

## საქართველოს სტანდარტი

თერმული იზოლაციის პროდუქტები სამშენებლო მოწყობილობებისა და  
სამრეწველო გამოყენებისათვის-ქარხანულად დამზადებული გაფართოებული  
პერლიტის (EP) და ქერცლავი ვერმიკულიტის (EV) პროდუქტები-  
სპეციფიკაცია

საქართველოს სტანდარტებისა და მეტროლოგიის  
ეროვნული სააგენტო  
თბილისი

**სსტ ენ 15501:2013/2018**

**საინფორმაციო მონაცემები**

**1 შემუშავებულია საქართველოს სტანდარტების და მეტროლოგიის ეროვნული სააგენტოს სტანდარტების დეპარტამენტის მიერ**

**2 დამტკიცებულია და შემოღებულია სამოქმედოდ საქართველოს სტანდარტების და მეტროლოგიის ეროვნული სააგენტოს 2018 წლის 29 აგვისტოს № 86 განკარგულებით**

**3 მიღებულია გარეკანის თარგმნის მეთოდით სტანდარტიზაციის ევროპული კომიტეტის სტანდარტი ენ 15501:2013 „, თერმული იზოლაციის პროდუქტები სამშენებლო მოწყობილობებისა და სამრეწველო გამოყენებისათვის-ქარხანულად დამზადებული გაფართოებული პერლიტის (EP) და ქერცლავი ვერმიკულიტის (EV) პროდუქტები-სპეციფიკაცია“**

**4 პირველად**

**5 რეგისტრირებულია საქართველოს სტანდარტების და მეტროლოგიის ეროვნული სააგენტოს რეესტრში: 2018 წლის 29 აგვისტო №268-1.3-014016**

**აკრძალულია ამ სტანდარტის გადაცემა მესამე პირებისათვის ან/და მისი სხვა ფორმით გავრცელება**

**EUROPEAN STANDARD**  
**NORME EUROPÉENNE**  
**EUROPÄISCHE NORM**

**EN 15501**

April 2013

ICS 91.100.60

English Version

**Thermal insulation products for building equipment and industrial installations - Factory made expanded perlite (EP) and exfoliated vermiculite (EV) products - Specification**

Produits isolants thermiques pour l'équipement du bâtiment et les installations industrielles - Produits manufacturés en perlite expansée (EP) et en vermiculite exfoliée (EV) - Spécification

Wärmedämmstoffe für die Haustechnik und für betriebstechnische Anlagen - Werkmäßig hergestellte Produkte aus Blähperlit (EP) und expandiertem Vermiculit (EV) - Spezifikation

This European Standard was approved by CEN on 10 February 2013.

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

<b>Foreword.....</b>	<b>5</b>
<b>1 Scope .....</b>	<b>7</b>
<b>2 Normative references .....</b>	<b>7</b>
<b>3 Terms, definitions, symbols, units and abbreviated terms .....</b>	<b>8</b>
<b>3.1 Terms and definitions .....</b>	<b>8</b>
<b>3.1.1 Terms and definitions as given in EN ISO 9229:2007 .....</b>	<b>8</b>
<b>3.1.2 Additional terms and definitions .....</b>	<b>9</b>
<b>3.2 Symbols, units and abbreviated terms.....</b>	<b>10</b>
<b>3.2.1 Symbols and units .....</b>	<b>10</b>
<b>3.2.2 Abbreviated terms .....</b>	<b>11</b>
<b>4 Requirements .....</b>	<b>11</b>
<b>4.1 General.....</b>	<b>11</b>
<b>4.2 For all applications .....</b>	<b>12</b>
<b>4.2.1 Thermal conductivity .....</b>	<b>12</b>
<b>4.2.2 Dimensions and tolerances .....</b>	<b>12</b>
<b>4.2.3 Dimensional stability .....</b>	<b>13</b>
<b>4.2.4 Reaction to fire .....</b>	<b>13</b>
<b>4.2.5 Durability characteristics .....</b>	<b>13</b>
<b>4.3 For specific applications.....</b>	<b>14</b>
<b>4.3.1 General.....</b>	<b>14</b>
<b>4.3.2 Maximum service temperature .....</b>	<b>14</b>
<b>4.3.3 Minimum service temperature .....</b>	<b>14</b>
<b>4.3.4 Compressive stress or compressive strength .....</b>	<b>15</b>
<b>4.3.5 Trace quantities of water soluble ions and the pH value .....</b>	<b>15</b>
<b>4.3.6 Water vapour diffusion resistance .....</b>	<b>15</b>
<b>4.3.7 Short term water absorption by partial immersion .....</b>	<b>15</b>
<b>4.3.8 Dangerous substances .....</b>	<b>15</b>
<b>4.3.9 Continuous glowing combustion.....</b>	<b>16</b>
<b>5 Test methods.....</b>	<b>16</b>
<b>5.1 Sampling .....</b>	<b>16</b>
<b>5.2 Conditioning .....</b>	<b>16</b>
<b>5.3 Testing .....</b>	<b>16</b>
<b>5.3.1 General.....</b>	<b>16</b>
<b>5.3.2 Thermal conductivity .....</b>	<b>18</b>
<b>5.3.3 Maximum service temperature .....</b>	<b>19</b>
<b>5.3.4 Reaction to fire .....</b>	<b>19</b>
<b>6 Designation code .....</b>	<b>19</b>
<b>7 Evaluation of conformity.....</b>	<b>20</b>
<b>7.1 General.....</b>	<b>20</b>
<b>7.2 Initial Type Testing .....</b>	<b>20</b>
<b>7.3 Factory Production Control .....</b>	<b>20</b>
<b>8 Marking and labelling .....</b>	<b>20</b>
<b>Annex A (normative) Factory production control .....</b>	<b>21</b>
<b>Annex B (normative) Special conditions for the determination of organic content .....</b>	<b>24</b>
<b>B.1 Principle .....</b>	<b>24</b>
<b>B.2 Apparatus .....</b>	<b>24</b>
<b>B.3 Procedure .....</b>	<b>24</b>

