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OPERATION AND MAINTENANCE MANUAL

mcr TLB ECO GATES

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23.12.2014

CUSTOMERS:

The ASSA ABLOY Mercor Doors sp. z o.o. continues the business of Mercor S.A. in the fire partition sector. Since December 2013, the company has been a part of ASSA ABLOY, the world's leader in door security solutions.

With our qualified staff and technical facilities we can guarantee professional customer service from preparing quotations to product manufacturing, supply and installation.

The range of ASSA ABLOY Mercor Doors sp. z o.o. includes:

- steel doors;
- fire-rated wooden doors;
- fire-rated roller gates;
- sectional doors and walls;
- fire-rated curtains.

TABLE OF CONTENTS

OPERATION AND MAINTENANCE MANUAL

Manufacturer: ASSA ABLOY Mercor Doors sp. z o.o.,
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Technical Approval: ITB AT-15-9385/2014
Certificate of Conformity: CZ ITB – 2339/W
National Declaration of Conformity: 33_KDZ

The **mcr TLB ECO** steel fire sliding gates are intended to be used as closures of openings made in the building partitions of buildings and structures which are required to comply with the EI_1 60 or EI_2 60 fire resistance class.

1. SCOPE AND CONDITIONS OF USE

The gates can be used in two positions: as permanently open or closed. The permanently open gates are held in this position by the Electromagnetic Gate Closing Speed Regulators (ERPZ), interfaced with the structure's fire protection system. In the case of fire, the EPRZ electromagnet is automatically powered off and the gate is closed automatically by its counterweight. Once the cause of the fire alarm signal has been removed, the normal operation mode of the control unit (mcr RS-06) is restored and the gate must be moved manually to the open position. **When opening the gate, the leaf speed cannot exceed 0.3 m/s. No defect (i.e. damage to the console, the stop, etc.) caused by opening the gate too fast shall be covered by the guarantee.**
The permanently closed gates act as closures of openings in the building partitions of specific fire resistance classes. The gates are opened only to allow passage of people or vehicles.
The mcr TLB ECO fire gates must be installed according to this manual.

2. GUIDELINES FOR INSTALLATION PREPARATION AND EXECUTION

- Prior to installation of the product verify that the product delivery items are complete (in quantity and quality) against the shipping list attached with the delivery.
- When unloading, keeping and storing the product delivery items, follow the necessary precautions.
- ASSA ABLOY Mercor Doors sp. z o.o. hereby declares that it shall not be liable for any modifications of the product made by the customer.
- The manufacturer has the right to modify the product and its manuals without prior notice.

3. FIRE AND OCCUPATIONAL HEALTH AND SAFETY REGULATIONS

- Install, operate and repair the fire gates according to the general occupational safety regulations.
- All work that is particularly hazardous to human health or life shall be carried out by a minimum of two persons.
- All personnel who works at height shall wear safety harnesses with fall arresters.
- Connect and operate all electrical equipment according to the regulations and operating manuals in force. The electrical equipment may only be connected by qualified electricians.
- Fire protection equipment must be installed near the installation site.
- Never use damaged or defective equipment and tools.
- Detailed instructions concerning health and safety at work shall be provided to the worker who must acknowledge the receipt thereof.

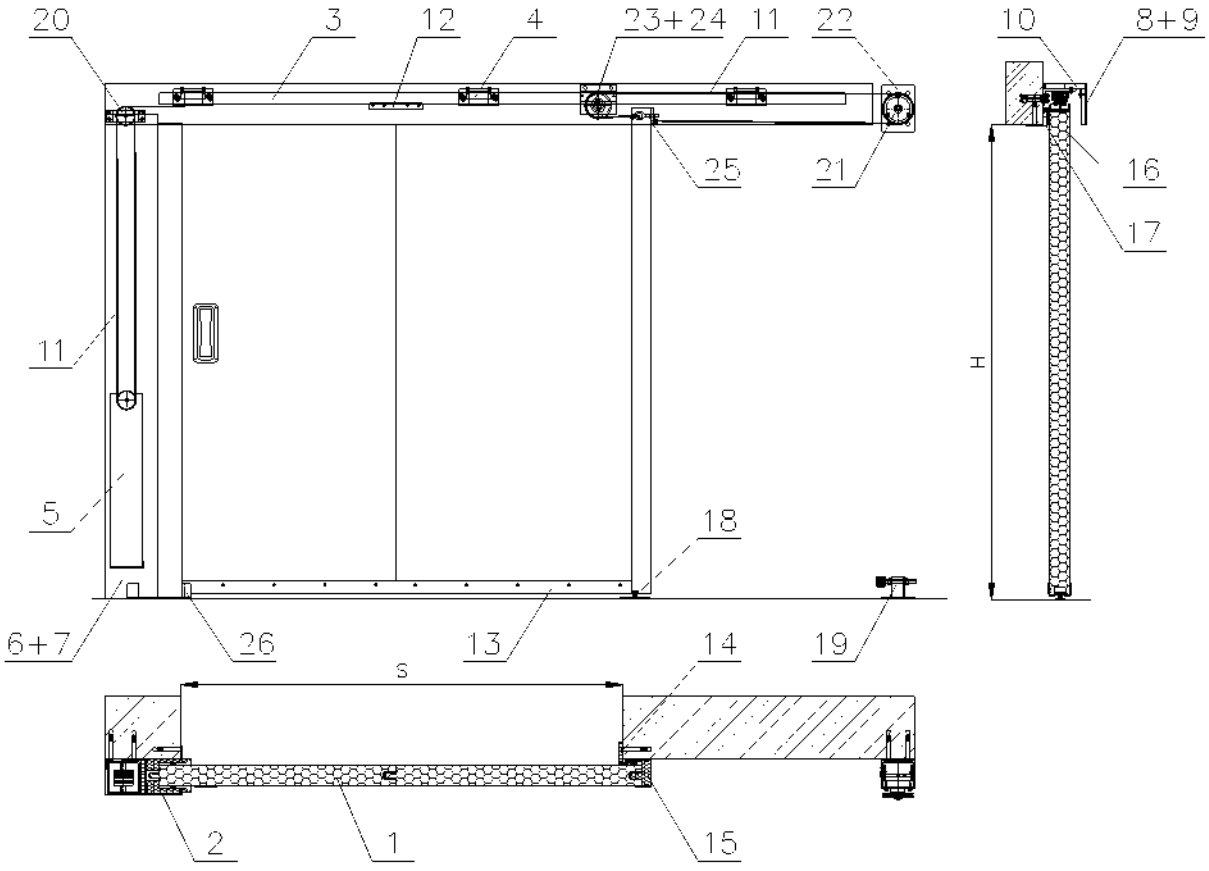
CAUTION:
Exposure of paint coated surfaces covered a protective film to sun and moisture may damage the paint coat permanently. Remove the protective film as soon as the gate has been installed.

