



NSAI
Standards

Irish Standard
I.S. EN 12390-7:2019&AC:2020

Testing hardened concrete - Part 7: Density of hardened concrete

I.S. EN 12390-7:2019&AC:2020

Incorporating amendments/corrigenda/National Annexes issued since publication:

EN 12390-7:2019/AC:2020

The National Standards Authority of Ireland (NSAI) produces the following categories of formal documents:

I.S. xxx: Irish Standard — national specification based on the consensus of an expert panel and subject to public consultation.

S.R. xxx: Standard Recommendation — recommendation based on the consensus of an expert panel and subject to public consultation.

SWiFT xxx: A rapidly developed recommendatory document based on the consensus of the participants of an NSAI workshop.

This document replaces/revises/consolidates the NSAI adoption of the document(s) indicated on the CEN/CENELEC cover/Foreword and the following National document(s):

NOTE: The date of any NSAI previous adoption may not match the date of its original CEN/CENELEC document.

This document is based on:

EN 12390-7:2019

Published:

2019-06-26

*This document was published
under the authority of the NSAI
and comes into effect on:*

2020-11-23

ICS number:

91.100.30

NOTE: If blank see CEN/CENELEC cover page

NSAI
1 Swift Square,
Northwood, Santry
Dublin 9

T +353 1 807 3800
F +353 1 807 3838
E standards@nsai.ie
W NSAI.ie

Sales:
T +353 1 857 6730
F +353 1 857 6729
W standards.ie

Údarás um Chaighdeáin Náisiúnta na hÉireann

National Foreword

I.S. EN 12390-7:2019&AC:2020 is the adopted Irish version of the European Document EN 12390-7:2019, Testing hardened concrete - Part 7: Density of hardened concrete

This document does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

For relationships with other publications refer to the NSAI web store.

Compliance with this document does not of itself confer immunity from legal obligations.

In line with international standards practice the decimal point is shown as a comma (,) throughout this document.

This page is intentionally left blank

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 12390-7:2019/AC

November 2020

ICS 91.100.30

English version

Testing hardened concrete - Part 7: Density of hardened concrete

Essais pour béton durci - Partie 7 : Masse
volumique du béton durci

Prüfung von Festbeton - Teil 7: Rohdichte
von Festbeton

This corrigendum becomes effective on 4 November 2020 for incorporation in the official English version of the EN.



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

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

EN 12390-7:2019/AC:2020 (E)

Contents	Page
1 Modification to 4.2, Apparatus.....	3
2 Modification to 6.2, Mass of as-received specimen.....	3

1 Modification to 4.2, Apparatus

Replace “0,1 g” with “0,1 %”.

2 Modification to 6.2, Mass of as-received specimen

Replace “to a maximum permissible error of 1 g” with “to the nearest 1 g”.

This page is intentionally left blank

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 12390-7

June 2019

ICS 91.100.30

Supersedes EN 12390-7:2009

English Version

**Testing hardened concrete - Part 7: Density of hardened
concrete**

Essais pour béton durci - Partie 7 : Masse volumique du
béton durci

Prüfung von Festbeton - Teil 7: Dichte von Festbeton

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 Test specimens.....	6
6 Procedures.....	7
6.1 General.....	7
6.1.1 Determination of mass.....	7
6.1.2 Determination of volume	7
6.2 Mass of as-received specimen.....	7
6.3 Mass of water saturated specimen	7
6.4 Mass of oven-dried specimen	7
6.5 Volume obtained by water displacement.....	7
6.5.1 General.....	7
6.5.2 Mass in water	8
6.5.3 Mass in air	8
6.5.4 Calculate the volume of the specimen	8
6.6 Volume obtained by measurement.....	8
6.7 Volume obtained by using designated dimensions (cubes only)	8
7 Test result.....	9
8 Test report.....	9
9 Precision.....	10
Bibliography.....	11

European foreword

This document (EN 12390-7:2019) 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 12390-7:2009.

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).*

EN 12390-7:2019 (E)

This edition includes the following significant technical changes with respect to EN 12390-7:2009:

- editorial revision;
- technical corrections.

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 a method for determining the density of hardened concrete. It is applicable to lightweight, normal-weight and heavy-weight concrete.

It differentiates between hardened concrete in the following states:

- 1) as-received;
- 2) water saturated;
- 3) oven-dried.

The mass and volume of the specimen of hardened concrete are determined and the density calculated.

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

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 Callipers and rules, with a maximum permissible error of 0,5 % of the dimension, for measuring the dimensions of the specimens.

4.2 Balance, equipped with a stirrup for weighing the specimen in both air and water with a maximum permissible error of 0,1 g of the mass.

4.3 Water tank, fitted with a device to maintain the water at a constant level and of sufficient size to allow the specimen on the stirrup to be fully immersed to a constant depth (see Figure 1).

If the reading of the balance is affected to within the accuracy required due to the displacement of water when immersing the specimen, then the tank should be fitted with a device to maintain the water at a constant level. The tank should be of sufficient size to allow the specimen to be fully immersed.

4.4 Ventilated oven, in which the temperature is capable of being controlled at $(105 \pm 5) ^\circ\text{C}$.

NOTE The apparatus required depends upon the method selected for determining the volume of the specimen.

4.5 Moist cloth.

This is a free preview. Purchase the entire publication at the link below:

[Product Page](#)

-
- Looking for additional Standards? Visit Intertek Inform Infostore
 - Learn about LexConnect, All Jurisdictions, Standards referenced in Australian legislation
-