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European Assessment Document for

Closure systems for conveyor systems

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) 305/2011 as a basis for the preparation and issuing of European Technical Assessments (ETA).

Contents

1 Scope of the EAD 4

1.1 Description of the construction product 4

1.2 Information on the intended use(s) of the construction product 11
1.2.1 Intended use 11
1.2.2 Working life/Durability 11

1.3 Specific terms 12
1.3.1 Specific terms used in this EAD 12
1.3.1.1 Movable element 12
1.3.1.2 Fixed panel 12
1.3.1.3 Sealing block 12
1.3.1.4 Panel/ fabric strips 12
1.3.1.5 Frame 12
1.3.1.6 Guide 12
1.3.1.7 Anti-drop system 12
1.3.1.8 Sealing system 12
1.3.1.9 Intumescent material 12
1.3.1.10 Closing device 12
1.3.1.11 Fixing material 12
1.3.1.12 Supporting construction 13
1.3.1.13 Cable penetration seals 13
1.3.1.14 Additional flap or slide elements 13
1.3.1.15 Hold-open device 13
1.3.1.16 Conveyor system 13
1.3.1.17 Closing area 13
1.3.1.18 Safety system for monitoring the closing area 13
1.3.1.19 Drive control unit 13
1.3.1.20 Motor drive 13
1.3.1.21 CWT and CWFT 13

2 Essential characteristics and relevant assessment methods and criteria 14

2.1 Essential characteristics of the product 14

2.2 Methods and criteria for assessing the performance of the product in relation to essential characteristics of the product 14
2.2.1 Resistance to fire 15
2.2.2 Mechanical durability of self-closing systems 15
2.2.3 Reaction to fire 15
2.2.4 Content, emission and/or release of dangerous substances 16

3 Assessment and verification of constancy of performance 18

3.1 System(s) of assessment and verification of constancy of performance to be applied 18

3.2 Tasks of the manufacturer 19

3.3 Tasks of the notified body 20

4 Reference documents 21

Annex A Deviation and additions concerning fire resistance test 23

Annex B Additional provisions for testing mechanical durability of self-closing 33

Annex C Mounting and fixing provisions for reaction to fire tests and rules for the extended application of test results 34

1 SCOPE OF THE EAD

1.1 Description of the construction product

This EAD covers closure systems for conveyor systems which are placed on the market as a kit. They can operate vertically or horizontally in internal walls and floors.

The closure systems for conveyor systems consist of the following components:

- Movable element (obligatory component)

The movable element consists of either

- a flap leaf (single-leaf or double-leaf) with hinges,
- a sliding leaf (single-leaf or double-leaf) with a guide system (simple slide or guide wheel system), or
- a curtain (rolling or folding fabric (curtain) with wind-up unit and end plate or final element).

The flap leaf and the double-leaf sliding leaf are equipped with locking devices keeping the flap leaf or sliding leaf shut after closing. The flap leaf or sliding leaf can be equipped with a sealing block in the area of the continuous conveyor system.

The curtain can be equipped with locking devices keeping the movable element shut after closing. The fabric can consist of one or several vertically or horizontally arranged strips stitched together overlappingly at the factory.

Each flap leaf, sliding leaf or curtain overlaps the respective supporting construction by a defined rate.

The flap leaf or sliding leaf can be equipped with additional flap or slide elements for closing residual openings. These additional elements can be actuated either by mechanical or thermal devices (triggering at an ambient air temperature of around 70°C from both sides of the closure). As thermal devices do not react to cold smoke, they are only used for small residual openings (see Annex A.2.8).

Uncoated or inorganic coated steel profiles and steel sheets, mineral fibre boards, gypsum boards, calcium silicate boards and water glass glue as well as fixing material made of uncoated or inorganic coated steel are used to manufacture the flap and sliding leaves. Coated glass fibre fabrics are used to manufacture the curtains.

- Fixed panel with clearance for the conveyor (obligatory component in the case of continuous conveyor systems)

The fixed panel is erected either on the floor or it is fixed to the supporting construction via brackets or using direct screw connections. The recess in the fixed panel is fitted to the respective conveyor system. Intumescent materials are used to close necessary functional gaps. If applicable, a cable penetration can be inserted in the fixed panel or inside the continuous profiles of the conveyor system.

Uncoated or inorganic coated steel profiles and steel sheets, mineral fibre boards, gypsum boards, calcium silicate boards and water glass glue as well as fixing material made of uncoated or inorganic coated steel are used to manufacture the fixed panels.

- Frame and locking device of the flap leaf (obligatory component in the case of a flap leaf as a movable element)

The movable element is fixed to the supporting construction via a frame or guide or be screwed to it directly. The movable element is kept closed by a locking device (flap leaf and the double-leaf sliding leaf) and/or additional claw fasteners.

Uncoated or inorganic coated steel profiles and other components made of uncoated or inorganic coated steel as well as fixing material made of uncoated or inorganic coated steel are used to manufacture the frame and locking device.

- Seal system

Unavoidable residual functional gaps between the movable element and

- the supporting construction (W) (here the seal is obligatory),
- the fixed panel (S2) (the seal is obligatory in the case of continuous conveyor systems) or
- the continuous conveyor system (S1) (the seal is obligatory in the case of continuous conveyor systems) as well as

between the fixed panel and the continuous conveyor system are closed by intumescent materials (see Annex A.1.11, Figures A.1.11.1 and A.1.11.2) (the seal is obligatory in the case of continuous conveyor systems).

- Closing device (obligatory component)

The movable element is opened manually or by auxiliary energy (e.g., spring tension, electromotive, pneumatic or hydraulic drive); additional balance weights can be used.

The movable element is closed via stored mechanical energy (closing weight, deadweight of the movable element, spring systems) or drive motor.

Concrete and uncoated or inorganic coated steel as well as polyester straps are used to manufacture the closing device.

Hold-open devices and free travel controls are not part of this EAD.

- Cable penetration seal (optional component)

The fixed panel contains maximum two cable penetrations per conveyor section for cables necessary for controlling the closure systems for conveyor systems (free travel control).

The dimensions of the cable penetrations are as follows: maximum clear width = 0,3 m; maximum clear height = 0,3 m; maximum clear area: 0,0165 m^2 (see Annex A.1.1). These dimensions are sufficient for cables to operate the closure systems for conveyor systems. Thus, the assessment methods given in this EAD are based on the experiences available with such components.

The following products are used as cable penetration seals:

a) cable penetration seals with a European Technical Assessment (ETA), or

b) cable penetration seals assessed together with the closure systems for conveyor systems (see Annex A.1.1).

The cable penetration seals are closed during normal operation.

In case a) the minimum distances between the individual cable penetrations as well as between the cable penetration and the edge of the fixed panel given in the particular ETA apply. In case b) the distances are bigger or equal to the tested distances. In both cases the minimum distances exceed 100 mm.

Uncoated or inorganic coated steel and intumescent materials are used to manufacture the cable penetration.

- Anti-drop protection for upward sliding leaves (installation in walls, obligatory component)

If the sliding element closes upwards, it is secured so that it is kept in the closed position even if the force-transmitting elements (e.g., belts, chains or ropes) fail.

Uncoated or inorganic coated steel is used to manufacture the anti-drop protection.

Designs using folding supports (made of flat steel) which are pushed up by intumescent materials in case of fire to keep the sliding leaf in the closed position are not covered by this EAD.

The normal position of the closure is open or closed (then it gets opened only in case of a transit). In the place of the closure the conveyor shall either be continued or discontinued or disconnected while closing of the closure. The position of the conveyor with regards to the closure is either at the top, at the bottom, on the sides or in the middle.

The following figures show schematically the types of closure systems for conveyor systems treated in this EAD.

Legend for Figures 1.1.1, 1.1.2a-c and 1.1.3:

1 –	fastenings	2 –	frame, guides
3 –	wall (supporting construction)	4 –	movable element
5 –	seal system	6 –	conveyor system[1]
7 –	fixed panel	8 –	closing device
9 –	locking device	10 –	hinges
11 –	sealing block (in the area of the continuous conveyor techniques)		

