SLOVENSKI STANDARD

SIST EN 446:2008

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SIST EN 446:1998

Injekcijska masa za prednapete kable - Postopki injektiranja

Grout for prestressing tendons - Grouting procedures

Einpressmörtel für Spannglieder - Einpressverfahren

Coulis pour câble de précontrainte - Procédures d'injection de coulis

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EUROPEAN STANDARD

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English Version

Grout for prestressing tendons - Grouting procedures

Coulis pour câble de précontrainte - Procédures d'injection de coulis

Einpressmörtel für Spannglieder - Einpressverfahren

This European Standard was approved by CEN on 21 June 2007.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN Management Centre or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN Management Centre has the same status as the official versions.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

Management Centre: rue de Stassart, 36 B-1050 Brussels

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Foreword

This document (EN 446:2007) has been prepared by Technical Committee CEN/TC 104 “Concrete and related products”, the secretariat of which is held by DIN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by April 2008, and conflicting national standards shall be withdrawn at the latest by April 2008.

This document supersedes EN 446:1996.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

Introduction

In post-tensioned prestressed concrete construction, the grouting of tendons is an important operation. The intention of this European Standard is to provide a specification for grouting, compliance with which will satisfy the requirements in prEN 13670.

The main function of grouting is to

- Provide protection to the prestressing steel against corrosion;
- Provide a bond between the prestressing steel and the ducts where required for the design of the structure;
- Allow the transfer of compressive stresses in the structure in a direction transverse to the internal tendons;
- Fill all voids where water may accumulate and cause frost damage.

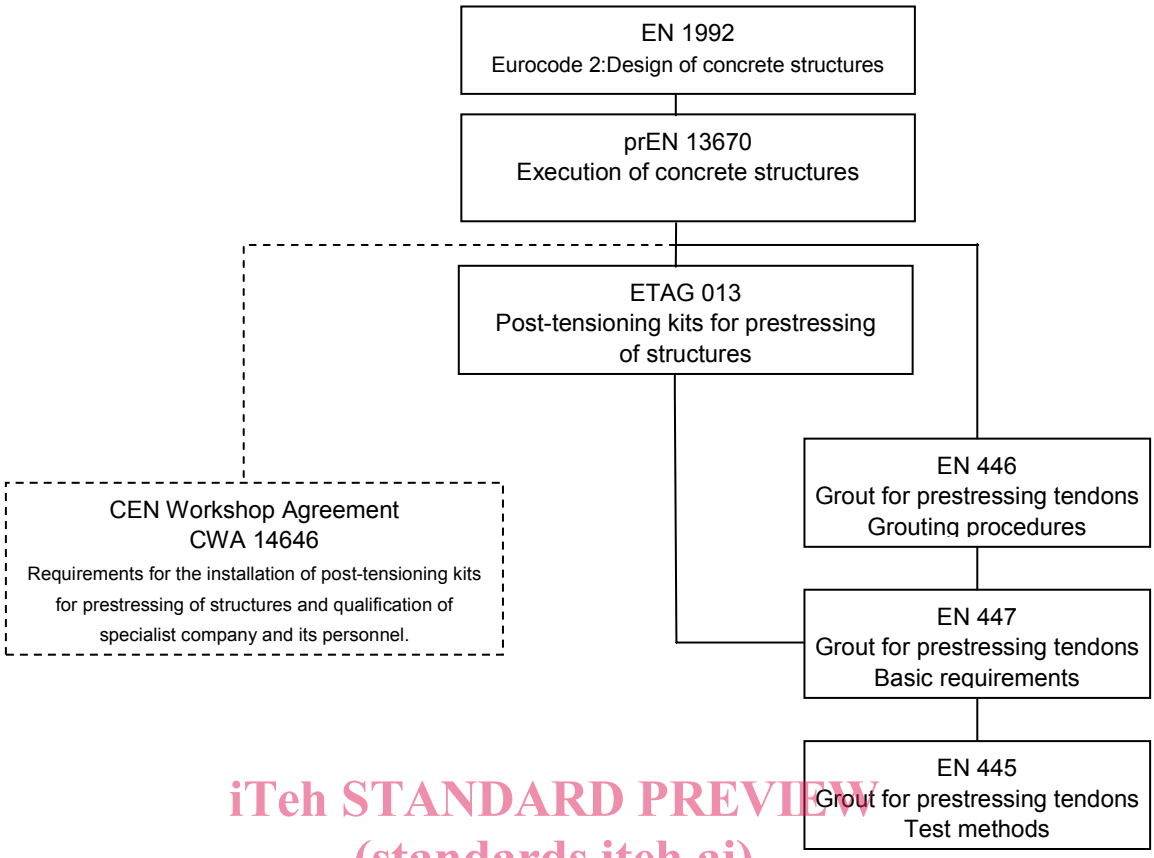
The testing regimes anticipated by this European Standard include three levels:

(1) Initial type and audit testing in accordance with EN 447;

(2) Suitability testing for confirmation of the selected grout for a specific project in accordance with this standard;

(3) Inspection during the production of grout on a specific project in accordance with this standard.

The test methods for each of the regimes are given in EN 445.



System of CEN and EOTA documents as basis for design, execution and materials selection for protective measures of prestressing systems (only main modules).

1 Scope

This European Standard gives the procedures to be used for grouting of tendons in post-tensioned prestressed concrete. It is applicable to all types of structures including bridges and buildings.

This standard also covers suitability testing and inspection testing for grouts and their component materials used on a project.

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.

EN 445, *Grout for prestressing tendons – Test methods*

EN 447, *Grout for prestressing tendons – Basic requirements*

prEN 13670, *Execution of concrete structures*

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

3.2
grouting
injection of grout into ducts in a continuous operation

3.3
tendon
assembly of prestressing steel and sheath with anchorages and all necessary auxiliary components to permit grouting, either placed internally or externally to the concrete structure

3.4
specialist contractor
contractor or construction enterprise which carries out grouting of tendons

4 Documentation

4.1 Execution specification

Before starting any part of the grouting works, the execution specification relevant to that part of the works shall be complete and available.

The following items shall be included in the execution specification:

— reference to this European standard;

— reference to other relevant European standards;

— reference to ETAs for the post-tensioning kit;

— reference to other relevant national regulations and standards;

— information and requirements for the particular project prepared to supplement and qualify the requirements of the above listed documents;

— drawings and other technical documents needed for the execution.

In addition where relevant, procedures shall be established for:

— making alterations to previously agreed requirements;

— distribution, the filing and recording of technical documents used for the works.

4.2 Quality plan

If a quality control procedure for grouting works is required by the execution specification, it shall be available at the site.

4.3 Execution documentation

The specialist contractor shall keep available on site written method statements covering materials, equipment, grouting procedures and inspection all adapted to the extent and complexity of the project. Provisions for the case of unusually low or high temperatures or delayed grouting, if likely to occur during the project duration, shall be specified.

The specialist contractor shall have shop drawings showing the position and details of the inlets and outlets, and the details of the sealing of the tendon anchorages.

The specialist contractor shall keep available on site documented records of:

— materials and grout used;

— initial type testing according to EN 447;

— suitability testing according to this European standard;

— results of the project specific grouting tests, if specified.

The specialist contractor shall keep documented records of the conformity of the materials, equipment, grout, grouting operations, and inspection with this standard and the execution specification according to Table 2, Table 3 and Table 4. These records shall be kept for the duration, as required by national provisions.

Any eventual corrective actions taken shall also be recorded.

If special documentation beyond the requirements of this European standard is required for grouting works, the type and extent of the documentation shall be stated in the execution specification.

5 Materials

The individual materials and the grout to be used shall comply with EN 447.