

# SVENSK STANDARD

## SS-EN 12430:2013



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### **Värmeisoleringsprodukter för byggnader – Bestämning av beteende vid punktlast**

### **Thermal insulating products for building applications – Determination of behaviour under point load**

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Europastandarden EN 12430:2013 gäller som svensk standard. Detta dokument innehåller den officiella engelska versionen av EN 12430:2013.

Denna standard ersätter SS-EN 12430, utgåva 1 och SS-EN 12430/A1:2006, utgåva 1.

The European Standard EN 12430:2013 has the status of a Swedish Standard. This document contains the official version of EN 12430:2013.

This standard supersedes the Swedish Standard SS-EN 12430, edition 1 and SS-EN 12430/A1:2006, edition 1.

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EUROPEAN STANDARD

**EN 12430**

NORME EUROPÉENNE

EUROPÄISCHE NORM

March 2013

ICS 91.100.60

Supersedes EN 12430:1998

English Version

## Thermal insulating products for building applications - Determination of behaviour under point load

Produits isolants thermiques destinés aux applications du  
bâtiment - Détermination du comportement sous charge  
ponctuelle

Wärmedämmstoffe für das Bauwesen - Bestimmung des  
Verhaltens unter Punktlast

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.



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

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<b>Contents</b>		<b>Page</b>
<b>Foreword</b> .....		<b>3</b>
<b>1</b>	<b>Scope</b> .....	<b>5</b>
<b>2</b>	<b>Normative references</b> .....	<b>5</b>
<b>3</b>	<b>Terms and definitions</b> .....	<b>5</b>
<b>4</b>	<b>Principle</b> .....	<b>5</b>
<b>5</b>	<b>Apparatus</b> .....	<b>5</b>
<b>6</b>	<b>Test specimens</b> .....	<b>7</b>
<b>7</b>	<b>Procedure</b> .....	<b>8</b>
<b>8</b>	<b>Calculation and expression of results</b> .....	<b>9</b>
<b>9</b>	<b>Accuracy of measurement</b> .....	<b>10</b>
<b>10</b>	<b>Test report</b> .....	<b>10</b>
<b>Annex A (normative) Modifications to the general test method for cellular glass products</b> .....		<b>11</b>

## Foreword

This document (EN 12430:2013) 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 12430:1998.

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 buildings 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*

## SS-EN 12430:2013 (E)

- 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 equipment and procedures for determining the behaviour of products under a force applied to a small area of a test specimen at a given speed. It is applicable to thermal insulating products.

This European Standard can be used to determine whether the products have sufficient strength to withstand forces applied directly to them either during installation or during application, mainly caused by pedestrian traffic.

**NOTE** The test methods given in the main body of the standard and in Annex A are reported and interpreted in different ways. The similarities that exist between the methods are not sufficient to permit reasonable comparisons to be made.

## 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 12085, *Thermal insulating products for building applications — Determination of linear dimensions of test specimens*

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

#### **point load**

compressive force applied to a test specimen by a circular indenter with a circular cross section of 50 cm<sup>2</sup> (diameter 79,8 mm)

### 3.2

#### **critical point**

point on the force-deformation curve, where a straight line, forming a tangent to the curve, separates from the curve

Note 1 to entry: See Figure 4a).

## 4 Principle

A point load is applied with an indenter at a given speed in an axial direction perpendicular to the major faces of a squarely cut square test specimen and the compressive force at the critical point and/or the force for a given deformation is calculated.

