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BSI Standards Publication

Ceramic tiles

Part 3: Determination of water absorption, apparent porosity, apparent relative density and bulk density

bsi.

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National foreword

This British Standard is the UK implementation of EN ISO 10545-3:2018. It is identical to ISO 10545-3:2018. It supersedes BS EN ISO 10545-3:1997, which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee B/539, Ceramic tiles and other rigid tiling.

A list of organizations represented on this committee can be obtained on request to its secretary.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

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Compliance with a British Standard cannot confer immunity from legal obligations.

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NORME EUROPÉENNE

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English Version

Ceramic tiles - Part 3: Determination of water absorption, apparent porosity, apparent relative density and bulk density (ISO 10545-3:2018)

Carreaux et dalles céramiques - Partie 3: Détermination de l'absorption d'eau, de la porosité ouverte, de la densité relative apparente et de la masse volumique globale (ISO 10545-3:2018)

Keramische Fliesen und Platten - Teil 3: Bestimmung von Wasseraufnahme, offener Porosität, scheinbarer relativer Dichte und Rohdichte (ISO 10545-3:2018)

This European Standard was approved by CEN on 22 January 2018.

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European foreword

This document (EN ISO 10545-3:2018) has been prepared by Technical Committee ISO/TC 189 "Ceramic tile" in collaboration with Technical Committee CEN/TC 67 “Ceramic tiles” the secretariat of which is held by UNI.

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of an identical text or by endorsement, at the latest by September 2018, and conflicting national standards shall be withdrawn at the latest by September 2018.

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 supersedes EN ISO 10545-3:1997.

According to the CEN-CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Serbia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Endorsement notice

The text of ISO 10545-3:2018 has been approved by CEN as EN ISO 10545-3:2018 without any modification.

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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).

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

For an explanation on 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 the following URL: www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 189, *Ceramic tiles*.

This second edition cancels and replaces the first edition (ISO 10545-3:1995 which has been technically revised. It also incorporates ISO 10545-3:1995/Cor.1:1997.

The main changes compared to the previous edition are as follows:

— The impregnation of the samples is now only done by vacuum.

— The boiling method for impregnation of the samples has been removed.

— Sampling guidelines according to the dimension of tiles are provided.

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

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Introduction

For ceramic tiles, water absorption is used to classify products. This document outlines the procedures for the measurement of water absorption and related properties using classical Archimedean techniques. Impregnation of the open porosity is achieved by a vacuum method only. Accommodations are provided for large or irregularly shaped ceramic tile.

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Ceramic tiles —

Part 3:
Determination of water absorption, apparent porosity, apparent relative density and bulk density

1 Scope

This document specifies a method for determining water absorption, apparent porosity, apparent relative density and bulk density of ceramic tiles. This method is applicable to classification of tiles and product specifications.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

No terms and definitions are listed in this document.

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

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

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

4 Principle

Impregnation of dry tiles with water and then suspension in water. Calculation of the listed properties using the relationships between dry, saturated and suspended masses.

5 Apparatus

5.1 Drying oven, capable of being operated at least at (110 ± 5) °C. Microwave, infrared, or other drying systems may be used provided that it has been determined that the same results are obtained.

5.2 Balance, accurate to 0,01 % of the mass of a test specimen.

5.3 Deionized or distilled water

5.4 Dessicator

5.5 Microfibre cloth

5.6 Wire loop, halter or basket, capable of supporting specimens under water for making suspended mass measurements.

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