

Contents

Page

| | |
|---------------------------------------------------------------------------------------------------------------------------------|----|
| European foreword..... | 3 |
| 1 Scope | 4 |
| 2 Normative references | 4 |
| 3 Terms and definitions, symbols, units and abbreviated terms | 6 |
| 3.1 Terms and definitions | 6 |
| 3.2 Symbols and abbreviated terms | 7 |
| 4 Characteristics | 10 |
| 4.1 Reaction to fire | 10 |
| 4.2 Propensity to undergo continuous smouldering | 10 |
| 4.3 Release of VOCs | 11 |
| 4.4 Compressive strength | 11 |
| 4.5 Tensile/flexural strength | 11 |
| 4.6 Thermal resistance | 12 |
| 4.7 Durability aspects | 12 |
| 5 Assessment methods | 13 |
| 5.1 General | 13 |
| 5.2 Test methods | 14 |
| 6 Assessment and verification of constancy of performance - AVCP | 21 |
| 6.1 General | 21 |
| 6.2 Assessment of performance | 21 |
| 6.3 Verification of constancy of performance | 23 |
| Annex A (normative) Determination of the expressed values of thermal resistance and thermal conductivity | 25 |
| Annex B (normative) Factory production control (FPC) | 27 |
| Annex C (normative) Determination of the aged values of thermal resistance and thermal conductivity including edge effect | 30 |
| Annex D (normative) Measurement of $p_{1/2}$ of core materials | 40 |
| Annex E (normative) Barrier performance of the envelope | 42 |
| Annex F (normative) Determination of desiccant service life time | 44 |
| Annex G (normative) Measurement of inner pressure | 46 |
| Annex H (normative) Mounting and fixing procedure for reaction to fire tests | 53 |
| Annex ZA (informative) Relationship of this European Standard with Regulation (EU) No.305/2011 | 58 |
| Bibliography | 62 |

European foreword

This document (EN 17140:2020) 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of an identical text or by endorsement, at the latest by April 2021, and conflicting national standards shall be withdrawn at the latest by July 2022.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

This document has been prepared under a standardization request given to CEN by the European Commission and the European Free Trade Association.

For relationship with (EU) Regulation 305/2011, see informative Annex ZA, which is an integral part of this document.

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, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

1 Scope

This document specifies characteristics of factory-made vacuum insulation panels (VIP) intended to be used for the thermal insulation of buildings.

This document is applicable for all types of factory-made vacuum insulation panels (VIP), independent of the core material (see 3.1.10) or type of envelope (see 3.1.11).

This document is applicable for factory-made vacuum insulation panels (VIP) with or without desiccants (see 3.1.12) and with and without evacuation valve (3.1.14).

The products covered by this document can be used in roofs, walls, ceilings and floors.

This document specifies procedures for assessment and verification of constancy of performance (AVCP) of characteristics of factory-made vacuum insulation panels (VIP).

This document does not cover products:

- intended to be used for the thermal insulation of building equipment and industrial installations;
- intended to be used for civil engineering works;
- intended to be used as perimeter or foundation;
- with a thermal resistance R_D lower than $0,5 \text{ m}^2 \cdot \text{K/W}$;
- that contain getters (3.1.13);
- that have protective layers (3.1.9).

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 822:2013, *Thermal insulating products for building applications — Determination of length and width*

EN 823:2013, *Thermal insulating products for building applications — Determination of thickness*

EN 824:2013, *Thermal insulating products for building applications — Determination of squareness*

EN 825:2013, *Thermal insulating products for building applications — Determination of flatness*

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

EN 1604:2013, *Thermal insulating products for building applications — Determination of dimensional stability under specified temperature and humidity conditions*

EN 1605:2013, *Thermal insulating products for building applications — Determination of deformation under specified compressive load and temperature conditions*

EN 1606:2013, *Thermal insulating products for building applications — Determination of compressive creep*

EN 1607:2013, *Thermal insulating products for building applications — Determination of tensile strength perpendicular to faces*