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Thermal insulation products for building equipment
and industrial installations - Factory made cellular glass
(CG) products - Specification

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN 14305:2015 sisaldab Euroopa standardi EN 14305:2015 ingliskeelset teksti.	This Estonian standard EVS-EN 14305:2015 consists of the English text of the European standard EN 14305:2015.
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EUROPEAN STANDARD

EN 14305

NORME EUROPÉENNE

EUROPÄISCHE NORM

December 2015

ICS 91.100.60

Supersedes EN 14305:2009+A1:2013

English Version

**Thermal insulation products for building equipment and
industrial installations - Factory made cellular glass (CG)
products - Specification**

Produits isolants thermiques pour l'équipement du
bâtiment et les installations industrielles - Produits
manufacturés en verre cellulaire (CG) - Spécification

Wärmedämmstoffe für die technische
Gebäudeausrüstung und für betriebstechnische
Anlagen in der Industrie - Werkmäßig hergestellte
Produkte aus Schaumglas (CG) - Spezifikation

This European Standard was approved by CEN on 24 October 2015.

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COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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European foreword

This document (EN 14305:2015) 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of an identical text or by endorsement, at the latest by June 2016, and conflicting national standards shall be withdrawn at the latest by September 2017.

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 supersedes EN 14305:2009+A1:2013.

This document is identifying those clauses of the standard which are needed for the compliance of the European Standard with the Construction Products Regulation (CPR).

The main technical changes that have been made in this new edition of EN 14305 are the following:

- a) an addition to the foreword;
- b) an addition in 3.2.2;
- c) a new 4.3.14;
- d) modification of 5.3.2;
- e) modification of Clause 7;
- f) modification of Clause 8;
- g) modification of Annex A;
- h) a new Annex ZA.

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 Regulation (EU) No. 305/2011.

For relationship with Regulation (EU) No. 305/2011, 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 harmonized 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 four annexes:

- Annex A (normative), Factory production control;
- Annex B (informative), Determination of minimum service temperature;
- Annex C (informative), Additional properties;

- Annex D (informative), Preparation of the flat test specimens to measure thermal conductivity;
- Annex ZA (informative), Clauses of this European Standard addressing the provisions of the EU Construction Products Regulation.

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.

In pursuance of Resolution BT 20/1993 revised, CEN/TC 88 have proposed defining the standards listed below as a European package of standards, setting 21 months after availability as the date of withdrawal (dow) of national standards which conflict with the European Standards of this package.

The package of standards comprises 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*

EN 15501, *Thermal insulation products for building equipment and industrial installations — Factory made expanded perlite (EP) and exfoliated vermiculite (EV) products — Specification*

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, 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.

1 Scope

This European Standard specifies the requirements for factory made cellular glass products which are used for the thermal insulation of building equipment and industrial installations with an operating temperature range of approximately - 265 °C to + 430 °C.

Below an operating temperature of - 50 °C, special tests regarding the suitability of the product in the intended application are advised (e.g. liquefaction of oxygen). Manufacturer's advice should be heeded in all cases.

The products are manufactured in the form of faced or unfaced boards, pipe sections, segments and prefabricated ware.

This European Standard describes product characteristics and includes procedures for testing, evaluation of conformity, marking and labelling.

Products covered by this standard are also used in prefabricated thermal insulation systems and composite panels; the performance of systems incorporating these products is not covered.

This European Standard does not specify the required level of a given property that should be achieved by a product to demonstrate fitness for purpose in a particular application. The levels required for a given application can be found in regulations and invitations to tender.

Products with a declared thermal conductivity greater than 0,065 W/(m·K) at 10 °C are not covered by this standard.

This European Standard does not cover products for the insulation of the building structure.

