Deutsches Institut für Bautechnik

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Approval body for construction products and types of construction

Bautechnisches Prüfamt

An institution established by the Federal and Laender Governments

Designated according to Article 29 of Regulation (EU) No 305/2011 and member of EOTA (European Organisation for Technical Assessment)

European Technical Assessment ETA-16/0851 of 3 August 2017

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	"GCC"
Product family to which the construction product belongs	Kit for closure system for conveyor systems use as single leaf closure of wall openings of conveyor systems; in the opening area connected or disconnected conveyor technique
Manufacturer	Stöbich Brandschutz GmbH Pracherstieg 6 38644 Goslar DEUTSCHLAND
Manufacturing plant	Stöbich Brandschutz GmbH Pracherstieg 6 38644 Goslar DEUTSCHLAND
This European Technical Assessment contains	26 pages including 19 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	European Assessment Document (EAD) 350022-01-1107

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Specific part

1 Technical description of the product

This European Technical Assessment applies for the closure system "GCC" for conveyor systems, hereinafter referred to as "GCC". The closure system can be designed to close vertically from top to bottom or horizontally. "GCC" primarily consists of the following components[1]:

- Single-leaf sliding leaf

  The approx. 51 mm thick sliding leaf can consist of an upper and a lower element and one or several centre elements arranged one on top of the other.

  All elements consist of

  – an inner layer of steel sheet (1 mm)

  – faced with non-combustible gypsum boards (12,5 mm) on the inside

  – and with non-combustible gypsum boards (12,5 mm) on the outside

  screwed together following an agreed pattern.

  Where the elements are joined together, the gypsum boards are offset by 50 mm.

  On the side, the sliding leaf overlaps the wall by 90 mm (vertical closing) and 100 mm (horizontal closing). At the top the sliding leaf overlaps the wall by 138 mm (vertical closing) and 100 mm (horizontal closing).

  In the case of a continuous conveyor system, a sealing element consisting of several strips of screwed calcium silicate board is mounted at the closing edge of the sliding leaf.

- Fixed panel with clearance for the conveyor

  The 175 mm thick fixed panel consists of several fire-resistant gypsum boards which are screwed together. The fixed panel is secured to the wall via brackets. The clearance in the fixed panel is configured for the respective conveyor system. Various intumescent materials are used to fill the necessary functional gaps.

- Guide for the sliding leaf

  – Vertical closing (from top to bottom)

    Sliding elements secured at the side of the sliding leaf run in a wall frame (2 mm) secured to the wall.

    U-notched steel plates secured to the top of the sliding leaf interlock with U profiles, which in turn are secured to the wall using fasteners such as threaded bolts or anchors, when closing.

  – Horizontal closing

    Depending on the weight, three different methods of suspending the sliding leaf are possible:

    – up to 350 kg: single set of running gear with polyamide rollers on an oval pipe rail

    – more than 350 kg: double set of running gear with polyamide rollers on an oval pipe rail

[1] The documents describing the structure of "GCC" in detail and the product specifications of the building materials used are deposited with DIBt.

The sliding leaf is guided by a guide roller which runs in a guide profile of the sliding leaf. The rail is secured to the wall using brackets. U-notched steel plates secured on the opening side of the sliding leaf interlock with U profiles, which in turn are secured to the wall using fasteners such as threaded bolts or anchors, when closing.

- Seal system

  In the overlap of the sliding leaf and adjacent wall on the wall additional strips of calcium silicate boards with strips of an intumescent material are positioned (see annex 3, 4, 5, 9 and 10).

  At the closing edge of the sliding leaf a sealing element comprising strips of an intumescent material is mounted. The sealing element consists of several strips of calcium silicate board.

  Strips of an intumescent material are also mounted on the fixed panel in the area of the conveyor system (see annex 13 to 16).

- Closing device (closing weight system)

  In versions with horizontal closing, the closure is closed via a closing weight system or spring force, and in versions with vertical closing, the deadweight of the sliding leaf is used for closing.

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

In accordance with this European Technical Assessment, the "GCC" can be used as closure to seal necessary openings of trackbound conveyors (see table 2) in internal walls (see table 1) at normal ambient conditions (categoriy Z_2 according TR024[2] or +5 °C to +40 °C, 25 % r. H. to 75 % r. H., class 0 according EN 1670).

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

The "GCC" 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.

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

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

[2] category Z_2 according to TR024: intended for use at internal conditions with humidity classes other than Z_1 (high humidity), excluding temperatures below 0°C

Table 1: Permitted dimensions of the clearance of the component opening

Component (supporting construction) in which the closure can be installed[a)]	**max. fire resistance class**[b)]	**Clearance of the wall opening**[c)]		
		maximum clear width	**maximum clear height**	**Maximum surface**
High-density solid wall Masonry or solid concrete with an overall density of ≥ 800 kg/m³ and a thickness ≥ 150 mm	EI_1 90 EI_2 90	3.600 mm	4.200 mm	10,0 m^2
Low-density solid wall Aerated concrete with an overall density of ≥ 450 kg/m³ and a thickness ≥ 150 mm	EI_1 90 EI_2 90	3.600 mm	4.200 mm	10,0 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 sealing systems for the continuous conveyor technology[6]

Sealing system for	**Fixed panel thickness (gypsum boards)**	**Minimum depth of the seal on the fixed panel (sealing via calcium silicate boards)**	**Minimum depth of the seal at the sliding leaf**	**Maximum fire resistance class**
roll conveyor	175 mm	– continuous steel profiles: 175 mm – between the rollers: 2 x 15 mm webs or 1 x 40 mm webs	114 mm	EI 90
belt conveyor	175 mm	– continuous steel profiles: 175 mm	114 mm	EI 90
chain conveyor	175 mm	– continuous steel profiles: 175 mm	114 mm	EI 90

The conveyor tracks shall be positioned at the bottom and can be continuous or disconnected or disconnected while closing of the closure in the closing area of the sliding leaf.

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

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
6 see Annexes 13 to 15

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)	– vertical closing: C5 – horizontal closing: C4
Reaction to fire (EN 13501-1)	see following table 3

Table 3: reaction to fire of the used materials

component	material	reaction to fire class according to EN 13501-1
slider leaf, fixed panel	steel sheet	A1
	calzium silicate boards	A1
	gypsum boards	A1
	mineral fibre boards	at least class E
guide	steel	A1
Seal system	Intumescent material – 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)

Essential characteristic	Performance
Content, emissions and/or release of dangerous substances	
Content of dangerous substances	
Substance(s) classified as EU-cat. Carc. 1A/1B in accordance with Regulation (EC) No 1272/2008.	The product does not contain these dangerous substances actively used.[7]
Substance(s) classified as EU-cat. Muta. 1A/1B in accordance with Regulation (EC) No 1272/2008.	
Substance(s) classified as EU-cat. Acute Tox. 1, 2 and/or 3; EU-cat. Repr. 1A/1B; EU-cat. STOT SE 1 and/or STOT RE 1, in accordance with Regulation (EC) No 1272/2008.	
Biopersitent fibers	The half-life after intratracheal instillation for tested WHO fibers is ≤ 40 days.
Use scenarios regarding BWR 3 in accordance with EOTA TR 034: IA1, IA 2	

[7] The assessment is based on a detailed manufacturer's product declaration.

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

In accordance with EAD No. 350022-00-1107, 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 "GCC". 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.

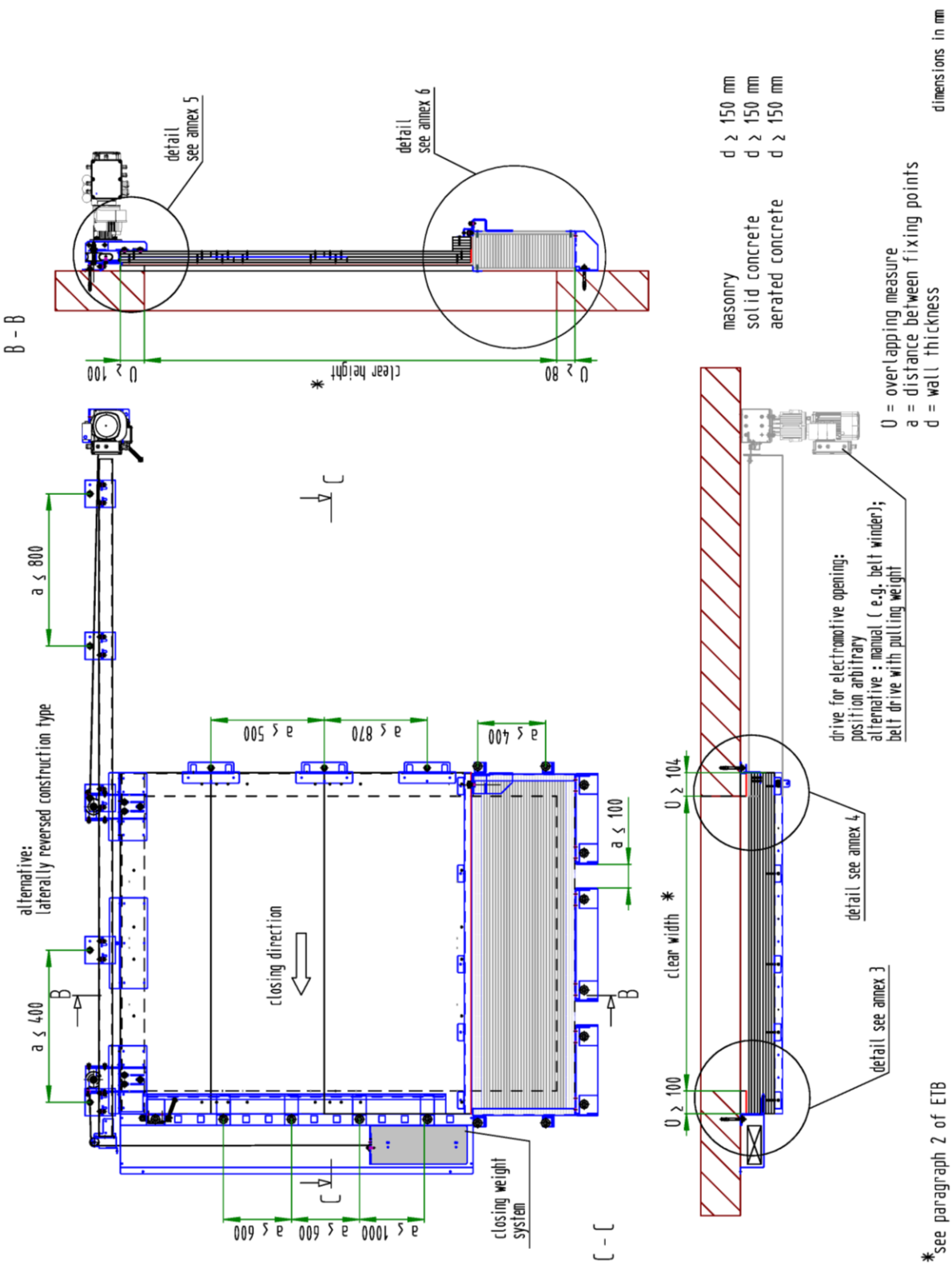
Issued in Berlin on 3 August 2017 by Deutsches Institut für Bautechnik