4. GATE INSTALLATION

The gates are delivered in complete assembly kits. Each kit includes (Fig. 1):

1 Panels
2 Stop
3 Track
4 Track assembly supports
5 Counterweight
6 Counterweight guard
7 Counterweight guard angle
8 Track guard
9 Track guard fasteners
10 Track guard installation angle
11 Steel cable
12 Top panel links
13 Bottom panel links
14 Wall vertical labyrinth
15 Gate vertical labyrinth
16 Wall horizontal labyrinth
17 Gate horizontal labyrinth
18 Guiding roller
19 Rubber fender
20 Cable guide console
21 Electromagnetic Gate Closing Speed Regulator [ERPZ]
22 ERPZ console
23 ERPZ return console
24 ERPZ console z-bar
25 ERPZ cable fastening plate
26 Gate stop foot
27 Intumescent gaskets

Fig. 1



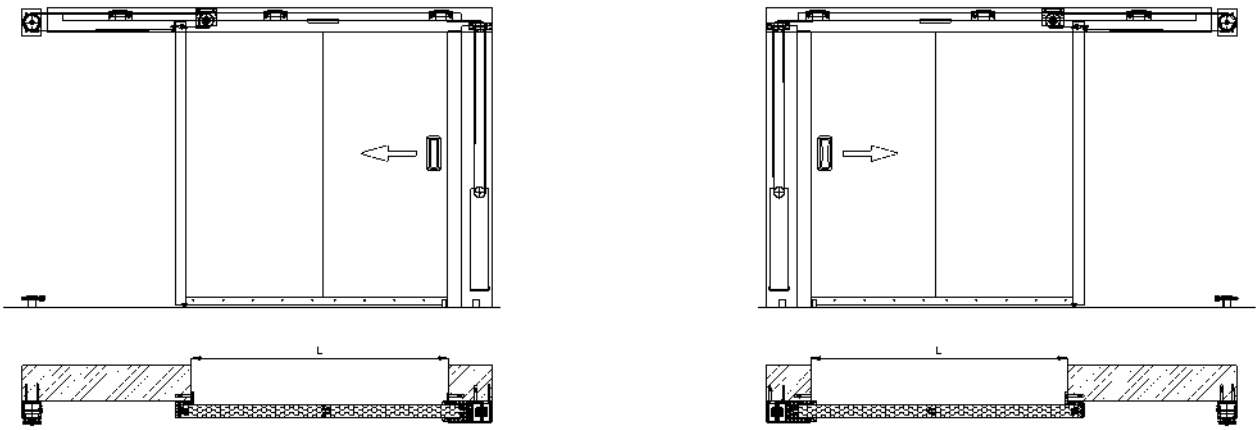
4.1. First steps

Unpack and identify the parts to be assembled. Verify that the dimensions of the delivered product items match the opening dimensions:

- Height of panels = opening clear height + 48 mm
- Track length = opening clear width x 2
- Gate stop height = opening clear height

Also verify the gate opening direction against Fig. 2.

Fig. 2



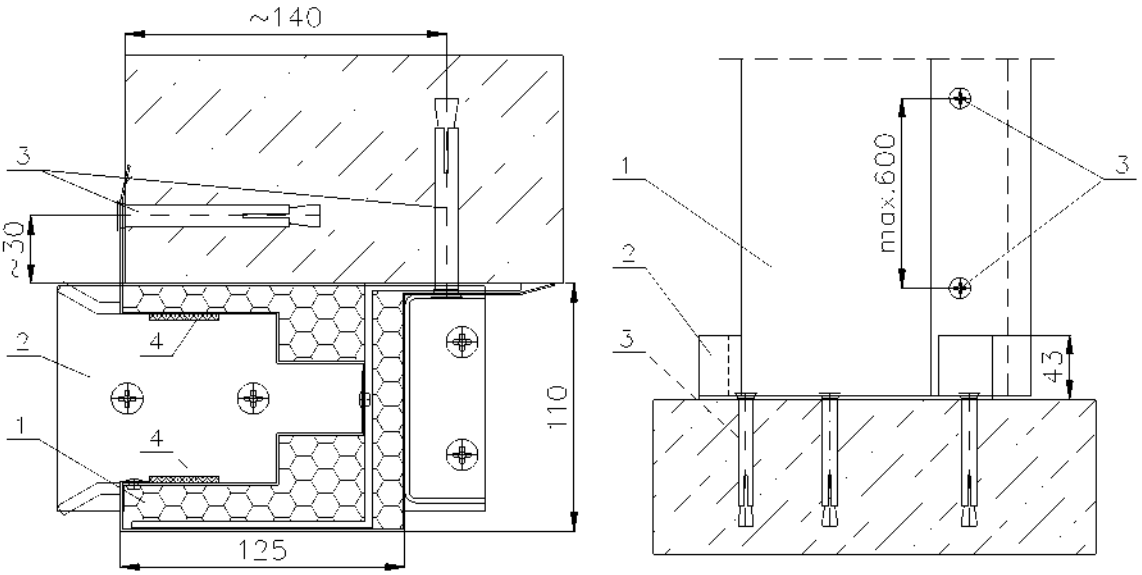
a) Gate opened to the left

b) Gate opened to the right

4.2. Gate stop installation

Locate the stop item as shown in Fig. 3. If the gate will open to the left, locate the stop at the right hand side of the opening; if the gate will open to the left, locate the stop at the right hand side of the opening. Place the gate stop foot on the floor under the stop.
Fasten the gate stop to the wall with steel anchors. The gate stop must be aligned vertically. Next, fasten the gate stop foot to the floor.
CAUTION: Before bonding the intumescent gasket, heat up the gate stop surface under the gasket to room temperature (30°C max.).

Fig. 3



1 - Gate stop; 2 - Gate stop foot; 3 - Steel anchor; 4 - 2x20mm intumescent gasket

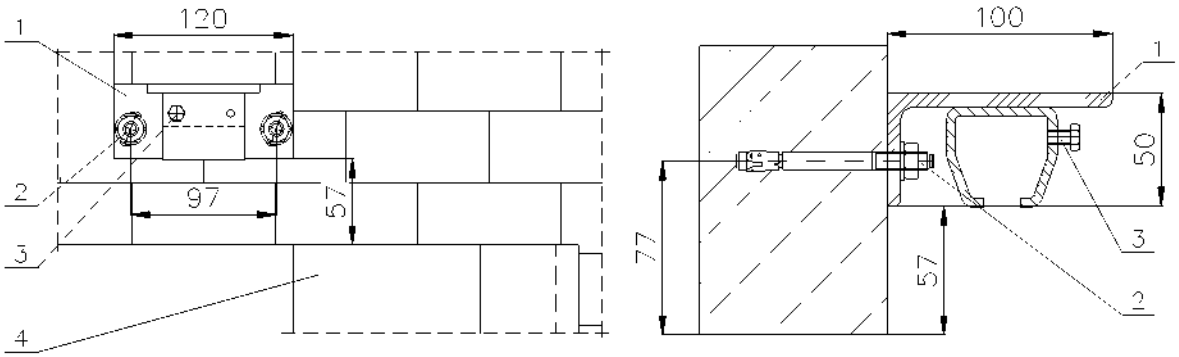
4.3. Track installation

Start by installing the track assembly supports (1) on the lintel with the M10 stud fasteners (2). The maximum spacing of the track assembly supports is 1000 mm.

If the gate track is made of several parts, join the parts at the track assembly supports (1).

The track assembly supports must be level and suspended in a straight line. Adjust the track assembly supports at their crescent holes through which they are fastened to the lintel.