1 Not part of the closure systems for conveyor systems.

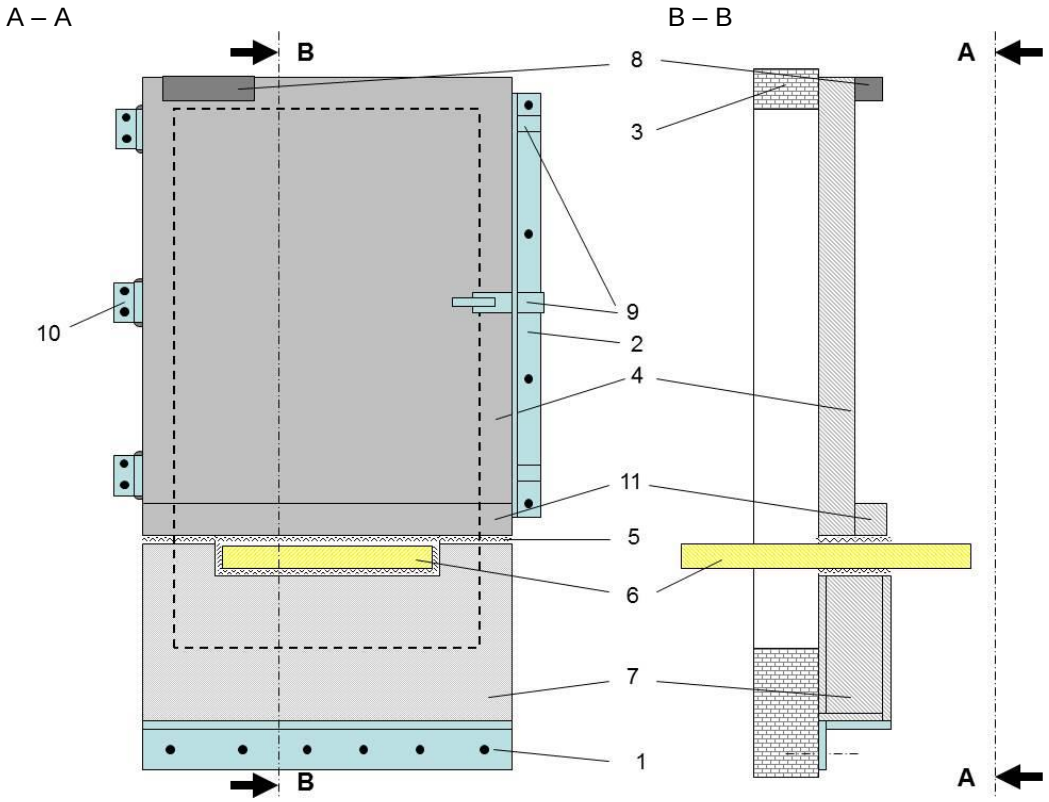

Figure 1.1.1: Example for a version with a flap leaf as the movable element (conveyor continues)

A – A B – B

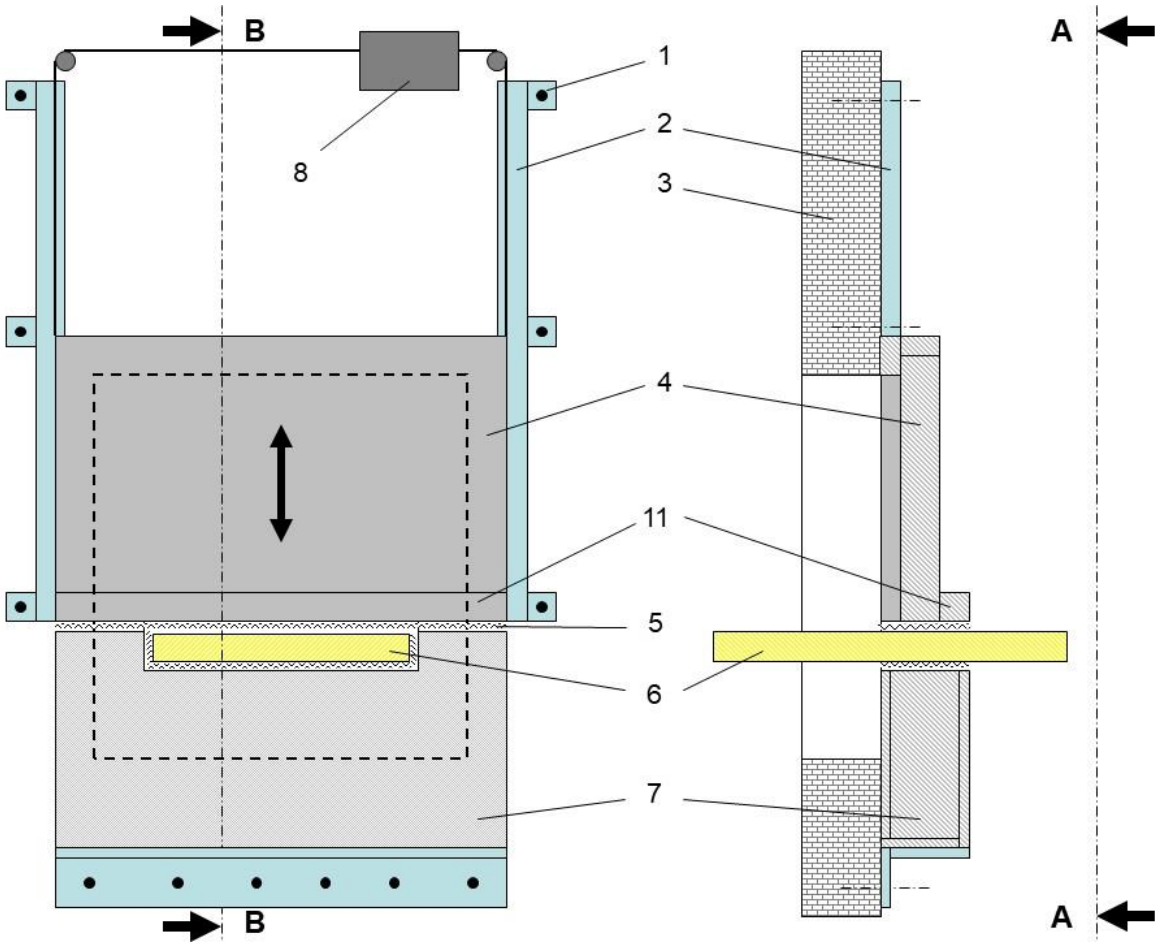

Figure 1.1.2a: Example for a version with a sliding leaf as the movable element (conveyor continues, closing direction vertical)

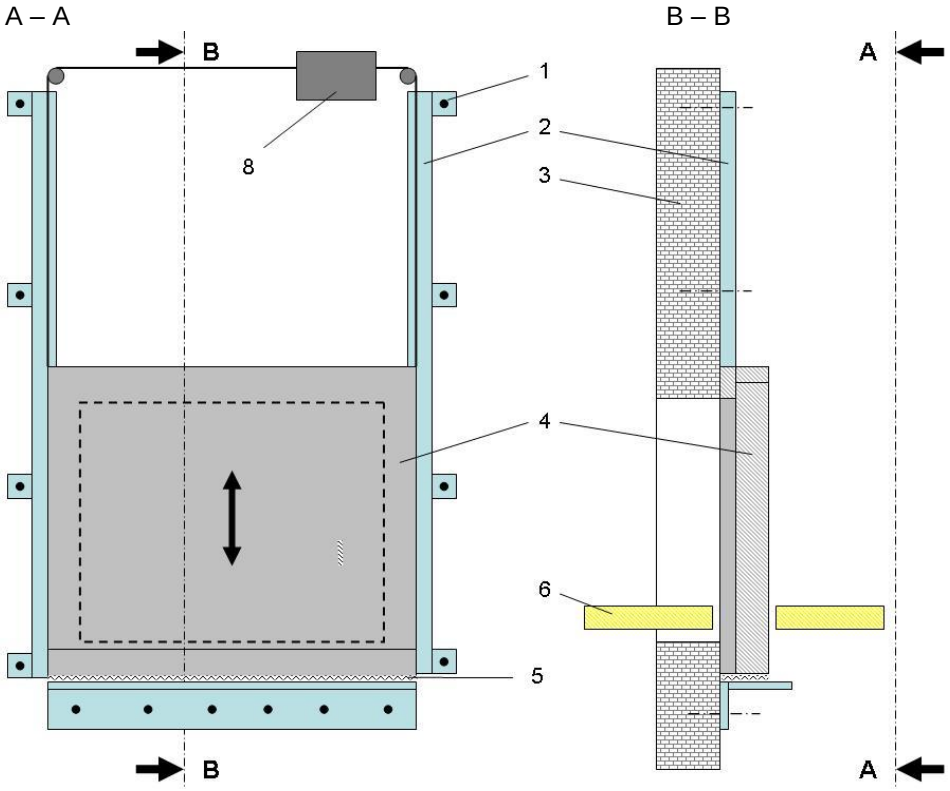

Figure 1.1.2b: Example for a version with a sliding leaf as the movable element (conveyor disconnected, closing direction vertical)

