

Permeation Grouting

PRE-CONSTRUCTION PIERS, SINKHOLE REPAIR,
SOIL & STRUCTURAL STABILIZATION

Permeation Grouting

The intent of the grouting is to fill void space within the medium being grouted. Grouting may be done either to improve the soil structure or to reduce the hydraulic conductivity of the soil or rock. Grouting to improve soil structure is often done prior to excavations to act as support of excavation, improve stand up time, or reduce settlement. Soil structure may also be improved to increase bearing capacity. Hydraulic conductivity applications may be undertaken any time a reduction in gas or liquid inflow or migration is required.

Permeation grouting is generally carried out in defined zones utilizing sleeve ports (also known as tube-a-manchettes) installed into soil or isolated intervals within rock. This method allows the grout to be injected at a specified location.

Technical Information

Permeation Grouting can be used for the agglomeration and solidification of unstable sands and other non-cohesive soils at depths as great as 200 feet.

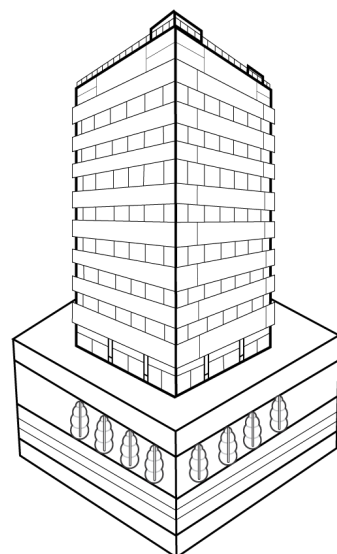
Microfine or Ultrafine cement, sodium silicate or other chemicals in liquid form is injected at low pressures into the area at the depths to be treated, bonded and contained. The liquid permeates the soil to bond the particles firmly together.

Permeation Grouting is generally carried out in defined zones utilizing injecting lances inserted into the ground at desired distances. This method allows the grout to be injected at a specified location.

It is essential to carefully plan the injection matrix to achieve full cohesion. This involves pre- determining the areas and depths for permeation, then calculating the volume of permeation liquid to be injected at each point in the matrix to ensure thorough soil cohesion.

Construction Sequence

- Drill and Grouting is progressed in either 'Down stage' or 'Up Stage' manner
- Grout viscosity is varied during each stage injection to ensure effective grout penetration
- Holes are drilled and grouted in a split spacing method with a primary, secondary, tertiary approach





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