Fig. 4



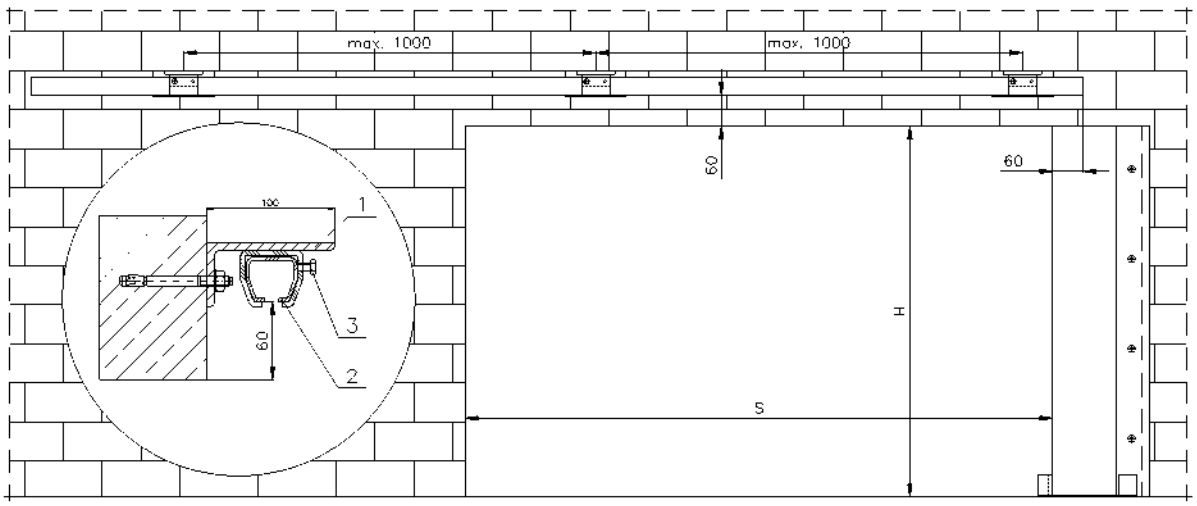
1 - Track assembly support; 2 - M10 stud fastener; 5 - Set screw; 4 - Gate stop

Insert and slide the track rail all the way into the track assembly supports. Next, clamp down the track rail with the set screw. Verify the level and straight line of the track.

NOTE 1: The track must be fastened to the lintel or ceiling with the steel studs intended for the given wall type and with a high load capacity rating. If regular studs are used, e.g. intended for door frame installation, the gate MAY FALL DOWN!

NOTE 2: Greasing the running edges of the gate track may cause dust to accumulate on the track, increasing the rolling resistance of the gate carriage trucks and improper operation of the gate. Those defects are not covered by the warranty.

Fig. 5

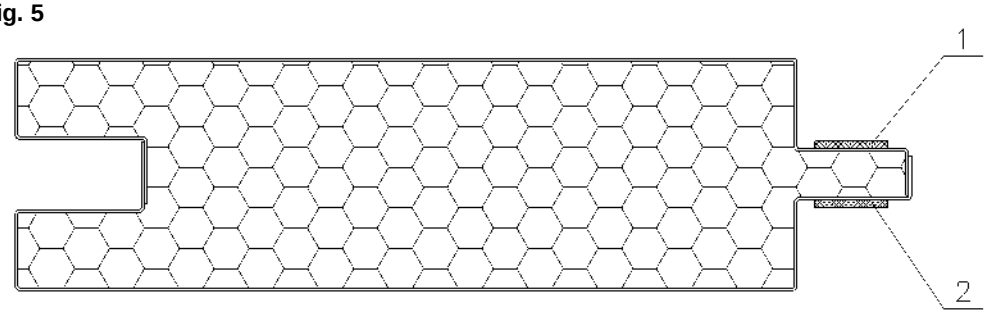


1 - Track assembly support; 2 - Track rail; 3 - Set screw

4.4. Suspending the gate panels on the gate track

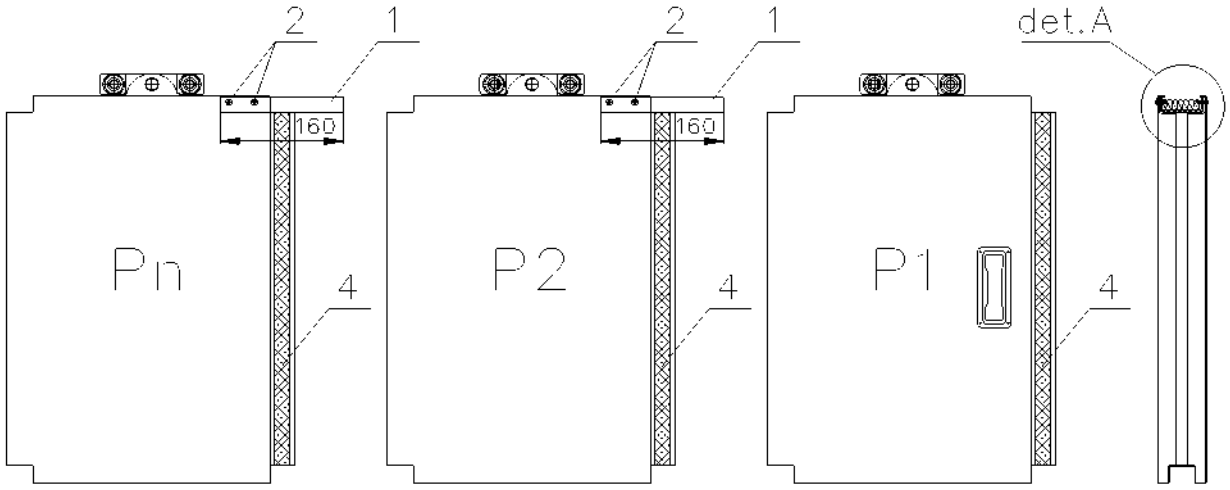
Bond two 20x2 mm intumescent gaskets (1 & 2) to the feather of each gate panel.

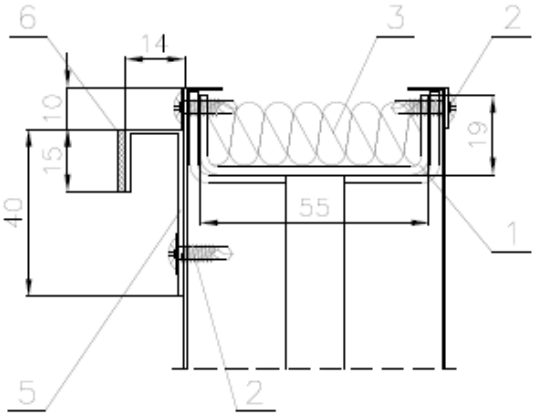
Fig. 5



1 - Palusol 20x2 mm intumescent gasket; 2 - 20x2mm carbon gasket

Fig. 6





1 - Top panel link; 2 - Screws or rivets; 3 - Mineral wool panel; 4 - 20x2 mm intumescent gaskets; 5 - Gate horizontal labyrinth; 6 - 15x2 mm intumescent gasket P1 - First gate panel; P2 - Second and following gate panels; Pn - Last gate panel

Install the gate horizontal labyrinth (5) along the entire width of each gate panel. Fasten with metal sheet tap screws, Ø4.2x20 mm or steel rivets, Ø4.0 mm, spaced at 600 mm max. in either case. Install the gate labyrinth from the gate inner side and on the lintel side.

Apply the 15x2 mm intumescent gasket (6) to the labyrinth.

Screw the top panel link (1) to the second panel and the following ones.

Each link is 160 mm long and shaped as 55x19 mm channels. Fasten the top panel links to the panels with metal sheet tap thumb screws, Ø4.2x20 mm or steel rivets, Ø4.0 mm.

Fasten the 3 mm steel cord with two clamps to the first panel carriage truck. Fill the top section of all panels with the ca. 15 mm thick mineral wool panels (3).

