

Approval body for construction products
and types of construction

Bautechnisches Prüfamt

An institution established by the Federal and
Laender Governments



European Technical Assessment

ETA-16/0938
of 27 April 2018

English translation prepared by DIBt - Original version in German language

General Part

Technical Assessment Body issuing the
European Technical Assessment:

Deutsches Institut für Bautechnik

Trade name of the construction product

abs EI SLIDE

Product family
to which the construction product belongs

Kit for closure system for conveyor systems

Manufacturer

abs Sicherungstechnik GmbH & Co. KG
Robert-Koch-Straße 19b
55129 Mainz
DEUTSCHLAND

Manufacturing plant

abs Sicherungstechnik GmbH & Co. KG
Robert-Koch-Straße 19b
55129 Mainz
DEUTSCHLAND

This European Technical Assessment
contains

34 pages including 26 annexes which form an integral
part of this assessment

This European Technical Assessment is
issued in accordance with Regulation (EU)
No 305/2011, on the basis of

EAD 350022-01-1107

European Technical Assessment

ETA-16/0938

English translation prepared by DIBt

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Specific part

1 Technical description of the product

This European technical approval applies for the closure system "abs EI SLIDE" for conveyor systems, hereinafter referred to as "abs EI SLIDE". The closure system can be designed to close vertically or horizontally in walls or in floors.

"abs EI SLIDE" primarily consists of the following components¹:

- Single-leaf sliding leaf

The approx. 62 mm thick sliding leaf consists of various calcium silicate boards (40 mm und 20 mm) which are secured with water glass adhesive.

Embedded in the calcium silicate boards in the area of points of load application (amongst others fixing of rollers and guides) are steel hollow profiles (40 mm x 40 mm x 2 mm) located. The front sides are covered with 0.75 mm thick steel plates. At the lateral faces are angle profiles located. The components are connected by screw joints of the steel plate with the steel hollow profiles.

In the case of continuous conveyors a sealing segment – consisting of a steel hollow profile ($t \geq 2$ mm) and covered with calcium silicate boards or exclusive consisting of calcium silicate boards - is placed at the closing edge of the sliding leaf.

The sidewise depth of coverage of sliding leaf and wall as well as the coverage of sliding leaf and floor amounts to 90 mm. The upper depth of coverage of sliding leaf and wall amounts to 120 mm.

- Fixed panel with clearance for the conveyor

The fixed panel consists of a core of mineral wool, covered with fire protection boards or steel hollow profiles, covered with fire protection boards or exclusive fire protection boards or masonry. It is secured to the wall via brackets or by direct screw connection.

The clearance in the fixed panel is configured for the respective conveyor technology. Various intumescent materials are used in the necessary functional gaps. In the fixed panel may be inserted cable penetration seals (table 4)¹.

- Guide for the sliding leaf

The guiding rails, running gears, running rails and wall fastenings have to be dimensioned according to dimension and weight of the sliding leaf. They must comply with the declarations of the drawings of the control plan¹ at least.

- Vertical closing and tilting on a wall as well as horizontal closing on/under the floor and tilting on the floor

Roller secured at the side of the sliding leaf are guided in a running rail which is fixed to the wall and on/under the floor, respectively. In the case of these sliding leafs a grip plate secured on the side of the sliding leaf or a slip in guide is necessary if the clear width of the closure is greater than 1.250 mm (wall) and 500 mm (on/under the floor) respectively.

Closures, which are closing from bottom to top, have to be provided with additional devices against opening in the case of fire (e.g. a thermally actuated locking device)¹ if the sliding leaf exceeds a defined weight.

¹ The documents describing the structure of " abs EI SLIDE " in detail and the product specifications of the building materials used are deposited with DIBt.

- Horizontal closing on a wall

The sliding leaf is suspended from the running rail by running gears. Alternatively, the running gears may be positioned at the bottom edge (upright mounted). The rail is secured to the wall using brackets. For the opposite guidance guide roller or guide plates with slide blocks are located at the bottom line of the closure and at the top edge of the closure, respectively.

If the clear height of the closure is greater than 833 mm a grip plate or a sliding guide secured on the side of the sliding leaf is necessary.

- Seal system

In the overlap of the sliding leaf and adjacent wall on the side of the sliding leaf facing the wall additional strips of an intumescent material are positioned.

The closure in the conveyor technology area is sealed by sealing segments on the sliding leaf and the fixed panel.

The sealing segments on the sliding leaf consist of a steel hollow profile ($t \geq 2$ mm) covered with calcium silicate boards or exclusive calcium silicate boards. Strips of calcium silicate boards must be positioned in the gaps between conveyor technique and fixed panel. Strips of an intumescent material must be positioned in the residual gaps¹.

- Closing device (closing weight system)

"abs EI SLIDE" shall be closed via stored mechanical energy (closing weight system, spring force, deadweight of the sliding leaf).

2 Specification of the intended use in accordance with the applicable European Assessment Document

In accordance with this European Technical Assessment, the "abs EI SLIDE" was assessed as closure to seal necessary openings of trackbound conveyors (see table 3) in internal walls (see table 1) and floors (see table 2).

When the cable penetration seals and the intumescent materials¹ are used, the verified ambient conditions (e.g. the category stated in TR024²) are to be observed.

"abs EI SLIDE" is not intended for passenger transportation. The normal position of the closure shall be opened or closed.

The "abs EI SLIDE" shall only be used if the following conditions apply:

- The normally-open closure (open in the normal position; closes in the event of a fire) shall be equipped with a hold-open system suitable for the closure – where applicable in conjunction with the national regulations.
- The normally-open closure, which cannot be opened from a fixed position (floor, pedestal etc.), is to be equipped with a drive to open the closure.
- It is to be ensured that the closing of the closure is not obstructed by conveyed goods or other objects.
- It is to be ensured that the closed closure cannot be damaged by conveyed goods or other objects.

The verifications and assessment methods on which this European Technical Assessment is based lead to the assumption of a working life of the "abs EI SLIDE" of at least 10 years. The indications given on the working life cannot be interpreted as a guarantee given by the producer, but are to be regarded only as a means for choosing the right products in relation to the expected economically reasonable working life of the works.

NOTE: Other requirements and other EU Directives may be applicable to the product(s) falling within the scope of this document.

Table 1: Permitted dimensions of the clearance of the opening in internal walls

component (supporting construction) in which the closure can be installed ^{a)}	maximum fire resistance class ^{b)}	clearance of the component opening ^{c)}		
		maximum clear width	maximum clear height	maximum surface
high-density solid wall masonry or solid concrete with an overall density of $\geq 800 \text{ kg/m}^3$ and a thickness $\geq 150 \text{ mm}$	E 120	2.500 mm	2.500 mm	6,25 m ²
	El ₂ 90 El ₁ 60	3.750 mm	3.750 mm	9,38 m ²
low-density solid wall aerated concrete with an overall density of $\geq 450 \text{ kg/m}^3$ and a thickness $\geq 150 \text{ mm}$	E 120	2.500 mm	2.500 mm	6,25 m ²
	El ₂ 90 El ₁ 60	3.750 mm	3.750 mm	9,38 m ²
lightweight wall in accordance with annex 8, fastening version 3 thickness $\geq 100 \text{ mm}$	El ₂ 90 El ₁ 90	2.000 mm	2.000 mm	4,00 m ²
a) Supporting construction to EN 1366-7 ³ , section 7.2 or EN 1363-1 ⁴ , section 7.2 b) Fire resistance class per EN 13501-2 ⁵ in accordance with the Evaluation Report c) Minimum dimension unrestricted				

Table 2: Permitted dimensions of the clearance of the opening in internal floors

component (supporting construction) in which the closure can be installed ^{a)}	maximum fire resistance class ^{b)}	clearance of the component opening ^{c)}		
		maximum clear width	maximum clear height	maximum surface
high-density solid floor masonry or solid concrete with an overall density of $\geq 800 \text{ kg/m}^3$ and a thickness $\geq 200 \text{ mm}$	El ₂ 90 El ₁ 60	2.090 mm	2.090 mm	2,34 m ²

³ EN 1366-7:2004 Fire resistance tests for service installations - Part 7: Conveyor systems and their closures

⁴ EN 1363-1:1999 Fire resistance tests - Part 1: General requirements

⁵ EN 13501-2:2007 Fire classification of construction products and building elements - Part 2: Classification using data from fire resistance tests, excluding ventilation services

component (supporting construction) in which the closure can be installed ^{a)}	maximum fire resistance class ^{b)}	clearance of the component opening ^{c)}		
		maximum clear width	maximum clear height	maximum surface
low-density solid floor aerated concrete with an overall density of $\geq 450 \text{ kg/m}^3$ and a thickness $\geq 150 \text{ mm}$	El ₂ 90 El ₁ 60	2.090 mm	2.090 mm	2,34 m ²
a) Supporting construction to EN 1366-7 ³ , section 7.2 or EN 1363-1 ⁴ , section 7.2 b) Fire resistance class per EN 13501-2 ⁵ in accordance with the Evaluation Report c) Minimum dimension unrestricted				

The conveyor tracks can be continuous or disconnected or disconnected while closing of the closure in the closing area of the sliding leaf.

In order to seal the continuous conveyor technology, the sealing systems specified in table 3 can be used.

Table 3: Permitted sealing systems for the continuous conveyor technology⁶

sealing system for	minimum depth of the seal on the fixed panel	minimum depth of the seal at the sliding leaf	maximum fire resistance class of "abs EI SLIDE"
chain conveyor (annex 14) – steel profile ⁷ – aluminium profile	175 mm 250 mm	166 mm 241 mm	EI 120 EI 90
roller conveyor (annex 15) – steel profile ⁷ – aluminium profile	175 mm 250 mm	166 mm 241 mm	EI 120 EI 90
belt conveyor (annex 16) – steel profile ⁷ – aluminium profile	175 mm 250 mm	166 mm 241 mm	EI 120 EI 90
crane runway (annex 20) (steel profile)	175 mm	166 mm	EI 120
container conveyor system (ann.17, 19) – steel profile or aluminium rack with separating cut	175 mm	166 mm	EI 120
electro-suspension track (annex 18) – steel profile or aluminium rack with separating cut	225 mm	217 mm	EI 90
– lifter (annex 21) steel profile ⁷	175 mm	166 mm	EI 120
– gravity chute (annex 22) steel profile ⁷	175 mm	166 mm	EI 120
round belt (annex 23)	100 mm	87 mm	EI 120
paper conveyor (annex 24, 25)	300 mm	297 mm	EI 120
power & free (steel) (annex 26)	175 mm	166 mm	EI 120

⁶

see annex 14 to 26

⁷

or aluminium profiles with separating cut ($\geq 2 \text{ mm}$)

Table 4: Permitted cable penetration seal

Cable penetration seal	fire resistance class	clearance of the opening in the fixed panel		
		maximum clear width	maximum clear height	maximum surface
Hensomastik 5 KS Viskos (ETA-15/0295)	EI 90	220mm	110 mm	0,0165 m ²
ZZ-Stein 200 NE (ETA-10/0431)	EI 90	220mm	110 mm	0,0165 m ²
ZZ-Brandschutzsilikon NE (ETA-13/0123)	EI 90	220mm	110 mm	0,0165 m ²
ZZ-Brandschutzschaum 2K NE (ETA-11/0206)	EI 90	220mm	110 mm	0,0165 m ²

Furthermore, the penetration of cables in continuous profiles in the area of the fixed panel is permitted (see test and control plan) provided that the relevant provisions for electrical installations are observed.

