



European Technical Approval ETA-13/0501

English translation prepared by DIBt - Original version in German language

Handelsbezeichnung
Trade name

Feuerschutzabschluss im Zuge bahngelagerter Förderanlagen
"abs EI SLIDE"
Kit for closure systems "abs EI SLIDE" for conveyor systems

Zulassungsinhaber
Holder of approval

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

Zulassungsgegenstand
und Verwendungszweck

Feuerschutzabschluss im Zuge bahngelagerter Förderanlagen
"abs EI SLIDE"
Verwendung als einflügeliger Feuerschutzabschluss von Wand- und
Deckenöffnungen von bahngelagerten Förderanlagen; im
Schließbereich getrennte und nicht getrennte Fördererntechnik
*Kit for closure systems "abs EI SLIDE" for conveyor systems
use as single leaf closure of wall or floor openings of conveyor systems;
in the opening area connected or disconnected conveyor technique*

*Generic type and use
of construction product*

Geltungsdauer:
Validity: vom
from
bis
to

23 May 2013

23 May 2018

Herstellwerk
Manufacturing plant

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

Diese Zulassung umfasst
This Approval contains

36 Seiten einschließlich 26 Anhänge
36 pages including 26 annexes

I LEGAL BASES AND GENERAL CONDITIONS

- 1 This European technical approval is issued by Deutsches Institut für Bautechnik in accordance with:
 - Council Directive 89/106/EEC of 21 December 1988 on the approximation of laws, regulations and administrative provisions of Member States relating to construction products¹, modified by Council Directive 93/68/EEC² and Regulation (EC) N° 1882/2003 of the European Parliament and of the Council³;
 - *Gesetz über das In-Verkehr-Bringen von und den freien Warenverkehr mit Bauprodukten zur Umsetzung der Richtlinie 89/106/EWG des Rates vom 21. Dezember 1988 zur Angleichung der Rechts- und Verwaltungsvorschriften der Mitgliedstaaten über Bauprodukte und anderer Rechtsakte der Europäischen Gemeinschaften (Bauproduktengesetz - BauPG) vom 28. April 1998⁴, as amended by Article 2 of the law of 8 November 2011⁵;*
 - Common Procedural Rules for Requesting, Preparing and the Granting of European technical approvals set out in the Annex to Commission Decision 94/23/EC⁶.
- 2 Deutsches Institut für Bautechnik is authorized to check whether the provisions of this European technical approval are met. Checking may take place in the manufacturing plant. Nevertheless, the responsibility for the conformity of the products to the European technical approval and for their fitness for the intended use remains with the holder of the European technical approval.
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¹ Official Journal of the European Communities L 40, 11 February 1989, p. 12
² Official Journal of the European Communities L 220, 30 August 1993, p. 1
³ Official Journal of the European Union L 284, 31 October 2003, p. 25
⁴ *Bundesgesetzblatt Teil I 1998*, p. 812
⁵ *Bundesgesetzblatt Teil I 2011*, p. 2178
⁶ Official Journal of the European Communities L 17, 20 January 1994, p. 34

II SPECIFIC CONDITIONS OF THE EUROPEAN TECHNICAL APPROVAL

1 Definition of the product and intended use

1.1 Definition of the construction 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 components⁷:

- 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 > 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 a cable penetration seal⁷.

- 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 plan⁷ at least.

- Vertical closing and tilting on a wall as well as horizontal closing on/under 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 leaves 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.

Closure, which are closing from bottom to top, have to be provided with a additional device against opening in the case of fire (e.g. thermal-causing locking device)⁷.

⁷ 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 two 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.

On the lower edge of the sliding leaf a sealing segment with strips of an intumescent material is positioned above the conveyor system. Strips of an intumescent material are positioned in the conveyor technology area in 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 gaps⁷.

- Closing device (closing weight system)

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

1.2 Intended use

In accordance with this European technical approval, the "abs EI SLIDE" can be used as closure to seal necessary openings of trackbound conveyors (see table 3) in internal walls and floors (see table 1 and 2).

When used, in particular the permitted service conditions of the intumescent materials used are to be observed.

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		
		clear width	clear height	clear surface
High-density solid wall Masonry or solid concrete with an overall density of ≥ 800 kg/m ³ and a thickness ≥ 150 mm	E 120	min. 1.250 max. 2.500	min. 1.875 max. 2.500	max. 6,25 m ²
	EI ₂ 90	min. 200	min. 200	max. 9,38 m ²
	EI ₁ 60	max. 3.750	max. 3.750	
low-density solid wall aerated concrete with an overall density of ≥ 450 kg/m ³ and a thickness ≥ 150 mm	E 120	min. 1.250 max. 2.500	min. 1.875 max. 2.500	max. 6,25 m ²
	EI ₂ 90	min. 200	min. 200	max. 9,38 m ²
	EI ₁ 60	max. 3.750	max. 3.750	
a) Supporting construction to EN 1366-7 ⁸ , section 7.2 or EN 1363-1 ⁹ , section 7.2				
b) Fire resistance class per EN 13501-2 ¹⁰ in accordance with the Evaluation Report				

⁸ EN 1366-7:2004 Fire resistance tests for service installations - Part 7: Conveyor systems and their closures

⁹ EN 1363-1:1999 Fire resistance tests - Part 1: General requirements

¹⁰ EN 13501-2:2007 Fire classification of construction products and building elements - Part 2: Classification using data from fire resistance tests, excluding ventilation services

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		
		clear width	clear height	Clear surface
High-density solid floor Masonry or solid concrete with an overall density of $\geq 800 \text{ kg/m}^3$ and a thickness $\geq 200 \text{ mm}$	E 90 EI ₂ 90 EI ₁ 60	min. 200 max. 2.730	min. 200 max. 2.730	max. 2,92 m ²
low-density solid floor aerated concrete with an overall density of $\geq 450 \text{ kg/m}^3$ and a thickness $\geq 200 \text{ mm}$	E 90 EI ₂ 90 EI ₁ 60	min. 200 max. 2.730	min. 200 max. 2.730	max. 2,92 m ²
a) Supporting construction to EN 1366-7 ⁸ , section 7.2 or EN 1363-1 ⁹ , section 7.2 b) Fire resistance class per EN 13501-2 ¹⁰ in accordance with the Evaluation Report				

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 technology¹¹

Sealing system for	Fixed panel thickness	Minimum penetration seal depth of the seal on the fixed panel	Minimum penetration seal depth of the sealing segment on the sliding leaf	Maximum fire resistance class
roller conveyor	175 mm	175 mm	166 mm	EI 120
belt conveyor	175 mm	175 mm	166 mm	EI 120
chain conveyor	175 mm	175 mm	166 mm	EI 120
crane runway	175 mm	175 mm	166 mm	EI 120
container conveyor system 1	175 mm	175 mm	166 mm	EI 120
Elektro-suspension track	225 mm	225 mm	217 mm	EI 90
Lifter	175 mm	175 mm	166 mm	EI 120
Gravity chut	175 mm	175 mm	166 mm	EI 120
Round belt	100 mm	100 mm	87 mm	EI 120
paper conveyor	300 mm	300 mm	297 mm	EI 120

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

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; see section 2.1.2) 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 conditions of this European technical approval are based on an assumed working life of the "abs EI SLIDE" of 10 years, provided the conditions for packaging, transport, storage, installation, use, maintenance and repair specified in sections 4.2, 5.1/5.2 are fulfilled.

The indications given on the working life cannot be interpreted as a guarantee given by the manufacturer, 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.

2 Characteristics of the product and methods of verification

2.1 Characteristics of the assembled system and method of verification

2.1.1 Fire resistance

The fire resistance was determined in accordance with EN 1366-7⁸. The fire resistance classes specified in section 1.2 were verified in accordance with EN 13501-2¹⁰.

2.1.2 Durability

The durability was determined in accordance with EN 14600¹². The vertically and horizontal closing closure systems were tested through 200,000 cycles. For particular running rails and running gears of the horizontally closing closure systems verifications of applicability for 200,000 cycles are available.

For vertically and horizontal closing closure systems, class C5 was demonstrated.

The drive belts, steel cables, steel chains and deflection rollers, as well as the roller devices and the rail shall be selected in accordance with the load bearing capacity specifications of the manufacturer for the weight of the sliding leaf.

2.1.3 Content and/or release of dangerous substances

For the components of the closure system "abs EI SLIDE" technical data sheets and safety data sheets are available.

Furthermore there is a manufacturer's statement concerning content of dangerous substances for the closure system "abs EI SLIDE".

2.1.4 Closing speed

The closing speed on the closing device shall be set such that compliance with the requirements per EN 14600¹² is ensured.

2.1.5 Closing and opening force

The applicant for this European technical approval shall specify the closing and opening force of the closure. The personal health and safety requirements per EN 12453¹³ were not verified.

12	EN 14600:2005	Doorsets and openable windows with fire resisting and/or smoke control characteristics - Requirements and classification
13	EN 12453:2000	Industrial, commercial and garage doors and gates - Safety in use of power operated doors - Requirements

2.2 Characteristics of the components of the system and method of verification

2.2.1 Moving sliding leaf and fixed panel with clearance for the conveyor

Reaction to fire

The steel profiles and the steel sheet of the sliding leaf were classified for their reaction to fire in accordance with Decision 96/603/EC of the European Commission¹⁴ (as amended) as Class A1 per EN 13501-1¹⁵.

The calcium silicate boards and the mineral wool used for the fixed panel were classified as Class A1 per EN 13501-1¹⁵ for their reaction to fire.

The water glass adhesive fulfils at least the requirements for reactions to fire of Class E materials per EN 13501-1¹⁵.

2.2.2 Guide for the sliding leaf

Reaction to fire

Per Decision 96/603/EC of the European Commission¹⁴ (as amended), galvanised steel profiles as well as brackets, running gears and running rails consisting of steel satisfy the requirements in accordance with fire resistance class A1 per EN 13501-1¹⁵.

2.2.3 Sealing system consisting of intumescent material

2.2.3.1 Reaction to fire

The intumescent materials

- Flaton VPG 12,
- Flaton flex EN,
- Roku-Strip and
- Hilti CP 611 A

which are used for the sealing system, fulfil at least the requirements for reactions to fire of Class E materials per EN 13501-1¹⁵.

2.2.3.2 Expansion ratio and expansion pressure of intumescent material after aging

The characteristics and the fire performance criteria of the intumescent materials used were determined after loading and are deposited with DIBt.

2.2.3.3 Identification

The intumescent materials used as a sealing system can be identified via their thickness, density and their expansion ratio as well as via their ash content and expansion pressure in accordance with the methods specified in section 5.2 of CUAP 11.07/02. A fingerprint and the chemical composition are deposited with DIBt for the intumescent materials.

2.2.4 Closing device (closing weight system)

2.2.4.1 Reaction to fire

The closing weights, cables, roller devices and deflection rollers are made of steel and the flashings are made of steel sheet.

Per Decision 96/603/EC of the European Commission¹⁴ (as amended), steel and steel sheet satisfy the requirements in accordance with fire resistance class A1 per EN 13501-1¹⁵.

2.2.4.2 Temperature dependence

The change in the closing time at ambient temperatures from 0 °C to 40 °C shall be less than 25 % compared with the closing time at room temperature (20 °C).

¹⁴ Official Journal of the European Communities L 267/23 of 19/10/1996 and L258/36 of 12/10/2000

¹⁵ EN 13501-1:2007 Fire classification of construction products and building elements - Part 1: Classification using data from reaction to fire tests

2.2.4.3 Corrosion reaction

No defined corrosion resistance (corresponds to Class 0) was verified for the closing device per EN 1670¹⁶.

3 Evaluation and attestation of conformity and CE marking

3.1 System of attestation of conformity

Per Decision 1999/454/EC of the European Commission¹⁷ and the amendment per Decision 2001/596/EC of the European Commission¹⁸, conformity attestation system 1 is applicable.

This system of conformity attestation is defined as follows:

System 1: Certification of the conformity of the product by an approved certification body on the basis of:

(a) Tasks for the manufacturer:

(1) Factory production control

(2) Further testing of samples taken at the factory by the manufacturer in accordance with a prescribed test plan

(b) Tasks for the approved body:

(3) Initial type testing of the product

(4) Initial inspection of the factory and of factory production control

(5) Continuous monitoring, assessment and approval of factory production control

Note: Approved bodies are also referred to as "notified bodies".

3.2 Responsibilities

3.2.1 Tasks for the manufacturer

3.2.1.1 Factory production control

The manufacturer shall exercise permanent internal control of production. All the elements, requirements and provisions adopted by the manufacturer shall be documented in a systematic manner in the form of written policies and procedures, including records of results performed. This production control system shall ensure that the product is in conformity with this European technical approval.

The manufacturer is only to use components stated in the technical documentation of this European technical approval.

The factory production control shall be in accordance with the "Control plan of 23 May 2013 relating to the European technical approval ETA-13/0501 issued on 23 May 2013" which is part of the technical documentation of this European technical approval. The control plan is laid down in the context of the factory production control system operated by the manufacturer and deposited with Deutsches Institut für Bautechnik¹⁹.

