



BSI Standards Publication

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

Part 2: Processing of the factory premixed
EPS dry plaster

National foreword

This British Standard is the UK implementation of EN 16025-2:2013.

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English Version

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

Produits isolants thermiques et/ou acoustiques utilisés
dans la construction des bâtiments - Empierrements en
PSE lié - Partie 2: Fabrication du pré-mélange plâtre sec
PSE

Wärmedämmstoffe für den Wärme- und/oder Schallschutz
im Hochbau - Gebundene EPS-Schüttungen - Teil 2:
Verarbeitung des werkmäßig vorgemischten EPS-
Trockenmörtels

This European Standard was approved by CEN on 16 February 2013.

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Foreword

This document (EN 16025-2:2013) 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of an identical text or by endorsement, at the latest by November 2013, and conflicting national standards shall be withdrawn at the latest by November 2013.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.

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.

Attention is drawn to the need to take into account any complementary member state rules (e.g. installation rules) which together with this document ensure the fitness for purpose of the installed product.

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 insulation of buildings when applied to walls, ceilings, roofs and floors.

This document is a specification for the installed insulation products.

This document describes, when taken together with EN 16025-1, the product characteristics that are linked to the essential requirements of the EU Construction Products Directive. It also specifies the checks and tests to be used for the declaration made by the installer of the products.

This document does not specify the required level of all properties to be achieved by a product to demonstrate fitness for purpose in a particular application. The required levels are to be found in regulations or non-conflicting standards.

This document does not cover factory made bound EPS insulation products.

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 823:2013, *Thermal insulating products for building applications — Determination of thickness*

EN 16025-1:2013, *Thermal and/ or sound insulating products in building construction — Bound EPS ballastings — Part 1: Requirements for factory premixed EPS dry plaster*

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

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

3 Terms and definitions and symbols

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

3.1 Terms and definitions

3.1.1

installed thickness of the bound EPS

thickness of the bound EPS as installed by the installer

3.1.2

nominal thickness of the bound EPS

thickness of the bound EPS as specified by the specifier

3.1.3

specifier

person responsible for defining the volume and thickness of thermal and/or impact sound insulation and the type of product to be used in a given situation

3.1.4

installer

person, company or organisation which is responsible for the process of installation of the thermal and/or impact sound insulation

3.1.5

fresh mortar

EPS dry mortar mixed with water on the construction site

3.1.6

bound EPS (BEPS)

installed and hardened fresh mortar for use as insulating material for thermal and/or impact noise insulation

3.2 Symbols

Symbols and units used in this document include:

d_N	declared installed thickness of the BEPS product	mm
R_D	declared installed thermal resistance	m ² K/W

4 Requirements

4.1 General

The installer shall use a bound EPS insulation product that complies with EN 16025-1.

4.2 Suitability of the building for the installation of the product

The installer shall inspect the building in accordance with the manufacturer's guidelines, in order to determine whether it is suitable for application of the product.

National rules may also apply.

4.3 In-situ measurements and calculations

4.3.1 Apparent density of the installed fresh mortar

During installation, the installer shall examine the apparent density of the fresh mortar at least every 10 m³. For that purpose, at least 5 l of fresh mortar shall be put into a suitable vessel in accordance with the manufacturer's installation instructions. The volume of the mortar contained in the vessel shall be determined with an accuracy of ± 0,5 % and its mass with an accuracy of ± 1 g.

The apparent density of the fresh mortar [kg/m³] shall be determined by the mass of the fresh mortar in grams divided by the volume in litres.

The apparent density of the fresh mortar shall be indicated with an accuracy of 1 kg/m³ on the delivery note issued by the installer and shall correspond to the fresh mortar's apparent density specified by the manufacturer. It shall not exceed the value indicated in EN 16025-1:2013, 4.2.2.2. The records of the apparent density of the fresh mortar shall be maintained by the installer for a minimum of three years.

4.4 Declared installed thickness of the installed bound EPS (BEPS)

For every 100 m² of insulation, at least five measurements of the installed thickness shall be measured at different places. For the measurements, a pin-plate method shall be used following EN 823:2013, B.1. The individual values and the mean value, d_N , shall be indicated on the delivery note.

4.5 Declared installed thermal resistance, R_D

The declared installed thermal resistance, R_D , for the installed insulation shall be declared according to the information given by the manufacturer in EN 16025-1, or calculated using the formula:

$$R_D = d/\lambda_D \quad (1)$$

where

d is the declared installed thermal insulation thickness (in metres);

λ_D is the declared thermal conductivity given for the product in EN 16025-1.

The correction of the values of thermal conductivity due to the influence of moisture and temperature can be calculated using the procedures given in EN ISO 10456.

For calculating the thermal resistance of complete building elements involving the use of these products, the procedures given in EN ISO 6946 can be used.

The value of the declared installed thermal resistance shall be rounded downwards to the nearest 0,05 m²K/W.

4.6 Declared installed bound EPS density

The declared installed bound EPS density shall be examined every 100 m³, but at least once per site. For this examination, a specimen with a volume of at least 3 l (e.g. 200 mm × 200 mm × 100 mm) shall be produced in accordance with the manufacturer's installation instructions. The volume of the specimen shall be determined with an accuracy of ± 0,5 % and its mass with an accuracy of ± 1 g.

On the basis of this data, the declared bound EPS density shall be calculated as follows:

bound EPS density in kg/m³ = mass of the specimen in grams/volume in litres

The declared installed bound EPS density shall be indicated with an accuracy of 1 kg/m³ and shall correspond to the bound EPS density specified by the manufacturer. It shall not exceed the value indicated in EN 16025-1:2013, 4.2.3.2. The results of these product examinations shall be recorded and made available to the client upon request. The specimens shall be kept by the installer for at least six months at room conditions and shall be marked in a way preventing them from being mixed up with other specimens.

4.7 Readiness for covering

The residual moisture content shall be determined in accordance with EN ISO 12570. The bound EPS is ready to be covered when its accessibility has been proven and the product-dependent residual moisture content is in line with the requirements for the subsequent floor structure.

The accessibility shall be checked by putting a point load of 0,2 kN on a round support surface of 50 cm² for 120 s and measuring the deformation. Care shall be taken to ensure that the support surface is in full contact with the bound EPS floor surface. If necessary, a suitable levelling material shall be applied. The bound EPS shall be deemed accessible for mounting purposes if the deformation does not exceed 3 mm. The manufacturer shall indicate the period of time after which deformation is below 3 mm.

NOTE The maximum residual moisture content permitted depends, for example, on later utilisation, type of covering or installed thickness.

5 Guidelines for installation

Manufacturers' instructions shall be followed; for example, the installation conditions and the mixing ratio.

National practice or local rules may also apply.

6 Installer's declaration

The installer shall declare to the customer that the work has been carried out in accordance with the requirements of this document using an insulation product that complies with EN 16025-1.

The installer shall also declare at least the following information:

- place and date of the installation,
- declared installed insulation thicknesses of the bound EPS,
- declared installed thermal resistance according to 5.3,
- declared installed apparent density of the fresh mortar,
- surface area of the bound EPS insulation product (m³ or number of bags),
- and, if requested, the declared installed bound EPS density

for the installed product, the trade name and designation code of the bound EPS (complying with EN 16025-1, from which it has been generated).

Bibliography

- [1] EN ISO 6946, *Building components and building elements — Thermal resistance and thermal transmittance — Calculation method*
- [2] EN ISO 10456, *Building materials and products — Hygrothermal properties — Tabulated design values and procedures for determining declared and design thermal values*

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