

Approval body for construction products
and types of construction

Bautechnisches Prüfamt

An institution established by the Federal and
Laender Governments



European Technical Assessment

ETA-17/0985
of 16 May 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

"ECClos-Q"

Product family
to which the construction product belongs

Kit for a closure system for conveyor systems

Manufacturer

Stöbich Brandschutz GmbH
Pracherstieg 6
38644 Goslar
DEUTSCHLAND

Manufacturing plant

Stöbich Brandschutz GmbH
Pracherstieg 6
38644 Goslar
DEUTSCHLAND

This European Technical Assessment
contains

17 pages including 10 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-17/0985

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 "ECClos-Q" as hanging flap (hinges located at the top) for conveyor systems, hereinafter referred to as "ECClos-Q". The closure system can be designed for installation at floor level or for installation at raised position.

"ECClos-Q" primarily consists of the following components¹:

- Single-leaf flap leaf

The approx. 122 mm thick, usually T-shaped flap leaf consists of two layers of mineral fibre board (each 50 mm thick) bonded with synthetic resin between which a gypsum board (20 mm thick) is secured with water glass adhesive. 0.75 mm thick steel sheet formwork is glued to the outside of the mineral fibre boards. Calcium silicate boards (2 x 20 mm) covered by a frame profile are fastened to the edges of the flap leaf. The flap leaf is fixed to the wall by steel hinges.

Wall covering of the flap leaf at the side amounts to 120 mm and at the top to 187 mm.

- Fixed panel with clearance for the conveyor

The fixed panel consists of

- aerated concrete stones 150 mm thick to which thin bed mortar is applied, with an upper cover layer of 20 mm thick calcium silicate boards to the safety edge or
- several fire-resistant gypsum boards (total thickness 175 mm) which are screwed together

and is secured to the wall via brackets (or floor-standing if used on flexible wall construction). The clearance in the fixed panel is configured for the respective conveyor technology. Various intumescent materials are used in the necessary functional gaps.

- Locking device of the flap leaf

The flap leaf will be locked by two uplock hooks located at the side of the flap leaf. The locking latch is fastened at the wall.

- Seal system

Strips of an intumescent material are positioned as follows in the closure area:

- on the side of the flap leaf facing the wall
- on the lower edge of the flap leaf
- in the conveyor technology area in the fixed panel
- on the face of the sealing frame

- Closing device (closing weight system)

The deadweight of the flap leaf is used for closing the closure.

¹ The documents describing the structure of "ECClos-Q" in detail and the product specifications of the building materials used are deposited with DIBt.

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

In accordance with this European Technical Assessment the "ECClos-Q" was assessed as closure to seal necessary openings of trackbound conveyors (see table 2) in internal walls (see table 1).

The "ECClos-Q" 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.

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 $\geq 800 \text{ kg/m}^3$ and a thickness $\geq 200 \text{ mm}$	E 120 EI ₁ 120 EI ₂ 120 EW 60	min. 1,275 max. 1,955	min. 750 max. 1,725	min. 0.95 max. 3,06
Low-density solid wall Aerated concrete with an overall density of $\geq 450 \text{ kg/m}^3$ and a thickness $\geq 200 \text{ mm}$	E 120 EI ₁ 120 EI ₂ 120 EW 60	min. 1,275 max. 1,955	min. 750 max. 1,725	min. 0.95 max. 3,06
Flexible wall construction (gypsum board type F to EN 520) Thickness $\geq 160 \text{ mm}$	E 120 EI ₁ 120 EI ₂ 120 EW 60	min. 1,275 max. 1,955	min. 750 max. 1,725	min. 0.95 max. 3,06
a) Supporting construction to EN 1366-7 ² , section 7.2 or EN 1363-1 ³ , section 7.2 b) Fire resistance class per EN 13501-2 ⁴ in accordance with the Evaluation Report				

² EN 1366-7:2004 Fire resistance tests for service installations - Part 7: Conveyor systems and their closures

³ EN 1363-1:2012 Fire resistance tests - Part 1: General requirements

⁴ EN 13501-2:2016 Fire classification of construction products and building elements - Part 2: Classification using data from fire resistance tests, excluding ventilation services

Table 2: Permitted sealing systems for the continuous conveyor technology⁵

Sealing system for	Fixed panel thickness (and material)	Minimum penetration seal depth of the seal on the fixed panel (Penetration seal via calcium silicate boards)	Minimum penetration seal depth at the flap leaf	Maximum fire resistance class for ECClos-Q
Roll conveyor	150 mm (aerated concrete)	continuous steel profiles: 175 mm between the rollers: 2 x 25 mm webs or 4 x 15 mm webs	flap leaf thickness	EI 120
	175 mm (gypsum boards)	continuous steel profiles: 175 mm between the rollers: 2 x 15 mm webs or 1 x 40 mm webs	flap leaf thickness	EI 90
Belt conveyor	150 mm (aerated concrete)	continuous steel profiles: 175 mm	flap leaf thickness	EI 120
	175 mm (gypsum boards)	continuous steel profiles: 175 mm	flap leaf thickness	EI 90
Chain conveyor	150 mm (aerated concrete)	continuous steel profiles: 175 mm	flap leaf thickness	EI 120
	175 mm (gypsum boards)	continuous steel profiles: 175 mm	flap leaf thickness	EI 90

The conveyor tracks shall be positioned at the bottom and can be continuous in the closing area of the flap leaf.

