

Rapid Impact Compaction (RIC) for ground improvement

A hydraulic hammer strikes a steel foot that stays in contact with the ground, in rapid, controlled blows.

CAN BE CONSIDERED WHERE

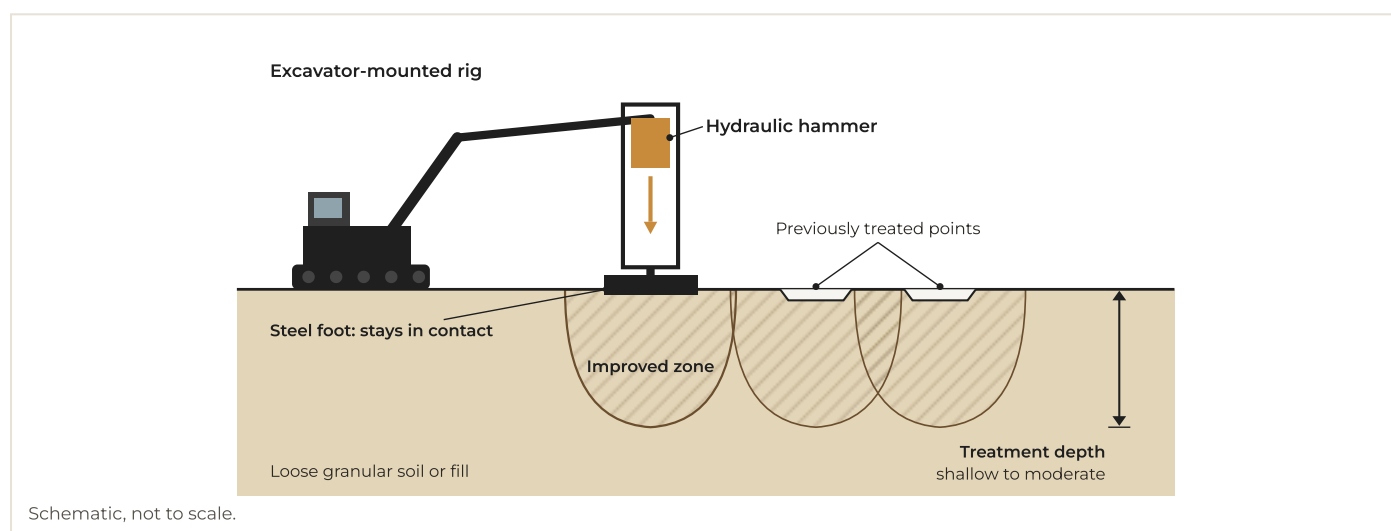
- Loose granular soils and fills at shallow-to-moderate depth.
- Sites where more control and less vibration than Dynamic Compaction are needed.
- Building platforms, tank foundations, roads and yards.
- Treatment of collapsible soils before loading.

LIMITATIONS

- Treatment depth is less than Dynamic Compaction.
- Saturated fine-grained soils (clays and silts) respond poorly.
- Vibration is lower than DC but still needs monitoring near assets.

HOW IT WORKS

The hammer is lifted hydraulically and dropped onto a steel foot that stays on the ground. Each blow drives the foot down, densifying the soil beneath and around it.



DESIGN INPUTS

- Site investigation: soil profile, CPT/SPT results, fines content, groundwater level.
- Performance criteria: bearing pressure, settlement, target test values.
- Required depth of improvement.
- Grid spacing and passes.
- Stopping criteria: set per blow and maximum blows.

EXECUTION CONTROLS

- Setting out of every point against the approved grid.
- Blow count and cumulative penetration per point from the rig data logger.
- Stopping criteria checked at each point.
- Backfilling and levelling of depressions between passes.
- Daily production records.

VERIFICATION AND ACCEPTANCE

Design intent: What is required

Performance criteria and target test values agreed with the consultant.

Production control: What was done

Data-logged blows and penetration for each point.

Acceptance: What was proven

Post-treatment CPT, plate load tests or zone load tests against the criteria.

DELIVERABLES

Method statement and risk assessment · Treatment grid drawings · Trial report with agreed criteria · Rig data logs for every point · Level surveys · Verification test reports