Prof. Gunter Hoppe
Head of Department

beglaubigt:
Biedermann

Deutsches Institut für Bautechnik

DIBt



"GCC"	Annex 1
Overview - horizontal closing direction	

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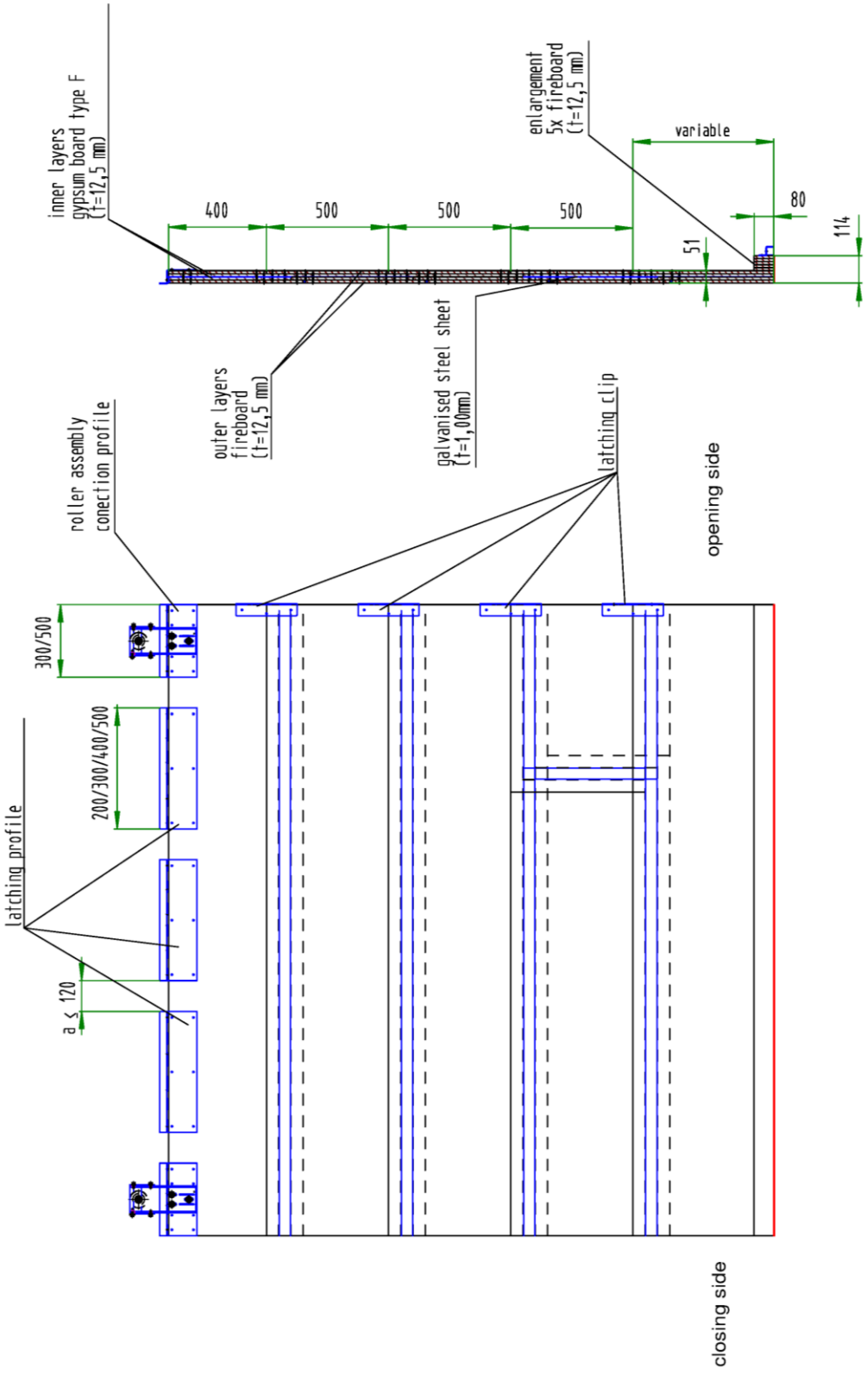
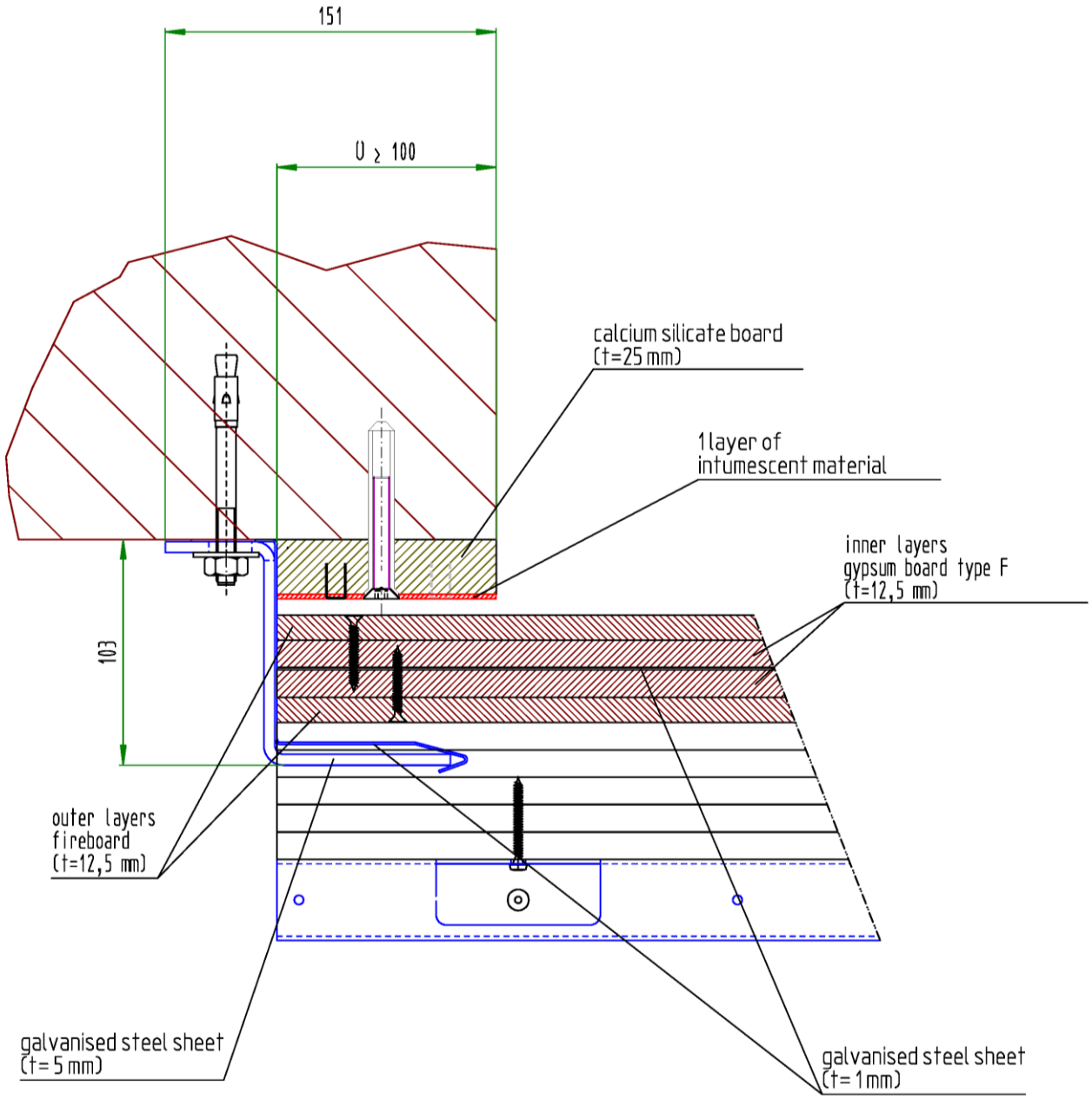


"GCC"

