

**Ehituses kasutatavad
soojustusmaterjalid. Deformatsiooni
määramine kindlates survejõu- ja
temperatuuritingimustes**

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

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN 1605:1999 sisaldab Euroopa standardi EN 1605:1996 + AC:1997 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 23.11.1999 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN 1605:1999 consists of the English text of the European standard EN 1605:1996 + AC:1997.</p> <p>This document is endorsed on 23.11.1999 with the notification being published in the official publication of the Estonian national standardisation organisation.</p> <p>The standard is available from Estonian standardisation organisation.</p>
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<p>Käsitlusala: See standard määrab kindlaks seadmed ja moodused kindlatest koormus-, temperatuuri- ja ajatingimustest põhjustatud deformatsiooni määramiseks. Standard kehtib soojustustoodete kohta.</p>	<p>Scope:</p>
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ICS 91.100.60

Võtmesõnad: deformatsioon, hooned, määramine, soojaisolatsioon, soojusmaterjalid, surveteimid, teimitingimused, temperatuur

ICS 91.100.99

Descriptors: Thermal insulation, insulating materials, compressive strength, testing.

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 the United Kingdom.

CEN

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

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Contents

	Page
Foreword	2
1 Scope	3
2 Normative reference	3
3 Definitions	3
4 Principle	3
5 Apparatus	3
6 Test specimens	3
7 Procedure	4
8 Calculation and expression of results	4
9 Precision of the method	5
10 Test report	5

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 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 building, but it may also be used in other areas where it is relevant.

In pursuance of Resolution BT 20/1993 (revised), CEN/TC 88 has 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 interrelated 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

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, by May 1997 at the latest, and conflicting national standards shall be withdrawn by December 1997 at the latest.

In accordance with 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 occurring under specified conditions of compressive load, temperature and time. It is applicable to thermal insulating products.

2 Normative reference

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 specimen under specified compressive load, expressed as a percentage of its initial thickness, measured in the direction of compressive loading.

4 Principle

A specified compressive load is applied to a 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 specimens in accordance with prEN 12085 to an accuracy of 0,5 % for length and width and 0,1 mm for thickness.

5.2 Oven, with thermostat and forced air circulation, capable of maintaining the required temperature to within ± 1 K.

5.3 Loading device, consisting of two flat platens, one of which shall be movable, so arranged that they compress the specimen in a vertical direction. The movable platen shall be guided in such a manner as to be self-aligning. The

platens 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).

6 Test specimens

6.1 Dimensions of test specimens

The thickness of the specimens shall be equal to the original product thickness, provided that the thickness is at least 20 mm.

The specimens shall be squarely cut and have sides with the following recommended dimensions:

50 mm \times 50 mm or
100 mm \times 100 mm or
150 mm \times 150 mm or
200 mm \times 200 mm or
300 mm \times 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 specimens may be agreed between parties.

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

If the specimen is not flat, it shall be ground flat or an adequate coating shall be applied to prepare the surface for the test. Where 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 specimens shall be as specified in the relevant product standard. If the number is not specified, then at least three specimens shall be used for each selected set of conditions.

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

6.3 Preparation of test specimens

The specimens shall be cut so that the direction of loading applied to the product will correspond to the direction in