

## **Kahlid. Osa 13: Keemilise püsivuse määramine**

Ceramic tiles - Part 13: Determination of chemical  
resistance

## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN ISO 10545-13:2000 sisaldab Euroopa standardi EN ISO 10545-13:1997 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 20.03.2000 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN ISO 10545-13:2000 consists of the English text of the European standard EN ISO 10545-13:1997.</p> <p>This document is endorsed on 20.03.2000 with the notification being published in the official publication of the Estonian national standardisation organisation.</p> <p>The standard is available from Estonian standardisation organisation.</p>
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<p><b>Käsitlusala:</b> See standardi EN ISO 10545 osa kirjeldab katsemeetodit kahlite keemilise püsivuse määramiseks toatemperatuuril. Meetod on kasutatav iga liiki kahlite korral.</p>	<p><b>Scope:</b></p>
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**ICS** 91.100.23

**Võtmesõnad:** katsed, keemiline püsivus, keemilised katsed, keraamika, määramine, plaadid

**English version**

**Ceramic tiles**

**Part 13: Determination of chemical resistance  
(ISO 10545-13 : 1995)**

Carreaux et dalles céramiques –  
Partie 13: Détermination de la  
résistance chimique  
(ISO 10545-13 : 1995)

Keramische Fliesen und Platten –  
Teil 13: Bestimmung der chemischen  
Beständigkeit (ISO 10545-13 : 1995)

This European Standard was approved by CEN on 1997-05-01.

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 Central Secretariat or to any CEN member.

The European Standards exist 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 Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, the Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, and the United Kingdom.

**CEN**

European Committee for Standardization  
Comité Européen de Normalisation  
Europäisches Komitee für Normung

**Central Secretariat: rue de Stassart 36, B-1050 Brussels**

## Foreword

International Standard

ISO 10545-13 : 1995 Ceramic tiles – Part 13: Determination of chemical resistance, which was prepared by ISO/TC 189 'Ceramic tiles' of the International Organization for Standardization, has been adopted by Technical Committee CEN/TC 67 'Ceramic tiles', the Secretariat of which is held by UNI, as a European Standard.

EN ISO 10545 comprises the following parts, under the common title 'Ceramic tiles':

- Part 1: Sampling and basis for acceptance
- Part 2: Determination of dimensions and surface quality
- Part 3: Determination of water absorption, apparent porosity, apparent relative density and bulk density
- Part 4: Determination of modulus of rupture and breaking strength
- Part 5: Determination of impact resistance by measurement of coefficient of restitution
- Part 6: Determination of resistance to deep abrasion for unglazed tiles
- Part 7: Determination of resistance to surface abrasion for glazed tiles
- Part 8: Determination of linear thermal expansion
- Part 9: Determination of resistance to thermal shock
- Part 10: Determination of moisture expansion
- Part 11: Determination of crazing resistance for glazed tiles
- Part 12: Determination of frost resistance
- Part 13: Determination of chemical resistance
- Part 14: Determination of resistance to stains
- Part 15: Determination of lead and cadmium given off by glazed tiles
- Part 16: Determination of small colour differences
- Part 17: Determination of coefficient of friction

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, and conflicting national standards withdrawn, by January 1998 at the latest.

In accordance with the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard:

Austria, Belgium, the Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, and the United Kingdom.

## Endorsement notice

The text of the International Standard ISO 10545-13 : 1995 was approved by CEN as a European Standard without modifications, but with the following correction:

In subclause 8.2.2.1, 2nd line, '...from a standard distance of 25 cm...' has been corrected to read '....from a distance of 25 to 30 cm...'.  
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## 1 Scope

This part of ISO 10545 specifies a test method for determining the chemical resistance of ceramic tiles at room temperature. The method is applicable to all types of ceramic tiles.

## 2 Normative reference

The following standard contains provisions which, through reference in this text, constitute provisions of this part of ISO 10545. At the time of publication, the edition indicated was valid. All standards are subject to revision, and parties to agreements based on this part of ISO 10545 are encouraged to investigate the possibility of applying the most recent edition of the standard indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 3585:1991, *Borosilicate glass 3.3 — Properties*.

## 3 Principle

Subjection of the test specimens to the action of the test solutions and visual determination of attack after a defined period.

## 4 Aqueous test solutions

### 4.1 Household chemicals

Ammonium chloride solution, 100 g/l.

### 4.2 Swimming pool salts

Sodium hypochlorite solution, 20 mg/l, prepared from technical grade sodium hypochlorite with about 13 % (m/m) of active chloride.

### 4.3 Acids and alkalis

#### 4.3.1 Low concentrations (L)

- a) Hydrochloric acid solution, 3 % (V/V), prepared from concentrated hydrochloric acid ( $\rho = 1,19$  g/ml).
- b) Citric acid solution, 100 g/l.
- c) Potassium hydroxide solution, 30 g/l.

#### 4.3.2 High concentrations (H)

- a) Hydrochloric acid solution, 18 % (V/V), prepared from concentrated hydrochloric acid ( $\rho = 1,19$  g/ml).
- b) Lactic acid solution, 5 % (V/V).
- c) Potassium hydroxide solution, 100 g/l.

## 5 Apparatus

**5.1 Vessel with a lid**, made of borosilicate glass 3.3 (ISO 3585), or any other suitable material.

**5.2 Cylinder of borosilicate glass 3.3** (ISO 3585), or any other suitable material having a lid or an opening for filling.