

Thermal insulating products — Factory made products of expanded polystyrene (EPS) — Voluntary certification of the raw material

ICS 13.220.50; 91.100.01

National foreword

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**Thermal insulating products - Factory made products of
expanded polystyrene (EPS) - Voluntary certification of the raw
material**

Produits isolants - Produits manufacturés en polystyrène
expansé (EPS) - Certification volontaire du matériau de
base

Wärmedämmstoffe - Werkmäßig hergestellte Produkte aus
expandiertem Polystyrol (EPS) - Freiwillige Zertifizierung
des Ausgangsstoffes

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Foreword

This document (CEN/TR 15985:2010) has been prepared by Technical Committee CEN/TC 88 “Thermal insulating materials and products”, the secretariat of which is held by DIN.

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Introduction

EN 13163 contains an option in Annex B, Table B.2 to change the frequency for the reaction to fire test according to EN ISO 11925-2 from once per day to once per week. A reduction of the frequency in the FPC is possible according to note to table h of Table B.2, if a certified raw material has been used.

Since rules on how to certify EPS raw material are still missing this option could not be chosen yet. That is why the following rules have been developed and issued by TC 88. These rules may be applied by the raw material suppliers and the involved bodies to certify the raw materials until the following text has been incorporated in the next revision of EN 13163:2008.

1 Scope

It is essential that EPS products with a reaction to fire performance better than Euroclass F be manufactured from raw materials with a chemical composition, which is under the control of the raw material producer.

This Technical Report specifies the conditions allowing reduction of the FPC frequency for testing the reaction to fire of specimens made from flame retardant EPS raw material. The preconditions are that products are manufactured solely from a specified, certified raw material, within defined density limits, and produced in the way specified by the raw material supplier.

The frequency of testing the final product can be reduced in accordance with EN 13163:2008, Annex B, Table B.2 footnote to table h. It is essential that the reaction to fire performance of the raw material be labelled according to 9.2 in the certificate from an approved body (see EN 13172:2008, 5.3.3 and Annex A).

The certification of the raw material relates only to products for which the reaction to fire Euroclass E according to EN 13501-1 is being claimed. The manufacturer of the EPS boards / products continues to be responsible for the FPC of the EPS boards / products.

This Technical Report is in accordance with the general rules of EN 13172.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

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

EN 13163:2008, *Thermal insulation products for buildings — Factory made products of expanded polystyrene (EPS) — Specification*

EN 13172:2008, *Thermal insulating 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 ISO 11925-2, *Reaction to fire tests — Ignitability of building products subjected to direct impingement of flame — Part 2: Single-flame source test (ISO 11925-2:2002)*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1

EPS raw material with flame retardant

non-expanded polystyrene beads containing additives such as a flame retardant treatment and a blowing agent

3.2

EPS test specimen

EPS foam in a finished form with its final product properties (without facing)

NOTE ITT = Initial Type Test.

4 Preparation of samples

The raw material supplier shall produce samples of the expanded raw material using all the procedures of the normal production process for EPS.

Thickness, density and exposure to thermal attack shall be measured and reported when making the ignitability test in accordance with EN ISO 11925-2. The specimens shall be cut from samples as described in EN ISO 11925-2.

NOTE Since EPS is an isotropic material the direction of the samples is irrelevant.

The thickness of all test specimens shall be 10 mm and 60 mm for ITT.

5 Initial tests

Initial type tests shall be carried out on samples as described in Clause 4.

Test specimens, in thickness of 10 mm and 60 mm shall be made from the minimum and maximum density of EPS product sample. The tests shall be performed in accordance with EN ISO 11925-2 with the thermal attack on the edge.

6 Factory Production Control (FPC) for EPS raw material

6.1 General

The raw material supplier shall have a factory production control system in place as described in EN 13172 to ensure the quality of production.

The continuous FPC of the raw materials shall be carried out by sampling EPS products produced at densities between 15 kg/m³ and 20 kg/m³.

The density of all samples prepared shall be determined in accordance with EN 1602.

The tests shall be made and the results recorded in accordance with EN ISO 11925-2 with an exposure time of 15 s and an observation time of 20 s; edge attack only.

All tests results shall fulfil the requirements to meet Euroclass E according to EN 13501-1.

6.2 Testing frequency

The tests shall be performed on one set of specimens per batch (or per production day whichever gives the highest frequency) and per plant and type of polymer at a density between 15 kg/m³ and 20 kg/m³. The thickness of the samples shall be 20 mm.

