EAD **340556-00-05066**

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European Assessment Document for

Attic stair kits

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This European Assessment Document (EAD) has been developed taking into account up-to-date technical and scientific knowledge at the time of issue and is published in accordance with the relevant provisions of Regulation (EU) No 305/2011 as a basis for the preparation and issuing of European Technical Assessments (ETA).

Contents

1 SCOPE OF THE EAD

1.1 Description of the construction product

The attic stair kits consist of an attic hatch with a frame, a hatch door and a lifting mechanism. The mandatory components of the kit include feed box, sealing, cover profiles and stair consisting of stringers and steps. See figure 1.1.1

The attic hatch is made from steel or timber, the hatch door is made from wood-based panels, the lifting mechanism is metal based and the stringers and steps are metal or timber based.

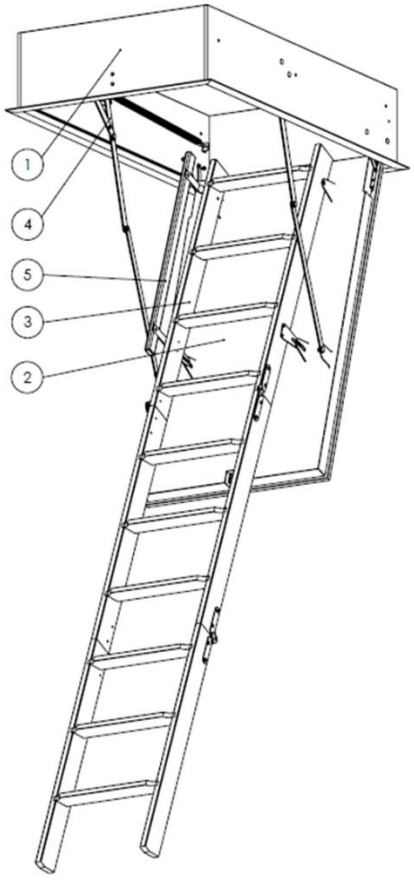
The steel elements covered by the EAD do not contain more than 1,0 % by weight or volume (whichever is the more onerous) of homogeneously distributed organic material.

As an optional component, additional polyethylene (PE) foam panels can be included on the attic side of the hatch door for fire resistance purposes for fires originating in the room below the attic stair kit and for thermal resistance purposes.

The ladder itself can be a concertina loft ladder, hinged/folding loft ladder or a sliding loft ladder.

The attic stair kit is in accordance with EN 14975[1].

See figure 1.1.1 for an overview of the kit.



1. Feed box including sealing and cover profiles
2. Hatch door
3. Ladder/stair consisting of stringers and steps
4. Lever – lifting mechanism
5. Handrail

Figure 1.1.1 Overview of the kit and components

The product is not covered by EAD 340006-00-0506, since the attic stair kit, which is referred to in EAD 340006-00-0506 as a “loft ladder”, is specifically excluded from the scope of EAD 340006-00-0506 and the assessment methods in EAD 340006-00-0506 do not apply to this product. The product is not covered by EN 16034.

1 All undated references to standards in this EAD are to be understood as references to the dated versions listed in clause 4

Concerning product packaging, transport, storage, maintenance, replacement and repair it is the responsibility of the manufacturer to undertake the appropriate measures and to advise his clients on the transport, storage, maintenance, replacement and repair of the product as he considers necessary.

It is assumed that the product will be installed according to the manufacturer's instructions or (in absence of such instructions) according to the usual practice of the building professionals.

Relevant manufacturer's stipulations, e.g., with regard to the intended end use conditions, having influence on the performance of the product covered by this European Assessment Document shall be considered for the determination of the performance and detailed in the ETA as long as the details of the assessment methods as laid down in this EAD are respected.

1.2 Information on the intended use(s) of the construction product

1.2.1 Intended use(s)

The attic stair kit is used in indoor conditions and not exposed to outdoor conditions. The stair kit may be used in ceilings between a heated living space and a cold attic. The attic stair is permanently fixed at its top end with sliding or hinged sections permitting it to be lowered to and raised from a lower level to provide access to a loft or similar point at a higher level.

The scope takes into account attic stairs, which are usually in the closed position and do not have a self-closing mechanism.

The attic stair kits may be used as fire and smoke compartmentation s well.

