

# SLOVENSKI STANDARD

## SIST EN 1603:2013

01-julij-2013

Nadomešča:

SIST EN 1603:1997

SIST EN 1603:1997/A1:2007

SIST EN 1603:1997/AC:1999

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**Toplotnoizolacijski proizvodi za uporabo v gradbeništvu - Preskus dimenzijske stabilnosti pri konstantnih laboratorijskih pogojih (23 °C/50-odstotna relativna vlažnost zraka)**

Thermal insulating products for building applications - Determination of dimensional stability under constant normal laboratory conditions (23 °C/50 % relative humidity)

Wärmedämmstoffe für das Bauwesen - Bestimmung der Dimensionsstabilität im Normaklima (23°C/50% relative Luftfeuchte)

Produits isolants thermiques destinés aux applications du bâtiment - Détermination de la stabilité dimensionnelle dans des conditions de laboratoire constantes et normales (23° C/50% d'humidité relative)

**Ta slovenski standard je istoveten z: EN 1603:2013**

**ICS:**

91.100.60	Materiali za toplotno in zvočno izolacijo	Thermal and sound insulating materials
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**SIST EN 1603:2013**

**en,fr,de**

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EUROPEAN STANDARD

EN 1603

NORME EUROPÉENNE

EUROPÄISCHE NORM

March 2013

ICS 91.100.60

Supersedes EN 1603:1996

English Version

Thermal insulating products for building applications -  
Determination of dimensional stability under constant normal  
laboratory conditions (23 °C/ 50 % relative humidity)

Produits isolants thermiques destinés aux applications du  
bâtiment - Détermination de la stabilité dimensionnelle  
dans des conditions de laboratoire constantes et normales  
(23°C/50% d'humidité relative)

Wärmedämmstoffe für das Bauwesen - Bestimmung der  
Dimensionsstabilität im Normalklima (23°C/50% relative  
Luftfeuchte)

This European Standard was approved by CEN on 15 December 2012.

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 CEN-CENELEC Management Centre or to any CEN member.

This European Standard exists 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 CEN-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.



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COMITÉ EUROPÉEN DE NORMALISATION  
EUROPÄISCHES KOMITEE FÜR NORMUNG

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## Foreword

This document (EN 1603:2013) 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 September 2013, and conflicting national standards shall be withdrawn at the latest by September 2013.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN 1603:1996.

The revision of this standard contains no major changes, only minor corrections and clarifications of an editorial nature.

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.

This European test standard is one of the following group of interrelated standards on test methods for determining dimensions and properties of thermal insulation materials and products, all of which fall 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*

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- 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*
- EN 12085, *Thermal insulating products for building applications — Determination of linear dimensions of test specimens*
- EN 12086, *Thermal insulating products for building applications — Determination of water vapour transmission properties*
- EN 12087, *Thermal insulating products for building applications — Determination of long-term water absorption by immersion*
- EN 12088, *Thermal insulating products for building applications — Determination of long-term water absorption by diffusion*
- EN 12089, *Thermal insulating products for building applications — Determination of bending behaviour*
- EN 12090, *Thermal insulating products for building applications — Determination of shear behaviour*
- EN 12091, *Thermal insulating products for building applications — Determination of freeze-thaw resistance*
- EN 12429, *Thermal insulating products for building applications — Conditioning to moisture equilibrium under specified temperature and humidity conditions*
- EN 12430, *Thermal insulating products for building applications — Determination of behaviour under point load*
- EN 12431, *Thermal insulating products for building applications — Determination of thickness for floating floor insulating products*
- EN 13793, *Thermal insulating products for building applications — Determination of behaviour under cyclic loading*
- EN 13820, *Thermal insulating materials for building applications — Determination of organic content*

According to the CEN/CENELEC Internal Regulations, the national standards organisations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

## 1 Scope

This European Standard specifies the equipment and procedures to evaluate irreversible dimensional changes of test specimens and full size products with time under constant normal laboratory conditions. It is applicable to thermal insulating products.

