

# SVENSK STANDARD

## SS-EN 14313:2009+A1:2013



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### **Värmeisoleringsprodukter för teknisk isolering – Fabrikstillverkade produkter av expanderad etencellplast (PEF) – Egenskapsredovisning**

**Thermal insulation products for building equipment and  
industrial installations – Factory made polyethylene foam (PEF)  
products – Specification**

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Denna standard ersätter SS-EN 14313:2009, utgåva 1.

The European Standard EN 14313:2009+A1:2013 has the status of a Swedish Standard. This document contains the official version of EN 14313:2009+A1:2013.

This standard supersedes the Swedish Standard SS-EN 14313:2009, edition 1.

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EUROPEAN STANDARD

**EN 14313:2009+A1**

NORME EUROPÉENNE

EUROPÄISCHE NORM

January 2013

ICS 91.100.60

Supersedes EN 14313:2009

English Version

## Thermal insulation products for building equipment and industrial installations - Factory made polyethylene foam (PEF) products - Specification

Produits isolants thermiques pour l'équipement du bâtiment et les installations industrielles - Produits manufacturés en mousse de polyéthylène (PEF) - Spécification

Wärmedämmstoffe für die technische Gebäudeausrüstung und für betriebstechnische Anlagen in der Industrie - Werkmäßig hergestellte Produkte aus Polyethylenschäum (PEF) - Spezifikation

This European Standard was approved by CEN on 29 September 2009 and includes Amendment 1 approved by CEN on 11 November 2012.

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

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## Foreword

This European Standard (EN 14313:2009+A1:2013) 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 July 2013, and conflicting national standards shall be withdrawn at the latest by July 2013.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN 14313:2009.

This document includes Amendment 1 approved by CEN on 2012-11-11.

The start and finish of text introduced or altered by amendment is indicated in the text by tags A1 A1.

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 89/106/EEC.

For relationship with EU Directive 89/106/EEC, see informative Annex ZA, which is an integral part of this document.

Locally responsible authorities and contracting entities, who are bound by EU Directives to specify their requirements using European harmonized product standards, are allowed to demand additional properties outside the provisions of this standard if this is technically necessary because of prevailing operational conditions of the building equipment or the industrial installation projected or because of safety regulations.

This European Standard contains four annexes:

- Annex A (normative), Factory production control
- Annex B (normative), Determination of minimum service temperature
- Annex C (informative), Additional properties
- Annex ZA (informative), Clauses of this European Standard addressing the provisions of the EU Construction Products Directive

This document includes a bibliography.

This European Standard is one of a series of standards for insulation products used in building equipment and industrial installations, but this standard can be used in other areas, where appropriate.

In pursuance of Resolution BT 20/1993 revised, CEN/TC 88 have proposed defining the standards listed below as a European package of standards, setting 21 months after availability as the date of withdrawal (dow) of national standards which conflict with the European Standards of this package.

The package of standards comprises the following group of interrelated standards for the specifications of factory made thermal insulation products, all of which come within the scope of CEN/TC 88:

EN 14303, *Thermal insulation products for building equipment and industrial installations — Factory made mineral wool (MW) products — Specification*

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EN 14304, *Thermal insulation products for building equipment and industrial installations — Factory made flexible elastomeric foam (FEF) products — Specification*

EN 14305, *Thermal insulation products for building equipment and industrial installations — Factory made cellular glass (CG) products — Specification*

EN 14306, *Thermal insulation products for building equipment and industrial installations — Factory made calcium silicate (CS) products — Specification*

EN 14307, *Thermal insulation products for building equipment and industrial installations — Factory made extruded polystyrene foam (XPS) products — Specification*

EN 14308, *Thermal insulation products for building equipment and industrial installations — Factory made rigid polyurethane foam (PUR) and polyisocyanurate foam (PIR) products — Specification*

EN 14309, *Thermal insulation products for building equipment and industrial installations — Factory made products of expanded polystyrene (EPS) — Specification*

EN 14313, *Thermal insulation products for building equipment and industrial installations — Factory made polyethylene foam (PEF) products — Specification*

EN 14314, *Thermal insulation products for building equipment and industrial installations — Factory made phenolic foam (PF) products — Specification*

According to the CEN/CENELEC Internal Regulations, the national standards organizations 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 factory made flexible polyethylene foam products which are used for the thermal insulation of building equipment and industrial installations with an operating temperature in the range of approximately - 80 °C to + 150 °C.

NOTE Tensile stress in the insulation product should be avoided when applying PEF. This is even more important when applying PEF on lines with operating temperatures between - 50 °C and - 80 °C. The tensile stress should be kept at the minimum by applying the foam “under pressure”, i.e. cutting the parts in a generous way. Manufacturer’s advice should be heeded in all cases.

