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Thermal insulation materials and products - In-situ formed expanded clay lightweight aggregate products (LWA) - Part 1: Specification for the loose-fill products before installation

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EUROPEAN STANDARD

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Thermal insulation materials and products - In-situ formed expanded clay lightweight aggregate products (LWA) - Part 1: Specification for the loose-fill products before installation

Produits isolants thermiques pour le bâtiment - Isolation thermique formée en place à base de granulats légers d'argile expansée (LWA) - Partie 1: Spécification des produits en vrac avant la mise en oeuvre

Wärmedämmstoffe für Gebäude - An der Verwendungsstelle hergestellte Wärmedämmung aus Blähton-Leichtzuschlagsstoffen (LWA) - Teil 1: Spezifikation für die Schüttdämmstoffe vor dem Einbau

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Foreword

This document (EN 14063-1:2004) 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of an identical text or by endorsement, at the latest by February 2005, and conflicting national standards shall be withdrawn at the latest by May 2006.

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 standard consists of two parts. The first part, which is the harmonised part satisfying the mandate, the CPD and is the basis for the CE marking, covers the products which are placed on the market. The second part, which is the non-harmonised part, covers the specification for the installed products.

This European Standard is one of a series for mineral wool, expanded clay, expanded perlite, exfoliated vermiculite, polyurethane/polyisocyanurate, cellulose and urea formaldehyde in-situ formed insulation products used in buildings, but this standard may be used in other areas where appropriate.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

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1 Scope

This document specifies the requirements for loose-fill expanded clay lightweight aggregate products for in-situ installation in roofs, ceilings, floors and ground floors.

This document is a specification for the insulation products before installation.

This document also describes the product characteristics and includes procedures for testing, marking and labelling.

This document 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 regulations or non-conflicting standards.

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

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 932-1:1996, *Tests for general properties of aggregates — Part 1: Methods for sampling.*

EN 932-2, *Tests for general properties of aggregates — Part 2: Methods for reducing laboratory samples.*

EN 933-1, *Tests for geometrical properties of aggregates — Part 1: Determination of particle size distribution — Sieving method.*

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 1097-10, *Tests for mechanical and physical properties of aggregates — Part 10: Determination of water suction height.*

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 13055-1:2002, *Lightweight aggregates — Part 1: Lightweight aggregates for concrete, mortar and grout.*

EN 13055-2, *Lightweight aggregates — Part 2: Lightweight aggregates for bituminous mixtures and surface treatments and for unbound and bound applications.*

EN 13172:2001, *Thermal insulation products — Evaluation of conformity.*

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

EN 13820, *Thermal insulating materials for building applications — Determination of organic content.*

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EN ISO 10456, *Building materials and products — Procedures for determining declared and design thermal values (ISO 10456:1999).*

ISO 12491, *Statistical methods for quality control of building materials and components.*

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

[prEN ISO 9229:1997]

3.1.2
settlement
decrease of installed insulation thickness with time, expressed as a percentage of the initial installed thickness (after compaction if prescribed)

3.1.3
compaction
mechanical compression (e.g. by vibrator) of the installed insulation layer, expressed as a percentage of the initial untreated layer thickness

3.1.4
level
given value, which is the upper or lower limit of a requirement. The level is given by the declared value of the characteristic concerned

3.1.5
class
combination of two levels of the same property, between which the performance shall fall, where the levels are given by the declared value of the characteristic concerned

3.2 Symbols, units and abbreviated terms

Symbols and units used in this document:

H	is the water suction height	mm
k	is a factor related to the number of test results available	–
$\lambda_{10,\ dry}$	is the thermal conductivity at 10 °C mean temperature after drying at (110 ± 5) °C	W/(m·K)
$\lambda_{90/90}$	is the 90 % fractile with a confidence level of 90 % for the thermal conductivity	W/(m·K)
λ_D	is the declared thermal conductivity	W/(m·K)
λ_i	is one test result of thermal conductivity	W/(m·K)
λ_{mean}	is the mean thermal conductivity	W/(m·K)
n	is the number of test results	–
s_λ	is the estimate of the standard deviation of the thermal conductivity	W/(m·K)

LD	is the symbol of the declared level for loose bulk density
PS	is the symbol of the declared level for aggregate size
CR	is the symbol of the declared level for crushing resistance
WH	is the symbol of the declared level for water suction height