BS EN 16025-1:2013

BSI Standards Publication

Thermal and/or sound insulating products in building construction — Bound EPS ballastings

Part 1: Requirements for factory premixed EPS dry plaster

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National foreword

This British Standard is the UK implementation of EN 16025-1:2013.

The UK participation in its preparation was entrusted to Technical Committee PRI/72, Rigid cellular materials.

A list of organizations represented on this committee can be obtained on request to its secretary.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

ISBN 978 0 580 69114 0

ICS 91.100.60

Compliance with a British Standard cannot confer immunity from legal obligations.

This British Standard was published under the authority of the Standards Policy and Strategy Committee on 31 May 2013.

Amendments issued since publication

Date	Text affected

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 16025-1

May 2013

ICS 91.100.60

English Version

Thermal and/or sound insulating products in building construction - Bound EPS ballastings - Part 1: Requirements for factory premixed EPS dry plaster

Produits isolants thermiques et/ou acoustiques utilisés dans la construction des bâtiments - Empierrements en PSE lié - Partie 1: exigences pour un pré-mélange en usine plâtre sec PSE

Wärmedämmstoffe für den Wärme- und/oder Schallschutz im Hochbau - Gebundene EPS-Schüttungen - Teil 1: Anforderungen an den werkmäßig vorgemischten EPS-Trockenmörtel

This European Standard was approved by CEN on 23 February 2013.

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.

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COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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Ref. No. EN 16025-1:2013: E

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Foreword

This document (EN 16025-1:2013) 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 November 2013, and conflicting national standards shall be withdrawn at the latest by November 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 has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s).

For relationship with EU Directive(s), see informative Annex ZA, which is an integral part of this document.

This document consists of two parts which form a package:

— EN 16025-1, *Thermal and/or sound insulating products in building construction — Bound EPS ballastings — Part 1: Requirements for factory premixed EPS dry plaster*

— EN 16025-2, *Thermal and/or sound insulating products in building construction — Bound EPS ballastings — Part 2: Processing of the factory premixed EPS dry plaster*

The first part is the harmonised part satisfying the mandate and the CPD and is the basis for the CE marking covering the products, which are placed on the market. The second part, which is the non-harmonised part, covers the specification for the installed products. Both parts need to be used for the application of the insulation product in the end-use applications covered by the standard.

This document is one of a series for mineral wool, expanded clay, expanded perlite, exfoliated vermiculite, polyurethane/polyisocyanurate, cellulose, bound EPS and expanded polystyrene in-situ formed insulation products used in buildings, but this document may be used in other areas where appropriate.

The reduction in energy used and emissions produced during the installed life of insulation products exceeds by far the energy used and emissions made during the production and disposal processes.

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 the requirements for in-situ formed bound EPS products (BEPS) for the thermal and/or sound insulation of buildings when applied to walls, ceilings, roofs and floors.

This European Standard covers products which are manufactured as premixed EPS dry plaster/mortar in a factory or mobile production unit.

This European Standard is a specification for the bound EPS products before installation.

This European Standard describes the product characteristics and includes procedures for testing, marking and labelling and the rules for evaluation of conformity.

This European Standard does not specify the required class or level of a given property to be achieved by a product to demonstrate fitness for purpose in a particular application. The classes and levels required for a given application are to be found in regulations or non-conflicting standards.

Products with a declared thermal conductivity at 10 °C greater than 0,18 W/(m · K) are not covered by this European Standard.

This European Standard does not cover factory made insulation products in the form of prefabricated shapes or boards made of bound EPS.

This European Standard also specifies performance requirements for airborne sound insulation and for acoustic absorption applications.

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

EN 933-1, *Tests for geometrical properties of aggregates — Part 1: Determination of particle size distribution — Sieving method*

EN 1097-3, *Tests for mechanical and physical properties of aggregates — Part 3: Determination of loose bulk density and voids*

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

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

EN 1609:2013, *Thermal insulating products for building applications — Determination of short term water absorption by partial immersion*

EN 12086:2013, *Thermal insulating products for building applications — Determination of water vapour transmission properties*

EN 12350-6, *Testing fresh concrete — Part 6: Density*

EN 12431, *Thermal insulating products for building applications — Determination of thickness for floating floor insulating products*

EN 12667, *Thermal performance of building materials and products — Determination of thermal resistance by means of guarded hot plate and heat flow meter methods — Products of high and medium thermal resistance*

EN 12939, *Thermal performance of building materials and products — Determination of thermal resistance by means of guarded hot plate and heat flow meter methods — Thick products of high and medium thermal resistance*

EN 13172:2012, *Thermal insulation products — Evaluation of conformity*

EN 13501-1, *Fire classification of construction products and building elements — Part 1: Classification using data from reaction to fire tests*

EN 13823:2010, *Reaction to fire tests for building products — Building products excluding floorings exposed to the thermal attack by a single burning item*

EN 29052-1, *Acoustics — Determination of dynamic stiffness — Part 1: Materials used under floating floors in dwellings*

EN ISO 9229:2007, *Thermal insulation — Vocabulary (ISO 9229:2007)*

EN ISO 11925-2, *Reaction to fire tests — Ignitability of products subjected to direct impingement of flame — Part 2: Single-flame source test (ISO 11925-2)*

3 Terms and definitions, symbols and abbreviated terms

3.1 Terms and definitions

For the purposes of this document, the terms and definitions given in EN ISO 9229:2007 and the following apply.

3.1.1
fresh mortar
EPS dry mortar mixed with water on the construction site

3.1.2
bound EPS (BEPS)
installed and hardened fresh mortar for use as insulating material for thermal and/or impact noise insulation

3.1.3
class
combination of two levels of the same or different property between which the performance falls, where the levels are given by the declared value of the characteristic concerned

3.1.4
level
given value, which is the upper or lower limit of a requirement

Note 1 to entry: The level is given by the declared value of the characteristic concerned.

