



SLOVENSKI STANDARD

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Preskušanje strjenega betona - 8. del: Globina vpijanja vode pod pritiskom

Testing hardened concrete - Part 8: Depth of penetration of water under pressure

Prüfung von Festbeton - Teil 8: Wassereindringtiefe unter Druck

Essai pour béton durci - Partie 8 : Profondeur de pénétration d'eau sous presssion

Ta slovenski standard je istoveten z: **EN 12390-8:2019**

ICS:

91.100.30	Beton in betonski izdelki	Concrete and concrete products
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SAMPLE

EUROPEAN STANDARD
NORME EUROPÉENNE
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EN 12390-8

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ICS 91.100.30

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English Version

**Testing hardened concrete - Part 8: Depth of penetration
of water under pressure**

Essais pour béton durci - Partie 8 : Profondeur de
pénétration d'eau sous pression

Prüfung von Festbeton - Teil 8: Wassereindringtiefe
unter Druck

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.

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

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European foreword

This document (EN 12390-8:2019) 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of an identical text or by endorsement, at the latest by December 2019, and conflicting national standards shall be withdrawn at the latest by December 2019.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 12390-8:2009.

The standard has been restricted to tests on specimens cured 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);*

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— *Part 18: Determination of the chloride migration coefficient (in preparation).*

This edition includes the following significant technical changes with respect to EN 12390 8:2009:

— editorial revision.

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.

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1 Scope

This document specifies a method for determining the depth of penetration of water under pressure in hardened concrete which has been water cured.

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

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 Principle

Water is applied under pressure to the surface of hardened concrete. The specimen is then split and the depth of penetration of the waterfront is measured.

5 Apparatus

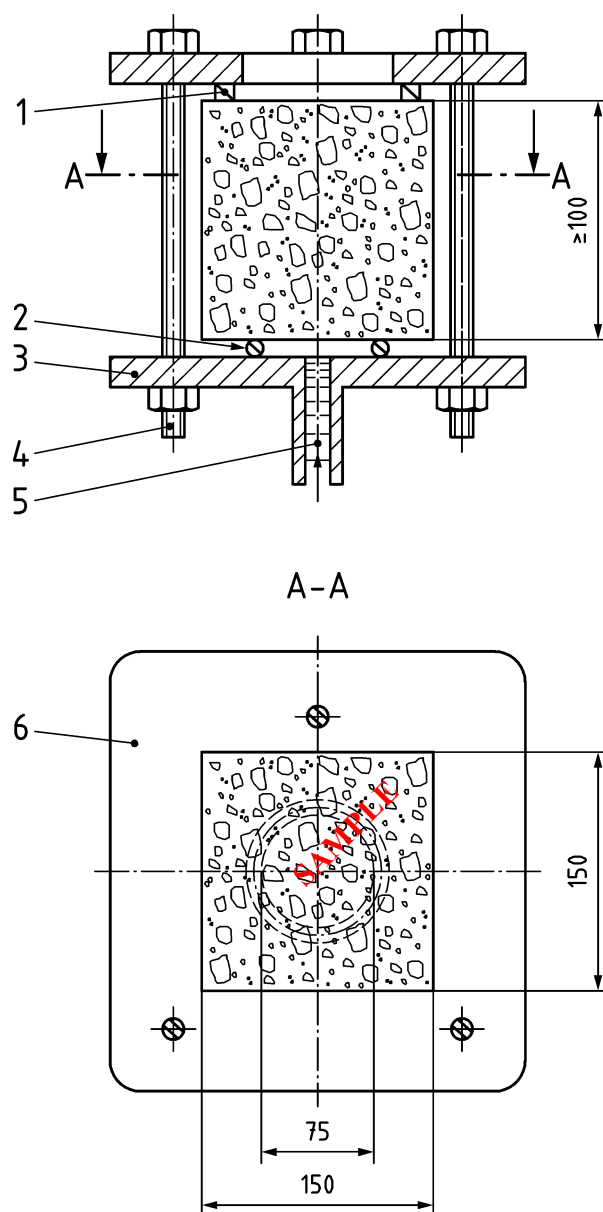
The test specimen, of given dimensions, shall be placed in any suitable equipment in such a manner that the water pressure can act on the test area and the pressure applied can be continuously indicated. An example of a test arrangement is shown in Figure 1.

It is preferable that the apparatus should allow the other surfaces of the test specimen to be observed.

The water pressure may be applied to the surface of the test specimen either from the bottom, or the top. A watertight seal shall be provided, made of rubber or other similar material.

The dimensions of a test area shall be approximately half of the length of the edge or diameter of the test surface.

Dimensions in millimetres

**Key**

- 1 packing piece
- 2 sealing ring
- 3 screwed on plate
- 4 screw-threaded rod
- 5 water under pressure
- 6 screwed on plate

Figure 1 — Example of test arrangement**6 Specimen**

The specimen shall be cubic, cylindrical or prismatic with the minimum dimension of the surface of the specimen to be tested not less than 150 mm and no other dimension less than 100 mm.

Smaller specimens can be tested. Their dimensions and test area shall be reported. Core specimens shall be at least 95 mm in diameter.

7 Procedure

7.1 Preparation of the test specimen

Immediately after the specimen is de-moulded, roughen the surface to be exposed to water pressure, with a wire brush and cure the specimen under water in accordance with the procedures given in EN 12390-2.

7.2 Application of water pressure

The test shall be started when the specimen is at least 28 days old. Do not apply the water pressure to a trowelled surface of a specimen. Place the specimen in the apparatus and apply a water pressure of (500 ± 50) kPa for (72 ± 2) h. During the test, periodically observe the appearance of the surfaces of the test specimen not exposed to the water pressure to note the presence of water. If leakage is observed then consider the validity of the result and record the fact.

NOTE Tap water can be used.

7.3 Examination of specimen

After the pressure has been applied for the specified time, remove the specimen from the apparatus. Wipe the face on which the water pressure was applied to remove excess water. Split the specimen in half, perpendicularly to the face on which the water pressure was applied. When splitting the specimen, and during the examination, place the face of the specimen exposed to the water pressure on the bottom. As soon as the split face has dried to such an extent that the water penetration front can be clearly seen, mark the water front on the specimen. Measure the maximum depth of penetration under the test area and record it to the nearest mm.

8 Test result

The maximum depth of penetration, expressed in mm, is the test result.

9 Test report

The report shall include:

- a) reference to this standard;
- b) identification of the test specimen;
- c) date of start of the test;
- d) description of the specimen (shape and dimensions);
- e) direction of application of water pressure with respect to the casting direction;
- f) maximum depth of penetration, in mm;
- g) any leakage and consideration of the validity of the result; (if appropriate);
- h) any deviation from the standard test method;