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Grout for prestressing tendons - Part 3: Test methods

Coulis pour câbles de précontrainte - Partie 3: Méthodes d'essai

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Grout for prestressing tendons —

Part 3:
Test methods

Coulis pour câbles de précontrainte —

Partie 3: Méthodes d'essai

ICS 91.100.30

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Contents

Page

Foreword

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The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 14824-3 was prepared by Technical Committee ISO/TC 71, *Concrete, Reinforced and Prestressed Concrete*, Subcommittee SC 3, *Production of Concrete and Execution of Concrete Structures*.

Introduction

In post-tensioned prestressed concrete construction, the grouting of tendons is an important operation. The intention of this International Standard is to provide a specification for grouting, compliance with which will satisfy the requirements in ISO 22966.

The testing regimes anticipated by this International Standard include three levels:

(1) Initial type and audit testing in accordance with ISO 14824-1;

(2) Suitability testing for confirmation of the selected grout for a specific project in accordance with ISO 14824-2;

(3) Inspection during the production of grout on a specific project in accordance with ISO 14824-2.

The test methods for each of the regimes are given in this standard ISO 14824-3. Some tests given herein are alternatives and it will be necessary to relate the chosen test method to the specified requirements. The tests are reference tests for checking suitability of grout for use with any type of tensile steel element.

Grout for prestressing tendons —

Part 3:
Test methods

1 Scope

This International Standard ISO 14824-3, describes the test methods for grout specified in ISO 14824-1. Testing shall be performed in accordance with the test methods given in this standard (reference test methods). The test methods are applicable to grout for all types of structures including bridges and buildings.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 679 – *Cement – Test methods - Determination of strength*

ISO 14824-1, *Grout for prestressing tendons – Part 1: Basic Requirements*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1
grout
homogeneous mixture of cement and water, it may contain admixtures and additions

4 The testing of grout

4.1 . General

4.1.1 Personnel

The grouts shall be tested by competent personnel experienced in the subject.

4.1.2 Test conditions

Testing shall be carried out at temperatures specified in accordance with ISO 14824-1. Temperature of constituent materials should be as recommended by the manufacturer.

The grout for the tests shall be made from materials specified in ISO 14824-1 and mixed in accordance with ISO 14824-1.

NOTE 1 ISO14824-2 requires suitability testing to be carried out using the same type of mixing equipment as is used for the actual site operations, hence it is preferable to also use the same type of equipment for all testing.

4.1.3 Test reports

All test reports shall include the following information as a minimum:

a) reference to this International Standard, ISO 14824-3;

b) name and address of the testing laboratory;

c) identification number of the test report;

d) name and address of the organisation or person who ordered the test;

e) name and address of the manufacturer or supplier of the product(s);

f) name or other identification mark of the product;

g) date of fabrication, and if relevant, supply of the product;

h) date of manufacture of test specimens;

i) date of test;

j) temperature of the fresh grout and ambient temperature;

k) batching and mixing procedures used;

l) specification of the grout mixer used;

m) identification of test equipment used, including where appropriate, calibration details;

n) individual results for the required test;

o) any inaccuracies or uncertainty of test results;

p) date and signature of the person responsible for the tests.

4.2 Sieve test

4.2.1 Principle of test

The test consists of pouring a quantity of grout through a sieve to check for the absence of lumps on the sieve.

NOTE The test may be omitted where all grout used in the project automatically passes through a sieve with an aperture ≤ 2 mm within the supply equipment.

4.2.2 Apparatus

A 150 mm diameter sieve with an aperture ≤ 2 mm.

4.2.3 Procedure

Pour a minimum of 1 l of freshly mixed grout through the sieve.

NOTE This may be carried out while filling the fluidity test cone.

4.2.4 Reporting

Report the absence of lumps on the sieve.

4.3 Fluidity test

NOTE Two test methods are described, only one is to be performed as appropriate for the type or characteristics of the grout.