When the intumescent materials¹ are used, the verified ambient conditions (e.g. the category stated in TR024⁶) are to be observed.

The "ECClos-Q" is not intended for passenger transportation. The normal position of the closure shall be opened or closed.

The verifications and assessment methods on which this European Technical Assessment is based lead to the assumption of a working life of the "ECClos-Q" 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.

⁵ see Annexes 7 to 9
⁶ TR024

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 and 2
Mechanical durability of self-closing (EN 13501-2)	C5
Reaction to fire (EN 13501-1)	see following table 3

Table 3: Reaction to fire of the used materials

component	material	class according to EN 13501-1
flap leaf, fixed panel	steel sheet	A1
	calcium silicate boards	A1
	gypsum boards	A1
	aerated concrete stones	A1
	thin bed mortar	A1
	mineral fibre boards bonded with synthetic resin	at least class E
	Water glass adhesive	at least class E
	PU adhesive	at least class E
guide	steel	A1
Seal system	Intumescent material – Pyro-Safe DG-CR – Promaseal PL – Tenmat Firefly 102	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.

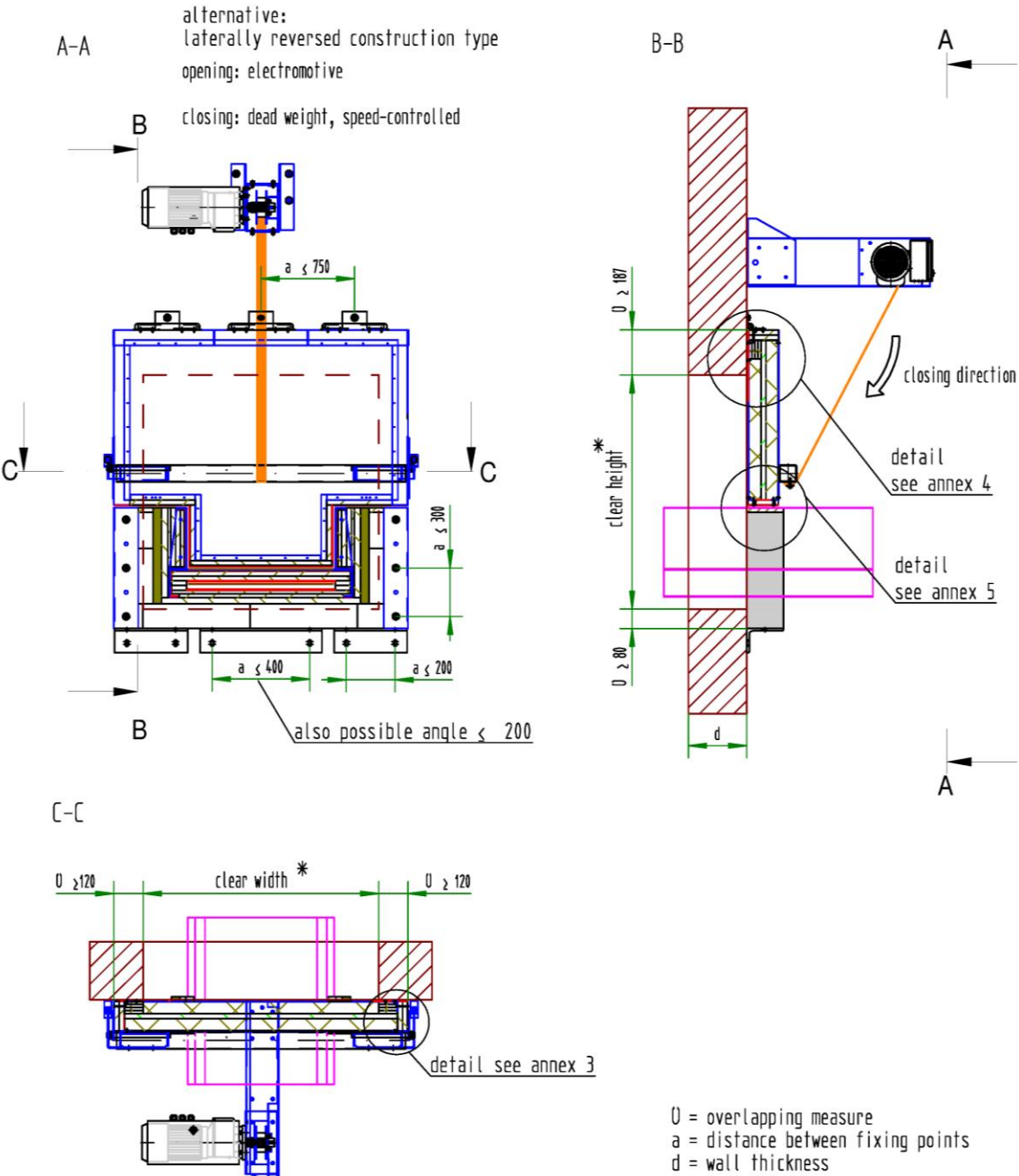
The manufacturer shall provide installation instructions and maintenance instructions for every "abs EI SLIDE". The maintenance instructions shall clearly indicate which work is to be performed to ensure that the installed closure system continues to perform its task after long-term use.

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

Issued in Berlin on 16. May 2018 by Deutsches Institut für Bautechnik.

