

SPECIFICATION FOR DROP HAMMER DRIVEN MINI PILES

All piling undertaken by MG Construction Ltd will be in compliance with the General Requirements section including appendix 1 to 4 of The ICE Specification for piling and embedded retaining walls Second Edition (SPERW).

The guidance notes section C of SPERW shall also be deemed the reference for guidance on allocation of responsibilities under any contract agreement entered into.

SECTION A : GENERAL

1. This specification is to be read with the Company MG Construction Ltd's General Conditions of Contract Piling Schedule and Estimate and Schedule of Attendances and Services to be provided free issue.
2. The estimate is based on the use of the Company's normal bottom driving equipment. 0.5 tonne drop hammer operated from Technodrill TD610 tracked mini piling rig.
3. The Company shall not accept responsibility for the stability of existing structures adjacent to or near to the piling operation. It is assumed that the Client will have relevant insurances in place for non-negligence. We confirm that 21.2.1 type insurance can be arranged where specifically instructed at an additional charge subject to survey. We would recommend that the client should monitor the structure and any adjacent structures for any movement during our works.
4. The positions of underground works and services shall be notified to the Company before piling commences. Even though notified, the Company shall accept no liability for damage to such underground works or services unless agreed in writing by the Company before piling work commences on site.
5. Driven pile lengths shall be measured from the toe of the fully driven pile casing to the ground level at the top of pile unless an alternative datum is specified in the Company's estimate.
6. Unless otherwise agreed in writing by the Company, the following works and services shall be carried out by others, free of charge to the Company at the location of the piling works, as per enclosed Schedule of Attendances and Services, relocation or diversion of services, any protection or enabling works, suitable access provision, any reinstatement work, setting out pile positions and pile cut off levels.
7. Where new work supported by the piles links with work not on foundations, the Company shall not be responsible for damage due to differential movement and a construction and movement joint is strongly recommended.
8. The Client shall be responsible for providing any protection deemed necessary to any existing structures local to our works. Attendance to this item and any suitable measures taken to be allowed for and carried out by others.

SECTION B : MATERIALS

Unless otherwise stated in the estimate, the materials used shall be as specified below: -

- (I) Pile Casing - Grade 43 weldable steel tube assembled in suitable length sections by arc welding on site. The internal pile diameter of the casing shall not be less than the nominal pile diameter indicated in the estimate, within a tolerance of plus or minus 3 mm.
- (II) Reinforcement shall be designed as per requirements of BS8004, BS8110. Piles designed as start struts.
- (III) Concrete - to mini piles and pile caps C35 mix with ordinary Portland cement, 20 mm nominal maximum size aggregate and a minimum cement content of 330kg/mm³ unless otherwise specified.

SECTION C : DESIGN AND CONSTRUCTION OF WORKS

The works to be carried out by the Company shall be as described in the estimate. The words or phrases used in the estimate or herein shall have meanings in accordance with the following glossary of terms and definitions.

1. DESIGN means supply calculations for the safe working load of piles. Piles are driven to a design set not a design length.
2. FORM PILES means where indicated, drive steel casing to achieve required set at depth. Record details of the driving. Supply and place reinforcement to within 1000 mm of the toe of the pile, supply and place concrete to cut off level or top of pile casing as required.
3. SETTING OUT means marking out the site in such a way that the required pile positions can be immediately and accurately identified by the Company's piling operatives.
4. PILE POSITION means the location of the pile centre as indicated on the setting out drawing, with a horizontal tolerance of 75 mm in any direction.
5. VERTICAL means the pile shall be installed in a vertical attitude within a tolerance of 1 in 75 unless exceptional circumstances render this difficult to achieve.
6. RAKING means the pile shall be installed at an inclination to vertical as defined on the Company's working drawing within a tolerance of 1 in 25 for raking piles up to 1:6 and 1 in 15 for pile raking more than 1:6.
7. SET means the rate of penetration of the pile casing, with the driving equipment in normal operating mode, as determined by the Company prior to commencement of work, at which the pile will be able to carry the calculated load with an ultimate Factor of Safety of at least two.
8. DRIVING RATE means the average rate of penetration of the pile casing, with the driving equipment in normal operating mode, from the commencement of driving of each pile to within 300 mm of the final depth of the pile.
9. OBSTRUCTION means the presence of large stones, rocks, timber, hard material etc. Which impedes the penetration of the pile to the required depth. Refer to Section D4.
10. STANDING TIME means time that operatives and rig are standing or are unable to continue piling for any reason outwith the Company's control.
11. CUT OFF means the level specified by the Client or his appointed Agent for the top of the pile. Where the Client does not specify a cut off level, cut off shall be 100 mm above ground level or to suit the Company's pile caps or other foundation works.
12. FORM PILE CAPS means excavate to the sizes, depths and in the positions indicated, trim tops of pile casings, supply and fix formwork and reinforcement, supply, place and compact concrete, then strike formwork; alternatively omit formwork and cast against adjacent ground or hardcore face.
13. A minimum useable pile length of 1.5 metres is assumed to ensure the piles fixity and stability. Piles which refuse under this depth may not be suitable for use dependant on individual conditions. We shall advise the Client of what action, if any, to consider if this occurs. Refused piles will remain chargeable through the contract, including any driving obstruction time.

SECTION D : CONTRACT SUM AND VARIATIONS

1. The estimate of pile lengths and any calculations for safe working load, stated in the estimate are based on the information known by the Company at the time of estimate and are given in good faith. Pile types and lengths may be varied from those estimated due to the actual strata found.
2. The Contract Sum shall be based on individual offer terms of remeasurement together with any variations noted on the Company's piling record. This record shall be agreed by the Customer with the Company's representative on site at the time of driving or failing this shall be as prepared by the Company's Engineer from the record kept by the chargehand responsible for driving. Normally a summary will be sent to the Client or his representative on completion of works.
3. The rates shown in the Company's Estimate and Daywork Schedule shall be used for adjusting the Contract Sum. If none are stated the adjustment to the estimate for standing or obstruction time shall be measured in accordance with CECA Daywork Rates plus 10%.
4. Where the driving is delayed by obstructions, the time spent in dealing with the obstruction will be charged at an extra over rate on a cost plus basis in addition to the normal piling rate. Unless otherwise indicated in the Company's Estimate, it shall be assumed that a driving rate of under 50 mm for 10 blows at 1.2 metre height will be subject to an additional charge for obstruction time.
5. Trial pits shall be constructed as required and if allowed for in the Estimate. The express purpose of these being to verify or otherwise the suitability of the pile type the absence of any previous subsoil investigation relevant to the site.
6. Our normal driving rate, unless stated otherwise, is in excess of 150 mm for 10 blows at drop 1.2 metres height. Should this rate prove unattainable we reserve the right to adjust the contract rates per metre. This will take the form of additional plant and labour charges.
7. Pile log sheets shall be kept by the site personnel. These log sheets shall be available for inspection on site and will be submitted to the Client upon completion of the works. The log sheets shall form the basis of the contract valuation and shall be deemed to have been agreed.