BRITISH STANDARD

BS EN 15715:2009

Thermal insulation products — Instructions for mounting and fixing for reaction to fire testing — Factory made products

ICS 13.220.50; 91.100.60

BSI
British Standards

National foreword

This British Standard is the UK implementation of EN 15715:2009.

The UK participation in its preparation was entrusted to Technical Committee B/540, Energy performance of materials components and buildings.

A list of organizations represented on this committee can be obtained on request to its secretary.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

Compliance with a British Standard cannot confer immunity from legal obligations.

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Thermal insulation products - Instructions for mounting and fixing for reaction to fire testing - Factory made products

Produits isolants thermiques - Instructions de montage et de fixations pour l'essai de réaction au feu - Produits isolants thermiques manufacturés

Wärmedämmstoffe - Einbau- und Befestigungsbedingungen für die Prüfung des Brandverhaltens - Werkmäßig hergestellte Wärmedämmstoffe

This European Standard was approved by CEN on 29 September 2009.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

Management Centre: Avenue Marnix 17, B-1000 Brussels

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Foreword

This document (EN 15715:2009) 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of an identical text or by endorsement, at the latest by May 2010, and conflicting national standards shall be withdrawn at the latest by August 2011.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 89/106/EEC.

For relationship with EU Directive 89/106/EEC, see informative Annex ZA, which is an integral part of this document.

In pursuance of the mandate M/103 given to CEN by the European Commission and the European Free Trade Association, CEN/TC 88 had prepared a package of European Standards which was published in 2001. The aspect of instructions for mounting and fixing for reaction to fire testing not treated at that time is now being dealt within this European Standard.

This European Standard supports a series of product standards for thermal insulating materials and products which derive from the Council Directive of 21 December 1988 on the approximation of laws, regulations and administrative provisions of the Member States relating to construction products (Directive 89/106/EEC) through the consideration of the essential requirements.

This European Standard provides instructions for mounting and fixing for reaction to fire testing procedure for factory made thermal insulation products in building, building equipment and industrial installations.

CEN/TC 88 have proposed to set the date of withdrawal (dow) of national standards which conflict with this European Standard 21 months after availability.

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, 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.

The moment this European Standard will have passed the CEN Formal Vote, subsequent alignments will have to be included in the relevant standards EN 13162 to EN 13171 as amendment:

Clause	Title	Alignment
4.2.xx[a)]	Reaction to fire	Addition to Title: of the product as placed on the market New text: Reaction to fire classification of the product, as placed on the market, shall be determined in accordance with EN 13501-1 and the basic Mounting and Fixing rules given in EN 15715:2009. NOTE 1 This classification is compulsory and always included in the CE Marking label. Detailed information about the test conditions and the field of application of the classification as stated in the reaction to fire classification report shall be given in the manufacturer's literature. Manufacturers declaring Euroclass A1 without further test shall demonstrate by testing in accordance with EN 13820 that the products do not contain more than 1,0 % by weight of organic matter. NOTE 2 The commission decision 96/603/EC of 4 October 1996 amended by the commission Decision 00/605/EC of 26 September 2000 gives the list of products to be considered as reaction to fire class Euroclass A1 without the need for testing.
4.3.xx [a)]		New Clause Title: Reaction to fire of product in standardized assemblies simulating end-use applications. Text: Reaction to fire classification of products in standardized assemblies simulating end-use applications excluding pipe insulation, shall be determined in accordance with EN 13501-1 and the basic Mounting and Fixing rules given in EN 15715:2009. This classification offers the opportunity to give a complementary and optional declaration on reaction to fire for standard test configurations of assemblies which include the insulation product. The number of the selected test configuration of assembly (Table 5 of EN 15715:2009) which is used in the test shall be quoted with the Euroclass. Detailed information about the test conditions and the field of application of the classification as stated in the reaction to fire classification report shall be given in the manufacturer's literature.
5., Table 7	Test methods, Table 7.	4.2xx[a)] Add: Under "specific conditions", column 5, "See Clause 5 of EN 15715:2009" Add: 4.3.xx Across columns 2, 3 and 4 add: see EN 13501-1 column 5 add see Clause 6 of EN 15715:2009.

Clause	Title	Alignment
8.	Marking and Labelling	Replace Clause 8 by: Products conforming to this standard shall be marked clearly, either on the product or on the label or on the packaging, with the following information: — product name or other identifying characteristic; — name or identifying mark of the manufacturer or his authorised representative; — address of the manufacturer or his authorised representative; — shift or time of production or traceability code; — reaction to fire class of the product as placed on the market. This classification shall be identified with the designation "product" after the classification. If tests on standardised assemblies have been performed according to Clause 6 of EN 15715:2009, then the reaction to fire classification shall be added and identified with the designation "standardised assembly no. x" after the classification. This information shall be kept distinct from the CE marking. The number of the standardised assembly is taken from Table 5 of EN 15715:2009. Reference to manufacturer's literature (ML) for further information: — declared thermal resistance; — declared thermal conductivity; — nominal thickness; — designation code as given in Clause 6; — nominal length; — nominal width; — type of facing, if any; — number of pieces and area in the package, as appropriate. NOTE : For CE marking and labelling see ZA.3. Any other voluntary information on the product such as: — Reaction to fire for standardised assembly No. 1, 2, 3, 4 — Voluntary marks Figure x[a)]: Example of additional voluntary information.
a) Number depends on the relevant product standard.		

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, 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.

1 Scope

This European Standard specifies instructions for mounting and fixing for reaction to fire testing of factory made thermal insulation products.

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 312 (all parts), *Particleboards — Specifications*

EN 508-1, *Roofing products from metal sheet — Specification for self-supporting products of steel, aluminium or stainless steel sheet — Part 1: Steel*

EN 520, *Gypsum plasterboards — Definitions, requirements and test methods*

EN 13172, *Thermal insulating products — Evaluation of conformity*

EN 13238, *Reaction to fire tests for building products — Conditioning procedures and general rules for selection of substrates*

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

EN 13823, *Reaction to fire tests for building products — Building products excluding floorings exposed to the thermal attack by a single burning item*

EN 13963, *Jointing materials for gypsum plasterboards — Definitions, requirements and test methods*

EN ISO 1182, *Reaction to fire tests for building products — Non-combustibility test (ISO 1182:2002)*

EN ISO 1716, *Reaction to fire tests for building products — Determination of the heat of combustion (ISO 1716:2002)*

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

EN ISO 11925-2, *Reaction to fire tests — Ignitability of building products subjected to direct impingement of flame — Part 2: single-flame source test (ISO 11925-2:2002)*

3 Terms, definitions and abbreviated terms

3.1 Terms and definitions

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

3.1.1
asymmetrical thermal insulation product
product that has no plane of symmetry in the thickness

3.1.2
installation parameter
aspect of mounting and fixing (e.g. substrate, joints, fixing method, air gap), which may vary and which may or may not have an influence on the test performance

3.1.3
pipe insulation
insulation product designed to fit around pipes

NOTE From fire respective "pipe insulation" is considered as linear product.

3.1.4
product as placed on the market
insulation product complying with the scope of this standard (product itself)

3.6
product parameter
aspect of a product (e.g. thickness, composition, density), which may vary and which may or may not have an influence on the test performance

3.2 Abbreviated terms used in this European Standard

CWFT **C**lassification **W**ithout **F**urther **T**esting

PCS **P**ouvoir **C**alorifique **S**upérieur (engl.: gross heat of combustion)

SBi **S**ingle **B**urning **i**tem

4 Principle

The reaction to fire classification (Euroclasses) shall be determined in accordance with EN 13501-1, respecting the test conditions laid down in this standard.

The classification for the product as placed on the market is without any non-integrated installation means, e.g. glues, sealants.

Thermal insulation products shall be tested in accordance with Clause 5 of this standard. This classification is compulsory and shall be included in the marking and labelling. Detailed information about the test conditions and the field of application of the classification as stated in the reaction to fire classification report shall be given in the manufacturer's literature and in the declaration of conformity.

Additional and optional reaction to fire tests of standardised assemblies simulating end-use applications, excluding pipe-insulation and which incorporate thermal insulation products, may be performed according to Clause 6 of this standard. This additional test data will allow the manufacturer the opportunity to give a complementary and optional declaration (where required) on reaction to fire for a standardised end-use application/assembly which includes the insulation product. The number of the selected test configuration of the assembly (Table 5) that is used shall be quoted with the Euroclass. Detailed information about the test conditions and the field of application of the classification as stated in the reaction to fire classification report shall be given in the manufacturer's literature. This information shall be kept distinct from the CE marking when labelling products.

NOTE 1 In respect of the standardised assemblies, it is understood that the manufacturer of the thermal insulation cannot take responsibility for the quality of the installation, neither for the way the insulation is installed.

NOTE 2 For pipe insulation, especially since the variety of end-uses, no standardised assemblies have been defined. Instructions for mounting and fixing of test specimens.

5 Instructions for mounting and fixing of test specimens

5.1 General

This clause gives instructions for mounting and fixing for reaction to fire testing of thermal insulation products as placed on the market (product itself) and includes the field of application of the test results in 5.4.

This subclause is related to 4.2 in the main body of the product standards, e.g. EN 13162 or EN 14303.

5.2 Product and installation parameters

Tables 1 and 2 give the parameters that have to be taken into account when determining a product's reaction to fire performance and the field of application of the test results. The following tables are valid for both, flat products and pipe insulation.

NOTE 1 Ageing or washing procedures are Not applicable for the test specimens.

NOTE 2 Prefabricated shapes, e.g. elbows, T-pieces shall be deemed to have the same fire classification as tested products of the same product group.

Table 1 — Product parameters

Product Parameters	EN ISO 1182 (class A1 and A2)	EN ISO 1716 (class A1 and A2)	EN 13823 (class A1 to D)	EN ISO 11925-2 (class B to E)
All products				
Thickness	—	—	X	**X**
Density	X	—	X	**X**
Type of product	X	X	X	**X**
Additional properties for faced and/or coated thermal insulation products				
Type of facing(s) or coating(s)	—	X	X	**X**
Thickness/area weight of facing(s) or coating(s)	—	X	X	**X**
Type and amount of adhesive for facing(s) or coating(s)	—	X	X	**X**
Asymmetry	**—**	**—**	**X**	**X**

Table 2 — Installation parameters

Parameter	EN 13823 (class A1 to D)	EN/ISO 11925-2 (class B to E)
Exposure to thermal attack	X	**X**
Substrate	X	**—**
Air gaps / Cavities	X	**—**
Joints/edges	X	**X**[a)]
Size and positioning of test specimen	X	**—**
Product orientation and geometry	X	**X**
Fixing of test specimen	X	**—**
a) For pipe insulation only		

5.3 Mounting and fixing

5.3.1 Ignitability, EN ISO 11925-2 Exposure to thermal attack

The product shall be tested directly exposed to the thermal attack.

Both surface and edge shall be exposed to the flame. If a product is produced with closed edges, the closed edge shall be exposed to the flame.

5.3.1.1 Substrate

The test specimen, cut from the product samples including their facings and/or coatings, shall be mounted in the test apparatus without a substrate.

5.3.1.2 Product orientation and geometry

Homogeneous products and products with the same facing or coating on both sides shall be tested on one face only.

If the product surfaces are not the same or the product is asymmetrical, two options are open for declaration:

— either the worse test result will be used to declare the reaction to fire class of the product (valid for both faces exposed); or

— a declaration of the reaction to fire class of each face is made, provided that the identification of the faces is clearly visible in the marking and labelling of the product.

In case of a Euroclass F declaration for one of the faces, no test needs be performed on that face.

5.3.2 Single Burning Item (SBI), EN 13823

5.3.2.1 Exposure to thermal attack

The product shall be tested directly exposed to the thermal attack.

5.3.2.2 Substrate

The type of the substrate is defined in EN 13238.

The general substrate to be used to test the product as placed on the market is made of calcium silicate. For pipe sections steel pipes are used as standard substrate (see 5.3.2.8.2).

For Euroclass A1 classification a calcium silicate substrate is compulsory.

Gypsum plaster board, steel, and wooden particle board substrates such as defined in EN 13238 are permitted to be used instead.

The test conditions and limit to the applicability of the classification shall be given in the declaration of conformity, in the classification report and in the manufacturer's technical literature.

5.3.2.3 Air gaps/cavities

The test specimen (product itself) shall be mounted in the test apparatus without an air gap/cavity (neither between the product and substrate nor between substrate and backing board).

5.3.2.4 Joints/ edges

The general test shall be done with one vertical and one horizontal joint in the long wing. Alternatively, testing can be done either with a horizontal or a vertical joint. Positioning of the joints shall be in accordance with EN 13823. Testing with a vertical and a horizontal joint in the same test reflects a worst case situation and gives the widest field of application.

Test specimens taken from product samples that are small shall be arranged in the test apparatus such that the joints required by EN 13823 are in the correct places. Other joints, resulting from the product size, may also be present. All joints (in the corner and at the long wing) shall be installed without a flashing or a sealant and tightly closed.

Products shall be mounted with the edges as existing; results from testing with butt edges are valid for all types of edges.

If a horizontal or vertical joint is used, the test conditions and field of application of the classification shall be given in the declaration/certification of conformity, in the classification report and in the manufacturer's technical literature.

5.3.2.5 Size and positioning of the test specimen

The size of the test specimens is given in EN 13823. The test specimens shall be cut from the product sample including its facings or coatings. Positioning of the test specimens shall meet the following conditions:

— 5.3.2.4 shall be taken into account;

— products having larger dimensions than the SBI test specimens shall be cut to size;

— products having smaller dimensions than the SBI test specimen shall be mounted in such a way that installation of full size products is started at the bottom corner line between both wings and joints;

— the specimens installed on the short wing shall cover (on their thickness) those installed at the long wing with a butt joint, see Figure 1;

— the maximum thickness of the test specimen including the substrate that can be installed in the SBI is 200 mm.

5.3.2.6 Product orientation and geometry

Homogeneous products and products with the same facing or coating on both sides shall be tested on one face only.

If the product surfaces are not the same or the product is asymmetrical, two options are open for declaration:

— either the worse test result will be used to declare the reaction to fire class of the product (valid for both faces exposed); or

— a declaration of the reaction to fire class of each face is made, provided that the identification of the faces is clearly visible in the marking and labelling of the product.

In case of a Euroclass F declaration for one of the faces, no test needs to be performed on that face.

