SLOVENSKI STANDARD
SIST EN 824:1997

01-december-1997

Toplotno izolacijski proizvodi za uporabo v gradbeništvu - Določanje pravokotnosti

Thermal insulating products for building applications - Determination of squareness

Wärmedämmstoffe für das Bauwesen - Bestimmung der Rechtwinkligkeit

Produits isolants thermiques destinés aux applications du bâtiment - Détermination de l'équerrage

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

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English version

Thermal insulating products for building applications - Determination of squareness

Produits isolants thermiques destinés aux applications du bâtiment - Détermination de l'équerrage

Wärmedämmstoffe für das Bauwesen - Bestimmung der Rechtwinkligkeit

This European Standard was approved by CEN on 1994-07-22. 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 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of an identical text or by endorsement, at the latest by January 1995, and conflictng national standards shall be withdrawn at the latest by December 1996.

This European Standard is one of a series of standards with specify test methods for determining dimensions and properties of thermal insulating materials and products. It supports a series of products 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.

This European Standard has been prepared under a mandate given to CEN by the Commission of the European Communities and the European Free Trade Association, and suports essential requirements of EC Directive(s).

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, 1996 as the date of withdrawal (dow) of national standards which conflicts 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 application - Determination of length and width
EN 823	Thermal insulating products for building application - Determination of thickness
EN 824	Thermal insulating products for building application - Determination of squareness
EN 825	Thermal insulating products for building application - Determination of flatness
prEN 826	Thermal insulating products for building application - Determination of compression behaviour
	Thermal insulating products for building application - Determination of the apparent density [1])
	Thermal insulating products for building application - Determination of dimension and shape stability under constant normal laboratory conditions (23°c/50% relative humidity) [1])

[1]) Standards are in preparation.

Thermal insulating products for building application -
Determination of dimensional stability under specified temperature and humidity conditions [1])

Thermal insulating products for building application -
Determination of deformation under specified compressive load and temperature conditions [1])

Thermal insulating products for building application -
Determination of compressive creep [1])

Thermal insulating products for building application -
Determination of tensile strength perpendicular to faces [1])

Thermal insulating products for building application -
Determination of tensile strength parallel to faces [1])

Thermal insulating products for building application -
Determination of short term water absorption by partial immersion [1])

Thermal insulating products for building application -
Determination of linear dimensions of test specimens [1])

Thermal insulating products for building application -
Determination of water vapour transmission properties [1])

Thermal insulating products for building application -
Determination of long term water absorption by immersion [1])

Thermal insulating products for building application -
Determination of long term water absorption by diffusion [1])

Thermal insulating products for building application -
Determination of bending behaviour [1])

Thermal insulating products for building application -
Determination of shear behaviour [1])

Thermal insulating products for building application -
Determination of freeze-thaw resistance [1])

According to the CEN/CENELEC Internal Regulations, 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, United Kingdom.

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[1]) Standards are in preparations.

1 Scope

This European Standard specifies the equipment and procedure for determining the deviation from squareness for length, width and/or thickness of full-size products. It is applicable to thermal insulating products. The method is normally applicable to products with straigth edges. For products of other shape, e.g. profiled edges, the method can be adapted accordingly.

2 Normative references

This European Standard contains no normative references.

3 Definition

For the purposes of this standard, the following definition applies :

deviation from squareness : The distance from one limb of a perfect square (see figure 1, 2 and 3) to the edge of the product at a given distance from a corner.

4 Principle

Apply a metal square to the product edges and measure the deviation between one limb of the metal square and the products edge (see figure 1).

5 Apparatus

5.1 A flat surface;

5.2 Metal rule or metal tape graduate in millimetres and permitting reading to 0,5 mm;

5.3 A metal square with limbs at least 500 mm long with a deviation from squareness of not more than ± 0,1 mm when measured at 500 mm from the corner.

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

6 Test specimens

6.1 Dimensions of test specimens

The test specimens shall be the full-size product.

6.2 Number of test specimens

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

NOTE : In the absence of a product standard the number of test specimens may be agreed between parties.

6.3 Conditionning of test specimens

The test sprecimens should be stored for a 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.

7 Procedure

7.1 Determination of the squareness of the length and width edges

7.1.1 Test conditions

The test should be carried out at (23 ± 5)°C. In case of dispute it shall be carried out at (23 ± 2)°C and (50 ± 5)% relative humidity.

7.1.2 Test procedure

Lay the test specimen on a flat surface and measure the deviation from squareness of length and width as follows :

a) place the metal square along one of the sides of the test specimen with the right angle of the square aligned qgainst the adjoining adge as in figure 2

b) measure the distance a_b between the edge of the test specimen and the edge of the metal square, at a distance c from the corner, to the nearest 0,5 mm, where :

1) for the test specimens with a side of less than 500 mm, c is the maximum width or length of the specimen;

2) for the test specimen with a side equal to or greater than 500 mm, c is the length of the inner side of the square (see figure 2).

c) repeat for all corner of the test specimen having angles smaller than or equal to 90°

d) if there is any significant deviation from linearity of the edges in the length or the width, this shall be reported as the maximum deviation from linearity a_{max} expressed in millimetres (see figure 4).

7.2 Determination of the squareness of the thickness edge

7.2.1 Test conditions

The test should be carried out at (23 ± 5)°C. In case of dispute it shall be carried out at (23 ± 2)°C and (50 ± 5)% relative humidity.

7.2.2 Test procedure

Lay the test specimen on a flat surface and measure the deviation from squareness of the thickness as follows :

a) place the metal square on the flat surface against one edge of the test specimen as in figure 3;

b) measure the distance a_d to the nearest 0,5 mm between the edge of the test specimen and the edge of the square at the point of the greatest deviation along the side;

c) repeat for all sides;

d) turn the test specimen over and repeat items a) to c);

e) report the largest figure as the deviation from squareness of the thickness edge.

8 Calculation and expression of results

8.1 Calculation of the deviation from the squareness of the length and width edges

Calculate deviation from squareness S_b using the following equation : $S_b = \frac{a_b}{c}$

where :

a_b is the measured value in millimetres;

c is the measured value in millimetres.

Express the deviation from squareness S_b in millimetres per metre and round to the nearest millimetre per metre.

8.2 Calculation of the deviation from squareness of the thickness edge

Calculate deviation from squareness S_d using the following equation :

$$S_d = a_d$$

where :

a_d is the maximum measured value in millimetres.

Round the deviation, S_d, to the nearest millimetre and report the thickness of the test specimen.

9 Accuracy of measurement

NOTE : It has not been possible to include a statement of the accuracy of the method in this edition of the standard, but it is intended to include such a statement when the standard is next revised.

10 Test report

The test report shall include the following information :

a) reference to this European Standard;

b) product identification

1) product name, factory, manufacturer or supplier;

2) production code number;

3) type of products;

4) packaging;

5) the form in which the product arrived at the laboratory;

6) other information as a appropriate, e.g. nominal thickness, nominal density.

c) test procedure

1) pre-test history and sampling, e.g. who sampled and where;

2) conditioning;