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1.2.2 Working life/Durability

The assessment methods included or referred to in this EAD have been written based on the manufacturer's request to take into account a working life of the attic stair kit for the intended use of 25 years. These provisions are based upon the current state of the art and the available knowledge and experience.

When assessing the product, the intended use as foreseen by the manufacturer shall be taken into account. The real working life may be, in normal use conditions, considerably longer without major degradation affecting the basic requirements for works[2].

The indications given as to the working life of the construction product cannot be interpreted as a guarantee neither given by the product manufacturer or his representative nor by EOTA when drafting this EAD nor by the Technical Assessment Body issuing an ETA based on this EAD, but are regarded only as a means for expressing the expected economically reasonable working life of the product.

2 The real working life of a product incorporated in a specific works depends on the environmental conditions to which that works is subject, as well as on the particular conditions of the design, execution, use and maintenance of that works. Therefore, it cannot be excluded that in certain cases the real working life of the product may also be shorter than referred above.

2 ESSENTIAL CHARACTERISTICS AND RELEVANT ASSESSMENT METHODS AND CRITERIA

2.1 Essential characteristics of the product

Table 2.1.1 shows how the performance of attic stair kit is established in relation to the essential characteristics.

Table 2.1.1 Essential characteristics of the product and methods and criteria for assessing the performance of the product in relation to those essential characteristics

No	Essential characteristic	Method of assessment	Type of expression of product performance
Basic Requirement for Construction Works 2: Safety in case of fire			
1	Reaction to fire	2.2.1	Class
2	Resistance to fire	2.2.2	Class
3	Propensity to undergo continuous smouldering	2.2.3	Description
4	Smoke control	2.2.4	Class
Basic Requirement for Construction Works 3: Hygiene, health and the environment			
5	Content, emission and/or release of dangerous substances	2.2.5	Level
Basic Requirement for Construction Works 4: Safety in use			
6	Resistance to static load	2.2.6	Description
7	Resistance to fatigue load	2.2.7	Description
8	Torsion resistance of rungs or treads	2.2.8	Description
9	Mechanical strength of handrail – if relevant	2.2.9	Description
10	Mechanical strength of ladder stops	2.2.10	Description
11	Bending strength of rungs and/or treads	2.2.11	Description
Basic Requirement for Construction Works 5: Protection against noise			
12	Airborne sound insulation	2.2.12	Level
Basic Works Requirement 6: Energy economy and heat retention			
13	Thermal resistance	2.2.13	Level
14	Air permeability	2.2.14	Level
Aspects of durability			
15	Behaviour between different climates	2.2.15	Level

2.2 Methods and criteria for assessing the performance of the product in relation to essential characteristics of the product

This chapter is intended to provide instructions for TABs. Therefore, the use of wordings such as “shall be stated in the ETA” or “it has to be given in the ETA” shall be understood only as such instructions for TABs on how results of assessments shall be presented in the ETA. Such wordings do not impose any obligations for the manufacturer and the TAB shall not carry out the assessment of the performance in relation to a given essential characteristic when the manufacturer does not wish to declare this performance in the Declaration of Performance.

If for any components covered by harmonised standards or European Technical Assessments the manufacturer of the component has included the performance regarding the relevant characteristic in the Declaration of Performance, retesting of that component for issuing the ETA under the current EAD is not required.

2.2.1 Reaction to fire

The reaction to fire of the attic stair kit is assessed by means of the reaction to fire of its components which are representative of the attic stair kit performance. The hatch door, the feed box and the ladder/stair are the essential components of the kit for this characteristic.

The components of the attic stair kit shall be tested, using the test method(s) relevant for the corresponding reaction to fire class. The components of the stair kit shall be classified according to Delegated Regulation (EU) 2016/364 and EN 13501-1.

The lifting mechanism, sealing and components with a mass ≤ 50 g and a size of $\leqslant$ 50 mm x $\leqslant$ 50 mm are considered to be small components/surfaces, which do not need to be tested and classified separately.

The steel elements of the attic stair kit are considered to satisfy the requirements for performance class A1 of the characteristic reaction to fire in accordance with the Commission Decision 96/603/EC, as amended by 2000/605/EC and 2003/424/EC, without the need for testing on the basis of it fulfilling the conditions set out in that Decision and its intended use being covered by that Decision.

