



SLOVENSKI STANDARD
SIST EN 1604:1997
01-december-1997

Toplotnoizolacijski proizvodi za uporabo v gradbeništvu - Preskus dimenzijske stabilnosti pri predpisani temperaturi in relativni vlažnosti zraka

Thermal insulating products for building applications - Determination of dimensional stability under specified temperature and humidity conditions

Wärmedämmstoffe für das Bauwesen - Bestimmung der Dimensionsstabilität bei definierten Temperatur- und Feuchtebedingungen

Produits isolants thermiques destinés aux applications du bâtiment - Détermination de la stabilité dimensionnelle dans des conditions de température et d'humidité spécifiées

<https://standards.iteh.ai/catalog/standards/sist/7b76f8b5-c5ae-43a0-9eaa-7435ced9c311/sist-en-1604-1997>

Ta slovenski standard je istoveten z: EN 1604:1996

ICS:

91.100.60	Materiali za toplotno in zvočno izolacijo	Thermal and sound insulating materials
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EUROPEAN STANDARD

EN 1604

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EUROPÄISCHE NORM

November 1996

ICS 91.120.10

Descriptors: buildings, thermal insulation, thermal insulating materials, tests, determination, dimensional stability, testing conditions, test atmospheres, temperature, humidity

English version

**Thermal insulating products for building
applications - Determination of dimensional
stability under specified temperature and humidity
conditions**

Produits isolants thermiques destinés aux applications du bâtiment - Détermination de la stabilité dimensionnelle dans des conditions de température et d'humidité spécifiées (standards.iteh.ai)

Wärmedämmstoffe für das Bauwesen - Bestimmung der Dimensionsstabilität bei definierten Temperatur- und Feuchtebedingungen

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This European Standard was approved by CEN on 1996-10-05. 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, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

CEN

European Committee for Standardization
Comité Européen de Normalisation
Europäisches Komitee für Normung

Central Secretariat: rue de Stassart,36 B-1050 Brussels

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Foreword

This European Standard has been prepared by 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 May 1997, and conflicting national standards shall be withdrawn at the latest by December 1997.

This European Standard is one of a series of standards which specify test methods for determining dimensions and properties of thermal insulating materials and products. It supports a series of product standards for thermal insulating materials and products which derive from the Council Directive of 21 December 1988 on the approximation of laws, regulations and administrative provisions of the Member States relating to construction products (Directive 89/106/EEC) through the consideration of the essential requirements.

This European Standard has been drafted for applications in buildings but it may also be used in other areas where it is relevant.

In pursuance of Resolution BT 20/1993 Revised, CEN/TC 88 have proposed defining the standards listed below as a European "package" of standards, setting December 31, 1997 as the date of withdrawal (dow) of national standards which conflict with the European Standards of this package.

The "package" of standards comprises the following group of inter-related standards on test methods for determining dimensions and properties of thermal insulation materials and products, all of which come within the scope of CEN/TC 88:

- | | |
|---------|---|
| EN 822 | Thermal insulating products for building applications - Determination of length and width |
| EN 823 | Thermal insulating products for building applications - Determination of thickness |
| EN 824 | Thermal insulating products for building applications - Determination of squareness |
| EN 825 | Thermal insulating products for building applications - Determination of flatness |
| EN 826 | Thermal insulating products for building applications - Determination of compression behaviour |
| EN 1602 | Thermal insulating products for building applications - Determination of the apparent density |
| EN 1603 | Thermal insulating products for building applications - Determination of dimensional stability under constant normal laboratory conditions (23 °C/50 % relative humidity) |

EN 1604	Thermal insulating products for building applications - Determination of dimensional stability under specified temperature and humidity conditions
EN 1605	Thermal insulating products for building applications - Determination of deformation under specified compressive load and temperature conditions
EN 1606	Thermal insulating products for building applications - Determination of compressive creep
EN 1607	Thermal insulating products for building applications - Determination of tensile strength perpendicular to faces
EN 1608	Thermal insulating products for building applications - Determination of tensile strength parallel to faces
EN 1609	Thermal insulating products for building applications - Determination of short term water absorption by partial immersion
prEN 12085	Thermal insulating products for building applications - Determination of linear dimensions of test specimens
prEN 12086	Thermal insulating products for building applications - Determination of water vapour transmission properties
prEN 12087	Thermal insulating products for building applications - Determination of long term water absorption by immersion
prEN 12088	Thermal insulating products for building applications - Determination of long term water absorption by diffusion
prEN 12089	Thermal insulating products for building applications - Determination of bending behaviour
prEN 12090	Thermal insulating products for building applications - Determination of shear behaviour
prEN 12091	Thermal insulating products for building applications - Determination of freeze-thaw resistance

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

1 Scope

This European Standard specifies the equipment and procedures to evaluate dimensional changes of the test specimens under specified conditions of temperature, relative humidity and duration of exposure. This standard proposes a range of conditions from which one or more desirable test conditions can be selected. It is applicable to thermal insulating products.