Sliding leaf construction
- horizontal closing direction

Annex 2



"GCC"	Annex 3
Detail closing side - horizontal closing direction	

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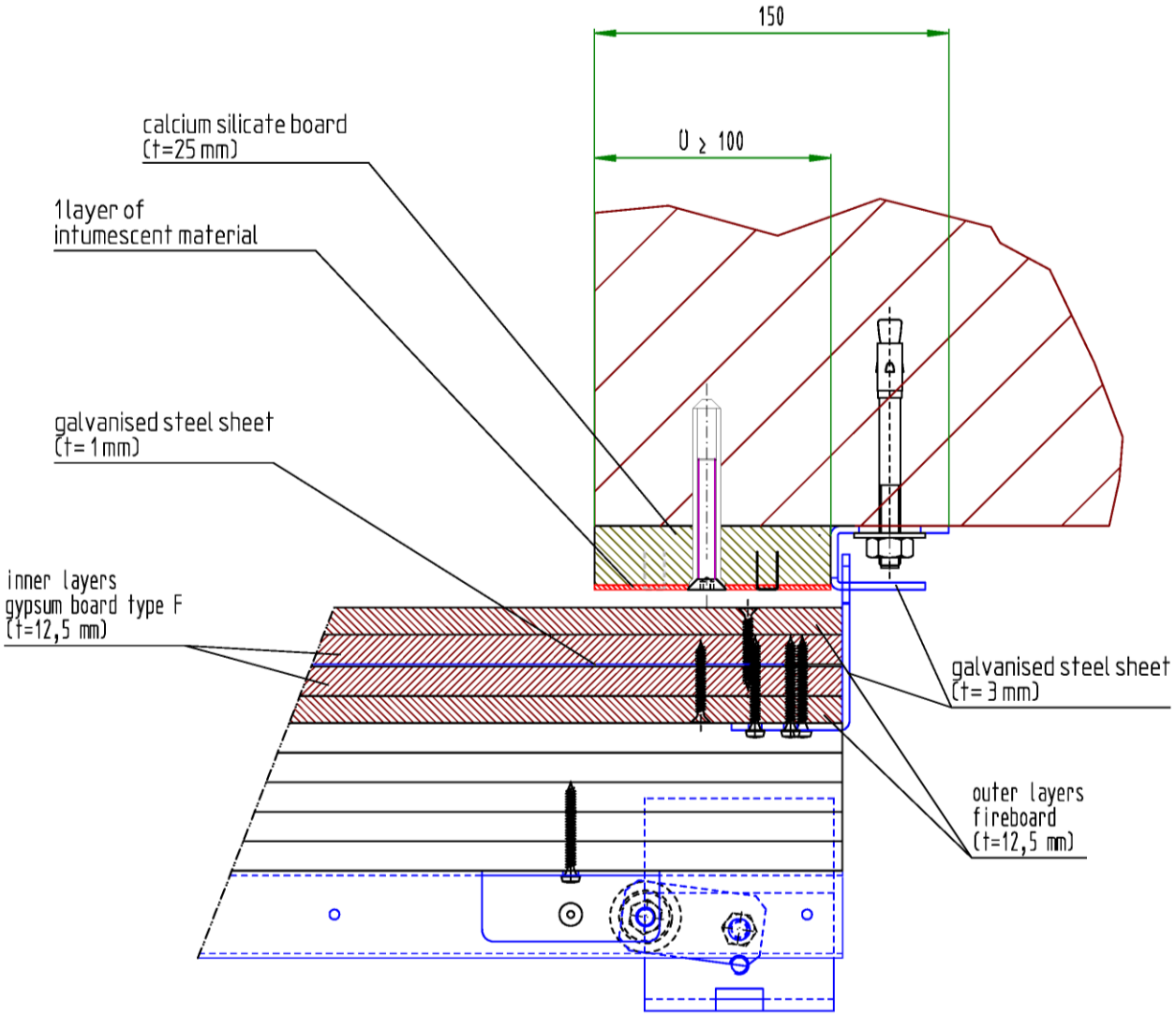

U = overlapping measure

dimensions in mm

"GCC"	Annex 4
Detail opening side - horizontal closing direction	

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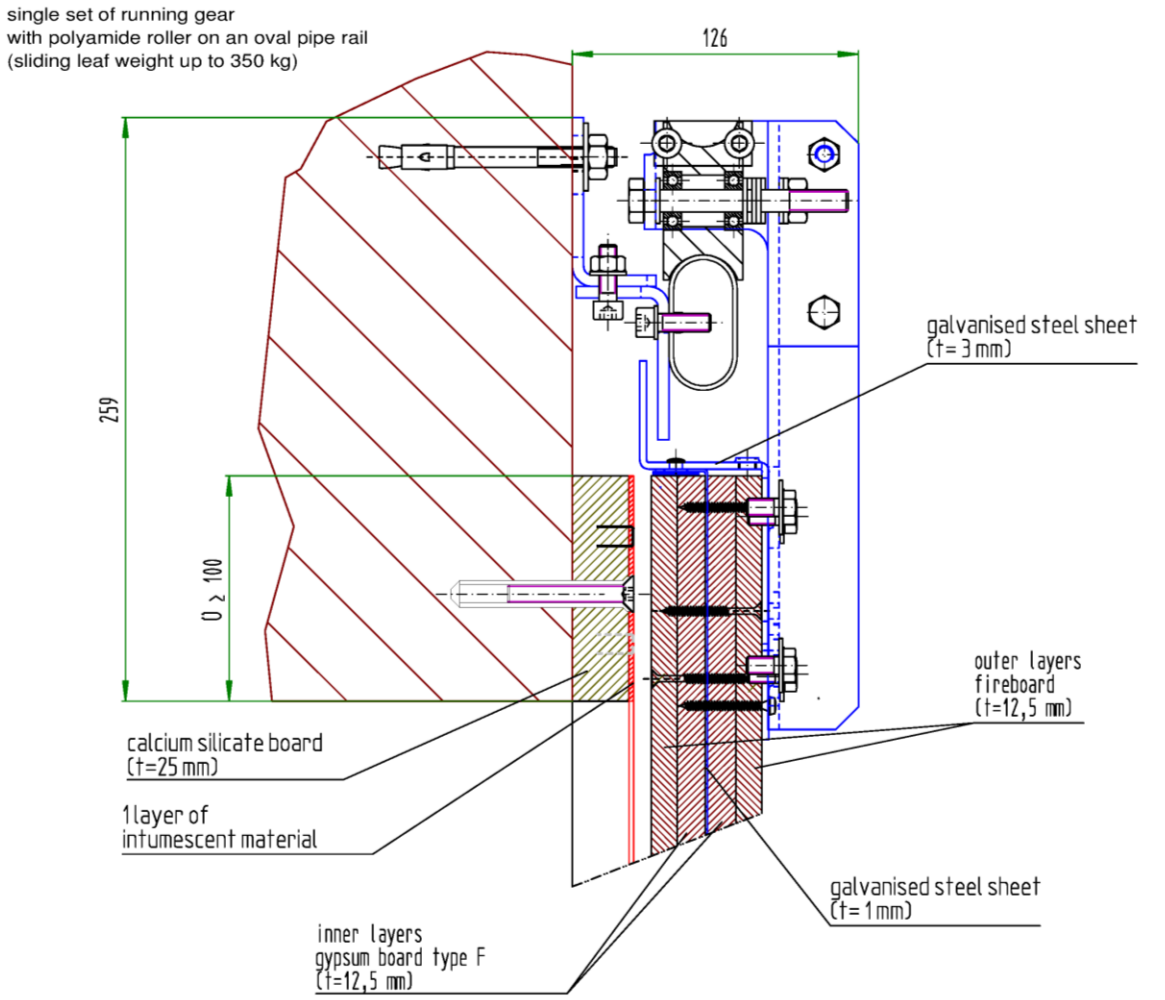
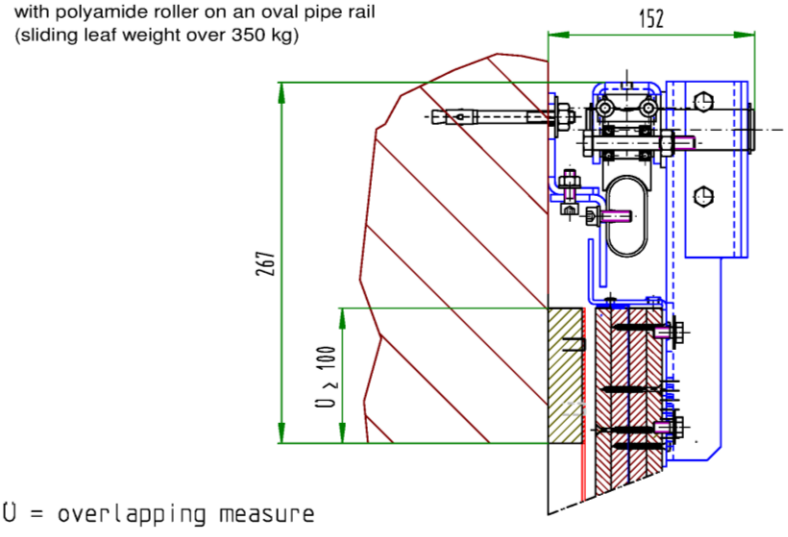
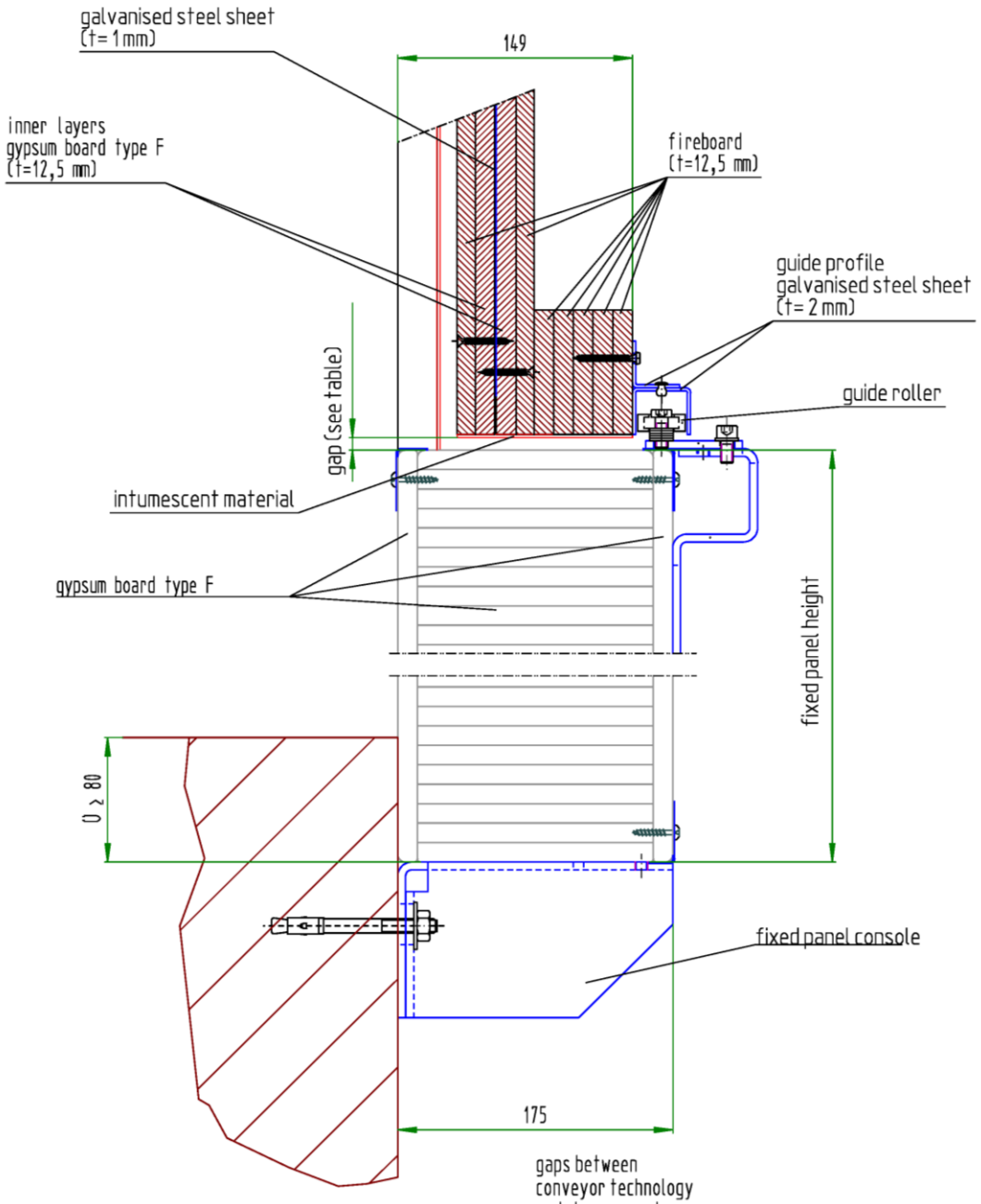




