

SPECIFICATION DP1 FOR TOP DRIVEN 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 top driving equipment. Crawler mounted one tonne Ramtek hammer. The rates for driving are based on tender issue Ground Investigation Reports.

Our estimate is based on the premise that a comprehensive site investigation has been carried out in accordance with BS 5930. Errors in estimating costs or providing designs, which result in additional costs as a direct result of lack of or misleading ground information will be chargeable to the client.

3. The Company shall not accept responsibility for the stability of existing structures adjacent or near to the piling operation. We recommend that a non-negligence insurance policy be taken out in the joint names of the employers and contractor. Where possible, the position of underground works and services shall be noticed 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 when the information is formally received. 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. 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. It has been assumed that continuity of work and access to pile positions will be available at all times. Failure of the Client to provide such will result in standing time being chargeable. Protection of surfaces in the proximity of our works shall be provided free issue by the Client and any damage due to piling or other foundation works which may reasonably be expected, shall be reinstated by others and is not deemed included in our Offer price. Enabling works including removal of fixtures, fittings etc in advance of underpinning or piling may be required to be carried out and this shall be provided in advance of our works by the Client. Liaison with MG Construction Ltd is recommended.
5. The ICE Specification for Piling and Embedded Retaining Walls (SPERW) will be the reference 'general' Specification with the exclusion of clauses relating to measure or record keeping.
6. Unless otherwise agreed in writing by the Company, 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.
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.

SECTION B: MATERIALS

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

1. STEEL PILES - Pile casing – high quality AP15CTL80 steel casing. Diameter as per quotation. Tube assembled in suitable length sections on site.
2. PRECAST CONCRETE PILES – Piles shall be manufactured to European code with 50N/mm² grade concrete. Joints shall be compliant with this European code and fully lockable type.

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, based on tender information supplied.
2. FORM PILES means where indicated, drive steel casing to achieve required set at depth. Record details of the driving.
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 75mm 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 or obstructions deflect the pile.

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, 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 shoe, with the driving equipment in normal operating mode, from the commencement of driving of each pile to within 300mm of the final depth of the pile.
9. OBSTRUCTION means the presence of large stones, rocks, timber, hard filled material etc. Which impedes the penetration of the pile to the required depth. Refusal shall be defined at 25 mm penetration for 10 blows of 1 tonne hammer at 900 mm drop. Obstruction will be defined as a rate of penetration of under 70 mm for 10 blows at 900 mm drop.
10. Steel piles will require starter bars installed by others after cut down. Ref MG Construction's standard detail.
11. Concrete infill to head of pile C35N, to enable starter bar installation if required. This work to be carried out by Client on completion of our works. (Steel piles only).
12. 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 type of pile lengths and any calculations for safe working load, allowed for 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 and the appropriate change in the Contract sum made in accordance with the basis of the estimate notes presented with the tender estimate.
2. The Contract Sum shall be based on the bill of quantities, re-measured to extent indicated, together with any variations noted on the Company's piling record.
3. 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 50mm for 10 blows will be subject to an additional charge for obstruction time.
4. Should piles deflect out of tolerance in position or vertically due to hitting obstructions, and these piles are deemed not to be able to carry the full working load, the Client will select alternative position or positions for re-driving piles and issue an instruction to that effect. The cost of additional piles will be chargeable to the Client.
5. 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.
6. Monitoring of adjacent structures can be instructed and carried out on the Clients behalf. Our rates do not include for this work and an additional instruction would be required.

SECTION E: PILE LOAD TESTS

12. PILE LOAD TESTS WHERE INSTRUCTED OR QUOTED

12.1 Capacity of Load Test Equipment

12.1.1 Non Working and Working Piles

The test equipment shall be capable of safe application of 150% of the anticipated test load on a working pile or 200% if a trial pile is required.

12.2 Reactions for Static Load Test

12.2.1 Tension Piles in Static Load Test

If tension piles are used to provide the reaction for the hydraulic jack these piles shall not be closer to the test pile than 1.5 metres measured centre to centre or a distance equivalent to five diameters of the largest pile whichever is the greater.

12.3. Static Load Testing

Incremental loading and testing shall be carried out in accordance with recommendations of the ICE Piling Specification 1988 written report issued to the Client or his Engineer. A 2-cycle test shall be made.

12.4. Dynamic Load Testing

Dynamic Load testing shall be carried out on working piles or a trial pile by an independent consultant specialising in this field. Information on the specialist Company proposed shall be issued to the supervising officer prior to the test.

12.5. Working Piles

12.5.1. Definition

Working piles shall be piles installed as part of the Foundation.

12.5.2. Notice of commencement of Load Test

MG Construction Ltd shall give at least 48 hours notice of the commencement of each test to the Client.

12.5.3. Test Report

The Contractor shall send to the Client within one week of completion of each test a report on test results.

12.5.4. Working Piles as Tension Piles

The use of working piles as tension piles for the purposes of load tests may be adopted by MG Construction Ltd.

12.5.5. Acceptance of Load Test Results

The deflection at the head of the working pile at the end of the period under the maintained calculated safe capacity during the first cycle of incremental loading will not exceed 15 mm.

12.6 Trial Piles / Preliminary Piles

Trial Pile / Preliminary Pile static testing shall be undertaken on the basis of verification of proposed pile SWL with adopted F.O.S. Should amendment of SWL be required, this variation shall be valued through the contract and any additional costs borne by the client.

13 Down Time

We advise an allowance in programme of 15% down time. Experience is that on piling plant, there is an average site time spent effecting maintenance and repair to plant.