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 822, *Thermal insulating products for building applications - Determination of length and width*

EN 823, *Thermal insulating products for building applications - Determination of thickness*

EN 824, *Thermal insulating products for building applications - Determination of squareness*

EN 825, *Thermal insulating products for building applications - Determination of flatness*

EN 826:2013, *Thermal insulating products for building applications - Determination of compression behaviour*

EN 1604, *Thermal insulating products for building applications - Determination of dimensional stability under specified temperature and humidity conditions*

EN 1606, *Thermal insulating products for building applications - Determination of compressive creep*

EN 1607, *Thermal insulating products for building applications - Determination of tensile strength perpendicular to faces*

EN 1608, *Thermal insulating products for building applications - Determination of tensile strength parallel to faces*

EN 1609, *Thermal insulating products for building applications - Determination of short term water absorption by partial immersion*

- EN 12085, *Thermal insulating products for building applications - Determination of linear dimensions of test specimens*
- EN 12086:2013, *Thermal insulating products for building applications - Determination of water vapour transmission properties*
- EN 12087, *Thermal insulating products for building applications - Determination of long term water absorption by immersion*
- EN 12089, *Thermal insulating products for building applications - Determination of bending behaviour*
- EN 12430, *Thermal insulating products for building applications - Determination of behaviour under point load*
- EN 12667, *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 12939, *Thermal performance of building materials and products - Determination of thermal resistance by means of guarded hot plate and heat flow meter methods - Thick products of high and medium thermal resistance*
- EN 13172:2012, *Thermal insulation products - Evaluation of conformity*
- EN 13467, *Thermal insulating products for building equipment and industrial installations - Determination of dimensions, squareness and linearity of preformed pipe insulation*
- EN 13468, *Thermal insulating products for building equipment and industrial installations - Determination of trace quantities of water soluble chloride, fluoride, silicate, sodium ions and pH*
- EN 13472, *Thermal insulating products for building equipment and industrial installations - Determination of short term water absorption by partial immersion of preformed pipe insulation*
- EN 13501-1:2007+A1:2009, *Fire classification of construction products and building elements - Part 1: Classification using data from reaction to fire tests*
- EN 13820, *Thermal insulating materials for building applications - Determination of organic content*
- EN 13823, *Reaction to fire tests for building products — Building products excluding floorings exposed to the thermal attack by a single burning item*
- EN 14706, *Thermal insulating products for building equipment and industrial installations - Determination of maximum service temperature*
- EN 14707, *Thermal insulating products for building equipment and industrial installations - Determination of maximum service temperature for preformed pipe insulation*
- EN 15715:2009, *Thermal insulation products - Instructions for mounting and fixing for reaction to fire testing - Factory made products*
- EN ISO 354, *Acoustics - Measurement of sound absorption in a reverberation room (ISO 354:2003)*
- EN ISO 1182, *Reaction to fire tests for products - Non-combustibility test (ISO 1182:2010)*

EN ISO 1716, *Reaction to fire tests for products - Determination of the gross heat of combustion (calorific value) (ISO 1716)*

EN ISO 8497, *Thermal insulation - Determination of steady-state thermal transmission properties of thermal insulation for circular pipes (ISO 8497)*

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

EN ISO 11654, *Acoustics - Sound absorbers for use in buildings - Rating of sound absorption (ISO 11654)*

EN ISO 11925-2, *Reaction to fire tests - Ignitability of products subjected to direct impingement of flame - Part 2: Single-flame source test (ISO 11925-2)*

EN ISO 13787, *Thermal insulation products for building equipment and industrial installations - Determination of declared thermal conductivity (ISO 13787)*

ISO 7884-7, *Glass — Viscosity and viscometric fixed points — Part 7: Determination of annealing point and strain point by beam bending*

3 Terms and definitions

3.1 Terms and definitions

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

3.1.1 Terms and definitions as given in EN ISO 9229:2007

For the purposes of this document, most of the terms and definitions given in EN ISO 9229:2007 apply.

3.1.1.1

cellular glass

rigid insulation material made from expanded glass with a closed-cell structure

3.1.1.2

faced cellular glass board

board of cellular glass with facing(s) with a maximum of 3 mm on one or two faces which may be roofing felt or metal foil or paper, cardboard, plastic foil, rendering or similar materials

Note 1 to entry: The core may consist of either one board, a part of a board or a number of boards bonded edge to edge in the factory, with an appropriate adhesive.

Note 2 to entry: Bitumen is a suitable adhesive which may be used to bond both the joints and the facings. Of course there are alternative adhesives available depending the end use.

3.1.1.3

board

slab

(insulation) rigid or semi-rigid product of rectangular shape and cross section in which the thickness is uniform and substantially smaller than the other dimensions

Note 1 to entry: Boards are usually thinner than slabs. They may also be supplied in tapered form.