Components covered by another appropriate CWFT decision such as Decision 2007/348/EC, 2003/593/EC or 2006/213/EC, as amended by Commission Delegated Regulation (EU) 2024/1399 in so far as the conditions set out in that decision are applicable for the use of the component in the kit covered by this EAD shall be classified in accordance with the said Decisions.

The classes shall be given in the ETA.

2.2.2 Resistance to fire

The resistance to fire of the attic stair kit shall be tested in its end use condition in closed position in accordance with EN 1634-1, using the test method relevant for the corresponding fire resistance class, in order to be classified according to EN 13501-2 clause 7.5.5. The class and the applicable field of application including that the fire exposure is considered only for fire originating from below the attic stair kit shall be given in the ETA.

Note: EN 1634-1 is in the framework of this EAD considered an appropriate method for the assessment of the resistance to fire performance of non-loadbearing horizontally oriented doors by analogy. The test shall be carried out in a horizontal furnace according to EN 1363-1 with fire load from below and / or from above.

Clauses 13.1, 13.2, 13.5 and 13.6 of the direct field of application in EN 1634-1 shall apply analogously to attic stair kits.

2.2.3 Propensity to undergo continuous smouldering

The propensity to undergo continuous smouldering of the wood-based panels and PE panels (if relevant) shall be tested and assessed in accordance with EN 16733 and as specified in annex A.

In accordance with EN 16733, clause 11, the ETA shall specify the following information, for the wood-based panels, depending on the outcome of the assessment:

- "The product does not show propensity to undergo continuous smouldering"; or
- "The product shows propensity to undergo continuous smouldering" or
- "Assessment of the propensity to undergo continuous smouldering is not possible"

2.2.4 Smoke control

The smoke control attic stair kit shall be tested in its end use condition in closed position in accordance with EN 1634-3, using the test method relevant for the corresponding smoke control class, in order to be classified according to EN 13501-2 clause 7.5.5.

Clause 8.2 of EN 1634-3 shall be disregarded. As preconditioning a 25 cycle of stoving and un-stoving shall be carried out.

Clauses 13.1 of EN 1634-3 and 13.2, 13.5 and 13.6 of EN 1634-1 of the direct field of application including that the fire exposure is considered only for fire originating from below the attic stair kit shall apply analogously to attic stair kits.

2.2.5 Content, emission and/or release of dangerous substances

The performance of attic stair kits related to the emission and/or release and, where appropriate, the content of dangerous substances shall be assessed on the basis of the information provided by the manufacturer[3] after identifying the release scenarios taking into account the intended use of the product and the Member States where the manufacturer intends his product to be made available on the market. Purely inorganic boards, slabs or mats alone and purely inorganic kits with fasteners and frames made of uncoated steel do not have to be tested.

The intended release scenarios for this product and intended use with respect to dangerous substances for this product are:

IA1: Product with direct contact to indoor air

IA2: Product with indirect contact to indoor air (e.g., covered products) but possible impact on indoor air.

2.2.5.1 SVOC and VOC

For the intended use covered by the release IA1 and IA2 semi-volatile organic compounds (SVOC) and volatile organic compounds (VOC) are to be determined in accordance with EN 16516. The loading factor to be used for emission testing shall be determined in accordance with EN 16516.

Loading factors L in accordance with EN 16516, depending on the product type:

Loading factor [m^2/m^3]	Intended use
0,4	Ceilings
0,05	small surfaces, for example door, window, heating system
0,007	very small surfaces, for example sealants

[3] The manufacturer may be asked to provide to the TAB the REACH related information which shall accompany the DoP (cf. Article 6(5) of Regulation (EU) No 305/2011).
The manufacturer is **not** obliged to:
- provide the chemical constitution and composition of the product (or of constituents of the product) to the TAB, or
- provide a written declaration to the TAB stating whether the product (or constituents of the product) contain(s) substances which are classified as dangerous according to Directive 67/548/EEC and Regulation (EC) No 1272/2008 and listed in the "Indicative list on dangerous substances" of the SGDS, taking into account the installation conditions of the construction product and the release scenarios resulting from there.

Any information provided by the manufacturer regarding the chemical composition of the products is not to be distributed to EOTA to other TABs or beyond.