2 Normative references

This European Standard incorporates, by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

prEN 12085 Thermal insulating products for building applications -
Determination of linear dimensions of test specimens

3 Definitions

For the purposes of this standard, the following definitions apply:

3.1 length, l : The dimension of the test specimen parallel to the longer linear dimension of the major surface of the original product.

3.2 width, b : The linear dimension of the major surface of the test specimen, measured at right angles to the length.

3.3 thickness, d : The linear dimension measured perpendicularly to the length and width plane.

4 Principle

Determine the changes in linear dimensions which occur when the test specimens have been conditioned, subjected to specified environments for a definite period of time, and then reconditioned.

5 Apparatus

5.1 Temperature controlled or temperature and humidity controlled chamber, capable of maintaining the test specimens within the specified conditions and within the limits specified in 7.2.

5.2 Measuring instruments, capable of measuring linear dimensions of test specimens in accordance with prEN 12085, with an accuracy of 0,1 mm.

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. If larger dimensions are used the accuracy shall be as given in 5.2.

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 at least three test specimens shall be tested for each set of chosen conditions.

NOTE: In the absence of a product standard or any other European technical specification the number of test specimens may be agreed between parties.

6.3 Preparation of test specimens

The test specimens shall be cut so that they are representative of the full size product. Any surface skins, facings and/or coatings shall be retained. Length and width directions shall be marked on the test specimens.

6.4 Conditioning of test specimens

The test specimens shall be conditioned to equilibrium with an atmosphere at (23 ± 2) °C and (50 ± 5) % relative humidity. A test specimen is considered to be conditioned when changes in length and in width, measured according to 7.2, between two consecutive measurements at a time interval of 14 days, are less than 0,1 %.

NOTE: Other time intervals may be defined in the relevant product standard or any other European technical specification.

7 Procedure

7.1 Test conditions

Condition the test specimens in accordance with 6.4

7.2 Test procedure

In the same atmosphere as used for conditioning, determine the initial length and width of each test specimen (l_0 and b_0) by taking readings at the three positions (l_{01} , l_{02} , l_{03} and b_{01} , b_{02} , b_{03}) and the initial thickness (d_0) at the five positions (d_{01} , d_{02} , d_{03} , d_{04} , d_{05}) as shown in figure 1, using the appropriate methods described in prEN 12085, with an accuracy of 0,1 mm.

Expose a set of test specimens to each of the conditions specified in the relevant product standard.

NOTE 1: In the absence of such a specification test conditions may be agreed between parties chosen from the following:

- For a specified temperature without a specified relative humidity:

(- 40 ± 3) °C

(- 30 ± 3) °C

(+ 40 ± 2) °C

(+ 60 ± 2) °C

- For a specified temperature with a relative humidity specified in the range 30 % to 90 %, with an accuracy of ± 5 % relative humidity:

(+ 20 ± 2) °C

(+ 23 ± 2) °C

(+ 60 ± 2) °C

(+ 70 ± 2) °C

Other conditions may be used.

Lay the test specimens horizontally or place them vertically in the test chamber, at not less than 25 mm apart, on rigid wire mesh or perforated metal plate such that substantially free air circulation occurs around the test specimens.

The test specimens shall not be exposed to the direct radiation from any heating elements.

The preferred duration of exposure is (24 ± 1) h or (48 ± 1) h.

NOTE 2: Other exposure times may be as specified in the relevant product standard or any other European technical specification or may be agreed between parties.

Remove the test specimens after exposure to the test atmosphere, and expose them for a further (3 ± 1) h in an atmosphere at (23 ± 2) °C and (50 ± 5) % relative humidity.

Determine the final length, width and thickness of the test specimens (l_t and b_t and d_t) by taking readings (l_{t1} , l_{t2} , l_{t3} and b_{t1} , b_{t2} , b_{t3} and d_{t1} , d_{t2} , d_{t3} , d_{t4} , d_{t5}) at the same positions as for the initial measurements (see figure 1). Examine the test specimens visually.

NOTE 3: If requested in the relevant product standard or any other European technical specification, the test specimens may be re-exposed to the test conditions for time periods of 7 days and the dimensions re-determined at the positions shown in figure 1, at the end of the requested time periods.