In addition, the minimum and maximum density shall be tested and recorded every 3 months. The thickness of the samples shall be 20 mm.

In case EN 13172 specifies applicable rules, the testing frequency can be reduced in agreement with the notified body if the raw material supplier has demonstrated reliable performance.

7 Certification of conformity for raw material

7.1 Bodies involved in the evaluation of conformity procedure

Bodies involved are specified in EN 13172:2008, Annex A.

7.2 Test specimens

The number of test specimens to obtain one test result is specified in EN 13501-1 and EN ISO 11925-2.

The raw material supplier shall send the samples to the approved body.

7.3 Initial test for EPS raw material

For the initial type test the tests shall be performed by an approved body taking into account the more critical edge flame attack only (not the surface attack).

NOTE EN ISO 11925-2 requires both testing with surface and edge flame attack, but for this purpose here only the more critical test is performed.

The specimen thickness shall be 10 mm and 60 mm, for both the minimum and maximum density.

These two densities specify the density range for which the certificate is valid.

A classification report according to EN 13501-1 from an approved body is required for the initial test only.

This test shall be repeated every 5 years.

8 Continuous surveillance of EPS raw material

8.1 Production

Plant and polymer samples, at the minimum and maximum density shall be tested by an approved body once per year with a specimen thickness of 20 mm. Different fractions of one production line can be grouped together within the defined density range.

8.2 Factory production control

The FPC shall be checked by an approved body once per year.

Table 1 — Testing frequency

Test	Frequency	Test performed by	Thickness of the samples	Density of the samples
Initial type test	1 / 5 years	Raw material supplier	10 mm and 60 mm	Minimum and maximum
Factory production control	1 / day or 1 / batch (which gives the highest frequency)	Raw material supplier	20 mm	Between 15 kg/m ³ and 20 kg/m ³
	1 / 3 months	Raw material supplier	20 mm	Minimum and maximum
Initial type test	1 / 5 years	Notified body	10 mm and 60 mm	Minimum and maximum
Continuous surveillance	1 / year	Notified body	10 mm and 60 mm	Minimum and maximum

9 Certificate of conformity

The approved body shall issue a certificate of conformity according to EN 13172:2008, Annex A. The validity of the certificate shall be limited to 5 years.

The certificate cannot be used directly by the EPS producer, but can be used to reduce the testing frequency in his FPC.

The certificate shall contain the following information:

Heading: "Certificate of conformity according to EN 13163:2008, Annex E"

Certified EPS raw material. "EPS Products made of this raw material (not mixed with other materials) and within a density range fromkg/m³ tokg/m³ will fulfil the requirements of class E according to EN 13501-1"

EPS raw material supplier

Production plant

Product name

Issuing date and duration of validity of the certificate

"The validity of the certification of conformity shall be checked once a year by an approved body. If a product no longer complies with the requirements for this certificate, the EPS producer shall be informed immediately by the raw material supplier".

Name, address and identification number of the approved body.

10 Responsibility of the raw material supplier

10.1 Declaration by the raw material supplier

The raw material supplier may affix information on the containers or in the delivery documents, concerning his certified EPS raw material only after the certificate of conformity has been obtained and the corresponding FPC requirements have been met. The initial certificate shall be provided to the EPS producers by the raw material supplier. The validity period of the declaration of the conformity shall be expressed by the declaration on the label.

In case of non-conformity the raw material supplier shall immediately cease to make the conformity declaration.

The validity of the certification shall be verified by the approved body at least once a year, with reference to the annual test-reports. An example for this reference is:

“Test on samples made from the raw material demonstrates that products made from the raw material comply with the requirements of EN 13163 for raw material, Euroclass E in accordance with EN 13501-1 (see test reports.....) and that the certification of conformity has been verified. The next verification is due by(month, year)”.

The raw material supplier shall inform the approved body about relevant changes to his FPC and third party control procedure.

The raw material supplier shall inform the relevant manufacturers about all changes in this certificate of conformity.

10.2 Labelling

On the label of the raw material the following shall be declared:

- certified raw material according to Technical Report CEN/TR 15985;
- products made of this raw material will obtain Euroclass E in accordance with EN 13501-1;
- raw material supplier;
- production plant;
- product name;
- approved body and number of the certificate.

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