3 Performance of the product and references to the methods used for its assessment

3.1 Safety in case of fire (BWR 2)

Essential characteristic	Performance
Fire resistance (EN 13501-2)	see clause 2, table 1 to 4
Mechanical durability of self-closing (EN 13501-2)	Installation in walls <ul style="list-style-type: none"> vertical closing: C5 horizontal closing: C5 Installation in floors: C5
Reaction to fire (EN 13501-1)	see following table 5

Table 5: Reaction to fire of the used materials

component	material	class according to EN 13501-1
slider leaf, fixed panel	steel sheet	A1
	calcium silicate boards	A1
	gypsum boards	A1
	gypsum mortar	A1
	mineral fibre boards	at least class E
	water glass glue	A1
	knitted glass fabric	at least class E
guide	steel	A1
Seal system	intumescent material	at least class E
cable penetration seals	intumescent material	at least class E
Closing device	steel	A1
Fixing material	steel	A1

3.2 Hygiene, health and the environment (BWR 3)

No performance assessed.

4 Assessment and verification of constancy of performance (AVCP) system applied, with reference to its legal base

In accordance with EAD No. 350022-01-1107, the applicable European legal act is: 1999/454/EG.

The system to be applied is: 1

In addition, with regard to e.g. reaction to fire of components and materials for products covered by this EAD the applicable European legal act is: 1999/454/EG.

The systems to be applied are: 1 / 3 / 4 (dependent on classes of reaction to fire)

5 Technical details necessary for the implementation of the AVCP system, as provided for in the applicable EAD

Technical details necessary for the implementation of the AVCP system are laid down in the control plan deposited with Deutsches Institut für Bautechnik.

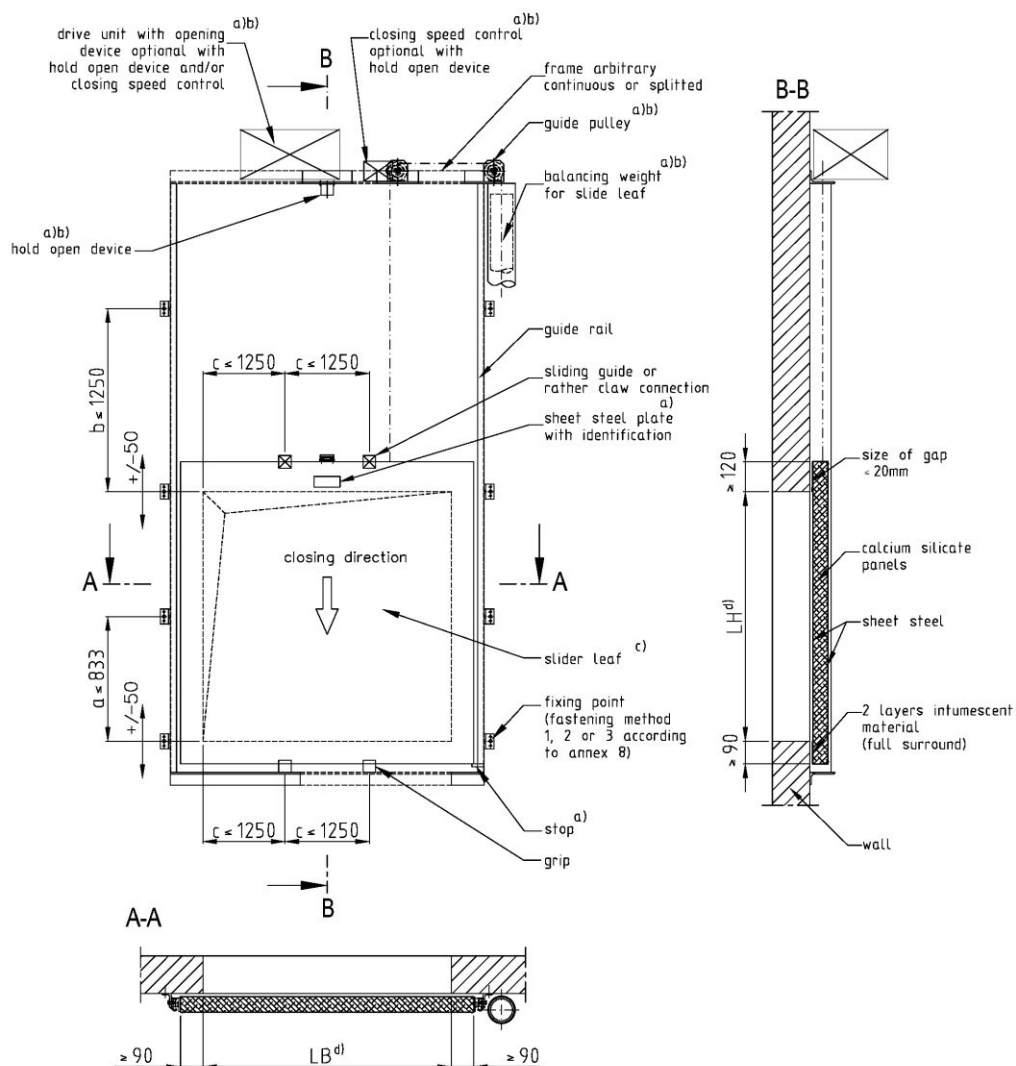
The manufacturer shall provide installation instructions and maintenance instructions for every "abs EI SLIDE". The maintenance instructions shall clearly indicate which work is to be performed to ensure that the installed closure system continues to perform its task after long-term use.

The manufacturer shall provide instructions on processing, packaging, transport, storage and use, maintenance and repair of the construction product.

Issued in Berlin on 27. April 2018 by Deutsches Institut für Bautechnik

Prof. Gunter Hoppe
Head of Department

beglaubigt:
Biedermann



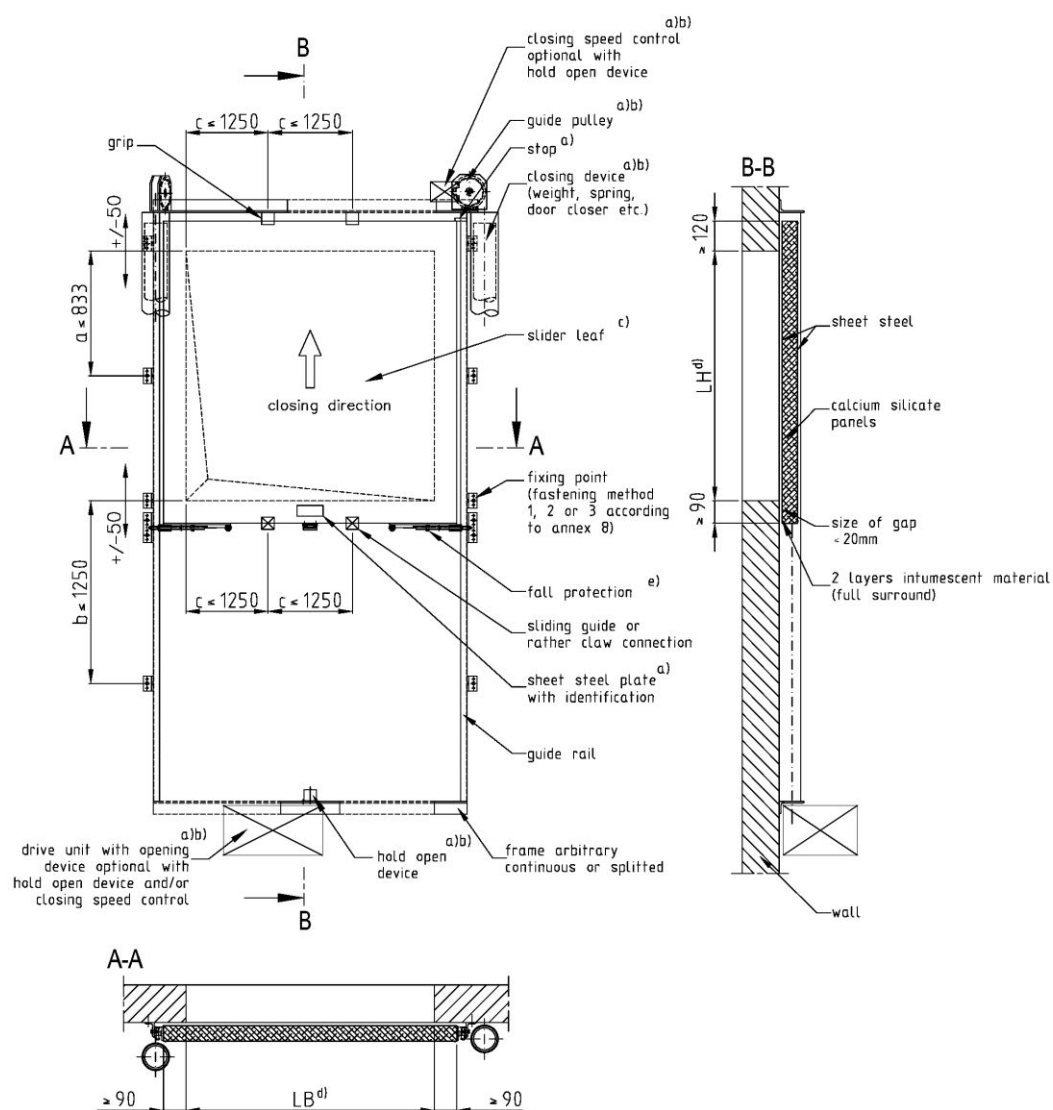
dimensions in mm

- a) arbitrary position, number and design
- b) optional
- c) depiction of splitted conveyor technique, see additional annexes for examples of application of not splitted conveyor technique.
- d) according to the table 1 of this ETA.