3.1.5
factory premixed EPS dry mortar
loose dry mixture of EPS aggregate and mineral binder for producing bound EPS

3.2 Symbols and abbreviated terms

3.2.1 Symbols

C	compressibility	mm
d_B	thickness of the specimen under a load of 2 kPa after removal of an additional load of 48 kPa	mm
d_L	thickness of the specimen under a load of 250 Pa	mm
d_N	nominal thickness of the product	mm
ε_{ct}	compressive creep	%
ε_t	total relative thickness reduction	%
$\lambda_{90/90}$	90 % fractile with a confidence level of 90 % for the thermal conductivity	W/(m · K)
λ_D	declared value of thermal conductivity	W/(m · K)
λ_U	design value of thermal conductivity	W/(m · K)
μ	water vapour diffusion resistance factor	1
s'	dynamic stiffness	MN/m^3
σ_2	compressive stress at 2 % deformation	kPa
σ_{10}	compressive stress at 10 % deformation	kPa
σ_c	compressive stress	kPa
W_p	water absorption by short-term partial immersion	kg/m^2
CC(i_1/i_2/25)σ_c	declared level for compressive creep	
CP	declared level for compressibility	
CS(2)	declared level for compressive stress at 2 % deformation	
CS(10)	declared level for compressive stress at 10 % deformation	
DLT	declared level for dimensional stability under load and temperature conditions	
DMD	bound EPS density	
FMD	apparent density of fresh mortar	
LD	bulk density of the EPS dry mortar	
MU	declared range of the water vapour resistance factor	
PS	particle size group	
SD	declared level for dynamic stiffness	

3.2.2 Abbreviated terms

BEPS	Bound EPS
EPS	Expanded PolyStyrene
ITT	Initial Type Test

4 Requirements

4.1 General

Product properties shall be assessed in accordance with Clause 5. To comply with this document, products shall meet the requirements of 4.2, and the requirements 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 8.

4.2 For all applications

4.2.1 Factory premixed EPS dry mortar

4.2.1.1 Type of EPS aggregate

The manufacturer shall identify the type of EPS aggregate. With regard to the type of aggregate, a differentiation shall be made between freshly foamed EPS indicated by N (= new) and ground EPS indicated by R (= recycled).

In a visual inspection, the EPS aggregate shall be checked for foreign substances and lumps. These shall be removed from the aggregate.

4.2.1.2 Particle size group of the EPS aggregate

The maximum size of the EPS beads shall be determined in accordance with EN 933-1. The maximum volume of the beads having a diameter greater than specified in Table 1 for the appropriate level shall not exceed 5 %.

Table 1 — Levels of maximum sizes of the EPS beads

Level	**Maximum diameter of beads** in mm
PS10	≤ 10
PS8	≤ 8
PS6	≤ 6
PS5	≤ 5
PS2	≤ 2

The amount of dust (0 mm to 0,5 mm) in the EPS beads, regarding to the volume, shall be determined in accordance with EN 933-1. The level shall be determined according to Table 2 and recorded during the factory production control process.

Table 2 — Levels of the percentage of dust (0 mm to 0,5 mm)

Level	**Amount of dust**
D0	< 1 vol-%
D5	< 5 vol-%
D10	< 10 vol-%

4.2.1.3 Mineral binder (e.g. cement, mixtures produced by the manufacturer, including additives)

The manufacturer shall inform the testing body of the binder's active ingredients, to monitor the mixing of binder ingredients and to keep records thereon. This obligation can be waived if a ready mixed, supervised binder is used.

4.2.1.4 Density of the EPS dry mortar

The bulk density of the EPS dry mortar shall be determined in accordance with EN 1097-3 and shall be indicated by the manufacturer in steps of 1 kg/m^3. The tolerances shall not exceed the values given in Table 3.

NOTE There is a relationship between the thermal conductivity, dynamic stiffness, compressive stress, compressibility and the bulk density of the EPS dry mortar.

4.2.2 Fresh mortar

4.2.2.1 Mixing water

The manufacturer shall specify the quantity of mixing water. The mixing water used shall have drinking-water quality.

4.2.2.2 Apparent density of fresh mortar

The apparent density of fresh mortar shall be determined in accordance with EN 12350-6 and shall be indicated by the manufacturer in steps of 1 kg/m^3. The tolerances shall not exceed the values given in Table 3.

NOTE There is a relationship between the thermal conductivity, dynamic stiffness, compressive stress, compressibility and the bulk density of the EPS dry mortar.

4.2.3 Bound EPS

4.2.3.1 Thermal conductivity

Thermal conductivity shall be based upon measurements carried out in accordance with EN 12667 or EN 12939 for thick products.

The thermal conductivity shall be determined in accordance with Annex A and declared by the manufacturer according to the following:

— the reference mean temperature shall be 10 °C;

— the measured values shall be expressed with three significant figures;

— the declared thermal conductivity, $\lambda_{90/90}$, shall be given as a limit value representing at least 90 % of the production, determined with a confidence level of 90 %;

— the value of thermal conductivity, $\lambda_{90/90}$, shall be rounded upwards to the nearest 0,001 W/(m · K) and declared as λ_D in levels with steps of 0,001 W/(m · K).

NOTE The declaration of the declared installed thermal resistance for an installed bound EPS product is given in EN 16025-2.

4.2.3.2 Bound EPS density

Bound EPS density shall be determined in accordance with EN 1602 and shall be indicated by the manufacturer rounded to 1 kg/m^3. The tolerances shall not exceed the values given in Table 3.

NOTE There is a relationship between the thermal conductivity, dynamic stiffness, compressive stress, compressibility and the bulk density of the EPS dry mortar.

Table 3 — Maximum deviation of the bulk density of EPS dry mortar, apparent density of the fresh mortar and bound EPS density from the manufacturer's specifications

Density	Products for thermal insulation		Products for sound insulation	
	Mean	Individual value	Mean	Individual value
Bulk density of the EPS dry mortar	± 10 %	± 15 %	± 7 %	± 10 %
Apparent density of fresh mortar	± 10 %	± 15 %	± 7 %	± 10 %
Bound EPS density	± 10 %	± 15 %	± 7 %	± 10 %

4.2.3.3 Reaction to fire

The reaction to fire classification of the products placed on the market but not simulating the end-use application shall be determined in accordance with Annex C and EN 13501-1 and using data obtained from tests carried out according to procedures EN ISO 11925-2 (see C.3.1) and EN 13823 (see C.3.2), using test specimens prepared in accordance with C.3.1.2 and C.3.2.1.

4.2.3.4 Durability characteristics

4.2.3.4.1 General

The appropriate durability characteristics have been considered and are covered in 4.2.3.4.2, 4.2.3.4.3 and 4.2.3.4.4.

4.2.3.4.2 Durability of reaction to fire against ageing/degradation

The reaction to fire performance of BEPS products does not decrease with time, in the applications covered by this document.

4.2.3.4.3 Durability of thermal resistance against ageing/degradation

The thermal conductivity of BEPS products does not change with time. This is covered by 4.2.3.1 thermal resistance — thermal conductivity.

4.2.3.4.4 Durability of compression strength against ageing/degradation

The compression strength of BEPS products does not change with time. This is covered by 4.3.2.1, compressive stress, 4.3.3.3, compressibility and 4.3.4, creep.

4.3 For specific applications

4.3.1 General

If there is no intended requirement for a property described in 4.3, for a product in the end-use application, then the property need not be determined and declared by the manufacturer.

4.3.2 Compressive stress

4.3.2.1 Compressive stress at 2 % deformation

Compressive stress at 2 % deformation, σ_2, or compressive strength, σ_m, shall be determined in accordance with EN 826. No test results shall be less than the value given in Table 4 for the declared level.

