# Kivistunud betooni katsetamine. Osa 3: Katsekehade survetugevus

Testing hardened concrete - Part 3: Compressive strenght of test specimens



EESTI STANDARDIKESKUS
ESTONIAN CENTRE FOR STANDARDISATION

## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

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| Käesolev Eesti standard EVS-EN 12390-3:2009 sisaldab Euroopa standardi EN 12390-3:2009+AC:2011 ingliskeelset teksti. | This Estonian standard EVS-EN 12390-3:2009 consists of the English text of the European standard EN 12390-3:2009+AC:2011. |
| Standard on kinnitatud Eesti Standardikeskuse 27.03.2009 käskkirjaga ja jõustub sellekohase teate avaldamisel EVS Teatajas. | This standard is ratified with the order of Estonian Centre for Standardisation dated 27.03.2009 and is endorsed with the notification published in the official bulletin of the Estonian national standardisation organisation. |
| Euroopa standardimisorganisatsioonide poolt rahvuslikele liikmetele Euroopa standardi teksti kättesaadavaks tegemise kuupäev on 18.02.2009. | Date of Availability of the European standard text 18.02.2009. |
| Standard on kättesaadav Eesti standardiorganisatsioonist. | The standard is available from Estonian standardisation organisation. |



**ICS** 91.100.30

Võtmesõnad: betoon, betoonisegu, betoontooted, katsekehad, kivistunud betoon, survetugevus,

Inglisekeelsed võtmesõnad: compressive strength, concrete, hardened concrete, test specimens,

EUROPEAN STANDARD

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# EN 12390-3

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English Version

# Testing hardened concrete - Part 3: Compressive strength of test specimens

Essais pour béton durci - Partie 3: Résistance à la compression des éprouvettes

Prüfung von Festbeton - Teil 3: Druckfestigkeit von Probekörpern

This European Standard was approved by CEN on 27 December 2008.

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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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# Foreword

This document (EN 12390-3:2009) 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 August 2009, and conflicting national standards shall be withdrawn at the latest by August 2009.

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

This document supersedes EN 12390-3:2001.

It is recognised good practice to include measurement of density prior to the determination of compressive strength.

The methods for adjusting the ends of test specimens, given in Annex A, have been validated in a laboratory inter-comparison, part-funded by the EC under the Measurement and Testing Programme; contract MATI-CT-94-0043.

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

The series EN 12390 includes the following parts:

EN 12390 Testing hardened concrete –

Part 1: Shape, dimensions and other requirements for specimens and moulds;

Part 2: Making and curing specimens for strength tests;

Part 3: Compressive strength of test specimens;

Part 4: Compressive strength - Specification for testing machines;

Part 5: Flexural strength of test specimens;

Part 6: Tensile splitting strength of test specimens;

Part 7: Density of hardened concrete;

Part 8: Depth of penetration of water under pressure.

The following amendments have been made to the 2001-12 edition of this standard:

— editorial revision

— the compressive strength to be expressed to the nearest 0,1 MPA (N/mm²) instead of 0,5 MPa (N/mm²)

— the loading rate has been changed from between 0,2 MPa/s and 1,0 MPa/s to 0,6 ± 0,2 MPa/s

— the allowable tolerance for specimens which do not meet the tolerance given in EN 12390-1 for designated size has been increased

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 the United Kingdom.

# 1 Scope

This European Standard specifies a method for the determination of the compressive strength of test specimens of hardened concrete.

# 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 197-1, *Cement — Part 1: Composition, specifications and conformity criteria for common cements*

EN 12350-1, *Testing fresh concrete — Part 1: Sampling*

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

EN 12390-2, *Testing hardened concrete — Part 2: Making and curing specimens for strength tests*

EN 12390-4, *Testing hardened concrete — Part 4: Compressive strength — Specification for testing machines*

EN 12504-1, *Testing concrete in structures — Part 1: Cored specimens — Taking, examining and testing in compression*

ISO 3310-1, *Test sieves; technical requirements and testing — Part 1: Test sieves of metal wire cloth*

# 3 Principle

Specimens are loaded to failure in a compression testing machine conforming to EN 12390-4. The maximum load sustained by the specimen is recorded and the compressive strength of the concrete is calculated.

# 4 Apparatus

Compression testing machine, conforming to EN 12390-4.

# 5 Test specimens

## 5.1 Requirement

The test specimen shall be a cube, cylinder or core meeting the requirements of EN 12350-1, EN 12390-1, EN 12390-2, or EN 12504-1. If the dimension of the test specimen does not conform to the tolerances for designated size in EN 12390-1, it can be tested in accordance with the procedure given in Annex B.

NOTE Damaged specimens or specimens which are badly honeycombed should not be tested.