

**Products and systems for the  
protection and repair of concrete  
structures - Test methods -  
Determination of elastic modulus in  
compression**

Products and systems for the protection and repair  
of concrete structures - Test methods -  
Determination of elastic modulus in compression

## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN 13412:2002 sisaldab Euroopa standardi EN 13412:2002 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 12.07.2002 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN 13412:2002 consists of the English text of the European standard EN 13412:2002.</p> <p>This document is endorsed on 12.07.2002 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><b>Käsitlusala:</b> This European Standard specifies a method for the determination of the modulus of elasticity in compression for high creep strain repair products and systems, containing polymer binders (PC) and of mortars and concretes with polymer additives (PCC).</p>	<p><b>Scope:</b> This European Standard specifies a method for the determination of the modulus of elasticity in compression for high creep strain repair products and systems, containing polymer binders (PC) and of mortars and concretes with polymer additives (PCC).</p>
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**ICS** 91.080.40

**Võtmesõnad:** binders : materials, concretes, construction, construction materials, definition, definitions, material, measurement, modulus of elasticity, mortars, protection, protection systems, repair, repairs, structures, testing, upsetting

ICS 91.080.40

English version

**Products and systems for the protection and repair of concrete  
structures - Test methods - Determination of modulus of  
elasticity in compression**

Produits et systèmes de protection et de réparation des  
structures en béton - Méthodes d'essai - Détermination du  
module d'élasticité en compression

Produkte und Systeme für den Schutz und die  
Instandsetzung von Betontragwerken - Prüfverfahren -  
Bestimmung des Elastizitätsmoduls im Druckversuch

This European Standard was approved by CEN on 27 December 2001.

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 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 Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.



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

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## Foreword

This document EN 13412:2002 has been prepared by Technical Committee CEN/TC 104 "Concrete and related products", the secretariat of which is held by DIN.

This document has been prepared by CEN/TC 104/SC 8 "Products and systems for the protection and repair of concrete structures", the secretariat of which is held by AFNOR.

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 November 2002, and conflicting national standards shall be withdrawn at the latest by December 2002.

This European Standard is one of a series dealing with products and systems for the protection and repair of concrete structures.

Annex A is normative.

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, Malta, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

## 1 Scope

This European Standard specifies a method for the determination of the modulus of elasticity in compression for high creep strain repair products and systems, containing polymer binders (PC) and of mortars and concretes with polymer additives (PCC).

This method is not intended for CC repair materials, for which testing according to prEN 12390–3 should be used.

## 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 (including amendments).

EN 196-1, *Methods of testing cement – Part 1: Determination of strength*.

EN 1504-1, *Products and systems for the protection and repair of concrete structures - Definition, requirements, quality control, evaluation of conformity – Part 1: Definitions*.

prEN 1504-3<sup>1</sup>, *Products and systems for the protection and repair of concrete structures - Definition, requirements, quality control, evaluation of conformity – Part 3: Structural and non-structural repair*.

EN 12390-1, *Testing of hardened concrete – Part 1: Shape, dimensions and other requirements for specimens and moulds*.

prEN 12390-3, *Testing of hardened concrete – Part 3: Compressive strength of test specimens*.

## 3 Terms and definitions

For the purposes of this European Standard, the terms and definitions given in EN 1504-1 and prEN 1504-3<sup>2</sup> and the following apply.

### 3.1

#### **compressive stress**

the compressive force carried at any time by the test specimen, per unit of the original cross-section

### 3.2

#### **compressive strain**

the ratio of the change in the distance between two reference points along the axis of the test specimen per unit length of the original distance

### 3.3

#### **elastic modulus**

the ratio of stress to corresponding strain below the proportional limit, where the proportional limit is the greatest stress which a material is capable of supporting without any deviation from the proportionality of compressive stress to compressive strain

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<sup>1</sup> Under preparation.

<sup>2</sup> Under preparation.