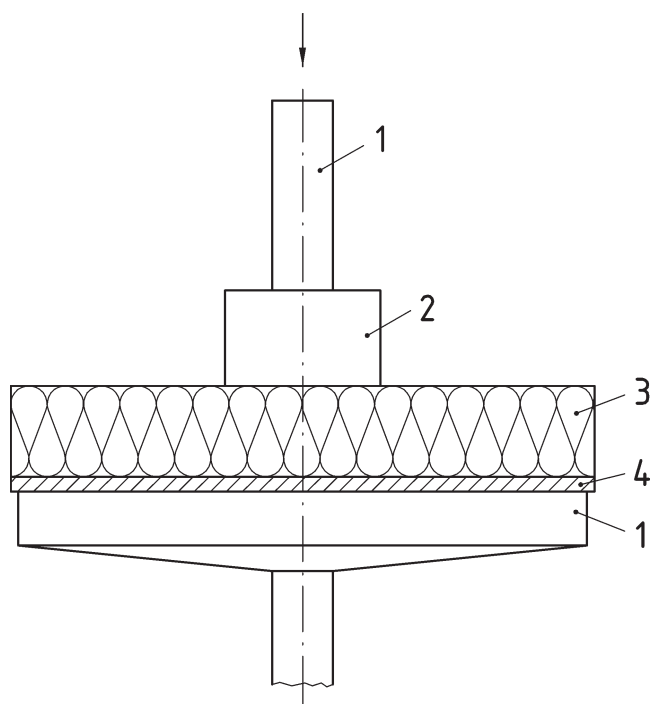
## 5 Apparatus

**5.1 Compression testing machine**, appropriate to the range of force and displacement involved and having one rigid, polished, fixed or vertically movable square or circular plane plate of which the length of one side (or the diameter) is at least as large as the length (or the diagonal length) of the test specimen (see Figure 1).

**5.2 Cylindrical indenter**, steel, having a diameter of  $(79,8 \pm 0,1)$  mm, connected to a vertically movable or fixed support.

**SS-EN 12430:2013 (E)**

If appropriate, the indenter shall be connected to the compression machine through a centrally positioned ball joint to ensure that only axial force is applied to the relevant area of the test specimen. The indenter or the supporting plate shall be capable of moving at a constant speed in accordance with 7.2 (see Figures 2 and 3).

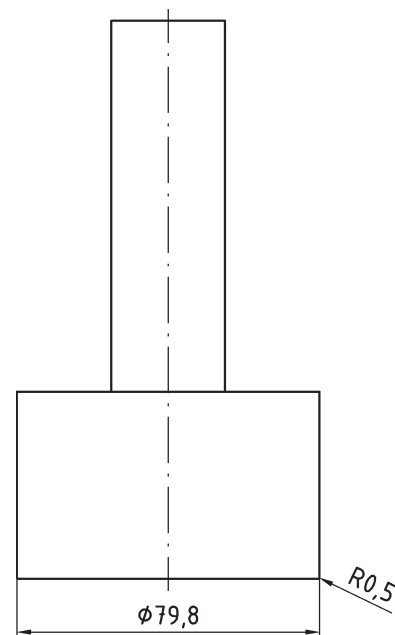
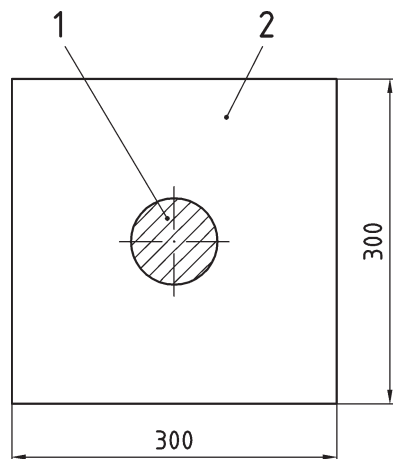


**Key**

- 1 connection to the testing machine
- 2 indenter
- 3 test specimen
- 4 supporting plate

**Figure 1 — Test setup**

Dimensions in millimetres



#### Key

- 1 cylindrical indenter
- 2 test specimen

Figure 2 — Test specimen

Figure 3 — Cylindrical indenter

**5.3 Displacement-measuring device**, capable of continuous measurement of the displacement of the indenter or the movable plate, permitting a reading to  $\pm 5\%$  or  $\pm 0,1$  mm, whichever is the smaller (see 5.1.1).

**5.4 Force-measuring sensor**, fitted to the machine plate or the indenter, to measure the force produced by the reaction of the test specimen upon the plate and the indenter.

This sensor shall be such that its own deformation during the course of the measuring operation is negligible compared with that being measured or if not, it shall be taken into account by calculation. In addition, it shall allow the continuous measurement of the force permitting reading to  $\pm 1\%$ .

**5.5 Recording device**, for the simultaneous recording of the force  $F$  and the displacement  $X$  which provides a curve of  $F$  as a function of  $X$  (see 7.2).

## 6 Test specimens

### 6.1 Dimensions of test specimens

Test specimens shall be at the original product thickness. Any skins, facings, and/or coatings shall be retained. The test specimens shall be squarely cut and square with sides having dimensions of  $300\text{ mm} \times 300\text{ mm}$ .

Other dimensions may be specified in the relevant product standard or any other European Technical Specification or may be agreed between parties.

The linear dimensions shall be determined in accordance with EN 12085, to the nearest millimetre.

The tolerance on parallelism and flatness between the two major faces of the test specimens shall not be greater than  $0,5\%$  of the test specimen side with a maximum of  $0,5$  mm.