5.3.2.7 Fixing of flat test specimens

The factory made product shall be fixed to the substrate using screws and washers (see Figures 2 and 3) and the following rules shall be respected:

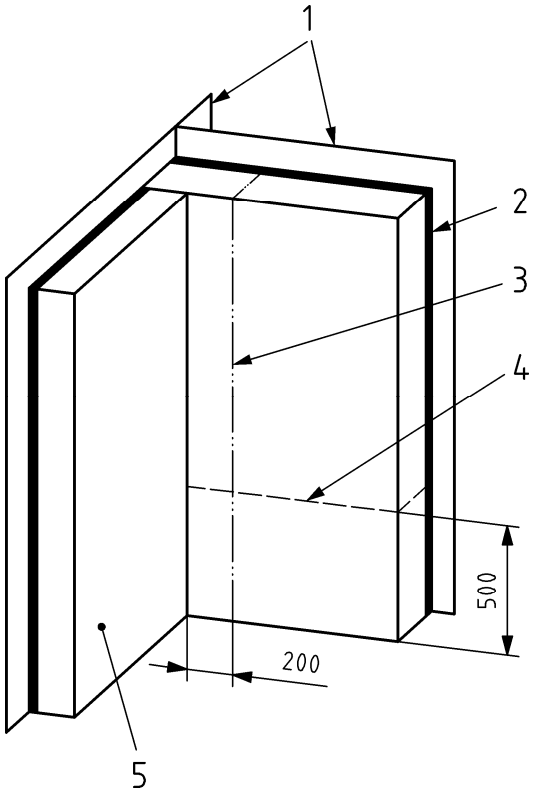
— the minimum fixing distance from any edge is 25 mm;

— position and number of fasteners shall be chosen to achieve sufficient stabilisation;

— the fastener is composed of a screw having a diameter of 2,5 mm to 5 mm, and a washer, with thickness up to 1,2 mm, if necessary to avoid any damage of the specimen having a diameter of 20 mm to 70 mm;

— no fixing shall be positioned below the U profile in the EN 13823 (SBI) test apparatus.

Dimensions in mm



Key:

1 Backing Board
2 Substrate
3 Vertical joint
4 Horizontal joint
5 Product

Figure 1 — Installation of specimen according to EN 13823

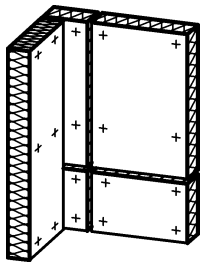


Figure 2 — Principle of positioning of minimum mechanical fixings

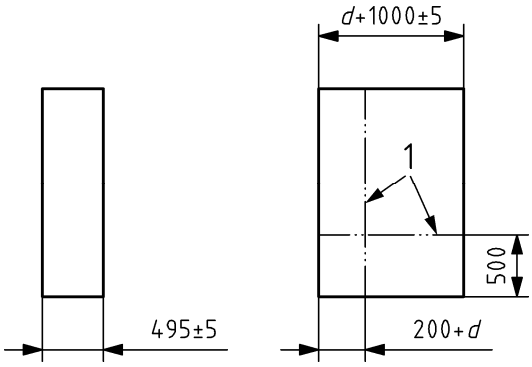


Figure 3 — Joint arrangement for a product tested uncovered (front view)

5.3.2.8 Fixing of pipe insulation test specimens

5.3.2.8.1 Dimensions of specimens

Products that can be tested in the SBI are pipe insulation with an inside diameter of 22 mm and a thickness of 25 mm to 75 mm. Each individual thickness in that range 25 mm to 75 mm may be tested and classified if desired.

The test data for 25 mm thickness is also valid for smaller thicknesses.

The following principles apply:

1) The product shall always be tested at 25 mm thickness, or at the nearest available greater thickness. Products only available at thicknesses below 25 mm shall be tested multi-layered to reach or exceed 25 mm.

2) For product thicknesses larger than 25 mm but smaller than 50 mm: The actual maximum thickness shall also be tested. The worst case results apply for all product thicknesses up to the maximum tested. This means that two thicknesses are tested.

3) For product thicknesses larger than 50 mm and up to 75 mm: The maximum thickness and the dimension closest to 50 mm shall also be tested. The worst case results apply for all product thicknesses up to the maximum tested. This means that three thicknesses are tested.

4) For product thicknesses larger than 75 mm: as 3), but the maximum thickness tested is 75 mm.

Test data on pipe-insulation with a bore of 22 mm is deemed to cover all other bores. Test data on pipe-insulation with a thickness of 75 mm is deemed to cover products of larger thickness.

Pipe-insulation and insulation for cylindrical ducts with an outer diameter larger than 300 mm and insulation products intended to be used on flat surfaces shall be tested as flat specimens.

If the pipe insulation is produced in a length greater than 1 500 mm the specimens shall be cut to a length of 1 500 mm. If the pipe insulation is produced in length shorter than 1 500 mm the specimens shall be combined to give a length of 1 500 mm each. The pipe insulation on the long wing in the SBI test shall have a joint at a height of 500 mm.

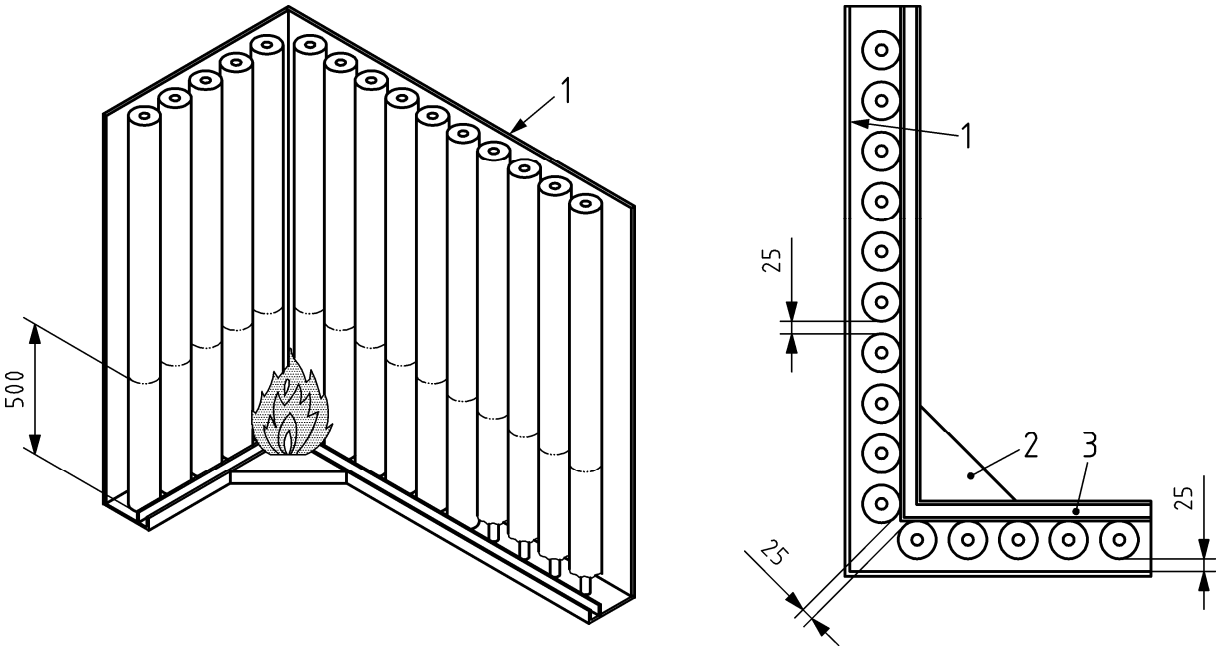
5.3.2.8.2 Mounting of test specimen

Pipe insulation shall be mounted on steel pipes. The steel pipes shall have an outside diameter of 21,3 mm and a wall thickness of 2,5 mm to 2,6 mm.

NOTE Steel pipes produced according to ISO 65.

The steel pipes shall have a length of 1 500 mm and be mounted vertically in the SBI trolley. The steel pipes shall be closed at one end to prevent convection, but for safety reasons care should be taken not to seal the pipe completely. The pipes shall be mounted in such a way that there is a gap of 25 mm between the outside pipe insulation surfaces of the adjacent pipe and between the outside insulation surface and the backing board. As many pipes as possible shall be mounted on each wing in the SBI. For the insulation thickness of 25 mm the number of pipes is five on the short wing and ten on the long wing. For the insulation thickness of 50 mm the number of pipes is three on the short wing and six on the long wing; for the insulation thickness of 75 mm the number of pipes is two on the short wing and five on the long wing. The steel pipes shall be mounted in such a way that their position is fixed for the duration of the test. Figure 4 shows a schematic drawing of the mounting in the SBI.

Dimensions in mm



a) Front view

b) Top view

Key:

1 Backing board
2 Burner
3 U-profile

Figure 4 — Schematic drawings of the mounting of the test specimens in the SBI in the case of 25 mm insulation thickness

5.3.2.8.3 Facing/coating

Faced/coated products shall be tested including any factory applied facing/coating.

5.3.2.8.4 Backing board

The backing board shall be positioned behind the test specimens at a distance of 25 mm from the outside surface of the specimen.

5.3.2.8.5 Fixing of the pipe insulation on the steel pipes

Pipe insulation, shall be mounted in the SBI test without any fixings, except where the products may be able to slide down during the test. These types of products shall be fixed at the top of each specimen using steel wire.

Pipe insulation of which the joints are adhered in end-use shall be mounted with adhered joints, faced to the burner in the SBI test.

Pipe insulation with mechanically held longitudinal joints shall be arranged with one joint on each pipe facing the burner

5.4 Validity of test results for product groups (Field of application)

The manufacturer is responsible for the grouping of his products according to EN 13172, the relevant product standard, and this standard.

The validity of the test result for a product group is determined by the product and installation parameters with the requirements given in Annex A.

Ancillaries used on site are not part of the product group and shall not be part of the test report for the reaction to fire classification.

6 Instructions for mounting and fixing of products in standardised assemblies simulating end-use application(s)

6.1 General

This subclause gives instructions for mounting and fixing for additional reaction to fire testing of standardised assemblies simulating end-use applications including the thermal insulation product and includes the field of application of the test results in 6.4.

This subclause is only relevant for flat products.

Further in this subclause the phrase “standard test configuration of assemblies” is used.

The following is related to 4.3 of the product standards, e.g. EN 13162 or EN 14303.

This subclause gives the manufacturer the opportunity to give a complementary and optional declaration on reaction to fire for a standardised end-use application/assembly including the insulation product.

The Euroclass of the product as placed on the market shall always be declared (see Clause 5).

6.2 Product and installation parameters

Tables 3 and 4 give the parameters that have to be taken into account when determining the reaction to fire performance of standard test configurations of assemblies including the thermal insulation product and the field of application of the test results.

NOTE Ageing or washing procedures are Not applicable for the test specimens.

Table 3 — Thermal insulation product parameters in standardised assemblies

Product Parameters	EN ISO 1182 (class A1 and A2)	EN ISO 1716 (class A1 and A2)	EN 13823 (class A1 to D)	EN ISO 11925-2 (class B to E)
Unfaced and uncoated products				
Thickness	—	—	X	**X**
Density	X	—	X	**X**
Type of product	X	X	X	**X**
Additional properties for faced and/or coated thermal insulation products				
Type of facing(s) or coating(s)	—	X	X	**X**
Thickness/ area weight of facing(s) or coating(s)	—	X	X	**X**
Type and amount of adhesive for facing(s) or coating(s)	—	X	X	**X**
Asymmetry	**—**	**—**	**X**	**X**

Table 4 — Installation parameters of standardised assemblies

Installation parameter	EN 13823	EN ISO 11925-2
Exposure to thermal attack	X	**X**
Standardised surface products	X	**—**
Substrate	X	**—**
Air gaps / Cavities	X	**—**
Joints/edges of the insulation product	X	**—**
Joints/edges of the surface product	X	**—**
Size and positioning of the insulation product	X	**—**
Product orientation and geometry	X	**X**
Fixing of the insulation product to the substrate	X	**—**
Fixing of the insulation product to the surface product	**X**	**—**

6.3 Mounting and fixing

6.3.1 Ignitability, EN ISO 11925-2

6.3.1.1 Exposure to thermal attack

If in end-use application conditions the insulation product is not directly exposed to thermal attack, it does not need to be tested. The test method in EN ISO 11925-2 is only applicable to the standard test configuration of assembly number 1 in Table 5. In this case, the product shall be tested directly exposed to the thermal attack and without substrate.

If in the end-use application direct flame attack on the edge will not occur, the product shall be tested with surface flame only.

If edges are exposed under end-use application conditions, both surface and edge flame attack are applied.

If a product is produced with closed edges, the edge exposure shall be applied to the closed edge.

6.3.1.2 Substrate

The test specimens shall be cut from the product samples including their facings and/or coatings and shall be mounted in the test apparatus without a substrate.

6.3.1.3 Product orientation and geometry

Homogeneous products and products with the same facing or coating on both sides shall be tested on one face only.

If the product surfaces are not the same, two options are open for the declaration:

— either the worse test result will be used to declare the reaction to fire class of the product (valid for both faces exposed); or

— a declaration of the reaction to fire class of each face is made, provided that the identification of the faces is clearly visible in the marking and labelling of the product.

If only one face is exposed to fire in the end-use application only that exposed face shall be tested.

In the case of a Euroclass F declaration for one of the faces, no test needs to be performed on that face.

6.3.2 Single Burning Item (SBI) (EN 13823)

6.3.2.1 Exposure to thermal attack

Most thermal insulation products will be incorporated into an assembled building system (end-use application) and the thermal insulation product is not directly exposed to a heat or fire source. In the case of a standard test configuration of assemblies where the thermal insulation product is directly exposed to a heat or fire source, the standard test configuration of assembly number 1 in Table 5 shall be followed.

When the product is not directly exposed in end-use application, another product immediately in front shall be applied so as to simulate the performance of the combination of these products in their end-use application. This product in front is designated as the surface product. Standardised surface products, such as particleboard, steel sheet and plasterboard shall be used (see 6.3.2.2).

Table 5 — Standard test configurations of standardised assemblies

Number	Substrate (see 6.3.2.3)	Air gap between substrate and insulation product	Insulation product	Surface product (see 6.3.2.2)
1	Plasterboard	Yes, 40 mm	X	**None**
2	Plasterboard	No	X	**Plasterboard**
3	None	Yes, 40 mm[a]	X	**Corrugated steel**
4	**Particle board**	**No**	**X**	**Particle board**
[a] Air gap between backing board and insulation product.				

6.3.2.2 Surface products

When testing the assemblies given in Table 5 the following products shall be used as surface products:

— Paper faced gypsum plaster board according to EN 520 with a thickness of 9,5 mm, density 600 kg/m^3 and a paper grammage of not more than 220 g/m^2 (CWFT Euroclass A2);

— Particleboard non-fire retardant treated according to type P1 of EN 312 with a thickness of 9 mm to 10 mm and a density of (650 +/- 50) kg/m^3 (CWFT Euroclass D);

— Steel sheet with polyester coating (if any) according to EN 508-1 with corrugated profile of 30 mm to 40 mm depth and 200 mm to 210 mm pitch and a thickness of (0,75 ± 0,1) mm (CWFT Euroclass A1). The maximum nominal thickness of polyester coating on the exposed face shall be 25 µm with a maximum mass/ unit area of 70 g/m² and with a maximum PCS of 1,0 MJ/m². On the non exposed face the maximum nominal thickness shall be 15 µm with a maximum PCS of 1,0 MJ/m².

6.3.2.3 Substrate

Test specimens are tested using the standard mounting (cf. EN 13238 and EN 13823) with paper-faced plasterboard representing all end-use non-wood based substrates and non-fire retardant-treated particleboard representing all end-use wood based substrates.

The test conditions and field of application of the classification shall be given in the declaration of conformity, in the classification report and in the manufacturer's technical literature.

6.3.2.4 Air gaps/cavities

There shall be no air gap between a surface product and the thermal insulation product.

The presence of an air gap between the thermal insulation product and the substrate may have an influence on the reaction to fire classification.

If in the end-use application an air gap is used, then an air gap of 40 mm shall be left between the thermal insulation product and the substrate. The air gap shall be ventilated.

No air gap needs to be left behind the thermal insulation product, if the thermal insulation product is tested behind a surface product of plasterboard or particle board (see Table 5).