NOTE The compressive stress at 2 % deformation is not a design value.

Table 4 — Levels of compressive stress at 2 % deformation or compressive strength

Level	Requirement kPa
CS(2)10	≥ 10
CS(2)15	≥ 15
CS(2)20	≥ 20
CS(2)25	≥ 25
CS(2)30	≥ 30
CS(2)40	≥ 40
CS(2)50	≥ 50
CS(2)60	≥ 60
CS(2)70	≥ 70
CS(2)80	≥ 80

4.3.2.2 Compressive stress at 10 % deformation

Compressive stress at 10 % deformation, σ_{10}, or compressive strength, σ_m, shall be determined in accordance with EN 826. No test results shall be less than the value given in Table 5 for the declared level.

NOTE The compressive stress at 10 % deformation is not a design value.

Table 5 — Levels of compressive stress at 10 % deformation or compressive strength

Level	Requirement kPa
CS(10)30	≥ 30
CS(10)40	≥ 40
CS(10)50	≥ 50
CS(10)60	≥ 60
CS(10)70	≥ 70
CS(10)80	≥ 80
CS(10)100	≥ 100
CS(10)120	≥ 120
CS(10)150	≥ 150
CS(10)200	≥ 200

4.3.3 Compressibility

4.3.3.1 Thickness, d_L

The thickness d_L shall be determined under a load of 250 Pa in accordance with EN 12431.

4.3.3.2 Thickness, d_B

The thickness, d_B, shall be determined in accordance with EN 12431 with a pause of 300 s before measuring d_B.

4.3.3.3 Compressibility, C

Compressibility, C, shall be determined as the difference between d_L and d_B. No test result shall exceed the values given in Table 6 for the declared level.

Table 6 — Levels of compressibility

Level	Useful load on the floor screed kPa	Requirement mm	Maximum deviation of a test result mm
CP5	≤ 2,0	≤ 5	+2
CP4	≤ 3,0	≤ 4	+2
CP3	≤ 4,0	≤ 3	+2
CP2	≤ 5,0	≤ 2	+1

4.3.4 Creep

Compressive creep shall be measured and extrapolated according to the method described in EN 1606, at the specified stress level, ε_{ct}, and for the specified extrapolation time, y; the total relative thickness reduction, ε_t, shall not exceed the declared level, i_1, and the compressive creep, ε_{ct}, shall not exceed the declared level i_2.

The specified stress level should preferably be indicated in values of 3,5 kPa; 6,5 kPa and 10 kPa. The extrapolation time should be 10 years.

EXAMPLE Example for declaration of levels. The designation code CC(2/1,5/10)6,5 defines a declared level of 2 % for the total relative thickness reduction and the declared level of 1,5 % for the compressive creep of 6,5 kPa for an extrapolated time of 10 years.

4.3.5 Water vapour diffusion resistance

The water vapour diffusion resistance factor μ shall be determined in accordance with EN 12086:2013, Table 1 (SET B). None of the test results shall be out of the range declared by the manufacturer.

In the absence of measurement data, the water vapour resistance diffusion factor of BEPS products may be indicated as 5 to 20.

4.3.6 Water absorption by short-term partial immersion

Water absorption by short-term immersion W_p shall be determined in accordance with EN 1609:2013, 7.2.2 (procedure A).

4.3.7 Dynamic stiffness

Dynamic stiffness, s', shall be determined in accordance with EN 29052-1. For binders that have not reached their nominal strength after 28 days, the test shall be performed at the time when the specimens have reached 90 % of the extrapolated final strength. No test result shall exceed the value given in Table 7 for the declared level.

Table 7 — Levels of dynamic stiffness

Level	Requirement MN/m^3
SD50	≤ 50
SD40	≤ 40
SD30	≤ 30
SD25	≤ 25
SD20	≤ 20
SD15	≤ 15
SD10	≤ 10

4.3.8 Reaction to fire of products in standardised assemblies simulating end-use applications

4.3.8.1 General

The reaction to fire classification taking into account the end-use application should be determined in accordance with Annex C, using EN 13501-1 and using data obtained from tests carried out according to procedures EN ISO 11925-2 and EN 13823 and using test specimens conforming to C.3.1.2 or C.3.2.1 and mounting and fixing procedures in accordance with C.3.2.5.

NOTE The ignitability procedure using EN ISO 11925-2 in Annex C is identical to the procedure given under C.3.1 and therefore need not be repeated. Accordingly, this clause contains only information relevant to testing carried out according to EN 13823 in Annex C.

4.3.8.2 Test specimens for the EN 13823 test

Prepare five test specimens in accordance with C.3.2.1.

4.3.8.3 Mounting and fixing procedure

Test specimens prepared in accordance with Annex C.

4.3.9 Continuous glowing combustion

Where subjected to regulations, the manufacturer shall declare the glowing combustion of the product. In the absence of an existing test method, the compliance with the requirements shall be made on the basis of the existing method used in the place of use of the product.

NOTE A test method is under development and the standard will be amended when this is available.

4.3.10 Dangerous substances

National regulations on dangerous substances may require verification and declaration on release, and sometimes content, when construction products covered by this standard are placed on those markets.

In the absence of European harmonised test methods, verification and declaration on release/content should be done, taking into account national provisions in the place of use.

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/enterprise/construction/cpd-ds/*

5 Test methods

5.1 Sampling and preparation of test specimens

5.1.1 Factory premixed EPS dry mortar

The test specimen is the contents of one full bag.

5.1.2 Bound EPS

The manufacturer's instructions with regard to mixer type, mixing time, mixing procedure and processing shall be followed in the production of specimen.

The specimen shall be produced from one batch (mixture). The number and size of the vessels to be filled shall be selected in such a way that there are enough specimens for the tests required. The samples shall be brought to the right dimensions by cutting; to this effect, the outer margins of the samples shall be cut by around 50 mm.

5.2 Preparation of test specimen

Unless otherwise specified in the related test standard, the test specimen shall be stored at a temperature of (23 $\pm$ 5) °C for at least 28 days. In case of dispute, the test specimen shall be stored at a temperature of (23 $\pm$ 5) °C and (50 $\pm$ 5) % relative air humidity for at least 28 days before testing.

5.3 Test results

The test result for a product property is the average across the measurement values determined for a certain number of test specimens; that number is specified in Table 8.

Table 8 contains the dimensions for the test specimens, the minimum number of measurements required for obtaining a test result and the conditions that have to be complied with.