B.4 Calculation and expression of results .....	24
B.5 Test report.....	25
<b>Annex C (informative) Preparation of the test specimens to measure thermal conductivity .....</b>	<b>26</b>
C.1 Preparation of the test specimens to measure thermal conductivity.....	26
C.2 Ageing.....	26
<b>Annex D (informative) Product specific details for mounting and fixing for reaction to fire testing .....</b>	<b>27</b>
<b>Annex E (informative) Additional properties .....</b>	<b>31</b>
E.1 General .....	31
E.2 Coefficient of thermal expansion.....	31
E.3 Apparent and true porosity .....	31
E.4 Air flow resistance.....	31
E.5 Creep in compression.....	31
E.6 Permeability to gases.....	31
E.7 Bending strength.....	31
E.8 Apparent density .....	31
<b>Annex ZA (informative) Clauses of this European Standard addressing the provisions of the EU Construction Products Directive .....</b>	<b>33</b>
Z.A.1 Scope and relevant characteristics .....	33
Z.A.2 Procedures for attestation of conformity of factory made expanded perlite and exfoliated vermiculite products .....	35
Z.A.2.1 Systems of attestation of conformity .....	35
Z.A.2.2 EC certificate and declaration of conformity.....	37
Z.A.3 CE Marking and labelling .....	38
<b>Bibliography.....</b>	<b>41</b>

## Figures

Figure ZA.1 — Example of CE marking information .....	40
---	----

## Tables

Table 1 — Dimensional tolerances.....	12
Table 2 — Levels for maximum service temperatures .....	14
Table 3 — Levels for compressive stress at 10 % deformation or compressive strength .....	15
Table 4 — Test methods, test specimens and conditions .....	17
Table A.1 — Minimum product testing frequencies.....	21
Table A.2 — Minimum product testing frequencies for the reaction to fire characteristics .....	23
Table D.1 — Product parameters for EP / EV - flat products when tested as placed on the market or in standard test configuration of assemblies .....	27
Table D.2 — Installation Parameters for EP / EV - flat products as placed on the market.....	28
Table D.3 — Product parameters for EP / EV - pipe insulation products, as placed on the market.....	28
Table D.4 — Installation Parameters for EP / EV - pipe insulation products, as placed on the market.....	29
Table D.5 — Installation Parameters for EP / EV - flat products in standard test configuration of assemblies simulating end-use applications .....	29

Table E.1 — Test methods, test specimens, and conditions.....	32
Table ZA.1— Relevant clauses .....	34
Table ZA.2 — System(s) of attestation of conformity .....	35
Table ZA.3.1 — Assignment of evaluation of conformity tasks for products under system 1 for reaction to fire and system 3 for other characteristics.....	36
Table ZA.3.2 — Assignment of evaluation of conformity tasks for products under system 3 or system 3 combined with system 4 for reaction to fire .....	37

## Foreword

This document (EN 15501:2013) 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 October 2013, and conflicting national standards shall be withdrawn at the latest by October 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.

Locally responsible authorities and contracting entities, who are bound by EU Directives to specify their requirements using European harmonised product standards, are allowed to demand additional properties outside the provisions of this standard if this is technically necessary because of prevailing operational conditions of the building equipment or the industrial installation projected or because of safety regulations.

This European Standard contains six annexes:

- Annex A (normative), Factory production control
- Annex B (normative), Special conditions to be used for the determination of organic content
- Annex C (informative), Preparation of the test specimens to measure thermal conductivity
- Annex D (informative), Product specific details for mounting and fixing for reaction to fire testing

NOTE This annex will be transferred to Annex A of EN 15715 when this document is being revised.

- Annex E (informative), Additional properties
- Annex ZA (informative), Clauses of this European Standard addressing the provisions of the EU Construction Products Directive

This document includes a bibliography.

This European Standard is one of a series of standards for insulation products used in building equipment and industrial installations, but this standard can be used in other areas, where appropriate.

Other standards in the series include the following group of interrelated standards for the specifications of factory made thermal insulation products, all of which come within the scope of CEN/TC 88:

- EN 14303, *Thermal insulation products for building equipment and industrial installations — Factory made mineral wool (MW) products — Specification*
- EN 14304, *Thermal insulation products for building equipment and industrial installations — Factory made flexible elastomeric foam (FEF) products — Specification*

- EN 14305, *Thermal insulation products for building equipment and industrial installations — Factory made cellular glass (CG) products — Specification*
- EN 14306, *Thermal insulation products for building equipment and industrial installations — Factory made calcium silicate (CS) products — Specification*
- EN 14307, *Thermal insulation products for building equipment and industrial installations — Factory made extruded polystyrene foam (XPS) products — Specification*
- EN 14308, *Thermal insulation products for building equipment and industrial installations — Factory made rigid polyurethane foam (PUR) and polyisocyanurate foam (PIR) products — Specification*
- EN 14309, *Thermal insulation products for building equipment and industrial installations — Factory made products of expanded polystyrene (EPS) — Specification*
- EN 14313, *Thermal insulation products for building equipment and industrial installations — Factory made polyethylene foam (PEF) products — Specification*
- EN 14314, *Thermal insulation products for building equipment and industrial installations — Factory made phenolic foam (PF) products — Specification*

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.