The results of factory production control shall be recorded and evaluated in accordance with the provisions of the control plan.

3.2.1.2 Other tasks for the manufacturer

The manufacturer shall provide installation instructions which contain at least the following information:

¹⁶ EN 1670:2007 Building hardware - Corrosion resistance - Requirements and test methods

¹⁷ Official Journal of the European Communities L 178/52 of 14/7/1999

¹⁸ Official Journal of the European Communities L 209/33 of 2/8/2001

¹⁹ The control plan is a confidential part of the European technical approval and only handed over to the approved body involved in the procedure of attestation of conformity. See section 3.2.2.

European technical approval

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English translation prepared by DIBt

- Information for the installation of the closure system (e.g., adjacent components, permitted fasteners, fastening distances, joint design)
- Notes on the sequence of steps for installation
- Information on the permitted accessory parts for the closure system
- Information on functional interplay of all parts
- Information on the use of hold-open systems
- Information on the interplay of the closure system, conveyor, hold-open system and emergency power supply

The manufacturer shall, on the basis of a contract, involve a body which is approved for the tasks referred to in section 3.1 in the field of closure systems for trackbound conveyors in order to undertake the actions laid down in section 3.2.2. For this purpose, the manufacturer shall submit the control plan in accordance with sections 3.2.1.1 and 3.2.2 to the approved body.

3.2.2 Tasks for the approved bodies

The approved body shall perform the following tasks in accordance with the provisions of the control plan:

- Initial type-testing of the product
- Initial inspection of factory and of factory production control
- Continuous monitoring, assessment and approval of the factory production control

The approved body shall record the essential points of its actions referred to above and state the results obtained and conclusions drawn in a written report.

The approved certification body involved by the manufacturer shall issue an EC certificate of conformity of the product stating the conformity with the provisions of this European technical approval.

In cases where the provisions of the European technical approval and its control plan are no longer fulfilled, the certification body shall withdraw the certificate of conformity and inform Deutsches Institut für Bautechnik without delay.

3.3 CE marking

The CE marking is to be attached to the closure itself (steel sheet plate) and printed on the accompanying commercial documents. The letters "CE" shall be followed by the identification number of the approved certification body and be accompanied by the following additional information:

- Trade name: abs EI SLIDE
- Name and address of the manufacturer (legal entity responsible for the manufacture)
- Last two digits of the year in which the CE marking was affixed
- Number of the EC certificate of conformity for the product
- ETA number
- Use category (fire resistance and durability classification)
- Closing force

4 Assumptions under which the fitness of the product for the intended use was favourably assessed**4.1 Manufacturing**

Steel parts no longer accessible after assembly shall be provided with lifetime corrosion protection. Steel parts accessible after assembly shall be provided with basic protection which is effective for at least three months after the delivery date.

Additional corrosion protection and basic protection (coatings) of the sheets are not required if galvanised fine sheets of at least zinc coating class Z 275 N A per EN 10346²⁰ are used.

The European technical approval is issued for the product on the basis of agreed data/information, deposited with Deutsches Institut für Bautechnik, which identifies the product that has been assessed and judged. Changes to the product or production process, which could result in this deposited data/information being incorrect, should be notified to Deutsches Institut für Bautechnik before the changes are introduced. Deutsches Institut für Bautechnik will decide whether or not such changes affect the approval and consequently the validity of the CE marking on the basis of the approval and if so whether further assessment or alterations to the approval shall be necessary.

4.2 Installation

The closure system shall be connected to the adjacent components in such a way that the forces which occur when the closure system closes automatically and the forces resulting from deformations during fires can be absorbed by the fasteners in the long term. These forces shall not endanger the stability of the adjacent structure.

The connections with the adjacent components shown in annex 8 fulfil this requirement without further verification.

Note: Other requirements for the installation and function of the "Abs EI SLIDE" and the requirement for acceptance testing can result in accordance with the national regulations.

5 Indications to the manufacturer

5.1 Packaging, transport and storage

When storing the intumescent material, the conditions in the assessment criteria (ambient air with temperatures between 0 °C and 40 °C and 50 to 80 % relative humidity) shall be observed.

5.2 Use, maintenance, repair

Maintenance instructions

The manufacturer shall provide 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.

Inspection and maintenance

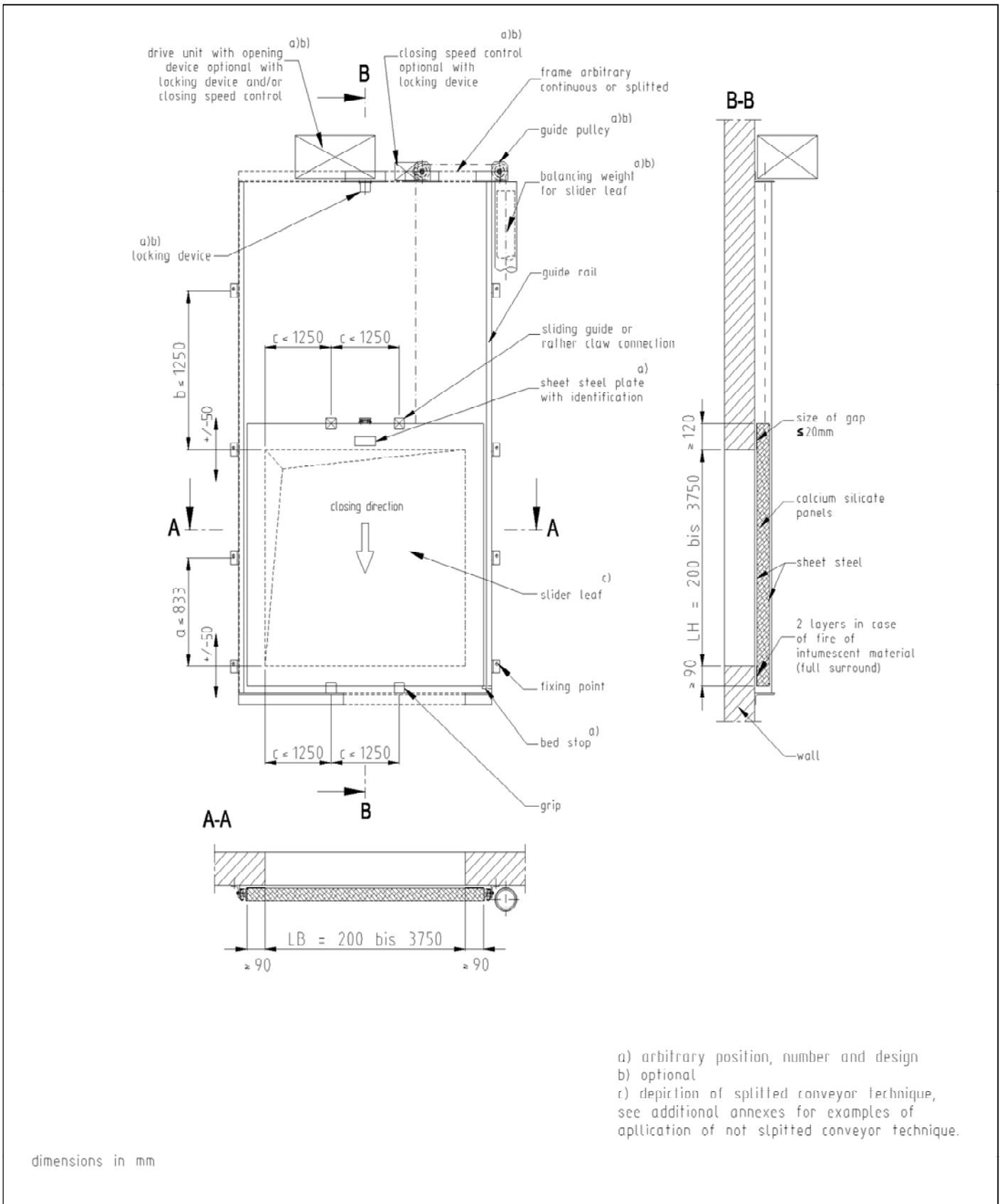
The "abs EI SLIDE" shall be inspected for serviceability at least once a month. At least once a year, the system shall be maintained by qualified personnel authorised by the manufacturer. The results shall be noted in the test and maintenance log.

Note: Further maintenance requirements may result for the "abs EI SLIDE" in conjunction with national regulations.

Prof. Gunter Hoppe
Head of Department

beglaubigt:
Biedermann

English translation prepared by DIBt

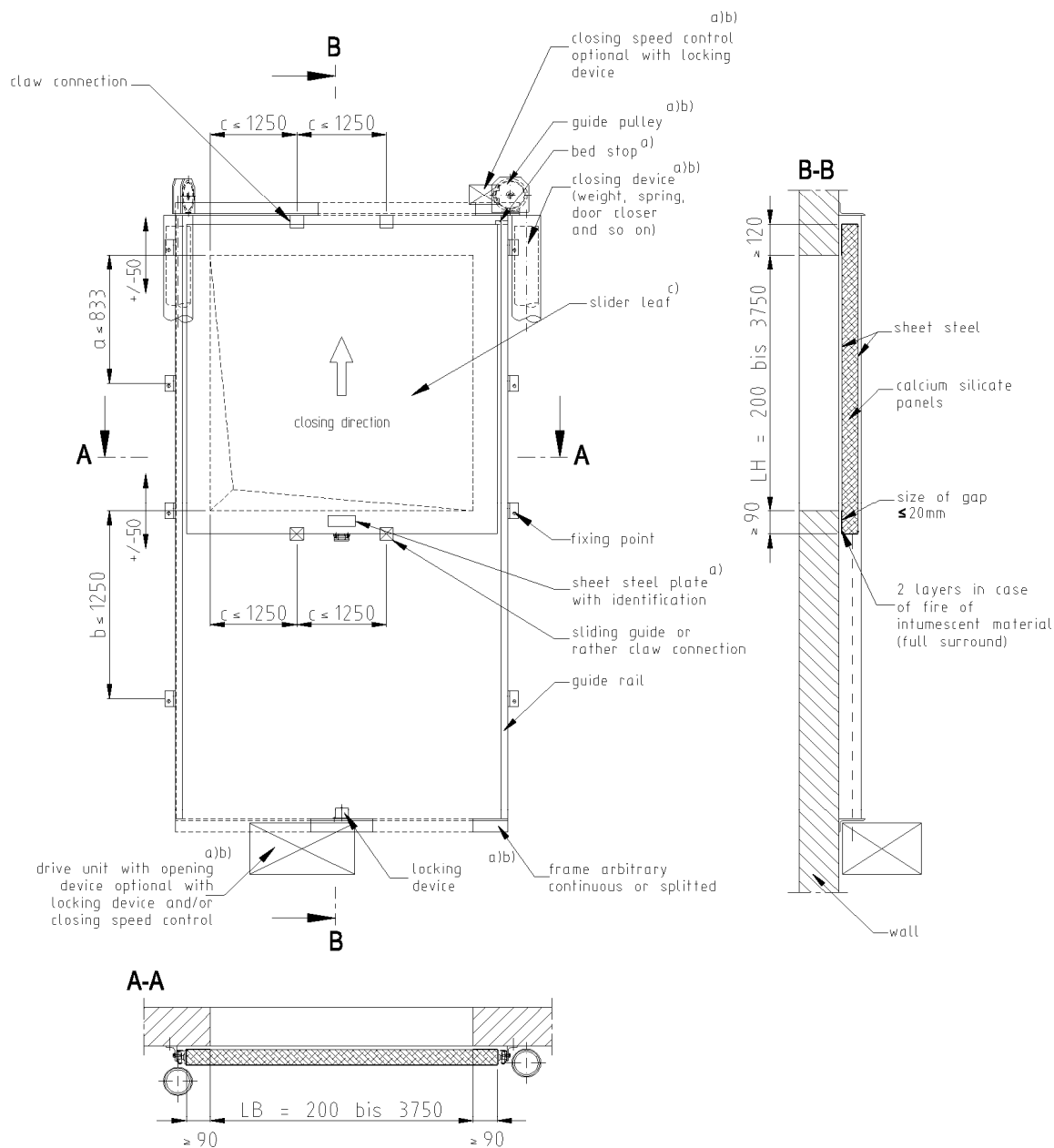


- a) arbitrary position, number and design
- b) optional
- c) depiction of splitted conveyor technique, see additional annexes for examples of application of not splitted conveyor technique.