Install the panels finished as above one by one on the gate track. Fasten each panel to the preceding one with the top panel link and sheet metal tap screws or steel rivets applied from the external gate side.

Install all panels in the same way. Before linking the last panel with the preceding one, install the guiding roller on the floor and clear from the gate clearance.

Fig. 7

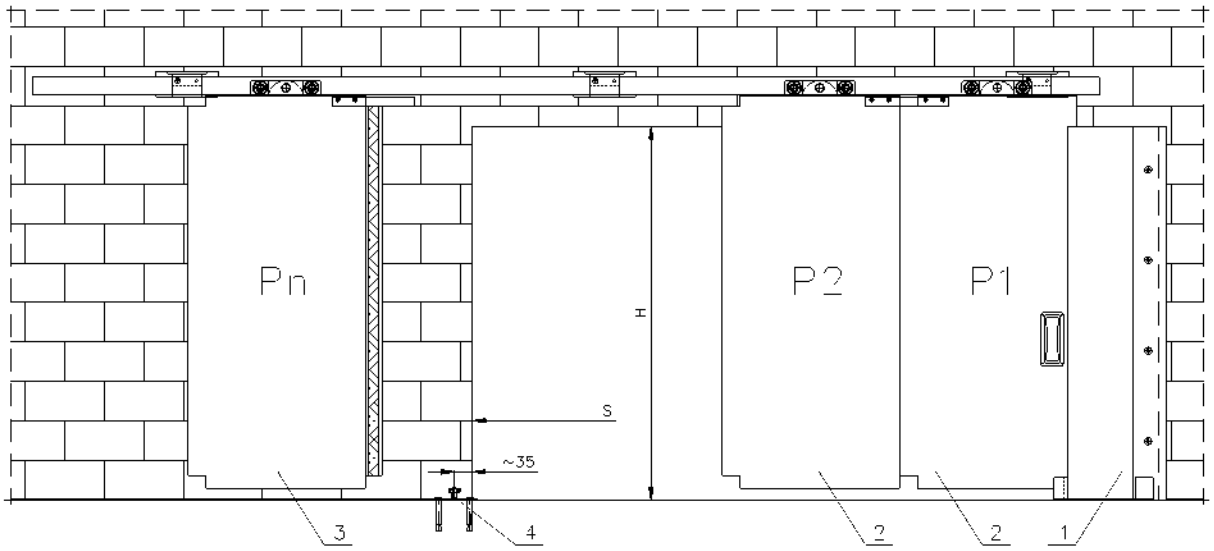
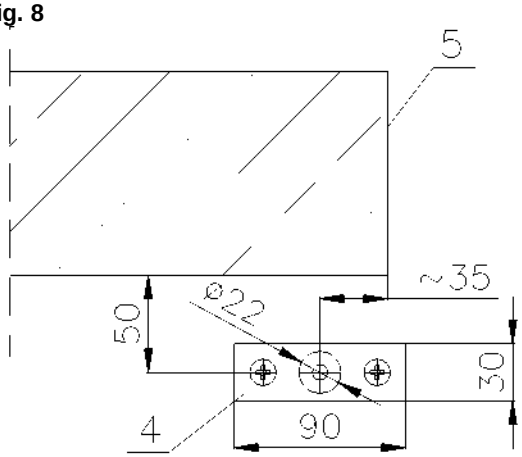


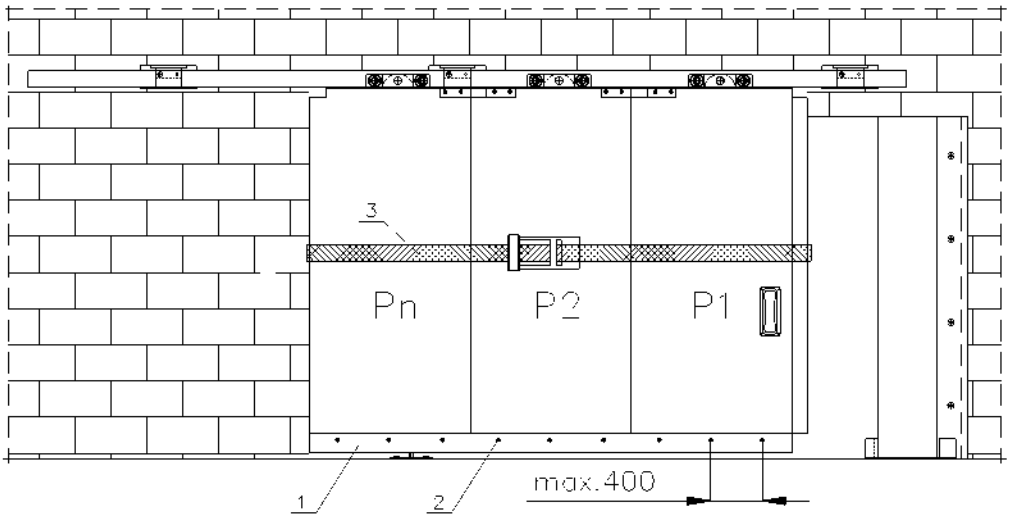
Fig. 8



1 - Gate stop; 2 - Gate panels on the track; 3 - Last panel, before linking;
4 - Guiding roller; 5 - Opening edge
P1 - First gate panel; P2 - Second and following gate panels;
Pn - Last gate panel

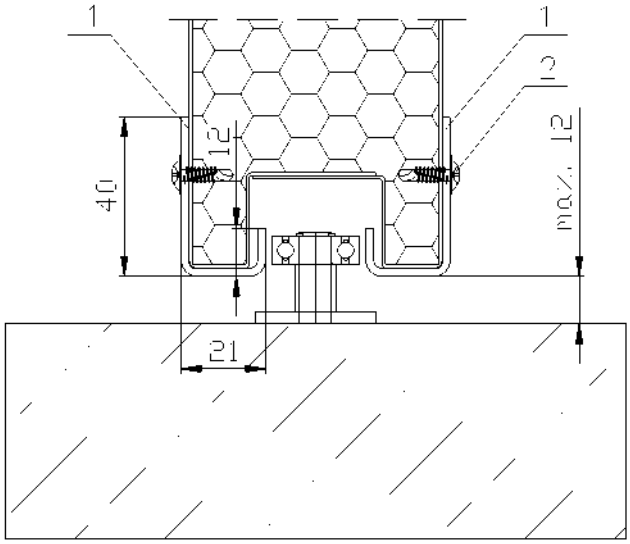
With the guiding roller installed, link and fasten the last gate panel, then tie up and tighten all panels together with a strap and ratchet and fasten the bottom panel links. Fasten the bottom panel links with sheet metal tap screws, Ø4.2x20 mm or steel rivets, Ø4.0 mm, spaced 400 mm max. in either case.