6.3.2.5 Joints/edges of the thermal insulation product

If the thermal insulation product is tested without surface product, the rules given in 5.3.2.4. shall be followed (see Figure 1).

If the thermal insulation product is positioned behind a surface product for testing, joints in the thermal insulation product are considered not to be relevant for the reaction to fire of the standard test configuration of assemblies including the thermal insulation product. There is no need for joints in the thermal insulation product in accordance with EN 13823.

For square edged products, the joints shall be butted. In case the thermal insulation product has profiled edges, the joints of any facings shall be butted. No sealant shall be included in the joints.

The butt corner joint shall not be covered with a flashing or a sealant.

6.3.2.6 Joints in surface products

Surface products shall be mounted with the edges as delivered. Results from testing with butt edges are valid for all type of edges.

Joints in surface products shall be treated as follows:

a) Paper-faced plasterboards and wooden particle boards used as surface products (Table 5 assembled systems 2 and 4) shall be installed with a vertical and a horizontal joint in the long wing; positioning of the joints shall be in accordance with EN 13823.

   Testing with a vertical and a horizontal joint in the same test reflects a worst case situation and gives the widest field of application.

   For wooden particle boards all joints in the corner and in the long wing shall be installed without a flashing or a sealant and tightly closed.

   For paper-faced plasterboard, all joints in the corner and in the long wing shall be paper taped as specified in EN 13963.

b) Corrugated steel surfaces shall be mounted as shown in Figure 5 with the joints and flashing in the corner as indicated.

6.3.2.7 Size and positioning of test specimens

The configuration of the test specimen shall be in accordance with Table 5.

Other size and positioning requirements are given in 5.3.2.5 and Figures 1 to 3.

6.3.2.8 Thermal insulation product orientation and geometry

Homogeneous products and products with the same facing or coating on both sides shall be tested on one face only.

Asymmetrical thermal insulation products shall be tested on the fire exposed face only according to the end-use application and the following shall be provided:

— a clear declaration of the way of installation and the face tested is given and a clear identification of the face tested is mentioned in the classification obtained;

— marking and labelling of the product (according to Clause 8 of the product standard, e.g. EN 13162 or EN 14303) takes into account the face tested.

If an asymmetrical thermal insulation product can be exposed to fire on either face (in end-use application), then it shall be tested on both faces. Two options are open for declaration in this case:

— either the worse test result will be used to declare the reaction to fire class of the product (valid for both exposed faces); or

— a declaration of the reaction to fire class of each face is made, provided that the identification of the faces is clearly visible in the marking and labelling of the product.

In the case of a Euroclass F declaration for one of the faces, no test needs to be performed on that face.

6.3.2.9 Fixing of the test specimen

6.3.2.9.1 Reporting

The test conditions and field of application of the classification shall be given in the declaration of conformity, in the classification report and in the manufacturer's technical literature.

6.3.2.9.2 Fixing of the thermal insulation product to the substrate

Fixing of the products and test specimens shall be done in accordance with the standard test configuration of the assembly.

When the thermal insulation product is fixed mechanically to the substrate, it shall be fixed using screws and washers. The fixings shall be evenly distributed on the boards (see 5.3.2.7 and Figure 2) and none of them shall be closer than 25 mm to the edge of the board.

Thermal insulation products may be tested without fixing to the substrate (large size product without joints behind surface products) or without substrate. In this case they shall be clamped, pressing the test specimens together with the surface product between the backing board and the U-profile (bottom) and the calcium silicate support (top) of the frame.

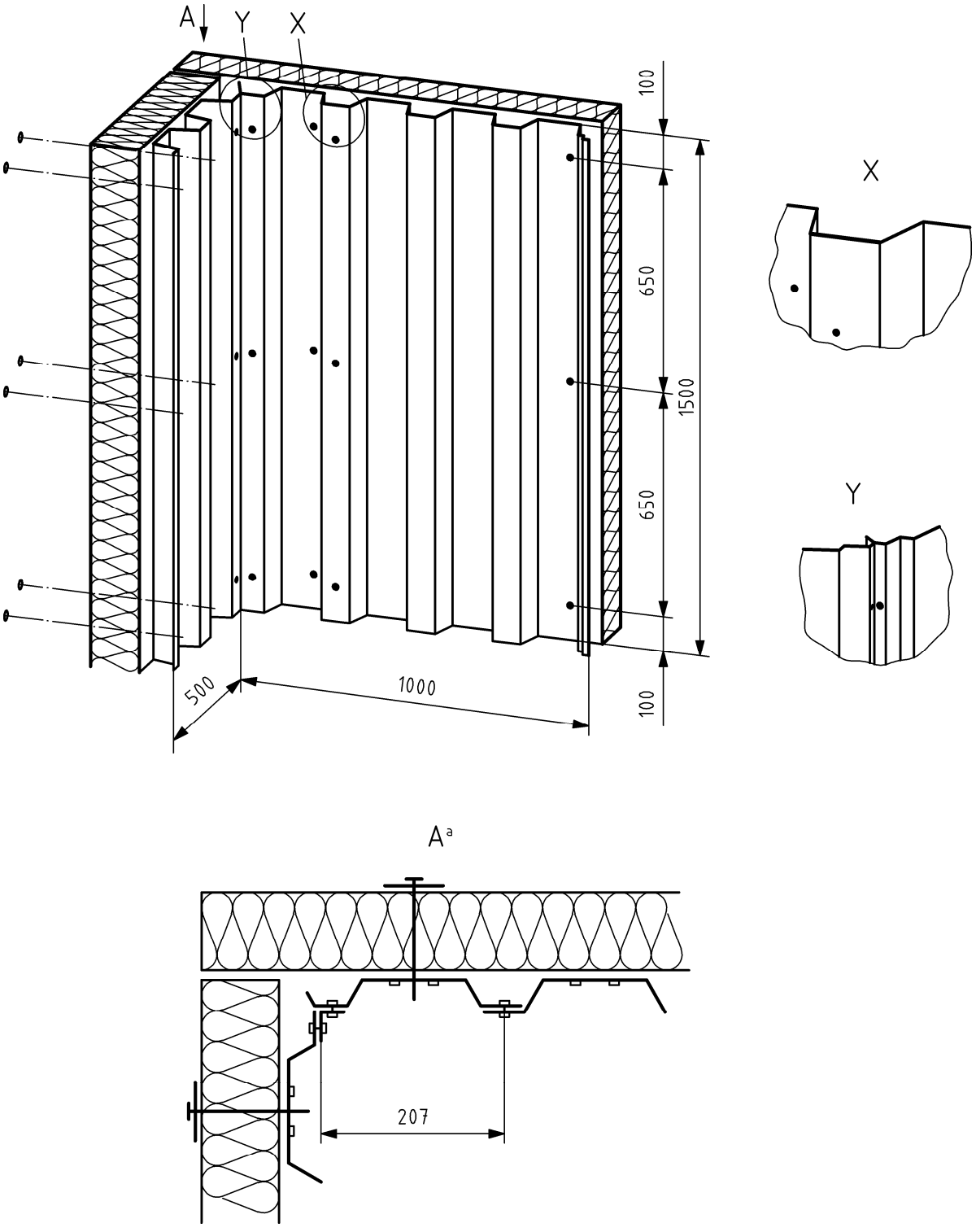
6.3.2.9.3 Fixing of the surface product to the thermal insulation product

Surface products such as the paper-faced plasterboards and the wooden particle boards shall be fixed through the thermal insulation product without air gap using screws, taking into account the position of joints in the surface products in accordance with EN 13823.

For testing with the corrugated steel sheet as surface product, fixing of the steel sheet shall be done in the configuration as given in Figure 5.

A vertical joint has to be implemented in the steel sheet in accordance with EN 13823 and fastened according to the end-use conditions, e.g. rivets or fixing screws for corrugated steel sheets.

Dimensions in mm



Key

a Perspective A illustrated to a larger scale

Figure 5 — Fixing corrugated steel sheet (New figure is being drawn)

6.4 Validity of test result for a product group (Field of application)

The manufacturer is responsible for the grouping of his products according to EN 13172, the relevant product standard and this standard.

The validity of the test results for a product group is determined by the product and the installation parameters with the requirements given in Annex A.

Ancillaries used on site are not part of the product group and shall not be part of the test report for the reaction to fire classification of the insulation product.

Annex A
(normative)
Product specific details

A.1 General

The following Tables A.1 to A.57 give product and installation parameters.

A.2 Mineral wool (MW)

Table A.1 — Product parameters for MW – flat products, when tested as placed on the market or in standard test configuration of assemblies

Product parameters	Validity of test results			
	EN ISO 1182	EN ISO 1716	EN 13823(SBI)	EN ISO 11925-2 (ignitability)
Thickness	No influence	No influence	All thicknesses of a MW product are covered as follows: For calcium silicate and plasterboard only the thickest product is tested, and for particle board substrate the maximum and the minimum thickness shall be tested and worse test result shall be used for declaration. The thickness giving the worst test result shall be determined for the declaration. If the worst test result is not known minimum and maximum thickness shall be fire tested. Test results on 180 mm thickness are also valid for higher thickness	No influence

Table A.1 *(continued)*

Product parameters	Validity of test results			
	EN ISO 1182	**EN ISO 1716**	**EN 13823(SBI)**	**EN ISO 11925-2 (Ignitability)**
Density	No influence	No influence	**All densities of a MW product are covered as follows:** **For calcium silicate and plasterboard only the highest density product is tested, and for particle board substrate the maximum and the minimum density shall be tested and worse test result shall be used for declaration** **The density giving the worst test result shall be determined for the declaration. If the worst test result is not known minimum and maximum density shall be tested.**	
Type of product	Test on the highest amount of organic content (expressed in kg/m^3) is valid for lower organic content of the same type of binder		**The test on the highest amount of organic content (expressed in kg/m³) is valid for lower organic contents**	
Type of facing(s)	Not applicable	For the tested type only	**For the tested type only.**	
Thickness/ area weight of facings	**Not applicable**	**The product with the thickest/ highest area weight of facing determines the classification. This is valid for one component facings and for multi component facings where the ratio between the components remains constant**	**For the tested thickness only. The test result obtained for A1 and A2 facings will also be valid for thicker facings of the same type**	

Table A.1 *(continued)*

Product parameters	**Validity of test results**			
	EN ISO 1182	**EN ISO 1716**	**EN 13823(SBI)**	**EN ISO 11925-2 (Ignitability)**
Type and amount of glue for facings	Not applicable	For products using the same type of facing and glue. The product with the highest amount of glue determines the classification.	**For the tested type and amount, extended to those glues where PCS is equal or lower than the PCS of the glue used in the test.**	
Asymmetry	**Not applicable**	**Not applicable**	**See 5.3.2.6**	**See 5.3.1.3**

Table A.2 — Installation parameters for MW – flat products, as placed on the market

Installation parameter	Validity of test results	
	EN 13823 (SBI)	**EN ISO 11925-2 (Ignitability**
Exposure to thermal attack	Test result is valid for product as placed on the market	**See 5.3.1.1**
Substrate	See 5.3.2.2 A test using a substrate of calcium silicate board, gypsum plaster board or particle board is also valid for a steel substrate.	**Not applicable**
Air gaps/ cavities	See 5.3.2.3	**Not applicable**
Joints / edges	When products are tested with one joint only (vertical or horizontal), then the test result is only valid for assemblies with the joint direction tested. If tested with vertical and horizontal joints, the test result is valid for all joint arrangements. When tested with butt edges the test result is valid for all edge types. If tested with any other type of edge the test result is valid for that type only.	**Not applicable**
Size and positioning of test specimen	Test valid for all product sizes	**Not applicable**
Product orientation and geometry	See 5.3.2.6	**See 5.3.1.3**
Fixing of test specimen	**The test result being obtained with a mechanical fixing is valid for the product as placed on the market. For product thickness ≥ 80mm test results with mechanical fixing are valid also for fixing with all types of glue.**	**Not applicable**

Table A.3 — Product parameters for MW – pipe insulation products, as placed on the market

Product parameters	Validity of test results			
	EN ISO 1182	**EN ISO 1716**	**EN 13823(SBI)**	**EN ISO 11925-2 (ignitability)**
Thickness	No influence	No influence	See 5.3.2.8.1	**No influence**
Density	No influence	No influence	All densities of a MW product is covered when the highest density product is tested.	**No influence**
Type of product	Test on the highest amount of organic content (expressed in kg/m^3) is valid for lower organic content of the same type of binder.		**The test on the highest amount of organic content (expressed in kg/m³) is valid for lower organic contents**	
Type of facing(s)	Not applicable	For the tested type only	**For the tested type only**	
Thickness/area weight of facings	Not applicable	The product with the thickest/highest area weight of facing determines the classification. This is valid for one component facings and for multi component facings where the ratio between the components remains constant.	**For the tested thickness only. The test result obtained for A1 and A2 facings will also be valid for thicker facings of the same type.**	
Type and amount of glue for facings	Not applicable	For products using the same type of facing and glue. The product with the highest amount of glue determines the classification.	**For the tested type and amount, extended to those glues where PCS is equal or lower than the PCS of the glue used in the test.**	
Asymmetry	**Not applicable**	**Not applicable**	**See 5.3.2.6**	**See 5.3.2.6**

Table A.4 — Installation parameters for MW – pipe insulation products, as placed on the market

Installation parameter	Validity of test results	
	EN 13823 (SBI)	**EN ISO 11925-2 (Ignitability)**
Exposure to thermal attack	Test result is valid for product as placed on the market	**See 5.3.1.1**
Substrate	See 5.3.2.8.2	**Not applicable**
Air gaps/ cavities	See 5.3.2.8.2	
Joints / edges	See 5.3.2.8.5 When tested with butt edges, the test result is valid for all edge types. If tested with any other type of edge the test result is valid for that type only.	
Size and positioning of test specimen	See 5.3.2.8.1	
Product orientation and geometry	See 5.3.2.8.2	**See 5.3.1.3**
Fixing of test specimen	**See 5.3.2.8.5**	**Not applicable**

Table A.5 — Installation parameters for MW – flat products in standard test configuration of assemblies, simulating end-use applications

Installation parameter	Validity of test results	
	EN 13823 (SBI)	**EN ISO 11925-2 (Ignitability)**
Exposure to thermal attack	**Without surface product (no. 1 of Table 5):** test result is valid for product applied without surface product(s). The classification obtained is also valid for assemblies when a covering or protecting layer having Euroclass A1 and A2 (except for an Euroclass A1 product covered by steel with organic coating, which will be Euroclass A2) is placed in front of the thermal insulation product in the end-use. **Plasterboard surface product (no. 2 of Table 5):** test results are valid for all non-combustible mineral surface products of Euroclasses A1 and A2 with equal or higher thickness and with equal or higher densities. No test is needed for MW thermal insulation products of classification Euroclass A1 and A2 (Testing for reaction to fire of products): CWFT Euroclass A2. **Corrugated steel sheet surface product (no. 3 of Table 5):** test results are valid for all steel sheets such as defined in 6.3.2.2 and for steel sheets without corrugation or with other type of corrugation and with equal or higher steel thickness. Test results are also valid for other type of organic coating of the steel sheet with equal or lower PCS value and with equal or lower thickness of the coating. No test is needed for MW thermal insulation products of classification Euroclass A1 and A2 (Testing for reaction to fire of products): CWFT Euroclass A2. **Particle board surface product (no. 4 of Table 5):** test results are valid for all types of wooden boards of Euroclasses D or higher and with equal or higher thickness and with equal and higher densities. No test is needed for MW thermal insulation products of classification Euroclass A1 and A2 (Testing for reaction to fire of products): CWFT Euroclass D.	**See 5.3.1.1**
Substrate	**Test results with steel or plasterboard surface products are valid for all substrates.** **Other test results are only valid for product applied with the substrate used in the test.** **For insulation product thickness ≥ 80 mm when tested without surface product or with steel sheet surface product and for any insulation product thickness when tested with plasterboard or particle board as surface product, test result with any substrate is valid for all types of substrate (incl. combustible types, e.g. particle board).**	**Not applicable**

Table A.5 *(continued)*

Installation parameter	Validity of test results	
	EN 13823 (SBI)	**EN ISO 11925-2 (Ignitability)**
Air gaps/ cavities	Test results are also valid for larger air gaps, if tested with an air gap. For assembly number 1 and for insulation products with a thickness of 50 mm and higher, the test results are also valid for smaller air gaps or no air gap.	**Not applicable**
Joints / edges	Test results are also valid for all assemblies without joints. When tested with butt edges, the test result is valid for all edge types If tested with any other type of edge the test result is valid for that type only.	
Size and positioning of test specimen	Test results are valid for all types of positioning and for insulation boards with larger dimensions.	
Product orientation and geometry of test specimen	See 6.3.2.8	**See 6.3.1.3**
Fixing of test specimen and surface product	**Test result using clamping is also valid for mechanical fixing.**	**Not applicable**

A.3 Expanded polystyrene (EPS)

Table A.6 — Product parameters for EPS – flat products, when tested as placed on the market or in standard test configuration of assemblies

<table>
<tr><th rowspan="2">Product parameters</th><th colspan="4">Validity of test results</th></tr>
<tr><th>EN ISO 1182</th><th>EN ISO 1716</th><th>EN 13823 (SBI)</th><th>EN ISO 11925-2 (Ignitability)</th></tr>
<tr><td>Thickness</td><td rowspan="8">Not applicable</td><td rowspan="8">Not applicable</td><td>The thickness giving the worst test result shall be determined for the declaration. If the worst test result is not known minimum and maximum thickness shall be fire tested.