Kit for closure systems "abs EI SLIDE" for conveyor systems

Overview – closing direction downwards from above
Wall installation

Annex 1



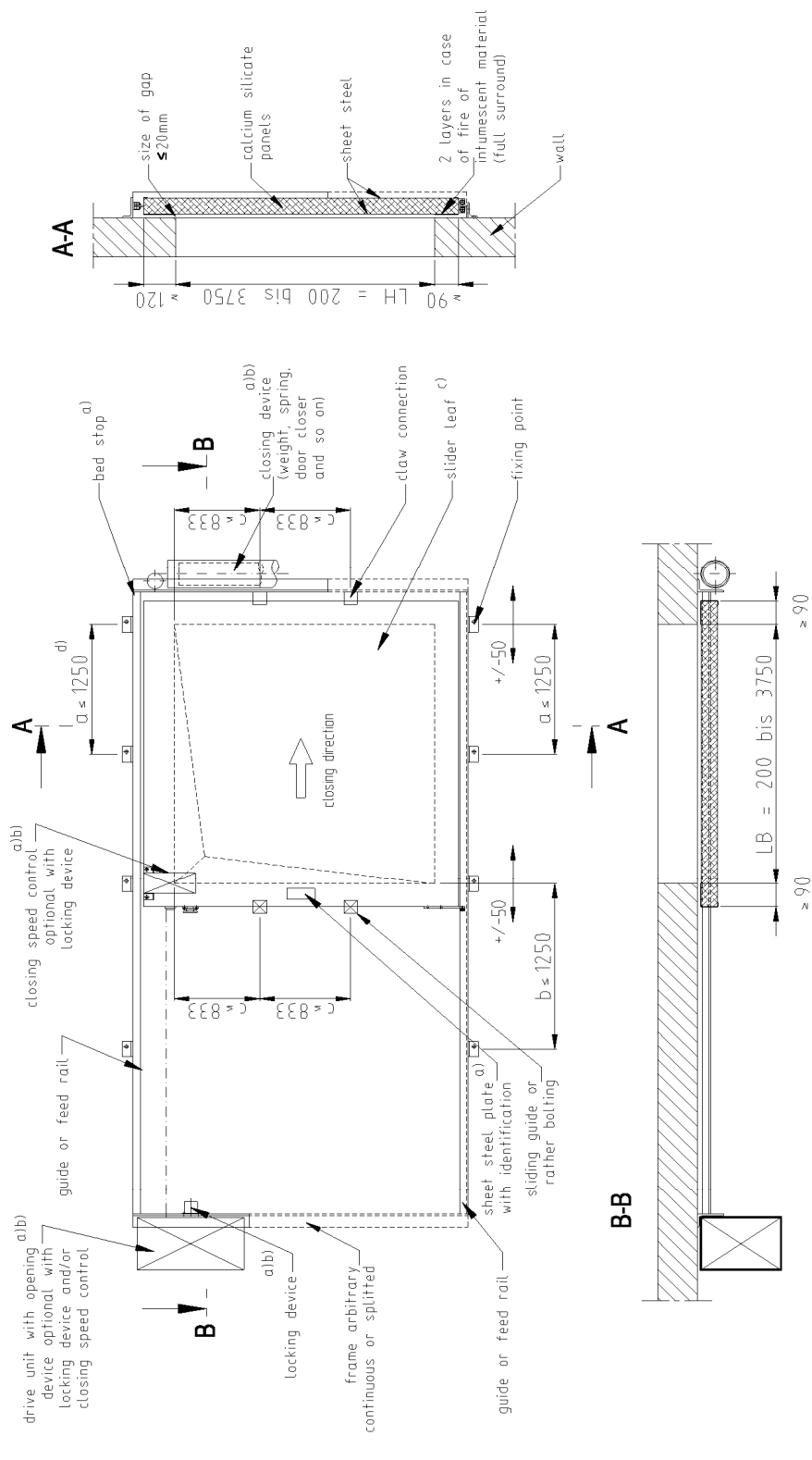
- a) arbitrary position, number and design
- b) optional
- c) depiction of splitted conveyor technique, see additional annexes for examples of application of not splitted conveyor technique.

dimensions in mm

Kit for closure systems "abs EI SLIDE" for conveyor systems

Overview – closing direction upwards from below
Wall installation

Annex 2



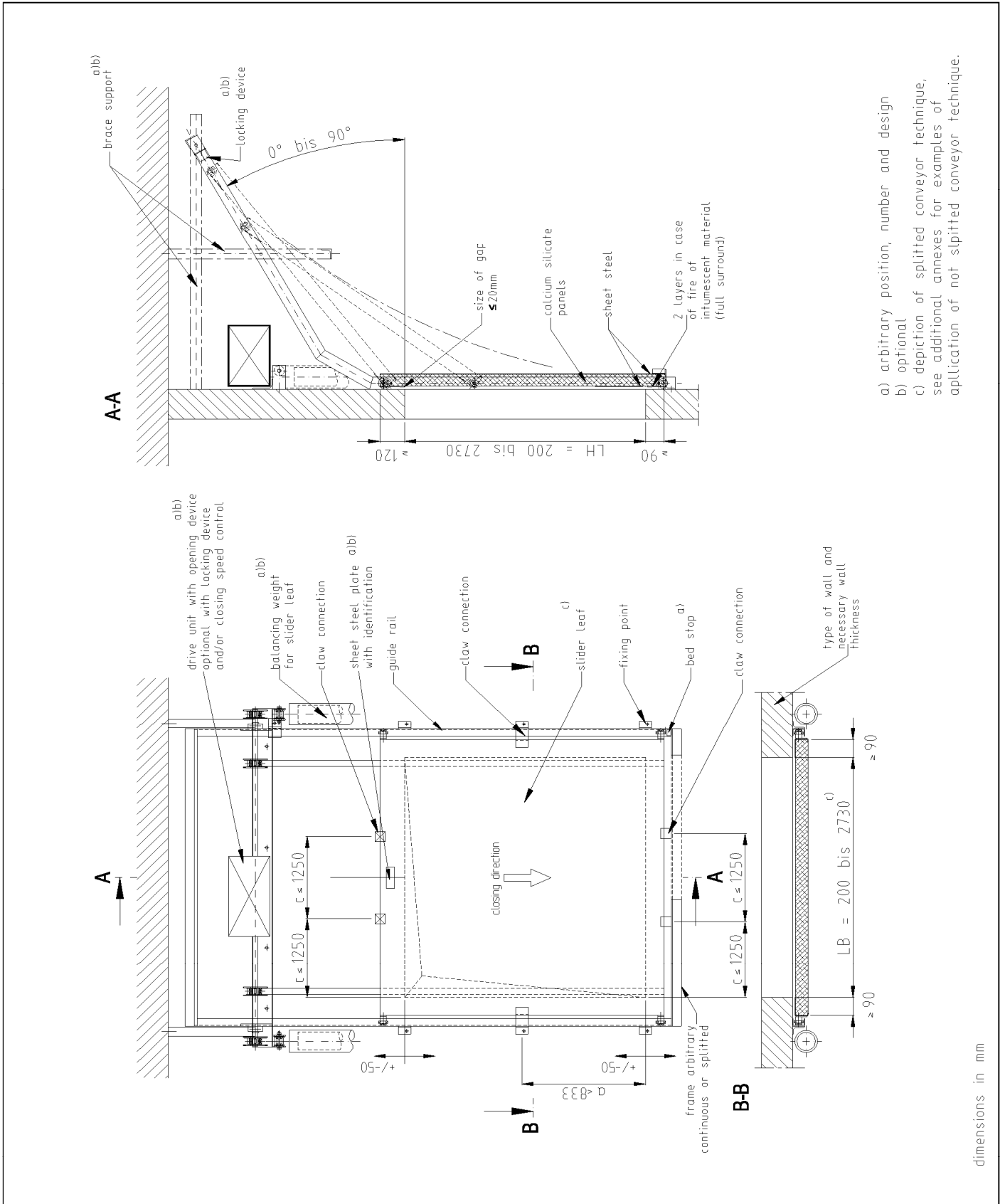
- a) arbitrary position, number and design
- b) optional
- c) depiction of splitted conveyor technique, see additional annexes for examples of application of not splitted conveyor technique.
- d) Gap leaf fixture position < 1250 mm
gap fixture position rails < 750 mm

dimensions in mm

Kit for closure systems "abs EI SLIDE" for conveyor systems

Overview – horizontal closing direction
Wall installation

Annex 3



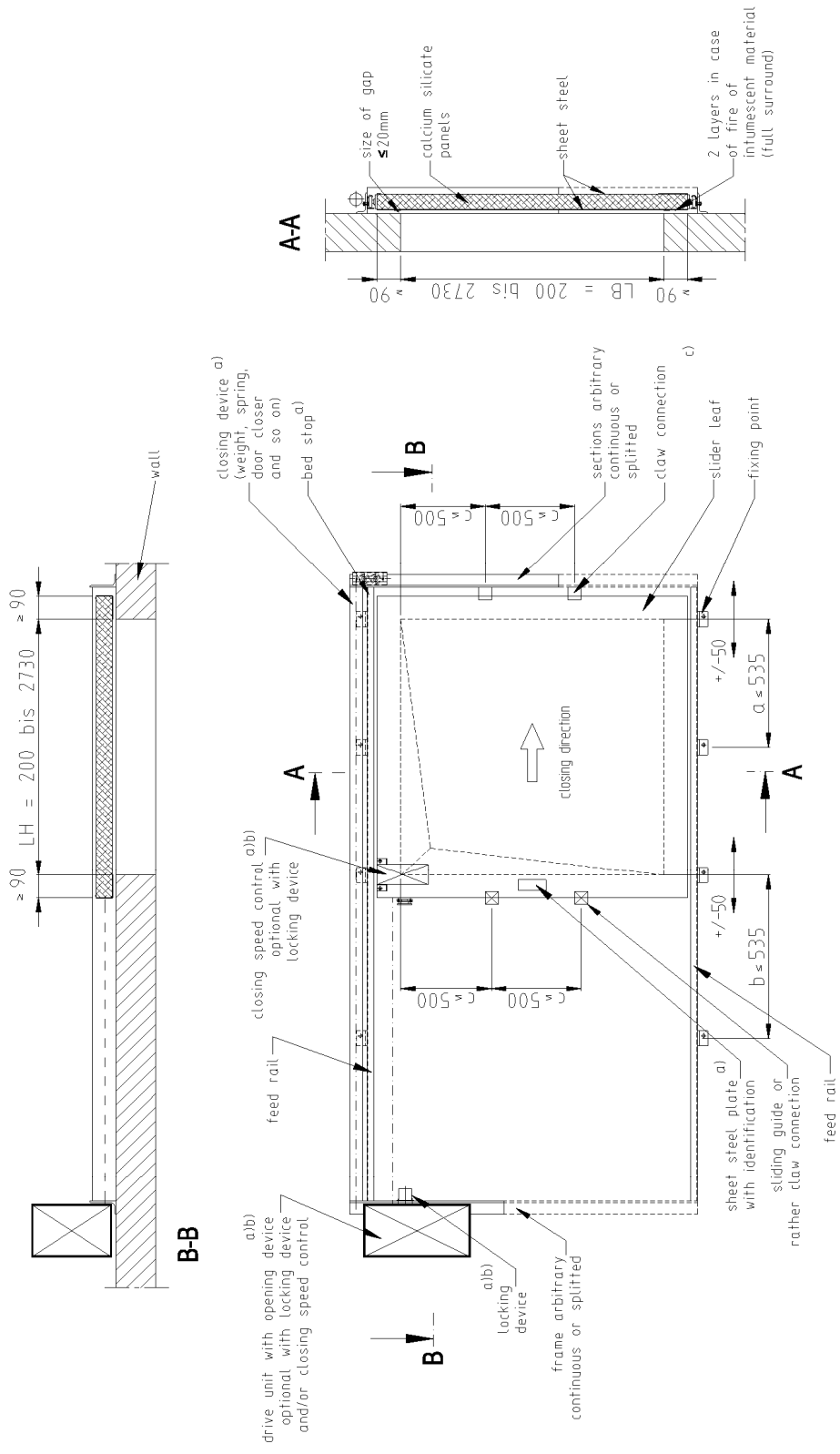
a) arbitrary position, number and design
b) optional
c) depiction of splitted conveyor technique, see additional annexes for examples of application of not splitted conveyor technique.

