

**Tooted ja süsteemid betoontarindite
kaitseks ja remondiks.
Teimimismeetodid.
Soojuspaisumisteguri määramine**

Products and systems for the protection and repair
of concrete structures - Test methods -
Determination of the coefficient of thermal expansion

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN 1770:2000 sisaldab Euroopa standardi EN 1770:1998 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 19.07.2000 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN 1770:2000 consists of the English text of the European standard EN 1770:1998.</p> <p>This document is endorsed on 19.07.2000 with the notification being published in the official publication of the Estonian national standardisation organisation.</p> <p>The standard is available from Estonian standardisation organisation.</p>
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<p>Käsitlusala: See Euroopa standard esitab meetodid kõvastunud tarindisideaine soojuspaisumisteguri määramiseks. Esimene meetod näeb ette lineaarse soojuspaisumise pideva mõõtmise, kasutades termomehaanilist mõõtetehnikat. Alternatiivne meetod kasutab prismsid mõõtetega 40 mm x 40 mm x 160 mm. Seda meetodit võib kasutada ka remondimõrdi korral. Mõlemad meetodid on rakendatavad nende sideainete korral, mis sisaldavad täiteainet tera läbimõõduga kuni 4 mm.</p>	<p>Scope:</p>
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ICS 91.080.40

Võtmesõnad: betoontarindid, kaitse, materjalid, määramine, remont, sideained, soojuspaisumine, teimid, toode betoontarindi jaoks

ICS 91.080.40

Descriptors: Concrete structures, repair, protection, testing.

English version

**Products and systems for the protection and
repair of concrete structures – Test methods**

Determination of the coefficient of thermal expansion

Produits et systèmes pour la protection et la réparation des structures en béton – Méthodes d'essais – Détermination du coefficient de dilatation thermique

Produkte und Systeme für den Schutz und die Instandsetzung von Betontragwerken – Prüfverfahren – Bestimmung des Wärmeausdehnungskoeffizienten

This European Standard was approved by CEN on 1998-02-22.

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Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CEN member.

The European Standards exist 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 Central Secretariat has the same status as the official versions.

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CEN

European Committee for Standardization
Comité Européen de Normalisation
Europäisches Komitee für Normung

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Foreword

This European Standard has been prepared by Technical Committee CEN/TC 104 "Concrete (performance, production, placing and compliance criteria)", the secretariat of which is held by DIN.

NOTE : This European standard should be read together with EN 1504-1.

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 September 1998, and conflicting national standards shall be withdrawn at the latest by September 1998.

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

1 Scope

This European Standard specifies methods for the determination of the coefficient of thermal expansion of hardened structural bonding agents. The first method provides a continuous measurement of linear thermal expansion using thermomechanical analysis techniques. This method may also be used for surface protection systems. The alternative method uses prisms of 40 mm x 40 mm x 160 mm. This method may also be used for repair mortar. Both methods are suitable for bonding agents formulated with fillers of up to 4 mm.

2 Normative references

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

prEN 12190 Products and systems for the protection and repair of concrete structures - Test methods - Determination of compressive strength

3 Thermomechanical analysis

3.1 Principle

The coefficient of thermal expansion of resinous materials is to be measured at an age of 7 days (storage at (21 ± 2) °C and (60 ± 10) % relative humidity).

Once hardened the bonding agent is subjected to a constant heating rate. This method uses a thermomechanical analyser to determine the changes in length, which is electronically recorded as a function of temperature. The coefficient of linear thermal expansion can be calculated from the recorded data.

3.2 Apparatus

3.2.1 Thermomechanical analyser, or similar device, consisting of :

- a) specimen holder and probe, (constructed from low-expansion materials such as fused quartz) that transmits changes in the length of the specimen to the transducer. The shape and size of the probe shall be such that the load applied shall not cause indentation of the specimen, during testing ;
- b) transducer, for sensing movement of the probe resulting from changes in length of the specimen and for translating these movements into an electrical signal suitable for input to a recording system ;
- c) temperature sensing element, for measuring the temperature of the test specimen ;
- d) a recording system to record the changes in specimen length as a function of specimen temperature. The combination of transducer and recorder shall have sufficient sensitivity to produce a minimum of 1 mm of chart deflection per 100 nm of probe movement with provision for less sensitive ranges, where needed.