Prof. Gunter Hoppe
Head of Department

beglaubigt:
Biedermann

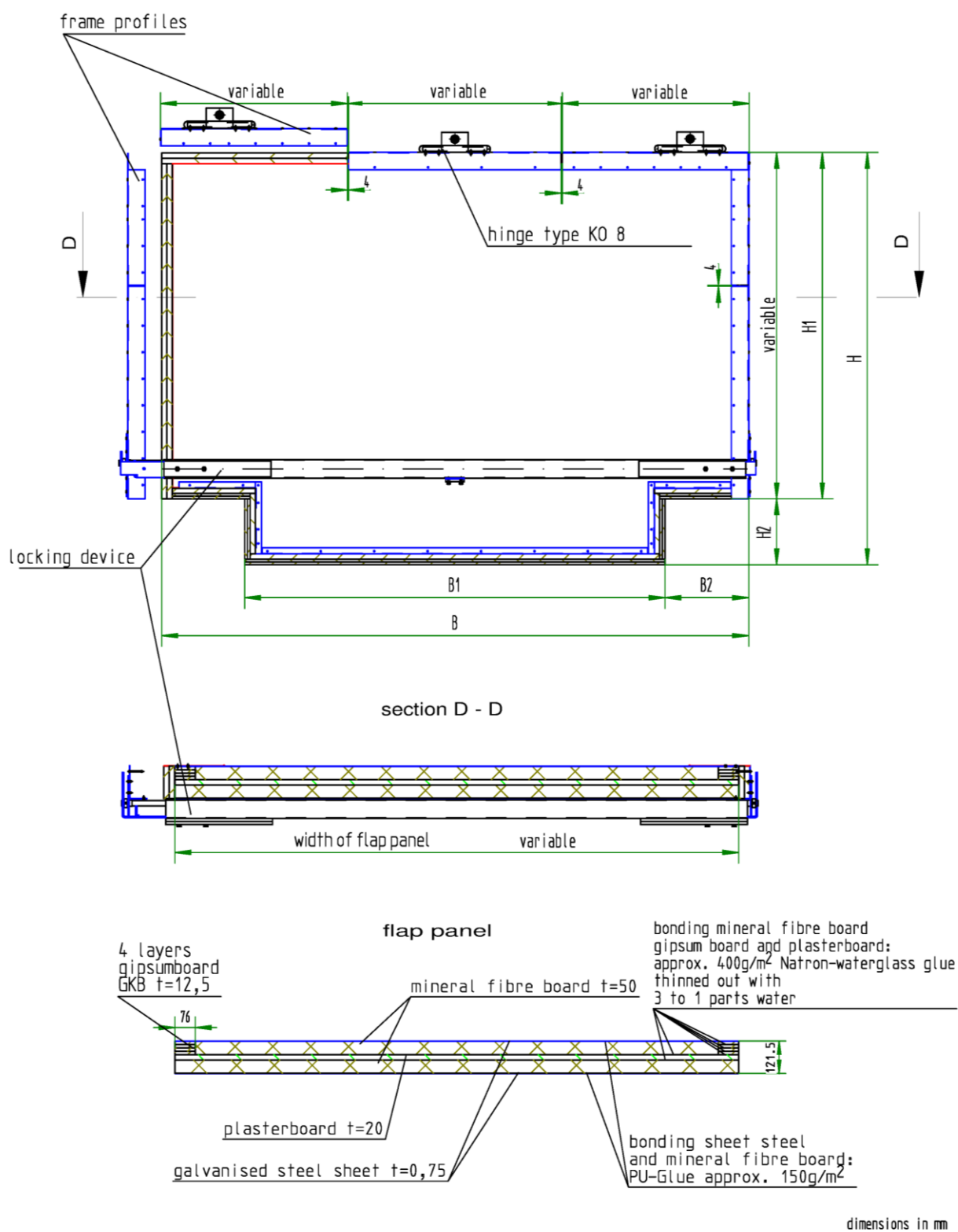


masonry	$d \geq 200$ mm
solid concrete	$d \geq 200$ mm
aerated concrete	$d \geq 200$ mm
flexible wall construction	$d \geq 160$ mm

