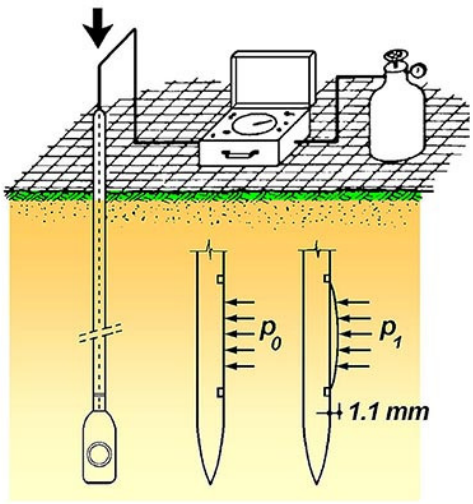
FLAT DILATOMETER

The flat dilatometer (DMT) is 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 DMT is mounted on the end of a series of rods that are pushed into the ground using a cone penetration testing (CPT) rig or the head of a rotary drilling rig.



Marchetti Seismic Dilatometer

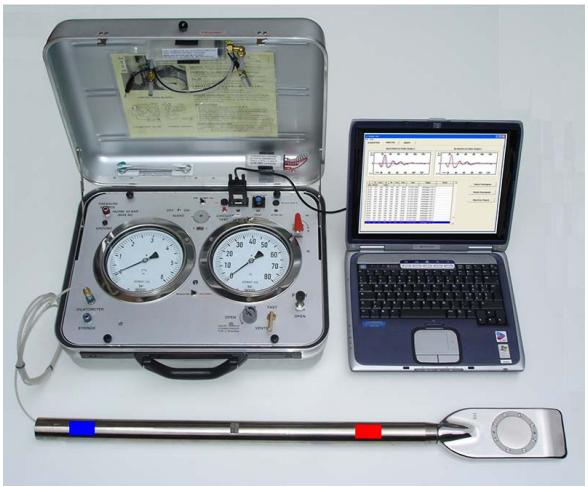
SOCOTEC UK operate the Marchetti Seismic Dilatometer (SPDMT). It comprises a flat blade with a flexible steel membrane located on one face. The membrane is inflated horizontally against the ground by gas pressure. Measurements are made specific points throughout the expansion, with digital data transmitted to the surface via an umbilical cable.

An additional module mounted behind the dilatometer also allows the recording of seismic (S & P) waves.

DMT DEPLOYMENT

The DMT is primarily operated in conjunction with a CPT rig and pushed into the ground continuously from ground level. However, 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 DMT 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 DMT is then advanced on to the next test depth.



TESTING & ANALYSIS

Testing is carried out under manual stress control using compressed gas to pressurise the DMT blade. It takes approximately 10 minutes to carry out a full cycle of loading and unloading. Interpretation of the test data can be carried out to obtain estimates of oedometer modulus M, shear strength Su, OCR, Ko in clay, small strain modulus Go and the working strain modulus M_{DMT}.

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