

Ceramic tiles - Part 15: Determination of lead and cadmium given off by glazed tiles

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EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN ISO 10545-15:2001 sisaldab Euroopa standardi EN ISO 10545-15:1997 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 18.06.2001 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 10545-15:2001 consists of the English text of the European standard EN ISO 10545-15:1997.</p> <p>This document is endorsed on 18.06.2001 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>Käsitlusala: This part of ISO 10545 specifies a method for the determination of lead and cadmium given off by the glaze of ceramic tiles.</p>	<p>Scope: This part of ISO 10545 specifies a method for the determination of lead and cadmium given off by the glaze of ceramic tiles.</p>
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ICS 91.100.23

Võtmesõnad: cadmium, ceramics, chemical tests, enamelled ceramic, extraction, lead, porcelain enamels, tests, tiles

ICS 91.100.20

Descriptors: Ceramics, tiles, lead, cadmium, testing.

English version

Ceramic tiles

**Part 15: Determination of lead and cadmium given off by glazed tiles
(ISO 10545-15 : 1995)**

Carreaux et dalles céramiques –
Partie 15: Détermination de la teneur
en plomb et en cadmium dégagés
par les carreaux émaillés
(ISO 10545-15 : 1995)

Keramische Fliesen und Platten –
Teil 15: Bestimmung der Abgabe von
Blei und Cadmium – Glasierte Fliesen
und Platten (ISO 10545-15 : 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 10545-15 : 1995 Ceramic tiles – Part 15: Determination of lead and cadmium given off by glazed tiles, 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 10545-15 : 1995 was approved by CEN as a European Standard without modifications, but with the following corrections:

In clause 3, 'Exposition of...' has been corrected to read 'Exposure of...'.

In clause 8, 8th line, ' ρ (M) is the concentration...' has been corrected to read ' ρ (M) is the concentration...'.

1 Scope

This part of ISO 10545 specifies a method for the determination of lead and cadmium given off by the glaze of ceramic tiles.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this part of ISO 10545. At the time of publication, the editions indicated were 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 editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 3696:1987 *Water for analytical laboratory use — Specification and test methods*.

ISO 6353-2:1983, *Reagents for chemical analysis — Part 2: Specifications — First series*.

3 Principle

Exposure of the glazed surface of a ceramic tile to an acetic acid solution. Determination of the amount of lead and cadmium released into the solution by an appropriate method.

4 Reagents

During the analysis, unless otherwise indicated, use only the reagents specified in ISO 6353-2 if indicated, if not, use reagents of recognized analytical grade, and grade 2 complying with ISO 3696:1987.

4.1 Test solution: acetic acid solution, 4 % (V/V). Add 40 ml of glacial acetic acid (R 1 of ISO 6353-2: 1983) to 960 ml of distilled water of grade 2.

5 Apparatus and materials

5.1 Atomic absorption spectrometer, or other suitable apparatus for the analysis of lead and cadmium from solution.

5.2 Silicone sealant in a tube or dispenser, enabling a ribbon of clear silicone (neutral cure) sealant approximately 6 mm in diameter to be formed.

5.3 Impervious cover, made of glass or plastics.

5.4 Detergent.

5.5 White cloth, made of cotton or flax.

5.6 Measuring cylinder.

6 Test specimens

6.1 Number of test specimens

A minimum of three whole tiles shall be tested.

6.2 Preparation of test specimens

The surface of a tile to be tested shall be clean and free from grease or other material that may interfere with the performance of the test. To ensure cleanliness, the tile shall be thoroughly washed in tap water containing a small amount of detergent (5.4),