dimensions in mm

Kit for closure systems "abs EI SLIDE" for conveyor systems

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

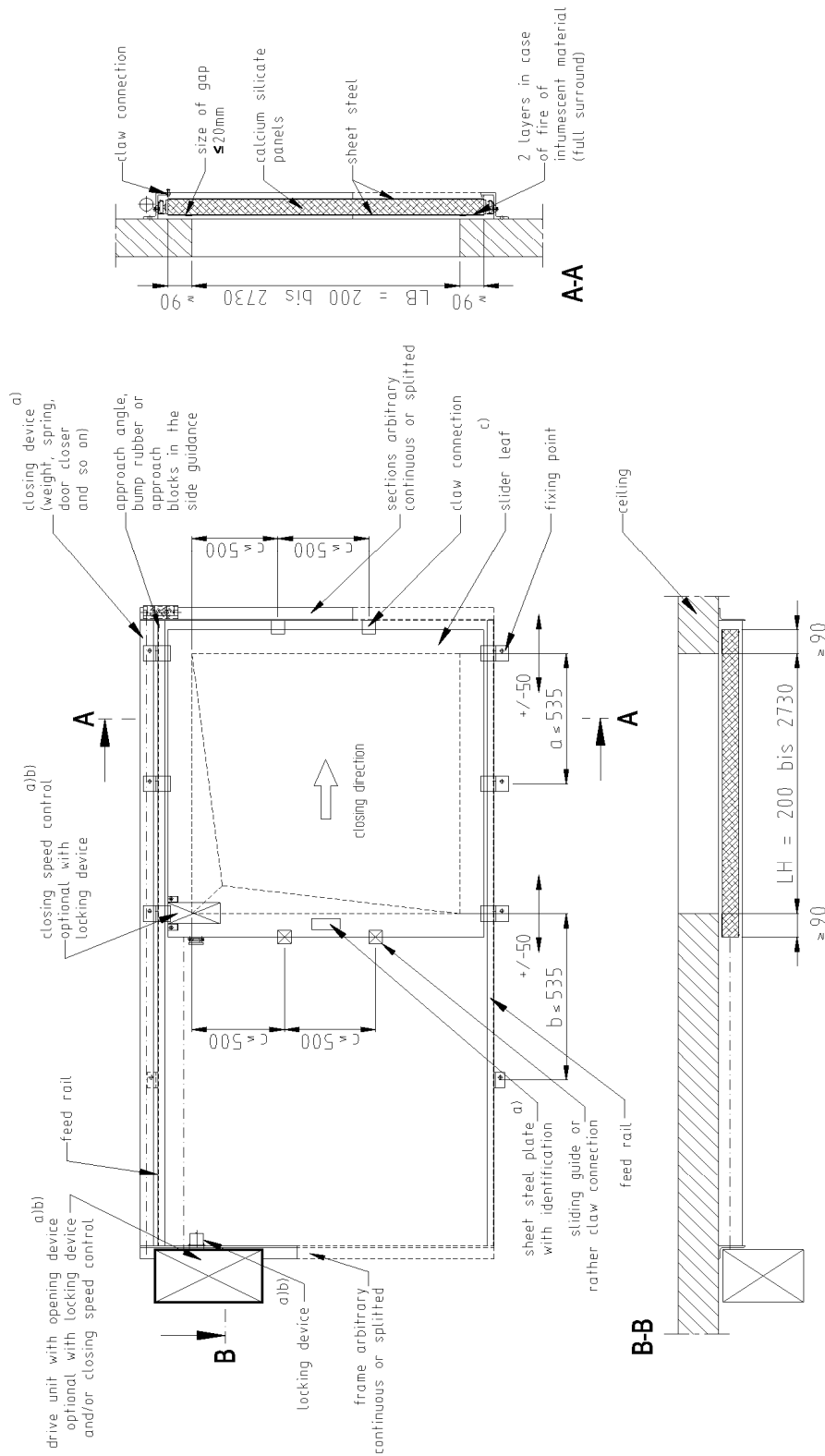
Annex 4



- 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.

dimensions in mm

<p>Kit for closure systems "abs EI SLIDE" for conveyor systems</p>	<p>Annex 5</p>
<p>Overview – horizontal closing direction On-floor installation</p>	



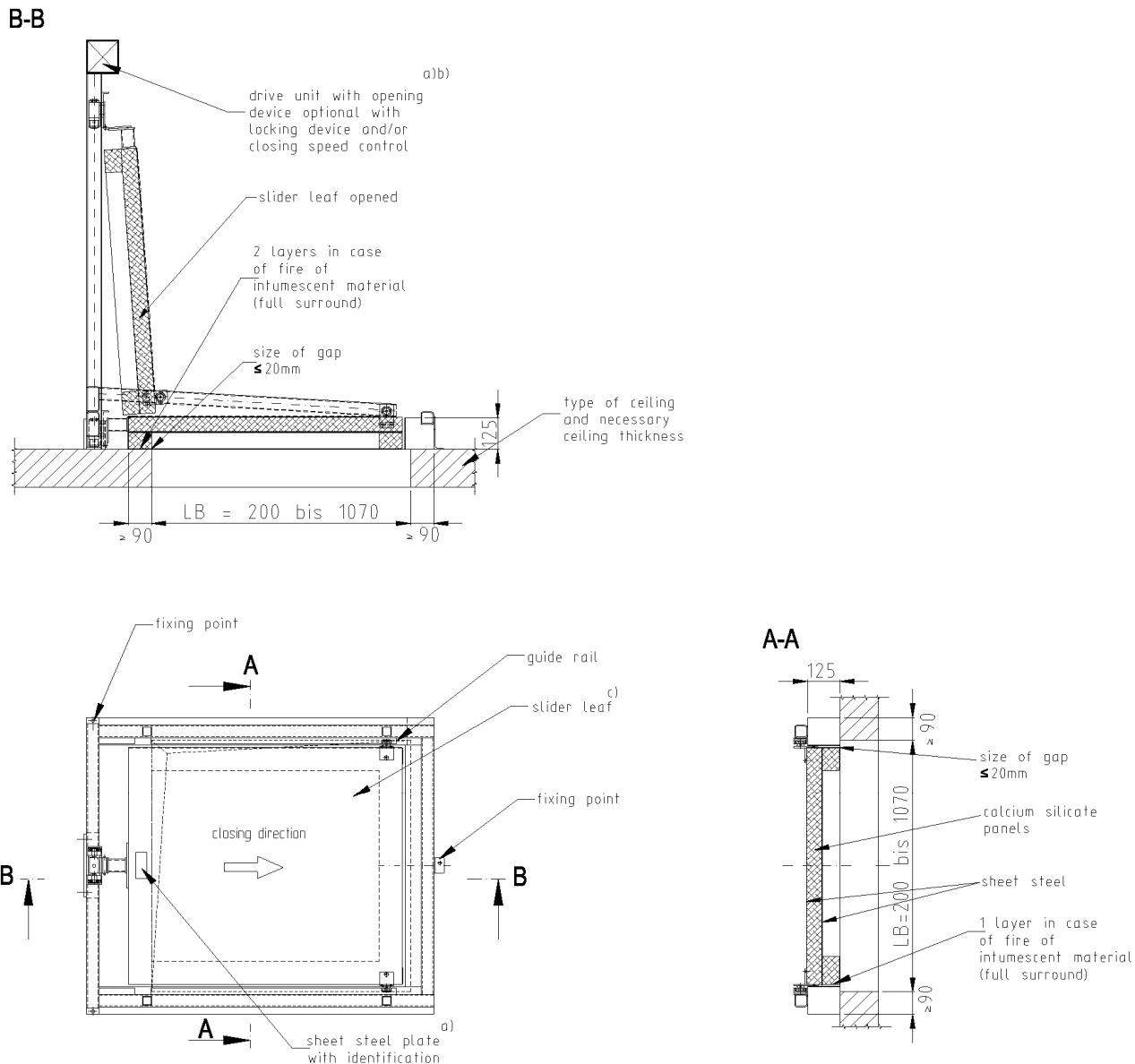
a) arbitrary position, number and design
b) optional
c) depiction of splitted conveyor technique, see additional annexes for examples of application of not splitted conveyor technique.

dimensions in mm

Kit for closure systems "abs EI SLIDE" for conveyor systems

Overview – horizontal closing direction
Installation beneath the ceiling

Annex 6



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.

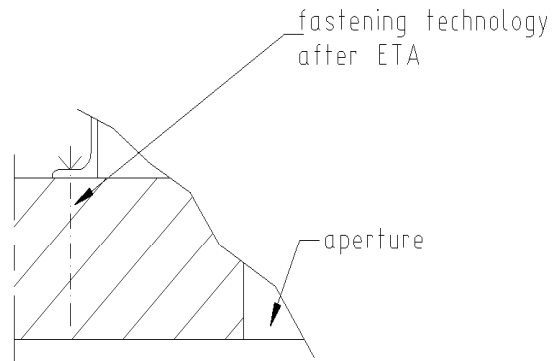
dimensions in mm

Kit for closure systems "abs EI SLIDE" for conveyor systems

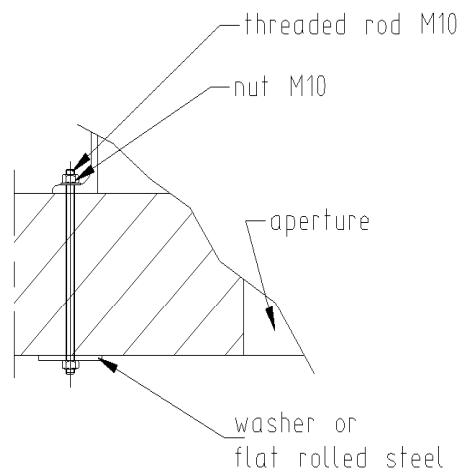
Overview – closing direction tilting on the floor
(maximum allowable slider leaf weight: 85 kg)
Floor installation

Annex 7

fastening method 1:



fastening method 2:



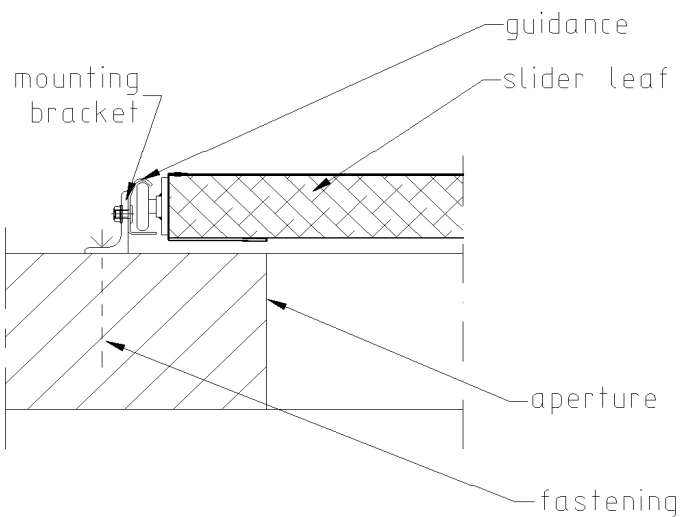
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Kit for closure systems "abs EI SLIDE" for conveyor systems

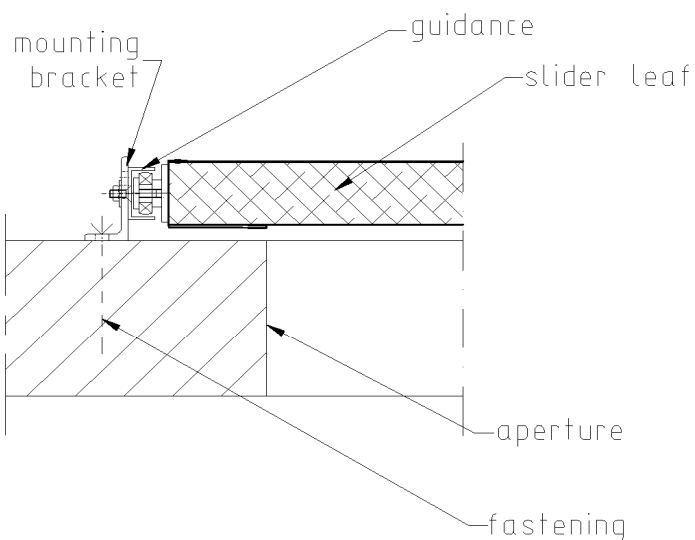
Types of connection to the bordering component
Fastening methods

Annex 8

alternative 1:



alternative 2:



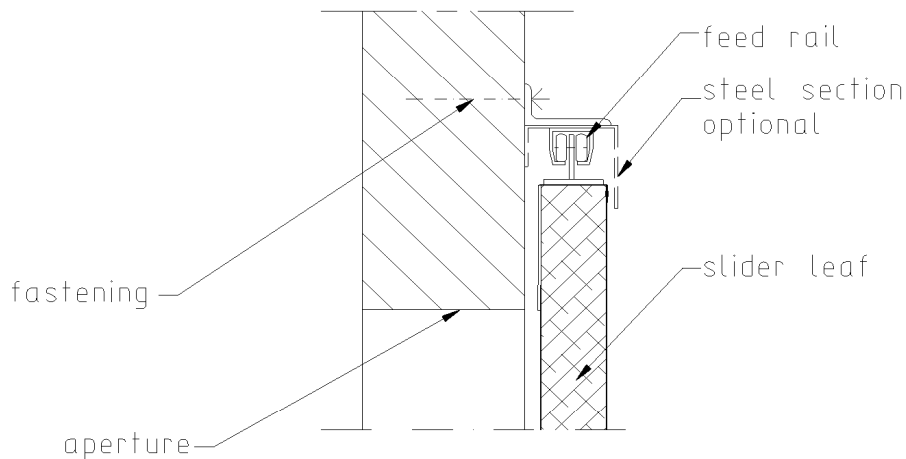
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Kit for closure systems "abs EI SLIDE" for conveyor systems

