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**Toplotnoizolacijski proizvodi za stavbe - Proizvodi iz trde poliuretanske pene (PUR) - Specifikacija**

Thermal insulation products for buildings - Factory made rigid polyurethane foam (PU) products - Specification

Wärmedämmstoffe für Gebäude - Werkmäßig hergestellte Produkte aus Polyurethan-Hartschaum (PU) - Spezifikation

Produits isolants thermiques pour le bâtiment - Produits manufacturés en mousse rigide de polyuréthane (PU) - Spécification

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Materiali za toplotno in  
zvočno izolacijoThermal and sound insulating  
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13165:2013+A2:2016/oprA3:2018****en,fr,de**

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**EN 13165:2012+A2:2016**  
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## Thermal insulation products for buildings - Factory made rigid polyurethane foam (PU) products - Specification

Produits isolants thermiques pour le bâtiment -  
Produits manufacturés en mousse rigide de  
polyuréthane (PU) - Spécification

Wärmedämmstoffe für Gebäude - Werkmäßig  
hergestellte Produkte aus Polyurethan-Hartschaum  
(PU) - Spezifikation

This draft amendment is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee CEN/TC 88.

This draft amendment A3, if approved, will modify the European Standard EN 13165:2012+A2:2016. If this draft becomes an amendment, CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for inclusion of this amendment into the relevant national standard without any alteration.

This draft amendment 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.

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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.

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

**CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels**

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## European foreword

This document (EN 13165:2012+A2:2016/prA3:2018) 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 CEN Enquiry.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association.

For relationship with EU Construction Products Regulation (CPR), see informative Annex ZA which is an integral part of this document.

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**EN 13165:2012+A2:2016/prA3:2018 (E)****1 Modification to the European foreword**

*In the seventh paragraph, delete ", and supports essential requirements of EU Directive(s)."*

*Delete the ninth paragraph (list of changes) and replace the tenth and eleventh paragraph with the following:*

"Amendment A3 modifies EN 13165:2012+A2:2016 and its A2 amendment. This amendment introduces or corrects:

- a) Modified the clause "Continuous smouldering";
- b) Modified the clause "Release of Dangerous substance";
- c) Modified the definition for "class F" in the clause "reaction to fire";
- c) Editorial modifications in different parts of the text and linked to the above modification;
- e) Modifications to be in line with the CPR e.g. PTD replaced by TT;
- f) Modified the Annex ZA."

*Delete the twelfth paragraph (list of changes).*

*In the fifteenth paragraph, add the following standard to the end of the list of standards:*

"EN 16069, Thermal insulation products for buildings — Factory made products of polyethylene foam (PEF) — Specification".

**2 Modification to the Scope**

*Replace the first sentence with:*

"This European Standard specifies the characteristics for factory made rigid polyurethane foam (PU) products, with or without facings or coatings, which are used for the thermal insulation of buildings. PU includes both PIR and PUR products."

*Replace the fourth paragraph with:*

"This standard describes product characteristics and includes procedures for testing, assessment and verification of constancy of performance (AVCP), marking and labelling."

*Replace the last paragraph with:*

"This standard does not cover in situ insulation products nor products intended to be used for the insulation of building equipment and industrial installations."

**3 Modification to Clause 2, "Normative references"**

*Replace the reference to "EN 12086:1997" with a reference to "EN 12086:2013".*

*Replace the reference to "EN 13172:2012" with an undated reference "EN 13172".*

*Add the following reference:*

"EN 16516, Construction products — Assessment of release of dangerous substances — Determination of emissions into indoor air".

#### 4 Modification to Clause 3, "Terms, definitions, symbols, units and abbreviated terms"

In 3.1, delete the term and definition for "3.1.2 level" and "3.1.3 class" and modify the numbers of the remaining terms accordingly.

In 3.2, delete the following abbreviated terms:

PTD is **P**roduct **T**ype **D**etermination (previously named ITT for Initial Type Test)

VCP is **V**erification of **C**onstancy of **P**erformance (previously named evaluation of conformity)

Add the following abbreviated term:

"

TT is **T**ype **T**esting (previously named PTD for Product Type Determination, and before that ITT for Initial Type Test)

".

#### 5 Modification to Clause 4, "Requirements"

In the title of Clause 4, replace "Requirements" with "Characteristics".

