
Toplotnoizolacijski proizvodi za uporabo v gradbeništvu - Ugotavljanje debeline izolacijskih proizvodov za plavajoče pode (ISO/DIS 29770:2021)

Thermal insulating products for building applications - Determination of thickness for floating-floor insulating products (ISO/DIS 29770:2021)

Wärmedämmstoffe für das Bauwesen - Bestimmung der Dicke von Dämmstoffen unter schwimmendem Estrich (ISO/DIS 29770:2021)

Produits isolants thermiques destinés aux applications du bâtiment - Détermination de l'épaisseur des produits d'isolation pour sol flottant (ISO/DIS 29770:2021)

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Ta slovenski standard je istoveten z: prEN ISO 29770

ICS:

91.060.30	Stropi. Tla. Stopnice	Ceilings. Floors. Stairs
91.100.60	Materiali za toplotno in zvočno izolacijo	Thermal and sound insulating materials

oSIST prEN ISO 29770:2021

en,fr,de

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Thermal insulating products for building applications — Determination of thickness for floating-floor insulating products

Produits isolants thermiques destinés aux applications du bâtiment — Détermination de l'épaisseur des produits d'isolation pour sol flottant

ICS: 91.100.60

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ISO/DIS 29770:2021(E)**Foreword**

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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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This document was prepared by Technical Committee Committee ISO/TC 163, *Thermal performance and energy use in the built environment*, Subcommittee SC 1, *Test and measurement methods*, in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 88, *Thermal insulating materials and products*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This second edition cancels and replaces the first edition (ISO 29770:2008) and the standard EN 12431:2013, which have been technically revised. The main changes compared to the previous edition are as follows:

Clause 6.4 conditioning of test specimen to reflect the conditions for tropical countries

Clause 7.1 test conditions and

Clause 10 test report

Thermal insulating products for building applications — Determination of thickness for floating-floor insulating products

1 Scope

This International Standard specifies the equipment and procedures for determining the thickness of thermal insulating products for impact sound insulation in floating floor applications.

2 Normative references

The following referenced documents are indispensable for the application 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

For the purposes of this document, the following terms and definitions apply.

3.1

thickness

d_L

thickness of the product under a load of 250 Pa

3.2

thickness

d_F

thickness of the product after a 120 s short-term application under a load of 2 kPa

3.3

thickness

d_B

thickness of the product after a 120 s short-term application under a load of 2 kPa after application of a short-term, additional load of 48 kPa

4 Principle

The thickness is determined as the distance measured between a rigid, flat base plate on which the test specimen rests and a rigid, flat pressure plate exerting different specified pressures on the top surface of the test specimen.

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5 Apparatus

5.1 Dial gauge, permitting readings to 0,1 mm, mounted on a rigid frame fastened to a rigid, flat base plate.

A device with the same accuracy for two readings of the thickness/deformation is placed symmetrically on a diagonal on the upper square plate of the device. The mean of these two readings is the thickness/deformation.

5.2 Base plate and pressure plate, at least as large as the test specimen.

5.3 Pressure device, capable of exerting a total pressure on the test specimen of $(0,250 \pm 0,05)$ kPa, including the force exerted by the dial gauge.

5.4 Pressure device, capable of exerting a total pressure on the test specimen of $(2 \pm 0,020)$ kPa, including the force exerted by the dial gauge.

5.5 Pressure device, capable of exerting a total pressure on the test specimen of $(50 \pm 0,500)$ kPa.

As an alternative to 5.1 through 5.5, a compression-testing machine suited to the range of force and displacement involved can be used. The compression-testing machine shall have two very rigid, polished, square, plane parallel plates, the length of one side of which is at least as large as the test specimen side being tested. One of the plates shall be fixed and the other movable, if appropriate, with a centrally positioned knee ball joint to ensure that only an axial force is applied to the test specimen.

A device for measuring the displacement shall be fitted to the compression-testing machine that allows measurement of the displacement of the movable plate and that permits a reading to $\pm 0,1$ mm.

A sensor shall be fitted to one of the machine plates to measure the force produced by the reaction of the test specimen upon the plates. This sensor shall be such that either its own deformation during the course of the measuring operation is negligible compared with that being measured or its deformation shall be taken into account by calculation. In addition, it shall allow continuous measurement of the force permitting a reading to $\pm 1\%$. When measurements are made on a movable plate and not in the axis, two sensors, placed symmetrically with respect to the axis, shall be used and then the mean value of the two measurements is used.

6 Test specimens

6.1 Dimensions of test specimens

The thickness of the test specimens shall be the original product thickness.

The test specimens shall be squarely cut and square having sides of (200 ± 1) mm.

The length and width shall be determined in accordance with ISO 29768, with an accuracy of ± 1 mm.