U = overlapping measure

dimensions in mm

"GCC"	Annex 5
Detail running rail / upper overlap - horizontal closing direction	



intumescent material - t=2,0-2,5	
gap s	minimum number of layer
0 - 10	1
10 - 20	2
20 - 30	3

ü = overlapping measure

dimensions in mm

"GCC"

Detail guide roller / lower overlap
- horizontal closing direction

Annex 6

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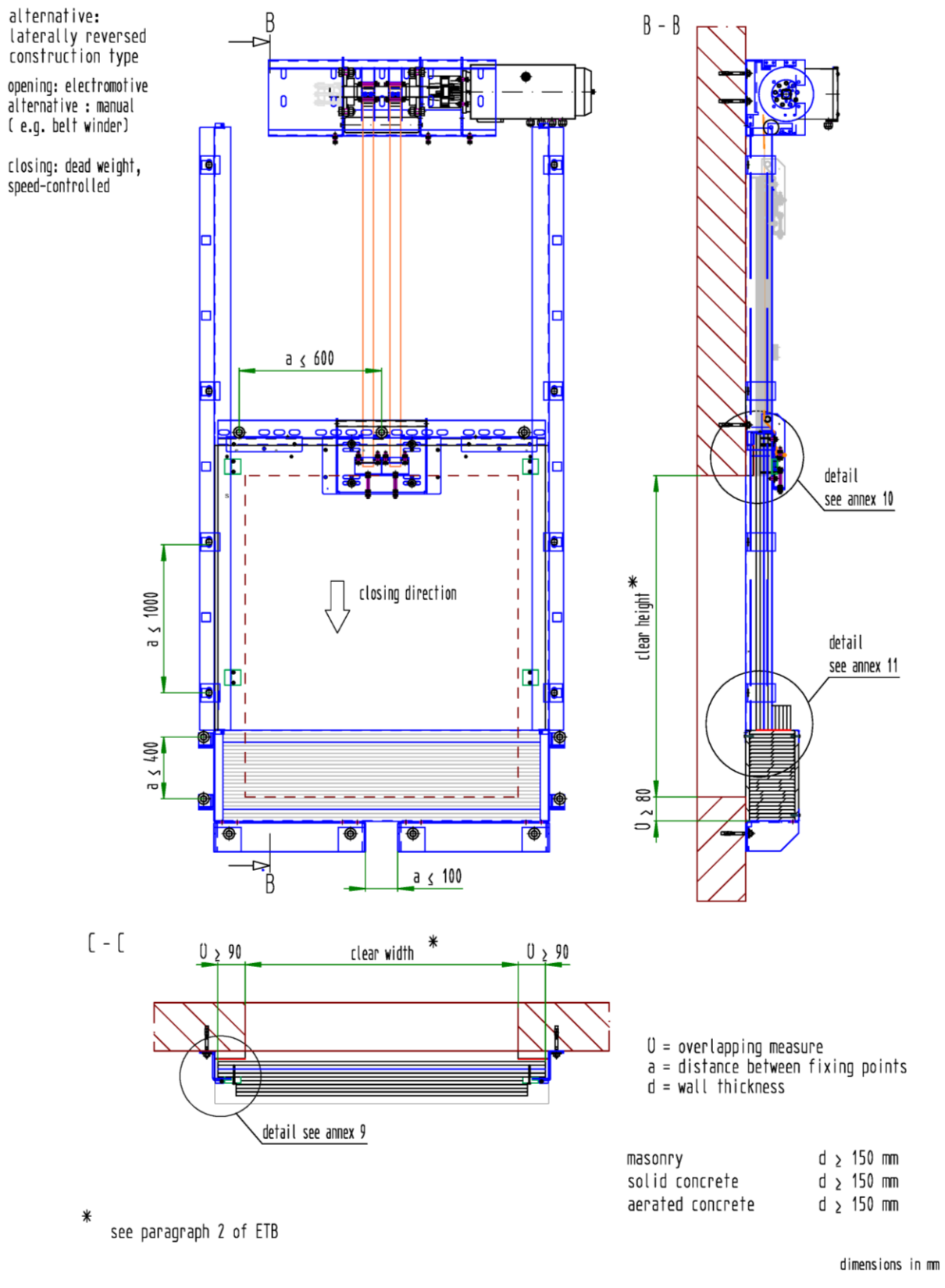

"GCC"	Annex 7
Overview - vertical closing direction	

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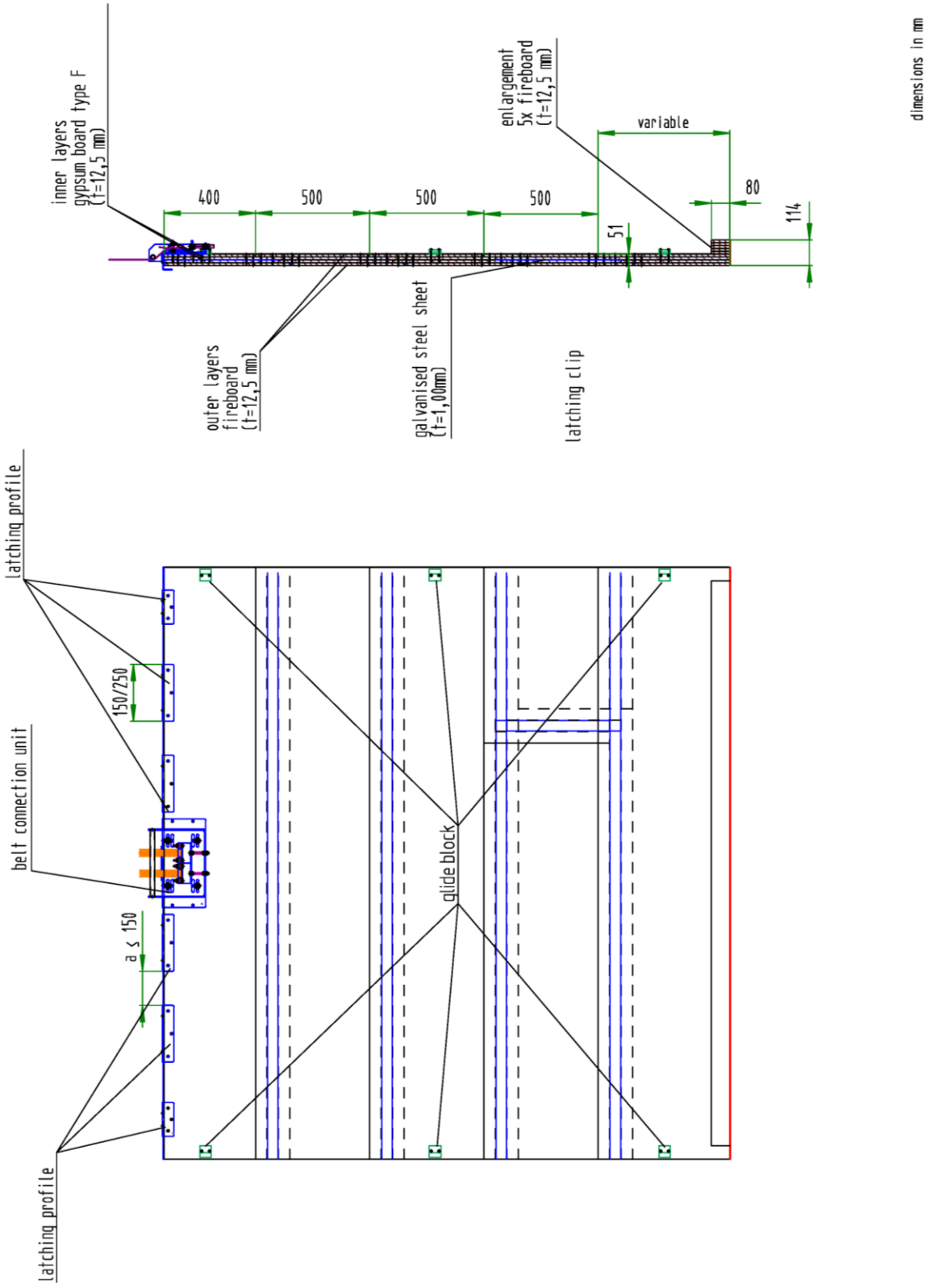

"GCC"