Fig. 9



1 - Bottom panel link; 2 - Screws/rivets; 3 - Strap with ratchet

Fig. 10

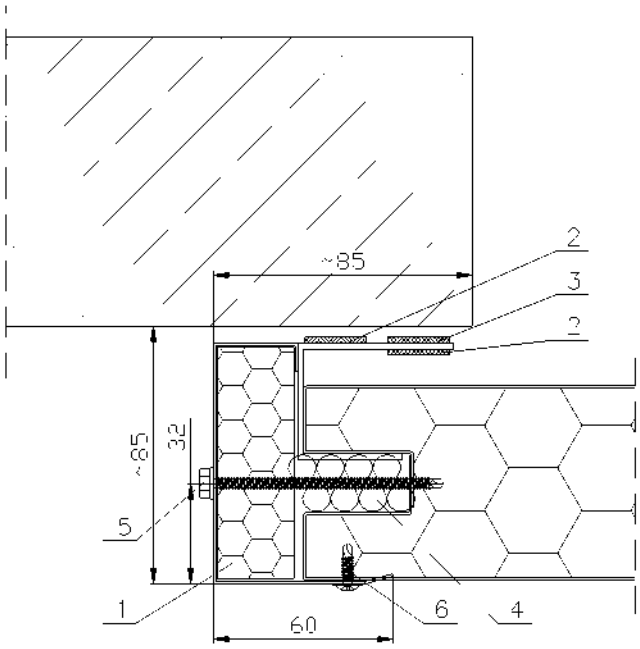


1 - Bottom panel link; 2 - Screws/rivets

4.5. Labyrinth installation

Before fastening the gate vertical labyrinth, apply the intumescent gaskets: 2 strips of the carbon gasket (2) and 1 Palusol intumescent gasket (3). Fill in the last panel feather with the mineral wool (4). Locate the labyrinth faced with the panel and fasten the detail with sheet metal tap screws, Ø6.3x75 mm and Ø4.2x20 mm, spaced 600 mm max.

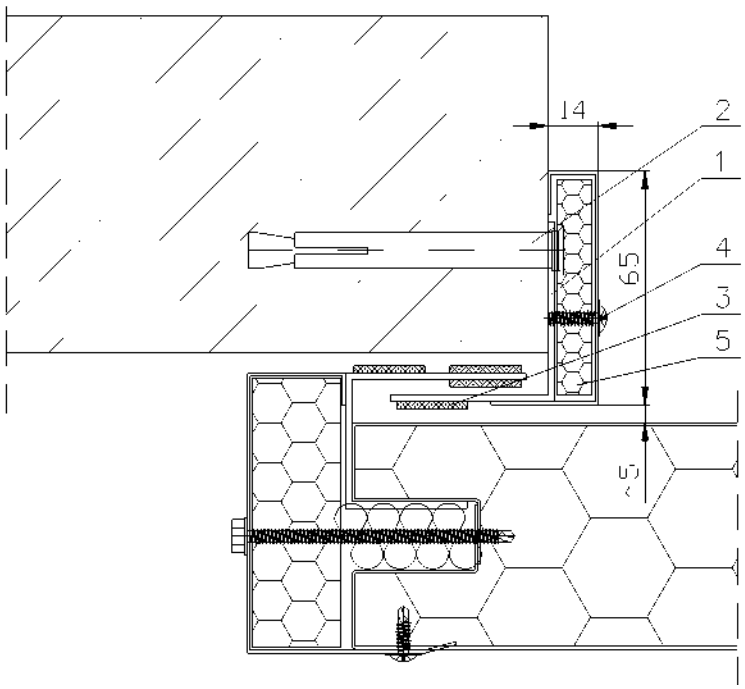
Fig. 11



1 - Gate vertical labyrinth; 2 - 20x2 mm carbon gasket; 3 - Palusol 20x2 mm intumescent gasket; 4 - Mineral wool; 5 - Ø6.3x75 mm, sheet metal tap screw; 6 - Ø4.2x20 mm sheet metal tap screw

Next, install the wall vertical labyrinth. Start by applying the Palusol 20x2 mm intumescent gasket to the labyrinth angle. Fasten the labyrinth angle with the gasket to the wall with Ø10 mm steel anchors at the required distance from the gate leaf. Fasten the wall labyrinth guard to the angle with sheet metal tap screws, Ø4.2x20 mm spaced 600 mm max.

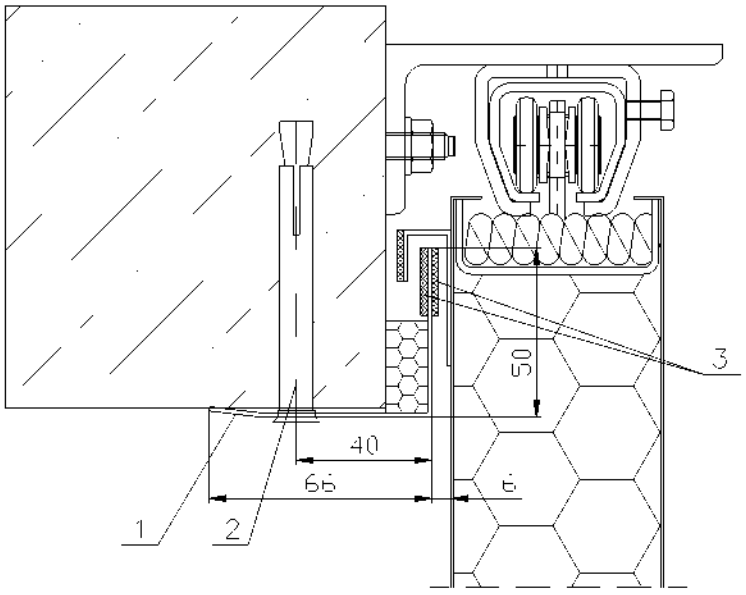
Fig. 12



1 - Wall labyrinth angle; 2 - Steel anchor; 3 - Palusol 20x2 mm intumescent gasket; 4 - Ø4.2x20 mm sheet metal tap screw; 5 - Wall labyrinth guard

The wall horizontal labyrinth is the last one to be installed. First, apply two strips of the Palusol 20x2 mm intumescent gasket to the labyrinth, then install the labyrinth on the lintel with Ø10 mm steel anchors spaced 600 mm max. and at the required distance from the gate leaf.

Fig. 13

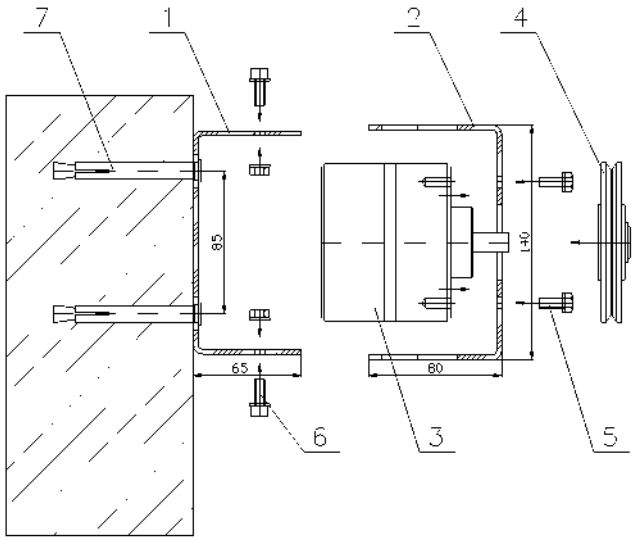


1 - Wall horizontal labyrinth; 2 - Steel anchor; 3 - Palusol 20x2 mm intumescent gasket

4.6. Installation of the Electromagnetic Gate Closing Speed Regulator [ERPZ] and the counterweight

To install the ERPZ on the gate, fasten the ERPZ to one part of the console, fasten the other console half to the wall and bolt both parts together. The ERPZ is fastened to the console with three M6 Allen socket head bolts. Install the other console part to the wall with Ø10 mm steel anchors. The console parts are fastened together with M6 bolts and nuts.

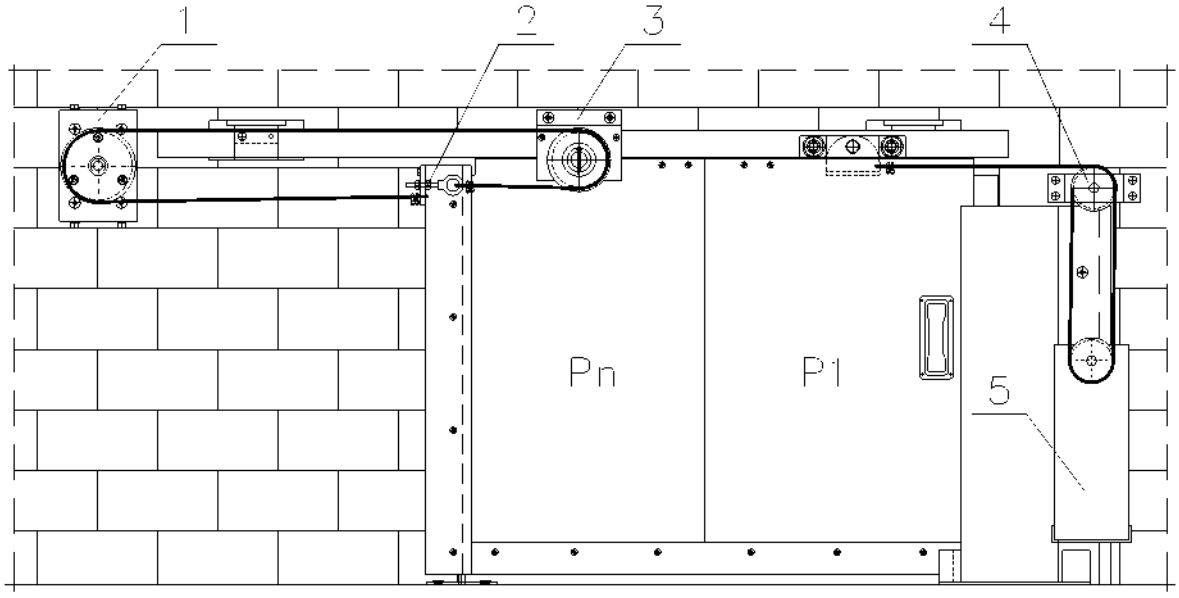
Fig. 14



1 - Console part, fastened to the wall; 2 - Console part, fastened to the ERPZ; 3 - ERPZ; 4 - ERPZ bearing wheel; 5 - M6x16 mm hex head bolts; 6 - M6x16mm Allen socket head bolts and M6 nuts; 7 - Steel anchors

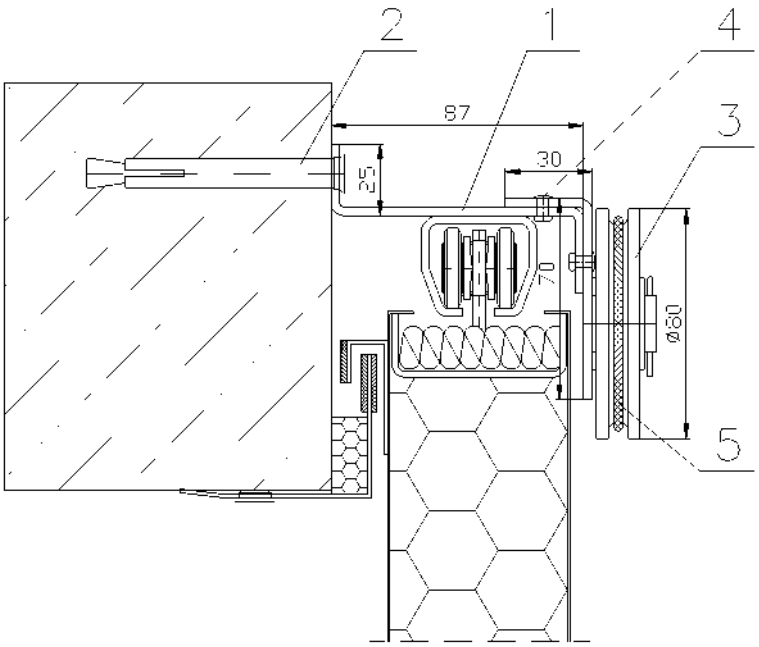
With the ERPZ console installed, fasten the ERPZ return console (Fig. 16) over the gate track at the last gate panel, and fasten the ERPZ cable fastening plate to the gate vertical labyrinth (Fig. 17) with two sheet metal tap screws, Ø6.3x75 mm. Feed the steel cable start tip through the ERPZ console and secure it with the supplied clamps. Feed the steel cable through the ERPZ return console and the ERPZ console at the gate track end. Fasten the other steel cable end to the M6 eye bolt with clamps. Next, screw in the M6 eye bolt to the ERPZ cable console with the cable tensioned. With the steel cable tensioned, secure the M6 eye bolt with a counternut.

Fig. 15



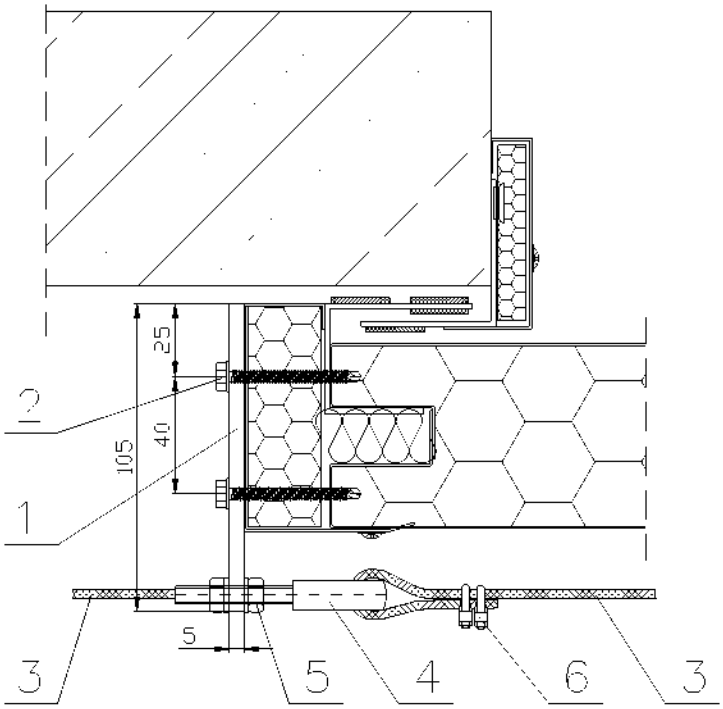
1 - Console with the ERPZ installed; 2 - ERPZ cable flat; 3 - ERPZ return console; 4 - Counterweight cable guide console; 5 - Counterweight; P1 - First gate panel; Pn - Last gate panel

Fig. 16



1 - ERPZ return console z-bar; 2 - Steel anchors; 3 - ERPZ return console; 4 Ø4 mm steel rivets; 5 - Steel cable, dia. 3 mm

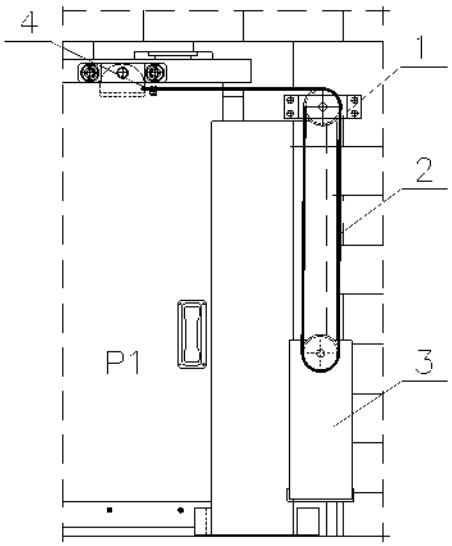
Fig. 17



1 - Cable fastening plate; 2 - Ø6.3x75 mm tap screw; 3 - Steel cable, dia. 3 mm; 4 - Eye bolt; 5 - M6 nuts and washers; 6 - Cable clamp

Feed the steel cable, fastened in prior to the carriage truck of the first panel, through the cable guide console (Fig. 18) and over the counterweight roller and fasten the cable to the cable guide console fastening bolt. If the gate width is significantly larger than the gate height, feed the steel cable over two or three rollers of the console and the counterweight.

Fig. 18



1 - Cable guide console; 2 - Steel cable; 3 - Counterweight; 4 - Steel cable clamps

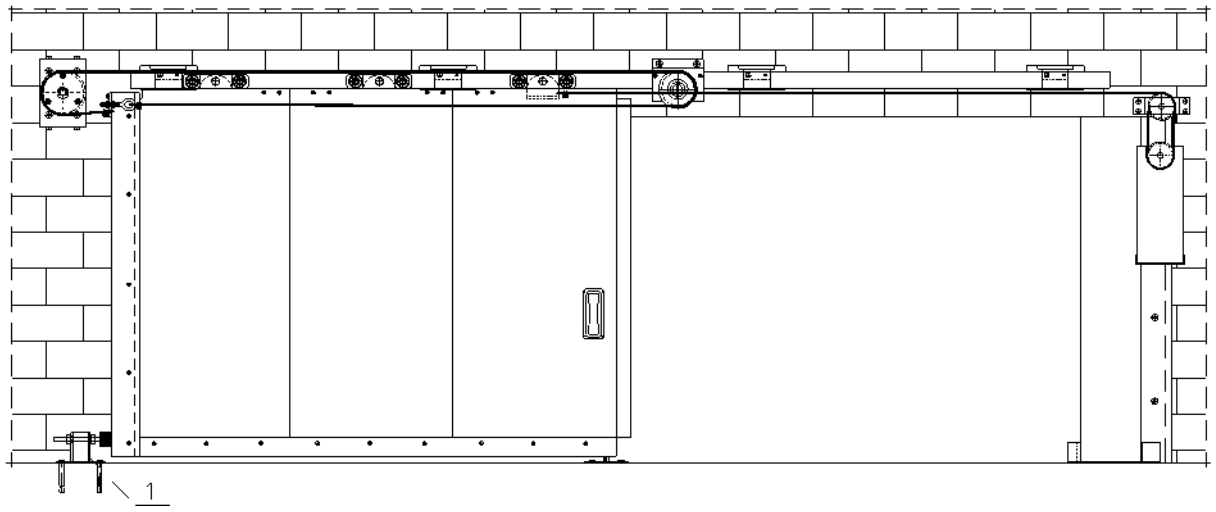
The cable length shall be short enough so that the counterweight does not rest on the floor with the gate closed. Balance the counterweight so that the gate runs smoothly and the gate opening force does not exceed 250 N (ca. 25 kg).

Adjust the gate closing speed by turning the ERPZ lid. The automatic gate leaf travel shall be between 0.08 m/s and 0.2 m/s. The gate leaf shall run smoothly, with a constant speed and without shudder or seizing.

4.7. Rubber fender installation

Open the gate leaf to expose the required clear passage width and place the rubber fender console with the fender installed. Fasten the rubber fender console with Ø10 mm steel anchors. Adjust the rubber fender as necessary.

Fig. 20

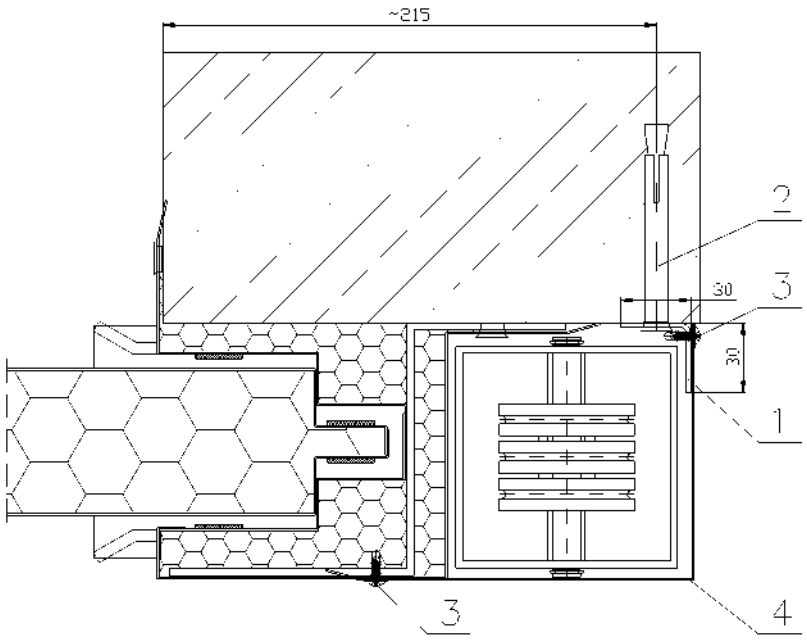


1 - Rubber fender console

4.8. Installation of the counterweight and track guards

Fasten the counterweight guard (Fig. 21). Prior to doing that, fasten the 30x30 mm steel angle to the wall with Ø10 mm steel anchors. Mount the counterweight guard to the angle with sheet metal tap screws, Ø4.2x20 mm.

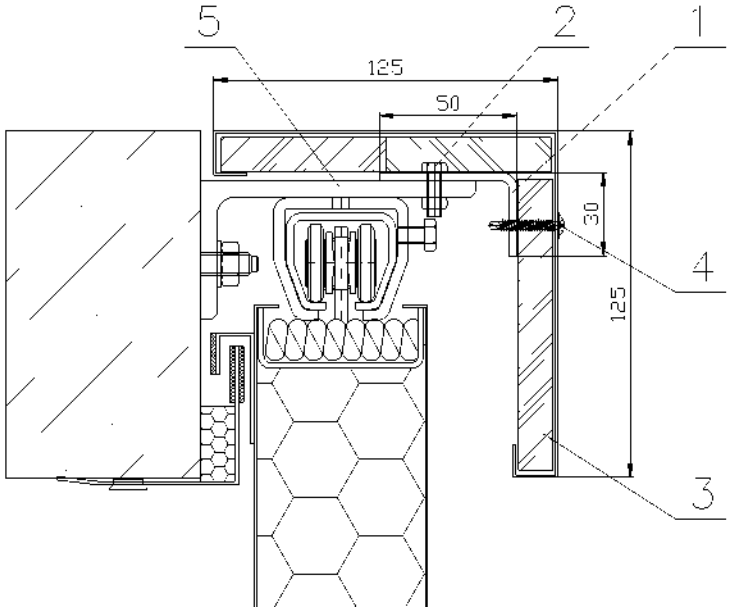
Fig. 21



1 - Counterweight guard angle; 2 - Steel anchor; 3 - 4.2x20 mm tap screw; 4 - Counterweight guard

Before installing the track guard, fasten the track guard installation angles to the track supports with M5x16 mm bolts and M6 nuts. Fasten the track guard to the angles filled with drywall panel strips. Use sheet metal tap screws, Ø4.2x25 mm.