A – A B – B

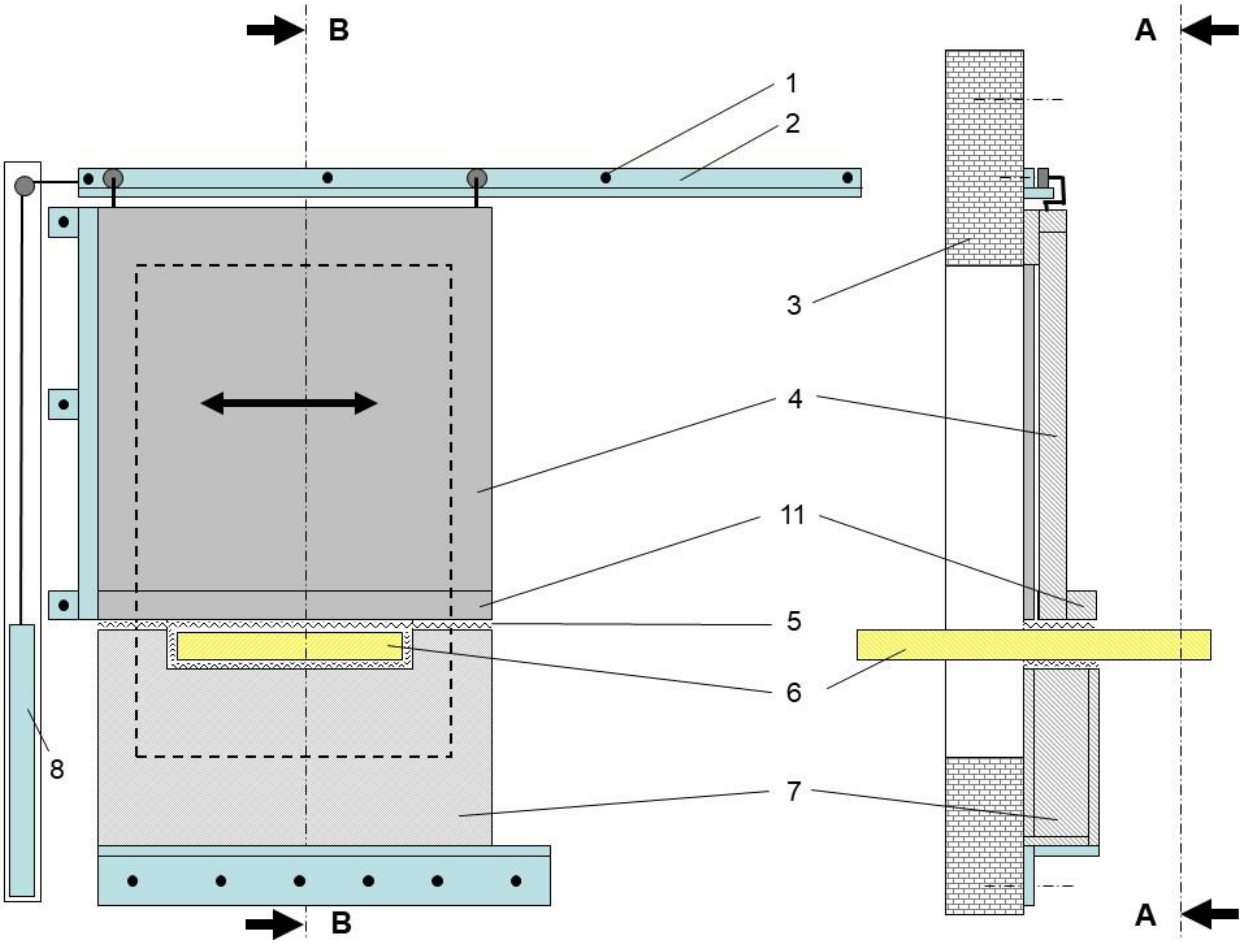

Figure 1.1.2c: Example for a version with a sliding leaf as the movable element (conveyor continues, closing direction horizontal)

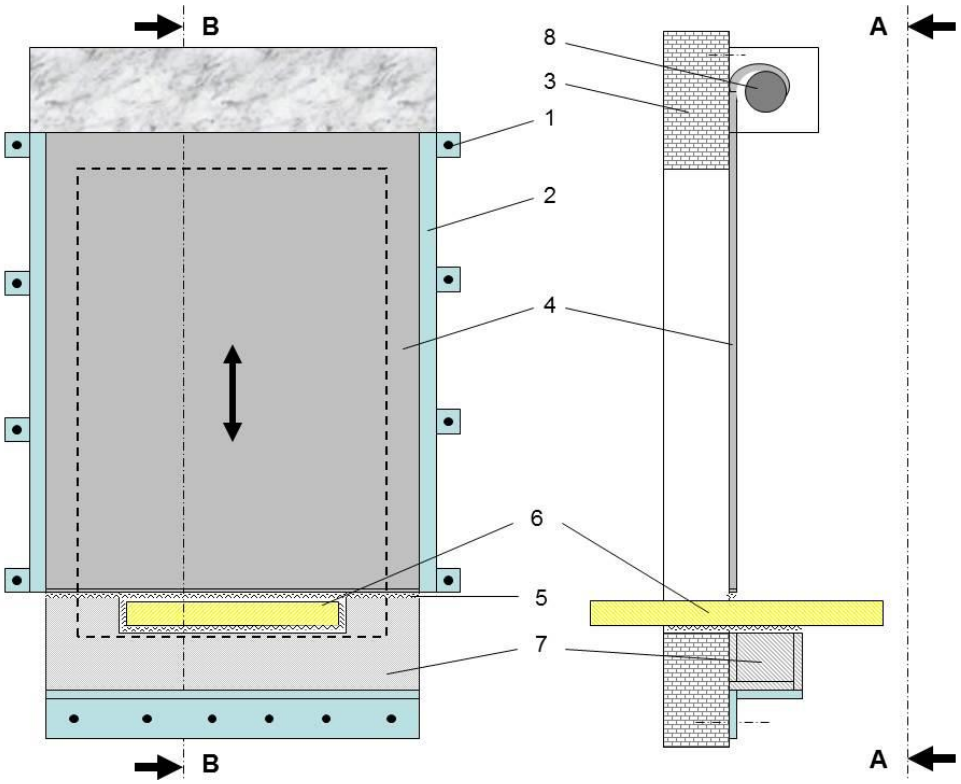

Figure 1.1.3: Example for a version with a curtain as the movable element (conveyor continues, closing direction vertical)

The closure systems for conveyor systems are produced as single-unit production in a factory and installed on site according to Manufacturer´s Product Installation Instructions.

The product is not covered by a harmonised European standard (hEN).

The product is not fully covered by EAD 350022-01-1107. Compared to the previous version of the EAD, the curtain version has been included. In addition, Annex B.6 was deleted, in order to avoid any overlapping provisions based on different European legal acts, because the provisions given therein are covered by the Machinery Directive or Machinery Regulation, as relevant[2].

This EAD only contains the assessment of essential characteristics relevant in accordance with Regulation (EU) No 305/2011. The EAD does not include the assessment on characteristics which are covered by other EU Directives such as, e.g., low voltage, machinery.

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.

2 The Regulation (EU) 2023/1230 of the European Parliament and of the Council of 14 June 2023 on machinery and repealing Directive 2006/42/EC of the European Parliament and of the Council and Council Directive 73/361/EEC was published on 29 June 2023 and entered into force on 19 July 2023. From 20 January 2027, it will become fully applicable and directly binding across all EU member states.

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

1.2.1 Intended use

The closure systems for conveyor systems are intended to be used for closing off necessary openings of track bound conveyors in internal separating walls or floors. It is used to close the opening in such a way that fire resistance of a wall/floor is ensured.

The version of the closure systems for conveyor systems with a curtain as the movable element can be used to close vertically in internal walls.

The closure systems for conveyor systems in accordance with this EAD are not intended for conveyors used for passenger transportation.

This EAD covers only the application under internal conditions with normal humidity and temperatures, excluding temperatures below 0°C.

The closure systems for conveyor systems are not intended to be used in situations where shock resistance in case of collapsing or falling debris, building components or other objects as well as the behaviour under pressure conditions deviating from EN 1634-1[3] (e.g., mounting at higher altitudes or in the operating area of mechanical smoke extractors) would be of relevance.

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 closure system for conveyor systems for the intended use of 10 years when installed in the works (provided that the closure system for conveyor systems are subject to appropriate installation (see 1.1)). 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[4].

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.

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3 All undated references to standards in this EAD are to be understood as references to the dated versions listed in Clause 4.

4 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 to above.

1.3 Specific terms

1.3.1 Specific terms used in this EAD

1.3.1.1 Movable element

Movable part of the closure systems for conveyor systems that will be closed in the case of fire (flap leaf, sliding leaf, curtain).

1.3.1.2 Fixed panel

Fixed part of the closure systems for conveyor systems connected to the supporting construction with openings/recesses for the conveyor system.

1.3.1.3 Sealing block

Enlargement on the movable element in the area of the continuous conveyor techniques.

1.3.1.4 Panel/ fabric strips

Part of the movable element.

1.3.1.5 Frame

Device that ensures the close connection between movable element and supporting construction.

1.3.1.6 Guide

Device that ensures moving of the movable element.

1.3.1.7 Anti-drop system

Device for upward sliding leaves ensuring that the movable element is kept in the closed position in case of failure of the force-transmitting devices (e.g., belts).

1.3.1.8 Sealing system

System for sealing unavoidable residual functional gaps when the movable element is in closed position by means of intumescent materials.

1.3.1.9 Intumescent material

Material that reacts chemically in the event of fire by creating foam.

1.3.1.10 Closing device

See EN 1366-7, Clause 3.4.

1.3.1.11 Fixing material

See EN 1366-7, Clause 3.1.

1.3.1.12 Supporting construction

See EN 1366-7, Clause 3.2.

1.3.1.13 Cable penetration seals

Fire resistant closure system in the fixed panel for cables necessary for controlling the closure systems for conveyor systems or the conveyor system in the closing area of the closure (see Annex A.1.1).

1.3.1.14 Additional flap or slide elements

Additional devices of the movable element for closing of residual openings.

1.3.1.15 Hold-open device

Combination of compatible elements, which has the function to hold open self-closing closures.

1.3.1.16 Conveyor system

See EN 1366-7, Clause 3.8.

1.3.1.17 Closing area

See EN 1366-7, Clause 3.6.

1.3.1.18 Safety system for monitoring the closing area

Devices (suitable sensors, such as light barriers), which are not shut down in case of a fire alarm or a malfunction or when triggered manually; they have to delay or interrupt the shutting of the movable element if obstacles are detected in the closing area.

1.3.1.19 Drive control unit

Part of an electromotive drive system which processes the signals emitted by the fire detection devices and safety systems and triggers the shutting of the movable element under specific conditions.

