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**Toplotnoizolacijski proizvodi za opremo stavb in industrijske inštalacije - Proizvodi iz trde poliuretanske pene (PUR) in poliizocianuratne pene (PIR), oblikovani na mestu vgradnje - 2. del: Specifikacija za vgrajene izolacijske proizvode**

Thermal insulating products for building equipment and industrial installations – In-situ formed dispensed rigid polyurethane (PUR) and polyisocyanurate foam (PIR) products – Part 2: Specification for the installed insulation products

Wärmedämmstoffe für die technische Gebäudeausrüstung und für betriebstechnische Anlagen in der Industrie - An der Verwendungsstelle hergestellte Wärmedämmung aus dispensiertem Polyurethan (PUR)- und Polyisocyanurat (PIR)-Hartschaum - Teil 2: Spezifikation für die eingebauten Produkte

Produits isolants thermiques destinés aux équipements de bâtiment et aux installations industrielles - Produits en mousse rigide de polyuréthane (PUR) et de polyisocyanurate (PIR) injectée, formés en place - Partie 2: Spécifications relatives aux produits isolants après mise en œuvre

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**ICS:**

91.100.60	Materiali za toplotno in zvočno izolacijo	Thermal and sound insulating materials
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**Thermal insulating products for building equipment and industrial installations - In-situ formed dispensed rigid polyurethane (PUR) and polyisocyanurate foam (PIR) products - Part 2: Specification for the installed insulation products**

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This draft European Standard is submitted to CEN members for third formal vote. It has been drawn up by the Technical Committee CEN/TC 88.

If this draft becomes a European Standard, 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.

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COMITÉ EUROPÉEN DE NORMALISATION  
EUROPÄISCHES KOMITEE FÜR NORMUNG

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## Foreword

This document (FprEN 14319-2:2012) has been prepared by Technical Committee CEN/TC 88 “Thermal insulating materials and products”, the secretariat of which is held by DIN.

This document is currently submitted to the third Formal Vote.

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 which 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 14319.

Attention is drawn to the need to take into account any complementary member state rules (e.g. installation rules) which together with Part 2 of this European Standard ensures the fitness for purpose of the installed product.

This European Standard is one of a series for expanded perlite, exfoliated vermiculite and polyurethane/polyisocyanurate in-situ formed insulation products used in building equipment and industrial installations, 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.

This document is one of a series of standards as listed below:

EN 14319-1, *Thermal insulating products for building equipment and industrial installations — In-situ formed dispensed rigid polyurethane (PUR) and polyisocyanurate foam (PIR) products — Part 2: Specification for the installed insulation products*

EN 14319-2, *Thermal insulating products for building equipment and industrial installations — In-situ formed dispensed rigid polyurethane (PUR) and polyisocyanurate foam (PIR) products — Part 2: Specification for the installed insulation products*

## FprEN 14319-2:2012 (E)

### 1 Scope

This European Standard specifies requirements for in-situ formed dispensed polyurethane (PUR) and polyisocyanurate (PIR) foam products for the insulation of building equipment industrial installations, for example storage vessels, pipes and ducts used for the supply of fuels, oil, other liquids, hot and cold water, air and other gases.

Depending on the type of foam products complying with this standard, they may have service temperature ranges which lie within the limits of  $\pm 200$  °C.

This Part 2 of this European Standard is a specification for the installed insulation product.

This Part 2 of this European Standard describes, when taken together with Part 1 of EN 14319, 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 declarations made by the installer of the product.

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 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 products or in-situ products intended to be used for the insulation of buildings.

The products are not intended for use for direct airborne sound insulation or acoustic absorption applications.

**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 use 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.

FprEN 14319-1:2012, *Thermal insulating products for building equipment and industrial installations — In-situ formed dispensed rigid polyurethane (PUR) and polyisocyanurate foam (PIR) products — Part 2: Specification for the installed insulation products*

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

### 3 Terms, definitions, symbols and abbreviations

#### 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****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

**3.1.3****polyurethane foam PU**

rigid cellular plastics insulation materials or products including both polymer types based mainly on polyurethane (PUR) or mainly on polyisocyanurate (PIR) groups

**3.1.4****rigid foam dispensing system**

kit of constituent components which when dispensed generates the rigid polyurethane (PUR) foam or the rigid polyisocyanurate (PIR) foam characterised by the specified properties of the foam generated

**3.1.5****isocyanate component**

liquid isocyanate product which is one of the components of the rigid foam dispensed system

**3.1.6****polyol component**

liquid polyhydroxyl product containing an expanding agent, catalysts and other additives which is one of the components of the rigid foam dispensed system

**3.1.7****machine**

equipment used to mix and dispense the foam

**3.1.8****mixing ratio**

proportions of the components of the rigid foam dispensing system specified by the manufacturer to be dispensed to generate the rigid polyurethane or polyisocyanurate foam

Note 1 to entry: This can be expressed either as a weight or a volume ratio or both.

**3.1.9****installation**

process of dispensing the mixture of the components into the cavity to be insulated

Note 1 to entry The procedure involves dispensing discrete amounts of foam system, according to the manufacturer's technical information, so that the height of the foam in the cavity increases by a specified height each time, until it reaches the desired height.

**3.1.10****industrial storage vessel**

storage vessel used as building equipment or located in industrial installations

**3.1.11****injection hole**

hole cut in the inner or outer face of a cavity through which the foam system can be dispensed into the cavity

**FprEN 14319-2:2012 (E)****3.1.12****declared installed aged thermal resistance**

time average value of the thermal resistance of the installed insulation over 25 years (see 5.2)

**3.1.13****declared installed insulation thickness**

the insulation thickness as installed by the installer (see 5.1)

**3.2 Symbols and abbreviations**

Symbols used in this standard:

$d$	is the declared installed insulation thickness	m
$\lambda_D$	is the declared aged thermal conductivity	W/(m·K)
$R_D$	is the declared installed aged thermal resistance	m <sup>2</sup> K/W

Abbreviations used in this standard:

PUR is **Rigid PolyUrethane Foam**

PU is rigid polyurethane foam including PUR and PIR types

PIR is **Rigid PolyIsocyanurate Foam**

**4 Requirements****4.1 General**

The installer shall use a PUR or PIR foam system that complies with FprEN 14319-1.

**NOTE** The range of properties exhibited by PUR products is very wide. The same is true for PIR products and these two ranges often overlap. Although not in every case, generally PIR products have a higher upper service temperature and can perform better in reaction to fire tests. In all cases, for both PIR and PUR products, their individual performance claimed by the manufacturer are described by the levels of properties obtained. Accordingly, therefore, all the declaration clauses will be completed using the term PU to include both PUR and PIR products (see 3.1.3).

**4.2 Suitability of the building equipment or industrial installation for the installation of the product**

The installer shall inspect the building equipment or industrial installation in accordance with manufacturer's technical information and any national rules, in order to determine whether it is suitable for application of the product (see Annex B).

**5 In-situ measurements and calculations****5.1 Declared installed insulation thickness**

The declared installed insulation thickness,  $d$ , shall be measured in accordance with procedure given in Annex A. However, the value shall not be less than the minimum thickness specified by the client or the manufacturer's technical information.