

Reference	NR/L3/CIV/140/70C
Issue	2
Publication date	6 th March 2010
Compliance date	5 th June 2010

SECTION 70 GENERAL REQUIREMENTS FOR PILING

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SECTION 70

GENERAL REQUIREMENTS FOR PILING

General

- 70.001** The whole of the piling work shall comply with the information shown on the Contract Drawings and shall be constructed in accordance with the relevant sections of the "ICE Specification for piling and embedded retaining walls" (2nd edition, 2007), hereinafter referred to as the 'ICE Specification', unless qualified or amended by the following Clauses.

Clause numbers in parentheses within the heading margins refer to the corresponding clauses in the ICE Specification.

Pile layout, design and construction (B1.4)

- 70.002** Further to ICE Specification, clause B1.4, Option 2 shall apply unless otherwise specified in Appendix 70/1.

Except where shown on the Contract Drawings, the pile type, pile size, and pile positions and spacing shall be selected and determined by the Contractor.

The piles shall be designed in accordance with the recommendations of BS EN 1997-1 and the NA to BS EN 1997-1; Non-Contradictory Complementary Information (NCCI) in BS 8004; the requirements of Appendix 70/1; and the following:

- i) the permitted vertical and horizontal pile head deflections for the specified design verification loads shall be in accordance with Schedule 70/A,
- ii) for the purposes of calculating horizontal deflections, the fixity of the pile heads shall be as shown on the Contract Drawings.

In addition, for helical screwed piles:

- i) design shall be based on conventional soil mechanics,
- ii) long-term tension loads in cohesive soils shall be checked using drained soil strength parameters,
- iii) in the design of radio mast equipment support structures, the wind loading component on a pile shall not exceed 25% of the ultimate tensile resistance of that pile,
- iv) the basis of the relationship between the pile capacity and measured values of torque shall be demonstrated in the design,

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- v) a minimum of two helices shall be provided on every pile, and a minimum of three helices where pile capacity is dependent on the strength of variable soils - such as non-engineered fill and inter-bedded soils,
- vi) creep of the piles shall be considered in the design.

For the purposes of the Tender only, the soil parameters used for the design of the piles shall be those given in the Contract.

Where Tenders propose alternative soil parameters for design they shall justify and gain the Engineer's approval prior to adopting these alternatives.

The Employer's Representative shall be provided with drawings showing the pile design and the pile arrangement. The number of copies shall be as detailed in Appendix 70/1.

A completed Certificate of Design and Checking shall be provided for the pile design in accordance with RT/CE/S/003.

**Information to
be supplied with
the Tender
(B1.4, B1.10)**

70.003

In addition to the requirements of the ICE Specification, clauses B1.4 and B1.10, the following shall be supplied with the Tender:

- i) details of the type of pile offered, including any permanent casing,
- ii) the method to be adopted for calculating and checking the load bearing capacity, pile settlement and horizontal pile head deflection,
- iii) details of the tests proposed to be undertaken on the Site to prove the pile design, including any proposed trial drives or bores, and the name of the specialist contractor proposed for undertaking the non-destructive testing of the piles,
- iv) where friction reduction is specified (but no particular method is detailed) or where friction reduction is required by the Contractor's design, the type and description of the method to be used to reduce friction on the piles, and the numbers and lengths of piles to be so treated,
- v) details of preboring or other methods of aiding pile driveability considered necessary by the Contractor, including the locations, diameters and depths below the commencing surface of any preboring,
- vi) the names of the organisations proposed for the design and design check,