Table 8 — Test methods, test specimens and conditions

Clause No.	Title	Test method	Test specimen (length × width × thickness) or volume	Minimum number of measurements to get one test results	Specific conditions
4.2.1.1	Type of EPS aggregate	Visual inspection	–	–	–
4.2.1.2	Particle size group of the EPS aggregate	EN 933-1	2 litre	5	–
4.2.1.2	Undersize particles	EN 933-1	2 litre	5	–
4.2.1.2	Oversize particles	EN 933-1	2 litre	5	–
4.2.1.3	Mineral binder	–	–	–	–
4.2.1.4	Density of the EPS dry mortar	EN 1097-3	content of one full bag	1	–
4.2.2.1	Mixing water	–	–	–	Drinking-water quality
4.2.2.2	Apparent density of fresh mortar	EN 12350-6	10 litre	5	–
4.2.3.1	Thermal conductivity	EN 12667 or EN 12939	$500 \times 500 \times d$	1	–
4.2.3.2	Bound EPS density	EN 1602	$500 \times 500 \times d$	5	–
4.2.3.3	Reaction to fire	EN 13501-1	–	1	–
4.3.2	Compressive stress at 2 % and 10 % deformation or compressive strength	EN 826	$200 \times 200 \times d$	3	Preload 1 kPa
4.3.3	Compressibility	EN 12431	$200 \times 200 \times d$[a]	1	–
4.3.4	Creep	EN 1606	$200 \times 200 \times d$[b]	2	–
4.3.5	Water vapour diffusion resistance	EN 12086:2013	$100 \times 100 \times d$	5	SET B
4.3.6	Water absorption by short-term partial immersion	EN 1609:2013, 7.2.2	$200 \times 200 \times 100$	3	Procedure A
4.3.7	Dynamic stiffness	EN 29052-1	$200 \times 200 \times d$[a]	3	–
4.3.9	Continuous glowing combustion	–	–	–	c
4.3.10	Dangerous substances	–	–	–	c

[a] A specimen series includes three thicknesses and comprises the minimum and maximum thicknesses specified by the manufacturer.

[b] Optionally between 50 mm and 100 mm.

[c] Not yet available.

6 Designation code

A designation code for the product shall be given by the manufacturer. The following shall be included except when there is no requirement for a property described in 4.3:

a)	abbreviation for the bound EPS	BEPS
b)	this document number	EN 16025-1
c)	particle size group of the EPS aggregate	PSi
d)	amount of dust	Di
e)	type of EPS aggregate	N or R or NR
f)	bulk density of the EPS dry mortar	LDi
g)	apparent density of fresh mortar	FMDi
h)	bound EPS density	DMDi
i)	water vapour diffusion resistance factor	MUi
j)	compressive stress at 10 % deformation or compressive strength	CS(10)i or CS(Y)i
k)	creep behaviour	CC(i_1/i_2/25)σ_c
l)	dynamic stiffness	SDi
m)	compressibility	CPi

where “i” shall be used to indicate the relevant class or level, “σ_c” shall be used to indicate the compressive stress.

The designation code for a bound EPS is illustrated in the following example:

BEPS — EN 16025-1 — PS10R — D4 — LD90 — FMD130 — DMD115 — MU5 — CS(10)70 — CC(1,2/1/25)6,5

7 Evaluation of conformity

7.1 General

The manufacturer or his authorised representative shall be responsible for the conformity of his product with the requirements of this document. The evaluation of conformity shall be carried out in accordance with EN 13172 and shall be based on initial type testing (ITT) and factory production control (FPC) by the manufacturer, including product assessment and tests on samples taken at the factory.

The compliance of the product with the requirements of this document and with the stated values (including levels and classes) shall be demonstrated by:

— initial type testing (ITT);

— factory production control by the manufacturer, including product assessment.

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

The manufacturer or his authorised representative shall make available, in response to a request, a Certificate or Declaration of Conformity as appropriate.

NOTE For the EC Certificate and Declaration of Conformity, as appropriate, see ZA 2.2.

7.2 Initial type testing

All characteristics defined in 4.2 and those in 4.3 if declared shall be subject to initial type testing, in accordance with Annex B.

ITT shall be carried out according to the principles of EN 13172.

7.3 Factory production control

The minimum frequencies of tests in the factory production control shall be in accordance with Annex B. When indirect testing is used, the correlation to direct testing shall be established in accordance with EN 13172.

8 Marking and labelling and technical information

8.1 Marking and labelling

Products conforming to this document shall be clearly marked, either on the label or on the packaging, with at least the following information:

— product name or other identifying characteristic;

— name or identifying mark and address of the manufacturer or his authorised representative;

— shift or time of production or traceability code;

— reaction to fire class of the bound EPS product. This classification shall be identified with the designation “Product” after the classification;

— declared thermal conductivity of the bound EPS product;

— minimum thickness for correct application;

— designation code as given in Clause 6;

— volume of the bag in m^3 or litres;

— quantity of mixing water in litres.

NOTE For CE marking and labelling, see ZA.3.

8.2 Technical information

The BEPS supplier shall provide technical information. This technical Information shall consist of at least the following:

— product name or other identifying characteristic;

— name or identifying mark and address of the manufacturer or his authorised representative established in the EEA;

— intended application;

— recommended substrates;

— recommended application conditions; for example the range of recommended ambient temperature, range of recommended substrate temperature, recommended ambient humidity and layer thickness, recommended substrate moisture content;

— storage conditions;

— mixing ratio;

— additives needed;

— BEPS properties;

— handling recommendations.

Annex A
(normative)

Determination of the declared thermal conductivity

A.1 General

It is the responsibility of the manufacturer to determine the declared value of thermal conductivity. He will have to demonstrate conformity of the product to its declared value. The declared value of thermal conductivity of a product is the expected value of this property during an economically reasonable working life under normal conditions, assessed through measured data at reference conditions.

A.2 Input data

The manufacturer shall have at least ten test results for thermal conductivity, obtained from internal or external direct measurements in order to calculate the declared value. The direct thermal conductivity measurements shall be carried out at regular intervals spread over a period of the last twelve months. If less than ten test results are available, that period may be extended until ten test results are obtained, but with a maximum period of three years, in which the product and production conditions have not changed significantly.

For new products, the ten thermal conductivity test results shall be carried out spread over a minimum period of ten days.

The declared values shall be calculated according to the method given in A.3 and shall be recalculated at intervals not exceeding three months of production.

A.3 Declared value of thermal conductivity

The value, $\lambda_{90,90}$, shall be calculated according to Formula (A.1) and Formula (A.2) and the derivation of the declared value, λ_D, shall follow the rules given in 4.2.3.1 which include the rounding conditions.

$$\lambda_{90,90} = \lambda_{mean} \times k \times s_\lambda \quad \text{(A.1)}$$

where

k is a factor related to the number of test results;

$\lambda_{90,90}$ is a 90 % fractile with a confidence level of 90 % for the thermal conductivity – (W/(m · K);

λ_{mean} is the mean thermal conductivity – W/(m · K);

s_λ is the estimate of the standard deviation of the thermal conductivity - (W/(m · K).

$$s_\lambda = \sqrt{\frac{\sum_{i=1}^{n} (\lambda_i - \lambda_{mean})^2}{n-1}} \quad \text{(A.2)}$$

where

n is the number of measurements.

