TECHNIQUE SHEET

Balfour Beatty
Ground Engineering

DRILLED MINI PILES

Drilled piles are particularly effective for penetrating rocks, boulders, general obstructions and mass concrete.

BASIC TECHNIQUE

A variety of drilling techniques are employed using concentric and eccentric overburden drilling systems as well as more conventional duplex methods. A water or air flush is used depending on the ground conditions however foam, grout, mud and polymer are also available in addition to these. The pile depth is normally predetermined by detailed pile design calculations.

Once the required depth is reached the bore is filled with grout using a tremie pipe where water is present. Typically a single bar or reinforcing cage is inserted on completion.

These piles are suitable in most ground conditions and are particularly appropriate in problem ground (where driven or augered piles would struggle to penetrate) or when a rock socket is required.

Systems utilising either permanent or temporary support casings through overburden and broken bedrock are available.

KLEMM KR709 MINI PILING RIG

TECHNIQUE SHEET

Balfour Beatty Ground Engineering

SAFETY CAGE ON DRILL RIG

BUTTON BIT FOR ROCK DRILLING

OVERBURDEN DRILLING

To deal with difficult ground conditions eg. Where a high boulder content is present an overburden drilling system (ODS) is required. A permanent or temporary casing is drilled through the overburden into competent ground, and the drill then continues to form the pile to the designed length. If rock is encountered, the overburden drill is removed and a 'Down-the-hole' (DTH) hammer is used to drill into the rockhead.

ROCK/CONCRETE DRILLING

A 'Down-the-hole' hammer drilling system can be used to drill through unreinforced concrete and rock.

STRENGTHS

- ✓ Small lightweight equipment
- ✓ Low noise and vibration
- ✓ Suitable for tension loads
- ✓ Minimal site preparation
- ✓ Can be installed into most ground conditions
- ✓ Limited headroom, restricted access capability

SYSTEM APPLICATIONS

- ✓ Bearing piles
- ✓ Tension piles
- ✓ Ground and rock anchors
- ✓ Piled retaining walls
- ✓ Anti-Flotation piles
- ✓ Raking piles

TECHNICAL CAPABILITIES – DRILLED MINIPILES

Specification	From	To
Practical Depth	N/A	50m
Diameters	100mm	450mm
Typical Load Capacity	N/A	1500kN
Rig Height	2.2m	8.0m
Rig Weight	2,000kg	15,000kg
Rig Length	1.8m	5.4m
Rig Width	0.75m	2.4m
Operating Distance from face of Wall to Centre of Pile (Including safety cage)	1000mm	-

Drilled mini piles can be installed at inclined angles if required.

CONTACT US

Balfour Beatty Ground Engineering Chaddock Lane, Worsley, Manchester, M28 1XW

T: 01256 400400 | **W**: www.bbge.com | **E**: info@bbge.com