# SLOVENSKI STANDARD
# kSIST FprEN 824:2012

**01-september-2012**

---

**Toplotno izolacijski proizvodi za uporabo v gradbeništvu - Ugotavljanje 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

**Ta slovenski standard je istoveten z:** **FprEN 824**

---

**ICS:**

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

**kSIST FprEN 824:2012** **en,fr,de**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

# FINAL DRAFT
# FprEN 824

June 2012

ICS 91.100.60

Will supersede EN 824:1994

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 draft European Standard is submitted to CEN members for unique acceptance procedure. It has been drawn up by the Technical Committee CEN/TC 88.

If this draft becomes a European Standard, 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.

This draft European Standard was established by CEN 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, 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.

Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

**Warning** : This document is not a European Standard. It is distributed for review and comments. It is subject to change without notice and shall not be referred to as a European Standard.

EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

**Management Centre: Avenue Marnix 17, B-1000 Brussels**

# Contents

Page

# Foreword

This document (FprEN 824:2012) has been prepared by Technical Committee CEN/TC 88 “Thermal insulating materials and products”, the secretariat of which is held by DIN.

This document is currently submitted to the Unique Acceptance Procedure.

This document will supersede EN 824:1994.

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

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 EN test standard is one of 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*

EN 826, *Thermal insulating products for building application — Determination of compression behaviour*

EN 1602, *Thermal insulating products for building application — Determination of the apparent density*

EN 1603, *Thermal insulating products for building application — Determination of dimension and shape stability under constant normal laboratory conditions (23 °C/50 % relative humidity)*

EN 1604, *Thermal insulating products for building application — Determination of dimensional stability under specified temperature and humidity conditions*

EN 1605, *Thermal insulating products for building application — Determination of deformation under specified compressive load and temperature conditions*

EN 1606, *Thermal insulating products for building application — Determination of compressive creep*

EN 1607, *Thermal insulating products for building application — Determination of tensile strength perpendicular to faces*

EN 1608, *Thermal insulating products for building application — Determination of tensile strength parallel to faces*

EN 1609, *Thermal insulating products for building application — Determination of short term water absorption by partial immersion*

EN 12085, *Thermal insulating products for building application — Determination of linear dimensions of test specimens*

EN 12086, *Thermal insulating products for building application — Determination of water vapour transmission properties*

EN 12087, *Thermal insulating products for building application — Determination of long term water absorption by immersion*

EN 12088, *Thermal insulating products for building application — Determination of long term water absorption by diffusion*

EN 12089, *Thermal insulating products for building application — Determination of bending behaviour*

EN 12090, *Thermal insulating products for building application — Determination of shear behaviour*

EN 12091, *Thermal insulating products for building application — 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 products for building applications — Determination of organic content*

# 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 straight 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 Terms and definitions

For the purposes of this document, the following term and definition apply.

**3.1**
**deviation from squareness**
distance from one limb of a perfect square (see Figure 1 to 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 Conditioning of test specimens

The test specimens 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 against the adjoining edge 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.