Test results on 180 mm thickness are also valid for higher thicknesses.</td><td>Test results on 10 mm thickness are also representative for higher thicknesses,</td></tr>
<tr><td>Density</td><td colspan="2">The test result is valid for the tested density ± 15 %</td></tr>
<tr><td>Type of product</td><td colspan="2">For the tested type only.</td></tr>
<tr><td>Type of facing(s)</td><td colspan="2">For the tested type only.</td></tr>
<tr><td>Thickness / area weight of facing(s)</td><td colspan="2">For the tested thickness only. The test result obtained for A1 and A2 facings will also be valid for thicker facings of the same type.</td></tr>
<tr><td>Type and amount of glue for facing(s)</td><td colspan="2">For the tested type and amount, extended to those glues where PCS is equal or lower than the PCS of the glue used in the test.</td></tr>
<tr><td>Asymmetry</td><td>See 5.3.2.6</td><td>See 5.3.1.3</td></tr>
</table>

Table A.7 — Installation parameters for EPS – flat products as placed on the market

Installation parameter	Validity of test results	
	EN 13823 (SBI)	**EN ISO 11925-2 (Ignitability)**
Exposure to thermal attack	Test result is valid for product as placed on the market.	**See 5.3.1.1**
Substrate	See 5.3.2.2	**Not applicable**
Air gaps / cavities	Test results valid for product applied without air gap only; for product thickness min 80 mm and higher the test result is also valid for applications with air gap.	
Joints / edges	When products are tested with one joint only (vertical or horizontal), then the test result is only valid for assemblies with the joint direction tested. If tested with vertical and horizontal joints, the test result is valid for all joint arrangements. When tested with butt edges, the test result is valid for all edge types. If tested with any other type of edge the test result is valid for that type only.	
Size and positioning of test specimen	Test valid for all product sizes.	
Product orientation and geometry	See 5.3.2.6	**See 5.3.1.3**
Fixing of test specimen	**Test result being obtained with a mechanical fixing is valid for the product as placed on the market.**	**Not applicable**

Table A.8 — Product parameters for EPS — pipe insulation products, as placed on the market

Product parameters	Validity of test results			
	EN ISO 1182	**EN ISO 1716**	**EN 13823(SBI)**	**EN ISO 11925-2 (ignitability)**
Thickness	Not applicable	Not applicable	See 5.3.2.8.1	**Test results on 10 mm thickness are representative for the complete range of thicknesses.**
Density			**The test result is valid for the tested density ± 15 %.**	
Type of product			**For the tested type only.**	
Type of facing(s)			**For the tested type only.**	
Thickness/ area weight of facings			**For the tested thickness only. The test result obtained for A1 and A2 facings will also be valid for thicker facings of the same type.**	
Type and amount of glue for facings			**For the tested type and amount, extended to those glues where PCS is equal or lower than the PCS of the glue used in the test.**	
Asymmetry			**See 5.3.2.8.5**	**See 5.3.1.3**

Table A.9 — Installation parameters for EPS – pipe insulation products, as placed on the market

Installation parameter	Validity of test results	
	EN 13823 (SBI)	**EN ISO 11925-2 (Ignitability)**
Exposure to thermal attack	Test result only valid for product as placed on the market.	**See 5.3.1.1, but note that only one face can be exposed in use.**
Substrate	See 5.3.2.8	**Not applicable**
Air gaps/ cavities	Not applicable	
Joints / edges	See 5.3.2.8.5 When tested with butt edges, the test result is valid for all edge types. If tested with any other type of edge the test result is valid for that type only.	
Size and positioning of test specimen	See 5.3.2.8.1 The test result will be valid for insulation section of greater length.	
Product orientation and geometry	See 5.3.2.8.1	**See 5.3.1.3**
Fixing of test specimen	**See 5.3.2.8.5**	**Not applicable**

Table A.10 — Installation parameters for EPS — flat products in standard test configuration of assemblies, simulating end-use applications

Installation parameter	Validity of test results	
	EN 13823 (SBI)	**EN ISO 11925-2 (Ignitability)**
Exposure to thermal attack	**Without surface product (no. 1 of Table 5):** test result is valid for product applied without surface product(s). The classification obtained is also valid for assemblies when a covering or protecting layer having Euroclass A1 and A2 is placed in front of the thermal insulation product in the end-use. **Plasterboard surface product (no. 2 of Table 5):** test result is valid for all non-combustible mineral surface products of Euroclasses A1 and A2 with equal or higher thickness and with equal or higher densities. **Corrugated steel sheet surface product (no. 3 of Table 5):** test results are valid for all corrugated steel sheets such as defined in 6.3.2.2 and for steel sheets with a corrugation of min. 35 mm and higher and with equal or higher steel thickness. **Particle board surface product (no. 4 of Table 5):** test results are valid for all types of wooden boards of Euroclasses D or higher and with equal or higher thickness and with equal and higher densities.	See 6.3.1.1
Substrate	Test results are only valid for product applied with the substrate used in the test.	Not applicable
Air gap / cavities	Test results are also valid for larger air gaps, if tested with an air gap.	
Joints / edges	Test results are valid also for all assembled systems without joints. When tested with butt edges, the test result is valid for all edge types If tested with any other type of edge the test result is valid for that type only.	
Size and positioning of test specimen	Test results are valid for all types of positioning and for insulation boards with larger dimensions.	
Product orientation and geometry of test specimen	See 6.3.2.8	See 6.3.1.3
Fixing of test specimen and surface product	Test result is valid for mechanical fixing. Alternatively glue can be used for fixing. In this case the largest amount of glue shall be tested and this test result shall be used for classification. The test result is only valid for the tested type of glue up to the maximum amount of glue used.	Not applicable

A.4 Extruded polystyrene foam (XPS)

Table A.11 — Product parameters for XPS – flat products when tested as placed on the market or in standard test configuration of assemblies

<table>
<tr><th rowspan="2">Product parameter</th><th colspan="4">Validity of test results</th></tr>
<tr><th>EN ISO 1182</th><th>EN ISO 1716</th><th>EN 13823 (SBI)</th><th>EN ISO 11925-2 (Ignitability)</th></tr>
<tr><td>Thickness</td><td rowspan="6">Not applicable</td><td rowspan="6">Not applicable</td><td colspan="2">The thickness giving the worst test result shall be determined for the declaration. If the worst test result is not known minimum and maximum thickness shall be fire tested.</td></tr>
<tr><td>Test results on 180 mm thickness are also valid for higher thicknesses.</td><td>Test results on 60 mm thickness are also valid for higher thicknesses.</td></tr>
<tr><td>Density</td><td colspan="2">Test result is valid for the tested density ± 15 %.</td></tr>
<tr><td>Type of facing(s) or coating(s)</td><td colspan="2">For the tested type only.</td></tr>
<tr><td>Thickness / area weight of facing(s) or coating(s)</td><td colspan="2">For the tested thickness only. The test result obtained for A1 and A2 facings will also be valid for thicker facings of the same type.</td></tr>
<tr><td>Type and amount of glue for facing(s) or coating(s)</td><td colspan="2">For the tested type and amount, extended to those glues where PCS is equal or lower than the PCS of the glue used in the test.</td></tr>
<tr><td>Asymmetry</td><td>See 5.3.2.6</td><td>See 5.3.1.3</td></tr>
</table>

Table A.12— Installation parameters for XPS — flat products as placed on the market

Installation parameter	Validity of test results	
	EN 13823 (SBI)	**EN ISO 11925-2 (Ignitability)**
Exposure to thermal attack	Test result is valid for product as placed on the market.	**See 5.3.1.1**
Substrate	See 5.3.2.2	**Not applicable**
Air gaps / cavities	See 5.3.2.3	
Joints / edges	When products are tested with one joint only (vertical or horizontal), then the result is only valid for assemblies with the joint direction as tested. If tested with vertical and horizontal joint, the test result is valid for all joint arrangements. When tested with butt edges, the test result is valid for all edge types. If tested with any other type of edge the test result is valid for that type only.	
Size and positioning of test specimen	Test result valid for all product sizes. See 5.3.2.5	
Product orientation and geometry	See 5.3.2.6	**See 5.3.1.3**
Fixing of test specimen	**The test result being obtained with mechanical fixing is valid for the product as placed on the market.**	**Not applicable**

Table A.13 — Product parameters for XPS — pipe insulation products, as placed on the market

Product parameters	Validity of test results			
	EN ISO 1182	**EN ISO 1716**	**EN 13823(SBI)**	**EN ISO 11925-2 (ignitability)**
Thickness	Not applicable	Not applicable	See 5.3.2.8.1	**For linear pipe insulation, tests on 50 mm are also valid for higher thicknesses when 75 mm is included in the product range (due to limitation of equipment to 60 mm thickness).**
Density			**The test result is valid for the tested density ± 15 %.**	
Type of product			**For the tested type only.**	
Type of facing(s)			**For the tested type only.**	
Thickness/area Weight of facings			**For the tested thickness only. The test result obtained for A1 and A2 facings will also be valid for thicker facings of the same type.**	
Type and amount of glue for facings			**For the tested type and amount, extended to those glues where PCS is equal or lower than the PCS of the glue used in the test.**	
Asymmetry			**See 5.3.2.8.5**	**See 5.3.1.3**

Table A.14 — Installation parameters for XPS — pipe insulation products, as placed on the market

Installation parameter	Validity of test results	
	EN 13823 (SBI)	**EN ISO 11925-2 (Ignitability)**
Exposure to thermal attack	Test result is valid for product as placed on the market.	**See 5.3.1.1, but note that only one face can be exposed in use.**
Substrate	See 5.3.2.8.2	**Not applicable**
Air gaps/ cavities	See 5.3.2.8.2	
Joints / edges	See 5.3.2.8.5 When tested with butt edges, the test result is valid for all edge types. If tested with any other type of edge the test result is valid for that type only.	
Size and positioning of test specimen	See 5.3.2.8.1 The test result will be valid for insulation section of greater length.	
Product orientation and geometry	See 5.3.2.8.2	**See 5.3.1.3**
Fixing of test specimen	**See 5.3.2.8.5**	**Not applicable**

Table A.15 — Installation parameters for XPS — flat products in standard test configuration of assemblies, simulating end-use applications

Installation parameter	Validity of test results	
	EN 13823 (SBI)	**EN ISO 11925-2 (Ignitability)**
Exposure to thermal attack	**Without surface product (no.1 of Table 5):** Test result is valid for product applied without surface product(s). The classification obtained is also valid for assemblies when a covering or protecting layer having Euroclass A1 and A2 is placed in front of the thermal insulation product in the end-use. **Plasterboard surface product (no.2 of Table 5):** test results are valid for all non-combustible mineral surface products of Euroclass A1 and A2 with equal or higher thickness and with equal or higher density. **Corrugated steel sheet surface product (no.3 of Table 5):** test results are valid for all corrugated steel sheets such as defined in 6.3.2.2 and with a corrugation of min. 35 mm and higher and with equal or higher steel thickness. Test results are valid also for types of organic coatings of the steel sheet with equal or lower PCS and with equal or lower thickness of the coating. **Particle board surface product (no.4 of Table 5):** test results are valid for all types of wooden boards of Euroclass D or higher and with equal or higher thickness and with equal or higher density.	**See 6.3.1.1**
Substrate	Test results only valid for product applied with the substrate used in the test.	**Not applicable**
Air gap / cavities	Test results are also valid for larger air gaps, if tested with an air gap.	
Joints / edges	Test results are valid also for all assemblies without joints. When tested with butt edges, the test result is valid for all edge types If tested with any other type of edge the test result is valid for that type only.	
Size and positioning of test specimen	Test results are valid for all types of positioning and for insulation boards with larger dimensions.	
Product orientation and geometry of test specimen	See 6.3.2.8	**See 6.3.1.3**
Fixing of test specimen and surface product	**Test results using clamping are valid also for mechanical fixing.**	**Not applicable**

A.5 Polyurethane and polyisocyanurate (PUR/PIR)

Table A.16 — Product parameters for PUR/PIR – flat products when tested as placed on the market or in standard test configuration of assemblies

<table>
<tr><th rowspan="2">Product parameters</th><th colspan="4">Validity of test results</th></tr>
<tr><th>EN ISO 1182
Not applicable</th><th>EN ISO 1716
Not applicable</th><th>EN 13823 (SBI)</th><th>EN ISO 11925-2
(Ignitability)</th></tr>
<tr><td rowspan="2">Thickness</td><td rowspan="8">Not applicable</td><td rowspan="8">Not applicable</td><td colspan="2">The thickness giving the worst test result shall be determined for the declaration. If the worst test result is not known minimum and maximum thickness shall be fire tested.</td></tr>
<tr><td>Test results on a 180 mm thickness are also valid for higher thicknesses.</td><td>Test result on a 60 mm thickness are also valid for higher thicknesses.</td></tr>
<tr><td>Density</td><td colspan="2">The result is valid for density ± 15 %.</td></tr>
<tr><td>Type of product</td><td colspan="2">For the tested type only.</td></tr>
<tr><td>Type of facing(s)</td><td colspan="2">For the tested type only.</td></tr>
<tr><td>Thickness / area Weight of facing(s)</td><td colspan="2">For the tested thickness only. The test result obtained for Euroclass A1 and A2 facings will also be valid for thicker facings of the same type.</td></tr>
<tr><td>Type and amount of glue for facing(s)</td><td colspan="2">For the tested type and amount, extended to those glues where PCS is equal or lower than the PCS of the glue used in the test.</td></tr>
<tr><td>Asymmetry</td><td>See 5.3.2.6</td><td>See 5.3.1.2</td></tr>
</table>