*see paragraph 2 of ETA

dimensions in mm

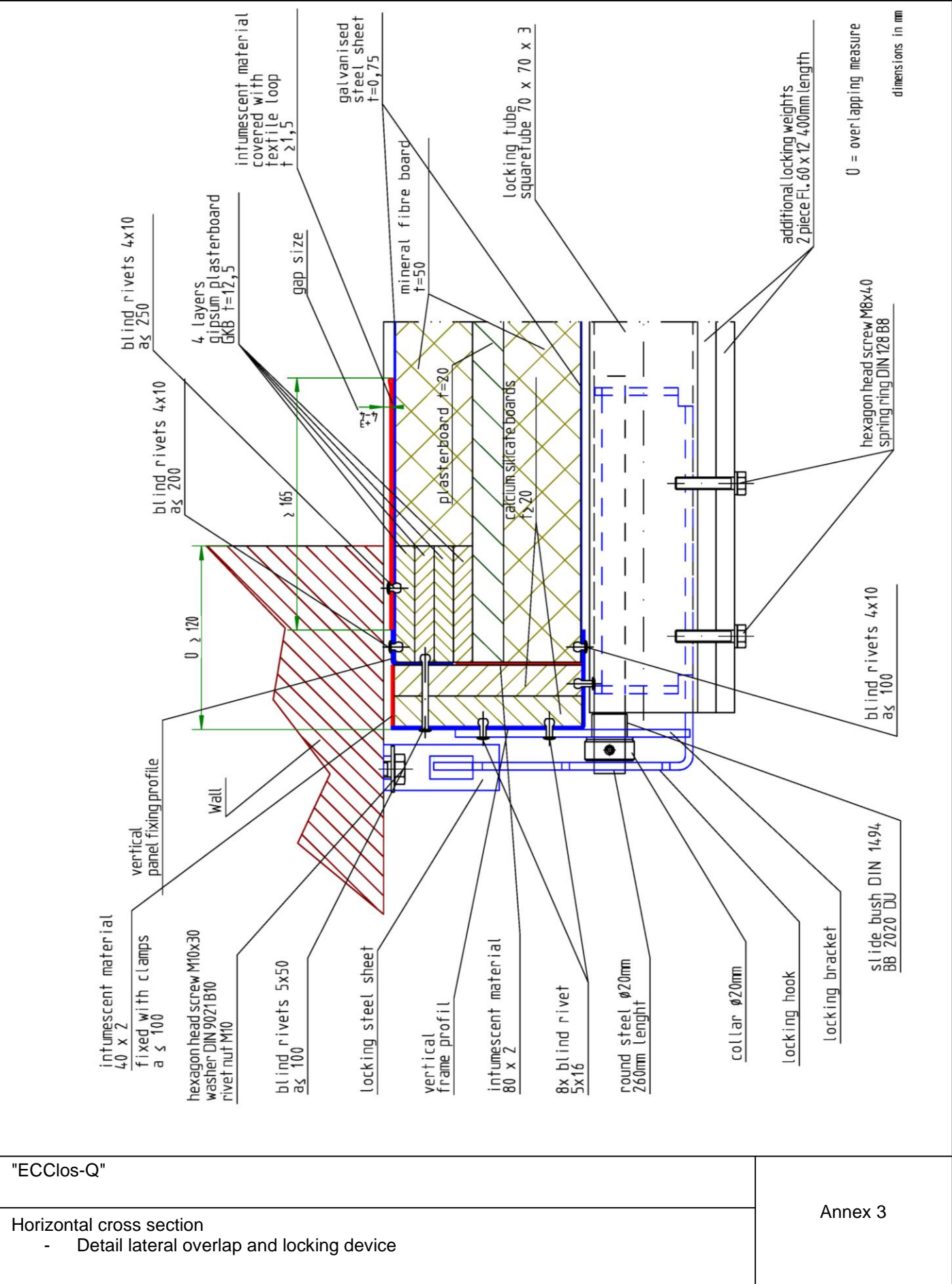
"ECClos-Q"	Annex 1
Overview – view and cross section	