Table A.1 — Values for k for one sided 90 % tolerance interval with a confidence level of 90 %

Number of test results n	k
10	2,07
11	2,01
12	1,97
13	1,93
14	1,90
15	1,87
16	1,84
17	1,82
18	1,80
19	1,78
20	1,77
22	1,74
24	1,71
25	1,70
30	1,66
35	1,62
40	1,60
45	1,58
50	1,56
100	1,47
300	1,39
500	1,36
2 000	1,32
For other numbers of test results use ISO 16269-6:2005, *Statistical interpretation of data — Part 6: Determination of statistical tolerance intervals*, Table D.3 or linear interpolation.	

Annex B
(normative)

Initial type testing (ITT) and factory production control (FPC)

B.1 Testing frequencies

Table B.1 — Minimum number of tests for ITT and minimum product testing frequencies

Clause		ITT[a,b,d] Minimum number of tests	FPC[a] Minimum testing frequency		
No	Title		Direct testing	Indirect testing	
				Test method	Frequency
4.2.1.2	Particle size group of the EPS aggregate (new “N”)	1	1 per 500 m^3	–	–
	Particle size group of the EPS aggregate (Rec. “R”)	1	1 per 300 m^3		
4.2.1.4	Density of the EPS dry mortar	4	1 per 10 m^3	–	–
4.2.2.2	Apparent density of fresh mortar	4	1 per 200 m^3	–	–
4.2.3.1	Thermal conductivity[b]	A minimum of 10 tests are needed statistically with a minimum of 4 from the ITT	1 per 24 h	–	–
			4 per year	and density of the final product (using a manufacturer correlation)	1 per week
			4 per year	and density of the EPS dry mortar (using a manufacturer correlation)	1 per day
			4 per year	and density of the fresh mortar (using a manufacturer correlation)	1 per day
4.2.3.2	Bound EPS density	4	1 per 200 m^3	–	–
4.2.3.3	Reaction to fire	1	See Table B.2		
4.3.2	Compressive stress at 2 % and 10 % deformation or compressive strength	4	1 per 1 000 m^3	–	–
4.3.3	Compressibility	4	1 per 2 000 m^3	–	–
4.3.4	Creep	4	1 per 5 years	–	–
4.3.5	Water vapour diffusion resistance	4	1 per 5 years	–	–
4.3.6	Water absorption by short-term partial immersion	4	1 per 5 years	–	–
4.3.7	Dynamic stiffness	4	1 per 2 000 m^3	–	–
4.3.8	Reaction to fire of products in standardised assemblies simulating end-use applications	1	1 per 5 years	–	–

Table B.1 *(continued)*

Clause		ITT[a,b,d] Minimum number of tests	FPC[a] Minimum testing frequency		
No	Title		Direct testing	Indirect testing	
				Test method	Frequency
4.3.9	Continuous glowing combustion	c	c	c	c
4.3.10	Dangerous substances	c			

a In line with EN 13172, the minimum testing frequencies, expressed in test results, shall be understood as the minimum for each production unit under stable conditions. In addition to the testing frequencies given above, testing of relevant properties of the product shall be repeated when changes or modifications are made that are likely to affect the conformity of the product.

b ITT, see EN 13172, and is only relevant when properties are declared.

c Frequencies are not given. When drafting this document, no European harmonised test method was available.

d Minimum number of tests may be reduced according to EN 13172. For initial type testing of long-term thermal and mechanical properties, test results of similar products produced at different plants will be recognised until testing for a new plant is complete.

Table B.2 — Minimum product testing frequencies for the reaction to fire characteristics

Clause		Minimum testing frequency[a]					
No	Title	Direct testing[b,c]		Indirect testing[d,e]			
4.2.3.3	Reaction to fire class			Product		Substantial (BEPS)	
		Test method	Frequency	Test method	Frequency	Test method	Frequency
	A1	EN ISO 1182 and EN ISO 1716 and EN 13823	1 per 2 years and indirect testing	–	–	Loss on ignition	1 per 4 h
						Apparent density	1 per 1 h
	A2	EN ISO 1182 or EN ISO 1716 and EN 13823	1 per 2 years and indirect testing	–	–	Loss on ignition	1 per 4 h
						Apparent density	1 per 1 h
	B, C, D	EN 13823	1 per month	–	–	–	–
			or 1 per 2 years and indirect testing	EN ISO 11925-2	1 per day[f]	Apparent density and thickness	1 per 2 h
		and EN ISO 11925-2					
			1 per day[f]	–	–	–	–
	E	EN ISO 11925-2	1 per day[f]	–	–	–	–
	F	–	–	–	–	–	–

NOTE Not all Euroclasses may apply for the products conforming to this document.

[a] The minimum testing frequencies, expressed in test results, shall be understood as the minimum for a product or product group for each production unit/line under stable conditions. In addition to the testing frequencies given above, testing of relevant properties of the product shall be repeated when changes or modifications are made that are likely to affect the conformity of the product.

[b] Direct testing may be conducted either by third party or by the manufacturer.

[c] Direct testing may also be the reference scenario Room-corner test ISO 9705:1993, *Fire tests — Full scale room test for service products*.

[d] Indirect testing is only possible in the case of products falling within the system 1 for attestation of conformity of reaction to fire, or by having a notified body verifying the correlation to the direct testing.

[e] In case of certified component, the frequency is once per delivery of the component.

[f] In case of certified raw material the frequency is once per week.

B.2 Indirect testing

If indirect testing is used, the correlation between the directly tested and the indirect property shall be known and the approach shall be calculated on a one sided 90 % prediction interval.

In this context compressive stress by 10 % deformation and thermal conductivity may be evaluated indirectly using the apparent density and its established mathematical correlation to these properties. For the relationship between compressive stress at 10 % deformation and apparent density and thermal conductivity and apparent density, there is a large amount of data collected in Europe. The curves in Figures B.1 and B.2 have been calculated on this European data to which every manufacturer may refer. If a manufacturer wants to use his own data, he should calculate and record the approach for a prediction interval, $1 - \alpha$, of 90 %.

Annex C
(normative)

Testing for reaction to fire of products

C.1 Scope

This annex gives basic rules for reaction to fire testing of products as placed on the market including instructions for mounting and fixing.

NOTE This annex is necessary for CE marking and deals with the insulation product in the same condition as placed on the market.

The following is related to 4.2.3.3 in the main body of the product standard.

