

## **A review of stabilization of soft soils by injection of chemical grouting**

### **ABSTRACT**

Soil stabilization has become one of the useful solutions to treat the soft soils to achieve the required engineering properties and specification so that structures can be placed safely without undergoing large settlements. The use of admixture such as lime, cement, oils and bitumen is one of oldest and most widespread method for improving soil. When mixed with soil, it forms a material called soil-cement. The original technique known internationally as the deep mixing method (DMM). It is an in-situ soil treatment technology whereby the soil is blended with cementitious and/or other materials. Jet Grouting is suitable to be used as the injection method for the DMM. It utilizes a fluid jet (air, water and/or grout) to erode and mix the in-situ soft or loose soils with grout. Chemical stabilization is the effective method to improve the soil properties by mixing additives to soils. Usually the additives are cement, lime, fly ash and bituminous material. The chemicals usually used are sodium silicate, acrylamide, N-methylolacrylamide, polyurethane epoxy resins, aminoplasts, phenoplasts, lignosulfonates, among others. The choice of a particular chemical for soil stabilization will depend upon many factors like, purpose, soil strength desired, toxicity, rheology among others. This paper is aiming to show the difference between the some famous chemical grouts and the usage of them in the field.

**Keyword:** Soil stabilization; Injection; Chemical grout