

Geophysical Testing for ground investigation and verification

Seismic and electrical surveys map ground stiffness, layers and anomalies across a site without drilling every metre.

TYPICALLY USED FOR

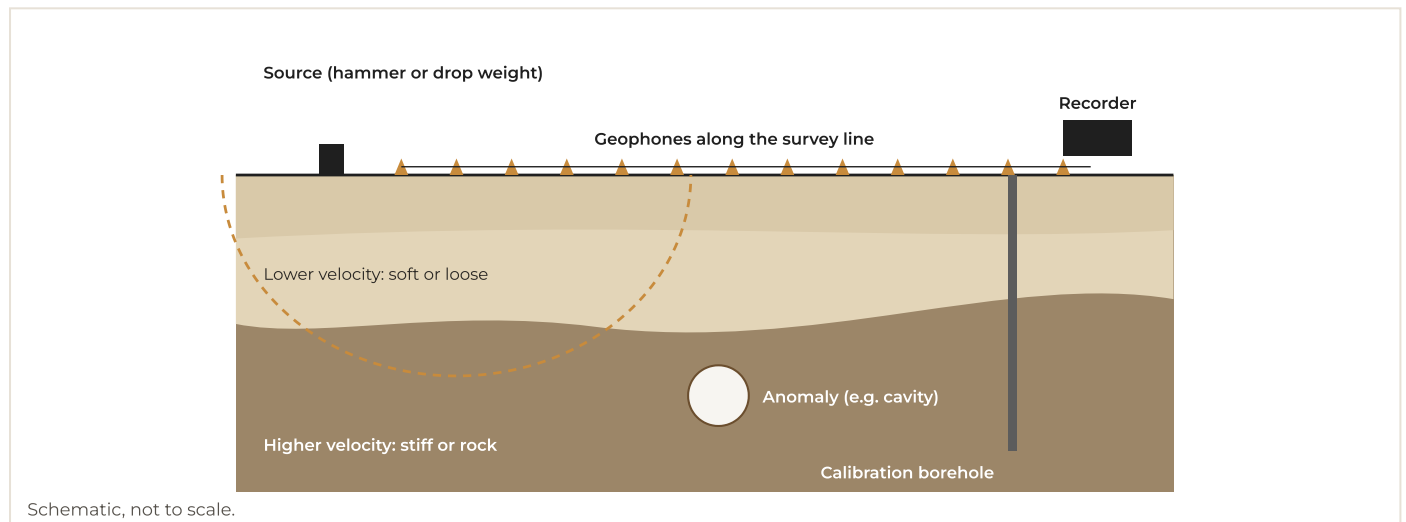
- Site investigation over large areas before boreholes are placed.
- Depth to rock and lateral changes in ground conditions.
- Locating cavities, buried features and services.
- Shear-wave velocity for seismic site classification.

LIMITATIONS

- Results are indirect and must be calibrated against boreholes or CPT.
- Resolution decreases with depth and depends on the method.
- Noise and vibration on active sites, and buried services, affect some methods.

HOW THE TEST WORKS

Sensors such as geophones or electrodes are laid out along survey lines. A seismic source, such as a hammer or drop weight, or an electrical current is applied, and the response is recorded along the line.



TEST PLANNING INPUTS

- Purpose: stiffness, layering, rock depth, cavities or verification.
- Survey lines and depth of interest.
- Existing borehole and CPT data for calibration.
- Site noise, access and buried services.
- Acceptance criteria where used for verification.

TEST EXECUTION CONTROLS

- Sensor spacing and line geometry surveyed.
- Source and acquisition settings recorded.
- Data quality checked in the field and repeated where needed.
- Line positions referenced to site coordinates.

INTERPRETATION AND REPORTING

Test plan: What is specified

Survey scope, methods and, where used, verification criteria agreed with the consultant.

Test record: What was measured

Raw data, processing steps and inverted sections.

Interpretation: What it shows

Interpretation calibrated against boreholes and CPT, in the survey report.

DELIVERABLES

Survey plan · Raw and processed data · Velocity or resistivity sections · Interpretation report · Before/after comparison where used for verification