1.3.1.20 Motor drive

Device of an electromotive drive system which opens the movable element if it receives the relevant signal from the drive control unit.

1.3.1.21 CWT and CWFT

CWT means Classified Without Testing and CWFT means Classified Without Further Testing, both situations based on relevant European legal acts.

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 the closure systems for conveyor systems is assessed 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	Assessment method	Type of expression of product performance
Basic Works Requirement 2: Safety in case of fire			
1	Resistance to fire	2.2.1	class
2	Mechanical durability of self-closing systems	2.2.2	class
3	Reaction to fire	2.2.3	class
Basic Works Requirement 3: Hygiene, health and the environment			
4	Content, emission and/or release of dangerous substances	2.2.4	Description/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 essential characteristic in the Declaration of Performance, retesting of that component for issuing the ETA under the current EAD is not required.

The product as assessed shall be described in the ETA in accordance with the minimum data (material and dimensions) for each component as indicated in Clause 1.1.

The result of the risk assessment (see Annex B.5 for type with electromotive opening aid) and the dimensions of the gaps (see Annex A.1.7) shall be stated in the ETA.

2.2.1 Resistance to fire

The closure system for conveyor systems shall be tested in accordance with EN 1366-7 with deviations specified in Annex A. The closure system for conveyor systems shall be classified in accordance with Commission Delegated Regulation (EU) 2024/1681 in connection with EN 13501-2, clause 7.5.6.

The resistance to fire class shall be stated in the ETA, taking into account the worst result and the installation location (wall or floor, see Annex A.1.4).

2.2.2 Mechanical durability of self-closing systems

The mechanical durability of self-closing systems shall be tested in accordance with EN 16034, Clause 5.4.2, with reference to EN 12605 with additions specified in Annex B. The closure system for conveyor systems shall be classified in accordance with EN 13501-2, Clause 7.5.6, and EN 16034 (Table 1 in Clause 4.5.2.1 – number of cycles). The class in accordance with EN 13501-2, Clause 7.5.6.5, and EN 16034, Table 1, shall be stated in the ETA.

2.2.3 Reaction to fire

Reaction to fire of the whole closure systems for conveyor systems shall be assessed by considering the reaction to fire of the components, in order to be classified in accordance with Commission Delegated Regulation (EU) 2016/364. For that, the assessment of the whole closure systems for conveyor systems shall be based on the worst class of any component obtained from CWFT Decisions or from results of the relevant tests method(s) in accordance with EN 13501-1 as prescribed below.

The following options for the assessment of the components shall apply:

a) Considering the description in clause 1.1, those components made of concrete, metal or metal alloys without coatings or with inorganic coatings 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 Commission Decisions 2000/605/EC and 2003/424/EC, without the need for testing on the basis of them fulfilling the conditions set out in that Decision and its intended use being covered by that Decision. Therefore, the performance class of these components is A1.

b) The component is covered by another harmonised product specification. In this case, the reaction to fire performance shall be taken from its own declaration of performance, if such declaration is available and the related performance is declared, as long as the conditions for which the classification is valid covers the application of the component in the kit.

c) The component is considered to satisfy the requirements for performance of the respective class of the characteristic reaction to fire in accordance with one of the Commission Decisions related to a classification without the need for further testing (CWFT Decisions) on the basis of it fulfilling the conditions set out in the respective Decision and its intended use being covered by that Decision.

   Therefore, the performance depending on its type and the conditions under which the component is used shall be taken from the respective Decision applicable for the component.

d) The component is considered to satisfy the requirements for small components in accordance with Annex C. In this case the component can shall be considered as a small component and its reaction to fire performance can be neglected and doesn't need to be tested and classified separately.

e) If none of the options a) to d) applies, the performance of the components shall be tested using the test method(s) for the corresponding reaction to fire classes in accordance with EN 13501-1. The components shall be classified in accordance with Commission Delegated Regulation (EU) 2016/364 in connection with EN 13501-1.

   The provisions of Annex C shall apply for mounting and fixing of the specimens of the respective components in the relevant reaction to fire tests as well as for the extended application of test results.

The reaction to fire class of the whole closure system for conveyor systems as well as the reaction to fire classes of the components shall be stated in the ETA together with those conditions for which the respective classification is valid.

It shall also be stated in the ETA if a component does not need to be tested because it is considered to be a small component and its contribution to the reaction to fire performance of the closure system is negligible.

2.2.4 Content, emission and/or release of dangerous substances

The performance of the closure systems for conveyor systems regarding the emissions and/or release and, where appropriate, the content of dangerous substances will be assessed on the basis of the information provided by the manufacturer[5] after identifying the release scenarios taking into account the intended use(s) of the product and the Member States where the manufacturer intends his product to be made available on the market.

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

- **SVOC and VOC**

For the intended use covered by the release scenario(s) IA1 or IA2 semi-volatile organic compounds (SVOC) and volatile organic compounds (VOC) shall be determined in accordance with EN 16516. The respective loading factor used for emission testing shall be taken from Table 2.2.4.1.

Table 2.2.4.1: Loading factor *L*, depending on the intended use (in accordance with EN 16516)

Intended use	**Loading factor** [m^2/m^3]
Walls	1,0
Floor, ceiling	0,4
Small surfaces, e.g., door, window, heating system	0,05
Very small surfaces	0,007

The closure systems for conveyor systems to be tested shall be assembled according to the envisaged application, with all components of the product according to clause 1.1 (being part of the test specimen. The installation shall be 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. This time is considered the starting time of the emission test.

5 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 in accordance with 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 test results in accordance with EN 16516 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 testing.

The product performance shall be stated in the ETA expressed in [unit mg/m^3 or $\mu g/m^3$] with regard to the loading factor used.

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 Commission Decision 1999/93/EC, as amended by Commission Decision 2011/246/EU.

The system is 1.

3.2 Tasks of the manufacturer

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

The manufacturer (regarding the components he buys from the market with the Declaration of Performance (DoP)) shall take into account the DoP issued by the manufacturer of that component. No retesting is necessary.

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)					
1	Checking of the incoming materials and components: – precise designation and relevant characteristics of the material or component – if possible, references to European and/or international standards or relevant specifications – inspection of the delivery receipt	Control plan	Compliance with required materials and/or components according to control plan as agreed between the product manufacturer and the TAB	Control plan	Every delivery
2	– Checking of compliance of actual dimensions with specified dimensions (drawings) of the closure systems for conveyor systems – Visual examination + size check	Control plan	Compliance with required tolerances according to control plan as agreed between the product manufacturer and the TAB	1	– at the beginning of a production series – at large production series: every day of production – at small series and single unit production: every 30th closure systems for conveyor systems
3	Checking of compliance of each closure systems for conveyor systems with the requirements of each individual project	Control plan	Compliance with the project-related requirements	1	Every closure systems for conveyor systems

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 closure system for conveyor systems 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 closure systems for conveyor systems.	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	Twice a year

4 REFERENCE DOCUMENTS

EN 520:2004+A1:2009	Gypsum plasterboards – Definitions, requirements and test methods
EN 1363-1:2020	Fire resistance tests – Part 1: General Requirements
EN 1366-3:2021+A1:2024+AC:2025	Fire resistance tests for service installations – Part 3: Penetration seals
EN 1366–7:2004	Fire resistance tests for service installations, Part 7: Conveyor systems and their closures
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 12467:2012+A2:2018	Fibre-cement flat sheets - Product specification and test methods
EN 12605:2000[6]	Industrial, commercial and garage doors and gates – Mechanical aspects – Test methods
EN 13238:2010	Reaction to fire tests for building products – Conditioning procedures and general rules for selection of substrates
EN 13501–1:2018	Fire classification of construction products and building elements - Part 1: Classification using data from reaction to fire tests
EN 13501–2:2023	Fire classification of construction products and building elements - Part 2: Classification using data from fire resistance and/or smoke control tests, excluding ventilation services
EN 13823:2020+A1:2022	Reaction to fire tests for building products – Building products excluding floorings exposed to the thermal attack by a single burning item
EN 14306:2015	Thermal insulation products for building equipment and industrial installations - Factory made calcium silicate (CS) products
EN 14716:2004	Stretched ceilings - Requirements and test methods
EN 15715:2009	Thermal insulation products - Instructions for mounting and fixing for reaction to fire testing - Factory made products
EN 15283-2:2008+A1:2009	Gypsum boards with fibrous reinforcement - Definitions, requirements and test methods - Part 2: Gypsum fibre boards
EN 16034:2014	Pedestrian doorsets, industrial, commercial, garage doors and openable windows – Product standard, performance characteristics – Fire resisting and/or smoke control characteristics
EN 16516:2017+A1:2020	Construction products: Assessment of release of dangerous substances – Determination of emissions into indoor air

6 This standard has been withdrawn by CEN. Nevertheless, it is referred to in the harmonised standard EN 16034. Furthermore, the standard 12604:2017+A1:2020 replacing EN 12605 does not contain the test of the mechanical durability of self-closing systems.

