METRO PILING

ENGINEERING STRONG FOUNDATIONS

CONTROLLED MODULUS COLUMNS (CMC)

GROUND IMPROVEMENT SOLUTIONS

Controlled Modulus Columns are installed by displacing the surrounding soil using a specially designed displacement tool and injecting high-strength grout or concrete during withdrawal. The columns reinforce weak and compressible ground, increase bearing capacity and reduce total and differential settlement beneath foundations, floor slabs and infrastructure.

DESCRIPTION

Controlled Modulus Columns (CMC) are formed by advancing a specially designed displacement tool through weak and compressible soils. The tool laterally displaces and compacts the surrounding ground with minimal spoil generation. During withdrawal, high-strength grout or concrete is injected under controlled pressure to form a continuous column. Column diameter, depth and spacing are selected to suit the ground conditions, applied loads and settlement criteria.

CMC ground improvement is suitable for soft cohesive soils, loose granular deposits and made ground beneath foundations, industrial floor slabs, storage tanks, roads and embankments. The columns increase the stiffness and bearing capacity of the treated ground while reducing total and differential settlement. Loads are normally transferred to the columns and surrounding soil through a designed granular load-transfer platform. Installation is rapid, produces minimal vibration and can provide an economical alternative to conventional piling where ground conditions are suitable.

APPLICATIONS

- Residintial
- Infrastructure
- Commercial

ADVANTAGES

- Increased bearing capacity
- Reduced Settlement
- vibration-free installation
- Minimal spoil generation
- Reduced foundation costs

INSTALLATION PROCESS

A displacement tool is advanced to the required depth, compacting the surrounding soil with minimal spoil. Grout or concrete is then pumped through the tool as it is withdrawn, forming a continuous column. A load-transfer platform is normally installed above the completed CMCs to distribute foundation loads.

TYPICAL CAPABILITIES

PARAMETER	FROM	TO
Column diameter	250 mm	600 mm
Treatment depth	3 m	30.0 m*
Column spacing	1.5 m	3.5 m*