C.2 Product and installation parameters

The test specimens shall be stored for at least six hours at (23 ± 5) °C. In case of dispute they shall be stored at (23 ± 2) °C and (50 ± 5) % RH for 14 days.

Tables C.1 and C.2 give the parameters, that have to be taken into account when determining a product's reaction to fire performance and the field of application of the test results.

Table C.1 — Product parameters

Product parameter	EN ISO 1182 (Euroclass A1 and A2)	EN ISO 1716 (Euroclass A1 and A2)	EN 13823 (Euroclass A1 to D)	EN ISO 11925-2 (ignitiability) (Euroclass B to E)
Thickness	No influence	No influence	X	No influence
Density	X	X	X	X
Type of product	Test on lower amount of binder is valid for higher content	Test on lower amount of binder is valid for higher content	X	X

Table C.2 — Installation parameters

Installation parameter	EN 13823	EN ISO 11925-2
Exposure to thermal attack	X	X
Substrate	X	–
Air gaps/cavities	X	–
Joints/edges	–	–
Size and positioning of test specimen	X	–
Product orientation and geometry	–	–
Fixing of the test specimen	X	–

C.3 Standardised Mounting and fixing

C.3.1 Ignitability (EN ISO 11925-2)

C.3.1.1 Exposure to thermal attack

The product shall be tested directly exposed to the thermal attack.

C.3.1.2 Test specimens

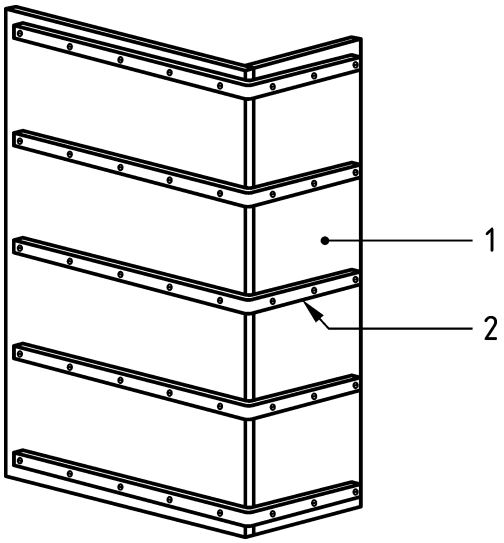
The test specimens, cut from the product sample shall be mounted in the test apparatus without a substrate.

C.3.2 Single Burning Item [SBI] (EN 13823)

C.3.2.1 Preparation of the test specimens

A test specimen shall be prepared by hand placed onto the internal face of an L-shaped substrate, which is prepared according to EN 13823.

Maximum thickness: 200 mm



Key

1 substrate
2 steel brackets (width 30 mm, thickness 5 mm)

Figure C.1 — Preparation of the test specimen: external surface of the substrate

C.3.2.2 Exposure to thermal attack

The product shall be tested directly exposed to the thermal attack.

C.3.2.3 Substrate

The type of the substrate is defined in EN 13238. The general substrate to be used to test the product is made of calcium silicate. Gypsum plaster board and wood particle board substrates such as defined in EN 13238 are permitted to be used instead. For A1 classification a calcium silicate substrate is compulsory.

The test conditions and field of application of the classification shall be given in the declaration of conformity, in the classification report and is requested to be included in the manufacturer's technical literature.

C.3.2.4 Air gaps/cavities

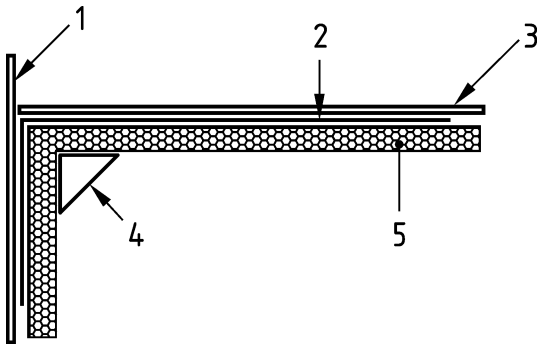
They are considered not to be relevant for the reaction to fire behaviour of the product.

C.3.2.5 Size and positioning of test specimen

The size of the test specimens is given in EN 13823:2010, 5.1. Positioning of the test specimens, shall meet the following specification:

The maximum thickness of the test specimen including the substrate that can be installed in the SBI is 200 mm.

The test specimen shall be positioned as shown in Figure C.2.



Key

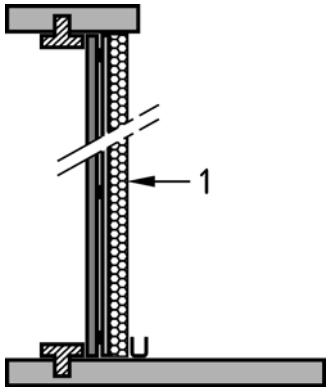
1 backing boards
2 brackets
3 substrate
4 burner
5 test specimen natural skin surface

Figure C.2 — Installation of the test specimen (top view)

C.4 Fixing of the test specimen

The specimen with its substrate shall be fixed in the test apparatus by clamping and maintained between the backing boards and the U profile, at the bottom part of the frame, and the calcium silicate support, at the top of the frame (see Figure C.3).

If necessary, the natural skin surface may be removed in places to create a flatter surface so that the test specimen will fit snugly against the U-profile section at the base of the apparatus adjacent to the burner. It may be necessary, for example, to remove sufficient material internally at the corner to again allow a snug fit of the test specimen at the corner.



Key

1 test specimen

Figure C.3 — Principle for mounting the test specimen by clamping (cross section)

C.5 Field of application

The manufacturer is responsible for the grouping of his products following the rules described in EN 13172 and this document. The validity of the test results and the field of application for a product group are determined by the product parameters and the installation parameters with the requirements given in Tables C.3 and C.4.

Table C.3 — Product parameters

Product parameter	**Validity of test results**			
	EN ISO 1182 Not relevant	**EN ISO 1716** Not relevant	**EN 13823 (SBI)**	**EN ISO 11925-2 (Ignitability)**
Thickness			Test results are valid for equal or lower thickness.	
			Test results on a 180 mm thickness are also valid for higher thickness.	Test results on 60 mm thickness are also valid for higher thickness.
Density (bound EPS)			Product density ± 15 %	
Type of product				

Table C.4 — Installation parameters

Installation parameter	Validity of test results	
	EN 13823 (SBI)	**EN ISO 11925-2 (Ignitability)**
Exposure to thermal attack	Test result is valid for the product placed on the market.	See C.3.1.1
Substrate	The standard wood particle board substrate represents wood and all A1 and A2 substrates. The standard gypsum plaster board represents all A1 and A2 substrates.	Not relevant
Air gaps/cavities	Test result is valid for product applied with and without an air gap.	Not relevant
Size and positioning of test specimen	Test result is valid for all product sizes.	Not relevant
Fixing of test specimen	Test result is valid for all product fixings.	Not relevant

Annex ZA
(informative)

Clauses of this European Standard addressing the provisions of the EU Construction Products Directive

ZA.1 Scope and relevant characteristics

This document has been prepared under amended Mandate M103 “Thermal insulation products” given to CEN by the European Commission and the European Free Trade Association.