Sliding leaf construction
- vertical closing direction

Annex 8

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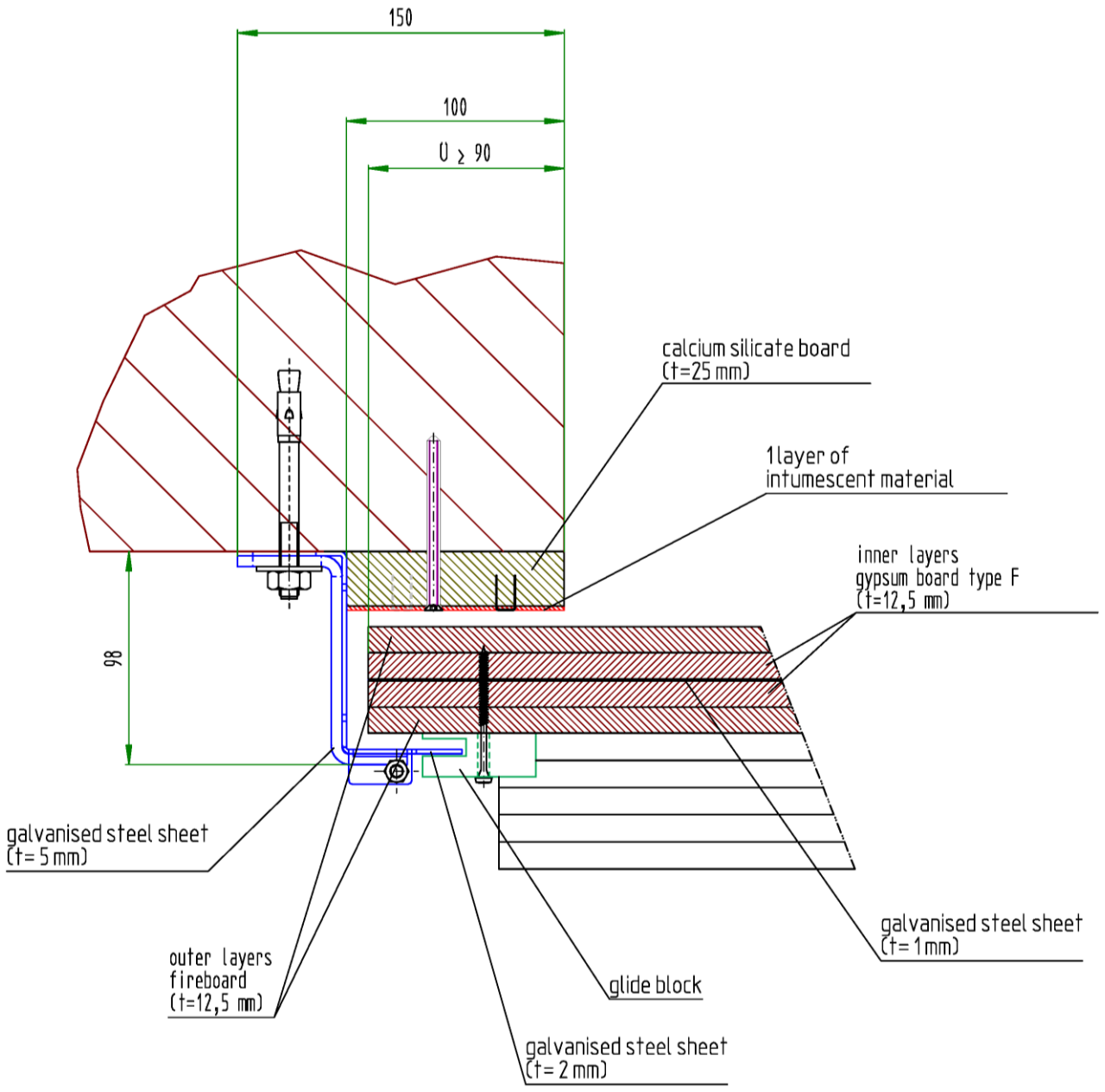
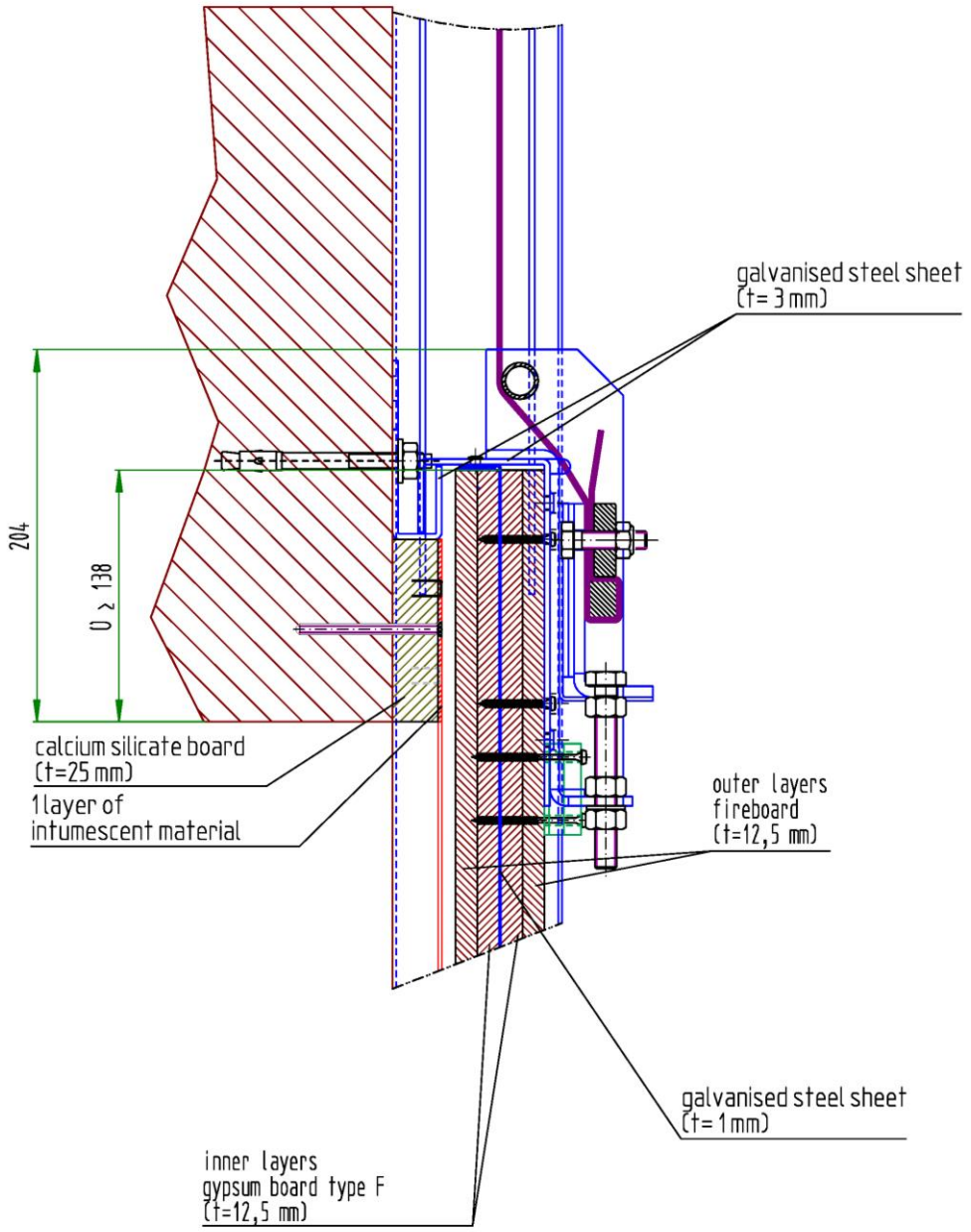


"GCC"	Annex 9
Detail lateral overlap - vertical closing direction	



Ü = overlapping measure

dimensions in mm

"GCC"

Detail upper overlap
- vertical closing direction

Annex 10

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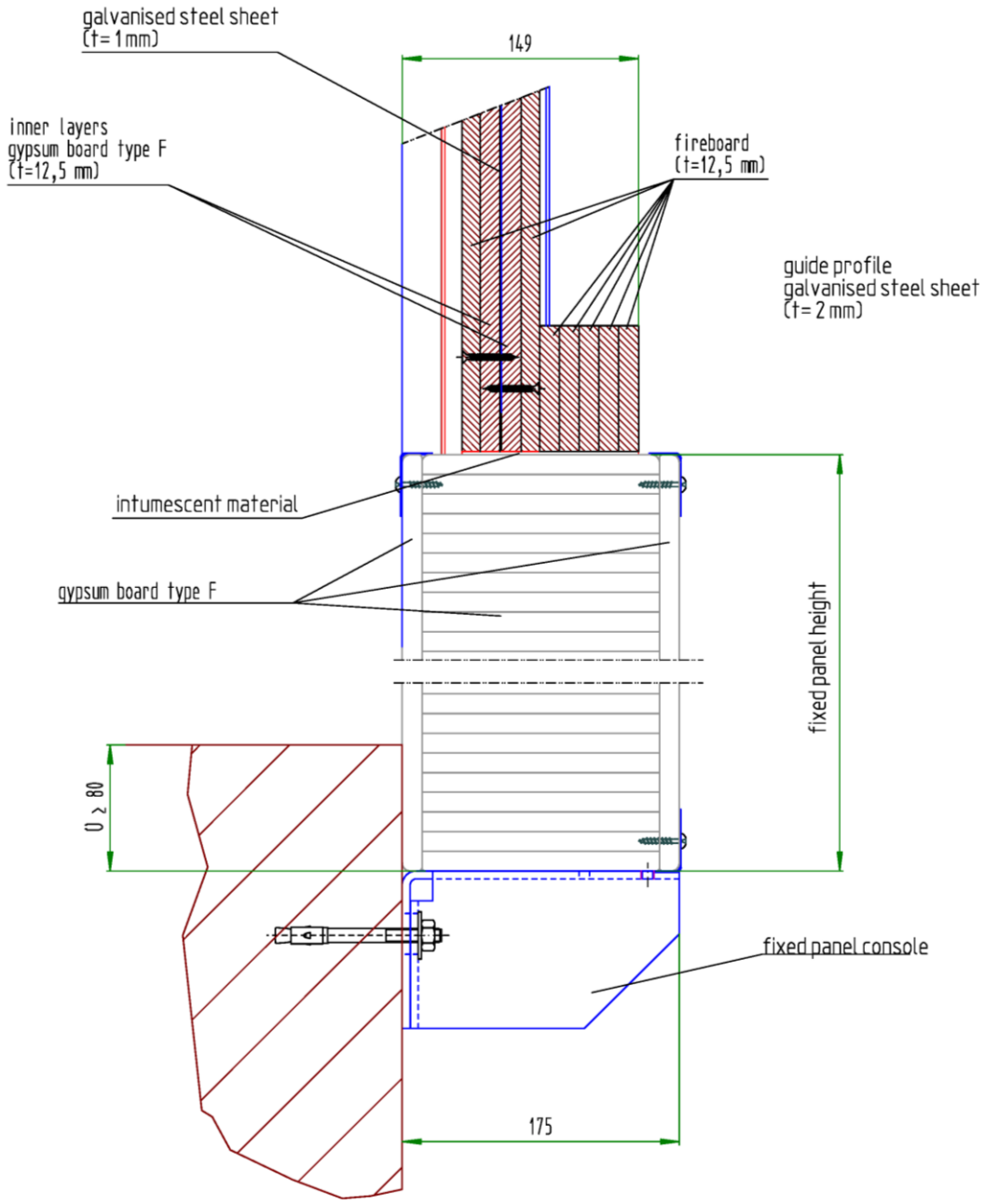

gaps between
conveyor technology
and closure system

intumescent material - t=2,0-2,5	
gap s	minimum number of layer
0 - 10	1
10 - 20	2
20 - 30	3

U = overlapping measure

dimensions in mm

"GCC"