Table A.17 — Installation parameters for PUR/PIR – flat products, as placed on the market

Installation parameter	Validity of test results	
	EN 13823 (SBI)	**EN ISO 11925-2 (Ignitability)**
Exposure to thermal attack	Test result is valid for product as placed on the market.	**See 5.3.1**
Substrate	See 5.3.2.2	**Not applicable**
Air gaps / cavities	Test result valid for product applied without air gap only; for product thicknesses ≥ 80 mm test result is also valid for application with air gap.	
Joints / edges	When products are tested with one joint only (vertical or horizontal), then the test result is only valid for assemblies with the joint direction tested. If tested with vertical and horizontal joints, the test result is valid for all arrangements. When tested with butt edges, the test result is valid for all edge types. If tested with any other type of edge the test result is valid for that type only.	
Size and positioning of test specimen	Test result is valid for all product sizes.	
Product orientation and geometry	See 5.3.2.6	**See 5.3.1.2**
Fixing of test specimen	**The test result being obtained with mechanical fixing is valid for the product as placed on the market.** **For product thickness ≥ 80 mm test results with mechanical fixings are valid also for fixings with all types of glue.**	**Not applicable**

Table A.18 — Product parameters for PUR/PIR - pipe insulation products, as placed on the market

<table>
<tr><th rowspan="2">Product parameters</th><th colspan="4">Validity of test results</th></tr>
<tr><th>EN ISO 1182</th><th>EN ISO 1716</th><th>EN 13823 (SBI)</th><th>EN ISO 11925-2 (Ignitability)</th></tr>
<tr><td>Thickness</td><td rowspan="8">Not applicable</td><td rowspan="8">Not applicable</td><td>See 5.3.2.8.1</td><td>20 mm or minimum for the range will be valid for all thicknesses.</td></tr>
<tr><td>Density</td><td colspan="2">The test result is valid for the tested density ± 15 %.</td></tr>
<tr><td>Type of product</td><td colspan="2">For the tested type only.</td></tr>
<tr><td>Type of facing(s)</td><td colspan="2">For the tested type only.</td></tr>
<tr><td>Thickness / area weight of facing(s)</td><td colspan="2">For the tested thickness only. The test result obtained for Euroclass A1 and A2 facings will also be valid for thicker facings of the same type.</td></tr>
<tr><td>Type and amount of glue for facing(s)</td><td colspan="2">For the tested type and amount, extended to those glues where PCS is equal or lower than the PCS of the glue used in the test.</td></tr>
<tr><td>Asymmetry</td><td>Not relevant</td><td>See 5.3.1.2</td></tr>
</table>

Table A.19 — Installation parameters for PUR/PIR — pipe insulation products, as placed on the market

Installation parameter	Validity of test results	
	EN 13823 (SBI)	**EN ISO 11925-2 (Ignitability)**
Exposure to thermal attack	Test result is valid for product as placed on the market.	**See 5.3.1.1, but note that only one face can be exposed in use.**
Substrate	Not applicable	**Not applicable**
Air gaps / cavities	See 5.3.2.8.2	
Joints / edges	See 5.3.2.8.1 and 5.3.2.8.5 When tested with butt edges, the test result is valid for all edge types. If tested with any other type of edge, the test result is valid for that type only.	
Size and positioning of test specimen	See 5.3.2.8.1	
Product orientation and geometry	See 5.3.2.8.1	**See 5.3.1.2, but note that only one face can be exposed in use.**
Fixing of test specimen	**See 5.3.2.8.5**	**Not applicable**

Table A.20 — Installation parameters for PUR/ PIR – flat products in standard test configuration of assemblies, simulating end-use applications

Installation parameter	Validity of test results	
	EN 13823 (SBI)	**EN ISO 11925-2 (Ignitability)**
Exposure to thermal attack	**Without surface product (no.1 of Table 5):** test result is valid for product applied without surface product(s). The classification obtained is also valid for assemblies when a covering or protecting layer having Euroclass A1 and A2 is placed in front of the thermal insulation product in the end-use. **Plasterboard surface product (no.2 of Table 5):** test results are valid for all non-combustible mineral surface products of Euroclasses A1 and A2 with equal or higher thickness and with equal or higher densities. **Corrugated steel sheet surface product (no.3 of Table 5):** test results are valid for all steel sheets such as defined in 6.3.2.2 and for steel sheets without corrugation or with other type of corrugation and with equal or higher steel thickness. Test results are also valid for other type of organic coating of the steel sheet with equal or lower PCS value and with equal or lower thickness of the coating. **Particle board surface product (no.4 of Table 5):** test results are valid for all types of wooden boards of Euroclasses D or higher and with equal or higher thickness and with equal and higher densities.	**See 6.3.1.1**
Substrate	Test result only valid for product applied with the substrate used in the test. For insulation product thickness ≥ 80 mm when tested without surface product or with steel sheet surface product and for any insulation product thickness when tested with plasterboard or particle board as surface product, test result with any substrate is valid for all types of substrate (incl. combustible types, e.g. particle board).	**Not applicable**
Air gap / cavities	Test result valid also for larger air gaps, if tested with an air gap. Test results from a test where an air gap has been included are also valid for assemblies without air gap; for products tested behind the standardised surface products and for products tested without surface products having a thickness ≥ 80 mm, test results without air gap are also valid for assemblies with air gap.	
Joints / edges	Test results are valid also for all assemblies without joints. When tested with butt edges, the test result is valid for all edge types. If tested with any other type of edge the test result is valid for that type only.	
Size and positioning of test specimen	**Test results are valid for all types of positioning and for insulation boards with larger dimensions.**	

Table A.20 *(continued)*

Installation parameter	Validity of test results	
	EN 13823 (SBI)	**EN ISO 11925-2 (Ignitability)**
Product orientation and geometry of test specimen	See 6.3.2.8	**See 6.3.1.3**
Fixing of test specimen and surface product	**Test results are valid only for the type of fixing used; for insulation product thicknesses ≥ 80 mm when tested without surface product and for any product thickness when tested with plasterboard or particle board as surface product, test results with mechanical fixing are also valid for all other types of fixing including glue.** **Test result using clamping is valid also for mechanical fixing.**	**Not applicable**

A.6 Phenolic Foam (PF)

Table A.21 — Product parameters for PF — flat products, when tested as placed on the market or in standard test configuration of assemblies

<table>
<tr><th rowspan="2">Product parameters</th><th colspan="4">Validity of test results</th></tr>
<tr><th>EN ISO 1182</th><th>EN ISO 1716</th><th>EN 13823 (SBI)</th><th>EN ISO 11925-2 (Ignitability)</th></tr>
<tr><td rowspan="2">Thickness</td><td rowspan="8">Not applicable</td><td rowspan="8">Not applicable</td><td colspan="2">The thickness giving the worst test result shall be determined for the declaration. If the worst test result is not known minimum and maximum thickness shall be fire tested.</td></tr>
<tr><td>Test results on 180 mm thickness are also valid for higher thicknesses.</td><td>Test result on 60 mm thickness are also valid for higher thicknesses.</td></tr>
<tr><td>Density</td><td colspan="2">Test results valid for the tested density ± 15 %.</td></tr>
<tr><td>Type of product</td><td colspan="2">For the tested type only (valid for the same formulation and same blowing agent).</td></tr>
<tr><td>Type of facing(s)</td><td colspan="2">For the tested type only.</td></tr>
<tr><td>Thickness / area Weight of facing(s)</td><td colspan="2">For the tested thickness only. The test result obtained for Euroclass A1 and A2 facings will also be valid for thicker facings of the same types.</td></tr>
<tr><td>Type and amount of glue for facing(s)</td><td colspan="2">For the tested type and amount, extended to those glues where PCS is equal or lower than the PCS of the glue used in the test.</td></tr>
<tr><td>Asymmetry</td><td>See 5.3.2. 6</td><td>See 5.3.1.3</td></tr>
</table>

Table A.22 — Installation parameters for PF - flat products, as placed on the market

Installation parameter	Validity of test results	
	EN 13823 (SBI)	**EN ISO 11925-2 (Ignitability)**
Exposure to thermal attack	Test result is valid for product as placed on the market.	See 5.2.1.1
Substrate	See 5.3.2.2	Not applicable
Air gaps / cavities	See 5.3.2.3	
Joints / edges	When products are tested with one joint only (vertical or horizontal), then the test result is only valid for assemblies with the joint direction tested. If tested with vertical and horizontal joints, the test result is valid for all arrangements. When tested with butt edges, the test result is valid for all edge types If tested with any other type of edge the test result is valid for that type only.	
Size and positioning of test specimen	Test result is valid for all product sizes	
Product orientation and geometry	See 5.3.2.6	See 5.3.1.3
Fixing of test specimen	Test result being obtained with a mechanical fixing is valid for the product as placed on the market. For product thickness ≥ 80 mm test results with mechanical fixings are valid also for fixings with all types of glue.	Not applicable

Table A.23 — Product parameters for PF — pipe insulation products, as placed on the market

Product parameter	Validity of test result			
	EN ISO 1182	EN ISO 1716	EN 13823 (SBI)	EN ISO 11925-2 (ignitability)
Thickness	Not applicable	Not applicable	See 5.3.2.8.1	20 mm or minimum for the range will be valid for all thicknesses.
Density			The result is valid for the tested density ± 15 %.	
Type of product			For the tested type only (valid for the same formulation and the same blowing agent).	
Type of facing(s)			For the tested type only	
Thickness/area weight of facing(s)			For the tested thickness only. The result obtained for Euroclass A1 and A2 facings will also be valid for thicker facings of the same types.	
Type and amount of glue for facing(s)			For the tested type and amount extended to those glues where the PCS is equal to or lower than the PCS of the glue used in the test.	
Asymmetry			see 5.3.2.8.5	See 5.3.1.3

Table A.24 — Installation parameters for PF — pipe insulation products, as placed on the market

Installation parameter	Validity of test results	
	EN 13823 (SBI)	**EN ISO 11925-2 (ignitability)**
Exposure to thermal attack	Test result is valid for product as placed on the market.	See 5.3.1.1 but note that only one face can be exposed in use.
Substrate	See 5.3.2.8.2	Not applicable
Air gaps/cavities	Not relevant	
Joints / edges	See 5.3.2.8.5 When tested with butt edges, the test result is valid for all edge types. If tested with any other type of edge the test result is valid for that type only.	
Size and positioning of test specimen	See 5.3.2.8.1	
Product orientation and geometry	Not relevant	See 5.3.1.3 but note that only one face can be exposed in use.
Fixing of test specimen	See 5.3.2.8.5	Not applicable

Table A.25 — Installation parameters for PF — flat products in standard test configuration of assemblies, simulating end-use applications

Installation parameter	Validity of test results	
	EN 13823 (SBI)	**EN ISO 11925-2 (Ignitability)**
Exposure to thermal attack	**Without surface product (no. 1 of Table 5):** test result is valid for product applied without surface product(s). The classification obtained is also valid for assemblies when a covering or protecting layer having Euroclass A1 and A2 is placed in front of the thermal insulation product in the end-use. **Plasterboard surface product (no. 2 of Table 5):** test results are valid for all non-combustible mineral surface products of Euroclass A1 and A2 with equal or higher thickness and with equal or higher densities. **Corrugated steel sheet surface product (no. 3 of Table 5)**: test results are valid for all steel sheets such as defined in 6.3.2.2 and for steel sheets without corrugation or with other type of corrugation and with equal or higher steel thickness. Test results are also valid for other type of organic coating of the steel sheet with equal or lower PCS value and with equal or lower thickness of the coating. **Particle board surface product (no. 4 of Table 5):** test results are valid for all types of wooden boards of Euroclass D or higher and with equal or higher thickness and with equal and higher densities.	**See 6.3.1.1**
Substrate	Test result only valid for product applied with the substrate used in the test; for products tested behind the standardised surface products and for products tested without surface products having thickness ≥ 80 mm, test result is valid representing all types of substrate (incl. combustible types, e.g. particleboard).	**Not applicable**
Air gap / cavities	**Test result valid also for larger air gaps, if tested with an air gap.** **Test results from a test where an air gap has been included are also valid for assemblies without air gap; for products tested behind the standardised surface products and for products tested without surface products having a thickness ≥ 80 mm, test results without air gap is also valid for assemblies with air gap.**	**Not applicable**

Table A.25 *(continued)*

Installation parameter	Validity of test results	
	EN 13823 (SBI)	**EN ISO 11925-2 (Ignitability)**
Joints / edges	If tested butt jointed with square edges, then valid for all profiled edge finishing. Position of joints and type of edge are not relevant for products without facings or coatings and test results from configurations without joints are valid also for assemblies with joints. (For testing faced or coated products without joints according to EN 13823). If faced or coated products are tested without joint, then the result is only valid for assemblies where the insulation product is installed on site behind additional surface products. (For testing faced or coated products with the joints according to EN 13823.) If faced or coated products are tested with one joint only (vertical or horizontal), then the result is only valid for assemblies with the joint direction as tested. If tested with vertical and horizontal joint, the test result is valid for all joint arrangements. (Type of edge of faced or coated product.) When tested with butt edges, the test result is valid for all edge types. If tested with any other type of edge the test result is valid for that type only.	**Not applicable**
Size and positioning of test specimen	Tests are only valid for arrangement as tested. Test result valid for all product sizes.	**Not applicable**
Product orientation and geometry of test specimen	See 6.3.2.8	See 6.3.1.3
Fixing of test specimen and surface product	**Test result using clamping is valid also for mechanical fixing; for products tested behind standardised surface products and for products having a thickness of 80 mm or greater, tested without surface products, test result is valid for all types of fixing (including glue).**	**Not applicable**

A.7 Cellular Glass (CG)

Table A.26 — Product parameters for CG – flat products when tested as placed on the market or in standard test configuration of assemblies

Product parameter	Validity of test results			
	EN ISO 1182	**EN ISO 1716**	**EN 13823 (SBI)**	**EN ISO 11925-2 (Ignitability)**
Thickness	No influence	No Influence	The thickness giving the worst test result shall be determined for the declaration. If the worst test result is not known minimum and maximum thickness shall be fire tested. Test results on 180 mm thickness are also valid for higher thicknesses.	Intermediate thickness representative for the complete range for all thickness.
Density	No Influence	No Influence	No Influence.	
Type of product	Not applicable	Test on highest amount of organic content (expressed in %) valid for lower organic contents.	Test on highest amount of organic content (expressed in %) valid for lower organic contents.	
Type of facing(s)	Not applicable	For the tested type only.	For the tested type only.	