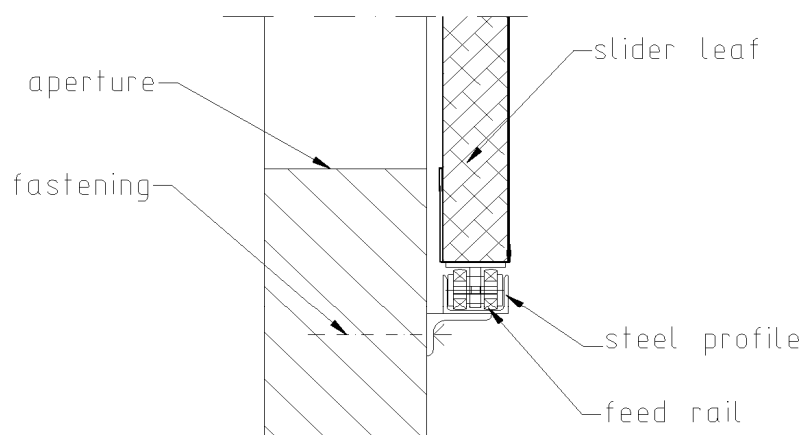
Types of connection to the bordering component
Vertical guide rail
Wall installation

Annex 9

alternative 1: pendulous slider
leaf



alternative 2: standstill slider leaf



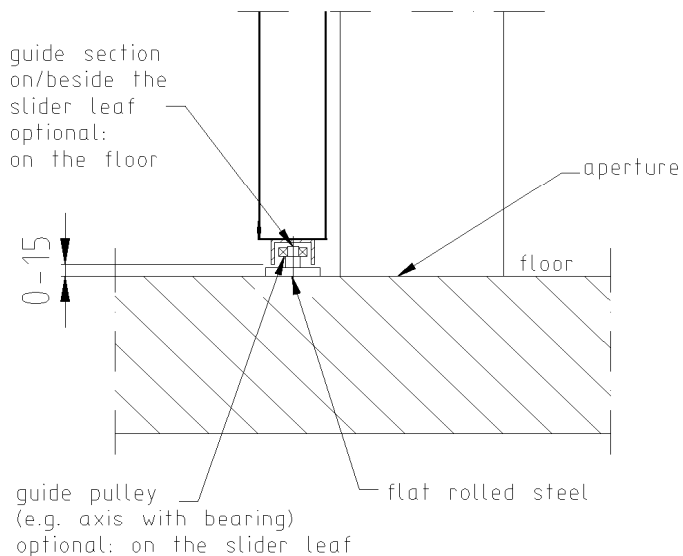
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Kit for closure systems "abs EI SLIDE" for conveyor systems

Connection to the bordering component, horizontal closing direction, wall installation
Alternative 1: pendulous slider leaf (maximum weight of the slider leaf acc. HELM-rail)
Alternative 2: running gears at the bottom edge (maximum weight of the slider leaf: 285 kg)

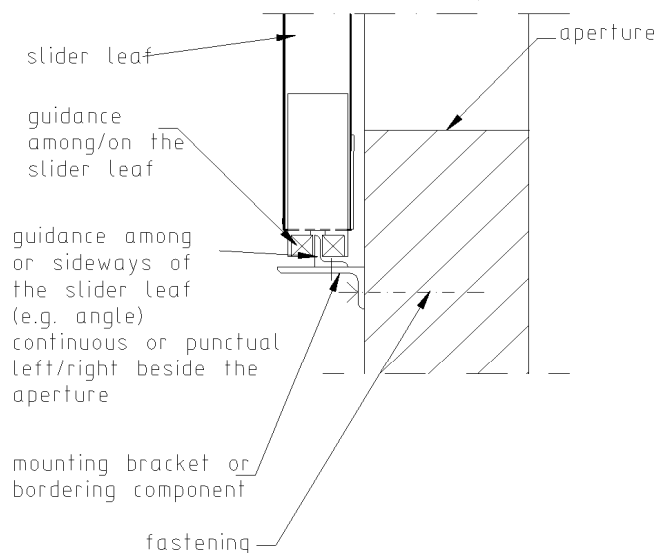
Annex 10

alternative 1:



alternative 2:

for installation in elevated position



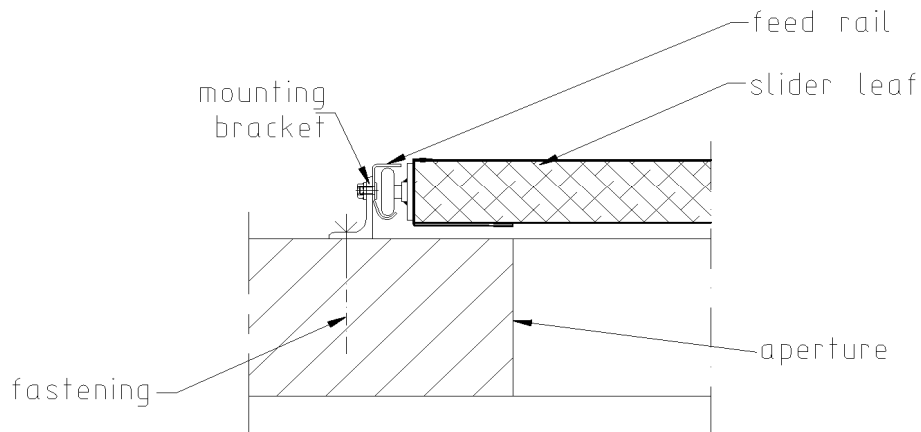
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Kit for closure systems "abs EI SLIDE" for conveyor systems

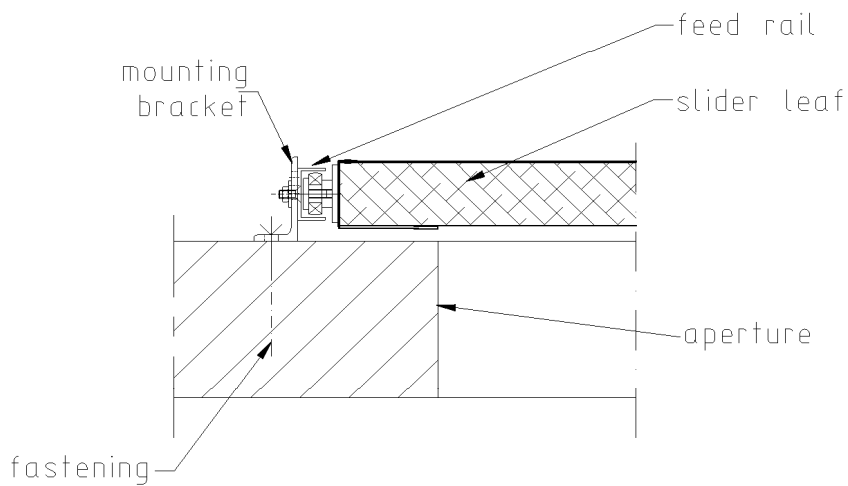
Types of connection to the bordering component
Guide rails below and in elevated position
Wall installation

Annex 11

alternative 1:



alternative 2:



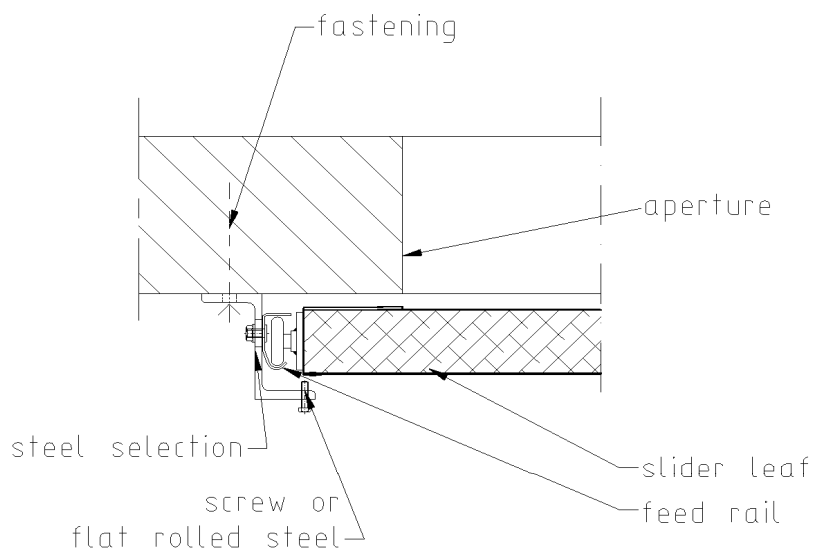
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Kit for closure systems "abs EI SLIDE" for conveyor systems

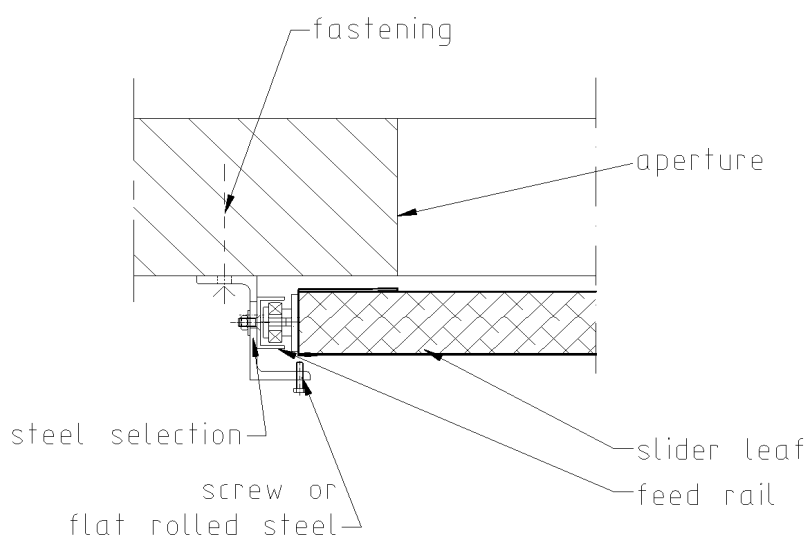
Types of connection to the bordering component
Running rail
On-floor installation

Annex 12

alternative 1:



alternative 2:

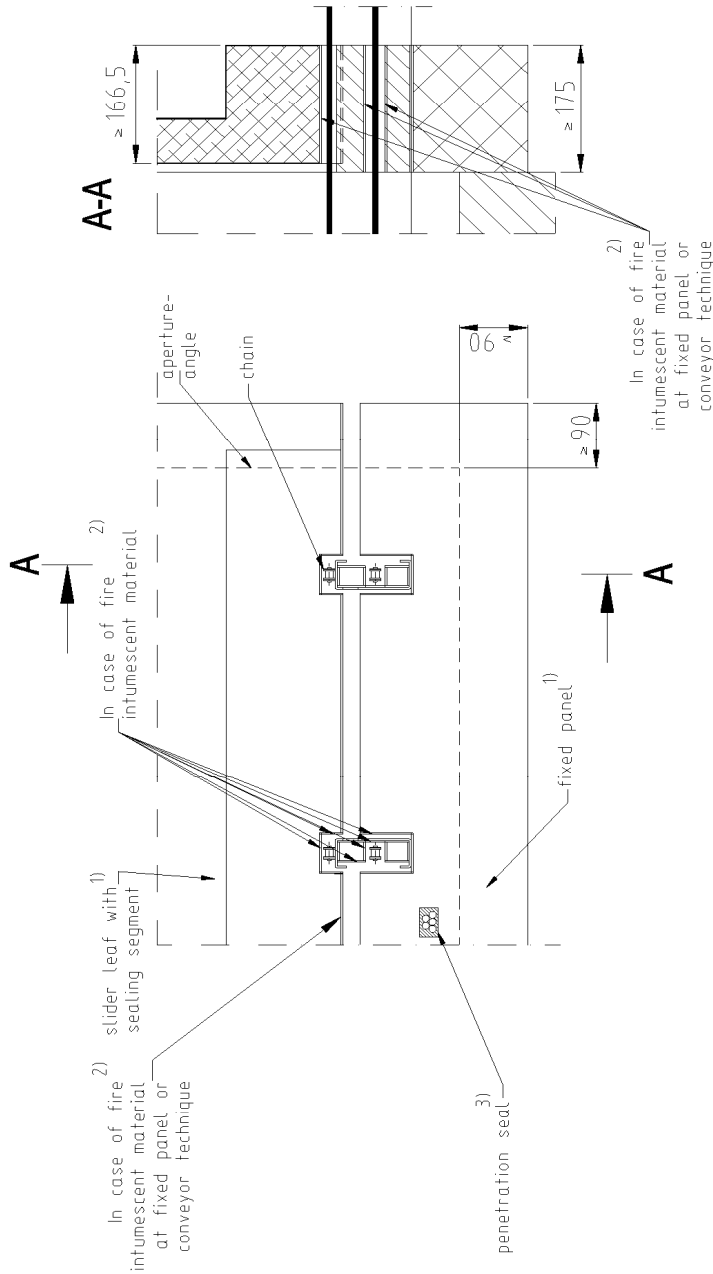


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Kit for closure systems "abs EI SLIDE" for conveyor systems