abs EI SLIDE

Overview – closing direction downwards form above
Wall installation

Annex 1



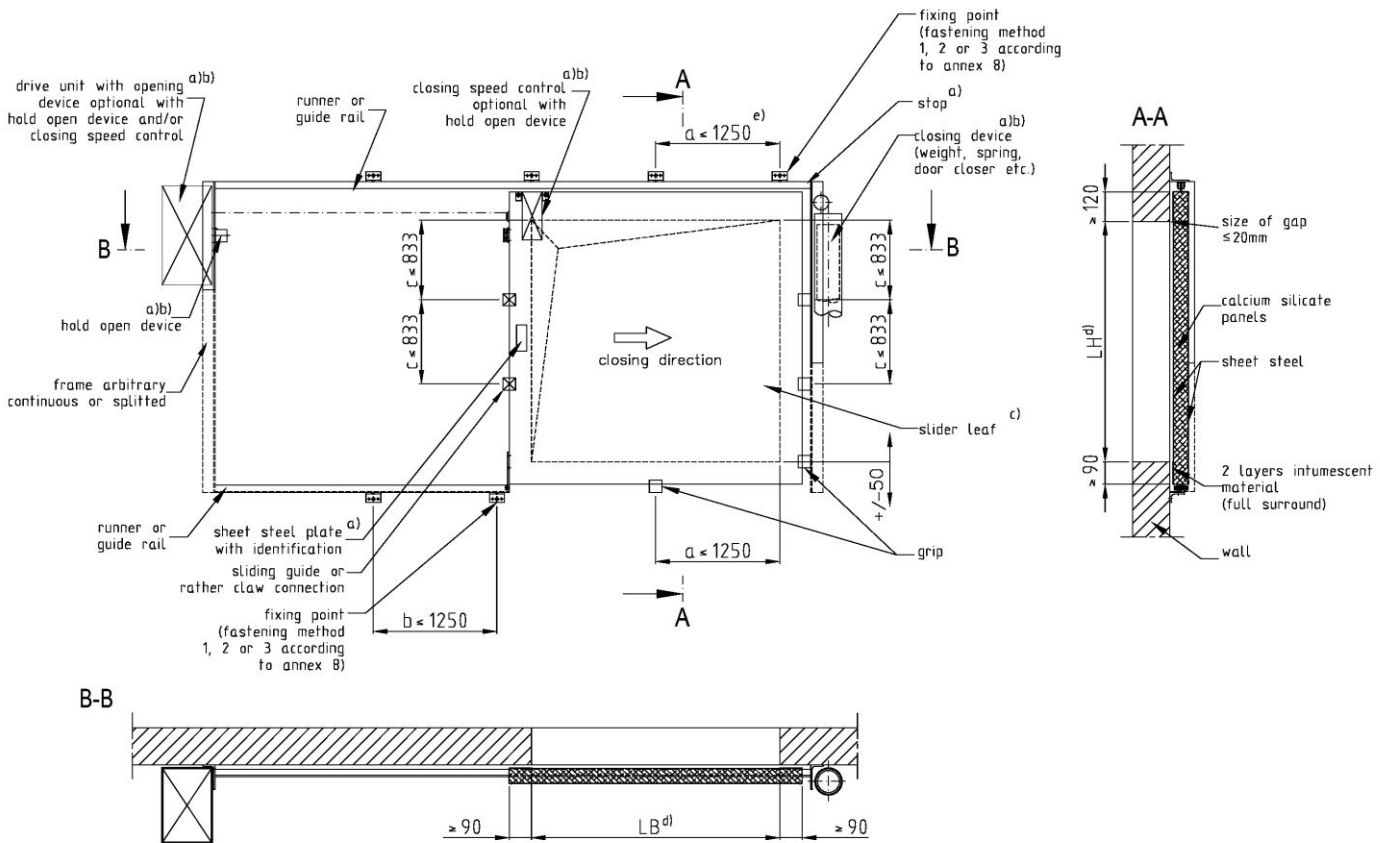
dimensions in mm

- a) arbitrary position, number and design
- b) optional
- c) depiction of splitted conveyor technique, see additional annexes for examples of application of not splitted conveyor technique.
- d) according to the table 1 of this ETA.
- e) Requirement of the fall protection is regulated in the checking and monitoring plan.

abs EI SLIDE

Overview – closing direction upwards from below
Wall installation

Annex 2



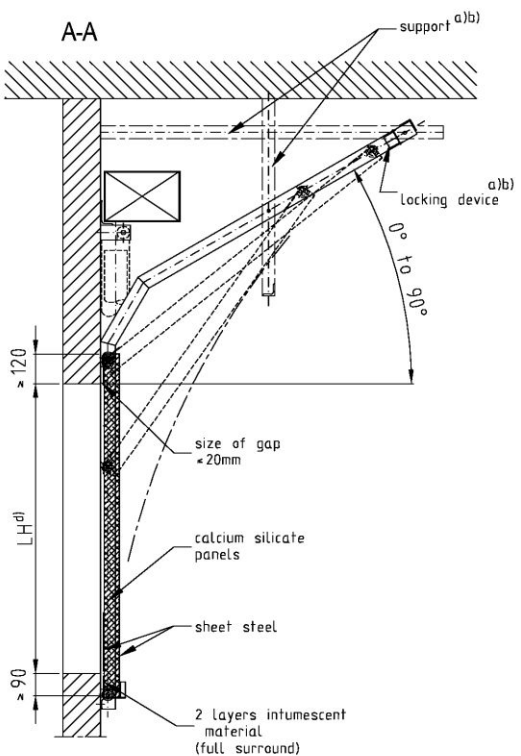
- a) arbitrary position, number and design
- b) optional
- c) depiction of splitted conveyor technique, see additional annexes for examples of application of not splitted conveyor technique.
- d) according to the table 1 of this ETA.
- e) distance leaf fixture points ≤ 1250 mm
distance rail fixture points ≤ 750 mm

dimensions in mm

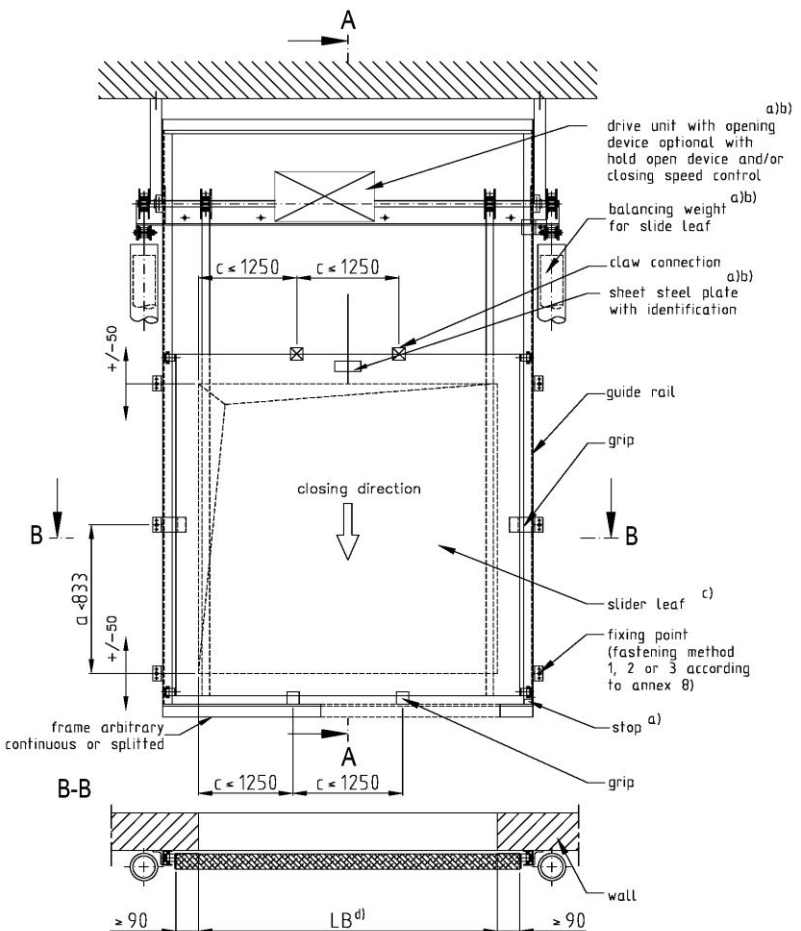
abs EI SLIDE

Overview – horizontal closing direction
Wall installation

Annex 3



- a) arbitrary position, number and design
b) optional
c) depiction of splitted conveyor technique, see additional annexes for examples of application of not splitted conveyor technique.
d) for lightweight wall according to table 1; for solid walls of high or low density according to checking and monitoring plan.

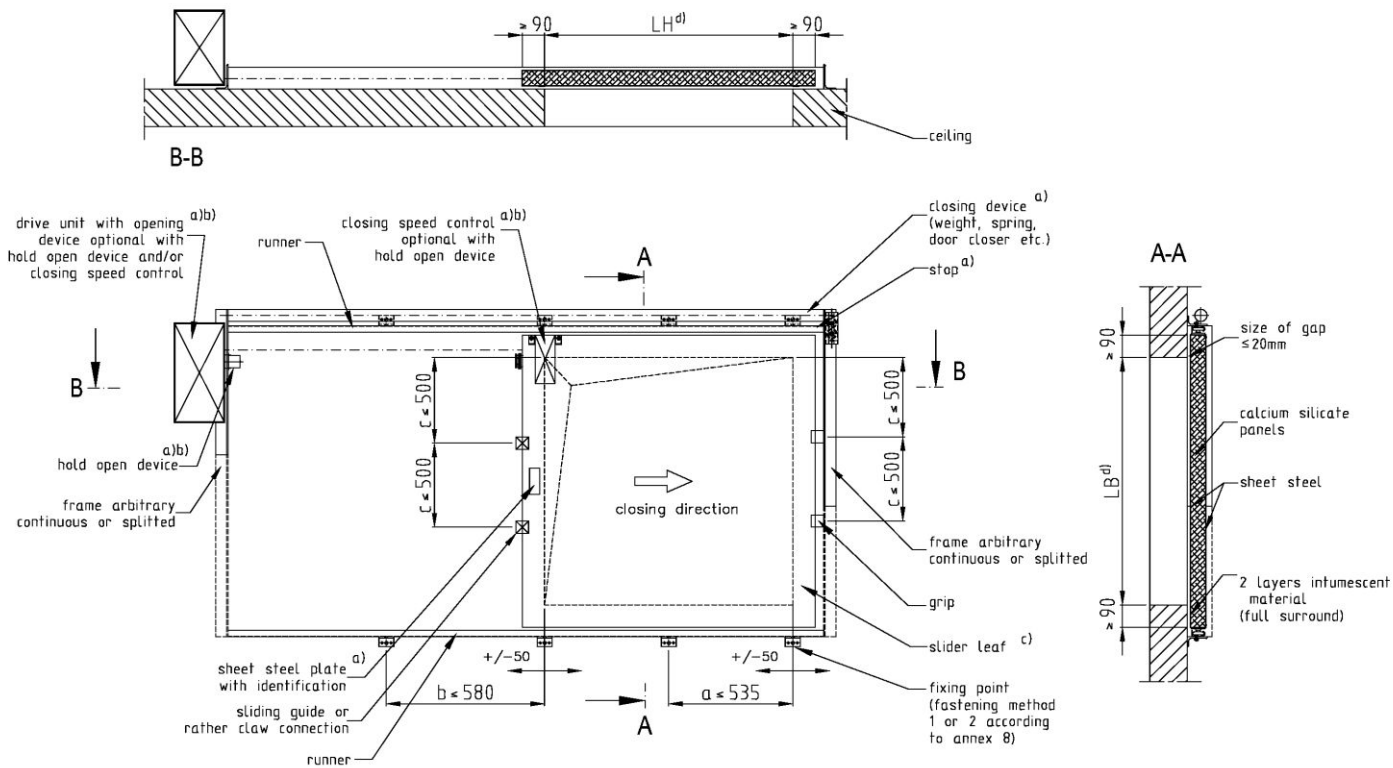


dimensions in mm

abs EI SLIDE

Overview – closing direction tilting on the wall downwards from above
(maximum allowable slider leaf weight: 285 kg)
Wall installation

