

BOTTOM DRIVEN MINI PILING

The installation of bottom-driven piles is quick, efficient and suitable for most ground conditions. Spoil removal is not required – a particular advantage on brownfield sites.

BASIC TECHNIQUE

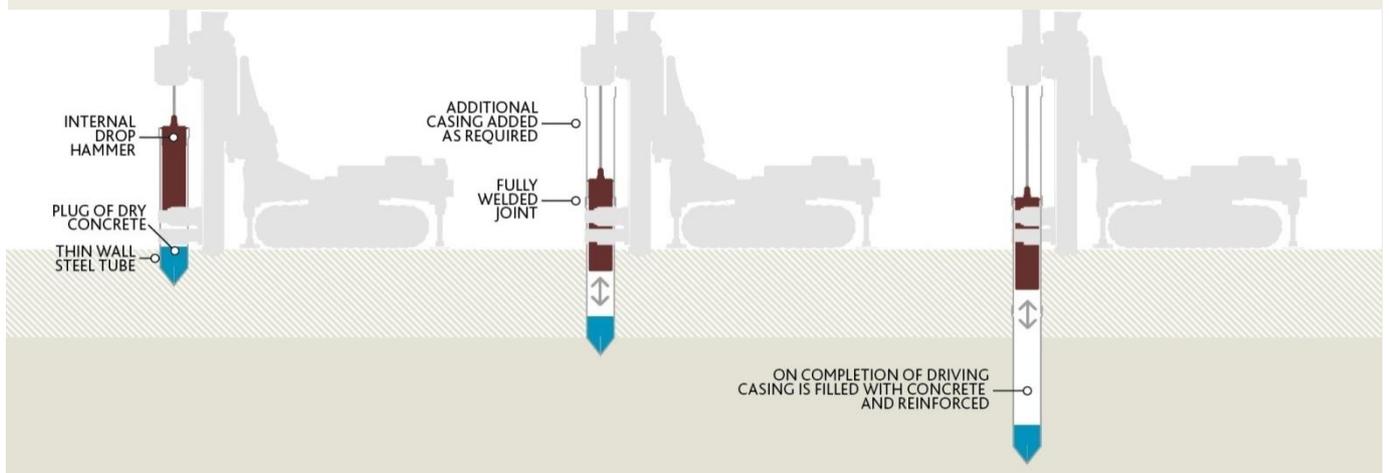
A closed-ended thin walled steel tube is driven in lengths of between 2 and 6m using an internal drop hammer on to a dry concrete plug. The tubes are joined by a full but non-structural fillet weld as the installation proceeds.

The pile is driven to a predetermined set or design length criteria. Once the required depth is reached the tube is filled with high slump concrete or grout and a single bar or cage is inserted.

STRENGTHS

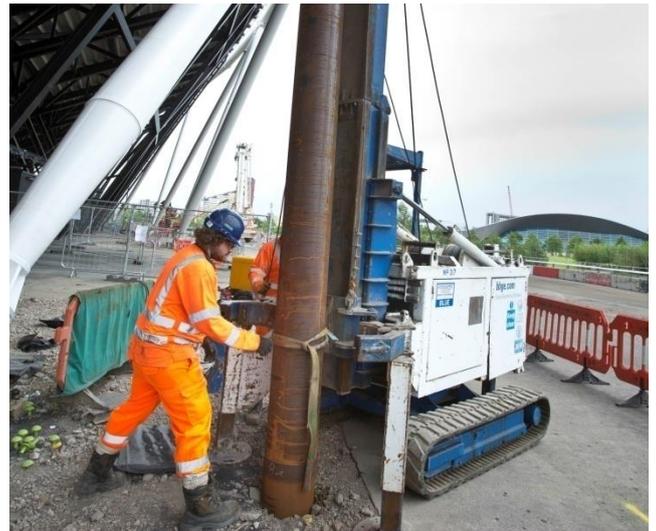
- ✓ Small lightweight equipment
- ✓ Minimal site preparation required
- ✓ Piles self-testing when driven to a set
- ✓ Limited headroom & restricted access capability
- ✓ Low levels of noise and vibration ideally suited to inner-city and environmentally sensitive sites.
- ✓ No spoil to be removed; a significant advantage on contaminated sites.
- ✓ Can be installed successfully into most ground conditions.

CONSTRUCTION SEQUENCE





STEEL CASINGS WITH CRIMPED CLOSED ENDS



BOTTOM DRIVEN MINIPILING UNDER STANCHION

COMPARISON OF TECHNIQUES

Using our in-house Carbon Calculator system, we have been able to compare the CO₂ produced for different Mini Piling systems. On one project in Central London with restricted access, a comparison between a Self-Drill Micro Pile, a Bottom-Driven Steel Tube Mini Pile and an Auger Bored Mini Pile was undertaken. The results showing the percentage of carbon dioxide embedded and emitted for each piling technique are shown in the charts below.

Pile Type	Example Project (Tonne CO2)
Bottom Driven	1.13te
Micro Pile	1.59te
Auger Bored	2.91te

SUSTAINABLE CONSTRUCTION

The bottom driven mini pile is one of the most cost-effective and environmentally friendly piling systems we offer. In particular it uses much less concrete/cement than other mini piling systems. Also the fact that it is a displacement system and produces no spoil makes it the ideal choice of mini piling system in contaminated ground.

LOW NOISE & VIBRATION

To form the bottom-driven minipile a hammer weighing up to 1tonne is lifted and dropped on a plug of dry concrete at the base of the crimped-end steel tube. As the impact of the hammer is always at the base of the pile, noise and vibration is well suppressed and increasingly dissipated at depth. The system is regularly used in built-up, city centre locations.



TECHNICAL CAPABILITIES – BOTTOM DRIVEN MINIPILES

Specification	From	To
Practical Depth	N/A	30m
Diameters	168mm	323mm
Typical Load Capacity	N/A	750kN
Rig Height	2.2m	8.0m
Rig Weight	1,000kg	4,000kg
Rig Length	1.8m	3.3m
Rig Width	0.7m	1.6m
Operating Distance face of Wall to Centre of Pile	350mm	-

CONTACT US

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