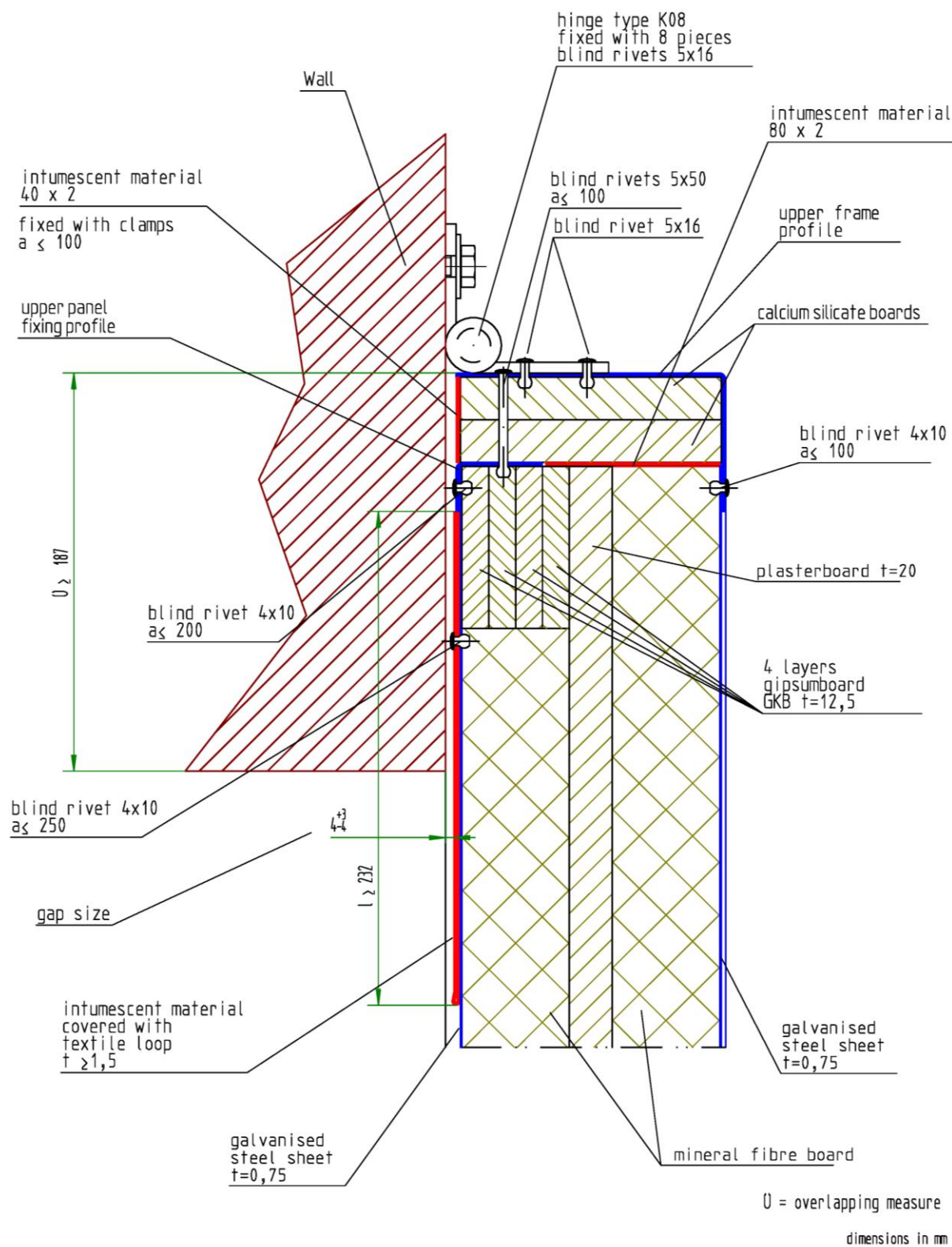


"ECClos-Q"

Structure of the flap leaf

Annex 2

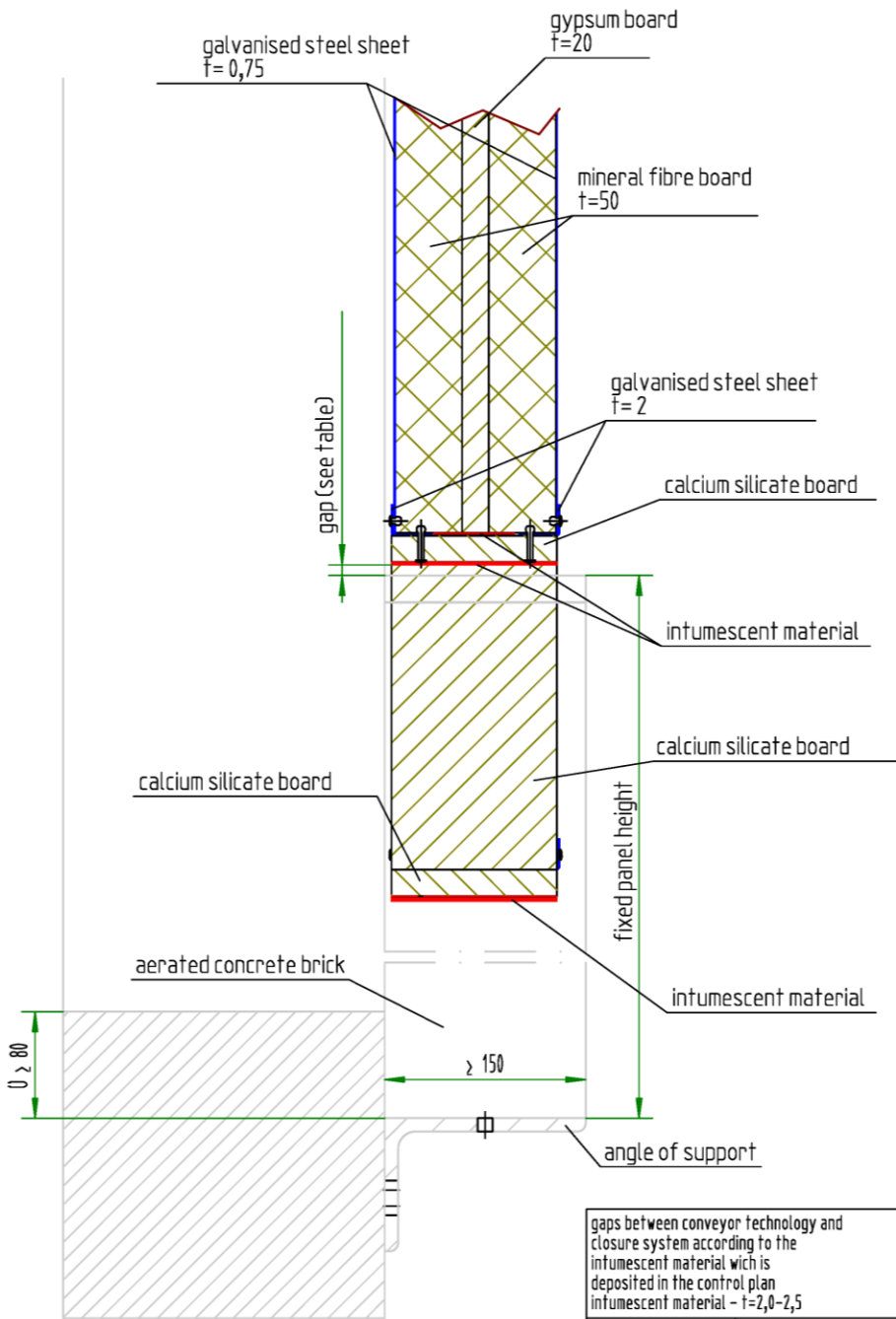




"ECClos-Q"

