

Plate Load Testing (PLT) for bearing and stiffness verification

A loaded steel plate measures the ground's settlement response to give near-surface stiffness and bearing behaviour.

TYPICALLY USED FOR

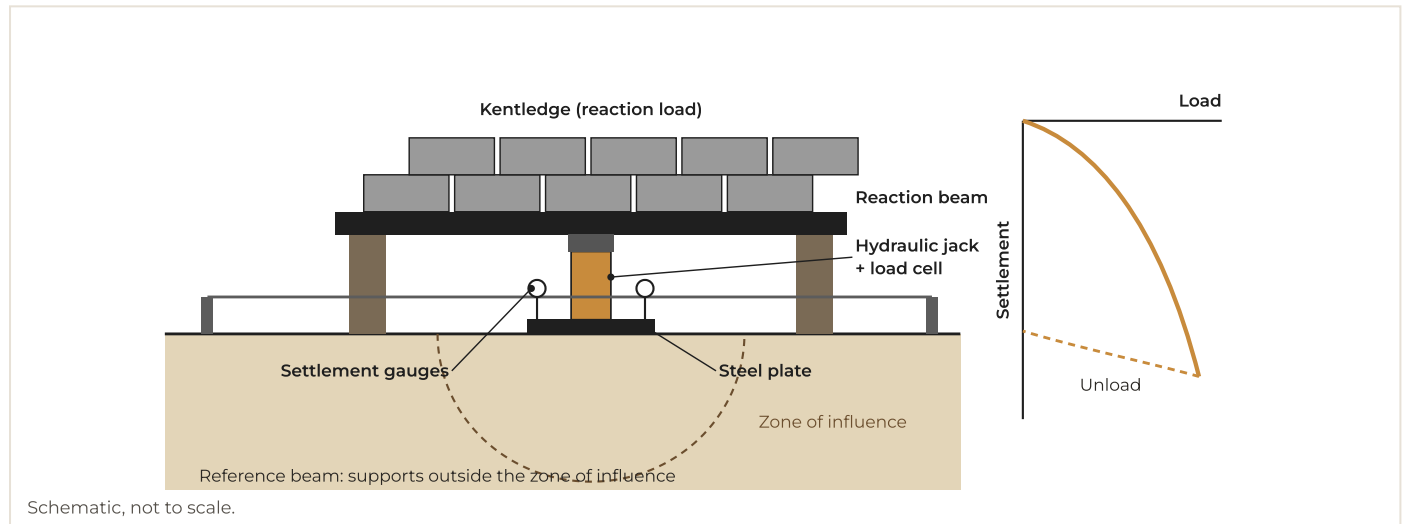
- Verifying compacted fills, platforms and improved ground.
- Checking bearing behaviour for shallow foundations and slabs.
- Acceptance testing against modulus or settlement criteria.
- Verifying working platforms for cranes and piling rigs.

LIMITATIONS

- The depth of influence is roughly 1.5 to 2 times the plate diameter, so deeper layers are not tested.
- A reaction load, such as kentledge or a heavy vehicle, is required.
- Each test represents one location; the number of tests must represent the area.

HOW THE TEST WORKS

A rigid steel plate is bedded on a levelled surface. A hydraulic jack between the plate and a reaction load applies load in steps, each held until settlement stabilises.



TEST PLANNING INPUTS

- Purpose and acceptance criteria (modulus, or settlement at a given load).
- Plate diameter and maximum test load.
- Load steps, cycles and hold criteria.
- Test locations and number of tests.
- Applicable standard.

TEST EXECUTION CONTROLS

- Load increments and hold times as per the procedure.
- Settlement readings at set intervals until stable.
- Reference beam supports outside the zone of influence.
- Test protected from vibration, direct sun and disturbance.
- Test location surveyed.

INTERPRETATION AND REPORTING

Test plan: What is specified

Plate size, loading procedure and acceptance criteria agreed with the consultant.

Test record: What was measured

Load and settlement readings for each increment and cycle.

Interpretation: What it shows

Load-settlement curve and calculated moduli compared with the criteria.

DELIVERABLES

Test procedure · Calibration certificates · Load-settlement records and curves · Calculated moduli · Test report with photographs