The clauses of this document shown in this annex meet the requirements of the mandate given under the EU Construction Products Directive (89/106/EEC).

Compliance with these clauses confers a presumption of fitness of the factory made bound EPS products covered by this annex for the intended uses indicated herein; reference shall be made to the information accompanying the CE marking.

This annex establishes the conditions for the CE marking of the factory made bound EPS products intended for the uses indicated in Table ZA.1 and shows the relevant clauses applicable.

This annex has the same scope as the relevant part in Clause 1 related to the aspect covered by the mandate and is defined by Table ZA.1.

Table ZA.1 — Relevant clauses for factory made bound EPS

Construction Products: Factory made bound EPS **Intended uses:** Thermal insulation for buildings			
Requirement/Characteristic from the mandate	**Requirement clauses in this European Standard**	**Classes or levels**	**Notes**
Reaction to fire	4.2.3.3 Reaction to fire	Euroclasses	–
Water permeability	4.3.6 Water absorption by short-term partial immersion	–	Levels
Release of dangerous substances to the indoor environment	4.3.10 Dangerous substances	–	–
Direct airborne sound insulation index	4.3.7 Dynamic stiffness	–	Levels
Acoustic absorption index	[a]	–	–
Impact noise transmission index *(for floors)*	4.3.7 Dynamic stiffness	–	Levels
	4.3.3.1 Thickness, d_L	–	Classes
	4.3.3 Compressibility	–	Levels
Thermal resistance	4.2.3.1 Thermal conductivity	–	Limit values[c]
Water vapour permeability	4.3.5 Water vapour diffusion resistance	–	Tabulated values
Compressive strength	4.3.2.1 Compressive stress at 2 % deformation	–	Levels
	4.3.2.2 Compressive stress at 10 % deformation	–	Levels
	4.3.4 Creep	–	Levels
Durability of reaction to fire against heat, weathering, ageing/degradation	4.2.3.4.2	–	[b]
Durability of thermal resistance against heat, weathering, ageing/degradation	4.2.3.1 Thermal conductivity 4.2.3.4.3	–	Limit values
Durability of compressive strength against ageing and degradation	4.3.4 Creep 4.2.3.4.4	–	Levels
Continuous glowing combustion	4.3.9 Continuous glowing combustion	–	–

[a] Bound EPS has airborne sound absorption properties.

[b] No change in reaction to fire properties for bound EPS.

[c] Thermal conductivity of bound EPS does not change with time.

The requirement on a certain characteristic is not applicable in those Member States (MSs) where there are no regulatory requirements on that characteristic for the intended use of the product. In this case, manufacturers placing their products on the market of these MSs are not obliged to determine nor declare the performance of their products with regard to this characteristic, and the option “No performance determined” (NPD) in the information accompanying the CE marking (see ZA.3) may be used. The NPD option may not be used, however, for durability of essential characteristics that have been declared and where the characteristic is subject to a threshold level.

ZA.2 Procedure for attestation of factory made bound EPS products

ZA.2.1 Systems of attestation of conformity

The systems of attestation of conformity of **factory made bound EPS** products, indicated in Table ZA.1 in accordance with the decision of the European Commission 95/204/EC of 30.04.95 revised by decision 99/91/EC of 25.01.99 and by the Commission Decision 2001/596/EEC, and as given in Annex III of the mandate M103 for thermal insulation as amended by mandates M126, M130 and M367, is shown in Table ZA.2 for the indicated intended use(s) and relevant level(s) or class(es).

Table ZA.2 — Systems of attestation of conformity

Product(s)	Intended use(s)	Level(s) or class(es)	Attestation of conformity system(s)
Thermal insulating products (products intended to be formed in-situ)	For uses subject to regulations on reaction to fire	A1(1), A2(1), B(1), C(1) A1(2), A2(2), B(2), C(2), D, E (A1 to E)(3), F	1 3 4
	Any	–	3
System 1: See Directive 89/106/EEC (CPD) Annex III.2.(i), without audit testing of samples. System 3: See Directive 89/106/EEC (CPD) Annex III.2.(ii), second possibility. System 4: See Directive 89/106/EEC (CPD) Annex III.2.(ii), third possibility.			

(1) Products/materials for which a clearly identifiable stage in the production process results in an improvement of the reaction to fire classification (e.g. an addition of fire retarders or a limiting of organic material).

(2) Products/materials not covered by footnote 1.

(3) Products/materials that do not require to be tested for reaction to fire (e.g. Products/materials of classes A1 according to the Decision 96/603/EC, as amended).

The attestation of conformity of **factory made bound EPS** products in Table ZA.1 shall be according to the evaluation of conformity procedures indicated in Tables ZA.3.1 to ZA.3.2, resulting from application of the clauses of this or other European Standards indicated therein.

Table ZA.3.1 — Assignment of evaluation of conformity tasks for factory made bound EPS products under system 1 for products of reaction to fire classes A1(1), A2(1), B(1), C(1) and system 3

Tasks		Content of the task	Evaluation of conformity Relevant clauses of EN 13172 and of this document
Tasks under the responsibility of the manufacturer	Factory production control (FPC)	Parameters related to essential characteristic of Table ZA.1 relevant for the intended use which are declared	EN 13172:2012, Clauses 1 to 5, Annexes B and 7.3 of this document
	Further testing of samples taken at factory according to the prescribed test plan	Essential characteristic of Table ZA.1 relevant for the intended use which are declared	Annex B
	Initial type testing	Those relevant characteristics of Table ZA.1 not tested by the notified laboratory and notified certification body	EN 13172:2012, Clause 6 and 7.2, Annex B of this document

Table ZA.3.1 *(continued)*

Tasks		Content of the task	Evaluation of conformity Relevant clauses of EN 13172 and of this document
Tasks under responsibility of a notified laboratory	Initial type testing	Thermal resistance Release of dangerous substances Compressive stress at 10 % deformation (for load bearing applications) Water vapour permeability	EN 13172:2012, Clause 6 and 7.2, Annex B of this document
Tasks under the responsibility of the notified certification body	Initial type testing	Reaction to fire	EN 13172:2012, Clause 6 and 7.2, Annex B of this document
	Initial inspection of factory and of FPC	Parameters related to EC of Table ZA.1, relevant for the intended uses which are declared: Reaction to fire Documentation of the FPC	EN 13172:2012, Annexes B and C and 7.3 of this document
	Continuous surveillance, assessment and approval of FPC	Parameters related to EC of Table ZA.1, relevant for the intended uses which are declared: Reaction to fire Documentation of the FPC	EN 13172:2012, Annexes B and C and 7.3 of this document