EN ISO 1182:2020	Reaction to fire tests for products – Non-combustibility test (ISO 1182:2020)
EN ISO 1716:2018	Reaction to fire tests for products – Determination of the gross heat of combustion (calorific value) (ISO 1716:2018)
EN ISO 11925-2:2020	Reaction to fire tests – Ignitability of products subjected to direct impingement of flame – Part 2: Single-flame source test (ISO 11925-2:2020)
CEN/TS 15447:2006	Mounting and fixing in reaction to fire tests under the Construction Products Directive
EAD 350005-00-1104	Intumescent products for fire sealing and fire stopping purposes

ANNEX A Deviation and additions concerning fire resistance test

A.1 Deviations/specifications concerning EN 1366-7

A.1.1 Cable penetration seal

Deviating from the provisions of EN 1366-7, the following approaches are possible for the products listed in Clause 1.1:

a) Cable penetration seals with European Technical Assessment (ETA)
Cable penetration seals shall be tested for fire resistance at least once together with the whole closure systems for conveyor systems (installed in a wall and/or floor[7]) and with the maximum permitted cable configuration (in accordance with the relevant ETA of the cable penetration). The cable penetration seals shall be completely closed in accordance with the installation instruction.

The whole closure systems for conveyor systems with cable penetration shall meet the performance criteria of the respective fire resistance class in accordance with EN 13501-2, clause 7.5.6). The achieved fire resistance class shall be stated in the ETA.

b) Cable penetration seals assessed together with the closure for conveyor system
In this approach, the cable penetration seals shall be tested in accordance with EN 1366-3 together with the whole closure systems for conveyor systems in a fire resistance test in accordance with EN 1366-7 and shall meet the performance criteria for the fire resistance class for which the whole closure systems for conveyor systems shall be classified (installation in a fixed panel attached to a wall and/or floor[7]). If the pressure conditions specified in EN 1366-3 cannot be met due to the position of the installation in the overall system (e.g., installation in a fixed panel positioned below the movable element), a part configuration test may be carried out.

The test shall be carried out with the cable configuration for the cable penetration in accordance with EN 1366-3. The cable penetration seals shall be completely closed in accordance with the installation instructions.

The whole closure systems for conveyor systems with cable penetration shall meet the performance criteria of the respective fire resistance class in accordance with EN 13501-2, clause 7.5.6). The achieved fire resistance class in accordance with Commission Delegated Regulation (EU) 2024/1681 in connection with EN 13501-2, clause 7.5.6 shall be stated in the ETA.

For the intended type of the closure with two cable penetrations per conveyor section in a single fixed panel at least two cable penetration seals with minimal intended distance (>100 mm) shall be incorporated in the test specimen.

For the intended type of the closure with cable penetration seals in the area of the continuous conveyor systems (installation inside the continuous profiles) such a cable penetration shall additionally be incorporated in the test specimen.

A.1.2 Dimensions of the test specimen

The test specimen shall have maximum dimensions taking into account the field of direct application in accordance with Annex A.1.8.

A.1.3 Design of the test specimen

The following examples shall be added to the design provision for the test specimen given in Clause 6.3 of EN 1363-1:

"No variation in construction (e.g., different jointing systems) shall be included in a single test specimen."

7 Only the installed positions of the closure systems for conveyor systems for which an ETA has been applied for shall be tested.

(1) Spacing of the fastenings attaching the installation to the supporting construction

If the fastenings are spaced unevenly, the test result obtained for the test specimen as a whole shall be taken into account (e.g., the test results from the side where the fastenings are closer together cannot be extended to the test specimen as a whole, even if a smaller spacing is intended to be used for all fastenings.)

(2) Use of different materials

Test specimens may only include discrete areas made of different materials if their installation in the closure is necessary (e.g., locking devices). Their use is not permitted if the purpose is to allow for the testing of variations in construction in a single test specimen.

(3) Orientation of the seams for curtains consisting of several fabric strips

Test specimens consisting of several fabric strips shall have either horizontal or vertical seams. A combination of horizontal and vertical seams in one test specimen shall not be permitted.

A.1.4 Number of the test specimen

The following tests shall be carried out for each design and each supporting construction of the subject of assessment:

(1) Fire exposure from the side including the hinges or guides of the closure

(2) Fire exposure from the side not including the hinges or guides of the closure

The provisions laid down in Clause 13.5.7 of EN 1366-7 shall not apply. In accordance with Clause 7.1.2.2 of EN 13501-2, the derogations described in Table A.1.4.1 are possible:

Table A.1.4.1: Required fire resistance tests for different applications

Location of the test specimen …		… on the wall		… on top of the floor		… below the floor	
Fire exposure during the test							
No	Assessment for installation …						
1	… on the wall	Test required	Test required	Test not required	Test not required	Test not required	Test not required
2	… on top of the floor	Test not required	Test not required	Test required	Test required	Test not required	Test not required
3	… on top and below the floor	Test not required	Test not required	Test not required	Test not required	Test required	Test required
4	… on the wall and on top of the floor	Test required	Test required	Test required	Test not required	Test not required	Test not required
5	… on the wall and on top and below the floor	Test required	Test required	Test not required	Test not required	Test required	Test not required

Example for using the table:

The closure is intended to be used on the wall and on top of the floor.

According to line four, two tests with wall installation and one test with installation on top of the floor with fire exposure from below are required.

A.1.5 Action of hot gases passing through the specimen

The reference to Clause 9.1.2.1 of EN 1363-1 in Clause 9.1.2.1 of EN 1366-7 (concerning thermocouples attached to the unexposed face heated by hot gases) shall not apply for the required measuring points on the continuous conveyor system, i.e., the values obtained at these temperature measuring points shall be taken into account even in case of hot gases flowing through.

However, the reference to Clause 9.1.2.1 of EN 1363-1 in Clause 9.1.2.1 of EN 1366-7 may be used in case the substrate/surface starts showing initial cracks directly at the measuring points during the test affecting the thermocouples.

A.1.6 Maximum temperature on the frame/guide

The test specimen shall be evaluated against the maximum temperature rise criterion (180 K) specified in EN 1363-1. The derogations for frames and guides specified in Clause 11.2.2 of EN 1366-7 shall not apply.

A.1.7 Maximum temperature on the conveyor systems

For penetrating conveyor tracks, thermocouples for maximum temperature rise only shall be positioned at a distance of 50 mm from the movable element. The distance from the supporting construction specified in Clause 9.1.2.5 and Figure 9 of EN 1366-7 is irrelevant.

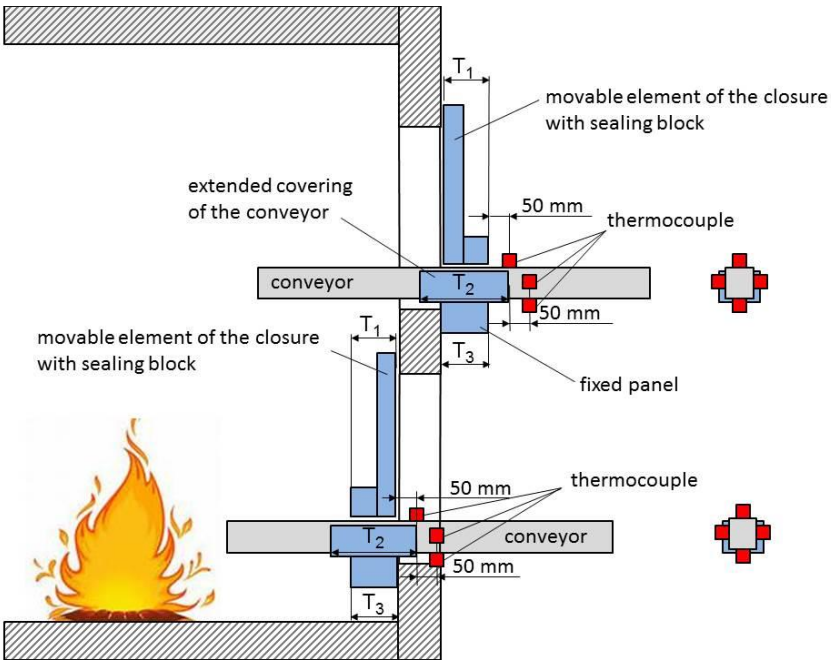

Figure A.1.7.1: Location of the thermocouples on the conveyor

Explanatory note on Figure A.1.7.1

The following dimensions shall be specified in the test report and in the European Technical Assessment:

T1 – Depth of the sealing block on the movable element (including movable element)

T2 – Depth of an extended, fixed, incomplete covering of the conveyor system (the conveyor system usually has no casing in direction of the movable element

T3 – depth of the actual fixed panel

A.1.8 Field of direct application – Limits of permitted size variation

Based on the specific features of the products covered by this EAD in comparison to those covered by EN 16034, the provisions regarding permitted size variations given in Clause 5.1 of EN 16034 with reference to Clause 13.3 of EN 1634-1 together with Annex B are amended and supplemented as given in Table A.1.8.1.