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

Annex 13

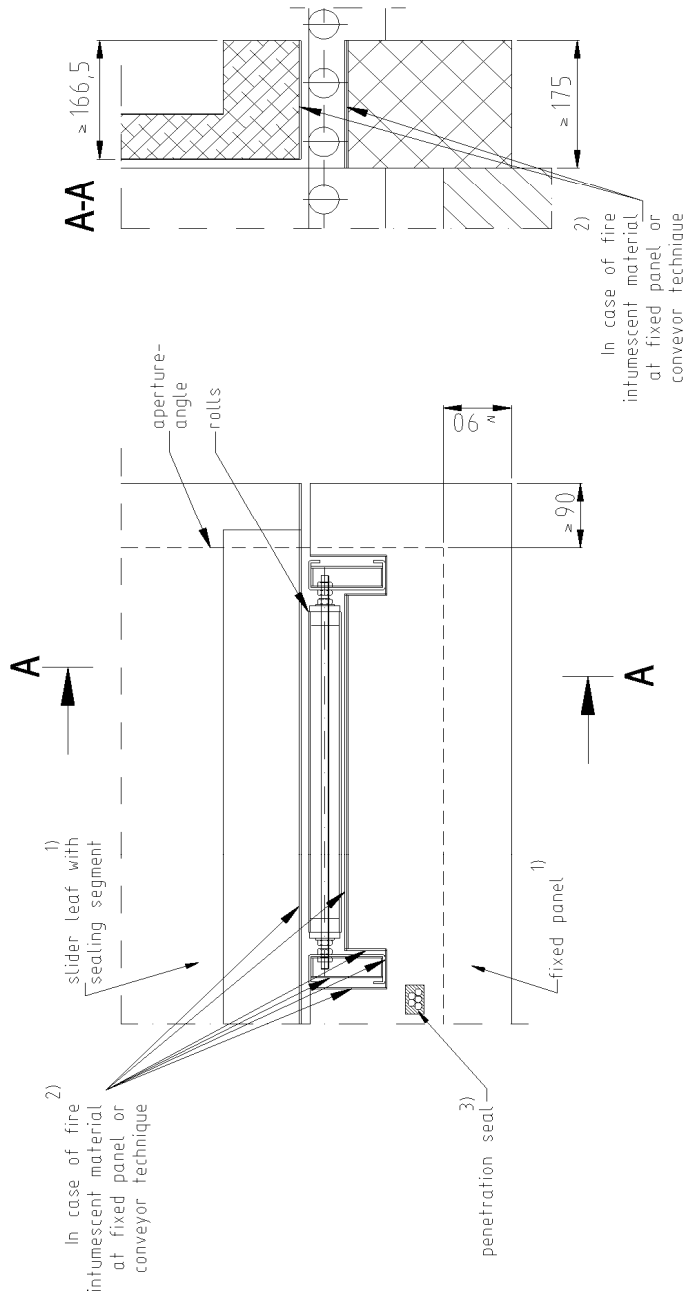


- 1) Dimensions and design are regulated in the appendix of the control plan relating to the ETA.
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- 3) Licensed penetration seal are regulated in the control plan relating to the ETA; penetration seal through the fixed panel of the closure are only for cables allowed, which are necessary for the control of the closure and the conveyor technique.

Kit for closure systems "abs EI SLIDE" for conveyor systems

Detail – sealing of the continuous conveyor technique
Sealing segment and fixed panel for chain conveyor
Vertical closing direction

Annex 14



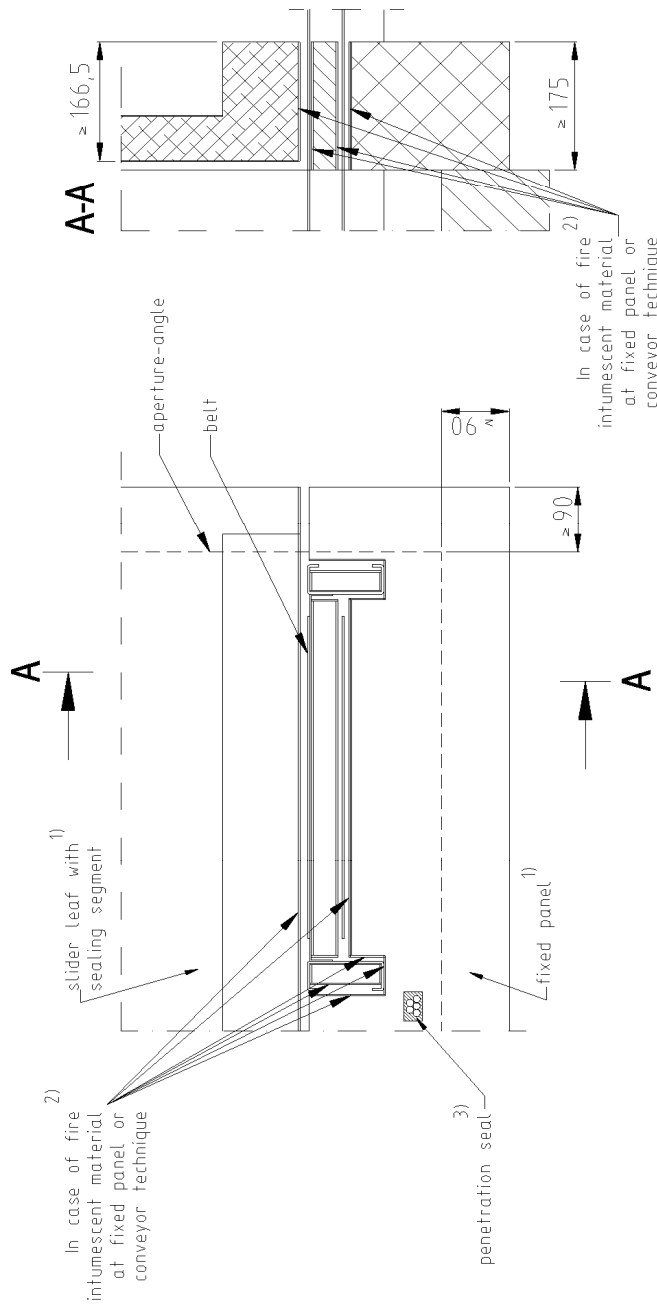
dimensions in mm

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Kit for closure systems "abs EI SLIDE" for conveyor systems

Detail – sealing of the continuous conveyor technique
Sealing segment and fixed panel for roller conveyor
Vertical and horizontal closing direction

Annex 15



dimensions in mm

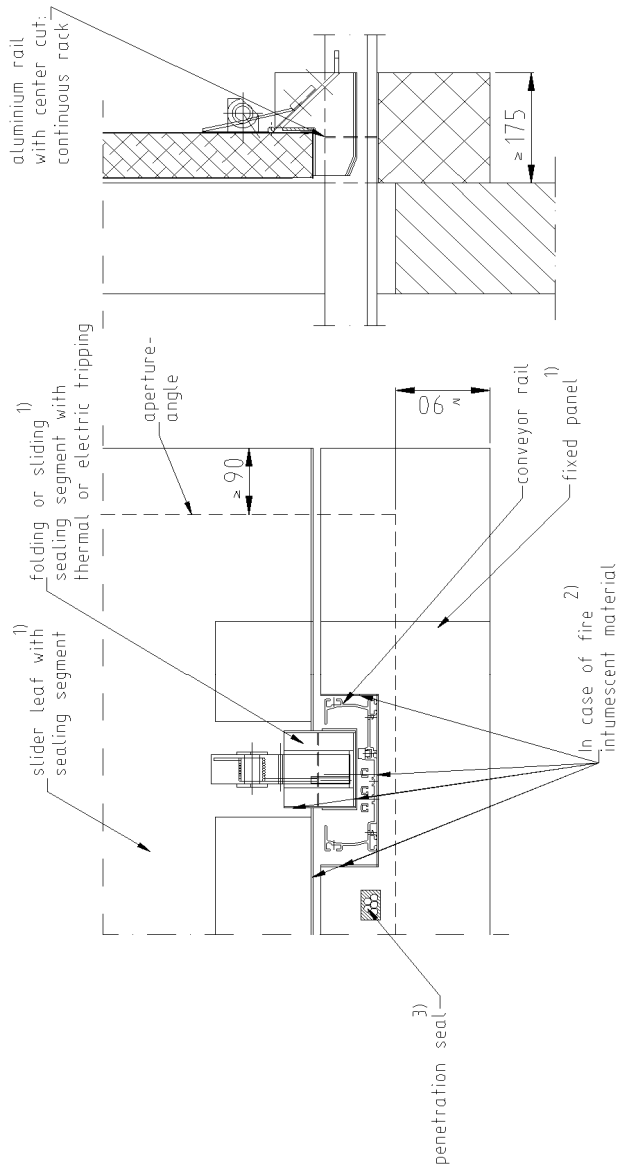
Electronic copy of the ETA by DIBt: ETA-13/0501

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Kit for closure systems "abs EI SLIDE" for conveyor systems

Detail – sealing of the continuous conveyor technique
Sealing segment and fixed panel for belt conveyor
Vertical and horizontal closing direction

Annex 16



dimensions in mm

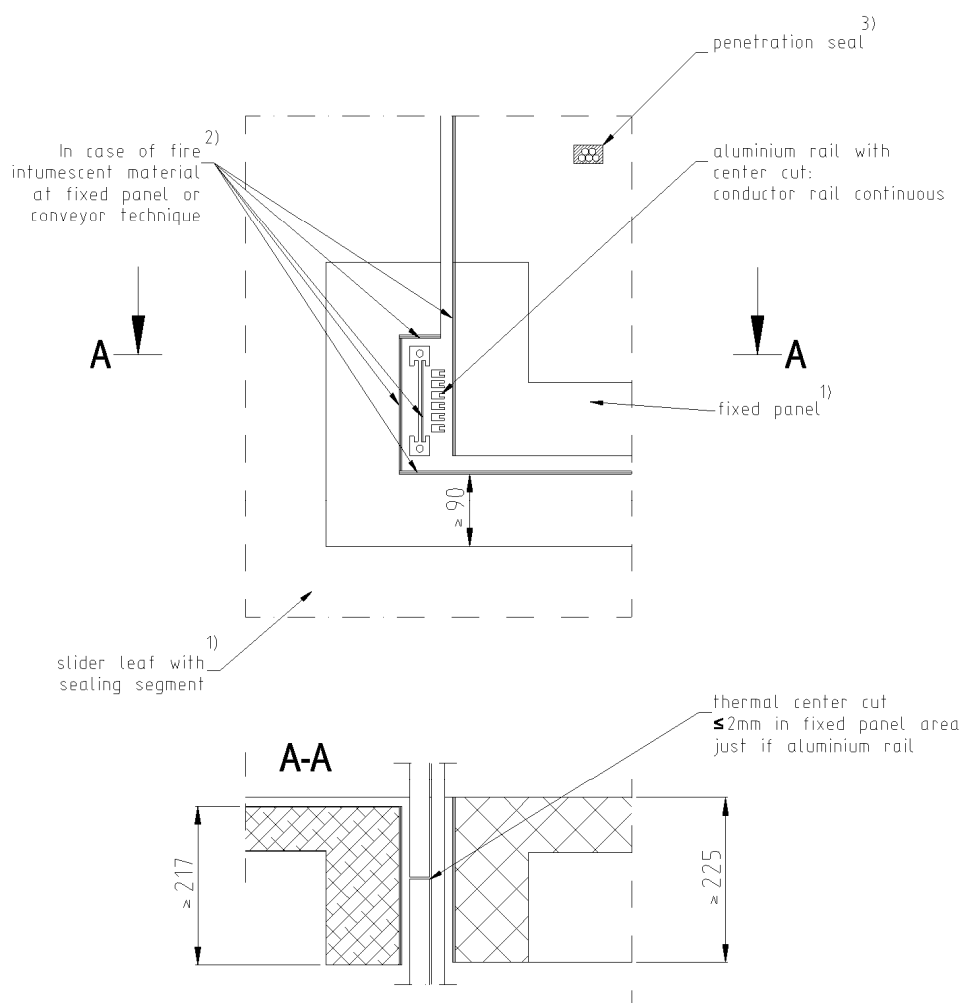
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Kit for closure systems "abs EI SLIDE" for conveyor systems

Detail – sealing of the continuous conveyor technique
Sealing segment and fixed panel for container conveyor
With folding or sliding sealing segment, horizontal closing direction