#### 6 Modification to 4.1, "General"

Replace the text in the clause with the following:

"Product properties shall be assessed in accordance with Clause 5. To comply with this standard, products shall meet the characteristics of 4.2 and the characteristics of 4.3 as appropriate.

One test result for a product property is the average of the measured values on the number of test specimens given in Table 11.

For multi-layered products, additional characteristics are given in Annex D.

NOTE Information on additional properties is given in Annex E."

#### 7 Modification to 4.2.3, "Thickness"

Replace Table 2 with the following:

"Table 2 — Classes for thickness tolerances

Class	Nominal thickness mm		
	$dn < 50$	$50 \leq dn < 75$	$dn \geq 75$
	Tolerance mm		
T1	$\pm 3$	$\pm 4$	$+ 6, - 4$
T2	$\pm 2$	$\pm 3$	$+ 5, - 3$
T3	$\pm 1,5$	$\pm 1,5$	$\pm 1,5$

".

## 8 Modification to 4.3.1, "General"

Replace the text in the subclause with:

"If there is no characteristic for a property described in 4.3 for a product in use, then the property does not need to be determined and declared by the manufacturer."

## 9 Modification to 4.3.3, "Deformation under specified compressive load and temperature conditions"

Replace the Table 7 with:

**"Table 7 — Levels for deformation under specified compressive load and temperature conditions"**

Level	Test conditions	Characteristic %
DLT(1)5	load: 20 kPa temperature: $(80 \pm 1) ^\circ\text{C}$ time: $(48 \pm 1) \text{ h}$	$\leq 5$
DLT(2)5	load: 40 kPa temperature: $(70 \pm 1) ^\circ\text{C}$ time: $(168 \pm 1) \text{ h}$	
DLT(3)5	load: 80 kPa temperature: $(60 \pm 1) ^\circ\text{C}$ time: $(168 \pm 1) \text{ h}$	

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## 10 Modification to 4.3.4, "Compressive stress or compressive strength"

Replace Table 8 with:

**"Table 8 — Levels for compressive stress or compressive strength"**

Level	Characteristic kPa
CS(10\Y)25	$\geq 25$
CS(10\Y)50	$\geq 50$
CS(10\Y)100	$\geq 100$
CS(10\Y)120	$\geq 120$
CS(10\Y)130	$\geq 130$
CS(10\Y)140	$\geq 140$
CS(10\Y)150	$\geq 150$
CS(10\Y)175	$\geq 175$
CS(10\Y)200	$\geq 200$
CS(10\Y)225	$\geq 225$
CS(10\Y)250	$\geq 250$
Values higher than 250 kPa can be declared in steps of 50 kPa.	



".

## 11 Modification to 4.3.5, "Tensile strength perpendicular to faces"

Replace Table 9 with:

"Table 9 — Levels for tensile strength perpendicular to faces"

Level	Characteristic kPa
TR40	≥ 40
TR50	≥ 50
TR60	≥ 60
TR70	≥ 70
TR80	≥ 80
TR90	≥ 90
TR100	≥ 100
TR150	≥ 150

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## 12 Modification to 4.3.7.1, "Short term water absorption"

Please replace the text in the subclause with the following:

"Short term water absorption by partial immersion,  $W_{sp}$ , shall be determined in accordance with EN 1609. No test result shall exceed the declared level  $W_{sp}$ . The level shall be declared in steps of 0,1 kg/m<sup>2</sup>".

## 13 Modification to 4.3.7.2, "Long term water absorption"

Please replace the text in the subclause with the following:

"Long term water absorption by partial immersion,  $W_{ip}$ , and/or by total immersion,  $W_{it}$ , shall be determined in accordance with EN 12087. No test result shall exceed the declared level.

The level  $W_{ip}$  shall be declared in steps of 0,1 kg/m<sup>2</sup>. The level  $W_{it}$  shall be declared in steps of 1 %".

## 14 Modification to 4.3.11, "Release of dangerous substances"

Replace the text in the subclause with the following:

"If the release of dangerous substances<sup>1)</sup> into indoor air is tested, this shall be done according to EN 16516.

NOTE An informative database covering European and national provisions on dangerous substances is available at the Construction web site on EUROPA accessed through:

[http://ec.europa.eu/growth/sectors/construction/eu-lci/values\\_en](http://ec.europa.eu/growth/sectors/construction/eu-lci/values_en)".