Annex 11

Detail lower overlap
- vertical closing direction

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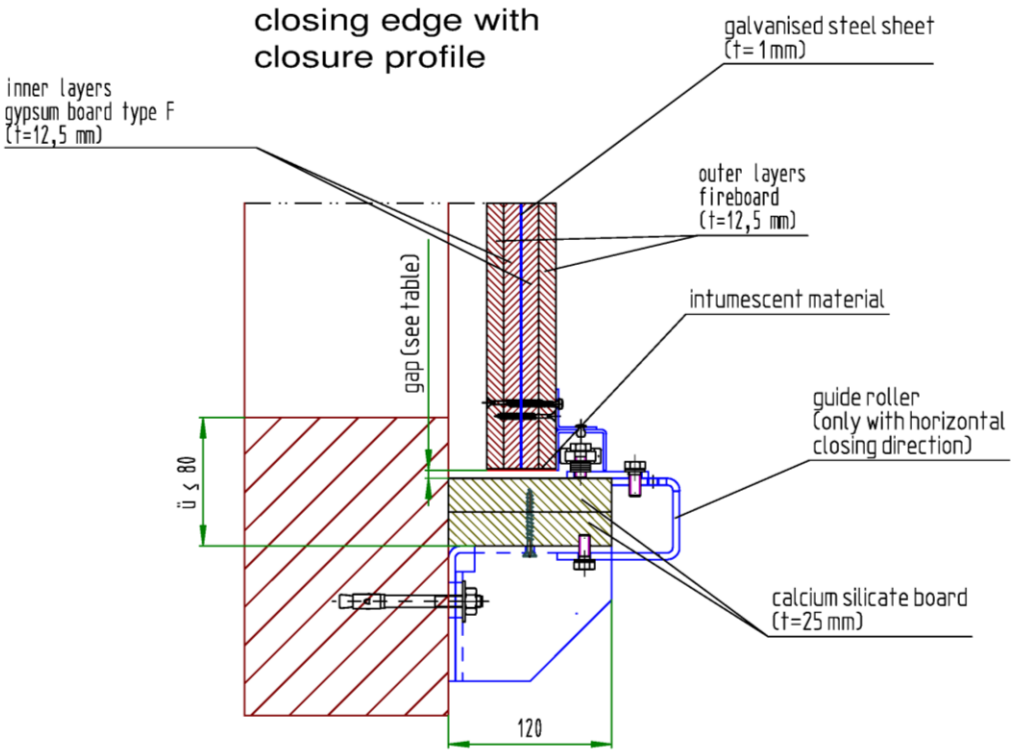

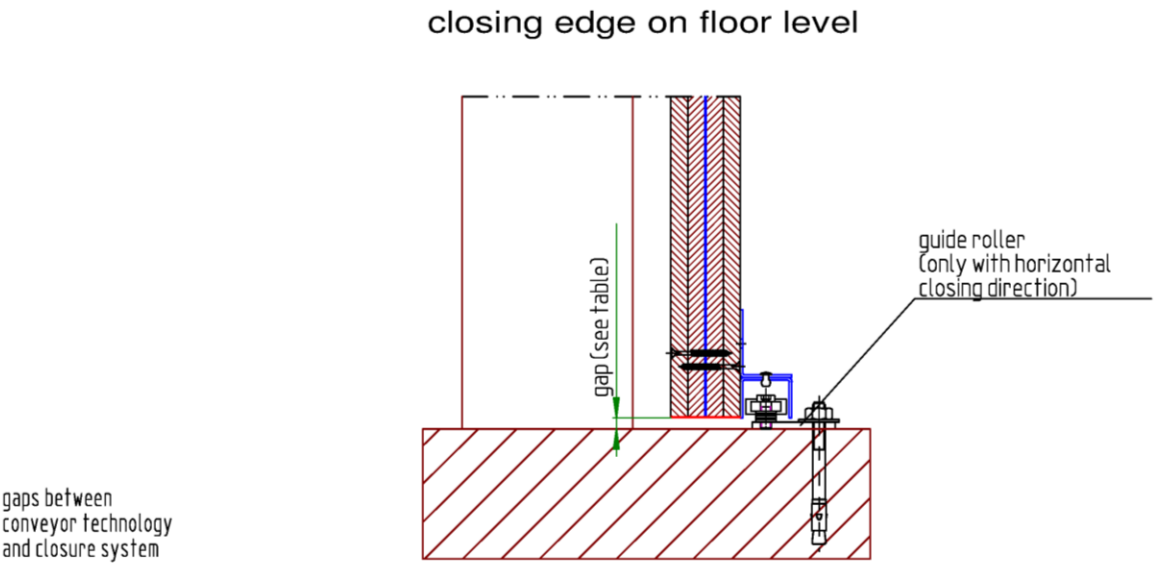

gaps between
conveyor technology
and closure system

intumescent material - t=2,0-2,5	
gap s	minimum number of layer
0 - 10	1
10 - 20	2
20 - 30	3

Ü = overlapping measure

dimensions in mm

"GCC"

Closing edge
- interrupted conveyor technology

Annex 12

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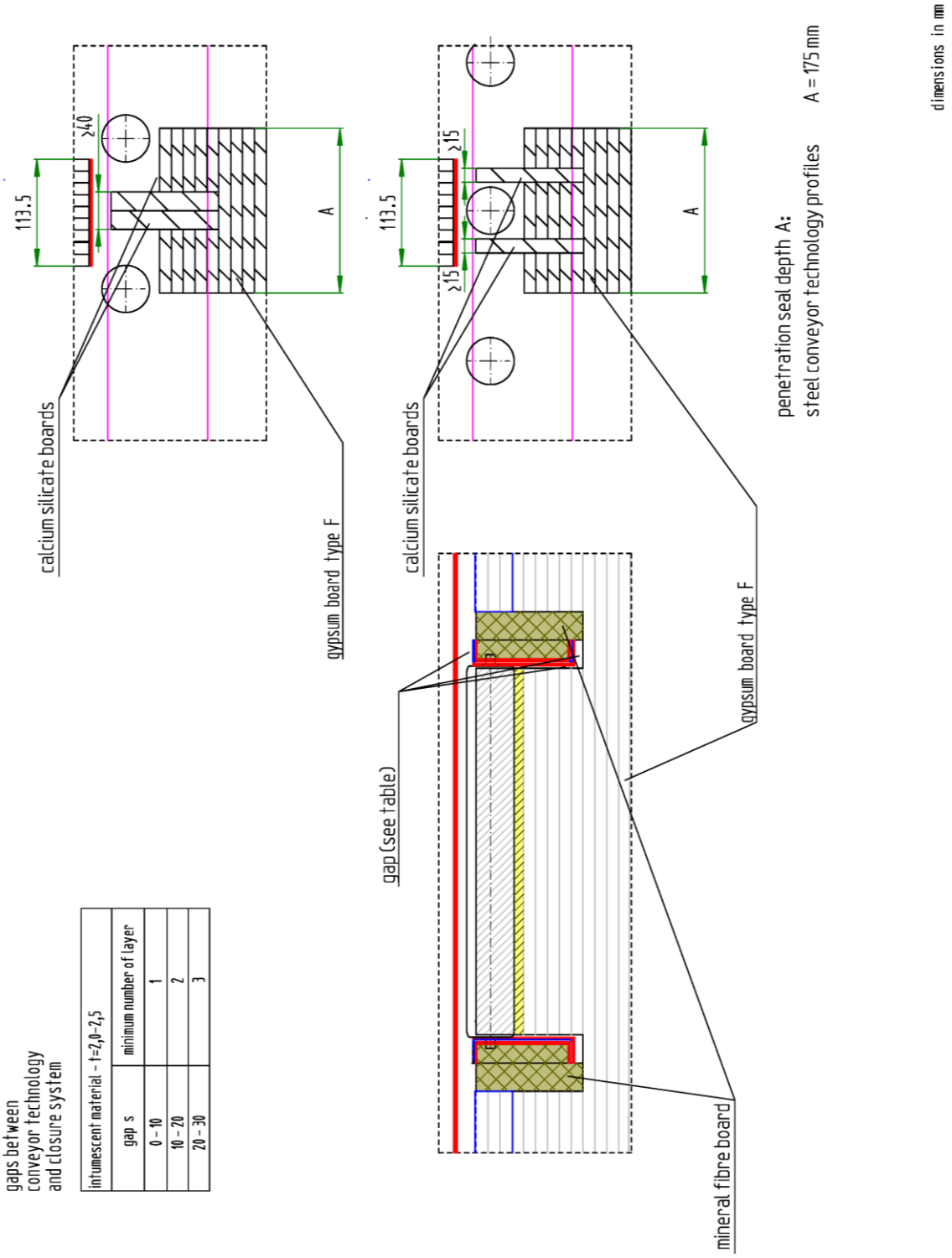

"GCC"

Closing edge
- roller conveyor

Annex 13

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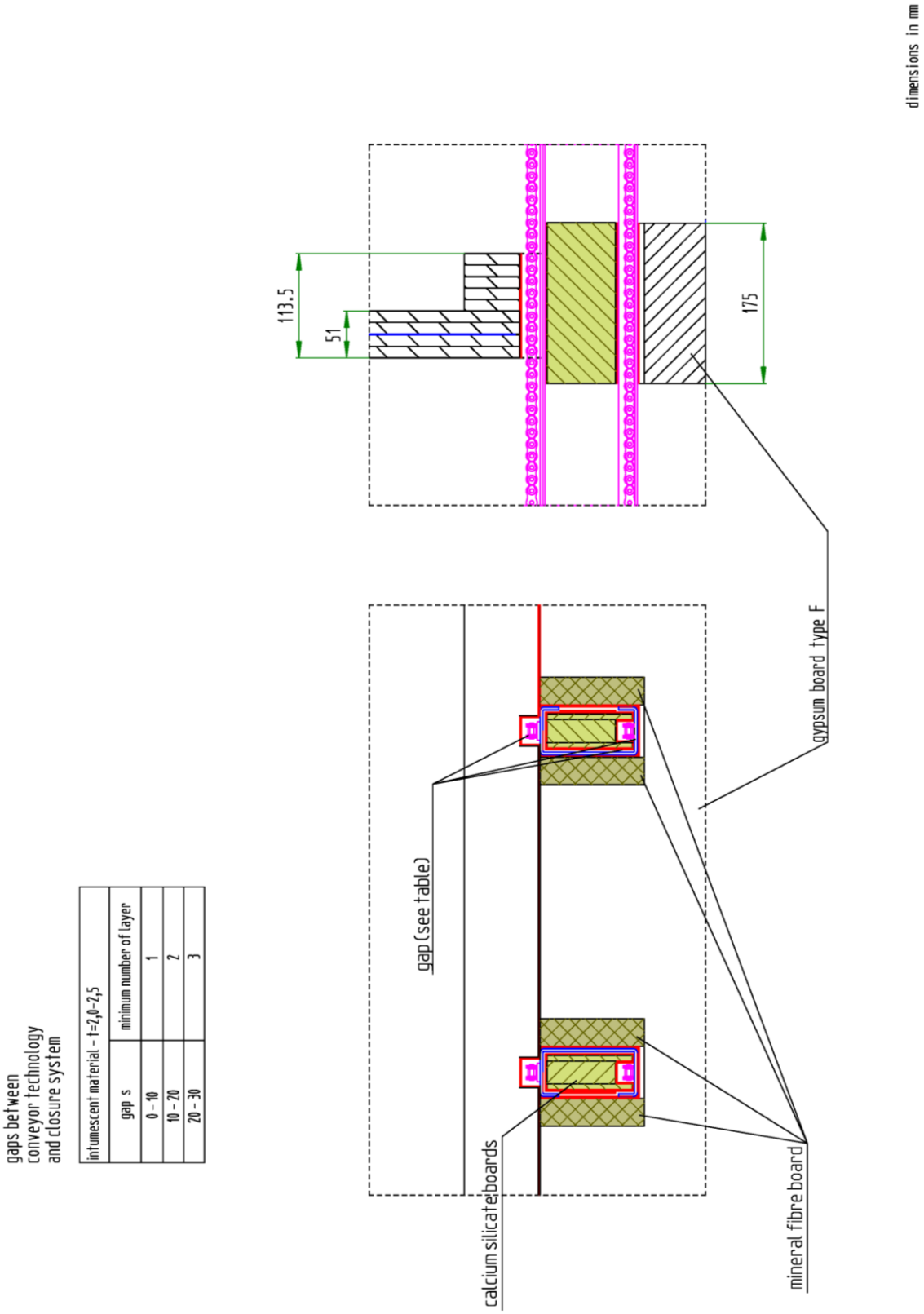