The preparation of the test specimen shall be performed by using all possible components of the kit (for the definition of the kit see clause 1.3) installed in accordance with the manufacturer's product installation instructions or (in absence of such instructions) the usual practice of installation.

Once the test specimen has been produced, as described above, it shall immediately be placed in the emission test chamber or cell. This time shall be considered the starting time of the emission test.

The test results shall be reported for the relevant parameters (e.g. chamber size, temperature and relative humidity, air exchange rate, loading factor, size of test specimen, conditioning, production date, arrival date, test period, test result) after 3 and 28 days of testing.

The relevant test results shall be expressed in [mg/m³] and stated in the ETA.

2.2.6 Resistance to static load

The resistance to static load of attic stair kit shall be tested in its end use condition in accordance with EN 14975 clause 5.2.

Test specimen: 1 piece from each type of attic stair

Test procedure: in accordance with EN 14975 clause 5.2

The test report shall detail the following:

- Material of frame and cover, and geometric characteristics of the attic stair,
- Each deflection caused by the force values,
- Statement on permanent deflection,
- Observations during the test.

It shall be stated in the ETA whether or not the ladder showed any visible damage or permanent deformation, and if the ladder is capable of being stowed and un-stowed after the test.

2.2.7 Resistance to fatigue load

The resistance to fatigue load of attic stair kit shall be tested in its end use condition in accordance with EN 14975 clause 5.3.

Test specimen: 1 piece from each type of attic stair

Test procedure: in accordance with EN 14975 clause 5.3

The test report shall detail the following:

- Material of frame and cover, and geometric characteristics of the attic stair,
- Observations during the test.
- Residual deflection of the stiles and rungs or tread

It shall be stated in the ETA whether or not the ladder showed any structural damage and if the ladder is capable of being stowed and un-stowed after the test. The residual deflection of the stiles and rungs or tread shall be stated in the ETA.

2.2.8 Torsion resistance of rungs or treads

The torsion resistance of rungs or treads of attic stair kit shall be tested in its end use condition in accordance with EN 14975 clause 5.4. The applied torque moment is 5 Nm as described in EN 14975

Test specimen: 1 piece from each type of attic stair.

Test procedure: in accordance with EN 14975 clause 5.4.

The test report shall detail the following:

- Material of frame and cover, and geometric characteristics of the attic stair,
- Permanent deformation,
- Observations during the test.

It shall be stated in the ETA whether or not the ladder showed any damage and/or permanent deformation to the joint between the stile and the rung or tread after the test.

2.2.9 Mechanical strength of handrail

This characteristic is only relevant if the attic stair kit includes a handrail.

The mechanical strength of handrail of attic stair kit shall be tested in its end use condition in accordance with EN 14975 clause 5.5.

Test specimen: 1 piece from each type of attic stair.

Test procedure: in accordance with EN 14975 clause 5.5.

The test report shall detail the following:

- Material of frame and cover, and geometric characteristics of the attic stair and handrail,
- Applied forces and their directions,
- Measured deflections,
- Failure mode (if any),
- Observations during the test.

It shall be stated in the ETA whether or not the ladder showed any failure of handrail fixings and the permanent deformation at the points of application of load shall be stated in the ETA.

2.2.10 Mechanical strength of ladder stops.

The mechanical strength of ladder stops of attic stair kit shall be tested in its end use condition in accordance with EN 14975 clause 5.6.

Test specimen: 1 piece from each type of attic stair.

Test procedure: in accordance with EN 14975 clause 5.6.

The test report shall detail the following:

- Material of frame and cover, and geometric characteristics of the attic stair and ladder stops,
- Number of test cycles,
- Failure mode (if any),
- Observations during the test.

It shall be stated in the ETA whether or not the stops remained in position and the sections of the ladder are not disengaged.

2.2.11 Bending strength of rungs and/or treads

The bending strength of rungs and/or treads of attic stair kit shall be tested in its end use condition in accordance with EN 14975 clause 5.7.

Test specimen: 1 piece from each type of attic stair.

Test procedure: in accordance with EN 14975 clause 5.7.

The test report shall detail the following:

- Material of frame and cover, and geometric characteristics of the attic stair, rungs and treads,
- Deflections,
- Observations during the test.

