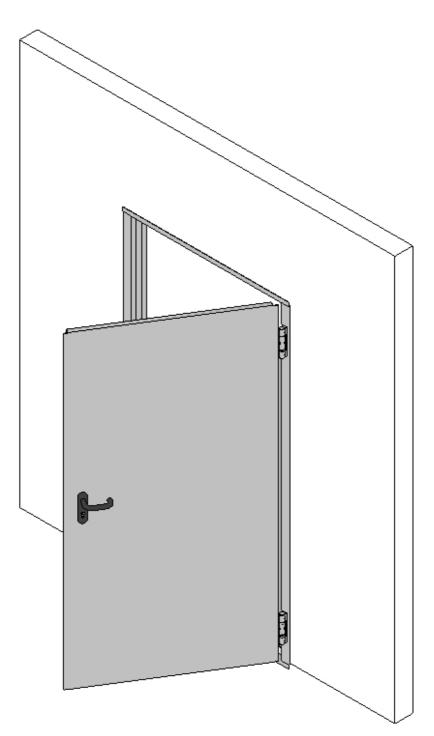
Planning, installation and maintenance instructions

for 1-leaf doors "can be used on the right/left hand side" Valid from: 04.2012





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2. Symbol legend



Warning! Danger of injury



Attention! Danger of damage to property!!



Note



Function check



Reference



Information on Fire doors



Information on Smoke protection doors



Information on Sound insulation doors



Information on Security doors



Information on Multipurpose doors



3.1 General information

Note:

- Installation may only be carried out by skilled personnel.
- We can only guarantee the function and safety of the door if it has been installed properly and if the installation process took place in the order that is shown in the instructions,
- if exclusively authorised accessories have been used,
- if the regular maintenance intervals have been adhered to



Note:

The owner or the client is entitled to a declaration of conformity signed by the installaton company (also see last page of the approval).

Wall types Table 1: Wall types

Function	Door type	Masonry	Concrete	Autoclaved aerated concrete blocks or high precision units	Reinforced autoclaved aerated concrete slabs	Assembly walls at least El30 *)	Panelled steel stanchion/steel girder at least El60 **)	Panelled wooden stanchion/woode n girder at least El60 **)	
Fire control/	HT8-D								
Smoke	RS-HT8-D	115	100	150	150	see the approval			
protection									
Safety	Keller-HT 8	115	100	175	150	No	Yes	VOE	
	MZD-HT 8	115	100	175	130	NV	165	yes	
Sound	MZD-HT 8	The insula	ating value of	of the wall m	ust be 10 dB	above the	insulating va	alue of the	
insulation					door				
Multi-purpose	MZD-HT8		Walls of all types						



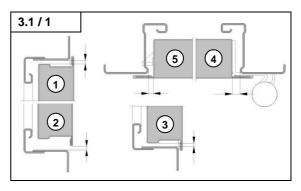
Note:

*) The profiles must be arranged in an H system, i.e. the vertical profiles should run continuously from the ceiling to the floor. The profiles must be screwed together at the floor and at the ceiling.

**) The cladding should be modified as little as possible during installation.

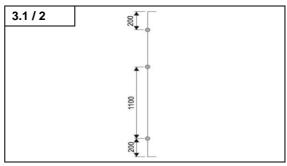
Gap dimensions Table 2: Gap dimensions

Position	Version	Drawing no.	
Upper		1	4 (+1/-2)
Lower	3- side	2	4 (+1/-2)
	4- side	3	4 (+1/-2)
Hinge side		4	8 (+2/-4)
Lock side		5	4 (+1/-2)



Anchor positions Table 3: Anchor

Note: The fixing points shown for the doors must be used.



Surface treatment

- If the primer has been removed or damaged during installation, it must be subsequently touched up.
- Never paint over seals, locks, identification plates or other fittings.
- To prevent a loss of adhesion of the top coat, we recommend that you clean and lightly sand the subsurface (except the insulation layer).
- Remove the frame seal prior to applying the final coat, and reinsert them correctly afterwards according to specifications.
- Primer: The door leaves have an environmentally friendly powder-coated primer. Sand the surface and clean it thoroughly for further colour treatment. Solvent-based 2K polyurethane paint can be used for single-layer painting.
- Always apply a solvent-based Epoxy primer before using synthetic enamels.



Attention!

