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Specification for

The performance of prestressing anchorage for post-tensioned construction

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The Government department and scientific and industrial organizations marked with an asterisk in the above list, together with the following were directly represented on the committee entrusted with the preparation of this British Standard.

This British Standard, having been approved by the Cement, Lime and Gypsum Products Industry Standards Committee, was published under the authority of the Executive Board on 12 October, 1973

Electricity Council, The Central Electricity Generating Board and the Area Boards in England and Wales

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Foreword

This British Standard was first published in March 1969. As a result of international experience it has been found that some revision to the methods covered were necessary and the standard has therefore been revised.

This standard describes three complementary methods of testing prestressing anchorages for post-tensioned concrete construction using wire, strand or bar tendons. These three methods of test are:

- 1) the test of static efficiency and of elongation of the anchored tendon;
- 2) the test of dynamic behaviour of the anchored tendon;
- 3) the test of force transfer to the end block.

The standard methods are intended to supply basic information on the performance of an anchorage under specified conditions, but it remains the responsibility of the structural engineer to ensure that the anchorage system is detailed and used correctly in each application and according to the appropriate Codes of Practice. It is the responsibility of the manufacturer to maintain such quality controls as are necessary.

It is not however practical for the anchorage manufacturer to carry out tests for all anchorage types and for all varieties of tendon material available in sufficient numbers to allow the characteristic efficiency and the characteristic elongation to be calculated for all the alternatives, since a minimum of twenty tests would be required in each case. However, where the client nominates a tendon material for which the manufacturer has no test evidence, the manufacturer shall be entitled to request that he carry out up to three tests of the type described in Clause 4 using the nominated tendon before any performance figures are given. The apportionment of the cost of these tests, including all labour, materials, transport and fees, shall be agreed between the client and the anchorage manufacturer.

To comply with this standard, the anchorage when tested with a specific tendon must comply with the requirements of Clause 4.

Anchorage which do not comply with the figure in Clause 4 may be used at proportionately reduced stressing forces by agreement between the manufacturer and the client.

There are a number of practical considerations that can affect the efficiency of an anchorage which should be taken into account at the design stage of the structure. Some of these are:

- 1) the ease of ensuring full compaction of the concrete around the anchorage;
- 2) the degree of misalignment of the anchorage relative to the tendon axis;
- 3) the surface condition of the anchorage and tendon;
- 4) the possibility of extreme environmental conditions;
- 5) the correct reinforcement of the end block in accordance with good engineering practice. The design of end blocks is outside the scope of this standard.

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Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, pages 1 to 6, an inside back cover and a back cover.

This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.