

Ehituslikud soojusisolatsioonitooted. Pihustatud jäigad vahtpolüuretaan- (PUR) ja vahtpolüisotsüanuraattooted (PIR). Osa 1: Pihustatud jäikade vahttoodete paigalduseelne spetsifikatsioon

Thermal insulating products for buildings - In-situ formed sprayed rigid polyurethane (PUR) and polyisocyanurate (PIR) foam products - Part 1: Specification for the rigid foam spray system before installation

EESTI STANDARDI EESSÕNA

See Eesti standard EVS-EN 14315-1:2013 sisaldab Euroopa standardi EN 14315-1:2013 ingliskeelset teksti.

Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.

Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 16.01.2013.

Standard on kättesaadav Eesti Standardikeskusest.

NATIONAL FOREWORD

This Estonian standard EVS-EN 14315-1:2013 consists of the English text of the European standard EN 14315-1:2013.

This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation.

Date of Availability of the European standard is 16.01.2013.

The standard is available from the Estonian Centre for Standardisation.

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile standardiosakond@evs.ee.

ICS 91.100.60

Standardite reprodutseerimise ja levitamise õigus kuulub Eesti Standardikeskusele

Andmete paljundamine, taastekitamine, kopeerimine, salvestamine elektroonsesse süsteemi või edastamine ükskõik millises vormis või millisel teel ilma Eesti Standardikeskuse kirjaliku loata on keelatud.

Kui Teil on küsimusi standardite autorikaitse kohta, võtke palun ühendust Eesti Standardikeskusega:
Aru 10, 10317 Tallinn, Eesti; www.evs.ee; telefon 605 5050; e-post info@evs.ee

The right to reproduce and distribute standards belongs to the Estonian Centre for Standardisation

No part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying, without a written permission from the Estonian Centre for Standardisation.

If you have any questions about copyright, please contact Estonian Centre for Standardisation:
Aru 10, 10317 Tallinn, Estonia; www.evs.ee; phone 605 5050; e-mail info@evs.ee

ICS 91.100.60

English Version

Thermal insulating products for buildings - In-situ formed
sprayed rigid polyurethane (PUR) and polyisocyanurate (PIR)
foam products - Part 1: Specification for the rigid foam spray
system before installation

Produits isolants thermiques destinés aux applications du
bâtiment - Produits en mousse rigide de polyuréthane
(PUR) ou de polyisocyanurate (PIR) projetée, formés en
place - Partie 1: Spécifications relatives aux systèmes de
projection de mousse rigide avant mise en oeuvre

Wärmedämmstoffe für das Bauwesen - An der
Verwendungsstelle hergestellter Wärmedämmstoff aus
Polyurethan (PUR) - und Polyisocyanurat (PIR)-
Spritzschaum - Teil 1: Spezifikation für das Schaumsystem
vor dem Einbau

This European Standard was approved by CEN on 17 November 2012.

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.

CEN members are the national standards bodies of 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 United Kingdom.



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

Management Centre: Avenue Marnix 17, B-1000 Brussels

Contents

Page

Foreword.....	4
1 Scope.....	5
2 Normative references.....	5
3 Terms, definitions, symbols and abbreviations.....	6
3.1 Terms and definitions	6
3.2 Symbols and abbreviations	8
4 Requirements	9
4.1 General	9
4.2 For all applications.....	9
4.3 Specific applications.....	12
5 Test methods.....	15
5.1 Sampling and test specimen preparation	15
5.2 Conditioning.....	15
5.3 Testing.....	16
6 Designation code	18
7 Evaluation of conformity.....	18
7.1 General	18
7.2 Initial type testing.....	19
7.3 Factory production control.....	19
8 Marking, labelling and technical information.....	19
8.1 Marking and labelling.....	19
8.2 Technical information	19
Annex A (normative) Determination of declared aged thermal conductivity and aged thermal resistance	21
A.1 Introduction	21
A.2 Input data.....	21
A.3 Declared values.....	21
Annex B (normative) Initial type testing (ITT) and Factory production control (FPC)	23
Annex C (normative) Determination of the aged values of thermal resistance and thermal conductivity.....	25
C.1 General	25
C.2 Sampling and test specimen preparation	25
C.3 Determination of the initial value of thermal conductivity	26
C.4 Determination of the accelerated aged value of thermal conductivity	27
C.5 Fixed increment procedure.....	29
C.6 Declaration of the aged values of thermal resistance and aged thermal conductivity	31
Annex D (normative) Preparation of the test sample	33
D.1 Principle.....	33
D.2 Procedure	33
Annex E (normative) Determination of the reaction profile and free-rise density.....	34
E.1 Introduction	34
E.2 Principle.....	34
E.3 Apparatus	34
E.4 Procedure	34
E.5 Free-rise density	35
Annex F (normative) Determination of substrate adhesion strength perpendicular to faces	36

