

Pile Testing: static, dynamic and integrity tests

Static, dynamic and integrity tests confirm pile capacity, settlement behaviour and soundness.

TYPICALLY USED FOR

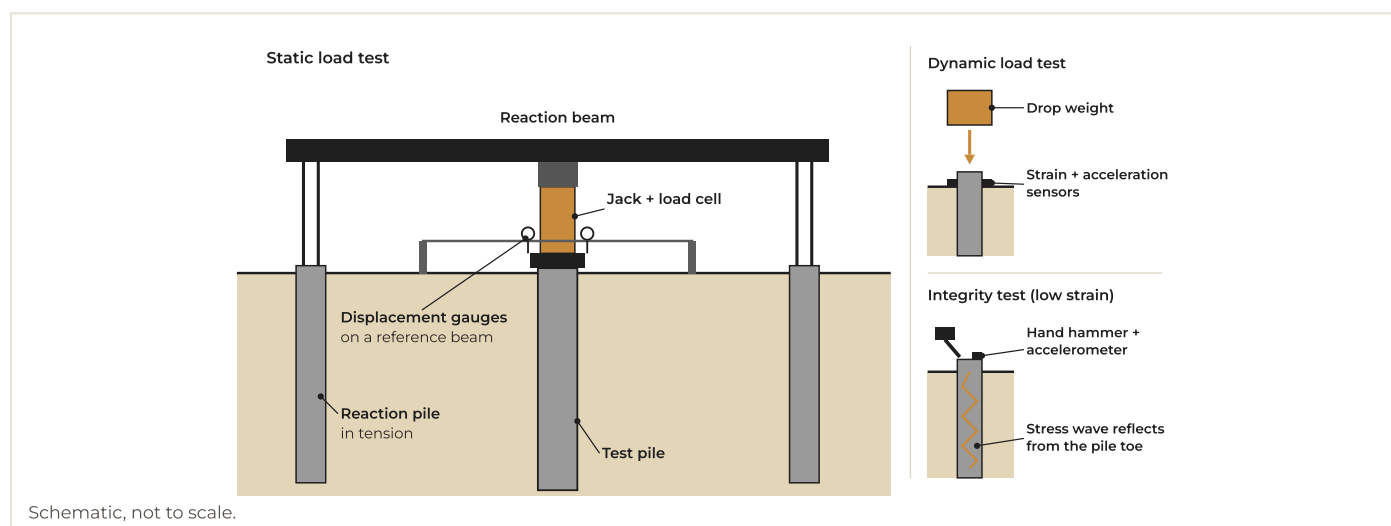
- Preliminary test piles to confirm design assumptions before production.
- Working pile tests to verify installed piles.
- Integrity screening of large numbers of piles.
- Tension and lateral load tests where required.

LIMITATIONS

- Static tests need substantial reaction (kentledge or reaction piles) and time.
- Dynamic test capacity is an estimate that depends on signal matching and calibration.
- Low-strain integrity tests detect major defects but do not measure capacity, and reliable interpretation depth is limited.

HOW THE TEST WORKS

In a static load test, a jack loads the pile in steps against kentledge or reaction piles. Each step is held while displacement gauges on an independent reference beam record settlement.



TEST PLANNING INPUTS

- Design loads and test loads.
- Type of test, number and location of piles.
- Reaction system and loading procedure.
- Acceptance criteria for settlement or capacity.
- Applicable standard.

TEST EXECUTION CONTROLS

- Load increments and hold periods as per the procedure.
- Readings continued until settlement-rate criteria are met.
- Reference beams independent of the reaction system.
- Signal quality checks for dynamic and integrity tests.
- Test records for every pile.

INTERPRETATION AND REPORTING

Test plan: What is specified

Test loads, procedure and acceptance criteria agreed with the consultant.

Test record: What was measured

Load-settlement records, or dynamic and integrity signals, for each pile.

Interpretation: What it shows

Capacity, settlement behaviour and integrity assessed against the criteria.

DELIVERABLES

Test procedure and pile selection · Calibration certificates · Load-settlement curves · Dynamic analysis and signal-matching reports · Integrity test reports · Summary of results against criteria