

Thermal insulating products for building applications -
Determination of long-term water absorption by
diffusion (ISO 16536:2019)

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN ISO 16536:2019 sisaldab Euroopa standardi EN ISO 16536:2019 ingliskeelset teksti.	This Estonian standard EVS-EN ISO 16536:2019 consists of the English text of the European standard EN ISO 16536:2019.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation.
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English Version

**Thermal insulating products for building applications -
Determination of long-term water absorption by diffusion
(ISO 16536:2019)**

Produits isolants thermiques destinés aux applications
du bâtiment - Détermination de l'absorption d'eau à
long terme par diffusion (ISO 16536:2019)

Wärmedämmstoffe für das Bauwesen - Bestimmung
der Wasseraufnahme durch Diffusion (ISO
16536:2019)

This European Standard was approved by CEN on 21 June 2019.

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

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European foreword

This document (EN ISO 16536:2019) has been prepared by Technical Committee ISO/TC 163 "Thermal performance and energy use in the built environment" in collaboration with Technical Committee CEN/TC 88 "Thermal insulating materials and products" the secretariat of which is held by DIN.

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of an identical text or by endorsement, at the latest by January 2020, and conflicting national standards shall be withdrawn at the latest by January 2020.

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 12088:2013.

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Endorsement notice

The text of ISO 16536:2019 has been approved by CEN as EN ISO 16536:2019 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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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 the European Committee for Standardization (CEN) Technical Committee CEN/TC 88, *Thermal insulating materials and products*, in collaboration with ISO Technical Committee TC 163, *Thermal performance and energy use in the built environment*, Subcommittee SC 1, *Test and measurement methods*, in accordance with the agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This second edition cancels and replaces the first edition (ISO 16536:2012), which has been technically revised. The main changes compared to the previous edition are as follows:

- The content in 6.4 and 10 has been revised to reflect the conditions for tropical countries.

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.

Thermal insulating products for building applications — Determination of long-term water absorption by diffusion

1 Scope

This document specifies the equipment and procedures for determining the long-term water absorption of test specimens by diffusion. It is applicable to thermal insulating products. It is intended to simulate the water absorption of products subjected to high relative humidities, approximating to 100 %, on both sides and subjected to a water vapour pressure gradient for a long period of time e.g. inverted roof or unprotected ground insulation.

The test is not applicable for all types of thermal insulating products. The relevant product standard should state for which of its products, if any, this test is applicable.

NOTE For unprotected ground insulation the temperature of 50 °C could be replaced by a lower temperature, when more data is available.

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 29768, *Thermal insulating products for building applications — Determination of linear dimensions of test specimens*

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

The long-term water absorption by diffusion is determined by measuring the increase in the mass of a test specimen subjected to a water vapour pressure difference and temperature gradient for a period of 28 days.

5 Apparatus

- 5.1 **Balance**, capable of determining the mass of a specimen to an accuracy of 0,1 g.
- 5.2 **Corrosion resistant container**, a frame supporting the test specimens.
- 5.3 **Heating device**, a thermostat, which provides water temperature control to (50 ± 1) °C.
- 5.4 **Cooling plate**, thermally insulated on the outside, operating at a temperature of $(1 \pm 0,5)$ °C.