SLOVENSKI STANDARD
SIST EN 1605:1997

01-december-1997

Toplotnoizolacijski proizvodi za uporabo v gradbeništvu - Določanje deformacij pri predpisani tlačni obremenitvi in temperaturi

Thermal insulating products for building applications - Determination of deformation under specified compressive load and temperature conditions

Wärmedämmstoffe für das Bauwesen - Bestimmung der Verformung bei definierter Druck- und Temperaturbeanspruchung

Produits isolants thermiques destinés aux applications du bâtiment - Détermination de la déformation sous charge en compression et conditions de température spécifiées

Ta slovenski standard je istoveten z: **EN 1605:1996**

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English version

Thermal insulating products for building applications - Determination of deformation under specified compressive load and temperature conditions

Produits isolants thermiques destinés aux applications du bâtiment - Détermination de la déformation sous charge en compression et conditions de température spécifiées

Wärmedämmstoffe für das Bauwesen - Bestimmung der Verformung bei definierter Druck- und Temperaturbeanspruchung

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

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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 for determining the deformation occuring under specified conditions of compressive load, temperature and time. 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 definition applies:

relative deformation, ϵ : Reduction in thickness of a test specimen under specified compressive load, expressed as a percentage of its initial thickness, measured in the direction of the compressive load.

4 Principle

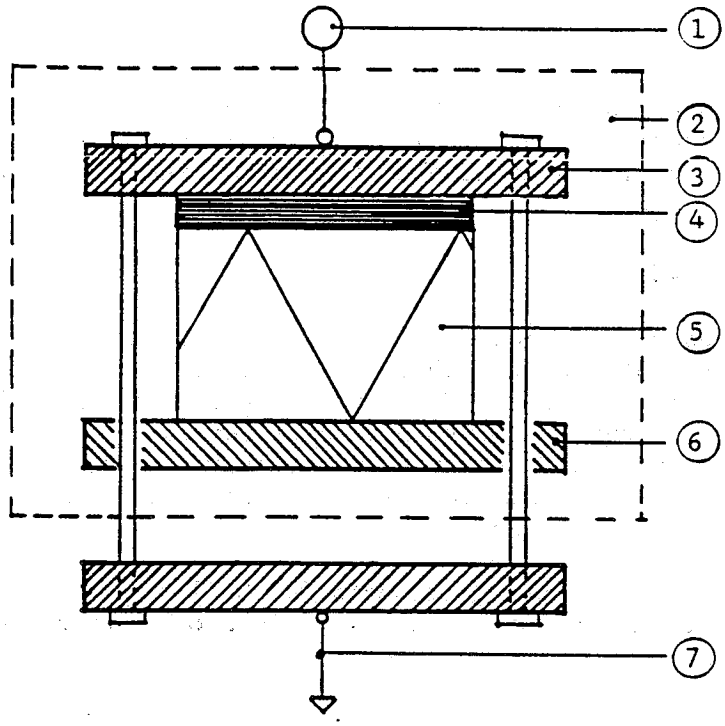
A specified compressive load is applied to the test specimen and the relative deformation is measured in two steps each with a different temperature and time condition.

5 Apparatus

5.1 **Instruments** capable of measuring linear dimensions of test specimens in accordance with prEN 12085 with an accuracy of 0,5 % for length and width and 0,1 mm for thickness.

5.2 **Oven** with thermostat and forced air circulation able to maintain the required temperature with an accuracy of ± 1 K.

5.3 **Loading device**, consisting of two flat plates, one of which shall be movable, so arranged that they compress the test specimen in a vertical direction. The movable plate shall be guided in such a manner as to be self aligning. The plates shall be capable of being loaded smoothly and without distortion so that, during the test, the static stress does not change by more than ± 5 %. See figure 1 and table 1 in 7.1.



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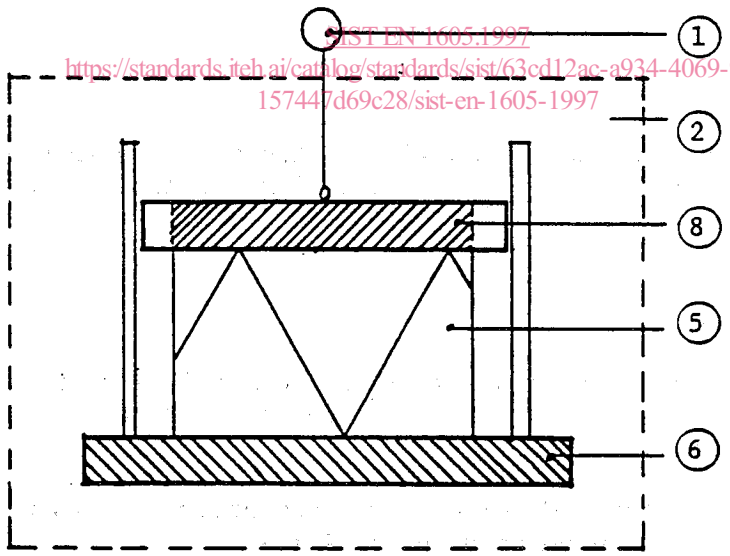

b)

1 Dial gauge
2 Oven
3 Loading bridge
4 Load distribution plate (movable, self-aligning)
5 Test specimen
6 Crosshead
7 Load by weights
8 Load

Figure 1: Examples of test apparatus

6 Test specimens

6.1 Dimensions of test specimens

The thickness of the test specimens shall be the original product thickness, provided that the thickness is at least 20 mm. The test specimens shall be squarely cut and square having sides with the following recommended dimensions:

50 mm x 50 mm or
100 mm x 100 mm or
150 mm x 150 mm or
200 mm x 200 mm or
300 mm x 300 mm.

The side length shall be equal to or greater than the thickness.
Dimensions used shall be as specified in the relevant product standard.

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

The tolerance on parallelism between the two faces of the test specimen shall not be greater than 0,5 % of the side length of the test specimen with a maximum of 0,5 mm.

If the test specimen is not flat, it shall be ground flat or an adequate coating shall be applied to prepare the surface for the test. If it is coated, no significant deformation should occur in the coating or it shall be taken into account by deducting the deformation of the coating.

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 selected set of 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 the direction of test forces applied to the product will correspond to the direction in which the compressive forces are applied to the product during its use.
Natural surface skins and any facings and/or coatings that form an integral part of the product shall be retained.

NOTE: Special methods of preparation, when needed, are given in the relevant product standard or any other European technical specification.

6.4 Conditioning of test specimens

The test specimens shall be stored for at least 6 h at (23 ± 5) °C. In case of dispute they shall be stored at (23 ± 2) °C and (50 ± 5) % relative humidity for the time specified in the relevant product standard.