Table ZA.3.2 — Assignment of evaluation of conformity tasks for Factory made bound EPS products for products under system 3 and 3 (with 4 for RtF)

Tasks		Content of the task	Evaluation of conformity Relevant clauses of EN 13172 and of this document
Tasks under the responsibility of the manufacturer	Factory production control (FPC)	Parameters related to EC of Table ZA.1 relevant for the intended uses which are declared	EN 13172:2012, Clauses 1 to 5 and 7.3 of this document and: For system 3 EN 13172:2012, Annex C For system 3 (with 4 for RtF) EN 13172:2012, Annexes C and D
	Initial type testing	Those relevant characteristics of Table ZA.1 not tested by the notified laboratory including reaction to fire for system 3 & 4[a]	EN 13172:2012, Clause 6 and 7.2, Annex B of this document

Table ZA.3.2 *(continued)*

Tasks under responsibility of a notified laboratory	Initial type testing	— Reaction to fire (system 3)[b] — Thermal resistance — Release of dangerous substances — Water vapour permeability	EN 13172:2012, Clause 6 and 7.2, Annex B of this document

[a] For classes (A1 to E)[(3)],F.

[b] For classes A1[(2)],A2[(2)],B[(2)],C[(2)],D,E.

ZA.2.2 EC Certificate and Declaration of Conformity

In case of products with system 1:

When compliance with the conditions of this annex is achieved, the certification body shall draw up the EC Certificate of Conformity, which entitles the manufacturer to affix the CE marking. The EC Certificate of Conformity shall include:

— name, address and identification number of the certification body;

— name and address of the manufacturer, or his authorised representative established in the EEA, and place of production;

NOTE 1 The manufacturer may also be the person responsible for placing the product onto the EEA market, if he takes responsibility for CE marking.

— description of the product (type, identification, use, ...);

— provisions to which the product conforms (i.e. Annex ZA of this EN);

— particular conditions applicable to the use of the product (e.g. provisions for use under certain conditions);

— the number of the certificate;

— conditions of validity of the certificate, where applicable;

— name of, and position held by, the person empowered to sign the certificate.

In case of products under system 3 or system 3 combined with system 4 for reaction to fire:

When compliance with the conditions of this annex is achieved, the manufacturer or his agent established in the EEA shall draw up and retain the EC Declaration of Conformity, which entitles the manufacturer to affix the CE marking. This EC declaration of Conformity shall include:

— name and address of the manufacturer, or his authorised representative established in the EEA, and place of production;

NOTE 2 The manufacturer may also be the person responsible for placing the product onto the EEA market, if he takes responsibility for CE marking.

— description of the product (type, identification, use, etc ...), and a copy of the information accompanying the CE marking;

NOTE 3 Where some of the information required for the declaration is already given in the CE marking information, it does not need to be repeated.

— provisions to which the product conforms (i.e. Annex ZA of this EN), and a reference to the ITT report(s) and factory production control records (if appropriate);

— particular conditions applicable to the use of the product, (e.g. provisions for use under certain conditions);

— name and address of the notified laboratory(ies);

— name of, and position held by, the person empowered to sign the declaration on behalf of the manufacturer or his authorised representative.

The above mentioned EC Declaration of Conformity or the EC Certificate of Conformity shall be presented in the language or languages accepted in the Member State in which the product is to be used.

ZA.3 CE marking and labelling

The manufacturer or his authorised representative established within the EEA is responsible for the affixing of the CE marking. The CE marking symbol to affix shall be in accordance with Directive 93/68/EEC and shall be shown on the product itself, on the accompanying label or on the packaging.

The following information shall accompany the CE marking symbol:

a) identification number of the certification body (only for products under system 1);

b) name or identifying mark of the manufacturer (see Note 1 in ZA.2.2);

c) the last two digits of the year in which the marking is affixed;

d) number of the EC Certificate of Conformity or factory production control certificate (if relevant);

e) reference to this European Standard;

f) description of the product;

g) information on those relevant essential characteristics listed in Table ZA.1 which are to be declared presented as:

    1) standard designation(s) in combination with declared values as described in Clause 6.

NOTE Care will be taken that using standard designation does not bring information on non-harmonised characteristics into the CE marking.

The “No performance determined” (NPD) option may not be used for durability and where the characteristic is subject to a threshold level. Otherwise, the NPD option may be used when and where the characteristic, for a given intended use, is not subject to regulatory requirements in the Member State of destination.

Figure ZA.1 gives an example of the information to be given on the product, label, packaging and/or commercial documents.

CE 0123	*CE marking, consisting of the "CE"-symbol given in Directive 93/68/EEC.* *Identification number of the certification body (for products under system1)*
AnyCo Ltd, PO Box 21, B-1050 **13** 0123-CPD-00234	*Name or identifying mark and registered address of the producer* *Last two digits of the year in which the marking was affixed* *EC Certificate of conformity number (where relevant)*
EN 16025-1 **Factory made bound EPS**, intended to be used in buildings Reaction to fire — D Thermal conductivity: 0,040 W/m · K Continuous glowing combustion: NPD BEPS — EN 16025-1 MU5 — CS(10)	*No. of European Standard* *Description of product* *Information on Essential Characteristics* *Designation code (in accordance with Clause 6 of this document for the relevant characteristics according to Table ZA.1)*

Figure ZA.1 — Example CE marking information for use in buildings

Bibliography

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

[2] EN 12085, *Thermal insulating products for building applications — Determination of linear dimensions of test specimens*

[3] EN 13238, *Reaction to fire tests for building products — Conditioning procedures and general rules for selection of substrates*

[4] EN 16025-2, *Themal and/ or sound insulating products in building construction — Bound EPS ballastings — Part 2: Processing of the factory premixed EPS dry plaster*

[5] EN ISO 140-8, *Acoustics — Measurement of sound insulation in buildings and of building elements — Part 8: Laboratory measurements of the reduction of transmitted impact noise by floor coverings on a heavyweight standard floor (ISO 140-8)*

[6] EN ISO 717-2, *Acoustics — Rating of sound insulation in buildings and of building elements — Part 2: Impact sound insulation (ISO 717-2)*

[7] EN ISO 10456, *Building materials and products — Hygrothermal properties — Tabulated design values and procedures for determining declared and design thermal values (ISO 10456)*

[8] EN ISO 12570, *Hygrothermal performance of building materials and products — Determination of moisture content by drying at elevated temperature (ISO 12570)*

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