Annex 4



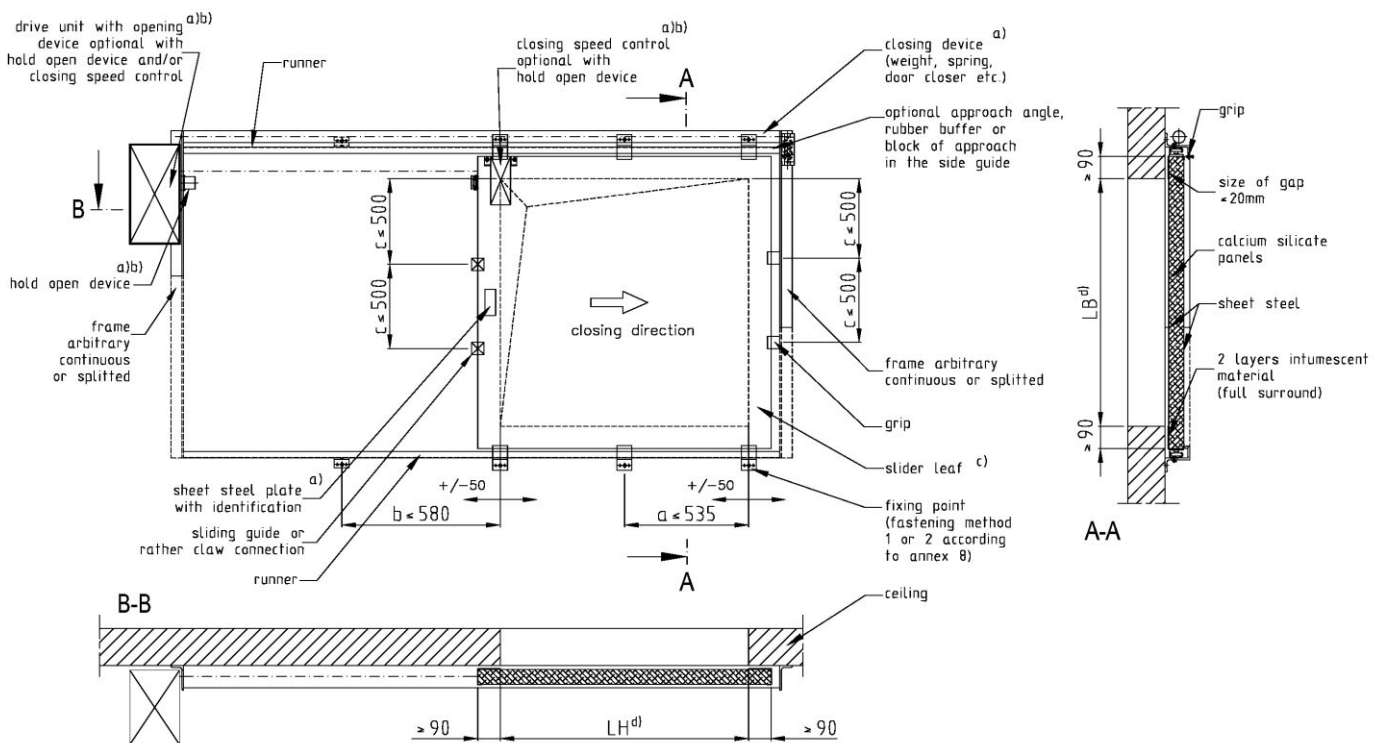
- a) arbitrary position, number and design
- b) optional
- c) depiction of splitted conveyor technique, see additional annexes for examples of application of not splitted conveyor technique.
- d) according to the table 2 of this ETA.

dimensions in mm

abs EI SLIDE

Overview – horizontal closing direction
On-floor installation

Annex 5



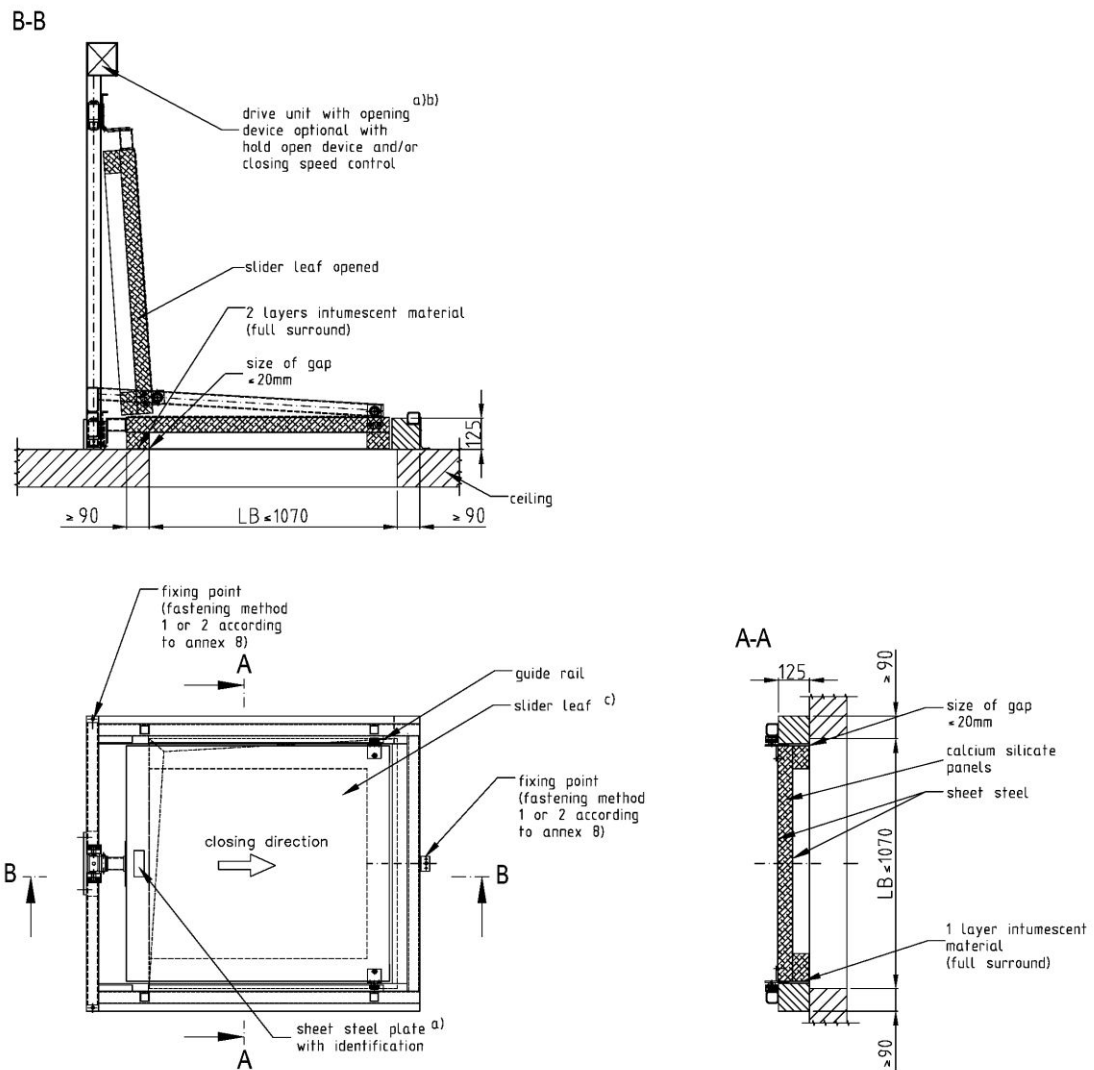
dimensions in mm

- a) arbitrary position, number and design
- b) optional
- c) depiction of splitted conveyor technique, see additional annexes for examples of application of not splitted conveyor technique.
- d) according to the table 2 of this ETA.

abs EI SLIDE

Overview – horizontal closing direction+
Installation beneath the ceiling

Annex 6



dimensions in mm

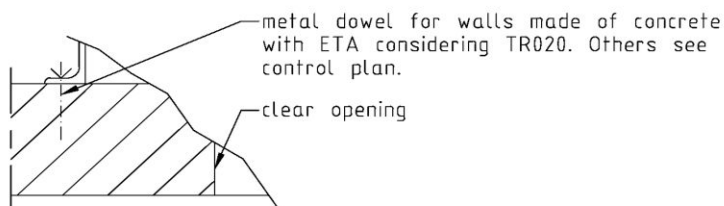
- a) arbitrary position, number and design
b) optional
c) depiction of splitted conveyor technique, see additional annexes for examples of application of not splitted conveyor technique.

abs EI SLIDE

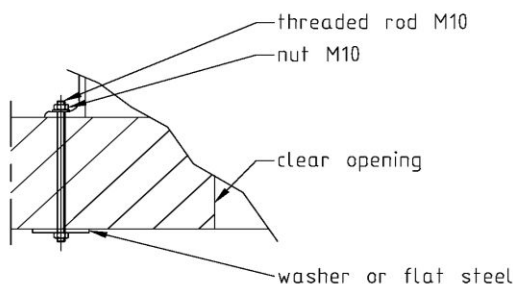
Overview – closing direction tilting on the floor
(maximum allowable slider leaf weight: 85 kg)
Floor installation

Annex 7

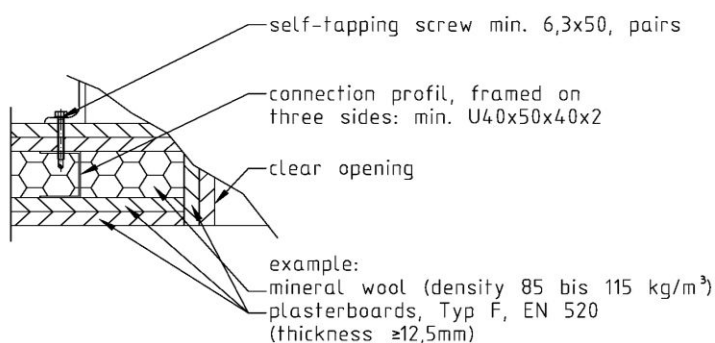
fastening method 1
(attachment to solid walls and ceilings of high density,
and solid walls and on solid ceilings of low density):



fastening method 2
(attachment to solid walls and on/under solid ceilings
of high density and low density):



fastening method 3
(Lightweight plasterboard faced
steel stud partition EI90):

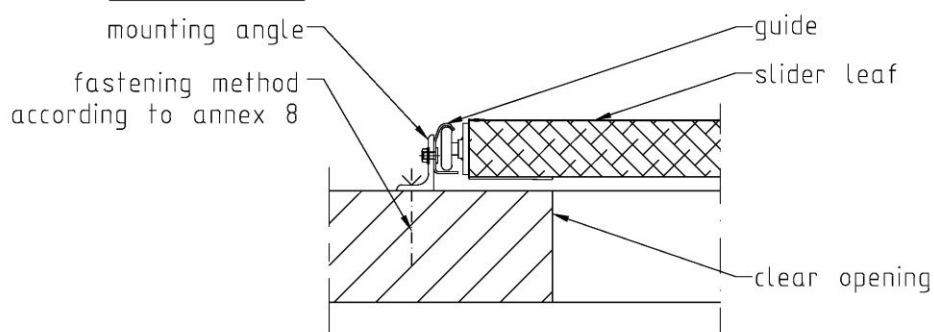


abs EI SLIDE

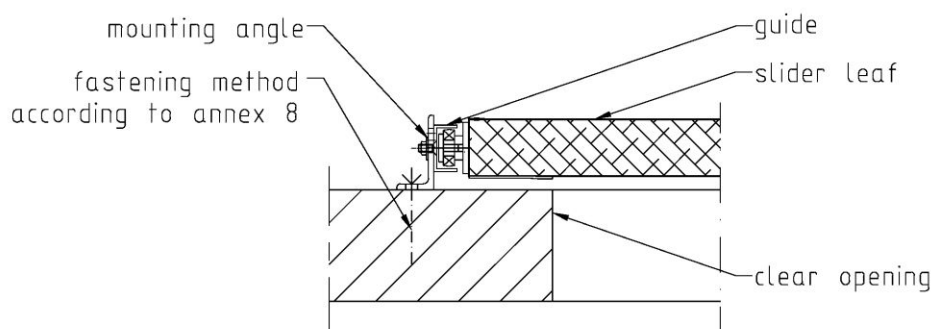
Types of connection to the bordering component
Fastening methods

Annex 8

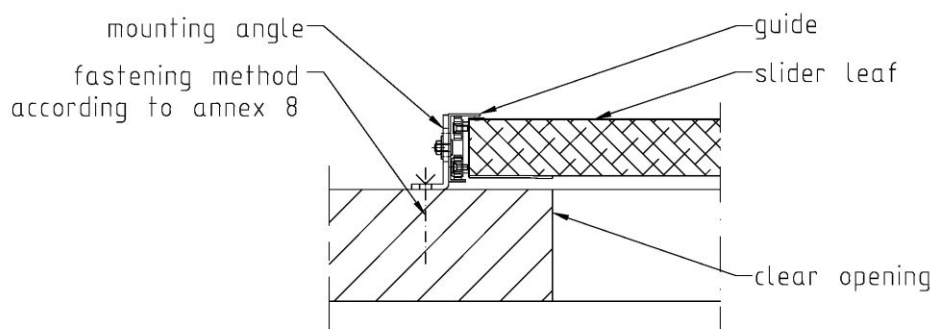
variant 1:



variant 2:



variant 3:

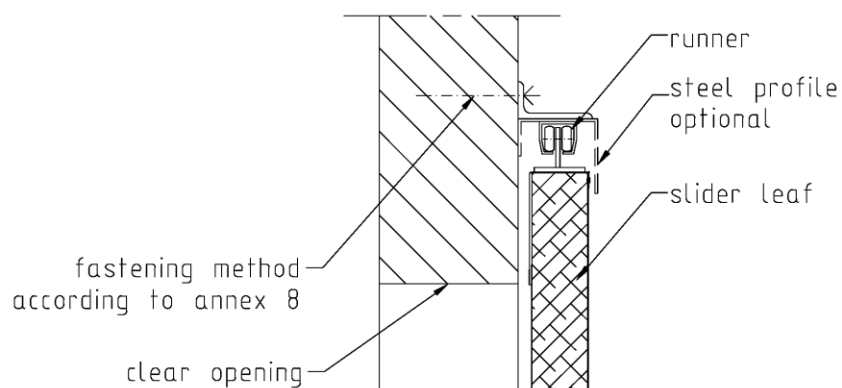


abs EI SLIDE

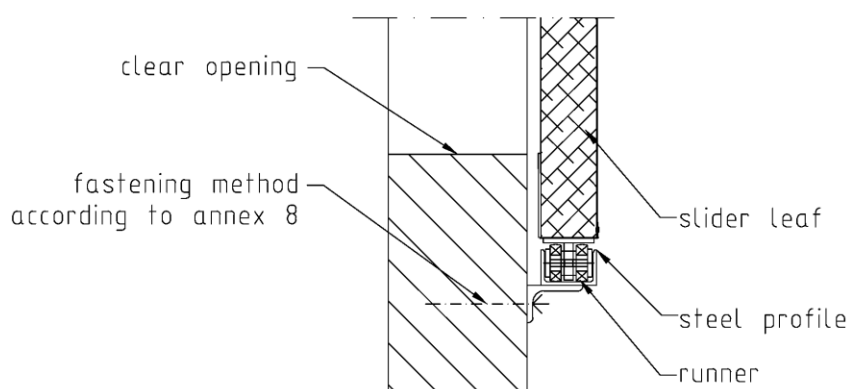
Types of connection to the bordering component
Vertical guide
Wall installation

Annex 9

variant 1: hanging slider leaf



variant 2: standing slider leaf



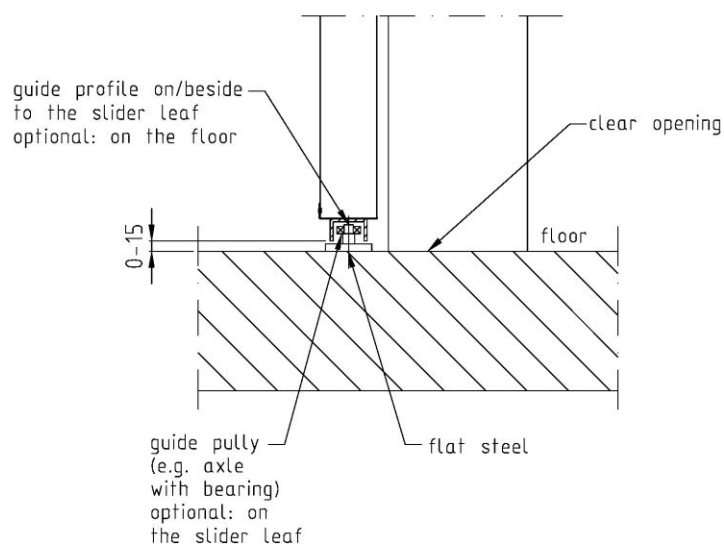
abs EI SLIDE

Connection to the bordering component, horizontal closing direction, wall installation

- variant 1: hanging slider leaf (maximum weight of the slider leaf acc. HELM-rail)
- variant 2: standing slider leaf (maximum weight of the slider leaf: 285 kg)

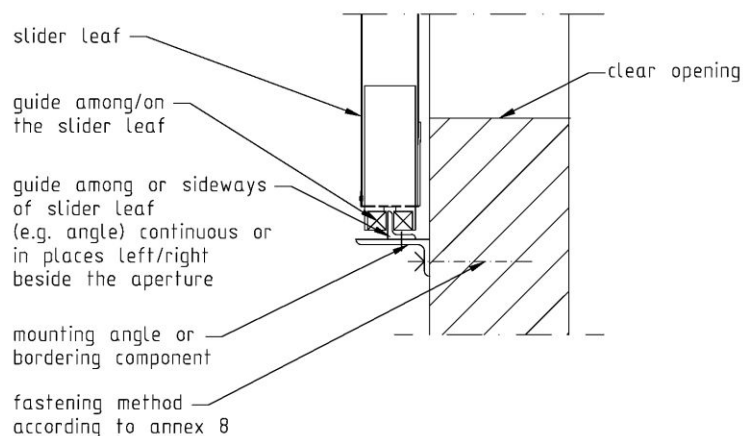
Annex 10

variant 1:



variant 2:

for installation in elevated position

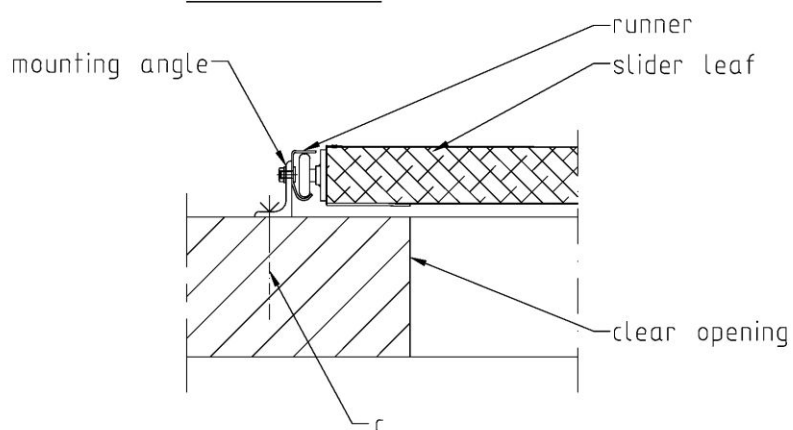


abs EI SLIDE

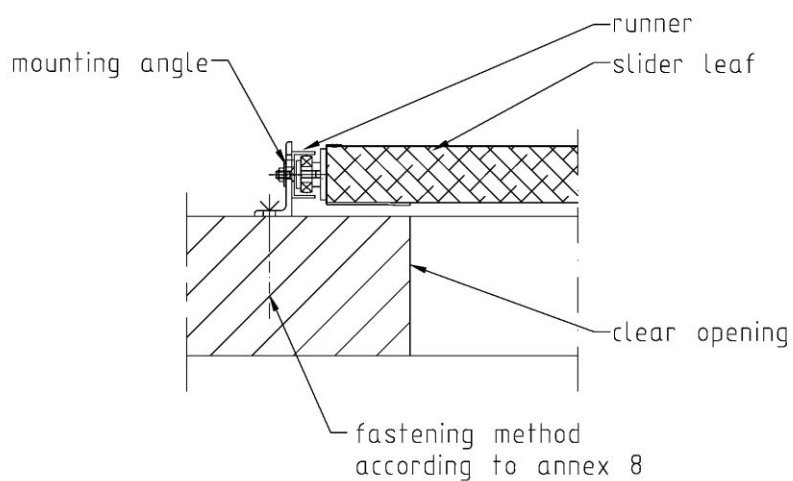
Types of connection to the bordering component
Guide rails below and in elevated position
Wall installation

Annex 11

variant 1:



variant 2:

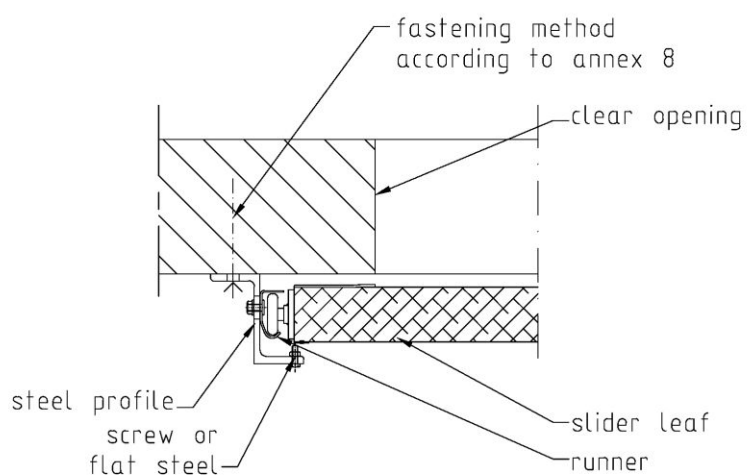


abs EI SLIDE

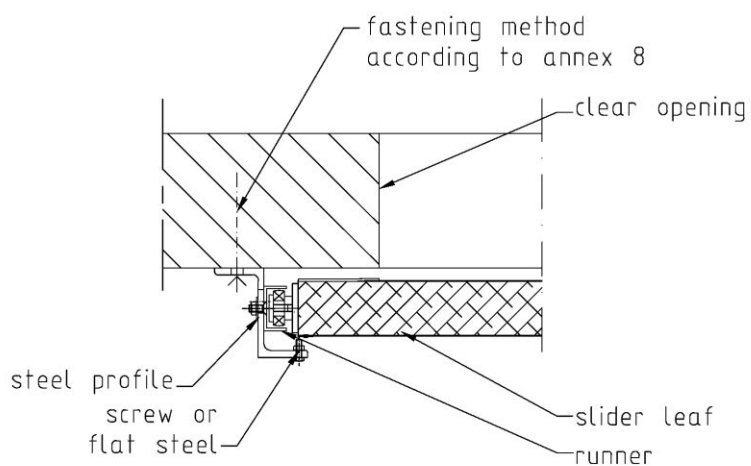
Types of connection to the bordering component
Running rail
On-floor installation

Annex 12

variant 1:



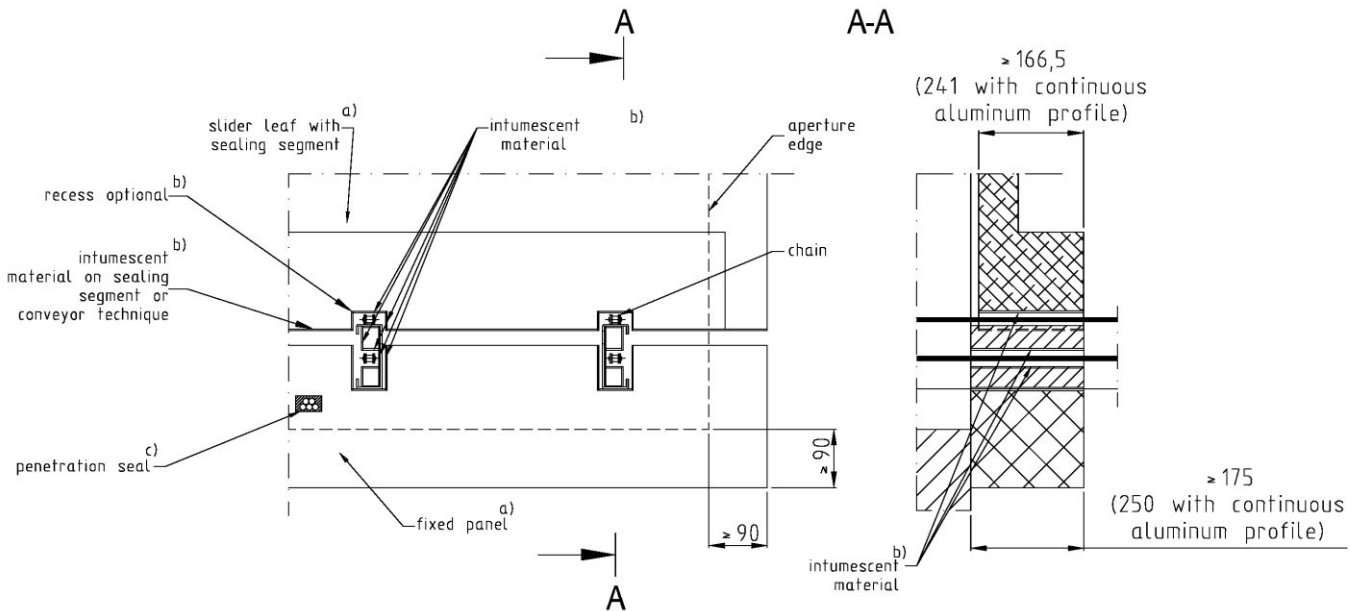
variant 2:



abs EI SLIDE

Types of connection to the bordering component
Running rail
Installation beneath the ceiling