Table A.1.8.1: Field of direct application - Replacement for Table B.1 in EN 1634-1

Type of closure	Category 'A' allowances	Category 'B' allowances
Hinged or pivoted closures in walls	Unlimited size reduction is permitted for all types except insulated metal closures for which the size reduction is limited to 50 % for the side perpendicular to the hinge side and 75 % for the hinge side of the tested specimen. Size increase is not permitted.	Unlimited size reduction is permitted for all types except insulated metal closures for which the size reduction is limited to 50 % for the side perpendicular to the hinge side and 75 % for the hinge side of the tested specimen. Size increase is permitted to the limit of: – 15 % for the lateral length and – 20 % area increase. This does **not** apply for closures which satisfy the criteria for radiation protection.
Hinged or pivoted closures in floors	Unlimited size reduction is permitted for all types except insulated metal closures for which the size reduction is limited to 50 % for the side perpendicular to the hinge side and 75 % for the hinge side of the tested specimen. Size increase is not permitted.	Unlimited size reduction is permitted for all types except insulated metal closures for which the size reduction is limited to 50 % for the side perpendicular to the hinge side and 75 % for the hinge side of the tested specimen. Size increase is permitted to the limit of: – 15 % for the lateral length and – 20 % area increase. This does **not** apply for closures which satisfy the criteria for radiation protection.
Horizontally and vertically sliding closures in walls	Unlimited size reduction is permitted for all types except insulated metal closures for which the size reduction is limited to 50% of the width and 75% of the height of the tested specimen. Size increase is not permitted.	Unlimited size reduction is permitted for all types. Size increase is permitted to the limit of: – 50 % for the lateral length and – 50 % area increase. This does **not** apply for closures which satisfy the criteria for radiation protection.
Horizontally and vertically sliding closures in floors	Unlimited size reduction is permitted for all types except insulated metal closures for which the size reduction is limited to 50 % for the unguided side and 75 % for the guided side of the tested specimen. Size increase is not permitted.	Unlimited size reduction is permitted for all types except insulated metal closures for which the size reduction is limited to - 50 % for the unguided side and - 75 % for the guided side of the tested specimen. Size increase is permitted to the limit of: – 15 % for the lateral length and – 20 % area increase. This does **not** apply for closures which satisfy the criteria for radiation protection.
Vertically oriented rolling fabric curtains in walls	Unlimited size reduction is permitted. Size increase is not permitted.	Unlimited size reduction is permitted. Size increase is not permitted.

A.1.9 Additional criteria for "otherwise identical" test specimen

In addition to an identical design of the movable element and of the fixed panel the criteria for "otherwise identical" test specimens are as follows:

(1) The fixing points for attaching the frame/guide to the supporting construction shall be spaced in the same way.

(2) The fixing points for attaching the movable element to the frame/guide shall be spaced in the same way.

(3) The fixing points shall be of equal quality[8] [9].

(4) The fastening for the fixed panel shall be of equal quality.

A.1.10 Flexible supporting construction

Flexible constructions within the meaning of this EAD are lightweight plasterboard faced steel stud partitions in accordance with EN 1363-1, Clause 7.2.2.4 "Flexible construction". In accordance with the said clause, the design of the supporting construction used during the test shall be described in a drawing. Additionally, the way in which the closure is fixed to the supporting construction shall be documented by a drawing. Furthermore, the following information shall be specified:

(1) Type of the materials used

(2) Type of fixing material

(3) Material and dimensions of the stud partitions

The design of the supporting construction shall be documented in the ETA.

A.1.11 Gaps prior to the fire resistance test

Dimensions of the gaps between the movable element and

- the supporting construction (W),
- the fixed panel (S2) and
- the continuous conveyor system (S1) as well as

between the fixed panel and continuous conveyor system (S3) shall be designed and executed as small as possible (see Figures A.1.11.1 and A.1.11.2).

Residual functional gaps shall be closed by intumescent materials if the temperature rises. To this effect, the intumescent materials shall be arranged in the gaps respecting the maximum allowable dimensions given in Table A.1.11.1.

Type, thickness per layer and number of layers of the intumescent materials shall be recorded in the test report in the form of a table as shown in Table A.1.11.1. If the result of the fire resistance test is positive, this table shall become part of both direct application and the control plan.

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8 A fixing point designates the fastening of the closure systems for conveyor systems to the supporting construction, including all necessary components (e.g., anchors, brackets, fastenings for load-bearing parts such as guides).

9 The reasons for concluding that the fixing points are of equal quality shall be stated in the test report.

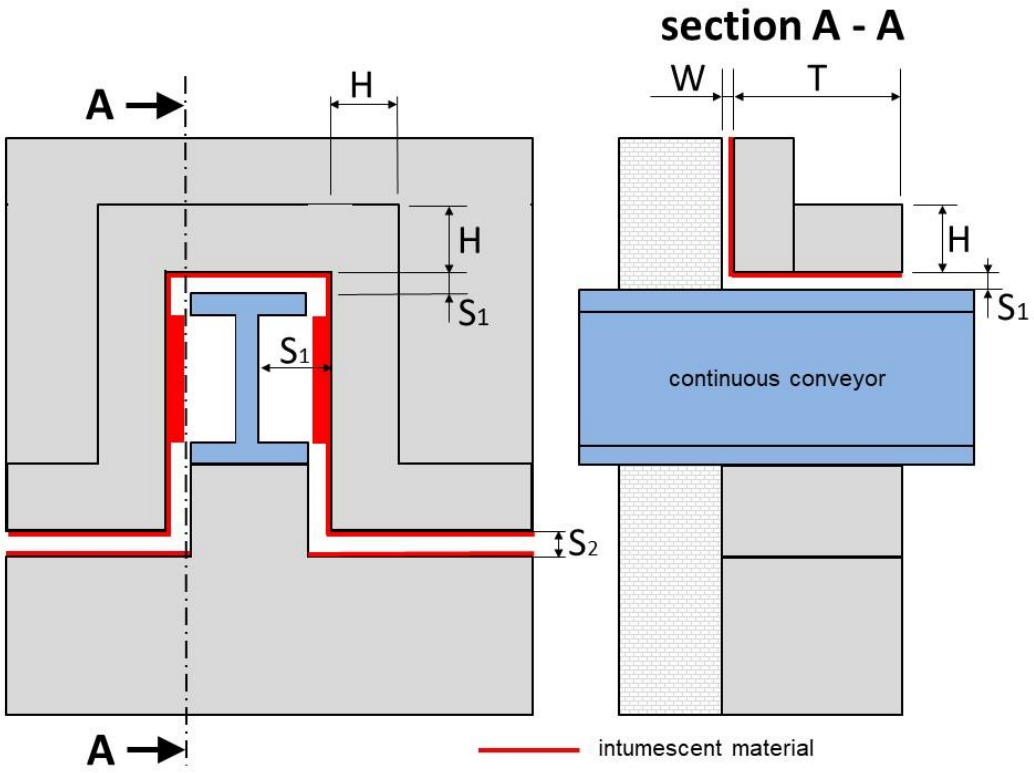

Figure A.1.11.1: Gaps between the movable element and supporting construction (W), fixed panel (S2) and continuous conveyor system (S1)

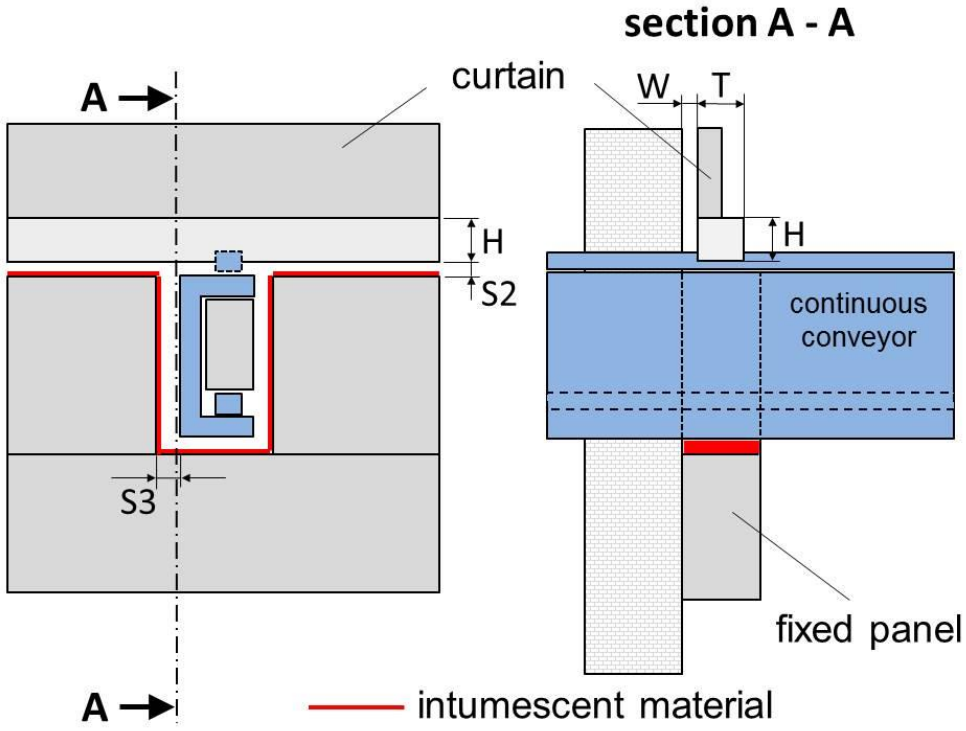

Figure A.1.11.2: Gaps between the fixed panel and continuous conveyor system (S3)

Table A.1.11.1: Maximum dimensions of functional gaps

Maximum gap width					
between movable element and supporting construction W: 20 mm		between movable element and fixed panel S2: 20 mm		between movable element and continuous conveyor system S1 as well as between the fixed panel and continuous conveyor system S3: 50 mm	
intumescent material type: _____ thickness per layer: _____		intumescent material type: _____ thickness per layer: _____		intumescent material type: _____ thickness per layer: _____	
gap [mm]	number of layers	gap [mm]	number of layers	gap [mm]	number of layers
5 ≤ W ≤ x1	1	5 ≤ S2 ≤ x1	1	5 ≤ S1 ≤ x1	1
x1 < W ≤ x2	2	x1 < S2 ≤ x2	2	x1 < S1 ≤ x2	2
x2 < W ≤ 20	3	x2 < S2 ≤ 20	3	x2 < S1 ≤ 50	3

The following shall apply to the use of gap gauges prior to the fire resistance test:

- in gaps between the movable element and the supporting construction (W) as well as between the movable element of the closure and the fixed panel (S2) a 25 mm gap gauge shall be used; the use of a 6 mm gap gauge is not permitted.
- in gaps between the movable element/fixed panel and the continuous conveyor system (S1) neither of the two gauges shall be used.

