

KIVISTUNUD BETOONI KATSETAMINE. OSA 2:
TUGEVUSKATSE KATSEKEHADE VALMISTAMINE JA
HOIDMINE

Testing hardened concrete - Part 2: Making and curing
specimens for strength tests

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN 12390-2:2019 sisaldab Euroopa standardi EN 12390-2:2019 ingliskeelset teksti.	This Estonian standard EVS-EN 12390-2:2019 consists of the English text of the European standard EN 12390-2:2019.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 26.06.2019.	Date of Availability of the European standard is 26.06.2019.
Standard on kättesaadav Eesti Standardikeskusest.	The standard is available from the Estonian Centre for Standardisation.

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile standardiosakond@evs.ee.

ICS 91.100.30

Standardite reprodutseerimise ja levitamise õigus kuulub Eesti Standardikeskusele

Andmete paljundamine, taastekitamine, kopeerimine, salvestamine elektroonsesse süsteemi või edastamine ükskõik millises vormis või millisel teel ilma Eesti Standardikeskuse kirjaliku loata on keelatud.

Kui Teil on küsimusi standardite autorikaitse kohta, võtke palun ühendust Eesti Standardikeskusega:
Koduleht www.evs.ee; telefon 605 5050; e-post info@evs.ee

The right to reproduce and distribute standards belongs to the Estonian Centre for Standardisation

No part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying, without a written permission from the Estonian Centre for Standardisation.

If you have any questions about copyright, please contact Estonian Centre for Standardisation:

Homepage www.evs.ee; phone +372 605 5050; e-mail info@evs.ee

EUROPEAN STANDARD

EN 12390-2

NORME EUROPÉENNE

EUROPÄISCHE NORM

June 2019

ICS 91.100.30

Supersedes EN 12390-2:2009

English Version

Testing hardened concrete - Part 2: Making and curing specimens for strength tests

Essais pour béton durci - Partie 2 : Confection et conservation des éprouvettes pour essais de résistance

Prüfung von Festbeton - Teil 2: Herstellung und Lagerung von Probekörpern für Festigkeitsprüfungen

This European Standard was approved by CEN on 29 April 2019.

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-CENELEC 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-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.



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

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

Contents	Page
European foreword.....	3
1 Scope.....	5
2 Normative references.....	5
3 Terms and definitions	5
4 Apparatus.....	5
5 Sampling.....	6
6 Procedures.....	6
6.1 Preparation and filling of the moulds.....	6
6.2 Compaction of the concrete.....	6
6.2.1 General.....	6
6.2.2 Mechanical vibration	6
6.2.3 Compacting by hand with compacting rod or bar	7
6.3 Surface levelling	7
6.4 Marking.....	7
6.5 Curing of test specimens.....	7
6.6 Transport of test specimens.....	8
7 Report.....	8

European foreword

This document (EN 12390-2:2019) has been prepared by Technical Committee CEN/TC 104 “Concrete and related products”, the secretariat of which is held by SN.

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 December 2019, and conflicting national standards shall be withdrawn at the latest by December 2019.

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

This document supersedes EN 12390-2:2009.

The compaction of specimens in the moulds using hand tamping, vibrating table, or internal (poker) vibrator are accepted as equivalent. However, it was found that the use of an internal vibrator to compact specimens of air entrained fresh concrete should only be done with caution, if loss of entrained air is to be avoided.

Curing specimens in a closely regulated humidity chamber is recognized as being equivalent to curing in water.

This standard is one of a series on testing concrete.

EN 12390, *Testing hardened concrete*, consists of the following parts:

- *Part 1: Shape, dimensions and other requirements of 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;*
- *Part 11: Determination of the chloride resistance of concrete, unidirectional diffusion;*
- *Part 12: Determination of the potential carbonation resistance of concrete: Accelerated carbonation method (in preparation);*
- *Part 13: Determination of secant modulus of elasticity in compression;*
- *Part 14: Semi-adiabatic method for the determination of heat released by concrete during its hardening process;*

- *Part 15: Adiabatic method for the determination of heat released by concrete during its hardening process;*
- *Part 16: Determination of the shrinkage of concrete (in preparation);*
- *Part 17: Determination of creep of concrete in compression (in preparation);*
- *Part 18: Determination of the chloride migration coefficient (in preparation).*

This edition includes the following significant technical changes with respect to EN 12390-2:2009:

- a) editorial revision;
- b) reference to common apparatus and specification given in EN 12350-1.

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

1 Scope

This document specifies methods for making and curing test specimens for strength tests. It covers the preparation and filling of moulds, compaction of the concrete, levelling the surface, curing of test specimens and transporting test specimens.

NOTE This document can be used for the making and curing of specimens for other test methods.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 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 206, *Concrete — Specification, performance, production and conformity*

3 Terms and definitions

No terms and definitions are listed in this document.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at <http://www.electropedia.org/>
- ISO Online browsing platform: available at <http://www.iso.org/obp>

4 Apparatus

4.1 Common apparatus

The apparatus listed below for the execution of this test method shall be in accordance with the specification given EN 12350-1 and EN 12390-1 as specified below;

4.1.1 Moulds, conforming to EN 12390-1.

4.1.2 Filling frame (optional).

Filling of the moulds may be simplified by using a filling frame fitted tightly to the mould.

4.1.3 Means of compacting the concrete (one of the following):

- a) internal (poker) vibrator;
- b) vibrating table;
- c) compacting rod;
- d) compacting bar.

4.1.4 Scoop.

4.1.5 Trowel or float.