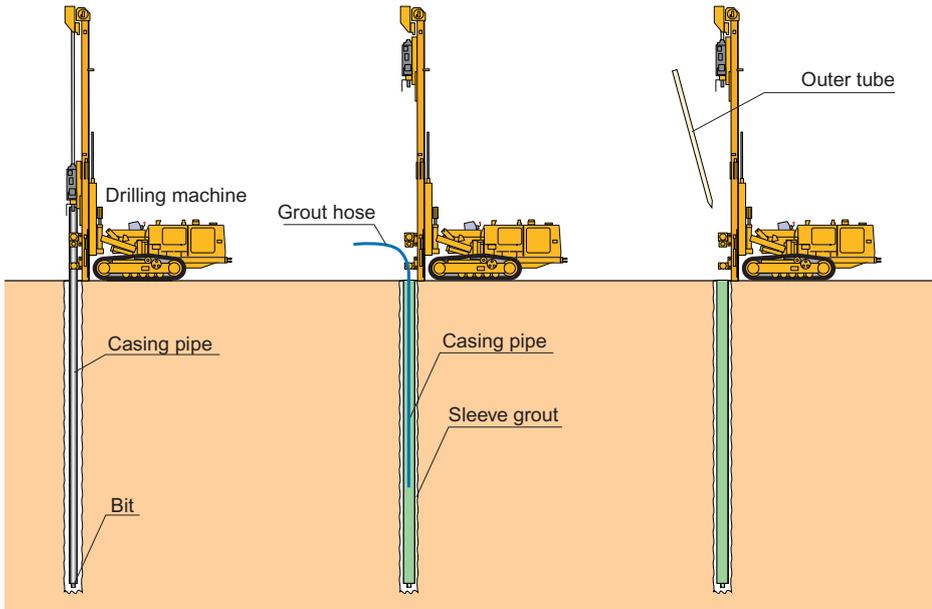
Generally, the ground is made of alternate layers consisting of different particle size and permeability. Normally there exist high permeability boundaries between two different layers. This type of heterogeneous ground is most suitable for Dual-tube Double Packer Grouting where cement-bentonite, the most economical and high-strength material, is first injected to fill in voids and water channels in order to make the target ground more homogeneous. The ground is now ready to accept and hold the other type of grout in the next phase. Then high-permeability grout is injected and permeated into soil pores at a low pressure. As a result of this combined grouting, the target zone is stabilized homogeneously.

Advantages

- ◇ A pre-defined zone is homogeneously stabilized by injecting grout from discrete injection points.
- ◇ Injection point is set at any pre-defined point by moving the double-packer along the outer-tube.
- ◇ The system allows repetitive grouting at the same injection point with different grout materials even after the work is completed.
- ◇ Drilling work and grouting work can be separated so that grouting program becomes more flexible to optimize labor and cost.



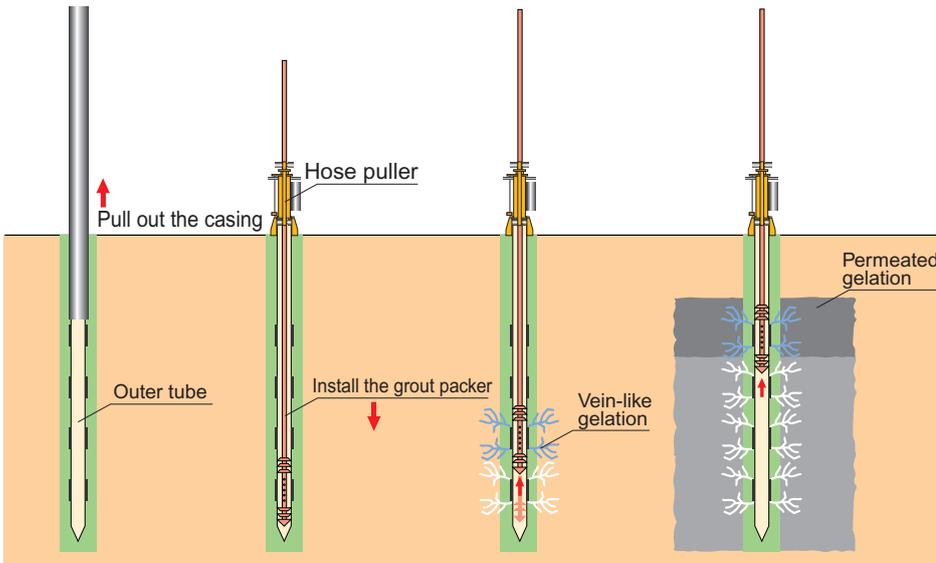
Packer Grout System



(1) Casing drilling (ø100mm) to a pre-defined depth.

(2) Sleeve grout is filled in the casing.

(3) Installation of the outer grout tube.

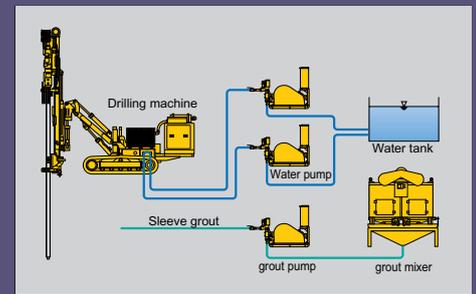


(4) Remove the casing.

(6) Modified liquid-phase silicate with a very low viscosity is injected into soil pores.

(5) Grout pipe equipped with the double packer is installed in the outer tube and cement-bentonite is injected (1st phase grouting) to fill in voids in the ground.

(7) Injection point is stepped up at a discrete interval to improve the target zone homogeneously.

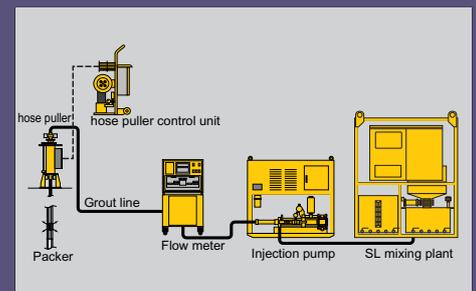


Crawler mount type

For deep drilling (LB-120)



Skid mount type



SL mixing plant



Injection pump



Flow meter



Hose puller



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