

Site Investigation

Cone Penetration Testing

As a specialist in Cone Penetration Testing (CPT), Soil Mechanics provide an accurate, cost effective in situ ground investigation service. The advantages are significant delivering high quality, real time geotechnical results with minimal soil disturbance which enables highly productive on the spot decisions relating to ground investigation strategy or foundation design.

As a stand alone service or as part of a wider ground investigation our CPT testing in the field is backed by excellent in-house analytical support and technical expertise.

Accessibility

Mounted in purpose built 6WD trucks and other all-terrain vehicles our wide range of penetrometers can gain access to most sites thereby offering a significantly quicker, cleaner and less disruptive means of ground investigation than conventional methods.

Productivity Gains

High productivity gains are achieved due to rapid penetration of the ground and small interval readings which enable greater definition of strata.

How it works

The CPT system operates by employing a powerful hydraulic jacking system to push the instrumented cone into the ground at a constant penetration rate. In addition to conventional friction cone measuring, tip resistance, local sleeve friction and electric piezocones of varying sensitivity are available to measure porewater pressures during penetration and dissipation tests. The output from the electric cones is sent via an umbilical cable to the monitoring/logging system together with depth information from an encoder linked to hydraulic rams. Data is displayed graphically on a monitor while the test is proceeding. If required all results can be processed on site and produced to a report quality format.

All terrains

All of our penetration vehicles have on-board data acquisition systems as standard. In addition to our truck mounted penetrometers we offer heavy/lightweight crawler units, trailers and demountable ram units to suit a wide range of ground surface conditions. The lighter units can be fitted to a pontoon, barge or jack up unit for over water application.

A range of cones

We are able to test the ground using a number of techniques, including:

- **Piezocone** for the determination of dynamic and equilibrium pore water pressures and parameter consolidation



- **Seismic cone** for the determination of downhole shear wave propagation velocity. The shear wave velocity enables an assessment to be made of in situ shear modulus
- **Full displacement pressuremeter cone** for the determination of soil strength and shear modulus
- We are also able to provide undisturbed push samples via proprietary **Mostap** and **GMF** sampling systems
- **Magnetometer cone** for the detection of magnetic anomalies associated with the presence of unexploded ordnance.