Table A.26 *(continued)*

Product parameter	Validity of test results			
	EN ISO 1182	**EN ISO 1716**	**EN 13823 (SBI)**	**EN ISO 11925-2 (Ignitability)**
Thickness / area weight of facing(s)	Not applicable	The product with the thickest/highest area weight of facing determines the classification. This is valid for one component facings and for multi component facings where the ratio between the components remains constant.	For the tested thickness of the facing only. The test result obtained for a facing (not for Euroclass A1 and A2 facings) with the greatest area weight will also be valid for thinner facings.	
Type and amount of glue for facing(s)		For products using the same type of facing and glue. The product with the highest percentage of glue and the highest area weight of the facing determines the classification.	For the tested type and amount, extended to those glues where PCS is equal or lower than to the PCS of the glue used in the test.	
Asymmetry		Not applicable	See 5.3.2.6	See 5.3.1.3
NOTE Cellular glass can be classified as Class A1, following the Commission Decision of 4-10-1996 (96/603/EC), establishing the list of products belonging to Class A1 'No contribution to fire' and its general note 'a material shall not consist of more than 1,0 % by weight or volume of homogeneously distributed organic material, as determined according EN 13820'.				

Table A.27 — Installation parameters for CG – flat products, as placed on the market

Installation parameter	Validity of test results	
	EN 13823 (SBI)	**EN ISO 11925-2 (Ignitability)**
Exposure to thermal attack	Test result is valid for product as placed on the market.	See 5.3.1.1
Substrate	See 5.3.2.2	Not applicable
Air gaps / cavities	See 5.3.2.3	
Joints / edges	When products are tested with one joint only (vertical or horizontal), then the test result is only valid for assemblies with the joint direction tested. If tested with vertical and horizontal joints, the test result is valid for all arrangements. When tested with butt edges, the test result is valid for all edge types. If tested with any other type of edge the test result is valid for that type only.	
Size and positioning of test specimen	Test valid for all product sizes.	
Product orientation and geometry	see 5.3.2.6	See 5.3.1.3
Fixing of test specimen	The test result being obtained with a mechanical fixing is valid for the product as placed on the market. For product thickness ≥ 80mm test results with mechanical fixing are valid also for fixing with all types of glue.	Not applicable

Table A.28 — Product parameters for CG – pipe insulation products[a], as placed on the market

<table>
<tr><th rowspan="2">Product parameter</th><th colspan="5">Validity of test results</th></tr>
<tr><th>EN ISO 1182</th><th>EN ISO 1716</th><th>EN 13823 (SBI)</th><th colspan="2">EN ISO 11925-2 (Ignitability)</th></tr>
<tr><td>Thickness</td><td>No influence</td><td>No Influence</td><td>See 5.3.2.8.1</td><td colspan="2">No influence</td></tr>
<tr><td>Density</td><td>No Influence</td><td>No Influence</td><td colspan="3">No Influence</td></tr>
<tr><td>Type of product</td><td colspan="5">Test on highest amount of organic content (expressed in %) valid for lower organic contents.</td></tr>
<tr><td>Type of facing(s)</td><td rowspan="4">Not applicable</td><td>If the facing is considered as a non-substantial component, only this component has to be tested and to respected only for this type.

If the facing is substantial, it applies only for the tested type.</td><td colspan="3">For the tested type only.</td></tr>
<tr><td>Thickness / area weight of facing(s)</td><td>The product with the thickest/ highest area weight of facing determines the classification. This is valid for one component facings and for multi component facings where the ratio between the components remains constant.</td><td colspan="3">For the tested thickness of the facing only.

The test result obtained for a facing (not for Euroclass A1 and A2 facings) with the greatest area weight will also be valid for thinner facings.</td></tr>
<tr><td>Type and amount of glue for facing(s)</td><td>For products using the same type of facing and glue. The product with the highest amount of glue determines the classification.</td><td colspan="3">For the tested type and amount, extended to those glues where PCS is equal or lower than the PCS of the glue used in the test.</td></tr>
<tr><td>Asymmetry</td><td>Not applicable</td><td>See 5.3.2.6</td><td>See 5.3.1.3</td></tr>
<tr><td colspan="6">[a] Cellular glass can be classified as Class A1, following the Commission Decision of 4-10-1996 (96/603/EC), establishing the list of products belonging to Class A1 'No contribution to fire' and its general note 'a material shall not consist of more than 1,0 % by weight or volume of homogeneously distributed organic material, as determined according EN 13820'.</td></tr>
</table>

Table A.29 — Installation parameters for CG-linear pipe thermal insulation

Installation parameter	Validity of test results	
	EN 13823 (SBI)	**EN ISO 11925-2 (Ignitability)**
Exposure to thermal attack	Test result is valid for product as placed on the market.	**See 5.3.1.1**
Substrate	See 5.3.2.8.2	**Not applicable**
Air gaps/ cavities	See 5.3.2.8.2	
Joints / edges	See 5.3.2.8.5 When tested with butt edges, the test result is valid for all edge types. If tested with any other type of edge the test result is valid for that type only.	
Size and positioning of test specimen	See 5.3.2.8.1	
Product orientation and geometry	See 5.3.2.8.2	**See 5.3.1.3**
Fixing of test specimen	**See 5.3.2.8.5**	**Not applicable**

Table A.30— Installation parameters for CG — flat products, in standard test configuration of assemblies simulating end-use applications

Installation parameter	Validity of test results	
	EN 13823 (SBI)	**EN ISO 11925-2 (Ignitability)**
Exposure to thermal attack	**Without surface product (no.1 of Table 5):** test result is valid for product applied without surface product(s). The classification obtained is also valid for assemblies when a covering or protecting layer having Euroclass A1 and A2 (except for an Euroclass A1 product covered by steel with organic coating, which will be Euroclass A2) is placed in front of the thermal insulation product in the end-use. No test is needed for CG thermal insulation products of classification Euroclass A1 and A2. **Plasterboard surface product (no.2 of Table 5):** test results are valid for all non-combustible mineral surface products of Euroclasses A1 and A2 with equal or higher thickness and with equal or higher densities. No test is needed for CG thermal insulation products of classification Euroclass A1 and A2. **Corrugated steel sheet surface product (no.3 of Table 5):** test results are valid for all corrugated steel sheets such as defined in 6.3.2.2 and thicker steel. No test is needed for CG thermal insulation products of classification Euroclass A1 and A2. **Particle board surface product (no.4 of Table 5):** test results are valid for all types of wooden boards of Euroclasses D or higher and with equal or higher thickness and with equal and higher densities. No test is needed for CG thermal insulation products of classification Euroclass A1 and A2.	See 6.3.1.1
Substrate	Test results with steel or calcium silicate board are valid for all kinds of substrate.	Not applicable
Air gap / cavities	Test results are also valid for larger air gaps, if tested with an air gap	
Joints / edges	Test results are valid also for setups without joints. When tested with butt edges, the test result is valid for all edge types If tested with any other type of edge the test result is valid for that type only.	
Size and positioning of test specimen	Test results are valid for all types of positioning and for insulation boards with larger dimensions.	

Table A.30 *(continued)*

Installation parameter	Validity of test results	
	EN 13823 (SBI)	**EN ISO 11925-2 (Ignitability)**
Product orientation and geometry of test specimen	See 6.3.2.8	See 6.3.1.3
Fixing of test specimen and surface product	Test result using clamping is valid also for loosely installed or mechanical fixing. If the insulation panels are positioned without fixing to the substrate, it is accepted that the largest product of the production range with a minimum of sealed joints behind the surface product can be used.	Not applicable

A.8 Wood Wool (WW)

Table A.31 — Product parameters for WW — flat products, when tested as placed on the market or in standard test configuration of assemblies

Product parameters	Validity of test results			
	EN ISO 1182	EN ISO 1716	EN 13823 (SBI)	EN ISO 11925-2 (Ignitability)
Thickness	Not applicable	Not applicable	For Euroclass D substrate: Test minimum and maximum thickness; the worst test result is used for declaration, also for defined substrate Euroclass A1/A2. For defined Euroclass A1/A2 substrate: Test maximum thickness. Test results on 180 mm thickness are also valid for higher thicknesses. The thickness giving the worst test result shall be determined for the declaration. If the worst test result is not known minimum and maximum thickness shall be fire tested.	**Test maximum thickness suitable in the apparatus.**
Density			**For Euroclass D substrate: Test maximum and minimum density[a]/mass per unit area[b] for declaration, also for defined substrate Euroclass A1/A2. For defined Euroclass A1/A2 substrate: Test maximum density[a]/mass per unit area[b].** **The density giving the worst test result shall be determined for the declaration. If the worst test result is not known minimum and maximum thickness shall be tested.**	**Test maximum density[a]/mass per unit area[b].**

Table A.31 *(continued)*

Product parameters	Validity of test results			
	EN ISO 1182	EN ISO 1716	EN 13823 (SBI)	EN ISO 11925-2 (Ignitability)
Type of product	Not applicable	Not applicable	**For the tested type only as defined:** — **WW, WW-C/MW, WW-C/EPS (PUR, XPS, ICB);** — **Binder (Portland cement, magnetite, combination of cement and lime);** — **Thickness of wood wool layers of WW-C/XX products have to be taken into consideration under the worst case scenario.** **2 and 3-layer product are considered equal, if the tested surface is WW.**	
Type of facing(s)			**For the tested type only.**	
Thickness / area weight of facing(s)			**For the tested thickness only. The test result obtained for Euroclass A1 and A2 facings will also be valid for thicker facings of the same type.**	
Type and amount of glue for facing(s)			**For the tested type and amount, extended to those glues where PCS is equal or lower than to the PCS for the glue used in the test.**	
Asymmetry			See 5.3.2.6	**See 5.3.1.3**
[a] For WW and additionally used insulating materials in WW-C/MW, WW-C/EPS, WW-C/PUR, WW- C/ICB products. **[b] For WW-C products.**				

Table A.32 — Installation parameters WW — flat products, as placed on the market

Installation parameter	Validity of test results	
	EN 13823 (SBI)	**EN ISO 11925-2 (Ignitability)**
Exposure to thermal attack	Test result is valid for product as placed on the market.	**See 5.3.1.1**
Substrate	See 5.3.2.2	**Not applicable**
Air gaps / cavities	See 5.3.2.3	
Joints / edges	When products are tested with one joint only (vertical or horizontal), then the test result is only valid for assemblies with the joint direction tested. If tested with vertical and horizontal joints, the test result is valid for all arrangements. When tested with butt edges, the test result is valid for all edge types. If tested with any other type of edge the test result is valid for that type only.	
Size and positioning of test specimen	Test valid for all product sizes.	
Product orientation and geometry	See 5.3.2.6	**See 5.3.1.3**
Fixing of test specimen	**The test result being obtained with a mechanical fixing is valid for the product as placed on the market.**	**Not applicable**

Table A.33 — Installation parameters for WW — flat products in standard test configuration of assemblies simulating end-use applications

Installation parameter	Validity of test results	
	EN 13823 (SBI)	**EN ISO 11925-2 (Ignitability)**
Exposure to thermal attack	**Without surface product (no. 1 of Table 5):** test result is valid for product applied without surface product(s). The classification obtained is also valid for assemblies when a covering or protecting layer having Euroclass A1 and A2 is placed in front of the thermal insulation product in the end-use. **Plasterboard surface product (no. 2 of Table 5):** test results are valid for all non-combustible mineral surface products of Euroclasses A1 and A2 with equal or higher thickness and with equal or higher densities. **Corrugated steel sheet surface product (no. 3 of Table 5):** test results are valid for all steel sheets such as defined in 6.3.2.2 and thicker steel. **Particle board surface product (no. 4 of Table 5):** test results are valid for all types of wooden boards of Euroclasses D or higher and with equal or higher thickness and with equal and higher densities.	**See 6.3.1.1**
Substrate	Test results with steel or plasterboard surface products are valid for all substrates. Other test results are only valid for product applied with the substrate used in the test.	**Not applicable**
Air gap / cavities	Test results are also valid for larger air gaps. For standard configuration number 1 and for insulation product with a thickness of 50 mm and higher, the test results are also valid for smaller air gaps or no air gap.	
Joints / edges	When tested with butt edges, the test result is valid for all edge types If tested with any other type of edge the test result is valid for that type only.	
Size and positioning of test specimen	Test results are valid for all types of positioning and for insulation boards with larger dimensions.	
Product orientation and geometry of test specimen	See 6.3.2.8	**See 6.3.1.3**
Fixing of test specimen and surface product	**Test result using clamping is valid also for mechanical fixing.**	**Not applicable**

A.9 Expanded perlite (EPB)

Table A.34 — Product parameters for EPB — flat products, when tested as placed on the market or in standard test configuration of assemblies

Product parameters	Validity of test results			
	EN ISO 1182	**EN ISO 1716**	**EN 13823 (SBI)**	**EN ISO 11925-2 (Ignitability)**
Thickness	No influence	No Influence	The thickness giving the worst test result shall be determined for the declaration. If the worst test result is not known minimum and maximum thickness shall be fire tested. Test results on 180 mm thickness are also valid for higher thicknesses.	**No influence**
Density			**The result is valid for the tested density ± 15 %.**	
Type of product	The type and amount of organic content expressed in kg/m³) may influence the test result.	Test on highest amount of organic content (expressed in kg/m³) valid for lower organic contents of the same type of binder.	**For the tested type only.**	
Type of facing(s)	Not applicable	For the tested type only.	**For the tested type only.**	
Thickness / area weight of facing(s)		The product with the thickest/highest area weight of facing determines the classification. This is valid for one component facings and for multi component facings where the ratio between the components remains constant.	**For the tested thickness only.** **The test result obtained for Euroclass A1 and A2 facings will also be valid for thicker facings of the same types.**	
Type and amount of glue for facing(s)		For products using the same type of facing and glue. The product with the highest amount of glue determines the classification.	**For the tested type and amount, extended to those glues where PCS is equal or lower than the PCS of the glue used in the test.**	
Asymmetry		**Not applicable**	**See 5.3.2.6**	See 5.3.1.3

Table A.35— Installation parameters for EPB — flat products, as placed on the market

Installation parameter	Validity of test results	
	EN 13823 (SBI)	**EN ISO 11925-2 (Ignitability)**
Exposure to thermal attack	Test result is valid for product as placed on the market.	**See 5.3.1.1**
Substrate	See 5.3.2.2	**Not applicable**
Air gaps/cavities	See 5.3.2.3	
Joints/edges	When products are tested with one joint only (vertical or horizontal), then the test result is only valid for assemblies with the joint direction tested. If tested with vertical and horizontal joints, the test result is valid for all arrangements. When tested with butt edges, the test result is valid for all edge types. If tested with any other type of edge the test result is valid for that type only.	
Size and positioning of test specimen	Test valid for all product sizes.	
Product orientation and geometry	See 5.3.2.6	**See 5.3.1.3**
Fixing of test specimen	**The test result being obtained with a mechanical fixing is valid for the product as placed on the market.**	**Not applicable**

Table A.36 — Installation parameters for EPB — flat products in standard test configuration of assemblies simulating end-use applications