## 2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 822, *Thermal insulating products for building applications — Determination of length and width*

EN 825, *Thermal insulating products for building applications — Determination of flatness*

ISO 5725-2, *Accuracy (trueness and precision) of measurement methods and results — Part 2: Basic method for the determination of repeatability and reproducibility of a standard measurement method*

## 3 Terms and definitions

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

### 3.1

#### length

*l*

long linear dimension of the major surface of the test specimen parallel to the longer linear dimension of the original product

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### 3.2

#### width

*b*

short linear dimension of the major surface of the test specimen, measured at right angles to the length

### 3.3

#### deviation from flatness

*S*

maximum distance between the product placed on a flat surface with the convex side uppermost and the flat surface

### 3.4

#### normal laboratory conditions

(23 ± 2) °C and (50 ± 5) % relative humidity

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### 4 Principle

Measure length, width and deviation from flatness of the test specimens at several time intervals under normal laboratory conditions until relative stability has been achieved.

Dimensional stability is determined using one or more of the following methods:

- Method A: determination of linear dimensions of full size products;
- Method B: determination of linear dimensions of products using test specimens with dimensions smaller than those of full size products;
- Method C: determination of deviation from flatness of full size products.

### 5 Apparatus

**Method A:** Measuring equipment as defined in EN 822.

**Method B:** A frame fixed on a flat reference surface with a dial gauge of 0,01 mm accuracy or any device (optical, electrical etc.) which has an accuracy of 0,1 mm/m (see examples in Figure 1 and Figure 2);

and either

**Method B1:** Metal plates of at least 20 mm in diameter (see Figure 1). The actual diameter is to be chosen so that the pressure exerted by the dial gauge is less than 2 kPa;

or

**Method B2:** Metal wire (see Figure 2).

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**Method C:** Measuring equipment as defined in EN 825.

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Any test equipment which provides the same result to at least the same accuracy may be used.

### 6 Test specimens

#### 6.1 Dimensions of test specimens

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

**Method A:** The test specimen shall be the full size product.

**Method B1:** 500 mm × 500 mm or, if less than 500 mm × 500 mm, as large as possible. In every case, it shall be greater than 250 mm × 250 mm.

**Method B2:** 250 mm × 250 mm.

**Method C:** The test specimen shall be the full size product.

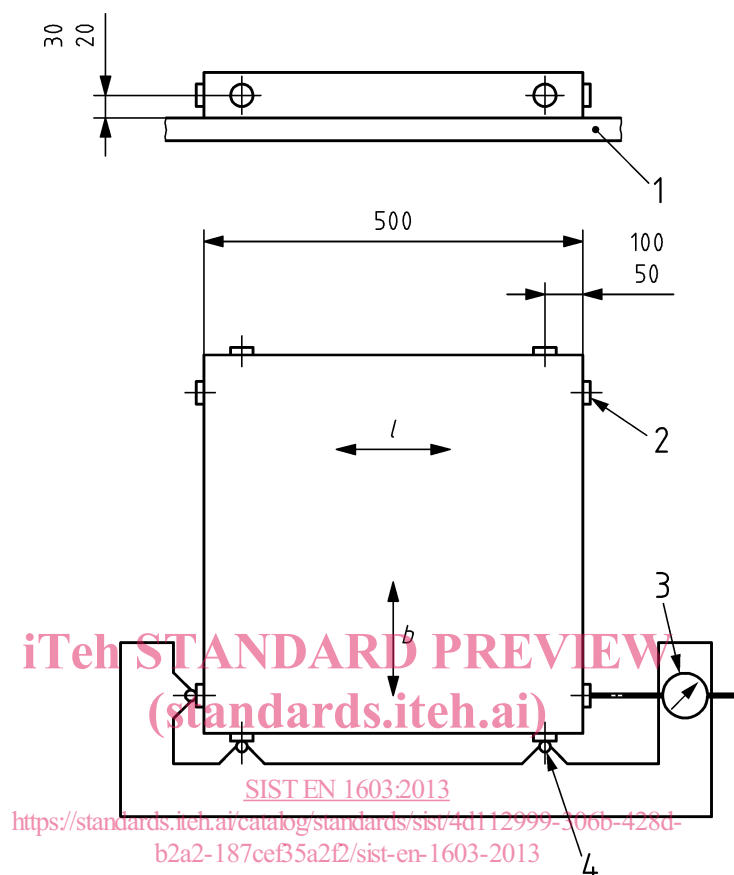
#### 6.2 Number of test specimens

When testing full size products, the number of test specimens shall be as specified in the relevant product standard. If measurements are made on test specimens taken from a full size product, at least three test specimens shall be tested.



In the absence of a product standard or any other European Technical Specification, the number of test specimens may be agreed between parties.

Dimensions in millimetres



### Key

- 1 flat reference surface
- 2 metal plate
- 3 dial gauge
- 4 metal bead

Figure 1 — Example of suitable equipment for method B1