Annex 17

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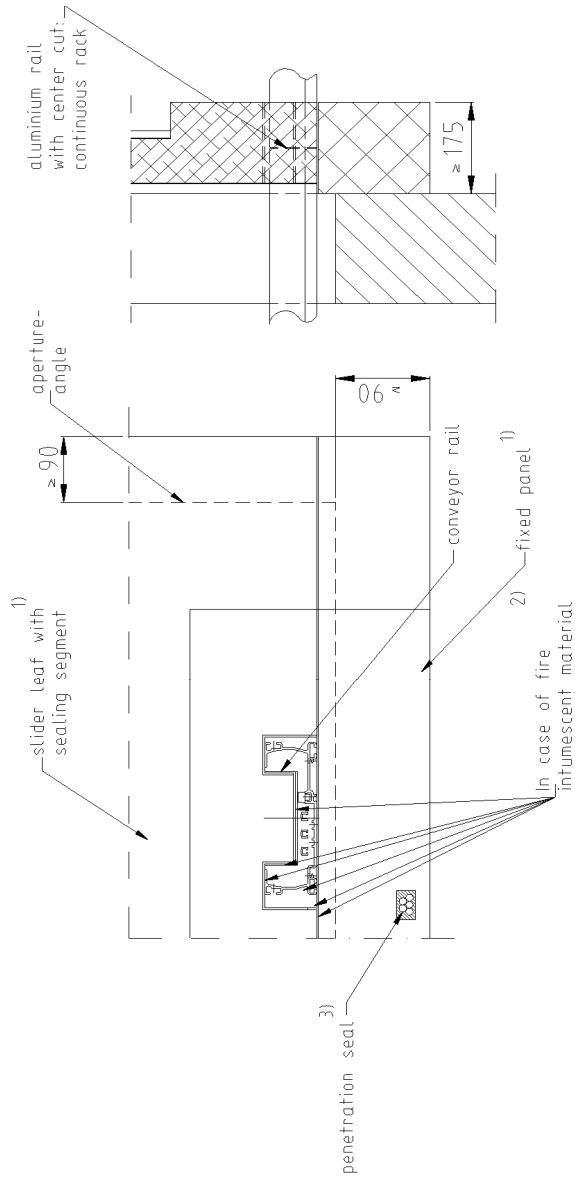
dimensions in mm

Electronic copy of the ETA by DIBt: ETA-13/0501

Kit for closure systems "abs EI SLIDE" for conveyor systems

Detail – sealing of the continuous conveyor technique
Sealing segment and fixed panel for electric monorail systems
Horizontal closing direction

Annex 18



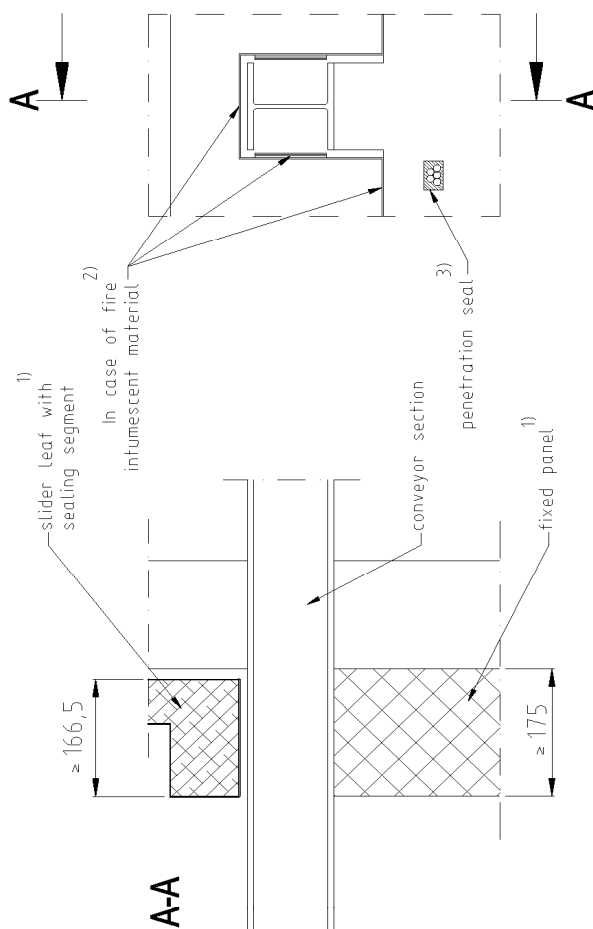
dimensions in mm

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Kit for closure systems "abs EI SLIDE" for conveyor systems

Detail – sealing of the continuous conveyor technique
Sealing segment and fixed panel for container conveyor
Vertical closing direction

Annex 19

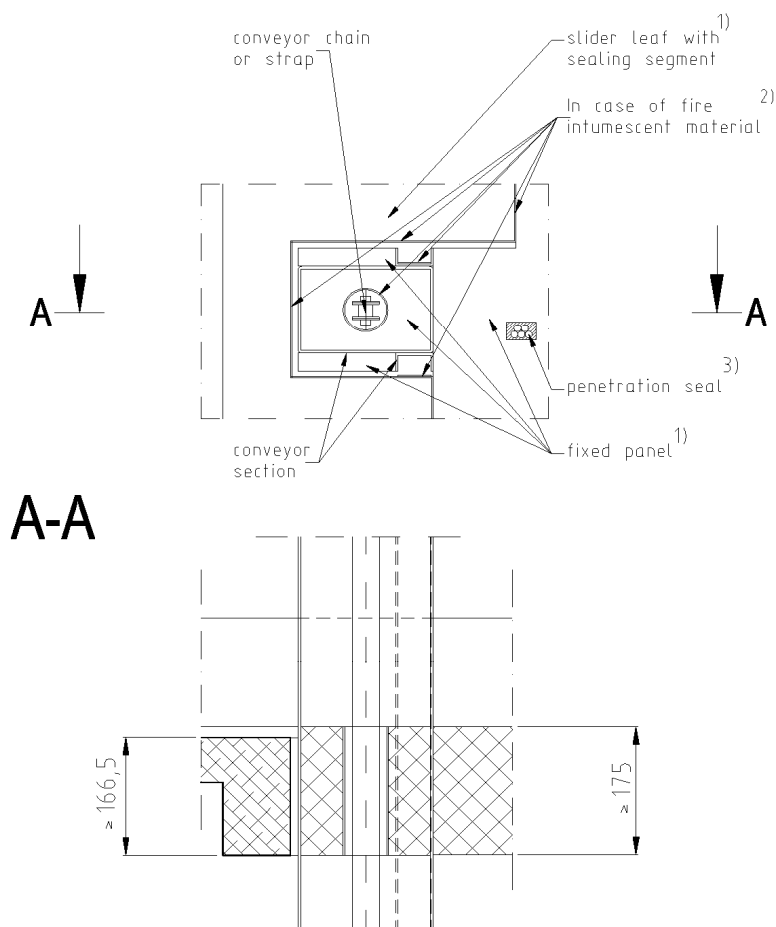


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Kit for closure systems "abs EI SLIDE" for conveyor systems

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

Annex 20



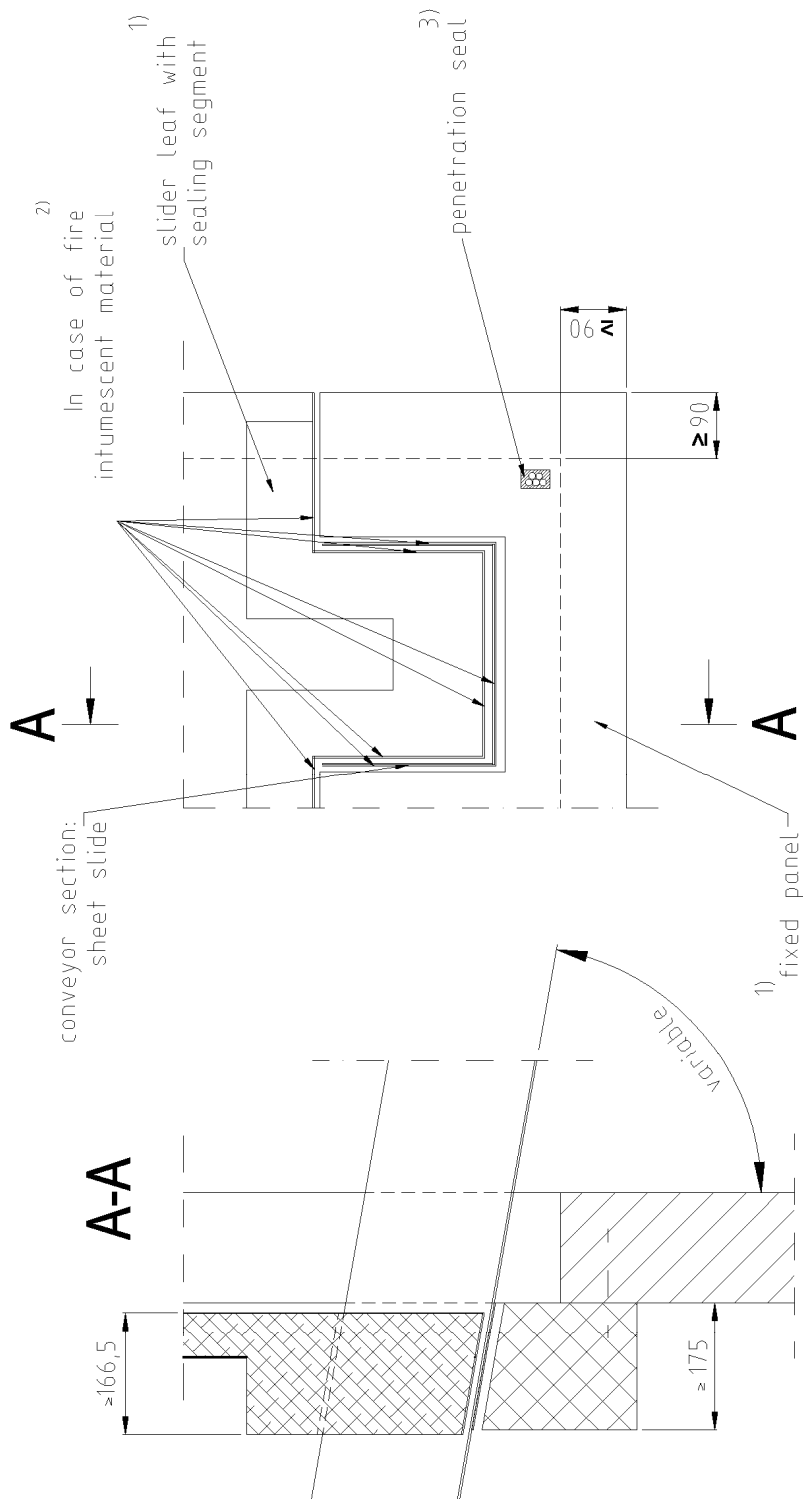
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dimensions in mm

Kit for closure systems "abs EI SLIDE" for conveyor systems

Detail – sealing of the continuous conveyor technique
 Sealing segment and fixed panel for jack
 Floor installation

Annex 21



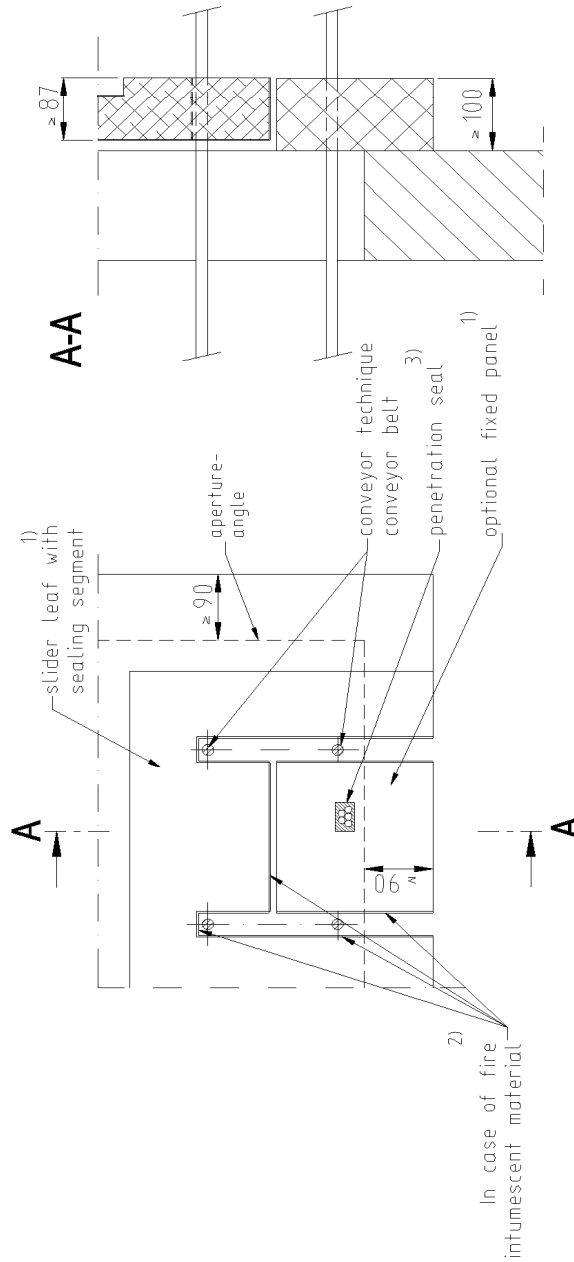
dimensions in mm

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Kit for closure systems "abs EI SLIDE" for conveyor systems

