

KIVISTUNUD BETOONI KATSETAMINE. OSA 18:  
KLORIIDI MIGRATSIOONITEGURI MÄÄRAMINE

Testing hardened concrete - Part 18: Determination of  
the chloride migration coefficient

## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

<p>See Eesti standard EVS-EN 12390-18:2021+A1:2024 sisaldab Euroopa standardi EN 12390-18:2021+A1:2024 ingliskeelset teksti.</p> <p>Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.</p> <p>Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 16.10.2024.</p> <p>Standard on kättesaadav Eesti Standardimis- ja Akrediteerimiskeskusest.</p>	<p>This Estonian standard EVS-EN 12390-18:2021+A1:2024 consists of the English text of the European standard EN 12390-18:2021+A1:2024.</p> <p>This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation and Accreditation.</p> <p>Date of Availability of the European standard is 16.10.2024.</p> <p>The standard is available from the Estonian Centre for Standardisation and Accreditation.</p>
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English Version

## Testing hardened concrete - Part 18: Determination of the chloride migration coefficient

Essais pour béton durci - Partie 18 : Détermination du coefficient de migration des chlorures

Prüfung von Festbeton - Teil 18: Bestimmung des Chloridmigrationskoeffizienten

This European Standard was approved by CEN on 8 February 2021 and includes Amendment approved by CEN on 26 August 2024.

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

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

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## European foreword

This document (EN 12390-18:2021+A1:2024) 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of an identical text or by endorsement, at the latest by April 2025, and conflicting national standards shall be withdrawn at the latest by April 2025.

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 includes Amendment 1 approved by CEN on 26 August 2024.

This document supersedes <sup>A1</sup> EN 12390-18:2021 <sup>A1</sup>.

The start and finish of text introduced or altered by amendment is indicated in the text by tags <sup>A1</sup> <sup>A1</sup>.

A list of all parts in the EN 12390 series, published under the general title “Testing hardened concrete”, can be found on the CEN website.

Any feedback and questions on this document should be directed to the users’ national standards body. A complete listing of these bodies can be found on the CEN website.

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, 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 the United Kingdom.

## 1 Scope

This document specifies the procedure for obtaining the non-steady-state chloride migration coefficient of specimens of hardened concrete at a specified age (see Annex A). The test procedure does not take into account any interaction of concrete with the saline solution over time. The test result is a durability indicator with respect to the resistance of the concrete investigated against chloride penetration.

The test procedure does not apply to concrete specimens with surface treatments such as silanes.

If the aggregate or any other embedded elements (such as metallic fibres or conducting particles) are electrically conductive, this will influence the magnitude of chloride migration. This fact is taken into account when establishing threshold values. It prevents comparison of chloride migration values between concretes if the aggregates induce a difference of half an order of magnitude (higher or lower) of chloride migration.

## 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*

EN 14488-1, *Testing sprayed concrete — Sampling fresh and hardened concrete*

## 3 Terms and definitions

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

ISO and IEC maintain terminological 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

#### **migration cell**

apparatus for holding a cylindrical test specimen with a lateral sealing of non-conductive material enabling the test specimen to be exposed on two parallel surfaces to test solutions

### 3.2

#### **migration test set-up**

test container with a migration cell support, migration cell test solutions, sleeve, sleeve clamps, electrodes and electronics

### 3.3

#### **migration**

movement of ions under the action of an external electrical field

### 3.4

#### **chloride migration coefficient**

transport property which reflects the resistance against chloride penetration under the action of an externally applied electrical field