

Vibro Replacement (Stone Columns) for soil reinforcement

Stone columns formed with a depth vibrator reinforce soft or mixed soils and improve drainage.

CAN BE CONSIDERED WHERE

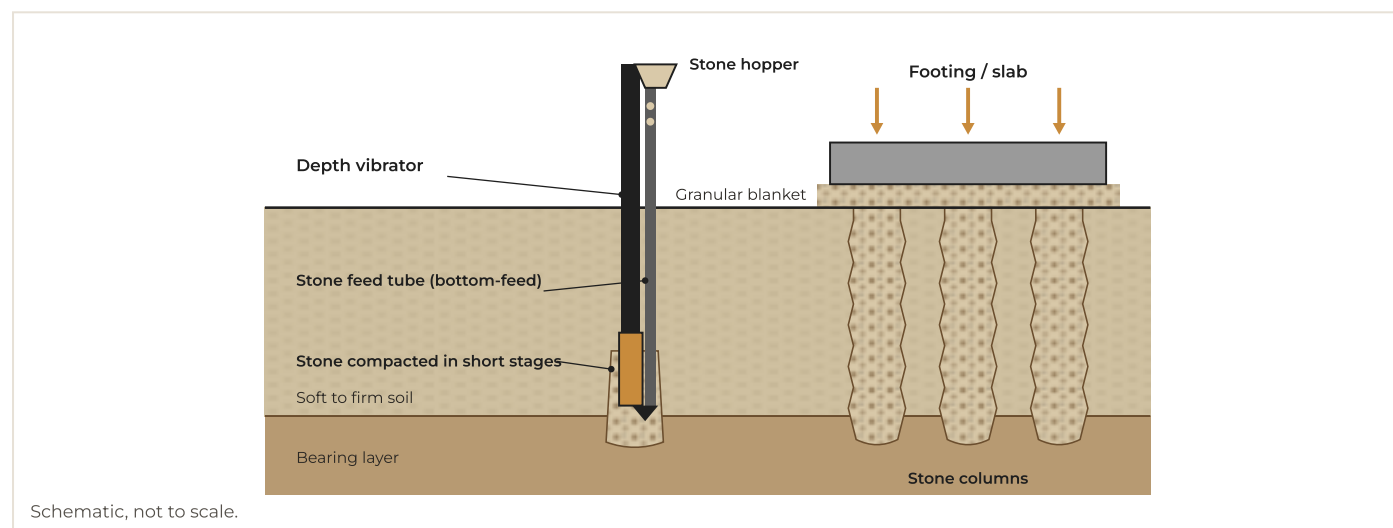
- Soft-to-firm silts and clays, mixed fills, and silty sands with too many fines for Vibro Compaction.
- Tanks, warehouses, embankments and building foundations.
- Reducing liquefaction potential through reinforcement and drainage.

LIMITATIONS

- Very soft soils or peat may not support the columns laterally, and rigid inclusions may then be considered.
- A reliable supply of suitable crushed stone is required.
- Obstructions may need pre-drilling.

HOW IT WORKS

The vibrator penetrates to the design depth. Stone is then fed either from the surface into the annulus (wet top-feed) or through a supply tube to the tip (dry bottom-feed).



DESIGN INPUTS

- Site investigation: soil strength, layer thickness, groundwater.
- Loads, bearing and settlement criteria.
- Column diameter, spacing and length.
- Stone grading and supply.
- Choice of wet or dry method.

EXECUTION CONTROLS

- Depth reached at each column.
- Stone volume per stage and per column.
- Vibrator power and compaction stages from the data logger.
- Column position and verticality.
- Daily production records.

VERIFICATION AND ACCEPTANCE

Design intent: What is required

Bearing and settlement criteria agreed with the consultant.

Production control: What was done

Data-logged depth, stone volume and power for each column.

Acceptance: What was proven

Column or zone load tests; settlement monitoring where specified.

DELIVERABLES

Method statement and risk assessment · Column layout drawings · Trial report · Data logs for every column · Load test reports · As-built records