gaps between conveyor technology and closure system

intumescent material - t=2,0-2,5	
gap s	minimum number of layer
0 - 10	1
10 - 20	2
20 - 30	3

"GCC"

Closing edge
- chain conveyor

Annex 14

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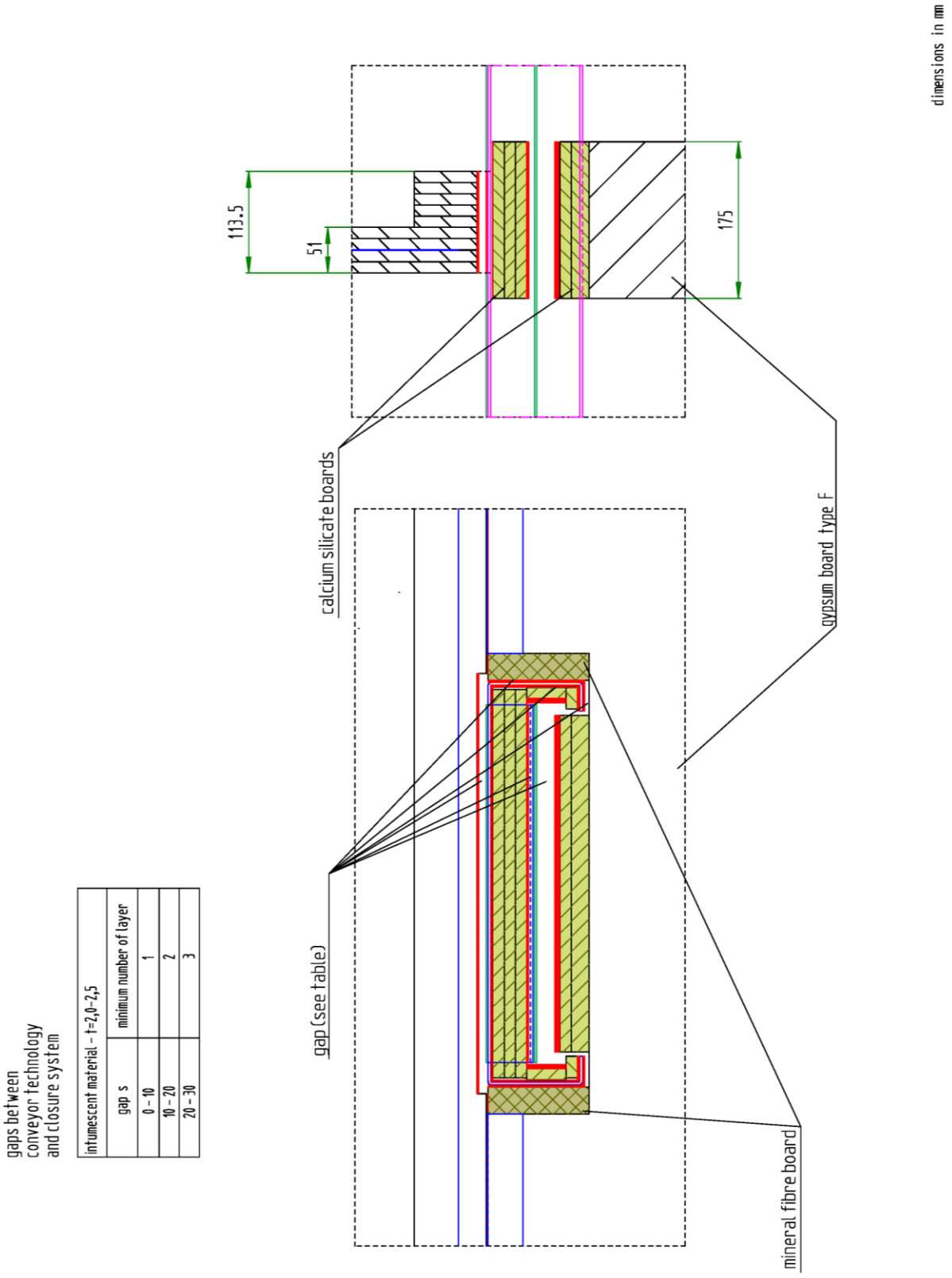

gaps between conveyor technology and closure system

intumescent material - t=2,0-2,5	
gap s	minimum number of layer
0 - 10	1
10 - 20	2
20 - 30	3

"GCC"

Closing edge
- belt conveyor

Annex 15

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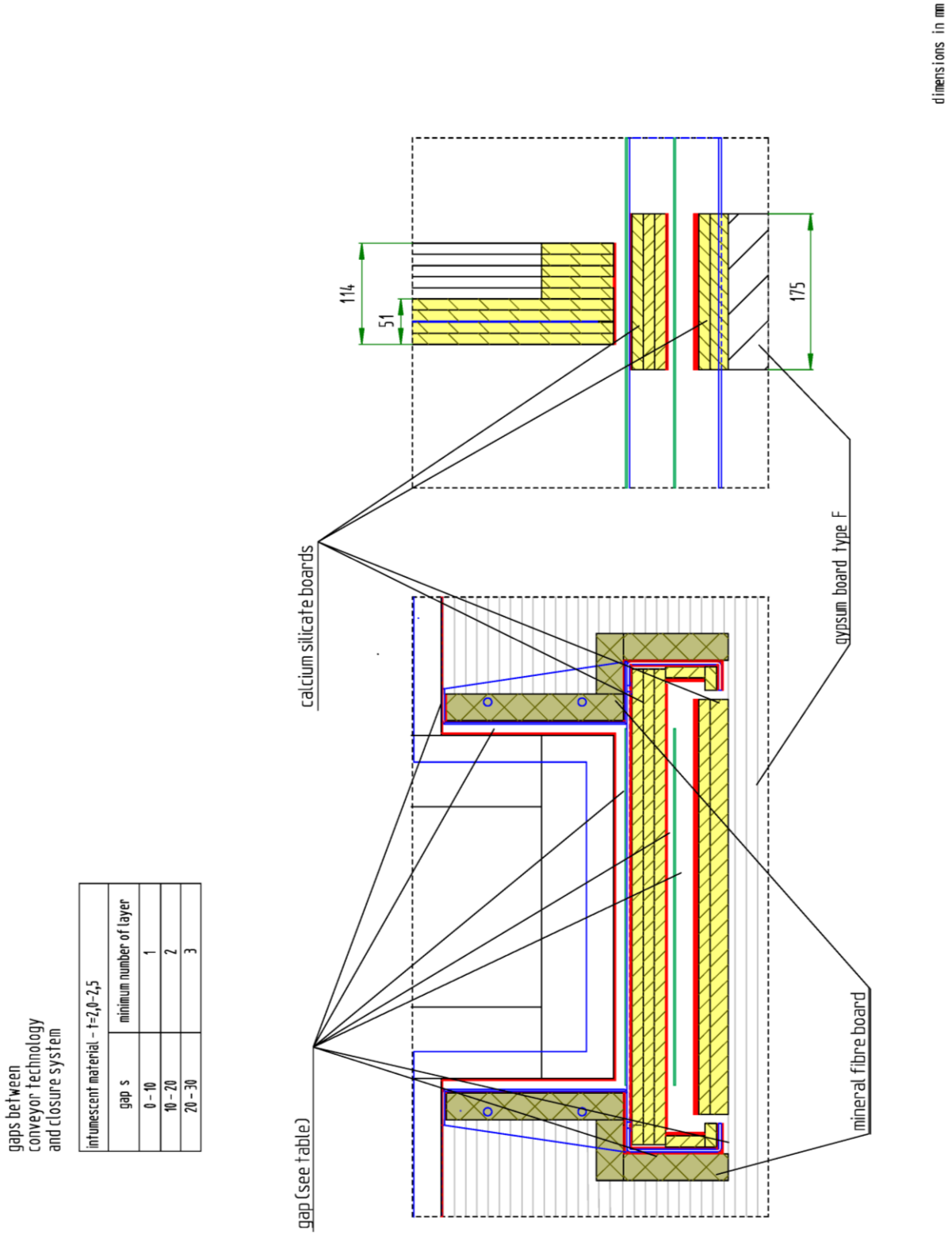

"GCC"