Strong sunlight can cause a bi-metal effect on double-skinned sheet steel doors used outdoors, resulting in door leaf warpage. Dark colours increase heat absorption at the door surface - especially with direct sunlight – thus significantly increasing the effect.

To prevent damage to the door:

- structural measures (e.g. projecting roof) which prevent direct sunlight must be taken,
- it should be painted in a bright, light reflecting colour.

Wall plugs

The following requirements must be met:

- Only use wall plugs (dia. 10) which are building authority approved for the substructure.
- Wall plugs do not have to be explicitly approved for use on fire doors.
- Wall plugs must be used with the respective screws.
- Follow the specifications of the wall plug manufacturers (wall plug distances/edge distances/hole diameter/hole depth).

Wall plug types:

Type: e. g. Atrion ARU, fischer FUR, fischer SXR, Hilti HRD, Würth W-RU or Würth W-UR.

3.2 Protection classes

General

- The respective approval/test certificate can be viewed at www.teckoptrup.biz/download/technische-informationed
- www.teckentrup.biz/download/technische-informationen.html
 Fire, smoke protection and burglar resistant doors are labelled with a name plate.
- Fire, smoke protection and burgiar resistant doors are labelled with a na
 The owner is responsible for the perfect condition of the door.



Fire doors (BS)

- Door modifications should only be carried out in accordance with the permitted measures (see approval)
- Fire doors must be fitted with profile cylinders (not included) or alternatively with fittings incl. a metal cover for both sides of the profile cylinder hole.
- The doors must close automatically.
- Use the supplied seal profiles.
- Fire doors should not be installed in outdoor areas.



Smoke protection doors (RS)

- The doors must close automatically.
- Wall sealing joints must be sealed on one side (if the frame is not backfilled with mortar) using a permanently elastic sealing compound (e.g. acrylic).
- Smoke protection doors must be fitted with profile cylinders (not included).
- The frame seals must be pushed close together at the connecting points.



Sound insulation doors (sound)

- The approved insulation value can only be achieved if all the areas (wall, floor, ceiling) have been planned correctly.
- The insulation values of walls, floors and ceilings must be 10 dB above the insulation value of the door.
- Moreover, there should not be any acoustic bridges.
- The surrounding components influence the entire sound inslation. The sound insulation of the wall and door must be verified separately, since it cannot be derived from the sound insulation

value of the door.

- The doors must be equipped with profile cylinders.
- Plaster or a plastic sealing compound should be used to create the connection between the wall and the frame.
- Separate the screed in the threshold area.



Security doors (WK)

- The burglar resistance of the door is only guaranteed when all the lock bolts are fully closed.
- The attack side must be determined prior to installation.
- With anti-panic doors, intrusion with a wire must be hindered, e.g., by a small bottom air gap or using a half-round threshold.
- The door must e equipped with fittings, glazing and cylinders according to the following table (cylinders are not necessarily included).
- Mounting in installation walls is not permitted.
- Use the supplied seal profiles.
- Hinge bolts must be secured using the supplied hinge bolt clips.
- Table 1 displays the minimum wall thicknesses.

Parameters of WK 2

Profile cylinder in accordance with EN 1303	P2 BS/BZ 1)				
Security fittings in accordance with EN 1906	ES1				
Glasses	P4A				

 BS = anti-drilling protection / BZ = anti-drilling and extraction protection (extraction protection is not required if security fittings with cylinder covers (ZA) are used)



Multi-purpose doors

There are no further specifications for multi-purpose doors.



3.3 Locks and fittings

Reference:

Always follow the installation instructions in the accessory packs.

Hinges

If necessary, re-adjust the hinges.

Locks

Locks must comply with EN 12209.

The locks can be replaced with locks with an anti-panic function in accordance with EN 179 or EN 1125.

Automatic closing of fire and smoke protection doors

- Only use door closers in accordance with EN 1154 / EN 1155.
- A door closer can be retrofitted at doors which close automatically via a spring hinge if the closing function of the spring hinge is deactivated. The door closers that are to be retrofitted can be normally installed on the hinge side.
 - A spring hinge may not be combined with the following characteristics / fittings:
 - Smoke protection (except: hatches < modular dimension 1000x1000)
 - Mounting in installation walls and autoclaved aerated concrete (except: hatches < modular dimension 1000x1000)
 - Sliding threshold seal
 - Glazing
 - Electrical door opener
 - Hold-open devices

