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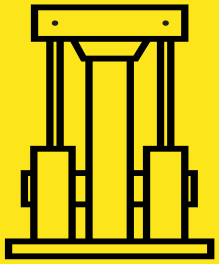
JACK PILES AND JACK PILES RAFT

Jack piles are installed using hydraulic jacking techniques and are predominantly used in underpinning schemes in conjunction with RC ground beams or rafts needled into the existing structures walls. They are installed in a silent and vibration free operation using the dead weight of an existing structure as a reaction to install the piles.



DESCRIPTION

Jack Piles are installed using hydraulic jacking techniques and are predominantly used in underpinning schemes in conjunction with RC rafts/ ground beams needled into the existing structures walls. They are installed in a silent and vibration free operation using the dead weight of an existing structure as a reaction to install the pile.

They can be used for all types of foundation stabilisation, upgrades and new builds but are commonly used for sensitive structures or listed buildings due to the vibration free pile installation process.

APPLICATIONS

- Residential
- Commercial
- Ideal for sensitive structures/ listed buildings

ADVANTAGES

- No spoil
- Quiet installation
- Vibration free
- Quick installation
- Limited headroom & restricted access
- Small lightweight equipment

INSTALLATION

RC beams are installed on the inside and outside of an existing building and needled into all load bearing walls to be underpinned. Prior to concreting the beams, polystyrene void forming and holding down (HD) bolts are placed within the RC beams reinforcement at the predetermined pile locations. The polystyrene cones installed are wider at the bottom than the top to provide a suitable load transfer system upon concreting once the piles have been installed.

Upon curing of the beam concrete, the polystyrene formers are removed, and the Jack rig is located over the pile positions and secured to the beams via the HD bolts. Heavy wall steel tubes are jacked down through the RC raft in 1.5m lengths in a vibration free operation. Each section is connected to the last by spigot / socket arrangement until the design load is achieved. This is checked by introducing a load cell between the top of the pile and head of the rig.

Once the design load is attained, the steel tube is then over jacked to ensure the top of the tube is at the underside of the RC beams. If this is not possible the tube can be burnt off to the underside of the RC beams.The pile and void through the RC beams are then concreted to the top of the beams.

TECHNIQUE CAPABILITIES

SPECIFICATION	FROM	TO
Standard pile size	140mm dia	178mm dia
Typical load capacity	50kN	250kN
Practical depth	4.5m	20.0m

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