



# SLOVENSKI STANDARD

## SIST EN 15600-2:2010

01-november-2010

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**Toplotnoizolacijski proizvodi za opremo stavb in industrijske inštalacije - Proizvodi iz ekspandiranega vermikulita (EV), oblikovani na mestu vgradnje - 2. del: Specifikacija za vgrajene izolacijske proizvode**

Thermal insulation products for building equipment and industrial installations - In-situ thermal insulation formed from exfoliated vermiculite (EV) products - Part 2: Specification for the installed products

Wärmedämmstoffe für die Haustechnik und für betriebstechnische Anlagen - An der Verwendungsstelle hergestellte Wärmedämmung mit Produkten aus expandiertem Vermiculit (EV) - Teil 2: Spezifikation für die eingebauten Produkte

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Produits isolants thermiques pour l'isolation du bâtiment et les installations industrielles - Isolation thermique formée en place à base de granulats légers de vermiculite exfoliée (EV) - Partie 2: Spécification de produits mis en place

**Ta slovenski standard je istoveten z: EN 15600-2:2010**

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**ICS:**

91.100.60	Materiali za toplotno in zvočno izolacijo	Thermal and sound insulating materials
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**SIST EN 15600-2:2010**

**en,fr,de**

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EUROPEAN STANDARD  
NORME EUROPÉENNE  
EUROPÄISCHE NORM

**EN 15600-2**

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ICS 91.100.60

English Version

**Thermal insulation products for building equipment and industrial installations - In-situ thermal insulation formed from exfoliated vermiculite (EV) products - Part 2: Specification for the installed products**

Produits isolants thermiques pour l'isolation du bâtiment et les installations industrielles - Isolation thermique formée en place à base de granulats légers de vermiculite exfoliée (EV) - Partie 2: Spécification de produits mis en place

Wärmedämmstoffe für die technische Gebäudeausrüstung und für betriebstechnische Anlagen in der Industrie - An der Verwendungsstelle hergestellte Wärmedämmung mit Produkten aus expandiertem Vermiculit (EV) - Teil 2: Spezifikation für die eingebauten Produkte

This European Standard was approved by CEN on 16 May 2010.

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 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 Management Centre has the same status as the official versions.

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COMITÉ EUROPÉEN DE NORMALISATION  
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## Foreword

This document (EN 15600-2:2010) 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 2011, and conflicting national standards shall be withdrawn at the latest by January 2011.

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).

This European Standard consists of two parts which form a package. 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.

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 polyurethane/polyisocyanurate, expanded perlite and exfoliated vermiculite in-situ formed insulation products used in building equipment and industrial installations, but this standard may be used in other areas where appropriate. EN 14317-1 covers the use of expanded vermiculite in buildings.

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

**EN 15600-2:2010 (E)****1 Scope**

This European Standard specifies the requirement for exfoliated vermiculite products, which are used for in-situ thermal insulation of building equipment and industrial installations with an operating temperature in the range of approximately – 40 °C to + 1050 °C.

This European Standard specifies the requirements for the four types of exfoliated vermiculite products Vermiculite Aggregate (EVA), Coated Vermiculite (EVC), Hydrophobic Vermiculite (EVH) and Premixed Vermiculite (EVM), containing less than 1 % by mass organic material as determined by Annex C in EN 15600-1:2010.

This European Standard is a specification for the installed products.

This European Standard also specifies the checks and test procedures to be used for the declaration made by the installer of the product.

This European Standard does not specify the required level 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 include factory made insulation products of formed shapes and boards made with exfoliated vermiculite.

The products covered by this European Standard are not intended to be used primarily for airborne sound insulation or sound absorption applications although they may improve the performance of the installation in these respects when installed for their primary insulation intended use.

**2 Normative references**

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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 823:1994, *Thermal insulating products for building applications — Determination of thickness*

EN 15600-1, *Thermal insulation products for building equipment and industrial installations — In-situ thermal insulation formed from exfoliated vermiculite (EV) products — Part 1: Specification for bonded and loose-fill products before installation*

**3 Terms and definitions**

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

**3.1 Definitions****3.1.1****exfoliated vermiculite**

insulation material that results from expanding or exfoliating a natural micaceous mineral by heating

[EN ISO 9229]

**3.1.2****loose fill insulation**

in-situ insulation formed by pouring the granular material into the void or cavity, without the use of a bonding material

**3.1.3****bonded insulation**

in-situ insulation formed by bonding the exfoliated vermiculite to itself, or to itself and a surface

**3.1.4****specifier**

person responsible for the amount and thickness of the insulation and the type of product to be used in a particular installation

**3.1.5****installer**

person, company or organization which is responsible for the process of installing the insulation product

**3.2 Symbols and abbreviations****3.2.1 Symbols used in this part of the standard**

$d$  is the required thickness of the product m

$\lambda_D$  is the declared thermal conductivity W/(m·K)

$R_s$  is the specified thermal resistance  $m^2 \cdot K/W$

**3.2.2 Abbreviations used in this part of the standard**

EV is exfoliated vermiculite as defined in 3.1.1.

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

The installer shall use an insulation product that complies with EN 15600-1.

The installer shall inspect the proposed installation, in order to determine whether it is suitable for application of the product.

**4.2 Thermal resistance**

The required thermal resistance is obtained using the specified thickness of exfoliated vermiculite. The thickness shall be calculated by the specifier before installation starts, according to the formula  $d = R_s \lambda_D$ . The required thickness shall be compared with the design specification to confirm the suitability of this product.

**4.3 Installed declared insulation thickness**

The mean value of the installed declared thickness shall not be less than the thickness calculated in accordance with 4.2. No individual value shall be less than 80 % of the specified value.

**EN 15600-2:2010 (E)****4.4 Cavity fill**

The cavity shall be filled as specified by the specifier.

**5 In-situ measurements****5.1 Installed declared insulation thickness**

The installed declared insulation thickness of the insulation layer shall be measured by the installer.

The method of verification will vary depending on the application. Verification shall include reference to guides or level marks placed before installation and direct measurement after installation using a calibrated depth gauge. At least five insulation thickness measurements in different places shall be made for each 100 m<sup>2</sup> insulation area. In case of dispute, the installed insulation thickness shall be measured in accordance with EN 823:1994, Annex A, pin and plate method.

**5.2 Width of cavities**

The width of a cavity shall be determined by reference to design drawings or use of a suitable test. This determination will normally be carried out by the specifier, before installation starts.

**5.3 Cavity fill**

For insulation applied in a cavity, the installer shall check to ensure that the cavity is filled as specified.

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**6 Installer's declaration**

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The installer (in conjunction with the specifier) shall declare to the customer that the work has been carried out in accordance with the requirements of this standard using an insulation product that complies with EN 15600-1.

The installer shall state at least the following information:

- trade name and designation code of the installed product;
- declared thermal resistance;
- required thermal resistance;
- required thickness;
- installed declared thickness;
- volume of insulation material used;
- date of installation.

The installer shall also declare that the work has been carried out according to the specified procedure.