
Toplotnoizolacijski proizvodi za stavbe - Proizvodi iz ekspandiranega glinenega agregatnega proizvoda (LWA), oblikovani na mestu vgradnje - 2. del: Specifikacija za vgrajene izolacijske proizvode

Thermal insulation products for buildings - In-situ formed expanded clay lightweight aggregate products - Part 2: Specification for the installed products

Wärmedämmstoffe für Gebäude - An der Verwendungsstelle hergestellte Wärmedämmung aus Blähton-Leichtzuschlagsstoffen (LWA) - Teil 2: Spezifikation für die eingebauten Produkte

Produits isolants thermiques pour le bâtiment - Produits à base de granulats légers d'argile expansée formés en place - Partie 2: Spécifications relatives aux produits installés

Ta slovenski standard je istoveten z: EN 14063-2:2013

ICS:

91.100.60	Materiali za toplotno in zvočno izolacijo	Thermal and sound insulating materials
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SIST EN 14063-2:2013

en,fr,de

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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 14063-2

July 2013

ICS 91.100.60

English Version

**Thermal insulation products for buildings - In-situ formed
expanded clay lightweight aggregate products - Part 2:
Specification for the installed products**

Produits isolants thermiques pour le bâtiment - Produits à
base de granulats légers d'argile expansée formés en place
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Verwendungsstelle hergestellte Wärmedämmung aus
Blähton-Leichtzuschlagsstoffen (LWA) - Teil 2:
Spezifikation für die eingebauten Produkte

This European Standard was approved by CEN on 23 May 2013.

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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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Foreword

This document (EN 14063-2:2013) 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of an identical text or by endorsement, at the latest by January 2014, and conflicting national standards shall be withdrawn at the latest by January 2014.

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 European standard consists of two parts. The first part is the harmonised part satisfying the mandate and the CPD. It 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 14063.

Part 1 of this European Standard has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association and supports the essential requirements of EU Directives. For relationship with EU Directive(s), see informative Annex ZA, which is an integral part of Part 1.

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

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 can 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.

EN 14063-2:2013 (E)

1 Scope

This European Standard specifies the requirements for loose-fill expanded clay lightweight aggregate (LWA) products installed in roofs, ceilings, floors and ground floors.

This Part 2 is a specification for the installed product.

Part 2 of this European Standard describes, when taken together with Part 1, the product characteristics that are linked to the essential requirements of the EU Construction Products Directive. Part 2 also specifies the checks and tests to be used for the declarations made by the installer of the product.

Part 2 of this European Standard does not specify the required level of a given property to be achieved by a product to demonstrate fitness for purpose in a particular application. The levels required for a given application are to be found in national regulations or non conflicting standards.

This European Standard does not cover factory made expanded clay lightweight aggregate products or in-situ products intended to be used for the insulation of building equipment and industrial installations.

This European Standard does not specify performance requirements for airborne sound insulation and for acoustic absorption applications.

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*

<https://standards.iteh.ai/catalog/standards/sist/35e387c1-b1f4-467e-97ad-707c1b66403c/en-823-2013>

EN 1097-3, *Tests for mechanical and physical properties of aggregates — Part 3: Determination of loose bulk density and voids*

EN 1097-5, *Tests for mechanical and physical properties of aggregates — Part 5: Determination of the water content by drying in a ventilated oven*

EN 14063-1, *Thermal insulation products for buildings — In-situ formed expanded clay lightweight aggregate products — Part 1: Specification for the loose-fill products before installation*

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

3 Terms, definitions, symbols, units and abbreviated terms

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

expanded clay lightweight aggregate

insulation material or product composed of lightweight granular material having a cellular structure formed by expanding clay minerals by heat

3.1.2**design insulation thickness**

insulation thickness after compaction as specified by the designer

3.1.3**declared installed insulation thickness**

insulation thickness as installed by the installer including compaction if prescribed

3.1.4**compaction**

mechanical compression (e.g. by vibrator) of the installed insulation layer, expressed as a percentage of the initially untreated layer thickness