The maximum permanent deflection shall be stated in the ETA.

2.2.12 Airborne sound insulation

The direct airborne sound insulation performance of the attic stair shall be obtained by test of the complete assembly according to EN ISO 10140-2 and expressed according to EN ISO 717-1 as the single weighted sound reduction index, R_w. The level shall be stated in the ETA.

2.2.13 Thermal resistance

The thermal transmittance of the attic stair kit shall be tested in accordance with EN ISO 12567-1 (reference method). In case of two-dimensional calculations, the calculation method shall be in accordance with EN ISO 10077-1 and EN ISO 10077-2 together with ISO 15099 using minimum 2 significant figures. In case of three-dimensional calculations, the calculation method shall be in accordance with EN ISO 10211.

The level of thermal transmittance of the attic stair kit shall be given in the ETA together with specification of the method used.

2.2.14 Air permeability

The air permeability of the attic stair kit shall be tested in accordance with EN 1026 and classified in accordance with EN 12207. The performance shall be given in the ETA.

2.2.15 Behaviour between different climates

The behaviour between different climates shall be tested in accordance with Annex B.

The performance of the attic stair kit shall be stated in the ETA in accordance with Annex B together with the applied climatic conditions.

3 ASSESSMENT AND VERIFICATION OF CONSTANCY OF PERFORMANCE

3.1 System(s) of assessment and verification of constancy of performance to be applied

For the products covered by this EAD the applicable European legal act is Decision 1999/89/EC amended by Commission Decision 2001/596/EC.

The applicable AVCP system is 2+ for any use except for uses subject to regulations on reaction to fire.

For uses subject to regulations on reaction to fire the applicable AVCP systems regarding reaction to fire are 1, or 3, or 4 depending on the conditions defined in the said Decision.

3.2 Tasks of the manufacturer

The cornerstones of the actions to be undertaken by the manufacturer of the attic stair kit in the procedure of assessment and verification of constancy of performance are laid down in Table 3.2.1.

Table 3.2.1 Control plan for the manufacturer; cornerstones

No	Subject/type of control	Test or control method	Criteria, if any	Minimum number of samples	Minimum frequency of control
Factory production control (FPC) [including testing of samples taken at the factory in accordance with a prescribed test plan]					
1	Material	Delivery documents	According to Control plan	Testing is not required	Each delivery
2	Geometry (form and dimensions)	Measurement	According to Control plan	Testing is not required	Each delivery
3	Mechanical characteristics	According to rows 6-11 in table 2.1.1	According to Control plan	Testing is not required	Each delivery
4	Reaction to fire of components	According to 2.2.1	According to Control plan	1	Every two years

3.3 Tasks of the notified body

The cornerstones of the actions to be undertaken by the notified body in the procedure of assessment and verification of constancy of performance for the attic stair kit are laid down in Table 3.3.1.

Table 3.3.1 Control plan for the notified body; cornerstones

No	Subject/type of control	Test or control method	Criteria, if any	Minimum number of samples	Minimum frequency of control
Initial inspection of the manufacturing plant and of factory production control					
1	Notified Body will ascertain that the factory production control with the staff and equipment are suitable to ensure a continuous and orderly manufacturing of the attic stair kit.	Verification of the complete FPC as described in the control plan agreed between the TAB and the manufacturer	According to Control plan	According to Control plan	When starting the production or a new line
Continuous surveillance, assessment and evaluation of factory production control					
2	The Notified Body will ascertain that the system of factory production control and the specified manufacturing process are maintained taking account of the control plan.	Verification of the controls carried out by the manufacturer as described in the control plan agreed between the TAB and the manufacturer with reference to the raw materials, to the process and to the product as indicated in Table 3.2.1	According to Control plan	According to Control plan	1/year

The intervention of the notified body under AVCP system 1 is only necessary for reaction to fire for products/materials for which a clearly identifiable stage in the production process results in an improvement of the reaction to fire classification (e.g., an addition of fire retardants or a limiting of organic material).

In this case the cornerstones of the actions to be undertaken by the notified body under AVCP system 1 are laid down in Table 3.3.2.