Vertical cross section
- Detail upper overlap

Annex 4

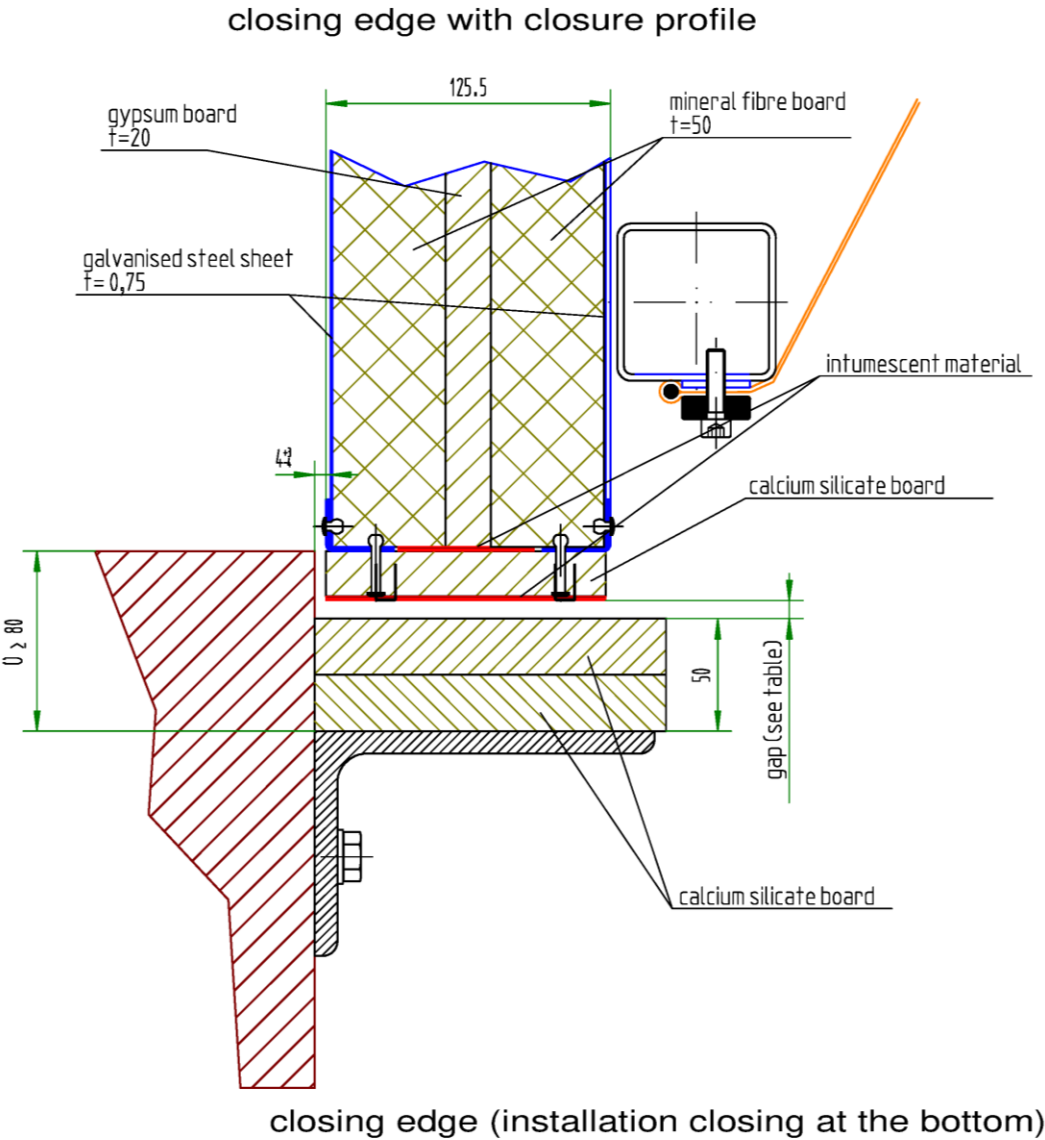


U = overlapping measure

gaps between conveyor technology and closure system according to the intumescent material wich is deposited in the control plan intumescent material - $t = 2,0-2,5$	
gap s	minimum number of layer
0 - 10	1
10 - 20	2
20 - 30	3
at the execution it must be ensured that the gaps are as small as possible	

dimensions in mm

"ECClos-Q"	Annex 5
Vertical cross section - Detail - lower overlap with fixed panel	

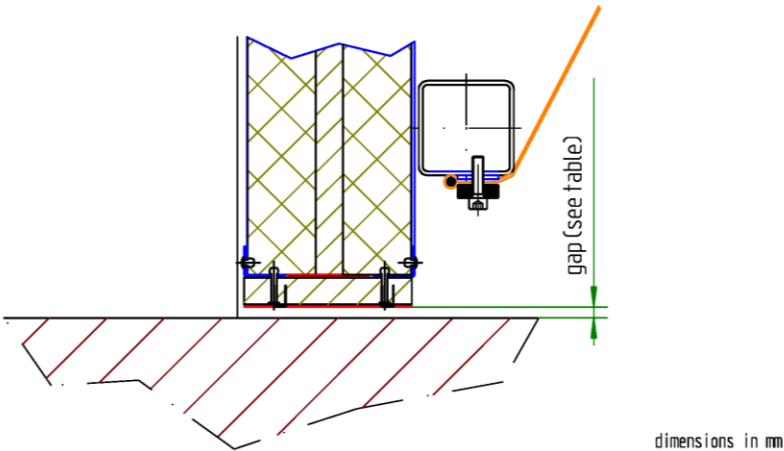


gaps between conveyor technology and closure system according to the intumescent material which is deposited in the control plan
intumescent material - $t=2,0-2,5$