Installation parameter	Validity of test results	
	EN 13823 (SBI)	**EN ISO 11925-2 (Ignitability)**
Exposure to thermal attack	**Without surface product (no. 1 of Table 5):** test result is valid for product applied without surface product(s). The classification obtained is also valid for assemblies when a covering or protecting layer having Euroclass A1 and A2 (except for an Euroclass A1 product covered by steel with organic coating, which will be Euroclass A2) is placed in front of the thermal insulation product in the end-use. **Plasterboard surface product (no. 2 of Table 5):** test results are valid for all non-combustible mineral surface products of Euroclasses A1 and A2 with equal or higher thickness and with equal or higher densities. **Corrugated steel sheet surface product (no. 3 of Table 5):** test results are valid for all steel sheets such as defined in 6.3.2.2 and for steel sheets without corrugation or with other type of corrugation and with equal or higher steel thickness. Test results are also valid for other type of organic coating of the steel sheet with equal or lower PCS value and with equal or lower thickness of the coating. **Particle board surface product (no. 4 of Table 5):** test results are valid for all types of wooden boards of Euroclasses D or higher and with equal or higher thickness and with equal and higher densities.	**See 6.3.1.1**
Substrate	Test results only valid for product applied with the substrate used in the test.	**Not applicable**
Air gap / cavities	Test results are also valid for larger air gaps.	
Joints / edges	Test results are valid also for all assemblies without joints. If products are tested with one joint only (vertical or horizontal), then the test result is valid for that assembly. If tested with vertical and horizontal joints, the result is valid for any joint arrangement. When tested with butt edges, the test result is valid for all edge types If tested with any other type of edge the test result is valid for that type only.	
Size and positioning of test specimen	Test results are valid for all types of positioning and for insulation boards with larger dimensions.	
Product orientation and geometry of test specimen	See 6.3.2.8	**See 6.3.1.3**
Fixing of test specimen and surface product	**Test result using clamping is valid also for mechanical fixing.**	**Not applicable**

A.10 Expanded cork (ICB)

Table A.37 — Product parameters for ICB flat products, when tested as placed on the market or in standard test configuration of assemblies

Product parameters	Validity of test results			
	EN ISO 1182	EN ISO 1716	EN 13823 (SBI)	EN ISO 11925-2 (Ignitability)
Thickness	Not applicable	Not applicable	The thickness giving the worst test result shall be determined for the declaration. If the worst test result is not known minimum and maximum thickness shall be fire tested. The maximum and the minimum thickness shall be tested and the worst test result shall be used for declaration (may be product dependant).Test results on 180 mm thickness are also valid for higher thicknesses.	**Intermediate thickness representative for the complete range.**
Density			The result is valid for the tested density ± 15 %.	**Any density between 90 kg/m^3 and 130 kg/m^3 is valid for the product.**
Type of product			**For the tested type only.**	
Type of facing(s)			**For the tested type only.**	
Thickness/ area weight of facing(s)			**For the tested thickness only. The test result obtained for Euroclass A1 and A2 facings will also be valid for thicker facings of the same type.**	
Type and amount of glue for facing(s)			**For the tested type and amount, extended to those glues where PCS is equal or inferior to the PCS of the glue used in the test.**	
Asymmetry			**See 5.3.2.6**	**See 5.3.1.3**

Table A. 38 — Installation parameters for ICB — flat products, as placed on the market

Installation parameter	Validity of test results	
	EN 13823 (SBI)	**EN ISO 11925-2 (Ignitability)**
Exposure to thermal attack	Test result is valid for product as placed on the market.	**See 5.3.1.1**
Substrate	See 5.3.2.2	**Not applicable**
Air gaps / cavities	See 5.3.2.3	
Joints / edges	When products are tested with one joint only (vertical or horizontal), then the test result is only valid for assemblies with the joint direction tested. If tested with vertical and horizontal joints, the test result is valid for all arrangements. When tested with butt edges, the test result is valid for all edge types. If tested with any other type of edge the test result is valid for that type only.	
Size and positioning of test specimen	The test results are valid for all product sizes.	
Product orientation and geometry	See 5.3.2.6	**See 5.3.1.3**
Fixing of test specimen	**The test result being obtained with a mechanical fixing is valid for the product as placed on the market.**	**Not applicable**

Table A.39 — Installation parameters for ICB — flat products in standard test configuration of assemblies simulating end-use applications

Installation parameter	Validity of test results	
	EN 13823 (SBI)	**EN ISO 11925-2 (Ignitability)**
Exposure to thermal attack	**Without surface product (no. 1 of Table 5):** test result is valid for product applied without surface product(s). The classification obtained is also valid for assemblies when a covering or protecting layer having Euroclass A1 and A2 is placed in front of the thermal insulation product in the end-use. **Plasterboard surface product (no. 2 of Table 5):** test results are valid for all non-combustible mineral surface products of Euroclasses A1 and A2 with equal or higher thickness and with equal or higher densities. **Corrugated steel sheet surface product (no. 3 of Table 5):** test results are valid for all steel sheets such as defined in 6.3.2.2 and for steel sheets without corrugation or with other type of corrugation and with equal or higher steel thickness. Test results are also valid for other type of organic coating of the steel sheet with equal or lower PCS value and with equal or lower thickness of the coating. **Particle board surface product (no. 4 of Table 5):** test results are valid for all types of wooden boards of Euroclasses D or higher and with equal or higher thickness and with equal and higher densities.	**See 6.3.1.1**
Substrate	Test results only valid for product applied with the substrate used in the test.	**Not applicable**
Air gap / cavities	Test results are also valid for larger air gaps.	
Joints / edges	Test results are valid also for setups without joints When tested with butt edges, the test result is valid for all edge types If tested with any other type of edge the test result is valid for that type only.	
Size and positioning of test specimen	Test results are valid for all types of positioning and for insulation boards with larger dimensions.	
Product orientation and geometry of test specimen	See 6.3.2.8	**See 6.3.1.3**
Fixing of test specimen and surface product	**Test result using clamping is valid also for mechanical fixing.**	**Not applicable**

A.11 Wood fibre (WF)

Table A.40 — Product parameters for WF — flat products, when tested as placed on the market or in standard test configuration of assemblies

Product parameters	Validity of test results			
	EN ISO 1182	EN ISO 1716	EN 13823 (SBI)	EN ISO 11925-2 (Ignitability)
Thickness	Not applicable	Not applicable	The thickness giving the worst test result shall be determined for the declaration. If the worst test result is not known minimum and maximum thickness shall be fire tested. Test results on 180 mm thickness are also valid for higher thicknesses.	**The minimum thickness representative for the complete range.**
Density			**The result is valid for the tested density ± 15 %.**	
Type of product			**For the tested type only.**	
Type of facing(s)			**For the tested type only.**	
Thickness / area weight of facing(s)			**For the tested thickness only. The test result obtained for Euroclass A1 and A2 facings will also be valid for thicker facings of the same types.**	
Type and amount of glue for facing(s)			**For the tested type and amount, extended to those glues where PCS is equal or inferior to the PCS of the glue used in the test.**	
Asymmetry			**See 5.3.2.6**	**See 5.3.1.3**

Table A.41 — Installation parameters for WF — flat products, as placed on the market

Installation parameter	Validity of test results	
	EN 13823 (SBI)	**EN ISO 11925-2 (Ignitability)**
Exposure to thermal attack	Test result is valid for product as placed on the market.	**See 5.3.1.1**
Substrate	See 5.3.2.2	**Not applicable**
Air gaps / cavities	See 5.3.2.3	
Joints / edges	When products are tested with one joint only (vertical or horizontal), then the test result is only valid for assemblies with the joint direction tested. If tested with vertical and horizontal joints, the test result is valid for all arrangements. When tested with butt edges, the test result is valid for all edge types. If tested with any other type of edge the test result is valid for that type only.	
Size and positioning of test specimen	Test valid for all product sizes.	
Product orientation and geometry	See 5.3.2.6	**See 5.3.1.3**
Fixing of test specimen	**The test result being obtained with a mechanical fixing is valid for the product as placed on the market.**	**Not applicable**

Table A.42 — Installation parameters for WF — flat products, in standard test configuration of assemblies simulating end-use applications

Installation parameter	Validity of test results	
	EN 13823 (SBI)	**EN ISO 11925-2 (Ignitability)**
Exposure to thermal attack	**Without surface product (no. 1 of Table 5):** test result is valid for product applied without surface product(s). The classification obtained is also valid for assemblies when a covering or protecting layer having Euroclass A1 and A2 (except for an Euroclass A1 product covered by steel with organic coating, which will be Euroclass A2) is placed in front of the thermal insulation product in the end-use. **Plasterboard surface product (no. 2 of Table 5):** test results are valid for all non-combustible mineral surface products of Euroclasses A1 and A2 with equal or higher thickness and with equal or higher densities. **Corrugated steel sheet surface product (no. 3 of Table 5):** test results are valid for all corrugated steel sheets such as defined in 6.3.2.2 and for steel sheets with a corrugation of min 35 mm and higher and with equal or higher steel thickness. **Particle board surface product (no. 4 of Table 5):** test results are valid for all types of wood boards of Euroclasses D or higher and with equal or higher thickness and with equal and higher densities.	**See 6.3.1.1**
Substrate	Test results only valid for product applied with the substrate used in the test.	**Not applicable**
Air gap / cavities	Test results are also valid for larger air gaps.	
Joints / edges	Test results are valid also for all assemblies without joints. When tested with butt edges, the test result is valid for all edge types If tested with any other type of edge the test result is valid for that type only.	
Size and positioning of test specimen	Test results are valid for all types of positioning and for insulation boards with larger dimensions.	
Product orientation and geometry of test specimen	See 6.3.2.8	**See 6.3.1.3**
Fixing of test specimen and surface product	**Test result using clamping is valid also for mechanical fixing.**	**Not applicable**

A.12 Flexible elastomeric foam (FEF)

Table A.43 — Product parameters for FEF — flat products, when tested as placed on the market or in standard test configuration of assemblies

<table>
<tr><th rowspan="2">Product parameter</th><th colspan="4">Validity of test results</th></tr>
<tr><th>EN ISO 1182</th><th>EN ISO 1716</th><th>EN 13823 (SBI)</th><th>EN ISO 11925-2 (Ignitability)</th></tr>
<tr><td rowspan="2">Thickness</td><td rowspan="8">Not applicable</td><td rowspan="8">Not applicable</td><td colspan="2">The thickness giving the worst test result shall be determined for the declaration. If the worst test result is not known, the maximum and the minimum thicknesses shall be tested.</td></tr>
<tr><td>Test results on 180 mm thickness are also valid for higher thicknesses.</td><td>Test results on 60 mm thickness are also valid for higher thicknesses.</td></tr>
<tr><td>Density</td><td colspan="2">A test result is valid for the tested density ± 15 %.</td></tr>
<tr><td>Type of product</td><td colspan="2">For the tested type only.</td></tr>
<tr><td>Type of facing(s) or coating(s)</td><td colspan="2">For the tested type only.</td></tr>
<tr><td>Thickness / area weight of facing(s) or coating(s)</td><td colspan="2">For the tested thickness only.

The test result obtained for A1 and A2 facings/coatings will also be valid for thicker facings of the same type.</td></tr>
<tr><td>Type and amount of glue for facing(s) or coating(s)</td><td colspan="2">For the tested type and amount, extended to those glues where PCS is equal or lower than the PCS of the glue used in the test.</td></tr>
<tr><td>Asymmetry</td><td>See 5.3.2.6</td><td>See 5.3.1.3</td></tr>
</table>

Table A.44 — Installation parameters for FEF — flat products, as placed on the market

Installation parameter	Validity of test results	
	EN 13823 (SBI)	**EN ISO 11925-2 (Ignitability)**
Exposure to thermal attack	Test result is valid for product as placed on the market.	**See 5.3.1.1**
Substrate	See 5.3.2.2	**The product shall be tested directly exposed to the thermal attack fixed to a steel sheet.**
Air gaps / cavities	See 5.3.2.3	**Not applicable**
Joints / edges	See 5.3.2.4	
Size and positioning of test specimen	Test valid for all product sizes (see 5.3.2.5).	
Product orientation and geometry	See 5.3.2.6	
Fixing of test specimen	**The test specimen shall be fixed with glue. The test result obtained is only valid for the product as placed on the market with this specified glue (formulation and application weight).**	

Table A.45 — Product parameters for FEF — pipe insulation products, as placed on the market

Product parameters	Validity of test results			
	EN ISO 1182	**EN ISO 1716**	**EN 13823(SBI)**	**EN ISO 11925-2 (ignitability)**
Thickness	Not applicable	Not applicable	See 5.3.2.8.1	**No influence**
Density			**A test result is valid for the tested density ± 15 %.**	
Type of product			**For the tested type only.**	
Type of facing(s)			**For the tested type only.**	
Thickness/area weight of facings			**For the tested thickness only.** **The test result obtained for A1 and A2 facings/coatings will also be valid for thicker facings of the same type.**	
Type and amount of glue for facings			**For the tested type and amount, extended to those glues where PCS is equal or lower than the PCS of the glue used in the test.**	
Asymmetry			**See 5.3.2.6**	**See 5.3.1.3**

Table A.46 — Installation parameters for FEF — pipe insulation products, as placed on the market

Installation parameter	Validity of test results	
	EN 13823 (SBI)	**EN ISO 11925-2 (Ignitability)**
Exposure to thermal attack	Test result is valid for product as placed on the market.	**See 5.3.1.1**
Substrate	The products shall be tested on steel pipes (see 5.3.2.8.2).	**The product shall be tested directly exposed to the thermal attack fixed to a steel pipe.**
Air gaps/ cavities	The pipes shall be mounted in such a way that there is a gap of 25 mm between the outside pipe insulation surfaces of the adjacent pipe and between the outside insulation surface and the backing board (see 5.3.2.8.2).	**Not applicable**
Joints / edges	When tested with butt edges the test result is valid for all edge types. If tested with any other type of edge the test result is valid for that type only.	**Not applicable**
Size and positioning of test specimen	Test valid for all product sizes (see 5.3.2.8.1).	**Use the same inside pipe diameter as used in the SBI test (22 mm inside diameter).**
Product orientation and geometry	See 5.3.2.8.2	**Not applicable**
Fixing of test specimen	**See 5.3.2.8.5**	**To be fixed mechanically at the top.**

Table A.47 — Installation parameters for FEF — for flat products in standard test configuration of assemblies simulating end-use applications

Installation parameter	Validity of test results	
	EN 13823 (SBI)	**EN ISO 11925-2 (Ignitability)**
Exposure to thermal attack	**Without surface product (no. 1 of Table 5)**: test result is valid for product applied without surface product(s). The classification obtained is also valid for assemblies when a covering or protecting layer having Euroclass A1 and A2 is placed in front of the thermal insulation product in end-use. **Plasterboard surface product (no. 2 of Table 5)**: test results are for all non-combustible mineral surface products of Euroclasses A1 and A2 with equal or higher thickness and with equal or higher densities. **Corrugated steel sheet surface product (no. 3 of Table 5)**: test results are valid for all steel sheets such as defined in 6.3.2.2 and thicker steel thickness. **Particle board surface product (no. 4 of Table 5):** Test results are valid for all type of wooden boards of Euroclasses D or higher and with equal or higher thickness and with equal or higher densities.	**See 6.3.1.1**
Substrate	**Test results only valid for product applied with the substrate used in the test.** **Other test results are only valid for product applied with the substrate used in the test.**	**Not applicable**

