

Secant & Contiguous Pile Walls for deep excavations

Rows of cast-in-place piles forming embedded retaining walls for basements and deep excavations.

CAN BE CONSIDERED WHERE

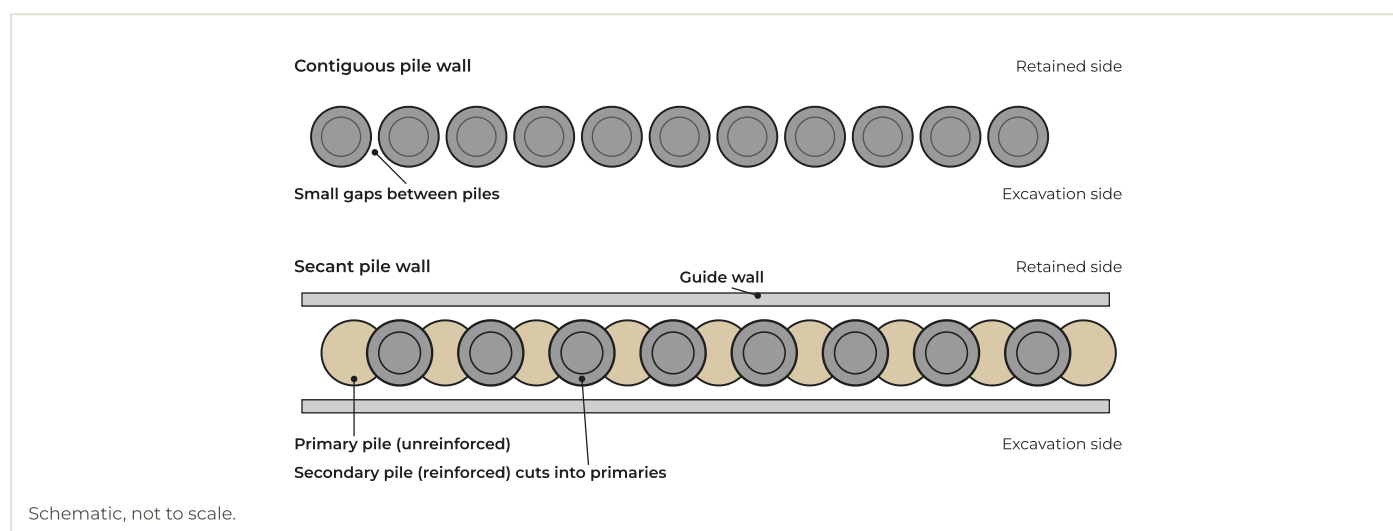
- Basements and deep excavations next to existing structures, roads and services.
- Secant walls where groundwater must be cut off.
- Contiguous walls where groundwater is low or controlled separately.
- Temporary or permanent retaining walls.

LIMITATIONS

- Contiguous walls are not watertight, so groundwater control may be needed.
- Secant walls need tight control of position and verticality to interlock.
- Walls may need props or anchors as the excavation deepens.

HOW IT WORKS

A reinforced concrete guide wall sets out the pile positions. For a secant wall, primary piles are installed first, in weaker or unreinforced concrete; reinforced secondary piles are then drilled, cutting into the primaries to interlock.



DESIGN INPUTS

- Site investigation and groundwater.
- Excavation depth, surcharges and adjacent structures.
- Movement limits.
- Wall design: embedment, pile diameter, spacing and reinforcement.
- Support system: props or anchors.

EXECUTION CONTROLS

- Guide wall setting out.
- Pile position and verticality.
- Concrete mixes and timing for primary and secondary piles.
- Reinforcement installation.
- Excavation sequence against the design.

VERIFICATION AND ACCEPTANCE

Design intent: What is required

Wall movement limits and design criteria agreed with the consultant.

Production control: What was done

Pile records, verticality and concrete records.

Acceptance: What was proven

Integrity tests, inclinometer and wall movement monitoring, settlement monitoring of neighbouring structures.

DELIVERABLES

Method statement and risk assessment · Wall layout and sequence drawings · Pile records · Monitoring reports · Test reports · As-built records