



Sustainable Technology

# JET GROUTING

## Jet Grouting

Jet Grouting is a method of ground improvement that departs from the classical forms of grouting in that it does not penetrate the soil either by means of impregnation or 'claquage', rather it uses high energy to destroy the soil structure and simultaneously mix cement grout into the in-situ soil. The principal purposes for the application of Jet Grouting are for significantly increasing the strength of the soil treated, reducing the permeability of the soil and treating ground, where other methods of grouting simply are unsuitable.



The method involves drilling a hole to the design depth of the treatment, whilst maintaining an annular space around the drill string. Grout at high pressure is supplied to the bottom of the drill string and emerges through a very small diameter orifice, converting the energy from high pressure to very high velocity. The drill string is rotated as the hydrodynamic jet of grout cuts and disintegrates the soil and mixes into it.

By raising the drill string a column of treated soil is created, the diameter of this column is a function of the nature of the soil and the amount of energy applied to it, dictated essentially by the rate at which the drill string is raised.



The soil/grout/water mixture produced by the jetting process is greater in volume than the primary soil and therefore a surplus of the mixed soil rises to the ground surface via the annular space around the drill string. It is vital that this annular space remains open and spoil continues to reach the surface, in order to prevent a build up of pressure within the ground.



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