Annex 13



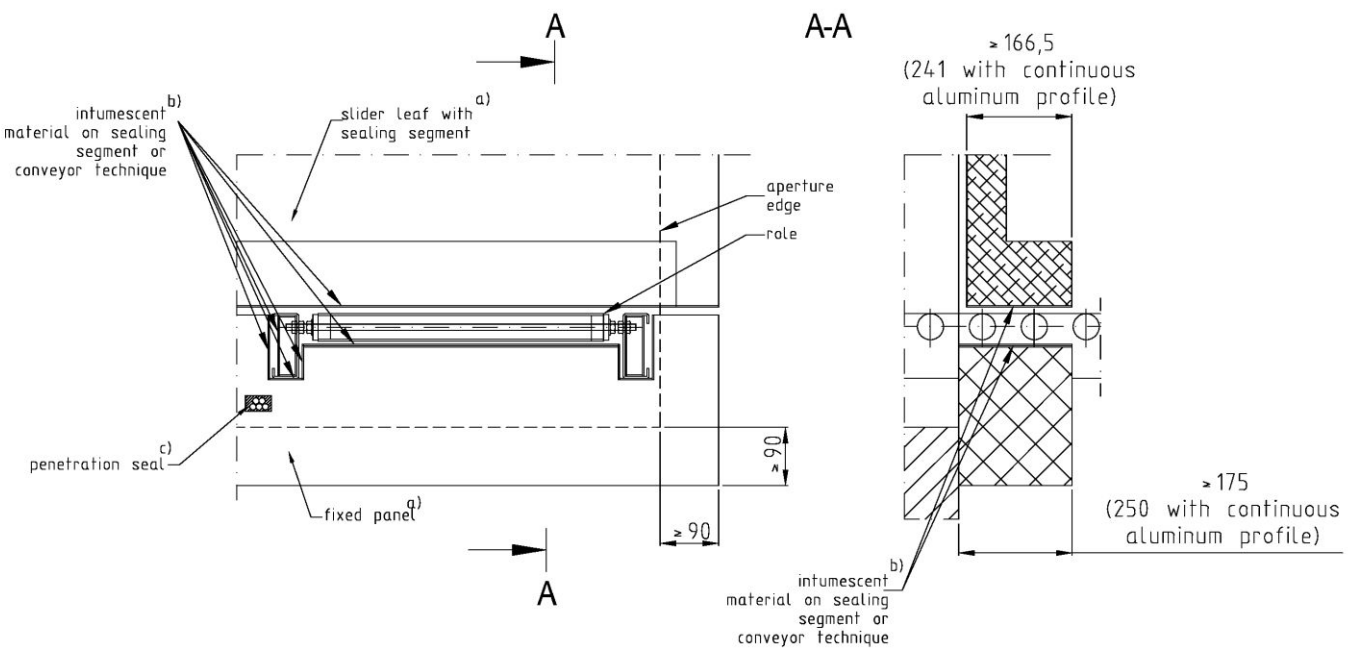
- a) dimensions and design are regulated in the control plan relating to the ETA.
b) Version and quantity of layers of the intumescent material are regulated in the control plan relating to the ETA.
c) Permitted penetration seals are regulated in the control plan; penetration seal through the fixed panel of the closure are only allowed for those cables, which are necessary for controlling the closure and the conveyor technique.

dimensions in mm

abs EI SLIDE

Detail – sealing of the continuous conveyor technique
- sealing segment and fixed panel for chain conveyor

Annex 14



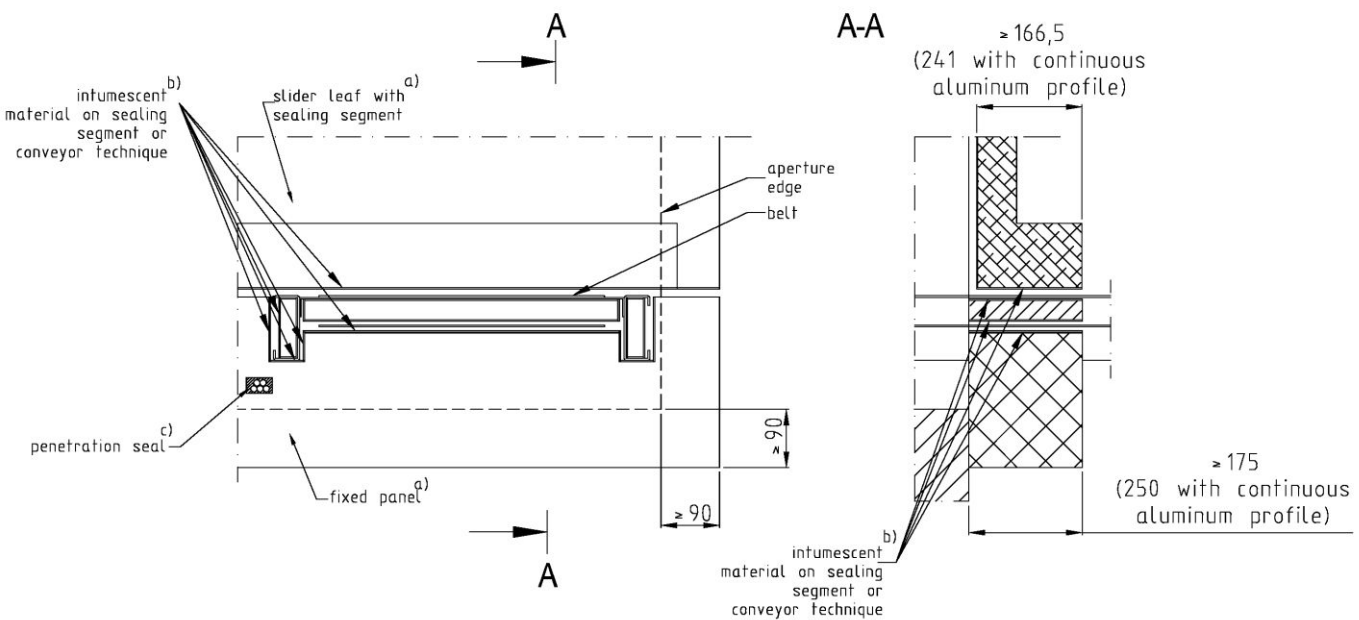
dimensions in mm

- a) dimensions and design are regulated in the control plan relating to the ETA.
b) Version and quantity of layers of the intumescent material are regulated in the control plan relating to the ETA.
c) Permitted penetration seals are regulated in the control plan; penetration seal through the fixed panel of the closure are only allowed for those cables, which are necessary for controlling the closure and the conveyor technique.

abs EI SLIDE

Detail – sealing of the continuous conveyor technique
- sealing segment and fixed panel for roller conveyor

Annex 15



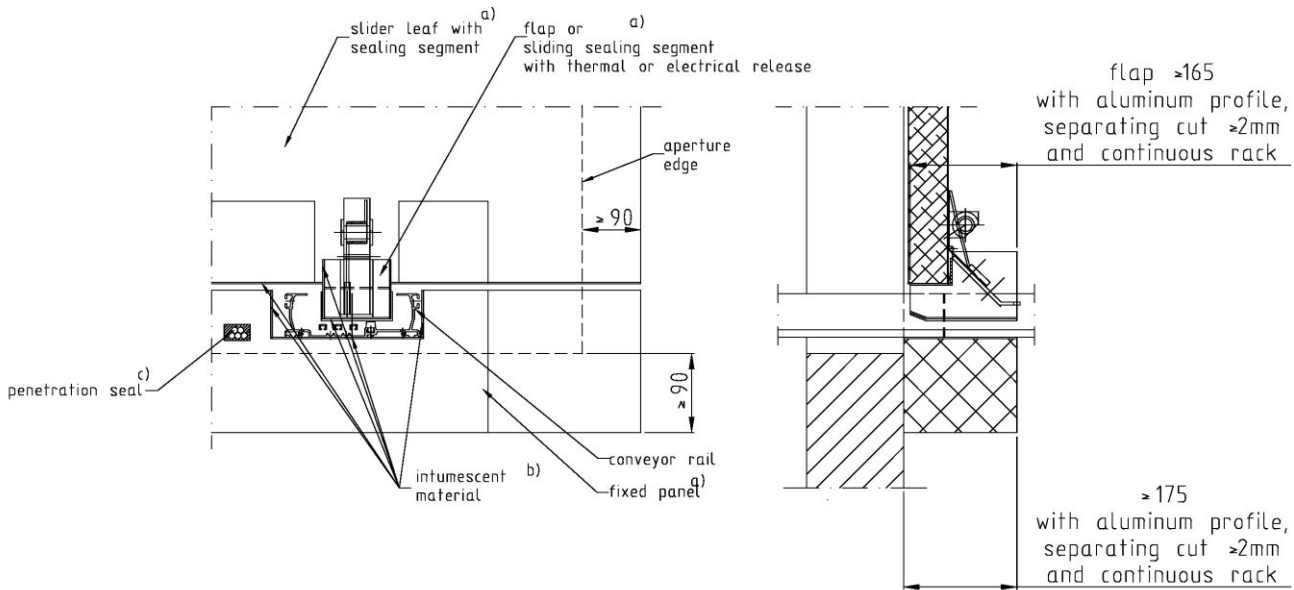
dimensions in mm

- a) dimensions and design are regulated in the control plan relating to the ETA.
- b) Version and quantity of layers of the intumescent material are regulated in the control plan relating to the ETA.
- c) Permitted penetration seals are regulated in the control plan; penetration seal through the fixed panel of the closure are only allowed for those cables, which are necessary for controlling the closure and the conveyor technique.

abs EI SLIDE

Detail – sealing of the continuous conveyor technique
- sealing segment and fixed panel for belt conveyor