About 5 minutes after the start of the fire resistance test the gap gauges shall be used.

A.1.12 Mechanical pre-treatment (only curtains)

By derogation from EN 1366-7, Clause 8.3.2, the operability of the specimen shall be assessed by at least 500 opening and closing cycles before execution of the fire resistance test.

A.2 Additions to the field of direct application

A.2.1 Number of panels/fabric strips in the movable element

The number of panels/fabric strips per movable element may be reduced provided that the dimensions of the panels/fabric strips lie within the range between the smallest and the largest panels/fabric strips tested.

A.2.2 Dimensions of a panels/fabric strips in the movable element

The width of vertical panels/fabric strips may be reduced within the range between the smallest and the widest panel/fabric strip tested. The height of horizontal panels/fabric strips may be reduced within the range between the smallest and biggest panel/fabric strip height tested.

A.2.3 Thickness of the steel panel covering

The thickness of the steel panel covering may be changed as follows:

- thickness tested: 1,0 mm, valid for thicknesses between 0,75 and 1,00 mm and
- thickness tested: 1,5 mm, valid for thicknesses between 1,00 and 1,50 mm.

A.2.4 Changing the number of movable elements

The test results obtained for horizontally closing double-leaf sliding elements may be transferred to single-leaf sliding elements provided that the overlap of the single-leaf sliding element is identical to that of the double-leaf sliding element (closing edge).

The dimensions of the single-leaf sliding element shall be equal to the dimensions of one leaf of the two-leaf sliding element.

The reasons for concluding that the test results can be transferred shall be stated in the test report.

A.2.5 Gaps in the movable element (except curtains)

When deviation from the rectangular shape, the following conditions related to the Figure A.2.5.1 shall be observed:

- H2 ≥ 1/3 H
- H2 ≥ 200 mm
- B2, B4, B6, ≥ 1/10 B
- B2, B4, B6, ≥ 200 mm
- H7 ≥ 1/3 H
- H7 ≥ 200 mm
- H5, H3 ≥ 1/10 H
- H5, H3 ≥ 200 mm
- B8 ≥ 1/2 B
- B8 ≥ 200 mm
- *B1 to B8 and H1 to H7 may be not relevant*

In case of deviation from these conditions, tests (fire resistance, durability) are required.

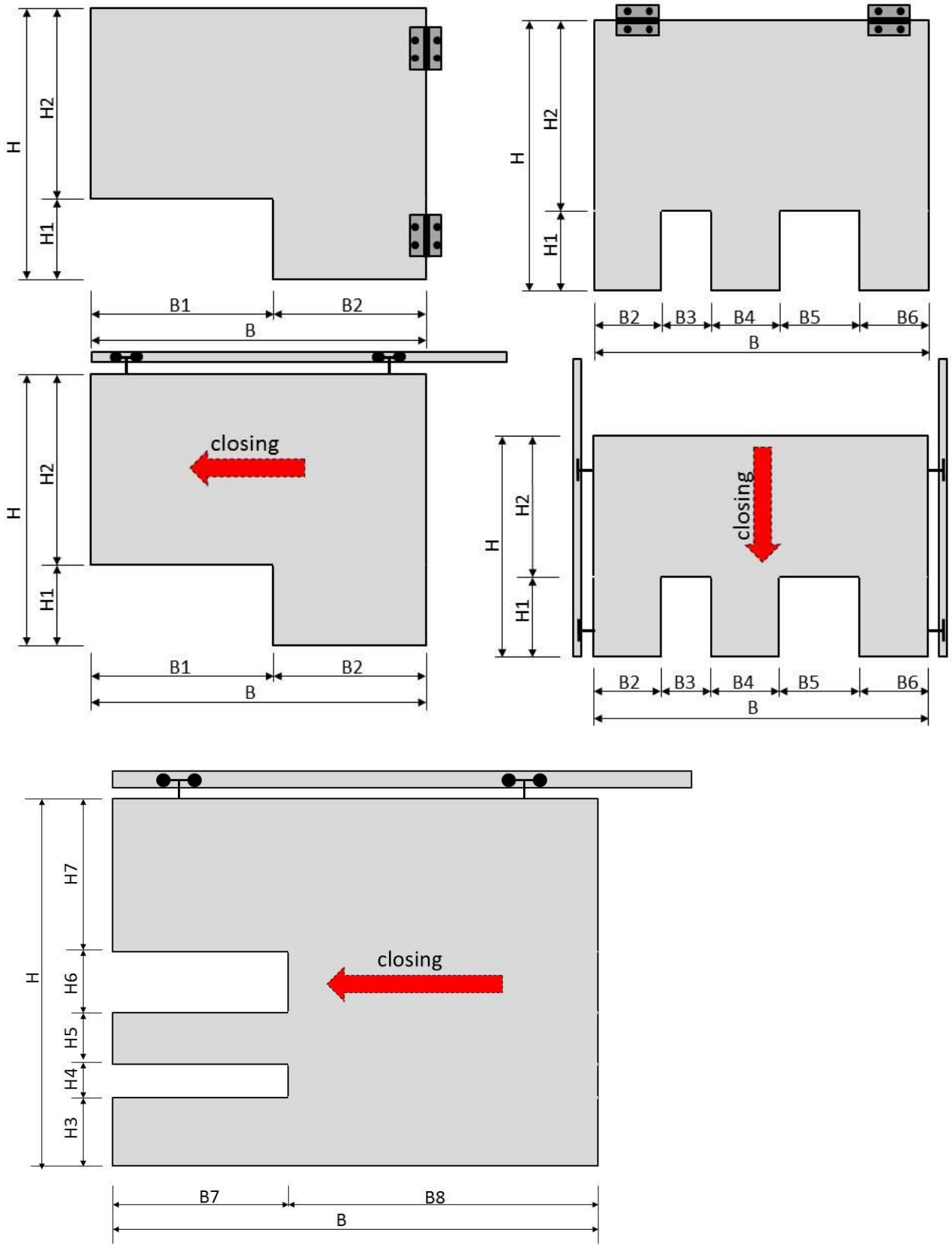

Figure A.2.5.1: Examples for gaps in the movable element (above flap leaf, below sliding leaf)

A.2.6 Transferring test results obtained in partial configuration tests for specific conveyor systems

The test results obtained in a partial configuration test for a specific conveyor system shall only be transferred to another type of closure system if:

- the depth (T) of the movable element in direction of the conveyer system is the same (see Figures A.1.11.1 and A.1.11.2)
- the height (H) of the movable element of the closure system is the same (see Figures A.1.11.1 and A.1.11.2)

The reasons for concluding that the test results can be transferred shall be stated in the test report.

A.2.7 Use of alternative construction materials

In order to ensure comparability, at least one test shall be carried out under the same conditions as in the respective test for the original construction materials, taking into account the following criteria:

(1) A test in the most critical installed position with exposure from the more critical side shall be sufficient.[10]

(2) The test shall be carried out with the maximum dimensions given in the application as well as with the most critical penetration seal for the continuous conveyor system.[10]

(3) The test shall be carried out on the most critical supporting construction on the basis of the tests carried out with the original construction material and respecting the conditions set out in (1) and (2).[10]

A.2.8 Limitation of size of optional flap or slide elements for closing of residual openings

(1) Flap and slide elements triggered by a fusible link

The maximum dimensions for these additional elements shall be the dimensions tested in the fire resistance test; they shall be as small as possible.

During this test, the duration and intensity of smoke penetration through the opening to be closed by the additional element shall be monitored before as well as after the additional element has been triggered. The results shall be recorded in the test report.

(2) Sliding sealing element mechanically actuated when closing the sliding leaf

The dimensions of such additional elements may only be varied proportionally to the dimensions of the closure as a whole, so that the proportions tested positively during the fire resistance tests remain unchanged.

A.2.9 Coatings

The test results obtained for uncoated closures shall not be transferred to coated closures and vice versa.

10 The choice of the conditions chosen as most critical shall be recorded in the test report.

ANNEX B Additional provisions for testing mechanical durability of self-closing

B.1 Design of the test specimen

When designing the test specimen sealing blocks on the movable element used during the fire resistance tests shall be taken into account where applicable.

B.2 Failure criteria

- incomplete closing
- tears in the fabric of the curtain

B.3 Operability tests

- self-closing after release of the hold-open device (if applicable integrated in the motor drive) and
- self-closing in the case of a power outage

B.4 Tests for flaps with different orientations of hinges

The tests to be carried out for movable elements vary depending on whether the elements rotate vertically or horizontally.