Fig. 22



1 - Track guard installation angle; 2 - M6x16 bolt and M6 nut; 3 - Track guard; 4 - Ø4.2x25 mm tap screw

4.9. Finish

Install the pulls and verify the gate running again. Remove all protective film.
If the gate is installed within a wall structure, its gears, the counterweight and the track must be accessible through suitable inspection openings in the wall.

Exposure of paint coated surfaces covered a protective film to sun and moisture may damage the paint coat permanently. Remove the protective film as soon as the gate has been installed.

CAUTION: NEVER install or place any objects within the gate running path that may prevent or hinder free closing. This applies to e.g. recess seal brushes behind which the gate leaf is concealed when open. The brushes must never touch the running leaf. No problem caused by failure to comply with this caution shall be covered by the warranty.

6. Warranty terms and conditions

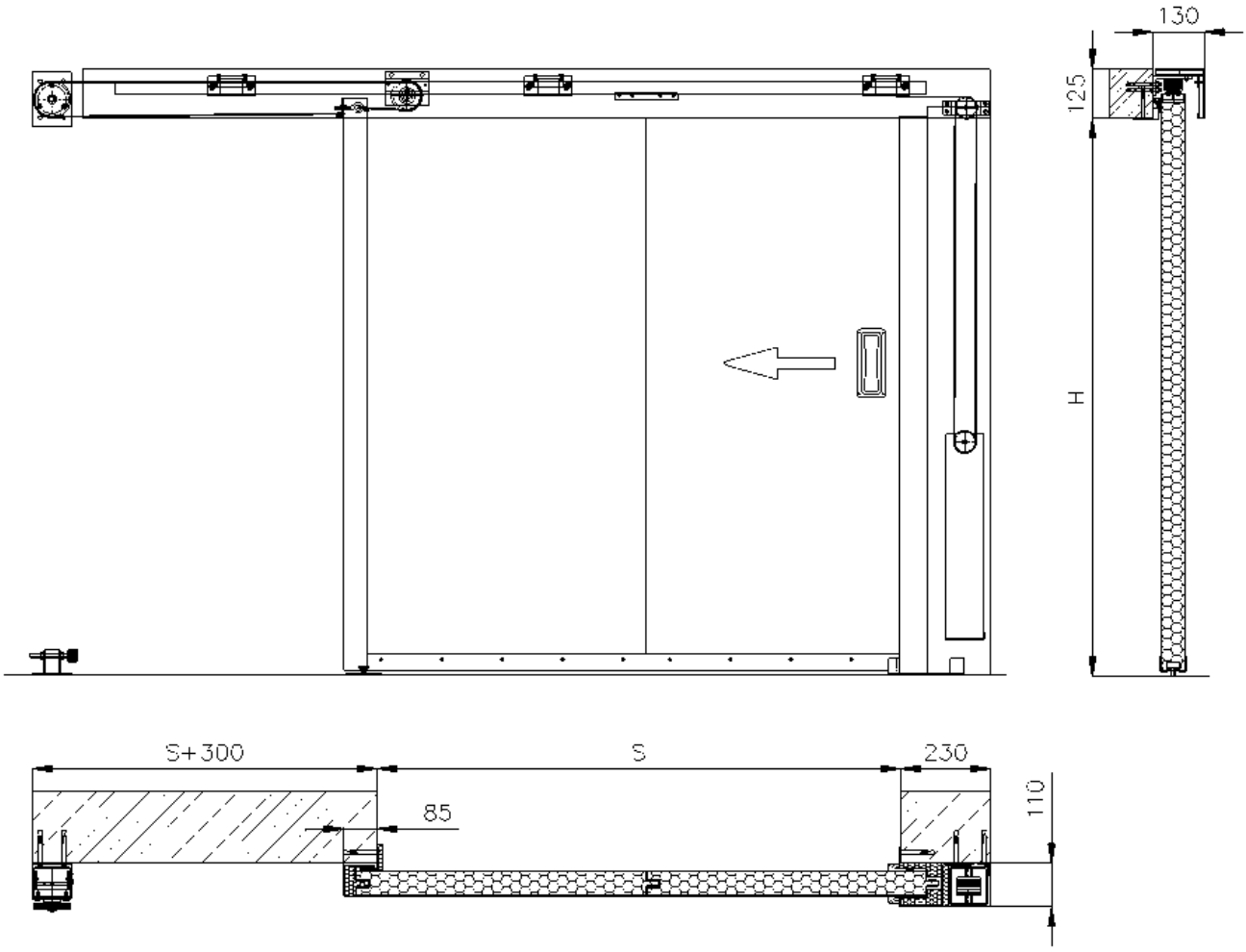
1. ASSA ABLOY Mercor Doors sp. z o.o. provides 12 months of guarantee for the products delivered, unless a different warranty period is specified in a separate agreement.
2. All defects discovered in the warranty period and preventing proper product operation shall be removed in 21 days from the date of warranty claim.
3. The warranty period will be automatically prolonged by the time from filing the claim to the completion of the warranty repairs.
4. All products covered by a valid warranty and found with defects that prevent further operation shall be replaced with defect free counterparts.
5. The warranty does not cover the activities to be performed by the user as specified in this Operation and Maintenance Manual.
6. To ensure proper operation of the gates and to retain the warranty rights of the user, do periodic inspection and maintenance of the gates at least every 6 months during the operating life. All technical inspections and maintenance shall only be carried out by service providers authorised by ASSA ABLOY Mercor Doors sp. z o.o.
7. The manufacturer shall be released from the warranty liability and other liabilities if:
   - periodic technical inspection and/or maintenance does not follow the schedule specified in item 6 or is carried out by unauthorised personnel or service providers not authorised by ASSA ABLOY Mercor Doors sp. z o.o.
   - The product suffers mechanical damage by improper operation by the user.
   - The product is modified by the user without any manufacturer authorisation.
   - Defects of the product are caused by failure to comply with this product maintenance manual.
   - Defects of the product are caused by improper storage and/or transport of the product.
   - The user installs the product without compliance with the installation manual.
   - The product rating plate is removed.
8. The manufacturer will charge the price of the product parts missing or damaged due to the user's fault plus their replacement labour costs.
9. ASSA ABLOY Mercor Doors sp. z o.o. warrants the paint coat life of the fire partition manufactured by ASSA ABLOY Mercor Doors sp. z o.o. If the product is purchased with the zinc-coat finish only (i.e. without a factory paint coat), the paint coat is not on warranty from ASSA ABLOY Mercor Doors sp. z o.o.
   Moreover, ASSA ABLOY Mercor Doors sp. z o.o. advises that the zinc-coat finish can be damaged by loading, shipping, unloading or installation. It is then recommended to paint coat the fire partition.
10. A warranty period of 3 years is granted by concluding a service contract for the product with ASSA ABLOY Mercor Doors sp. z o.o.

7. SERVICING

To ensure proper operation of the gates and to retain the warranty rights of the user, do periodic inspection and maintenance of the gates at least every 6 months.

All damaged or worn parts found during the inspection must be replaced or repaired.

8. INSTALLATION REQUIREMENTS



mcr TLB ECO sliding gate