Table 3.3.2 Tasks of the notified body under AVCP system 1

No	Subject/type of control	Test or control method	Criteria, if any	Minimum number of samples	Minimum frequency of control
Initial inspection of the manufacturing plant and of factory production control carried out by the manufacturer regarding the constancy of performance related to reaction to fire					
1	Where the intervention of the Notified Body is necessary only because the conditions for the applicability of system 1 are fulfilled for reaction to fire, the notified body will consider especially the clearly identifiable stage in the production process which results in an improvement of the reaction to fire classification (e.g. an addition of fire retardants or a limiting of organic material).	Verification of the complete FPC as described in the control plan agreed between the TAB and the manufacturer	As defined in the control plan agreed between the TAB and the manufacturer	As defined in the control plan agreed between the TAB and the manufacturer	When starting the production or a new line
Continuous surveillance, assessment and evaluation of factory production control carried out by the manufacturer regarding the constancy of performance related to reaction to fire					
2	Where the intervention of the Notified Body is necessary only because the conditions for the applicability of system 1 in the Decisions regarding reaction to fire are fulfilled, the notified body will consider especially the clearly identifiable stage in the production process which results in an improvement of the reaction to fire classification (e.g. an addition of fire retardants or a limiting of organic material)	Verification of the controls carried out by the manufacturer as described in the control plan agreed between the TAB and the manufacturer with reference to the raw materials, to the process and to the product as indicated in Table 3.2.1	As defined in the control plan agreed between the TAB and the manufacturer	As defined in the control plan agreed between the TAB and the manufacturer	1/year

4 REFERENCE DOCUMENTS

EAD 340006-00-0506	Prefabricated stair kits
EN 14975:2006 + A1:2010	Loft ladders – Requirements, marking and testing
EN 16034:2014	Pedestrian doorsets, industrial, commercial, garage doors and openable windows – Product standard, performance characteristics – Fire resisting and/or smoke control characteristics
EN 13501-1:2018	Fire classification of construction products and building elements - Part 1: Classification using test data from fire reaction to fire tests
EN 1363-1:2020	Fire resistance tests – Part 1: General requirements
EN 13501-2:2023	Fire classification of construction products and building elements – Part 2: Classification using data from fire resistance tests, excluding ventilation services
EN 1634-1:2014 + A1:2018	Fire resistance and smoke control tests for door and shutter assemblies, openable windows and elements of building hardware – Part 1: Fire resistance test for door and shutter assemblies and openable windows
EN 1634-3:2004/AC:2006	Fire resistance tests for door and shutter assemblies – Part 3: Smoke control doors and shutters
EN 16516:2017 + A1:2020	Construction products: Assessment of release of dangerous substances – Determination of emissions into indoor air
EN ISO 10140-2:2021	Acoustics - Laboratory measurement of sound insulation of building elements - Part 2: Measurement of airborne sound insulation
EN ISO 717-1:2020	Acoustics - Rating of sound insulation in buildings and of building elements - Part 1: Airborne sound insulation - Amendment 1: Rounding rules related to single number ratings and single number quantities
EN ISO 10211:2017	Thermal bridges in building construction – Heat flows and surface temperatures – Detailed calculations
EN ISO 12567-1:2010	Thermal performance of windows and doors – Determination of thermal transmittance by the hot-box method – Part 1: Complete windows and doors
EN ISO 10077-1:2017	Thermal performance of windows, doors and shutters – Calculation of thermal transmittance – Part 1: General
EN ISO 10077-2:2017	Thermal performance of windows, doors and shutters – Calculation of thermal transmittance – Part 2: Numerical method for frames
ISO 15099:2003	Thermal performance of windows, doors and shading devices — Detailed calculations
EN 1026:2016	Windows and doors – Air permeability – Test method
EN 12207:1999	Windows and doors – Air permeability – Classification
EN 1121:2000	Doors. Behaviour between two different climates. Test method
EN 16733:2016	Reaction to fire tests for building products – Determination of a building product’s propensity to undergo continuous smouldering
EN 323:1993	Wood-based panels – Determination of density
EN ISO 29466:2022	Thermal insulating products for building applications – Determination of thickness
EN 1191:2012	Windows and doors – Resistance to repeated opening and closing – Test method

ANNEX A: PROVISIONS FOR ASSESSING PROPENSITY TO UNDERGO CONTINUOUS SMOULDERING

A.1 Provisions for wood-based boards / panels

A.1.1 Sample taking

In addition to EN 16733, the following conditions and parameters shall be considered when performing sampling and preparing test samples:

- product-variations of a product family (as defined by a certain combination of raw material, e. g. binder, additives, wood type of the wood shapes / wood fibres etc., and produced in a certain production process);
- the product or product variant with the highest as well as the lowest density of the wood-based board / panel, determined by tests according to EN 323;
- the product or product variant with the highest thickness of the wood-based board / panel, determined by tests according to EN ISO 29466 on at least three specimens;
- each different produced shape / fibre orientation (i. e. lengthwise and crosswise to the length direction of the specimen);
- without any external non-substantial facings, coatings or suchlike – existing external non-substantial facings or coatings shall be removed when preparing the test specimens.

A.1.2 Preparation of tests specimens

The tests shall be done without consideration of the intended end-use conditions, because propensity to undergo continuous smouldering is hardly affected by end-use conditions. If the paragraph 6.2.5 of EN 16733 applies, a permanent contact between the pieces shall be assured.

A.1.3 Extended application of test results

The results of tests considering the aforementioned parameters in fully are also valid for products:

- of the same defined product-family,
- with all densities of wood-based boards / panels between those evaluated,
- with lower thickness of wood-based boards / panels and also with higher thickness when 100 mm thick specimens were tested,
- with all shape / fibre orientations, if all relevant orientations had been tested,
- with any external non-substantial facings or coatings or suchlike and for any end-use conditions.

ANNEX B BEHAVIOUR BETWEEN DIFFERENT CLIMATES

B.1 General

The test shall be carried out in accordance with EN 1121. The deviation from the standard is documented here and shall be taken into account when carrying out a test.

B.2 Apparatus

The apparatus shall be in accordance with EN 1121 Clause 5.

B.3 Test specimen

The test specimen shall represent the attic stair kit.

B.4 Test preparation

It shall be carried out on an attic stair kit in accordance with EN 1121 Clause 6.

B.4.1 Orientation of the attic stair kit

The attic stair kit shall be tested and mounted in a vertical position into the test rig.

The test specimens (in respect of weight and opening mechanism) shall be in the worst case tested.

The attic stair kit shall be tested from both sides (ladder side and opposite).

B.4.2 Fixation

The fixation of the attic stair kit shall represent the end use application (in terms of fixation methods and fixation elements). The feed box shall be so fixed that during the test not more than 1,0 mm deflection can be detected.

B.4.3 Closing conditions

B.4.3.1 During exposure to the climates

The attic stair kit with all its fittings shall be in a closed position.

B.4.3.2 When determining bow

The bow shall be determined with the attic stair kit in an open position.

B.4.3.3 When determining air permeability

The attic stair kit with all its fittings shall be in a closed position.

B.5 Measurement and accuracy

Measurement and accuracy shall be done in accordance with EN 1121 clause 7.

EN 1121 clause 7.1 and 7.2 shall not be applied.

B.6 Test conditions

The attic stair kits shall follow the test conditions of the test climate “a”, “b”, “c” or “d” in accordance with EN 1121 Table 1 depending on the respective specification in the Manufacturers Product Installation Instructions (MPII).

B.6.1 Verification of the test temperatures

Verification of the test temperature shall be in accordance with EN 1121 clause 8.1.

B.6.2 Airspeed

Airspeed shall be in accordance with EN 1121 clause 8.2.

B.6.3 Surface temperature and radiation of the test chamber wall

Surface temperature and radiation of the test chamber wall shall be in accordance with EN 1121 clause 8.3.

B.7 Test method

B.7.1 Test method in case of test climate “C”

The test method shall be in accordance with EN 1191 clause 9.1.2, except for measuring the operating forces.

B.7.2 Test method in case of test climate “D”

The test method shall be in accordance with EN 1191 clause 9.2.1 and 9.2.2, except for measuring the operating forces.

B.8 Test report

Test report shall be in accordance with EN 1121 clause 10.

B.9 Expression of test results

Test parameter	Category 0 (mm)	Category 1 (mm)	Category 2 (mm)	Category 3 (mm)
Bow, B	no requirement	8.0	4,0	2,0
Transverse bending, C	no requirement	4,0	2,0	1,0