gap s	minimum number of layer
0 - 10	1
10 - 20	2
20 - 30	3

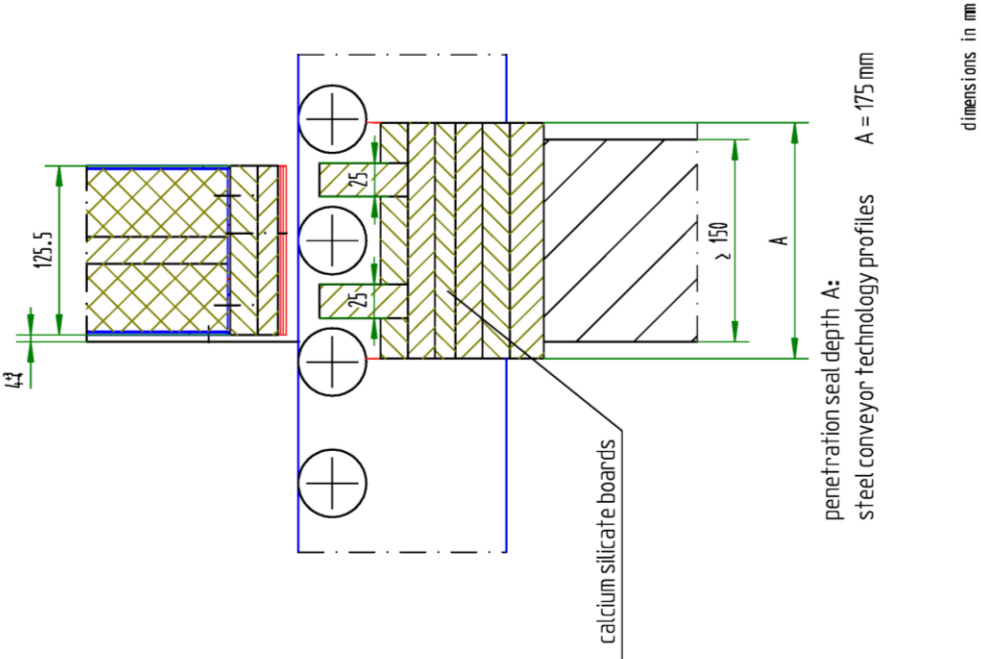
at the execution it must be ensured that the gaps are as small as possible