Closing edge
- belt conveyor
- uninterrupted flank / side bar

Annex 16

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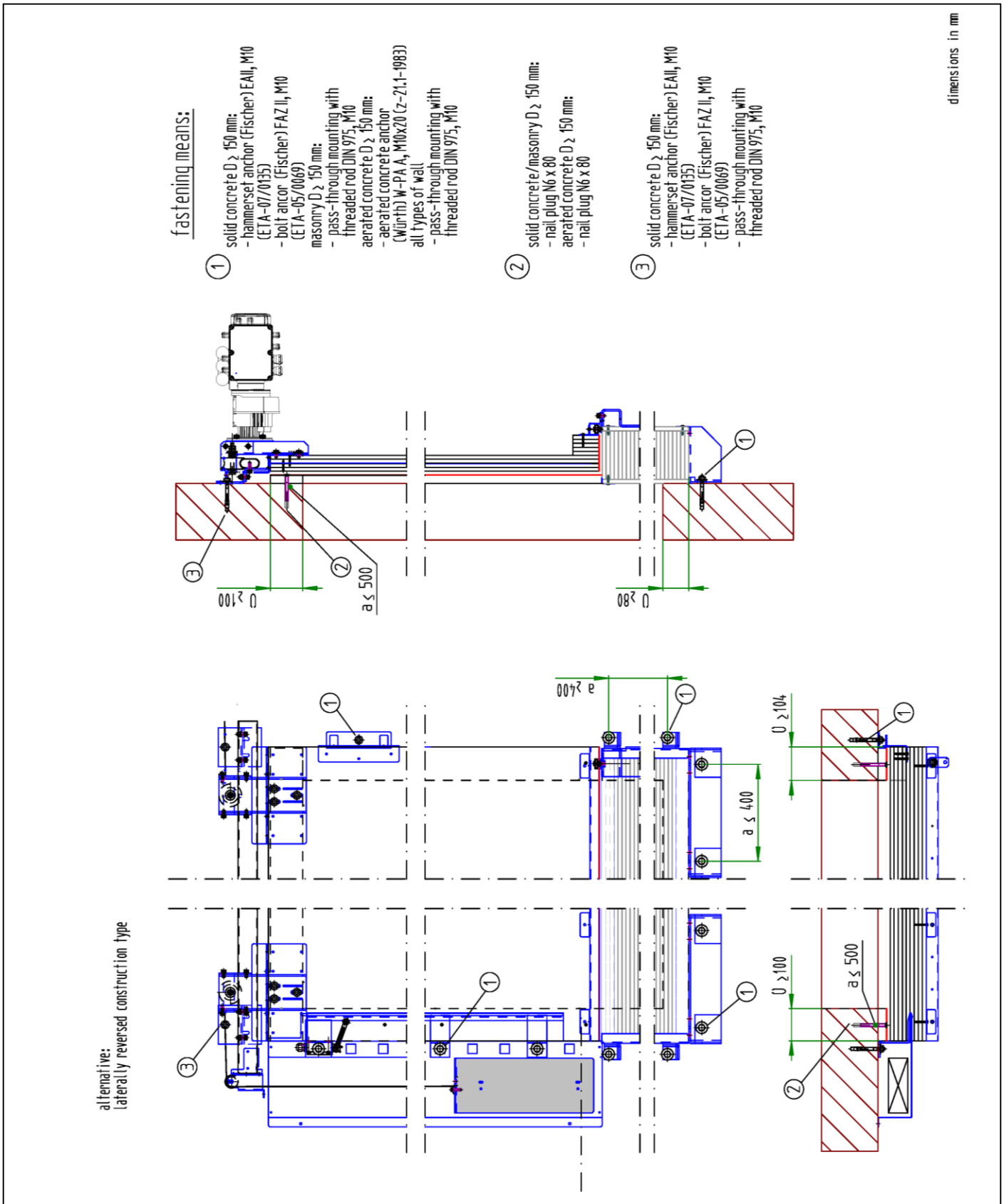

"GCC"	Annex 17
Installation - horizontal closing direction	

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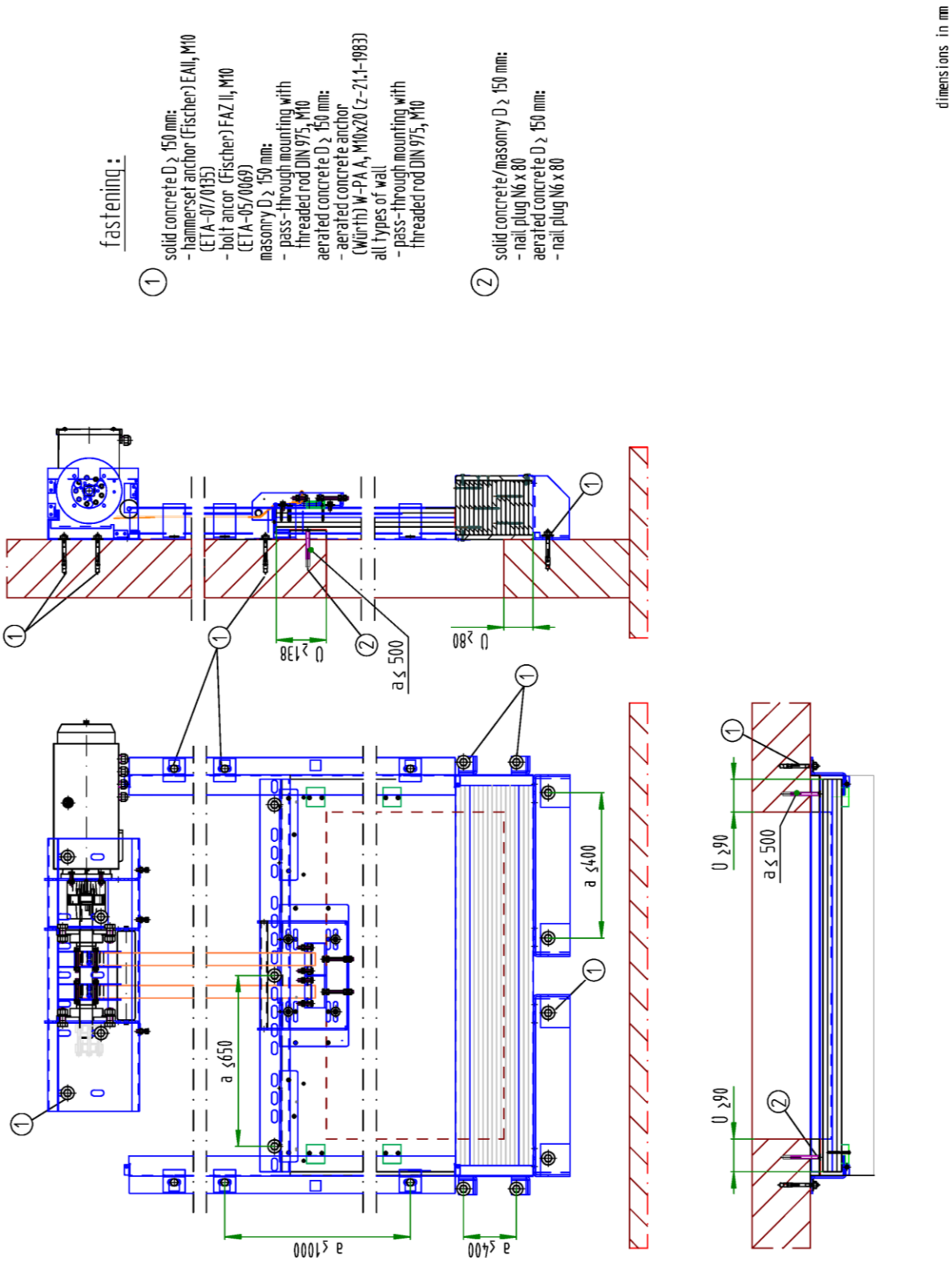

"GCC"	Annex 18
Installation - vertical closing direction	

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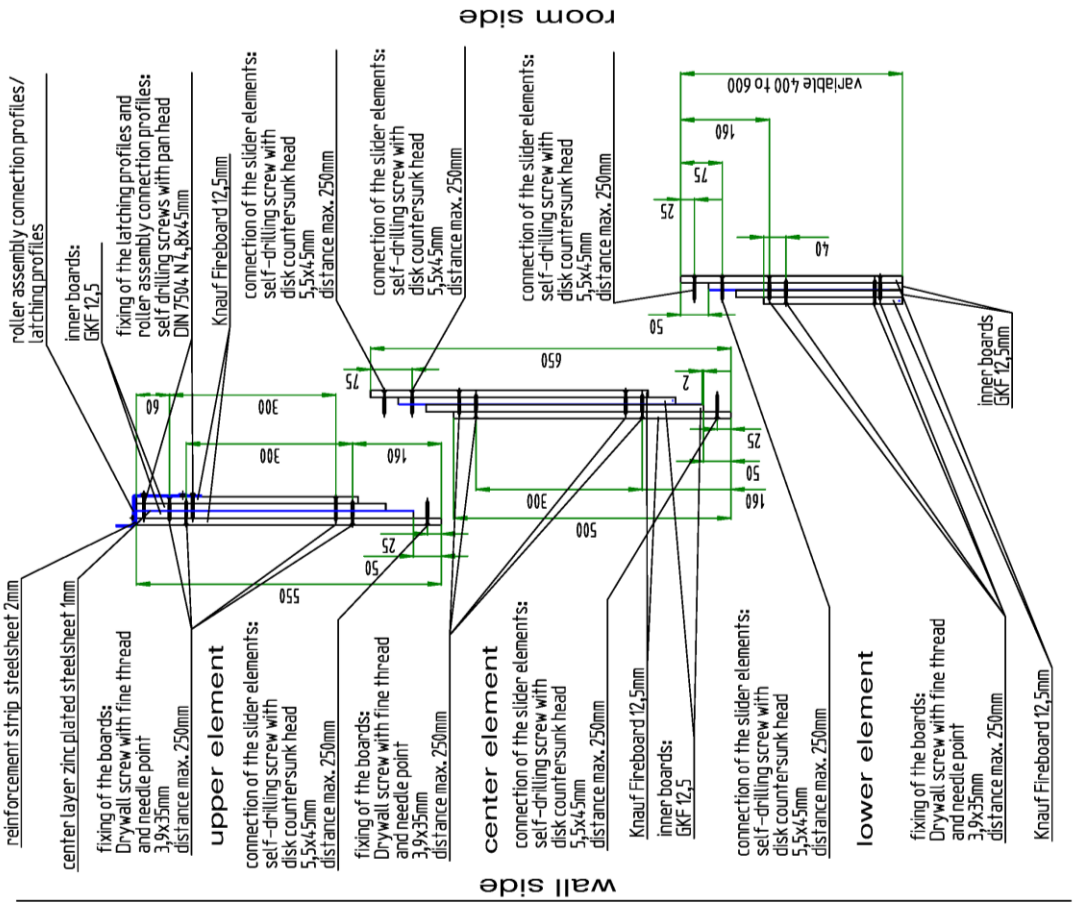

"GCC"	
Structure of the slider leaf - connection of the horizontal elements	Annex 19