6.2 Number of test specimens

The number of test specimens shall be as specified in the relevant product standard. If the number is not specified, then ten test specimens shall be used. In the absence of a product standard or any other international or European technical specification, the number of test specimens may be agreed between parties.

6.3 Preparation of the test specimens

The test specimens shall be cut so that they do not include product edges. The test specimens shall be prepared by methods that do not change the original structure of the product. Any skins, facings and/or coatings shall be retained.

6.4 Conditioning of test specimens

The test specimens shall be stored for at least 6 h at $(23 \pm 5) ^\circ\text{C}$. In case of dispute they shall be stored at $(23 \pm 2) ^\circ\text{C}$ and $(50 \pm 5) \%$ relative humidity for the time specified in the relevant product standard.

In tropical countries, different conditioning and testing conditions can be relevant. In this case, the conditions shall be $27 ^\circ\text{C}$ and 65% RH and be stated clearly in the test report.

7 Procedure

7.1 Test conditions

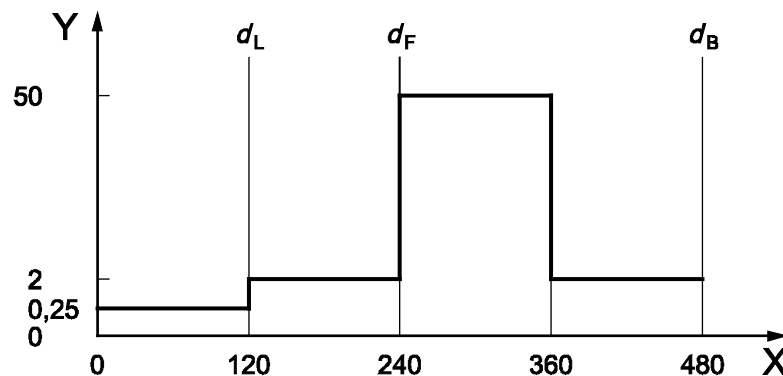
The test shall be carried out at $(23 \pm 5) ^\circ\text{C}$. In case of dispute, it shall be carried out at $(23 \pm 2) ^\circ\text{C}$ and $(50 \pm 5) \%$ relative humidity.

In tropical countries, different conditioning and testing conditions can be relevant. In this case, the conditions shall be $27 ^\circ\text{C}$ and 65% RH and be stated clearly in the test report.

7.2 Test procedure

7.2.1 General

The procedure for determining the thickness of the test specimen is shown in Figure 1.



Key

- X time, expressed in seconds
- Y pressure, expressed in kilopascals

Figure 1 — Illustration of the determination of the thicknesses versus time and pressure

ISO/DIS 29770:2021(E)**7.2.2 Thickness, d_L**

Lay the test specimen on the rigid, flat, horizontal base plate, ensuring that the measuring area is in contact with the base plate.

Place the test specimens, if faced or coated on one side, with the facing or coating against the base plate.

Load the test specimen with a device exerting a pressure of 250 Pa.

Measure the thickness, to the nearest 0,1 mm, (120 ± 5) s after placing the pressure plate in position. The thickness may be measured with the dial gauge at two diagonally opposite measuring devices (pins) forced through an opening in the centre of the pressure plate.

7.2.3 Thicknesses d_F and d_B

The thicknesses d_F and d_B shall be determined on the same test specimen that was previously used for determining the thickness d_L .

Load the test specimens with a device exerting a pressure of 2 kPa. Measure the thickness d_F , to the nearest 0,1 mm, (120 ± 5) s after applying this pressure. Apply an additional pressure of 48 kPa. Remove this additional pressure after (120 ± 5) s.

Measure the thickness, d_B , to the nearest 0,1 mm, (120 ± 5) s or (300 ± 10) s after removing the pressure of 48 kPa. The pause before measuring the thickness, either 120 s or 300 s, shall be as specified in the relevant product standard. In the absence of a product standard or any other international or European technical specification, the pause time may be agreed upon between parties.

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8 Calculation and expression of results

The results for each thickness d_L , d_F and d_B shall be the mean value of the respective measurements made on all test specimens, rounded to the nearest 0,1 mm.

9 Accuracy of measurement

NOTE It has not been possible to include a statement on the accuracy of the measurements in this edition of this International Standard, but it is intended to include such a statement when this International Standard is next revised.

10 Test report

The test report shall include the following information:

- a) reference to this International Standard;
- b) product identification:
 - 1) product name, factory, manufacturer or supplier,
 - 2) production code number,
 - 3) type of product,
 - 4) packaging,
 - 5) form in which the product arrived at the laboratory,
 - 6) other information as appropriate, e.g. nominal thickness, nominal density;