Detail – sealing of the continuous conveyor technique
Sealing segment and fixed panel for slide
Vertical closing direction

Annex 22



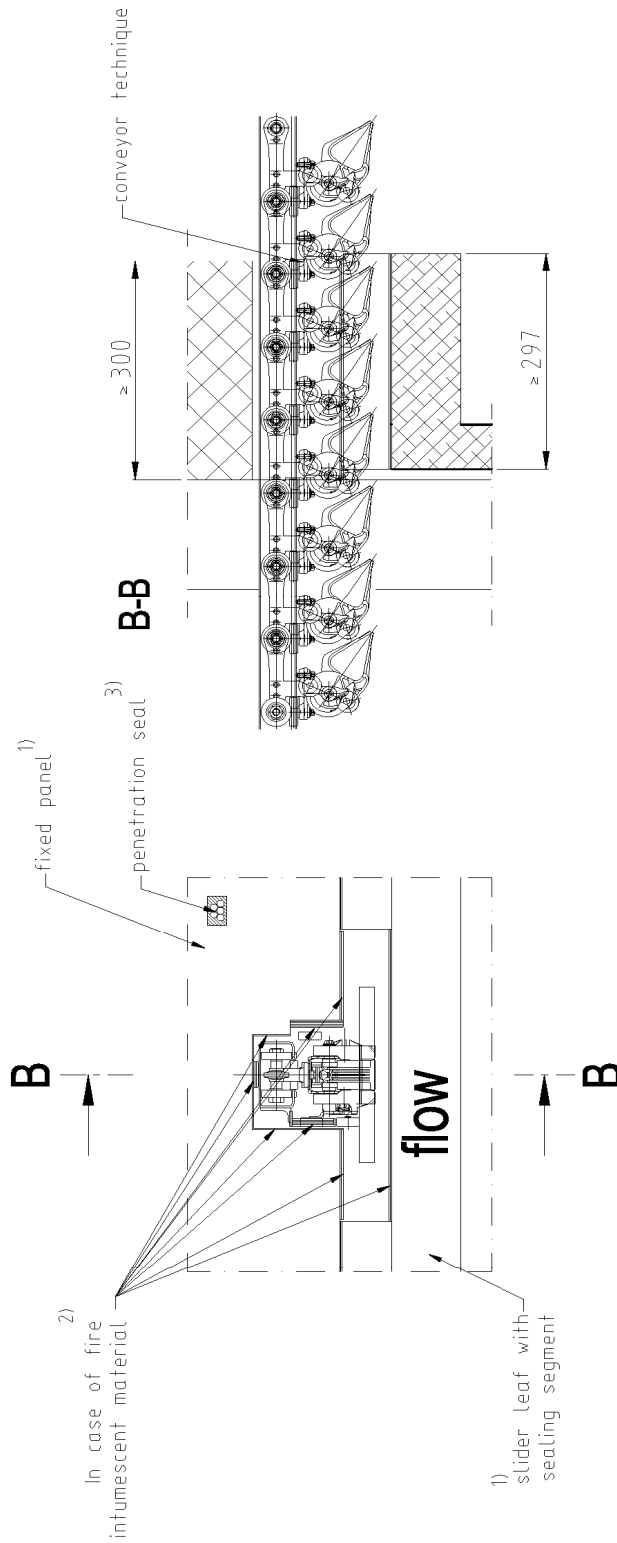
dimensions in mm

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Kit for closure systems "abs EI SLIDE" for conveyor systems

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

Annex 23



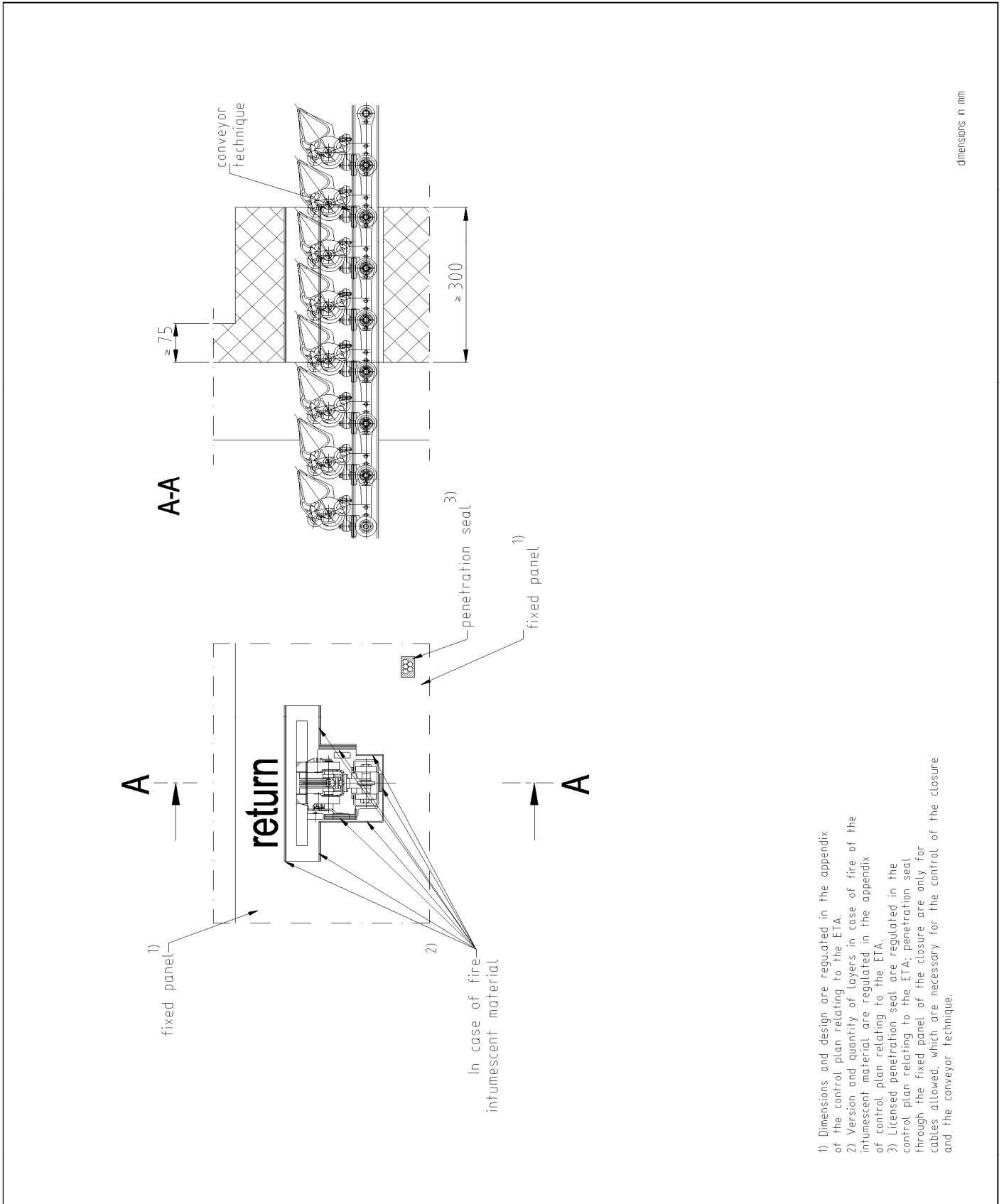
dimensions in mm

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Kit for closure systems "abs EI SLIDE" for conveyor systems

Detail – sealing of the continuous conveyor technique
Sealing segment and fixed panel for paper conveyor (flow line)
Vertical closing direction

Annex 24



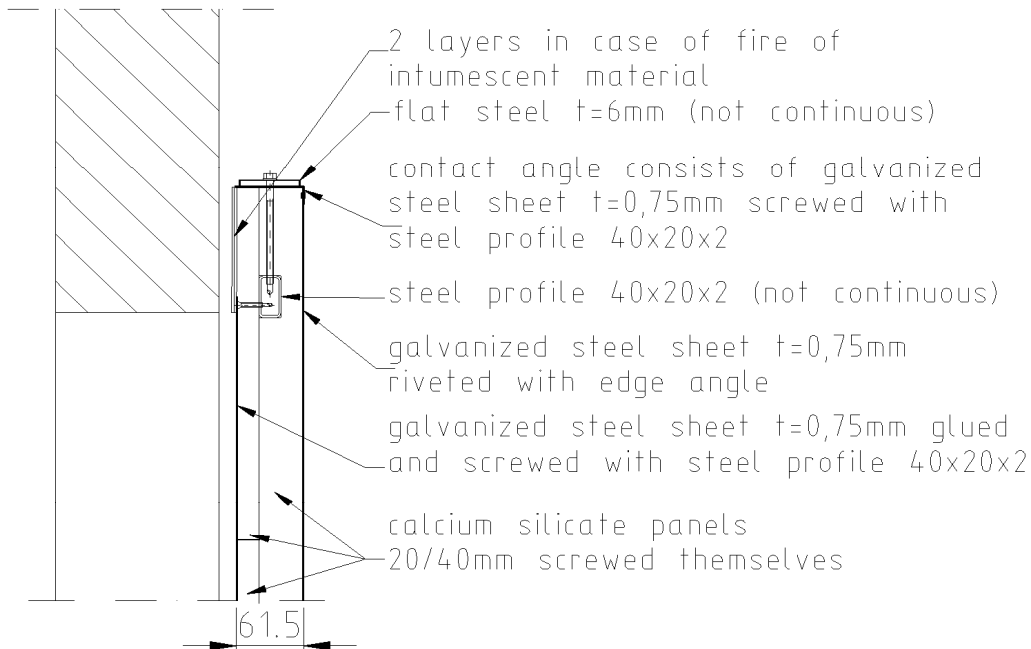
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Kit for closure systems "abs EI SLIDE" for conveyor systems

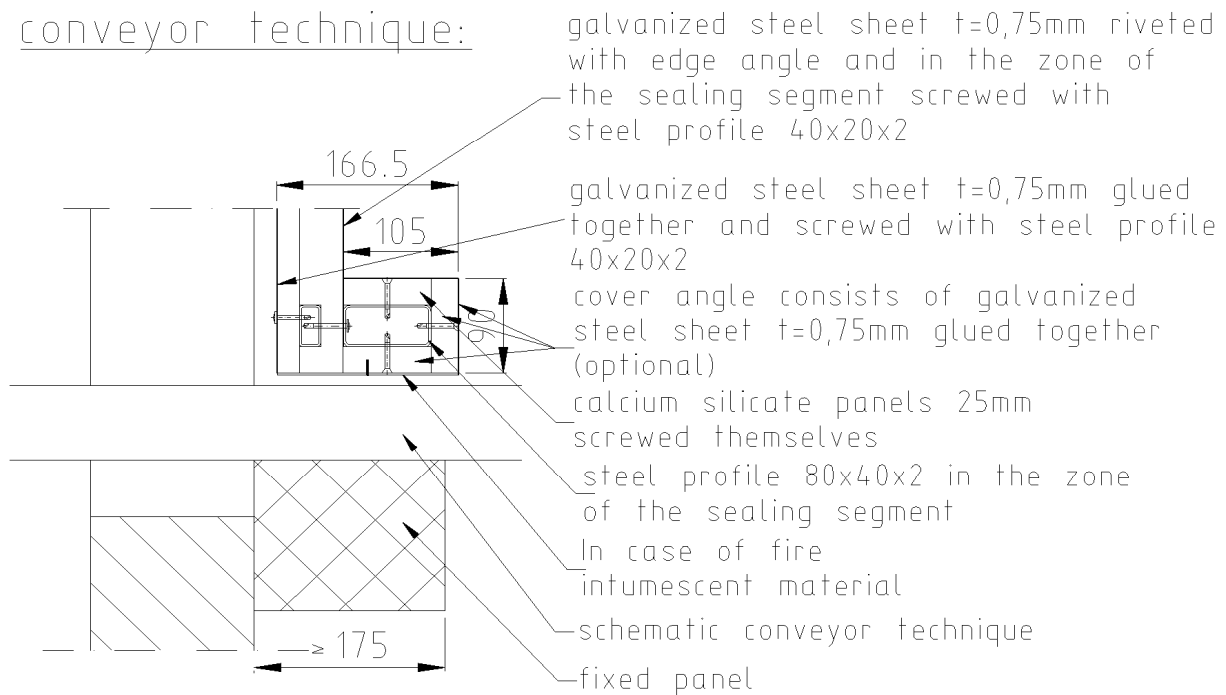
Detail – sealing of the continuous conveyor technique
Sealing segment and fixed panel for paper conveyor (return in the fixed panel)
Vertical closing direction

Annex 25

slider leaf construction in the edge area:



slider leaf construction in the zone of the conveyor technique:



dimensions in mm

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Kit for closure systems "abs EI SLIDE" for conveyor systems

Details of the structure of slider leaf

Annex 26