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**Toplotnoizolacijski proizvodi za uporabo v gradbeništvu - Preskus dimenzijske stabilnosti pri konstantnih laboratorijskih pogojih (23 °C in 50-odstotni relativni vlažnosti 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 Normalklima (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 1603:1996**

**ICS:**

91.100.60	Materiali za toplotno in zvočno izolacijo	Thermal and sound insulating materials
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**SIST EN 1603:1997**

**en**

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EUROPEAN STANDARD

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

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)

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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.

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**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, 1996 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 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

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.

- EN 822 Thermal insulating products for building applications - Determination of length and width
- EN 825 Thermal insulating products for building applications - Determination of flatness

## 3 Definitions

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

- 3.1 **length,  $l$** : The longer linear dimension of the major surface of the test specimen parallel to the longer linear dimension of the original product.
- 3.2 **width,  $b$** : The shorter linear dimension of the major surface of the test specimen, measured at right angles to the length.
- 3.3 **deviation from flatness,  $S$** : The maximum distance between the product placed on a flat surface with the convex side uppermost and the flat surface.
- 3.4 **normal laboratory conditions**:  $(23 \pm 2) ^\circ\text{C}$  and  $(50 \pm 5) \%$  relative humidity.

## 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 chosen so that the pressure exerted by the dial gauge is less than 2 kPa

or

Method B2: Metal wires (see figure 2).

Method C: Measuring equipment as defined in EN 825.

NOTE: Any test equipment which provides the same result with at least the same accuracy may be used.

All dimensions in millimetres

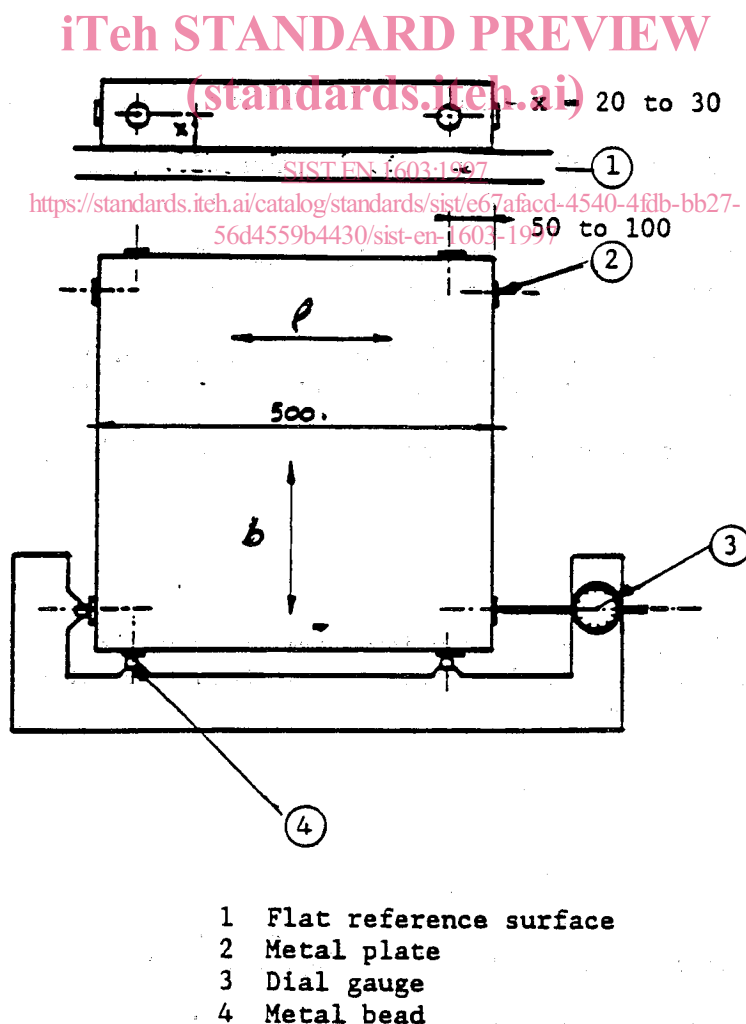


Figure 1: Example of suitable equipment for method B1



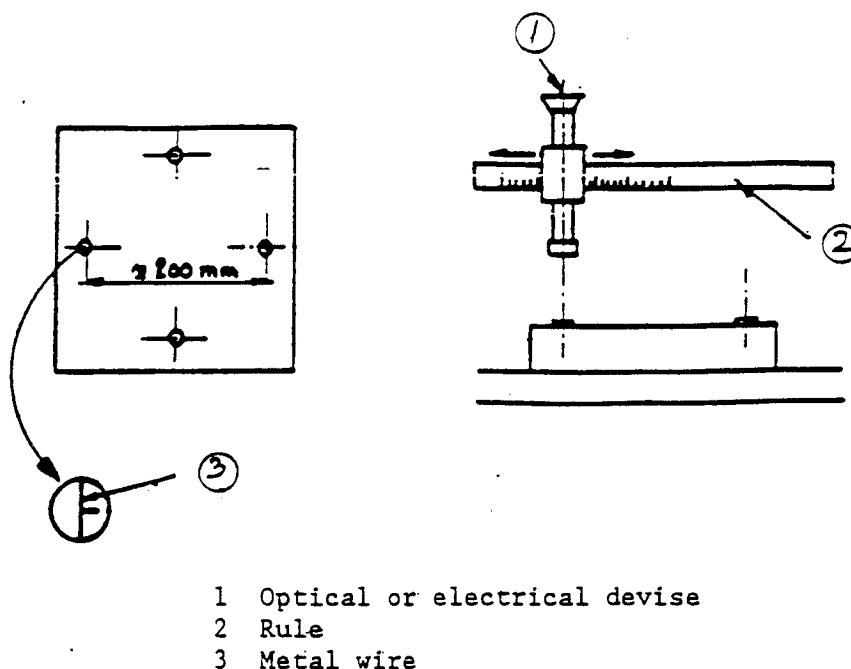


Figure 2: Example of suitable equipment for method B2

## 6 Test specimens

### 6.1 Dimensions of test specimens

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

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

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

Method B2: 250 mm x 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 shall be tested.

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 by methods that do not change the structure from that of the original product.

If test specimens are not the full size products, the length and width directions shall be marked on the test specimens.

The method of selection of the test specimens shall be as specified in the relevant product standard.