- Tests for movable elements with vertically oriented hinges
  - vertical stress applied to the hinges,
  - test specimens with maximum dimensions/maximum weight (use of additional weights is possible),
  - installation in a wall.

- Tests for movable elements with horizontally oriented hinges
  - horizontal stress applied to the hinges,
  - test specimens with maximum dimensions/maximum weight (use of additional weights is possible).
  -

The biggest dimensions of the test specimen shall be determined giving due consideration to the field of direct application in accordance with Annex A.1.8.

B.5 Type with electromotive opening aid

If the movable element is to be equipped with an electromotive opening aid, the electromotive opening aid shall be used for opening the movable element throughout all test cycles of the durability test. The TAB shall also assess the risk of the electromotive opening aid impeding the shutting of the closure (Check whether a defective motor drive or gearbox (if available) can block the closing process).

The result of the risk assessment shall be documented in the test report and shall be stated in the ETA.

If different drives from the same series are to be used to actuate different closure sizes, the most powerful one (in combination with the biggest closure) shall be tested. It may be possible to extend the results from this test to less powerful drives from the same series.

ANNEX C Mounting and fixing provisions for reaction to fire tests and rules for the extended application of test results

C.1 General

The provisions for mounting and fixing of test specimens of components that need to be tested as well as the rules for extended application of the results from these tests shall be taken from those specifications listed in table C.1.1 below.

Table C.1.1 Basis for assessing the characteristic reaction to fire of components where testing is needed

Type of component	Expression of the performance	Determined in accordance with the following specifications
Mineral fibre boards	class	Delegated Regulation (EU) 2016/364 in combination with EN 13501-1 and EN 15715
Gypsum boards		Delegated Regulation (EU) 2016/364 in combination with EN 13501-1 and (depending on the type of the boards) - EN 520 or - EN 15283-2
Calcium silicate boards		Delegated Regulation (EU) 2016/364 in combination with EN 13501-1 and (depending on the type of the boards) - EN 12467 or - EN 14306 together with EN 15715
Intumescent materials		Delegated Regulation (EU) 2016/364 in combination with EN 13501-1 and EAD 350005-00-1104

For the other components 'coated glass fibre fabrics" and 'polyester straps', the provisions of Annex C.3 shall apply.

C.2 Requirements for small components

A component is considered as small component not contributing to the growth and spread of fire if it satisfies all of the following requirements:

- a mass ≤ 50 g,
- a size of ≤ 50 mm x ≤ 50 mm or a diameter of ≤ 57 mm (equal area size as for a rectangular size of ≤ 50 mm x ≤ 50 mm) and
- a distance ≥ 200 mm to similar components when forming part of a composite product and being situated on the surface of a product made of material of classes B, C, D, or E

  or

  completely embedded all-round in non-melting material of class A1 when used as small connecting part of a product consisting of various components and without any possibility to ignite or to propagate fire.

Where the conditions are not met regarding the distance to other similar components or the all-round covering by non-melting A1 materials, the component shall be tested as part of the relevant composite product.

C.3 Provisions for coated glass fibre fabrics and polyester straps

C.3.1 EN ISO 1182 and EN ISO 1716

These test methods are relevant for reaction to fire classes A1 and/or A2 in accordance with EN 13501-1.

The tests shall be performed in accordance with the provisions of the relevant test standard. In addition, the following parameters of homogenous fabrics or straps and any layer of non-homogenous fabrics or straps shall be considered for choosing and preparing the test specimens and the execution of tests:

- product variations of a defined product family[11,12],
- density,
- organic content,
- type and amount of flame retardants.

In addition, thickness and weight per unit area of each layer of non-homogenous (multi-layer) fabrics or straps shall be considered, when calculating the total Q_{PCS} value of the entire product.

The results of these tests considering the aforementioned parameters are valid for

- all product variations of the same product family,
- with the same density (if only one was tested) or a density between highest and lowest density tested,
- with equal or lower organic content,
- with the same type and equal or higher amount of flame retardants,
- with any thickness in case of homogenous fabrics or straps, and
- with the same thickness and weight per unit area of the layers of non-homogenous (multi-layer) fabrics or straps used for calculating the total Q_{PCS} value of the entire product or
- with any thickness and weight per unit area between the highest and lowest values of these two parameters of the layers of non-homogenous (multi-layer) fabrics or straps used for calculating the total Q_{PCS} value of the entire product.

C.3.2 EN 13238 (SBI test)

This test method is relevant for reaction to fire classes A2 to D in accordance with 13501-1.

C.3.2.1 Dimension of the test rig and the test specimens

The dimension of the L-shaped test specimens (consisting of a long wing and a short wing) shall be as prescribed in the test standard.

A metal frame as specified in CEN/TS 15447:2206, figure A.2, or in EN 14716, figures A.2 to A.4, shall be used as sub-construction for mounting and mechanical fixing of the specimens of the fabrics or straps in the test apparatus.

No joint shall be considered (deviating from the provisions in clause 5.2.2 of the test standard) when preparing the specimens except in the burner corner, where the specimen pieces of long wing and short wing shall form a closed butt joint.

If the polyester straps are not manufactured in such dimensions (especially the width) to cover the surface of the specimen wing without joints, stripes of the straps with their maximum produced width shall be placed side by side with vertical butt joints until the prescribed width is reached on both wings. The mounting of the stripes shall be stated in the inner corner for both wings.

C.3.2.2 Substrate and Air gap

The test specimens shall normally be tested without any substrate behind and with a ventilated air gap of 80 mm between the rear of the fabrics or straps to be tested and the calcium-silicate backing board of the test rig.

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11 as defined by a certain combination of raw materials and produced in a certain type of production process

12 In order to permit the TAB to apply rules for the extended application of test results within the assessment, it is recommended that the manufacturer should provide (but he is not obliged to do so) sufficient information (e.g., on the basis of the composition of the products in questions), allowing the TAB to determine which products or product variants should be submitted to testing and so to reduce the number of tests required.

Only if relevant for the concrete end-use conditions of the fabrics or straps in the closure system for conveyor systems, a smaller air gap (recommended: not smaller than 40 mm) or a standard substrate in accordance with EN 13238 may be considered in the tests instead the 80 mm wide air gap, The standard substrate shall be placed directly behind the rear of the fabrics or straps to be tested or behind the air gap.

The corresponding boards of the SBI test rig in accordance with clause 4.4.11 of the test standard shall be removed for ensuring sufficient ventilation in the air gap. If the metal frame of the sub-construction hinders the air flow into the air gap, it shall be perforated to allow a sufficient ventilation.

C.3.2.3 Parameters of the test specimens

The following parameters shall be considered when preparing the test specimens:

- Product variations of a defined product family [11] [12]– each different variation regarding composition and assembly (e.g., number, type and dimensions of the various layers of the coated glass fibre fabric) shall be considered within the tests;
- Colour – if there is a range of different colours but no difference in the chemical composition itself, tests with a light, a dark and a medium colour (e.g., White, Black and Red) shall be performed;
- Thickness – the highest as well as the lowest thickness of the entire fabrics or straps shall be tested;
- Weight per unit area – the highest as well as the lowest weight per unit area shall be tested;
- Orientation – if relevant, the specimens shall be mounted and tested with vertical as well as with horizontal orientation,

At least one indicative test with any of the identified specimen configurations (based on the aforementioned parameters) shall be performed and, at least, two further tests with the most onerous specimen configuration as basis for the classification.

The results of tests taking into consideration completely the aforementioned parameters are valid for:

- only the chemical composition and assembly as tested,
- the complete range of colours,
- any thickness between those evaluated for the entire fabrics or straps or the tested thickness only (if only one thickness was tested),
- any weight per unit areas between those assessed or the tested weight per unit area only (if only one weight per unit area was tested),
- any orientation of the fabrics or straps, and
- applications with the same or greater distance to other flat adjacent materials / substrates than the width of the air in the tests and/or
- applications directly (if tested) on or with an air gap to substrates covered by that representative standard substrate in accordance with EN 13238 used in the tests.

C.3.3 EN ISO 11925-2 (Small ignition source test)

This test method is relevant for reaction to fire classes B to F in accordance with EN 13501-1.

C.3.3.1 Dimensions of the test specimens and preparation

The dimension of the test specimens shall be as prescribed in EN ISO 11925-2. The specimens shall be prepared and tested without consideration of any joints.

C.3.3.2 Substrate

The test specimens shall be mounted in the specimen holder as defined in the test standard and shall be tested free-hanging without any substrate behind.

If tests with a free-hanging specimen configuration fail, the specimens shall mechanically be fixed on a representative standard substrate in accordance with EN 13823 and then shall be tested.

C.3.3.3 Parameters of the test specimens and types of flame exposure

The provisions of clause C.3.2.3 shall also apply for the consideration of parameters when preparing the test specimens as well as for the application of test results except the following.

- Results of tests on free-hanging specimens are valid for any applications.

- Results of tests on specimens mechanically fixed on a standard substrate are only valid for applications on substrates covered by the standard substrate used in the tests in accordance with the provisions of EN 13238.

The test specimens shall be tested with edge exposure as well as with surface exposure as prescribed in the test standard.

At least two tests with any of the identified specimen configurations (based on the aforementioned parameters) shall be performed and, at least, four further tests with the most onerous specimen configuration as basis for the classification.