1) See for reference the LCI list of the European Commission "Agreed EU-LCI values" ([http://ec.europa.eu/growth/sectors/construction/eu-lci/values\\_en](http://ec.europa.eu/growth/sectors/construction/eu-lci/values_en)).

## 15 Modification to 4.3.13, "Continuous glowing combustion"

Replace the whole subclause with the following:

### "4.3.13 Propensity to undergo continuous smouldering"

Not applicable.

NOTE Glowing combustion (continuous smouldering) is no essential characteristic for PU. With the document CPR 09/4a/3 the EU commission confirms, that this characteristic has not to be tested for products covered by EN 13165."

## 16 Modification to 5.3.3, "Flatness after one-sided wetting – Conditioning procedure"

Replace Table 11 with the following:

**"Table 11 — Test methods, test specimens and conditions"**

Dimensions in millimetres

Clause		Test method	Test specimen length and width <sup>a</sup>	Minimum number of measurements to get one test result	Specific conditions
No	Title				
4.2.1	Thermal resistance and thermal conductivity	EN 12667 or EN 12939	See Annex C	1	See Annex C
4.2.2	Length and width	EN 822	Full-size	1	–
4.2.3	Thickness	EN 823	Full-size	1	Load = 50 Pa
4.2.4	Squareness	EN 824	Full-size	1	–
4.2.5	Flatness	EN 825	Full-size	1	–
4.2.6	Reaction to fire of the product as placed on the market	See EN 13501-1 and EN 15715			See Clause 5 of EN 15715:2009
4.3.2	Dimensional stability under specified conditions	EN 1604	200 × 200	3	–
4.3.3	Deformation under specified compressive load and temperature conditions	EN 1605	d ≤ 50: 50 × 50 d > 50: 100 × 100 d > 150: 150 × 150	3	–
4.3.4	Compressive stress or compressive strength	EN 826	d ≤ 50: 50 × 50 d > 50: 100 × 100 d > 150: 150 × 150	3	–
4.3.5	Tensile strength perpendicular to faces	EN 1607	50 × 50	3	–
4.3.6	Compressive creep	EN 1606	Same as 4.3.4	2	–
4.3.7.1	Short term water absorption	EN 1609	200 × 200	2	Method A
4.3.7.2	Long term water absorption	EN 12087	200 × 200	2	Method 1A or/and Method 2A

Clause		Test method	Test specimen length and width <sup>a</sup>	Minimum number of measurements to get one test result	Specific conditions
No	Title				
4.3.8	Flatness after one-sided wetting	EN 825	Full-size product or 1 200 × 600	1 per side	Conditioning as in 5.3.3
4.3.9	Water vapour transmission	EN 12086	See 6.1 in EN 12086:2013	3	–
4.3.10	Sound absorption	EN ISO 354	Minimum 10 m <sup>2</sup>	1	To be reported
4.3.11	Release of dangerous substances	EN 16516	See EN 16516	See EN 16516	4.3.11
4.3.12	Reaction to fire of the product in standardized assemblies simulating end-use applications	See EN 13501-1 and EN 15715			See Clause 6 of EN 15715:2009
C.5.1	Closed cell content	EN ISO 4590	100 × 30 × 30	3	Method 2, with correction
<sup>a</sup> Full-size product thickness, except for 4.2.6 when the limits of the test methods are exceeded.					

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## 17 Modification to Clause 6, "Designation code"

Replace the first sentence with the following:

"If a designation code is provided for the product, it shall be given by the manufacturer. The following shall be included except when there is no characteristic for a property described in 4.3:".

## 18 Modification to Clause 7, "Assessment and Verification of the Constancy of Performance (AVCP)"

Replace the subclauses with the following:

### "7.1 General

The Assessment and Verification of Constancy of Performance (AVCP) shall be carried out in accordance with EN 13172.

The compliance of the Factory made rigid polyurethane foam with the characteristics of this standard and with the performances declared by the manufacturer in the DoP shall be demonstrated by:

- determination of the product type;
- Factory Production Control (FPC) by the manufacturer, including product assessment.

If a manufacturer decides to group his products, it shall be done in accordance with EN 13172.

### 7.2 Type Testing (TT)

All performances related to characteristics included in this standard shall be determined when the manufacturer intends to declare the respective performances unless the standard gives provisions for declaring them without performing tests. (e.g. use of previously existing data, CWFT and conventionally accepted performance).

The type testing (TT) shall be carried out in accordance with Annex B