

**Kivistunud betooni katsetamine. Osa 4:
Survetugevus. Katsemasinatele esitatavad nõuded**

Testing hardened concrete - Part 4: Compressive
strength - Specifications for testing machines

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN 12390-4:2002 sisaldab Euroopa standardi EN 12390-4:2000 ingliskeelset teksti.</p> <p>Standard on kinnitatud Eesti Standardikeskuse 07.06.2002 käskkirjaga ja jõustub sellekohase teate avaldamisel EVS Teatajas.</p> <p>Euroopa standardimisorganisatsioonide poolt rahvuslikele liikmetele Euroopa standardi teksti kättesaadavaks tegemise kuupäev on 19.04.2000.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN 12390-4:2002 consists of the English text of the European standard EN 12390-4:2000.</p> <p>This standard is ratified with the order of Estonian Centre for Standardisation dated 07.06.2002 and is endorsed with the notification published in the official bulletin of the Estonian national standardisation organisation.</p> <p>Date of Availability of the European standard text 19.04.2000.</p> <p>The standard is available from Estonian standardisation organisation.</p>
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Võtmesõnad: betoon, katsemasinad, kivistunud betoon, survetugevus

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Aru 10 Tallinn 10317 Eesti; www.evs.ee; Telefon: 605 5050; E-post: info@evs.ee

English version

Testing hardened concrete

Part 4: Compressive strength – Specification for testing machines

Essais pour béton durci – Partie 4:
Résistance en compression –
Caractéristiques des machines
d'essai

Prüfung von Festbeton – Teil 4:
Bestimmung der Druckfestigkeit –
Anforderungen an Prüfmaschinen

This European Standard was approved by CEN on 1999-11-01.

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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.

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CEN

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

Central Secretariat: rue de Stassart 36, B-1050 Brussels

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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.

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 October 2000, and conflicting national standards shall be withdrawn at the latest by December 2003.

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.

This Standard is one of a series concerned with testing concrete.

During the 1980s a number of countries found it necessary to introduce standards to specify more precisely the performance of compression machines for testing concrete specimens. This standard has been written to continue this movement and to overcome the present lack of a European Standard.

A draft for this standard was published in 1996 for CEN enquiry as prEN 12390. It was one of a series of individually numbered test methods for fresh or hardened concrete. For convenience it has now been decided to combine these separate draft standards into three new standards with separate parts for each method, as follows:

- Testing fresh concrete (EN 12350)
- Testing hardened concrete (EN 12390)
- Testing concrete in structures (EN 12504)

This series EN 12390 includes the following parts where the brackets give the numbers under which particular test methods were published for CEN enquiry:

- Part 1: Shape, dimensions and other requirements of specimens and moulds (former prEN 12356:1996)
- Part 2: Making and curing specimens for strength tests (former prEN 12379:1996)
- Part 3: Compressive strength of test specimens (former prEN 12394:1996)

- Part 4: Compressive strength - Specification for testing machines (former prEN 12390:1996)
- Part 5: Flexural strength of test specimens (former prEN 12359:1996)
- Part 6: Tensile splitting strength of test specimens (former prEN 12362:1996)
- Part 7: Density of hardened concrete (former prEN 12363:1996)
- Part 8: Depth of penetration of water under pressure (former prEN 12364:1996)

Three classes of testing machine are currently recognized, corresponding to scale accuracies of 1 %, 2 % and 3 %. It is evident that these accuracy classes have a direct impact upon the accuracy of the test result and it is a matter for each country to decide whether to limit the range of machine classes to, for example, 1 % and 2 %.

The requirement in this standard for the manner of force transfer is also important with regard to the effect upon measured compressive strength. However, the requirement can be difficult to satisfy on some older testing machines. It is therefore a matter for each country to decide whether, at present, this requirement shall apply only to new machines as written in this standard or whether it shall apply immediately to all machines.

The requirements for testing machines set out in this standard have been formulated to satisfy the needs of those compressive tests on concrete specimens which are specified in EN 206. Machines conforming to this standard can be suitable for other uses, but this needs to be carefully considered on an individual test basis. Particular care needs to be taken before using machines conforming to this standard for compressive tests on small specimens e.g. these with lateral dimensions significantly less than 100 mm. The main concern is that the ball-seating fitted to the upper platen can be too large to align satisfactorily on the top of such small specimens and special adaptations can be required. Another concern is the ability to accurately determine the failure load of small or low strength specimens.

1 Scope

This Standard specifies the requirements for the performance of compression testing machines for the measurement of the compressive strength of concrete.

2 References

This European Standard incorporates by dated and 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.

EN ISO 7500-1: 1999

Metallic materials - Verification of static uniaxial testing machines - Part 1: Tension/compression testing machines; verification and calibration of the force-measuring system (ISO 7500-1:1999)

EN 10002-3

Metallic materials - Tensile testing - Part 3: Calibration of force proving instruments for the verification of uniaxial testing machines.

prEN 12390-1:1999

Testing hardened concrete - Part 1: Shape, dimensions and other requirements of specimens and moulds

ISO 6507-1

Metallic materials - Vickers hardness test - Part 1: Test method.

ISO 4287: 1997

Geometrical Product Specification (GPS) - Surface texture: Profile method - Terms, definitions and surface texture parameters

3 Definitions

For the purposes of this standard the following definitions apply: