Deutsches Institut für Bautechnik

Approval body for construction products and types of construction

Bautechnisches Prüfamt

An institution established by the Federal and Laender Governments

Member of EOTA
www.eota.eu

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

# European Technical Assessment ETA-18/0297 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 | BR 104 EU |
| Product family to which the construction product belongs | Kit for closure systems for conveyor systems |
| Manufacturer | gte Brandschutz GmbH<br>Hamburger Straße 2<br>14532 Stahnsdorf<br>DEUTSCHLAND |
| Manufacturing plant | gte Brandschutz GmbH<br>Hamburger Straße 2<br>14532 Stahnsdorf<br>DEUTSCHLAND |
| This European Technical Assessment contains | 11 pages including 5 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 |

The European Technical Assessment is issued by the Technical Assessment Body in its official language. Translations of this European Technical Assessment in other languages shall fully correspond to the original issued document and shall be identified as such.

Communication of this European Technical Assessment, including transmission by electronic means, shall be in full. However, partial reproduction may only be made with the written consent of the issuing Technical Assessment Body. Any partial reproduction shall be identified as such.

This European Technical Assessment may be withdrawn by the issuing Technical Assessment Body, in particular pursuant to information by the Commission in accordance with Article 25(3) of Regulation (EU) No 305/2011.

## Specific Part

### 1 Technical description of the product

This European Technical Approval applies for the closure system "BR 104 EU" as hanging flap (hinges located at the top) for conveyor systems, hereinafter referred to as "BR 104 EU". The closure system can be designed for installation at floor level or for installation at raised position.

"BR 104 EU" primarily consists of the following components[1]:

- Single-leaf flap leaf

  The approx. 48 mm thick flap leaf consists of an inner framework of steel hollow profiles (30 mm x 20 mm x 2 mm), filled with a 30 mm thick calcium silicate board and both-sided covered with a 9 mm thick calcium silicate board. The sliding leaf may be covered with ≤ 1 mm thick steel plate or wood veneer. The calcium silicate boards are secured with water glass adhesive and steel cramps.

  The flap leaf is fixed to the wall by a L steel section (60 mm x 60 mm x 6 mm) and steel hinges. Wall covering of the flap leaf at the side and at the top amounts to 100 mm.

- Fixed panel with clearance for the conveyor

  The 170 mm thick fixed panel consists of several calcium silicate boards or gypsum boards which are secured with water glass adhesive. The fixed panel is secured to the wall via brackets. The clearance in the fixed panel is configured for the respective conveyor technology. Various intumescent materials are used in the necessary functional gaps.

- Wall frame and locking device of the flap leaf

  The closed flap leaf is enclosed by a wall frame of L steel sections (60 mm x 40 mm x 5 mm). The flap leaf will be locked by two locking devices on the wall frame.

- Seal system

  In the overlap of the flap leaf and adjacent wall on the side of the flap leaf facing the wall strips of an intumescent material are positioned (see annex 3).

  On the lower edge of the flap 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 (see annex 4).

  The sealing segments on the flap leaf consist of several strips of calcium silicate board. The fixed panel in the conveyor technology area consist of several strips of calcium silicate board or gypsum board. Strips of an intumescent material must be positioned in the residual gaps.

- Closing device (closing weight system)

  "BR 104 EU" shall be closed via stored mechanical energy (deadweight of the flap leaf).



[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 Approval, the "BR 104 EU" was assessed as closure to seal necessary openings of trackbound conveyors (see table 2) in internal walls (see table 1).

When the intumescent materials[1] are used, the verified ambient conditions (e.g. the category stated in TR024[2]) are to be observed.

The "BR 104 EU" is not intended for passenger transportation. The normal position of the closure shall be opened or closed.

The "BR 104 EU" 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 "BR 104 EU" 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.



[2] TR024 Characterisation, Aspects of Durability and Factory Production Control for Reactive Materials, Components and Products

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<br>Masonry or solid concrete with an overall density of ≥ 800 kg/m$^3$ and a thickness ≥ 200 mm | E 90<br>EI$_2$ 90<br>EW 60 | min. 500<br>max. 1.500 | min. 500<br>max. 1.500 | min. 0,25<br>max. 2,25 |
| Low-density solid wall<br>Aerated concrete with an overall density of ≥ 450 kg/m$^3$ and a thickness ≥ 200 mm | E 90<br>EI$_2$ 90<br>EW 60 | min. 500<br>max. 1.500 | min. 500<br>max. 1.500 | min. 0,25<br>max. 2,25 |

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

Table 2: Permitted sealing systems for the continuous conveyor technology[6]

| Sealing system for | Fixed panel thickness (gypsum boards) | 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 |
|---|---|---|---|---|
| Roll conveyor | 170 mm | 170 mm<br>between the rollers:<br>2 x 20 mm webs | 124 mm | EI 90 |
| Belt conveyor | 170 mm | 170 mm | 124 mm | EI 90 |
| Chain conveyor | 170 mm | 170 mm | 124 mm | EI 90 |

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

## 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 |

[3] EN 1366-7:2004 Fire resistance tests for service installations - Part 7: Conveyor systems and their closures
[4] EN 1363-1:2012 Fire resistance tests - Part 1: General requirements
[5] EN 13501-2:2016 Fire classification of construction products and building elements - Part 2: Classification using data from fire resistance tests, excluding ventilation services
[6] see Annex 4

Table 3: Reaction to fire of the used materials

| **component** | **material** | **class according to EN 13501-1** |
|---|---|---|
| flap leaf, fixed panel | calzium silicate boards | A1 |
| | gypsum boards | A1 |
| | water glass adhesive | at least class E |
| hinges, guide | steel | A1 |
| seal system | Intumescent material<br>– Promaseal PL | 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.

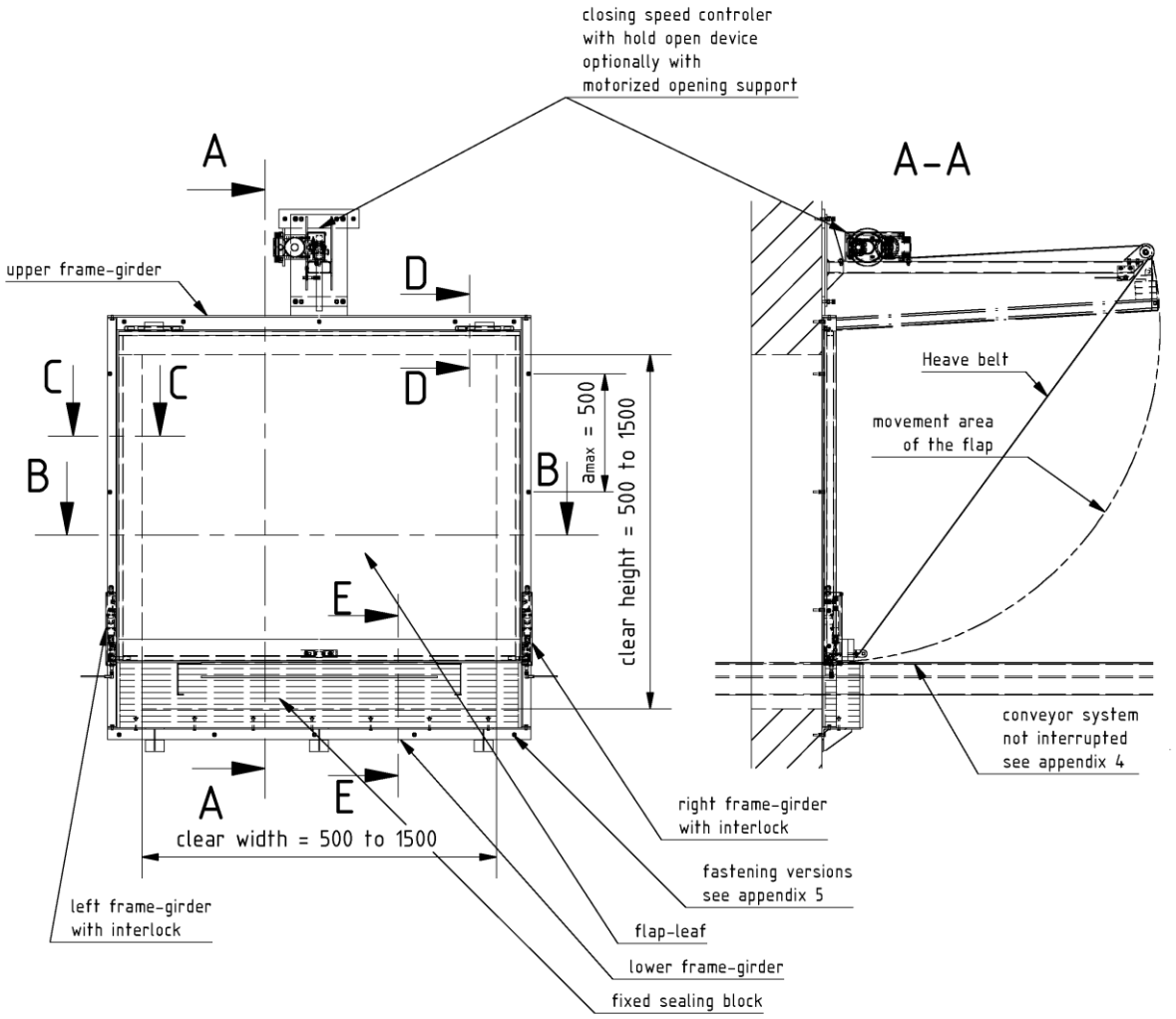
The manufacturer shall provide installation instructions and maintenance instructions for every "BR 104 EU". The maintenance instructions shall clearly indicate which work is to be performed to ensure that the installed closure system continues to perform its task after long-term use.
The manufacturer shall provide instructions on processing, packaging, transport, storage and use, maintenance and repair of the construction product.

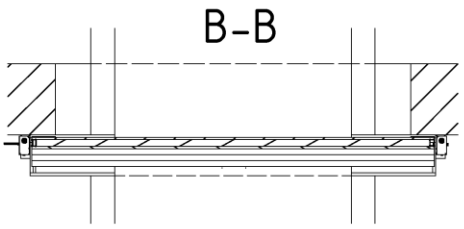
Issued in Berlin on 16 May 2018 by Deutsches Institut für Bautechnik.

Prof. Gunter Hoppe
Head of Department

*beglaubigt:*
Biedermann

Deutsches Institut für Bautechnik DIBt



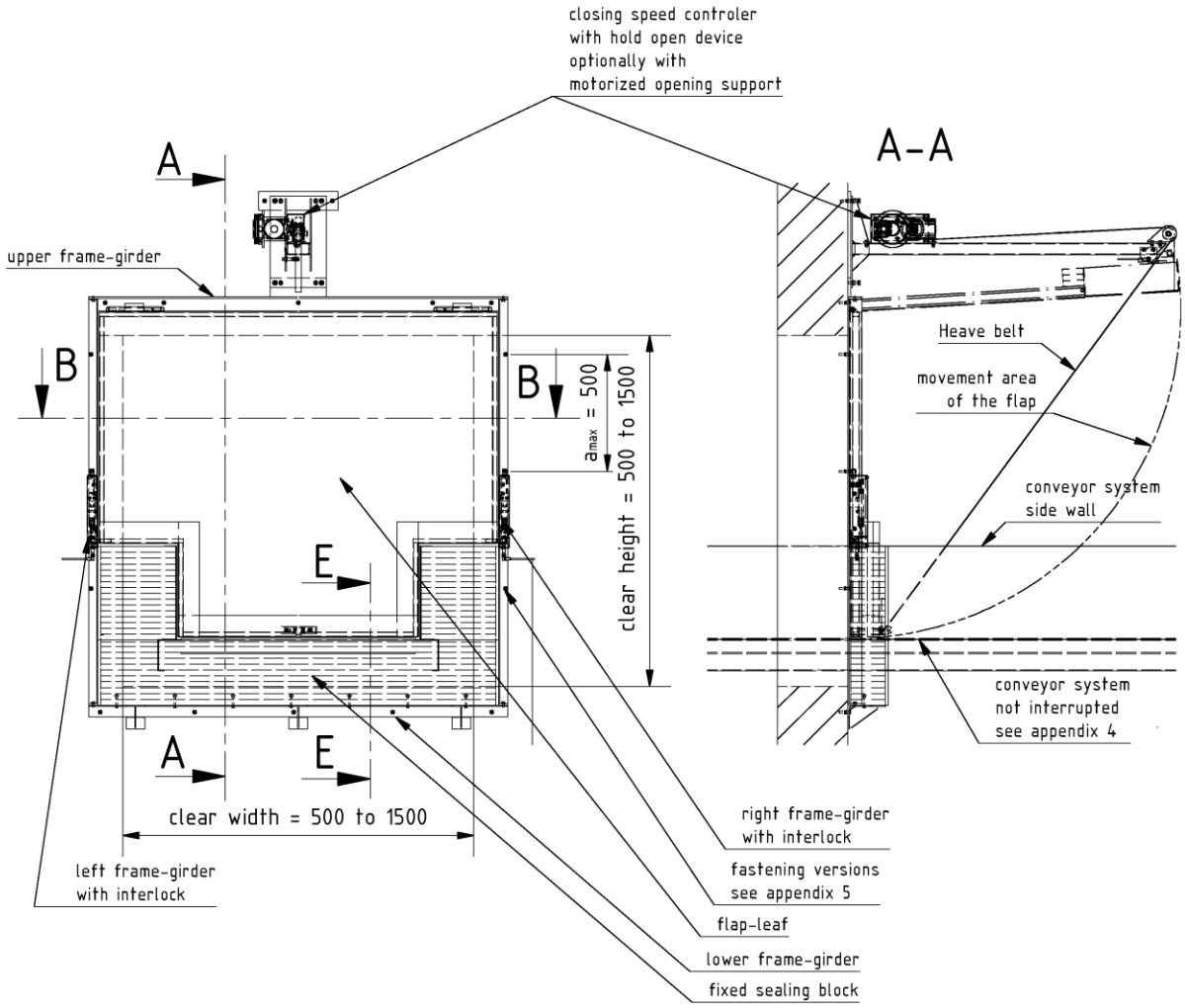

section C-C see appendix 3
section D-D see appendix 3
section E-E see appendix 4

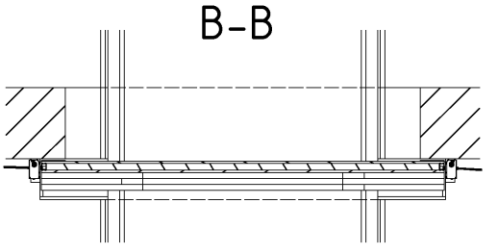
Details see control plan

dimensions in mm (not true to scale)

| | |
|---|---|
| BR 104 EU | Annex 1 |
| Overview<br>Installation in walls<br>Flap for conveyor technique without side wall | |

Deutsches Institut für Bautechnik DIBt




section C-C see appendix 3
section D-D see appendix 3
section E-E see appendix 4

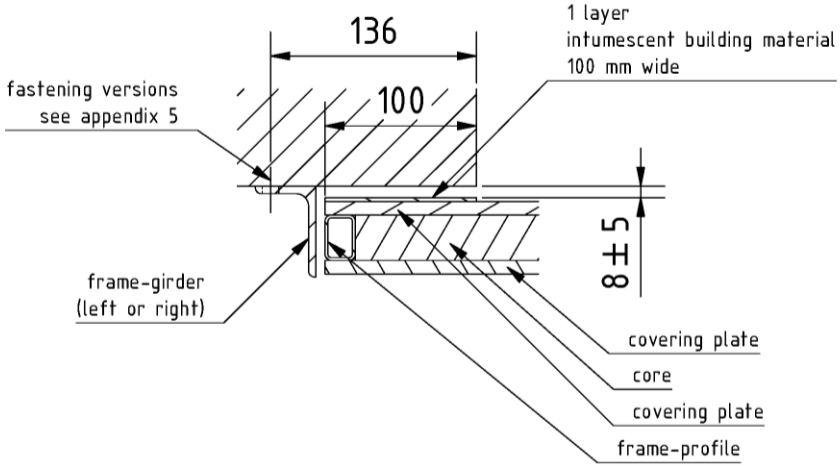
Details see control plan

dimensions in mm (not true to scale)

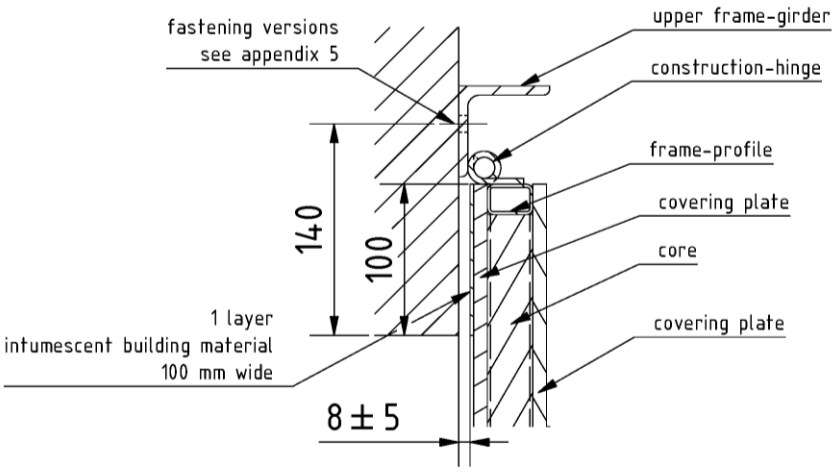
| | |
|---|---|
| BR 104 EU | Annex 2 |
| Overview<br>Installation in walls<br>Flap for conveyor technique with side wall | |

Deutsches Institut für Bautechnik DIBt

## section C-C
from appendix 1 und 2




## section D-D
from appendix 1 und 2




basic flap-leaf structure:
- core: calcium silicate board (30 mm)
- covering plate: calcium silicate board ( 9 mm)
- thickness of the flap-leaf = 48 mm

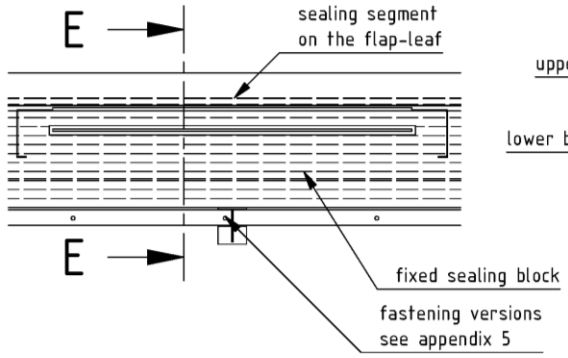
Details see control plan

dimensions in mm (not true to scale)

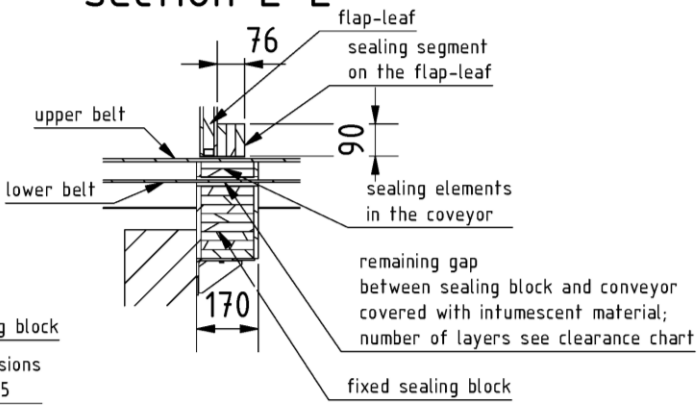
| | |
|---|---|
| BR 104 EU | Annex 3 |
| Details concerning wall sealing<br>- lateral (section C - C)<br>- at the top (section D - D) | |

Deutsches Institut für Bautechnik DIBt

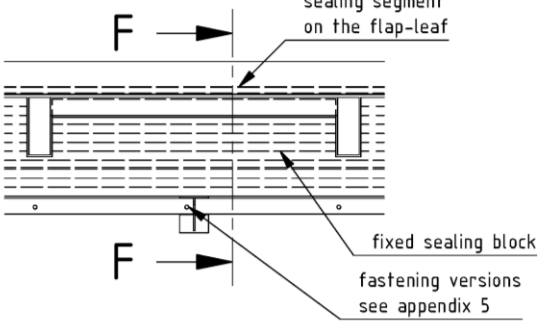
schematic diagram
sealing of belt conveyor



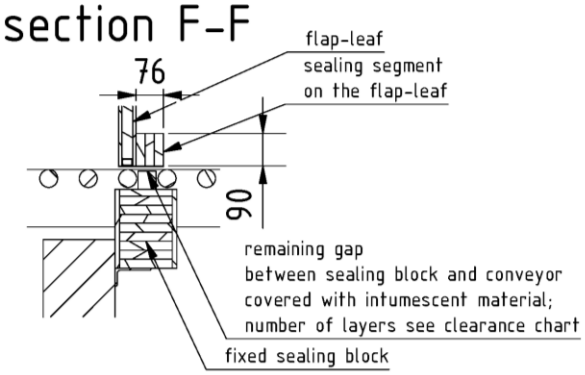

section E-E



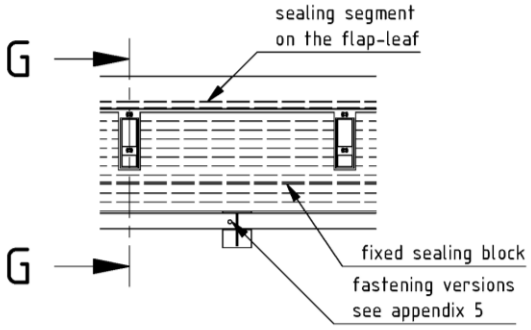

schematic diagram
sealing of roller conveyor



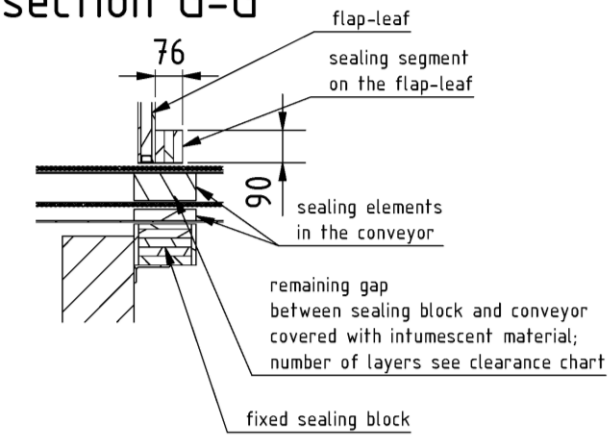

section F-F




schematic diagram
sealing of chain conveyor




section G-G




Details see control plan

| clearance for remaining gaps between the continuous parts of the conveyor and the closure (application of intumescent material PROMASEAL-PL; thickness per layer: 2,5 mm) | |
|---|---|
| remaining gap (mm) | minimum number of layers |
| 10 to 15 | 1 layer |
| 16 to 30 | 2 layers |
| 31 to 45 | 3 layers |
| Attention: the remaining gaps should be implemented as small as possible | |

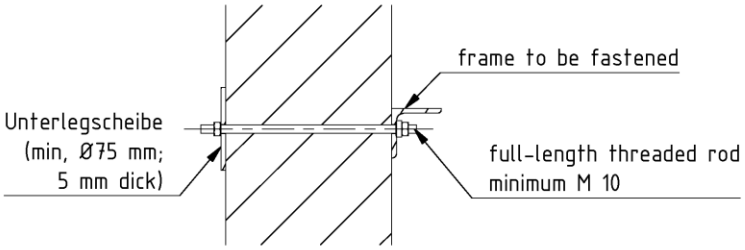
dimensions in mm (not true to scale)

| BR 104 EU | Annex 4 |
|---|---|
| Details concerning sealing of the conveyor technique (belt-, roller- and chain conveyor) | |

Deutsches Institut für Bautechnik DIBt

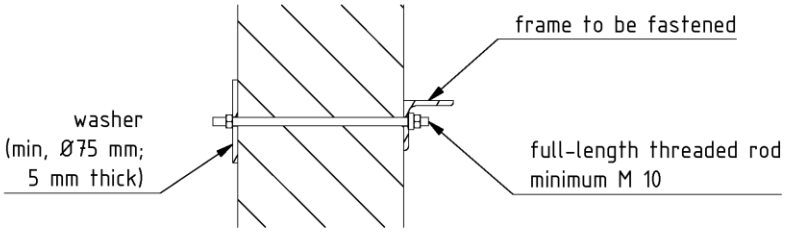
## manner of fastening 1

concrete wall, min. 175 mm thick
masonry (solid walls with high density), min. 175 mm thick
full-length threaded rod



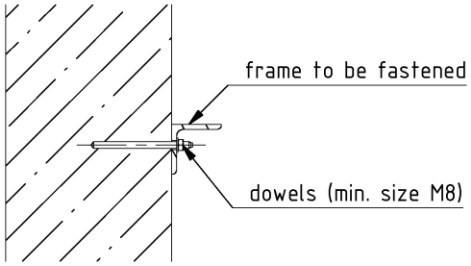

## manner of fastening 2

masonry (solid walls with low density), min. 175 mm thick
full-length threaded rod




## manner of fastening 3

concrete wall, min. 175 mm thick
metal dowel with ETA
considering TR020




Details see control plan

dimensions in mm (not true to scale)

| | |
|---|---|
| BR 104 EU | Annex 5 |
| Kind of fastening | |