Annex 16



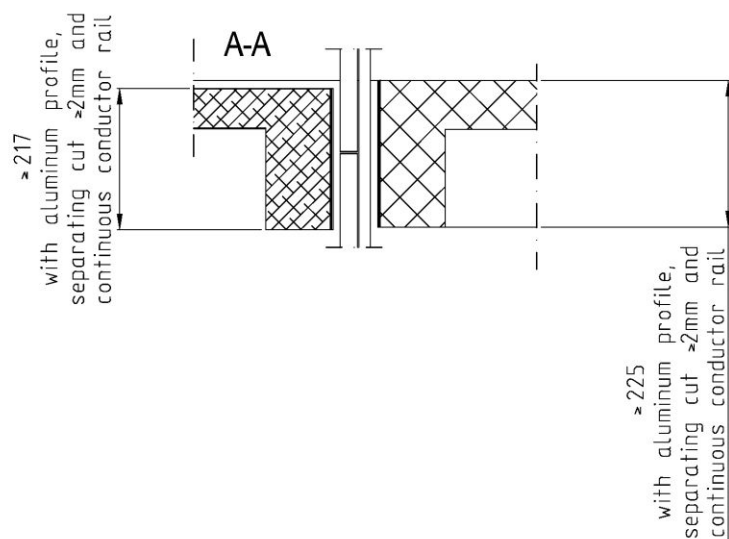
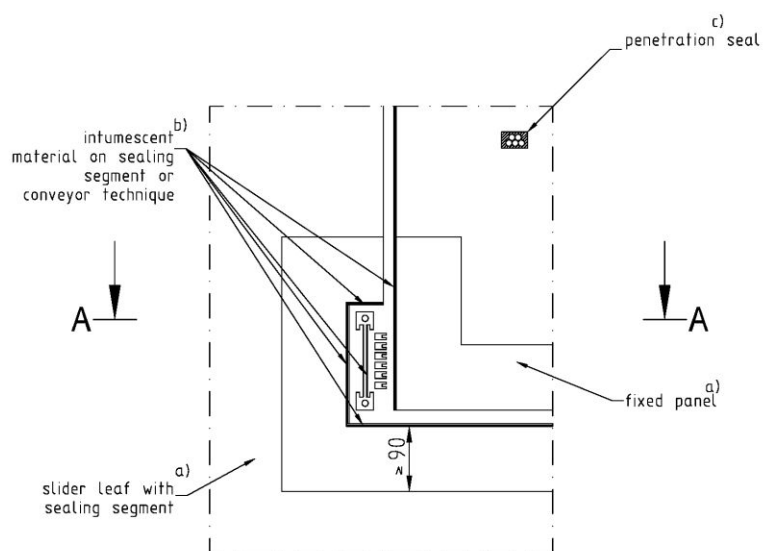
- a) dimensions and design are regulated in the control plan relating to the ETA.
b) Version and quantity of layers of the intumescent material are regulated in the control plan relating to the ETA.
c) Permitted penetration seals are regulated in the control plan; penetration seal through the fixed panel of the closure are only allowed for those cables, which are necessary for controlling the closure and the conveyor technique.

abs EI SLIDE

Detail – sealing of the continuous conveyor technique

- sealing segment and fixed panel for container conveyor
- with folding or sliding sealing segment

Annex 17



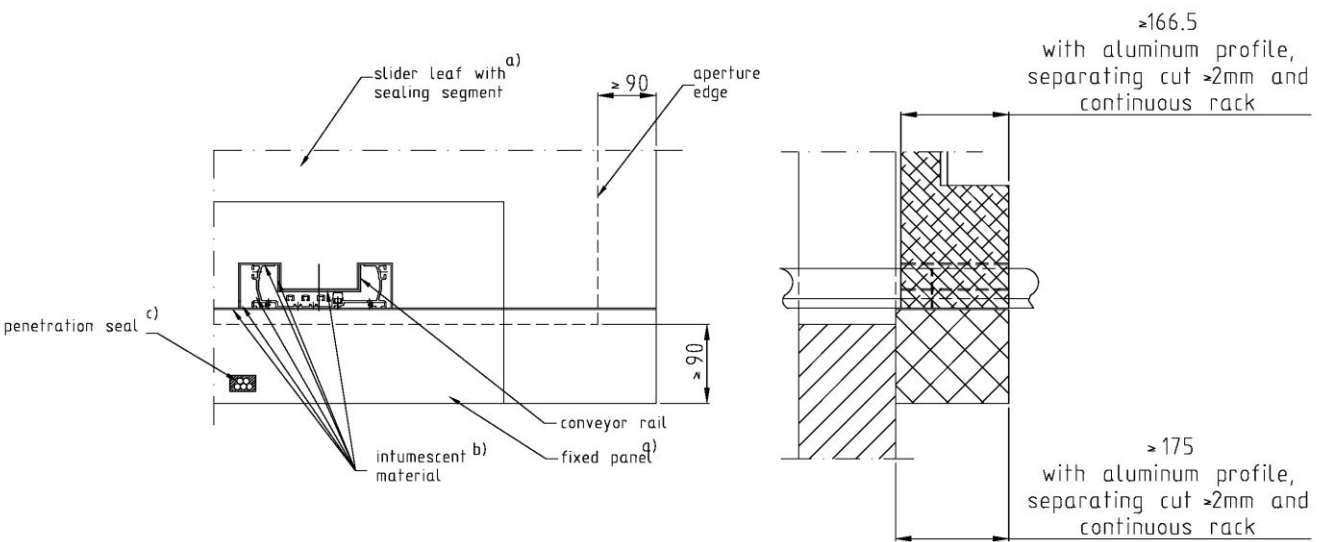
- a) dimensions and design are regulated in the control plan relating to the ETA.
b) Version and quantity of layers of the intumescent material are regulated in the control plan relating to the ETA.
c) Permitted penetration seals are regulated in the control plan; penetration seal through the fixed panel of the closure are only allowed for those cables, which are necessary for controlling the closure and the conveyor technique.

dimensions in mm

abs EI SLIDE

Detail – sealing of the continuous conveyor technique
- sealing segment and fixed panel for electric monorail system

Annex 18



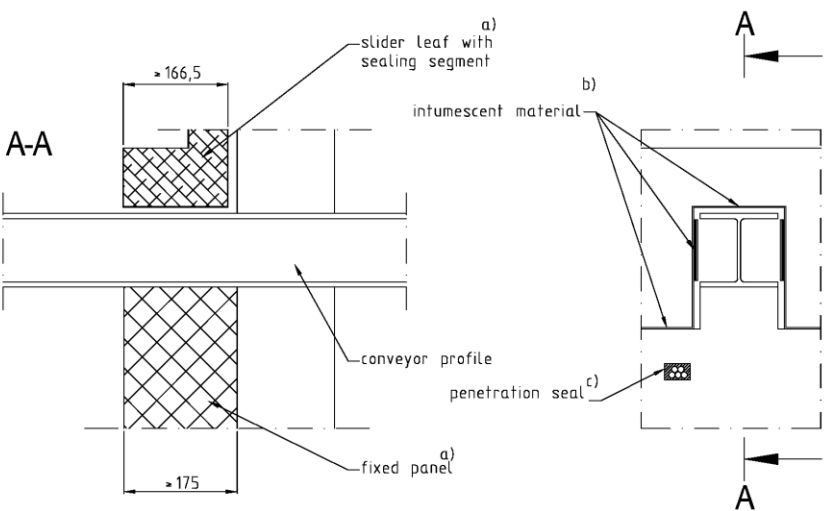
dimensions in mm

- a) dimensions and design are regulated in the control plan relating to the ETA.
b) Version and quantity of layers of the intumescent material are regulated in the control plan relating to the ETA.
c) Permitted penetration seals are regulated in the control plan; penetration seal through the fixed panel of the closure are only allowed for those cables, which are necessary for controlling the closure and the conveyor technique.

abs EI SLIDE

Detail – sealing of the continuous conveyor technique
- sealing segment and fixed panel for container conveyor

Annex 19



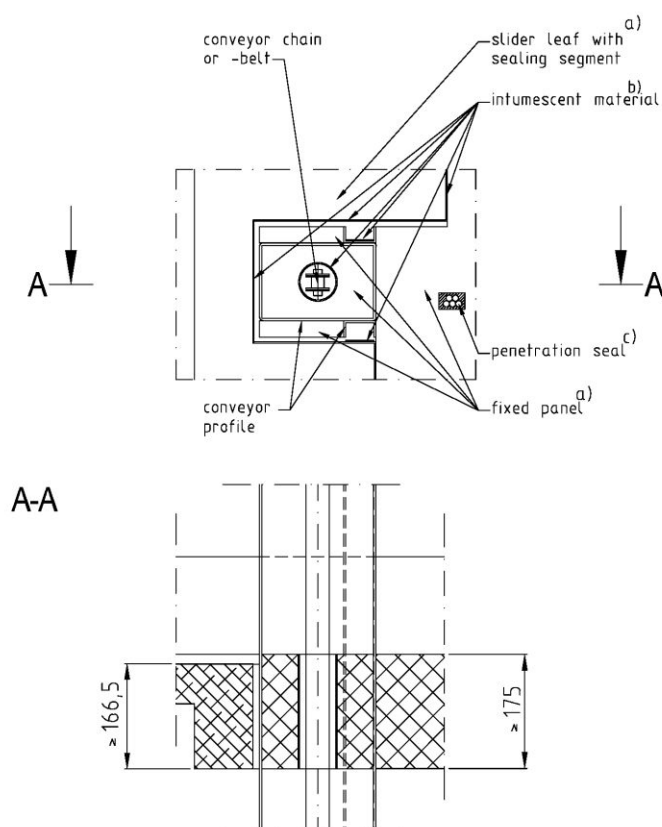
- a) dimensions and design are regulated in the control plan relating to the ETA.
b) Version and quantity of layers of the intumescent material are regulated in the control plan relating to the ETA.
c) Permitted penetration seals are regulated in the control plan; penetration seal through the fixed panel of the closure are only allowed for those cables, which are necessary for controlling the closure and the conveyor technique.

dimensions in mm

abs EI SLIDE

Detail – sealing of the continuous conveyor technique
- sealing segment and fixed panel for crane runway (H-beam)

Annex 20



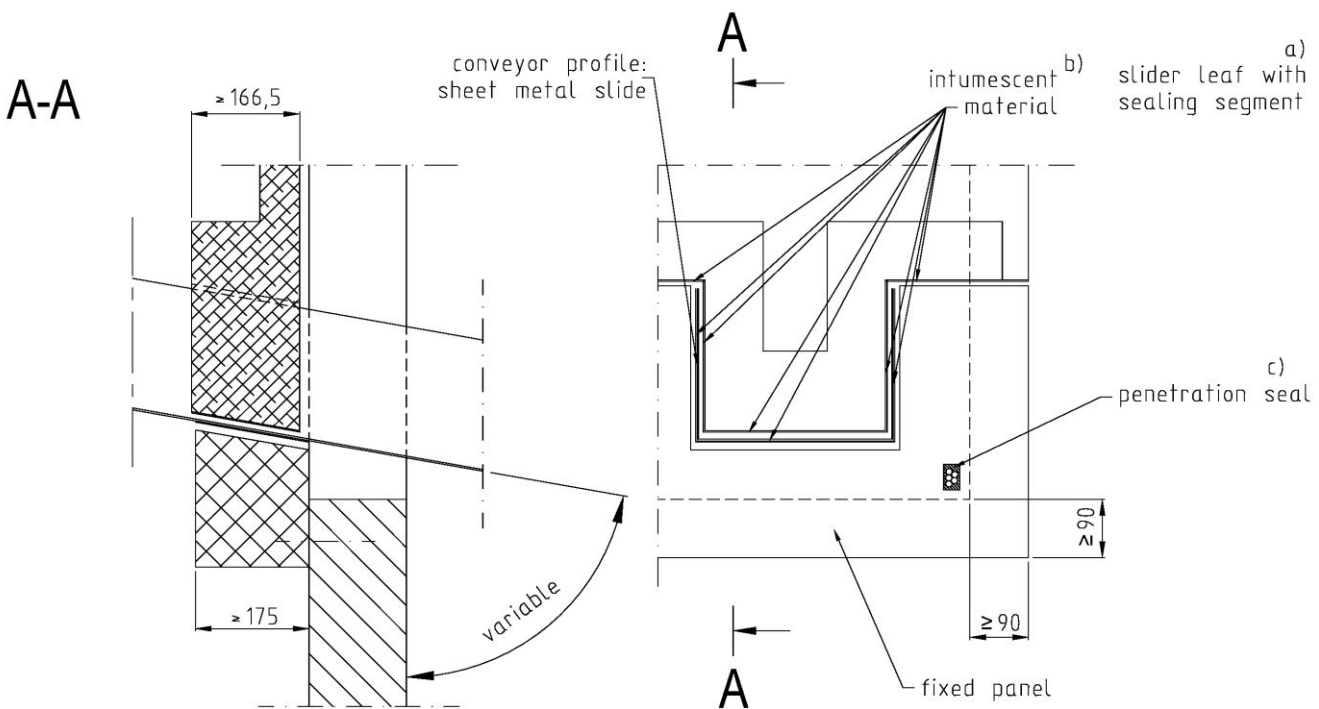
- a) dimensions and design are regulated in the control plan relating to the ETA.
b) Version and quantity of layers of the intumescent material are regulated in the control plan relating to the ETA.
c) Permitted penetration seals are regulated in the control plan; penetration seal through the fixed panel of the closure are only allowed for those cables, which are necessary for controlling the closure and the conveyor technique.

dimensions in mm

abs EI SLIDE

Detail – sealing of the continuous conveyor technique
- sealing segment and fixed panel for jack
- floor installation

Annex 21

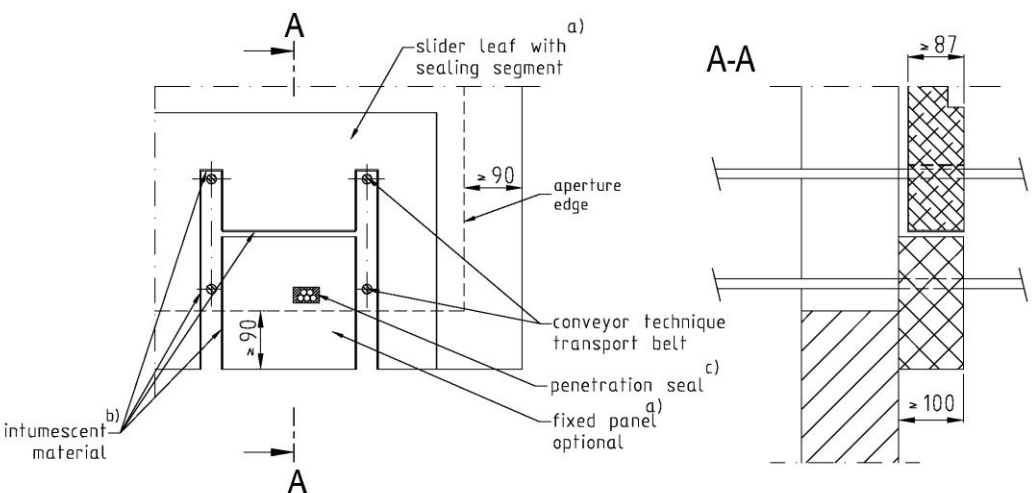


- a) dimensions and design are regulated in the control plan relating to the ETA.
b) Version and quantity of layers of the intumescent material are regulated in the control plan relating to the ETA.
c) Permitted penetration seals are regulated in the control plan; penetration seal through the fixed panel of the closure are only allowed for those cables, which are necessary for controlling the closure and the conveyor technique.

abs EI SLIDE

Detail – sealing of the continuous conveyor technique
- sealing segment and fixed panel for slide

Annex 22



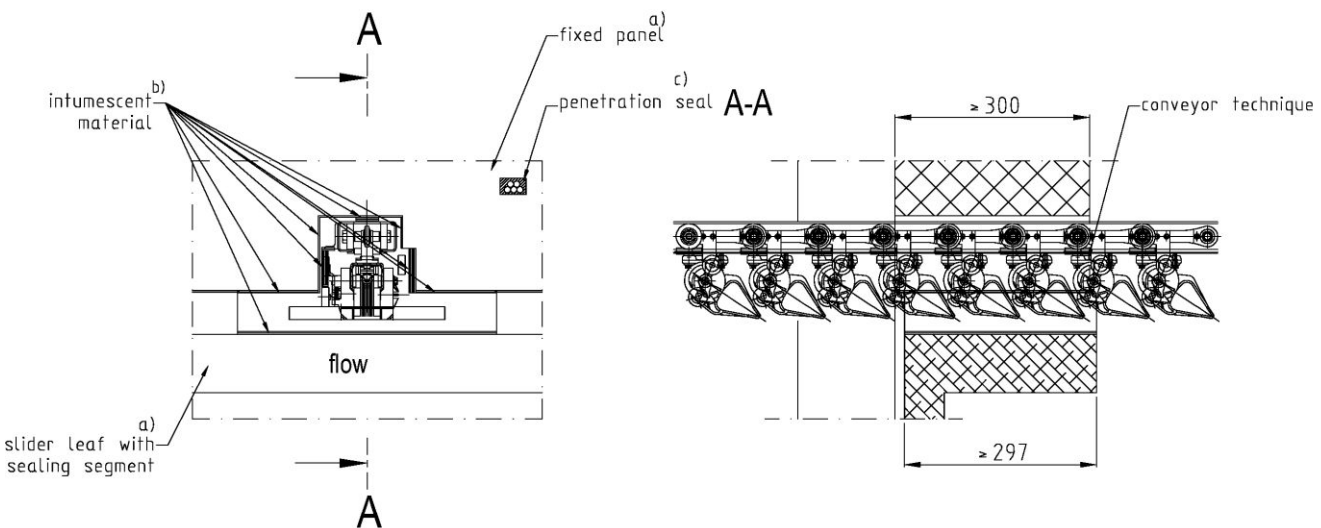
dimensions in mm

- a) dimensions and design are regulated in the control plan relating to the ETA.
b) Version and quantity of layers of the intumescent material are regulated in the control plan relating to the ETA.
c) Permitted penetration seals are regulated in the control plan; penetration seal through the fixed panel of the closure are only allowed for those cables, which are necessary for controlling the closure and the conveyor technique.

abs EI SLIDE

Detail – sealing of the continuous conveyor technique
- sealing segment and fixed panel for tray conveyor (o-belt)

Annex 23



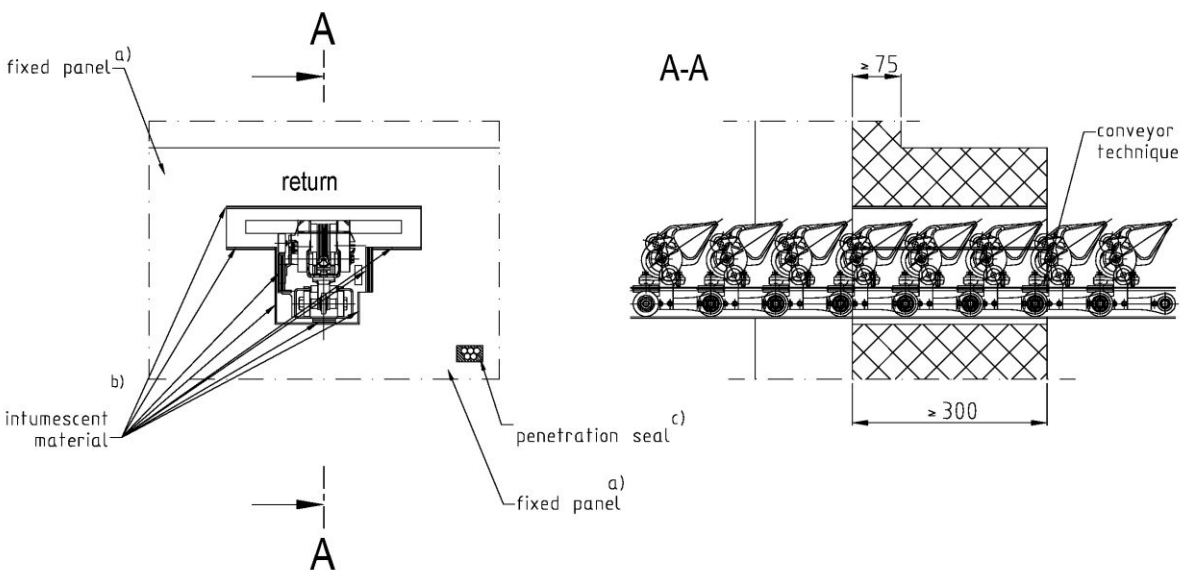
- a) dimensions and design are regulated in the control plan relating to the ETA.
b) Version and quantity of layers of the intumescent material are regulated in the control plan relating to the ETA.
c) Permitted penetration seals are regulated in the control plan; penetration seal through the fixed panel of the closure are only allowed for those cables, which are necessary for controlling the closure and the conveyor technique.

dimensions in mm

abs EI SLIDE

Detail – sealing of the continuous conveyor technique
- sealing segment and fixed panel for paper conveyor (flow line)

Annex 24



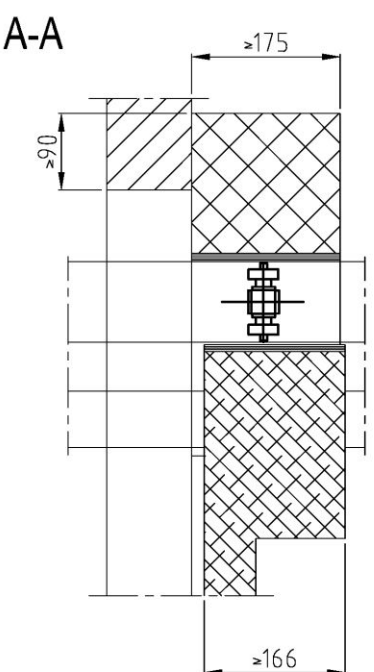
dimensions in mm

- a) dimensions and design are regulated in the control plan relating to the ETA.
- b) Version and quantity of layers of the intumescent material are regulated in the control plan relating to the ETA.
- c) Permitted penetration seals are regulated in the control plan; penetration seal through the fixed panel of the closure are only allowed for those cables, which are necessary for controlling the closure and the conveyor technique.

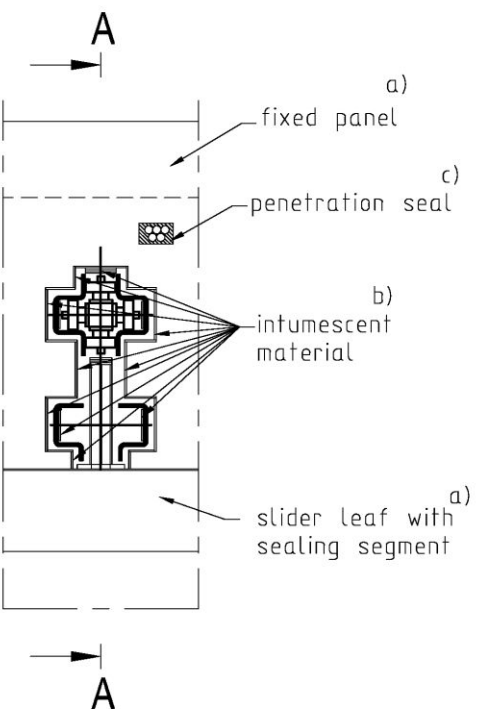
abs EI SLIDE

Detail – sealing of the continuous conveyor technique
- sealing segment and fixed panel for paper conveyor (return in the fixed panel)

Annex 25



dimensions in mm



- a) dimensions and design are regulated in the control plan relating to the ETA.
b) Version and quantity of layers of the intumescent material are regulated in the control plan relating to the ETA.
c) Permitted penetration seals are regulated in the control plan; penetration seal through the fixed panel of the closure are only allowed for those cables, which are necessary for controlling the closure and the conveyor technique.

abs EI SLIDE

Detail – sealing of the continuous conveyor technique
- sealing segment and fixed panel for "power and free" - conveyor

Annex 26