U = overlapping measure

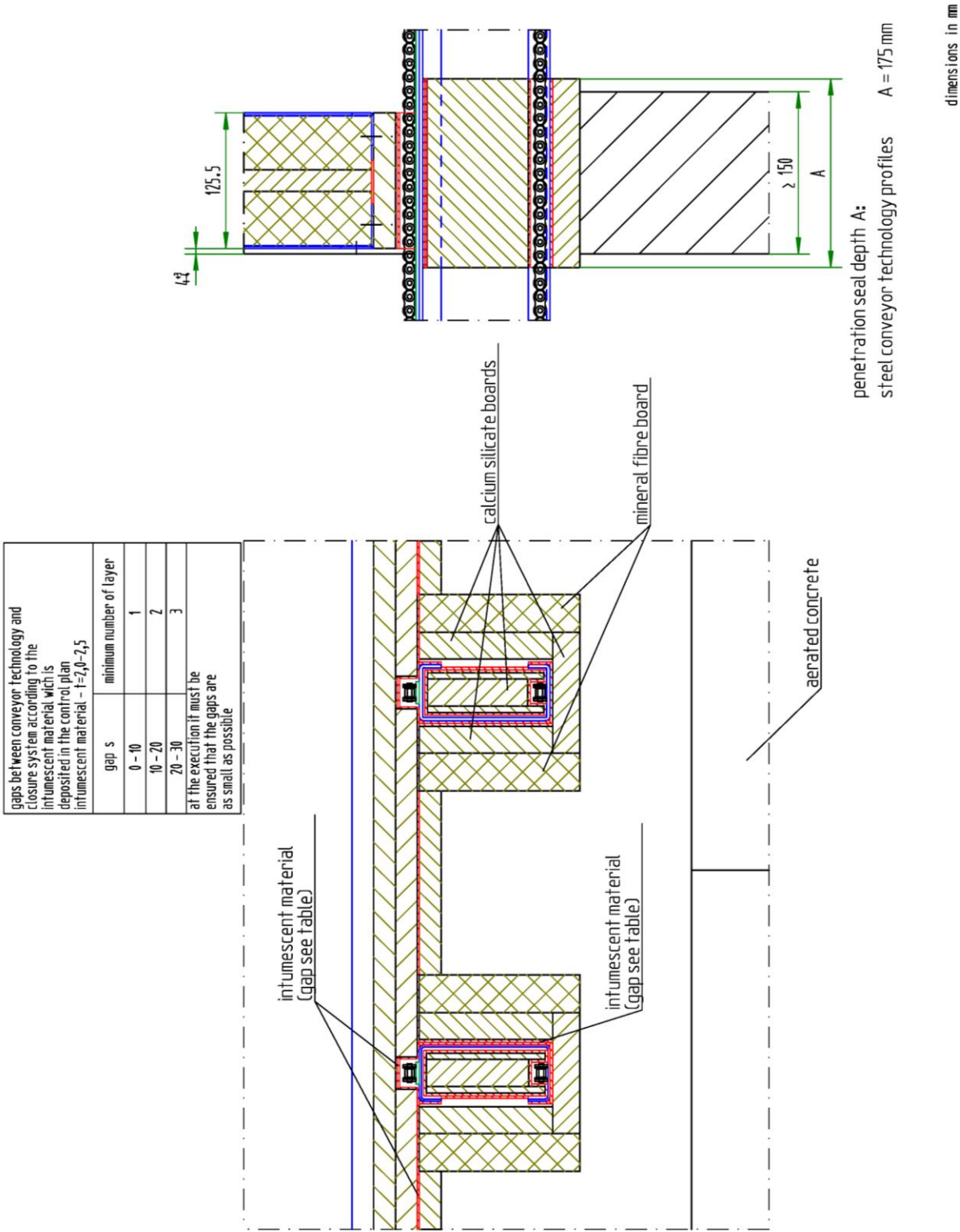


"ECClos-Q"	Annex 6
Vertical cross section – Closing edge (installation with closure profile and installation closing at the bottom)	

gaps between conveyor technology and closure system according to the intumescent material which is deposited in the control plan	
gap s	minimum number of layer
0 – 10	1
10 – 20	2
20 – 30	3
at the execution it must be ensured that the gaps are as small as possible	



"ECClos-Q"	Annex 7
Vertical cross section - Detail – sealing of the continuous conveyor technique (roller conveyor)	

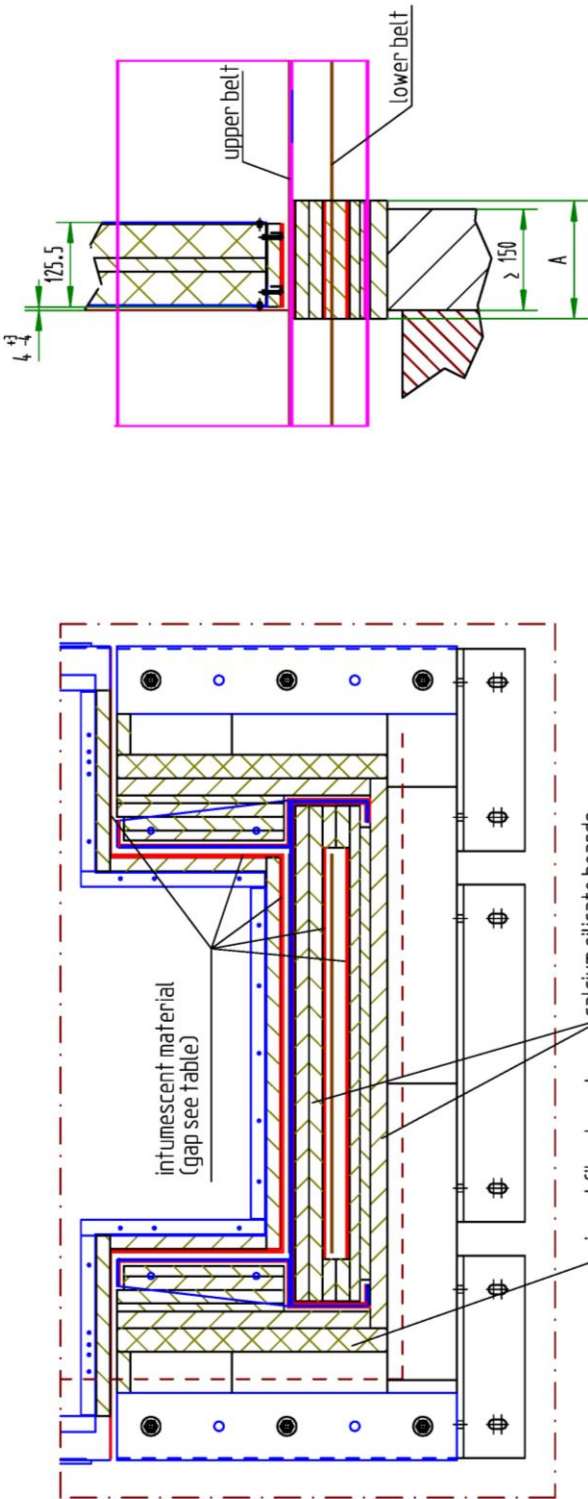


"ECClos-Q"

Annex 8

Vertical cross section
- Detail – sealing of the continuous conveyor technique (chain conveyor)

gaps between conveyor technology and closure system according to the intumescent material which is deposited in the control plan intumescent material - $t = 2,0 - 2,5$	
gap s	minimum number of layer
0 - 10	1
10 - 20	2
20 - 30	3
at the execution it must be ensured that the gaps are as small as possible	



penetration seal depth A:
steel conveyor technology profiles A = 175 mm

dimensions in mm

"ECClos-Q"	Annex 9
Vertical cross section - Detail – sealing of the continuous conveyor technique (belt conveyor)	

"ECClos-Q"	Annex 10
Installation	

