

Pressuremeter Testing (PMT) for ground deformation parameters

An inflatable probe expanded in a borehole measures in-situ stiffness and limit pressure at depth.

TYPICALLY USED FOR

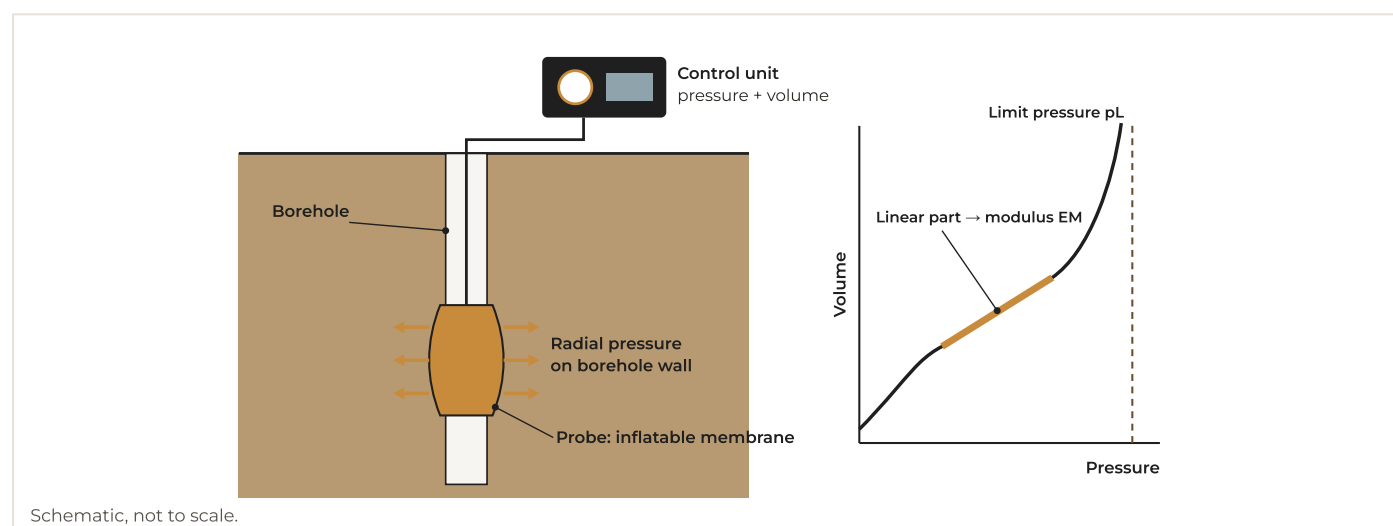
- Measuring in-situ deformation parameters at depth for foundation design.
- Ground where CPT cannot penetrate, including dense soils and weak rock.
- Verifying ground improvement at depth.
- Settlement and bearing calculations using pressuremeter-based methods.

LIMITATIONS

- Results depend strongly on borehole quality: a disturbed borehole wall reduces the measured stiffness.
- Tests are at discrete depths, not a continuous profile.
- Requires a drilling rig and experienced operators.

HOW THE TEST WORKS

A borehole is drilled with minimal disturbance and the probe is lowered to test depth. The membrane is inflated in pressure increments, each held for a set time, while the injected volume is recorded.



TEST PLANNING INPUTS

- Purpose and design method (for example the Ménard approach).
- Test depths and spacing.
- Drilling method suited to the ground.
- Expected pressures and probe type.
- Applicable standard.

TEST EXECUTION CONTROLS

- Test pocket drilled just before testing to limit wall disturbance.
- Pressure increments and hold times as per the procedure.
- Volume readings at standard times in each increment.
- Test depth recorded.
- Records reviewed for borehole quality.

INTERPRETATION AND REPORTING

Test plan: What is specified

Test depths, method and use of results agreed with the consultant.

Test record: What was measured

Corrected pressure-volume readings for each test.

Interpretation: What it shows

Pressuremeter modulus EM and limit pressure pL, interpreted for design or verification.

DELIVERABLES

Borehole and test location plan · Calibration records · Pressure-volume curves for each test · EM and pL values with depth · Interpretation report