



SOCOTEC

CONE PRESSUREMETER

The cone pressuremeter (CPM) is a full displacement pressuremeter designed to perform in situ load-displacement tests to determine strength and stiffness properties of the ground. Primarily designed for testing in soft to stiff clay and loose to medium dense sand. The CPM is mounted behind either a solid cone tip or piezocone and pushed into the ground using a cone penetration testing (CPT) rig.



CPM-47

SOCOTEC UK operate the 47 mm cone pressuremeter (CPM-47). It comprises a cylindrical probe covered by a flexible membrane that is expanded against the ground by oil or gas pressure. Measurements are made internally by radial displacement strain arms and pressure cells, with digital data transmitted to the surface via an umbilical cable.

CPM DEPLOYMENT

The CPM is primarily operated in conjunction with a CPT rig and pushed into the ground continuously from ground level. It can also be used with a rotary drilling rig to test discretely at the base of a borehole.

The sequence of testing involves the CPM being driven in by the CPT rig to the first scheduled test depth. The probe is then inflated and the test carried out. Following successful completion of the test, the CPM is then advanced on to the next test depth.



TESTING & ANALYSIS

Testing is carried out under manual stress control using either biodegradable oil or compressed gas to pressurise the CPM at an appropriate loading and unloading rate to suit the ground conditions. It takes approximately 1 hour to carry out a full cycle of loading and unloading, with two or more reload cycles. Interpretation of the test data can be carried out to obtain material strength and soil stiffness (shear modulus, G).

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