Table A.47 *(continued)*

Installation parameter	Validity of test results	
	EN 13823 (SBI)	**EN ISO 11925-2 (Ignitability)**
Air gaps / cavities	Test results are also valid for larger air gaps. Test results from a test where an air gap has been included are also valid for assemblies without air gap; for products tested behind the standardised surface products and for products tested without surface products having a thickness ≥ 80 mm, test results without air gap is also valid for assemblies with air gap.	**Not applicable**
Joints / edges	Test results are valid also for all assemblies without joints. When tested with butt edges the test result is valid for all edge types. If tested with any other type of edge the test result is valid for that type only.	
Size and positioning of test specimen	Tests results are valid for all sizes.	
Product orientation and geometry	See 6.3.2.8.	**See 6.3.1.3.**
Fixing of test specimen and surface product	**The test specimen shall be fixed with glue. The test result obtained is only valid with this specified glue. Surface products can be mechanically fixed or fixed with glue.** **Test results are valid only for the type of fixing used; for insulation product thicknesses ≥ 80 mm when tested without surface product and for any product thickness when tested with plasterboard or particle board as surface product, test results with mechanical fixing are also valid for all other types of fixing including glue.**	

A.13 Calcium silicate (CS)

Table A.48 — Product parameters for CS — flat products when tested as placed on the market or in standard test configuration of assemblies

Product parameters	Validity of test results			
	EN ISO 1182	**EN ISO 1716**	**EN 13823 (SBI)**	**EN ISO 11925-2 (Ignitability)**
Thickness	No influence	No influence	The thickness giving the worst test result shall be determined for the declaration. If the worst test result is not known minimum and maximum thickness shall be fire tested. Test results on 120 mm thickness are also valid for higher thicknesses.	**No influence**
Density	No influence	No influence	**A test result is valid for the tested density +/- 15 %.**	
Type of product	Test on highest amount of organic content (expressed in kg/m³) valid for lower organic contents.	Test on highest amount of organic content (expressed in kg/m³) valid for lower organic contents.	**For the tested type only.**	
Type of facing(s)	Not applicable	For the tested type only.	**For the tested type only.**	
Thickness / area Weight of facing(s)		The product with the thickest/ highest area weight of facing determines the classification. This is valid for one component facings and for multi component facings where the ratio between the components remains constant.	**For the tested thickness only. The test result obtained for Euroclass A1 and A2 facings will also be valid for thicker facings of the same types.**	
Type and amount of glue for facing(s)		For products using the same type of facing and glue. The product with the highest amount of glue determines the classification.	**For the tested type and amount, extended to those glues where PCS is equal or inferior to the PCS of the glue used in the test.**	
Asymmetry	**Not applicable**	**Not applicable**	**See 5.3.2.6**	**See 5.3.1.3**

Table A.49 — Installation Parameters for CS - flat products as placed on the market

Installation parameter	Validity of test results	
	EN 13823 (SBI)	**EN ISO 11925-2 (Ignitability)**
Exposure to thermal attack	Test result is valid for product as placed on the market.	**See clause 5.3.1.1**
Substrate	See 5.3.2.2	**Not applicable**
Air gaps / cavities	See 5.3.2.3	
Joints / edges	If products are tested with one joint only (vertical or horizontal), then the test result is only valid for assemblies with the joint direction tested. If tested with vertical and horizontal joints, the test result is valid for all arrangements. When tested with butt edges, the test result is valid for all edge types. If tested with any other type of edge the test result is valid for that type only.	
Size and positioning of test specimen	Test valid for all product sizes.	
Product orientation and geometry	See 5.3.2.6	**See 5.3.1.3**
Fixing of test specimen	**The test result being obtained with a mechanical fixing is valid for the product as placed on the market.**	**Not applicable**

Table A.50 – Product parameters for CS — pipe insulation products, as placed on the market

Product parameter	Validity of test results			
	EN ISO 1182	**EN ISO 1716**	**EN 13823 (SBI)**	**EN ISO 11925-2 (Ignitability)**
Thickness	No influence	No Influence	See 5.3.2.8.1	No Influence
Density	No Influence	No Influence	No Influence	
Type of product	Test on highest amount of organic content (expressed in %) is valid for lower organic content.	Test on the highest amount of organic content (expressed in %) is valid for lower organic content.		
Type of facing(s)	Not applicable if it is not a substantial component (see EN 13501-1).	For the tested type only if not A1.	For the tested type only if not A1 or A2.	
Thickness / area weight of facings	Not applicable if it is not a substantial component (see EN 13501-1).	The product with the thickest/highest area weight of facing determines the classification. This is valid for one component facings and for multi component facings where the ratio between the components remains constant.	The test result obtained for A1 and A2 facings will also be valid for thicker facings of the same type. The test result obtained for a facing (not for A1 or A2 facings) with the greatest area weight will also be valid for thinner facings.	
Type and amount of glue for facings	Not applicable if it is not a substantial component (see EN 13501-1).	For products using the same type of facing and glue. The product with the highest amount of glue determines the classification.	For the tested type and amount, extended to these glues where PCS is equal or lower than the PCS of the glue used in the test.	
Asymmetry	Not applicable if it is not a substantial component (see EN 13501-1).	Not applicable	See 5.3.2.6	See 5.3.1.3

NOTE Special prefabricated shapes, e.g. elbows, T-pieces, shall be deemed to have the same fire classification as tested of the same product group.

Table A.51 – Installation parameters for CS — pipe insulation products, as placed on the market

Installation parameter	Validity of test results	
	EN 13823 (SBI)	**EN ISO 11925-2 (Ignitability)**
Exposure to thermal attack	Test result is valid for product as placed on the market.	See 5.3.1.1
Substrate	See 5.3.2.8.2	Not relevant
Air gaps / cavities	Not relevant	Not relevant
Joints / edges	See 5.3.2.8.5, if tested with vertical and horizontal joints, the test result is valid for all arrangements. In case a product is tested with a certain type of edge, then the test result is valid for that type of edge only. When tested with butt edges, the test result is valid for all edge types.	Not relevant
Size and positioning of test specimen	See 5.3.2.8.1	Not relevant
Product orientation and geometry	See 5.3.2.8.2	See 5.3.1.3
Fixing of test specimen	See 5.3.2.8.5	Not relevant

Table A.52 — Installation parameters for CS — flat products in standard test configuration of assemblies simulating end-use applications

Installation parameter	Validity of test results	
	EN 13823 (SBI)	**EN ISO 11925-2 (Ignitability)**
Exposure to thermal attack	**Without surface product (no. 1 of Table 5):** test result is valid for product applied without surface product(s). The classification obtained is also valid for assemblies when a covering or protecting layer having Euroclass A1 and A2 (except for an Euroclass A1 product covered by steel with organic coating, which will be Euroclass A2) is placed in front of the thermal insulation product in the end-use. No test is needed for CS thermal insulation products of classification Euroclass A1. **Plasterboard surface product (no. 2 of Table 5):** test results are valid for all non-combustible mineral surface products of Euroclasses A1 and A2 with equal or higher thickness and with equal or higher densities. No test is needed for CS thermal insulation products of classification Euroclass A1. **Corrugated steel sheet surface product (no. 3 of Table 5):** test results are valid for all corrugated steel sheets such as defined in 6.3.2.2 and thicker steel. No test is needed for CS thermal insulation products of classification Euroclass A1. **Particle board surface product (no. 4 of Table 5):** test results are valid for all types of wooden boards of Euroclasses D or higher and with equal or higher thickness and with equal and higher densities. No test is needed for CS thermal insulation products of classification Euroclass A1.	**See 6.3.1.1**
Substrate	Test results only valid for product applied with the substrate used in the test.	**Not applicable**
Air gap / cavities	Test results are also valid for larger air gaps.	
Joints / edges	Test results are valid also for all assemblies without joints. When tested with butt edges the test result is valid for all edge types. If tested with any other type of edge the test result is valid for that type only.	
Size and positioning of test specimen	**Test results are valid for all types of positioning and for insulation boards with larger dimensions.**	

Table 52 *(continued)*

Installation parameter	Validity of test results	
	EN 13823 (SBI)	**EN ISO 11925-2 (Ignitability)**
Product orientation and geometry of test specimen	See 6.3.2.8	**See 6.3.1.3**
Fixing of test specimen and surface product	**Test result using clamping is valid also for loosely installed or mechanical fixing.** **If the insulation panels are fixed without fixing to the substrate, it is accepted that the largest product of the production range with a minimum of sealed joints behind the surface product can be used.**	**Not applicable**

A.14 Polyethylene foam (PEF)

Table A.53 — Product parameters for PEF, flat products when tested as placed on the market or in standard test configuration of assemblies

<table>
<tr><th rowspan="2">Product parameter</th><th colspan="4">Validity of test results</th></tr>
<tr><th>EN ISO 1182</th><th>EN ISO 1716</th><th>EN 13823 (SBI)</th><th>EN ISO 11925-2 (Ignitability)</th></tr>
<tr><td rowspan="2">Thickness</td><td rowspan="8">Not applicable</td><td rowspan="8">Not applicable</td><td colspan="2">The thickness giving the worst test result shall be determined for the declaration. If the worst test result is not known, the maximum and the minimum thicknesses shall be tested.</td></tr>
<tr><td>Test results on 180 mm thickness are also valid for higher thicknesses.</td><td>Test results on 60 mm thickness are also valid for higher thicknesses.</td></tr>
<tr><td>Density</td><td colspan="2">A test result is valid for the tested density ± 15 %.</td></tr>
<tr><td>Type of product</td><td colspan="2">For the tested type only.</td></tr>
<tr><td>Type of facing(s) or coating(s)</td><td colspan="2">For the tested type only.</td></tr>
<tr><td>Thickness / area weight of facing(s) or coating(s)</td><td colspan="2">For the tested thickness only.
The test result obtained for Euroclass A1 and A2 facings/coatings will also be valid for thicker facings of the same type.</td></tr>
<tr><td>Type and amount of glue for facing(s) or coating(s)</td><td colspan="2">For the tested type and amount, extended to those glues where PCS is equal or lower than the PCS of the glue used in the test.</td></tr>
<tr><td>Asymmetry</td><td>See 5.3.2.6</td><td>See 5.3.1.3</td></tr>
</table>

Table A.54 — Installation parameters for PEF flat products, as placed on the market

Installation parameter	Validity of test results	
	EN 13823 (SBI)	**EN ISO 11925-2 (Ignitability)**
Exposure to thermal attack	Test result is valid for product as placed on the market.	**See 5.3.1.1**
Substrate	See 5.3.2.2	**The product shall be tested directly exposed to the thermal attack fixed to a steel sheet.**
Air gaps / cavities	See 5.3.2.3	**Not applicable**
Joints / edges	See 5.3.2.4	
Size and positioning of test specimen	Test valid for all product sizes (see 5.3.2.5).	
Product orientation and geometry	See 5.3.2.6	
Fixing of test specimen	**The test specimen shall be fixed with glue. The test result obtained is only valid for the product as placed on the market with this specified glue (formulation and application weight).**	

Table A.55 — Product parameters for PEF — pipe insulation products as placed on the market

Product parameter	Validity of test results			
	EN ISO 1182	**EN ISO 1716**	**EN 13823 (SBI)**	**EN ISO 11925-2 (Ignitability)**
Thickness	Not applicable	Not applicable	See 5.3.2.8.1	No influence
Density			A test result is valid for the tested density ± 15 %.	
Type of product			For the tested type only.	
Type of facing(s) or coating(s)			For the tested type only.	
Thickness / area weight of facing(s) or coating(s)			For the tested thickness only. The test result obtained for A1 and A2 facings/coatings will also be valid for thicker facings of the same type.	
Type and amount of glue for facing(s) or coating(s)			For the tested type and amount, extended to those glues where PCS is equal or lower than the PCS of the glue used in the test.	
Asymmetry			See 5.3.2.6	See 5.3.1.3

Table A.56 — Installation parameters for PEF – pipe insulation products as placed on the market

Installation parameter	Validity of test results	
	EN 13823 (SBI)	**EN ISO 11925-2 (Ignitability)**
Exposure to thermal attack	Test result is valid for product as placed on the market.	See 5.3.1.1
Substrate	The products shall be tested on steel pipes. (see 5.3.2.8.2).	The product shall be tested directly exposed to the thermal attack fixed to a steel pipe.
Air gaps / cavities	The pipes shall be mounted in such a way that there is a gap of 25 mm between the outside pipe insulation surfaces of the adjacent pipe and between the outside insulation surface and the backing board (see 5.3.2.8.2).	Not applicable
Joints / edges	When tested with butt edges, the test result is valid for all edge types. If tested with any other type of edge the test result is valid for that type only.	Not applicable
Size and positioning of test specimen	Test valid for all product sizes (see 5.3.2.8.1).	Use the same inside pipe diameter as used in the SBI test (22 mm inside diameter).
Product orientation and geometry	See 5.3.2.8.2	Not applicable
Fixing of test specimen	See 5.3.2.8.5	To be fixed mechanically at the top.

Table A.57 — Installation parameters for PEF – for flat products in standard test configuration of assemblies simulating end-use applications

Installation parameter	Validity of test results	
	EN 13823 (SBI)	**EN ISO 11925-2 (Ignitability)**
Exposure to thermal attack	**Without surface product (no. 1 of Table 5)**: test result is valid for product applied without surface product(s). The classification obtained is also valid for assemblies when a covering or protecting layer having Euroclass A1 and A2 is placed in front of the thermal insulation product in end-use. **Plasterboard surface product (no. 2 of Table 5)**: test results are for all non-combustible mineral surface products of Euroclasses A1 and A2 with equal or higher thickness and with equal or higher densities. **Corrugated steel sheet surface product (no. 3 of Table 5)**: test results are valid for all steel sheets such as defined in 6.3.2.2 and thicker steel thickness. **Particle board surface product (no. 4 of Table 5)**: Test results are valid for all type of wooden boards of Euroclasses D or higher and with equal or higher thickness and with equal or higher densities.	**See 6.3.1.1**
Substrate	**Tests results with steel or plasterboard substrates are valid for all substrates.** **Other test results are only valid for product applied with the substrate used in the test.**	**Not applicable**

Table A.57 *(continued)*

Installation parameter	Validity of test results	
	EN 13823 (SBI)	**EN ISO 11925-2 (Ignitability)**
Air gaps / cavities	Test results are also valid for larger air gaps. Test results from a test where an air gap has been included are also valid for assemblies without air gap; for products tested behind the standardised surface products and for products tested without surface products having a thickness ≥ 80 mm, test results without air gap is also valid for assemblies with air gap.	**Not applicable**
Joints / edges	Test results are valid also for all assemblies without joints. When tested with butt edges the test result is valid for all edge types. If tested with any other type of edge the test result is valid for that type only.	
Size and positioning of test specimen	Tests results are valid for all sizes.	
Product orientation and geometry	See 6.3.2.8.	**See 6.3.1.3.**
Fixing of test specimen and surface product	**The test specimen shall be fixed with glue. The test result obtained is only valid with this specified glue. Surface products can be mechanically fixed or fixed with glue.** **Test results are valid only for the type of fixing used; for insulation product thicknesses ≥ 80 mm when tested without surface product and for any product thickness when tested with plasterboard or particle board as surface product, test results with mechanical fixing are also valid for all other types of fixing including glue.**	

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[2] EN 13163, *Thermal insulation products for buildings — Factory made products of expanded polystyrene (EPS) — Specification*

[3] EN 13164, *Thermal insulation products for buildings — Factory made products of extruded polystyrene foam (XPS) — Specification*

[4] EN 13165, *Thermal insulation products for buildings — Factory made rigid polyurethane foam (PUR) products — Specification*

[5] EN 13166, *Thermal insulation products for buildings — Factory made products of phenolic foam (PF) — Specification*

[6] EN 13167, *Thermal insulation products for buildings — Factory made cellular glass (CG) products — Specification*

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Tel +44 (0)20 8996 9001
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