SLOVENSKI STANDARD
oSIST prEN 12390-20:2025

01-april-2025

Preskušanje strjenega betona - 20. del: - Določanje poroznosti

Testing hardened concrete - Part 20: Determination of porosity

Prüfung von Festbeton - Teil 20: Bestimmung der Porosität

Essais pour béton durci - Partie 20 : Détermination de la porosité

Ta slovenski standard je istoveten z: **prEN 12390-20**

ICS:

91.100.30	Beton in betonski izdelki	Concrete and concrete products

oSIST prEN 12390-20:2025 **en,fr,de**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

DRAFT
prEN 12390-20

February 2025

ICS 91.100.30

English Version

Testing hardened concrete - Part 20: Determination of porosity

Essais pour béton durci - Partie 20 : Détermination de la porosité

Prüfung von Festbeton - Teil 20: Bestimmung der Porosität

This draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee CEN/TC 104.

If this draft becomes a European Standard, 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.

This draft European Standard was established by CEN 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, Türkiye and United Kingdom.

Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

Warning : This document is not a European Standard. It is distributed for review and comments. It is subject to change without notice and shall not be referred to as a European Standard.

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

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

Ref. No. prEN 12390-20:2025 E

Contents

Page

European foreword

This document (prEN 12390-20:2025) has been prepared by Technical Committee CEN/TC 104 “Concrete and related products”, the secretariat of which is held by SN.

This document is currently submitted to the CEN Enquiry.

It is based on the French Standard NF P 18-459 “Concrete — Testing hardened concrete — Testing porosity and density”.

This document 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 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*

— Part 10: *Determination of the carbonation resistance of concrete at atmospheric levels of carbon dioxide*

— Part 11: *Determination of the chloride resistance of concrete, unidirectional diffusion*

— Part 12: *Determination of the potential carbonation resistance of concrete: Accelerated carbonation method;*

— 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 shrinkage of concrete;*

— Part 17: *Determination of creep of concrete in compression;*

— Part 18: Determination of the chloride migration coefficient;

— Part19: Determination of resistivity;

1 Scope

This document describes the method for the determination of the porosity (open pores) of hardened concrete on test specimens of any type (moulded, sawn, cored) or any shape.

The test is suitable for specimens having a declared value of *D* of the coarsest fraction of aggregates actually used in the concrete (D_{max}) not greater than 40 mm.

The test method is not applicable for concrete containing lightweight aggregate.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For undated references, the latest edition of the referenced document (including any amendments) applies.

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

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

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

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

— IEC Electropedia: available at https://www.electropedia.org/

— ISO Online browsing platform: available at https://www.iso.org/obp

3.1
open pores
pores accessible to water in this test

Note to entry: In principle, these pores are all those that connect with the surface, either directly, or through other pores.

3.2
closed pores
pores not accessible to water in this test

3.3
porosity
ratio of the volume of the pores of a test specimen to its apparent volume, expressed as a percentage, the porosity can be open (or accessible to water), closed; (not accessible to water) or total (sum of open and closed porosity)