F.1	Principle.....	36
F.2	Apparatus	36
F.3	Sample preparation and conditioning	36
F.4	Preparation of test specimens.....	36
F.5	Testing procedure	36
F.6	Presentation of results.....	36
Annex G	(normative) Testing for reaction to fire products	37
G.1	Scope	37
G.2	Product and installation parameters	37
G.3	Mounting and fixing	38
G.4	Field of application.....	40
Annex H	(normative) Testing for reaction to fire products in standardised assemblies simulating end-use application(s).....	42
H.1	Scope	42
H.2	Product and installation parameters	42
H.3	Mounting and fixing	43
H.4	Field of application.....	47
Annex I	(informative) Example for the determination of the declared aged values of thermal conductivity and thermal resistance for a product.....	49
Annex J	(normative) Instructions for compiling thermal resistance performance charts	51
J.1	Introduction	51
J.2	General	51
J.3	Procedure for the manufacturer to create the performance charts	53
Annex ZA	(informative) Clauses of this European Standard addressing the provisions of the EU Construction Products Directive	57
Bibliography	64

Foreword

This document (EN 14315-1:2013) 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 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 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 European Standard consists of two parts which form a package. 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 products in the end-use applications covered by EN 14315.

This European Standard is one of a series for mineral wool, expanded clay, expanded perlite, exfoliated vermiculite, polyurethane/polyisocyanurate, cellulose, bound expanded polystyrene and expanded polystyrene in-situ formed insulation products used in buildings, but this standard 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.

EN 14315, *Thermal insulating products for buildings — In-situ formed sprayed rigid polyurethane (PUR) and polyisocyanurate (PIR) foam products*, consists of the following parts:

- *Part 1: Specification for the rigid foam spray system before installation* (the present document)
- *Part 2: Specification for the installed insulation products*

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 requirements for in-situ formed sprayed rigid polyurethane (PUR) and rigid polyisocyanurate (PIR) foam products when applied to walls, ceilings, roofs, suspended ceilings and floors.

This Part 1 of this European Standard is a specification for the rigid foam spray system before installation.

Part 1 of 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 levels of all properties to be achieved by a product to demonstrate fitness for purpose in a particular end-use application. The required levels are to be found in regulations or non-conflicting standards.

This European Standard does not cover factory made rigid polyurethane (PUR) or polyisocyanurate (PIR) foam insulation products or in-situ products intended to be used for the insulation of building equipment and industrial installations.

NOTE Foam products are either called flexible or rigid. The flexible products are used in upholstery and mattresses and are characterised by their ability to deflect, support and recover to their original thickness continually during their in-use phase. Those that are not flexible are termed rigid and do not possess these flexible characteristics. They are mostly used for thermal insulation purposes and vary widely in their compression strength values. Once the cell structure is crushed in a rigid foam, it does not recover its thickness fully. Some of these rigid foams are very low in density with very low compression strengths and are sometimes described “commercially” as “soft foams” or “semi-rigid” foams. This note has been included to clarify that all foams with such descriptions are covered by this standard’s used of the term rigid foam.

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 312, *Particleboards — Specifications*

EN 508-1, *Roofing products from metal sheet — Specification for self-supporting products of steel, aluminium or stainless steel sheet — Part 1: Steel*

EN 520, *Gypsum plasterboards — Definitions, requirements and test methods*

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

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

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

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

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

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

EN 1607:1996, *Thermal insulating products for building applications — Determination of tensile strength perpendicular to faces*

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

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

EN 12667:2001, *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 13238, *Reaction to fire tests for building products — Conditioning procedures and general rules for selection of substrates*

EN 13501-1, *Fire classification of construction products and building elements — Part 1: Classification using test 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 ISO 354, *Acoustics — Measurement of sound absorption in a reverberation room (ISO 354)*

EN ISO 1182, *Reaction to fire tests for products — Non-combustibility test (ISO 1182)*

EN ISO 1716, *Reaction to fire tests for products — Determination of the gross heat of combustion (calorific value) (ISO 1716)*

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

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

EN ISO 11925-2:2010, *Reaction to fire tests — Ignitability of products subjected to direct impingement of flame — Single-flame source test (ISO 11925-2:2010)*

ISO 4590, *Rigid cellular plastics — Determination of the volume percentage of open cells and of closed cells*

3 Terms, definitions, symbols and abbreviations

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

polyurethane foam PUR (in-situ formed products)

rigid cellular plastics insulation material or product with a structure based on polymers mainly of the polyurethane type

3.1.2

polyisocyanurate foam PIR (in-situ formed products)

rigid cellular plastics insulation material or product with a structure based on polymers mainly of the polyisocyanurate type