SLOVENSKI STANDARD
oSIST prEN ISO 10545-20:2021

01-september-2021

Keramične ploščice - Preskusne metode - 20. del: Ugotavljanje upogiba keramičnih ploščic za izračun njihovega polmera ukrivljenosti (ISO/DIS 10545-20:2021)

Ceramic tiles - Test methods - Part20: Determination of deflection of ceramic tiles for calculating their radius of curvature (ISO/DIS 10545-20:2021)

Keramische Fliesen und Platten - Prüfverfahren - Teil 20: Bestimmung der Durchbiegung von keramischen Fliesen und Platten zur Berechnung des Krümmungsradius (ISO/DIS 10545-20:2021)

Carreaux et dalles céramiques - Méthodes d'essai - Partie 20: Détermination de la flèche des carreaux et dalles céramiques pour calculer leur rayon de courbure (ISO/DIS 10545-20:2021)

Ta slovenski standard je istoveten z: **prEN ISO 10545-20**

ICS:

91.100.23	Keramične ploščice	Ceramic tiles

oSIST prEN ISO 10545-20:2021 **en,fr,de**

DRAFT INTERNATIONAL STANDARD

ISO/DIS 10545-20

ISO/TC **189**

Secretariat: **ANSI**

Voting begins on:
2021-07-13

Voting terminates on:
2021-10-05

Ceramic tiles — Test methods —

Part 20:
Determination of deflection of ceramic tiles for calculating their radius of curvature

ICS: 91.100.23

This document is circulated as received from the committee secretariat.

ISO/CEN PARALLEL PROCESSING

Reference number
ISO/DIS 10545-20:2021(E)

ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Email: copyright@iso.org
Website: www.iso.org

Published in Switzerland

Contents

Page

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 189 (Ceramic Tiles)

A list of all parts in the ISO 10545 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Introduction

The International Organization for Standardization (ISO) draws attention to the fact that it is claimed that compliance with this document may involve the use of a patent.

ISO takes no position concerning the evidence, validity and scope of this patent right.

The holder of this patent right has assured ISO that he/she is willing to negotiate licences under reasonable and non-discriminatory terms and conditions with applicants throughout the world. In this respect, the statement of the holder of this patent right is registered with ISO. Information may be obtained from the patent database available at www.iso.org/patents.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights other than those in the patent database. ISO shall not be held responsible for identifying any or all such patent rights.

Ceramic tiles — Test methods —

Part 20: Determination of deflection of ceramic tiles for calculating their radius of curvature

1 Scope

This part of ISO 10545 specifies a method for measuring the deflection of ceramic tiles for calculating their radius of curvature.

NOTE 1 to entry ISO 13006 provides property requirements for tiles and other useful information on these products.

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.

ISO 10545-4, *Ceramic tiles — Part 4: Determination of modulus of rupture and breaking strength*

ISO 48-2, *Rubber, vulcanized or thermoplastic — Determination of hardness — Part 2: Hardness between 10 IRHD and 100 IRHD*

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:

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

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

3.1
Breaking load, F
force necessary to cause the test specimen to break, as read from the pressure gauge (see Figure 1)

3.2
Deflection at breaking, Z
deflection of tile at the breaking point under load (see Figure 1).

3.3
Curvature radius, r
radius of the circumference that approximates the curve that is determined when the tile is deflected at breaking.

4 Principle

Measure of deflection of ceramic tiles, subjected to a load applied in the middle of the surface during a three points test. The measure is performed by using dial gauges or other suitable apparatus for linear measurements.

5 Apparatus

5.1 Drying Oven

Drying oven capable of being operated at (105 ± 5) °C. Microwave, infrared or other drying systems can be used provided that it has been determined that equal results are obtained.

5.2 Recording pressure gauge

Recording pressure gauge with an accuracy to 2,0 %.

5.3 Cylindrical support rods,

Two cylindrical support rods made of metal, the parts in contact with the test specimens being covered with rubber having a hardness of (50 ± 5) IRHD, measured in accordance with ISO 48-2. One rod shall be slightly pivotable (Figure 2) and the other shall be slightly rotatable about its own axis. See Table 1 for relevant dimensions.

5.4 Central cylindrical rod

Central cylindrical rod, of the same diameter as the support rods (5.3) and covered with the same rubber, for transmission of the load. This rod shall also be slightly pivotable (Figure 2). See Table 1 for relevant dimensions.

Table 1 — Diameter of rods, *d*, thickness of rubber, *t*, and overlap of tile beyond the edge supports, *l*1

Diameter of rod (mm)	Thickness of rubber (mm)	Overlap of tile beyond the edge supports (mm)
d	*t*	l_1
20 ± 1	5 ± 1	10 ± 1

5.5 Deflection measurement device

Deflection measurement device, able to measure the deflection in the central point due to the contact between the central cylindrical rod and the surface of the specimen under load, without being affected by the thickness of the specimen, by the deformations of the framework of the equipment and by the deformations generated by the compression of the rubber layers covering the support rods. The center of the specimen is identified by the crossing point of the two diagonals. The gauge shall be able to measure the deflection with a precision of at least 0,03 mm, in correspondence to the center of the specimen with a span of + 1 mm. When the test specimen is positioned on the two support rods and is under load, the device shall register the deflection in the center of the specimen with an accuracy of at least 0.1 mm, also including the deformation generated by the test specimen under its own weight. An example of the apparatus is reported in Figure 3.

Note If the deflection measured by the testing equipment includes deviation (eg. generated by the rubber of the rod or frame), the deflection value Z shall be corrected to remove such variables.

5.6 Stiff brush

Stiff brush, with coarse bristles, for removing loose particles.

6 Test Specimens

Select the tiles at random from the lot to be tested.