The products are manufactured in the form of tubes, profiles, sheets, rolls and tapes with or without coating and/or self-adhesive backing and/or different closure systems.

This standard describes product characteristics and includes procedures for testing, evaluation of conformity, marking and labelling.

Products covered by this standard are also used in prefabricated thermal insulation systems and composite panels; the performance of systems incorporating these products is not covered.

This standard does not specify the required level of a given property that shall be achieved by a product to demonstrate fitness for purpose in a particular application. The levels required for a given application can be found in regulations and invitations to tender.

Products with a declared thermal conductivity greater than 0,050 W/(m·K) at 10 °C are not covered by this standard.

This standard does not cover products for the insulation of the building structure.

The normative part of this standard does not cover compressive stress (see Annex C, C.4).

## 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 822, *Thermal insulating products for building applications — Determination of length and width*

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

EN 824, *Thermal insulating products for building applications — Determination of squareness*

EN 1604, *Thermal insulating products for building applications — Determination of dimensional stability under specified temperature and humidity conditions*

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

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

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

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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, *Thermal insulating products — Evaluation of conformity*

EN 13467, *Thermal insulating products for building equipment and industrial installations — Determination of dimensions, squareness and linearity of preformed pipe insulation*

EN 13468, *Thermal insulating products for building equipment and industrial installations — Determination of trace quantities of water soluble chloride, fluoride, silicate, sodium ions and pH*

EN 13469, *Thermal insulating products for building equipment and industrial installations — Determination of water vapour transmission properties of preformed pipe insulation*

EN 13472, *Thermal insulating products for building equipment and industrial installations — Determination of short term water absorption by partial immersion of preformed pipe insulation*

EN 13501-1:2007, *Fire classification of construction products and building elements — Part 1: Classification using data from reaction to fire tests*

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

EN 14366:2004, *Laboratory measurement of noise from waste water installations*

EN 14706, *Thermal insulating products for building equipment and industrial installations — Determination of maximum service temperature*

EN 14707, *Thermal insulating products for building equipment and industrial installations — Determination of maximum service temperature for preformed pipe insulation*

EN 15715:2009, *Thermal insulation products — Instructions for mounting and fixing for reaction to fire testing — Factory made products*

EN ISO 354, *Acoustics — Measurement of sound absorption in a reverberation room (ISO 354:2003)*

EN ISO 3822-1, *Acoustics — Laboratory tests on noise emission from appliances and equipment used in water supply installations — Part 1: Method of measurement (ISO 3822-1:1999)*

EN ISO 4589-1, *Plastics — Determination of burning behaviour by oxygen index — Part 1: Guidance (ISO 4589-1:1996)*

EN ISO 8497, *Thermal insulation — Determination of steady-state thermal transmission properties of thermal insulation for circular pipes (ISO 8497:1994)*

EN ISO 11654, *Acoustics — Sound absorbers for use in buildings — Rating of sound absorption (ISO 11654:1997)*

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)*

EN ISO 13787, *Thermal insulation products for building equipment and industrial installations — Determination of declared thermal conductivity (ISO 13787:2003)*

### 3 Terms, definitions, symbols, units and abbreviated terms

#### 3.1 Terms and definitions

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

##### 3.1.1 Terms and definitions as given in EN ISO 9229:2007

###### 3.1.1.1

###### **polyethylene foam**

semi-rigid or flexible cellular plastics insulation material based on polymers derived mainly from ethylene and/or propylene

###### 3.1.1.2

###### **tube**

(insulation) product for application on cylindrical objects

###### 3.1.1.3

###### **roll**

(insulation) product supplied in the form of a wound cylinder

###### 3.1.1.4

###### **pipe insulation**

insulation product designed to fit around pipes

###### 3.1.1.5

###### **thermal insulation**

process of reducing heat transfer through a system, or to describe a product, component or system which performs that function

###### 3.1.1.6

###### **test specimen**

single item within a sample or part of an item used for a test

###### 3.1.1.7

###### **Initial Type Test**

###### **ITT**

test(s) performed on a product prior to commencing normal production to prove that the product is capable of conforming to the relevant requirements of a standard

###### 3.1.1.8

###### **building equipment**

system incorporated in a permanent manner in construction works forming part of the heating, cooling and ventilation installation of those works

###### 3.1.1.9

###### **industrial installation**

plant and associated vessels, pipes, ducts etc. used by industry to manufacture or store a product or to transfer a fluid

##### 3.1.2 Additional terms and definitions

###### 3.1.2.1

###### **profile**

product for application on cylindrical and other objects shaped for special insulation