[SOURCE: EN 14063-1:2004]

3.1.5**settlement**

decrease of installed insulation thickness with time, expressed as a percentage of the initial installed thickness (after compaction if prescribed)

3.2 Symbols and units

d_m	mean insulation thickness	m
$d_{m,a}$	mean installed insulation thickness after compaction	m
$d_{m,b}$	mean installed insulation thickness before compaction	m
R_D	installed declared thermal resistance	m ² ·K/W
λ_D	declared thermal conductivity	W/m·K
C_p	degree of compaction	%

3.3 Abbreviated terms

LWA Lightweight Aggregate

4 Requirements**4.1 General**

The installer shall use an insulation product that complies with EN 14063-1.

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

NOTE National regulations may also apply.

4.2 Guidelines for installation

National Practice, National Standards, National Regulations or Local rules may exist, for the installation of the product. In the absence of National Regulations, National Standards or any local rules, the manufacturer's technical information shall be followed together with the procedure given in Annex B.

EN 14063-2:2013 (E)**4.3 Declared installed thermal resistance, R_D**

The thermal resistance, R_D , shall be assessed by measurement of the declared installed insulation thickness according to 5.1 combined with the declared thermal conductivity, λ_D .

NOTE 1 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.

NOTE 2 EN ISO 10456 describes how the design thermal conductivity is calculated from the declared thermal conductivity.

4.4 Declared installed insulation thickness, d_m

The mean value of the installed thickness, d_m , shall be not less than the specified thickness prescribed by the designer. No individual value shall be less than 80 % of the specified value. Installed insulation thickness is measured according to 5.1.

4.5 Declared moisture content

When required the moisture content shall be measured in accordance with EN 1097-5 and expressed in % by mass.

NOTE The declaration of moisture content is only needed if the products are to be used in contact with wooden materials, e.g. between rafters and wooden beams.

4.6 Settlement

NOTE The settlement of expanded clay lightweight aggregate products is negligible and therefore no method of measurement has been specified.

4.7 Compaction

The installer shall ensure that the degree of compaction specified by the client or designer is obtained.

The degree of compaction in percent (C_p) shall be calculated using Formula (1):

$$C_p = 100 \cdot (d_{m,b} - d_{m,a}) / d_{m,b} \quad (1)$$

where

$d_{m,b}$ is the mean installed insulation thickness before compaction, m

$d_{m,a}$ is the mean installed insulation thickness after compaction, m

In case of dispute determination of density and degree of compaction of the installed product shall be assessed by the method given in Annex A.

The mean installed insulation thickness is calculated as described in 5.1.

NOTE The typical degree of compaction is (5-15) % for rounded aggregates and could be more for other types of shapes

5 In-situ measurements and calculations

5.1 Calculation of the declared mean installed insulation thickness

The measured mean installed insulation thickness $d_{m,a}$, after compaction if prescribed, shall not be less than the design insulation thickness. At least five insulation thickness measurements in different places shall be made for each 100 m² insulation area. A pin or ruler graduated in millimetres shall normally be used for these measurements. In case of dispute the installed insulation thickness shall be measured in accordance with EN 823:2013, Annex A, pin and plate method.

5.2 Calculation of declared installed thermal resistance, R_D

The declared installed thermal resistance, R_D for the mean insulation thickness after compaction shall be calculated using Formula (2):

$$R_D = d_{m,a} / \lambda_D \quad (2)$$

where

$d_{m,a}$ is the declared mean installed insulation thickness after compaction, m

λ_D is the declared thermal conductivity, W/mK (as declared by the manufacturer)

The thermal resistance shall be given as the nearest lower value rounded to not more than two decimals or three significant figures.

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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 Part 2 of the standard using an insulation product that complies with Part 1 of the standard.

The installer shall also declare at least the following information:

- trade name and designation code of the installed insulation product;
- that the declared mean installed insulation thickness is not less than the design thickness;
- the declared thermal resistance, R_D , according to 5.2, rounded downwards to the nearest 0,05 m²·K/W;
- the total quantity of material used, in m³;
- date of installation.