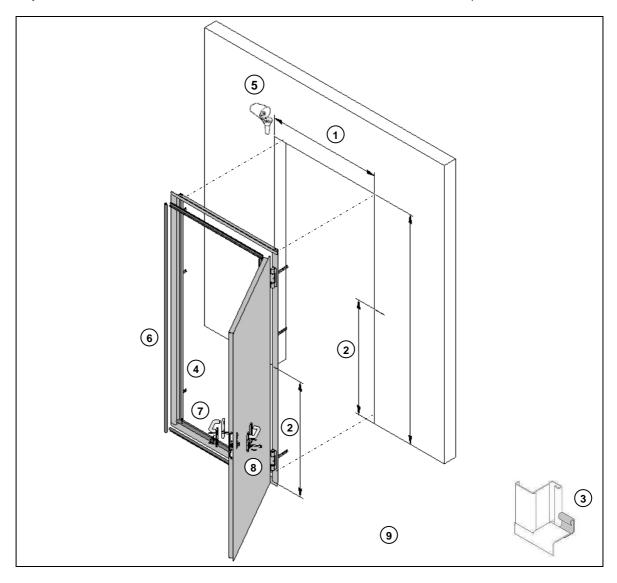
3.4 General information on the instructions

All dimensions in millimetres (mm).

We reserve the right to make technical changes.

4.1 Installation procedure

The standard installation sequence is described below. Any alternative installation methods are described in the individual installation steps..



Order	Process	Reference				
1	Installation preparation	Point 5.1and 5.2				
2	Marking the one metre level	Point 5.3				
(3)	Preparing frame	Point 5.4				
4	Installing the frame	Point 5.5				
5	Backfilling the frame	Point 5.6				
6	Inserting the seals	Point 5.7				
7	Installing bottom seal	Point 5.7				
8	Installing fittings	Point 5.8				
9	Final work	Point 5.9				

5.1 Installation preparation

The following points must be clarified prior to installation:

- Which protection classes should be achieved?
- Do you know and understand the existing building regulations?
- On which substructure is the door going to be mounted?
- Is the door being installed suitable for the wall type?
- Do you know the height of the finished floor?
- Is the opening large enough for the protective boxes of the frame?
- Which anchor types will be used?
- Which floor connection will be used?
- Which accessory parts should be used?
- In which direction should the door open?

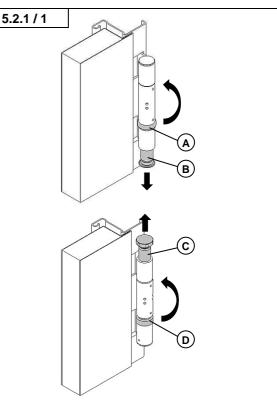
5.2 Changes before the door is installed

The doors are supplied with the buffer type DIN right and with a bottom buffer.

5.2.1 Change to DIN left

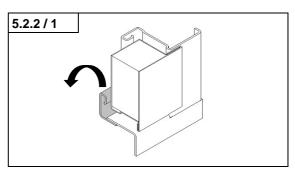
Note: The door should be in laying position if the buffer direction has to be retrofitted. The frame should be facing down when dong this.

- Pull the hinge bolt out from the spring hinge (A).
- Remove the intermediate ring (B).
- Pull the hinge bolt out from the construction hinge (C).
- Remove the ball bearing (D).
- Slide the door leaf onto the frame.
- Insert the intermediate ring (B) and the ball bearing (D).
- Lubricate the hinge bolts (A) and (C) and push them in.



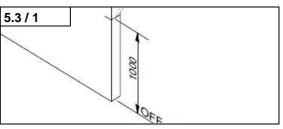
5.2.2 without bottom buffer

• Break the bottom bracket off before installation.

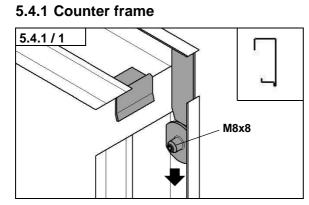


5.3 Marking the one metre level

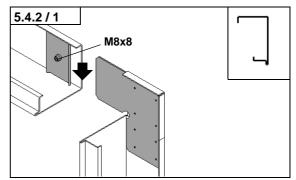
- The metre level specified by the customer must be transferred to the wall opening.
- Orient the frame to the 10 mm frame flush ege on the meter mark.



5.4 Screwing together the frame



5.4.2 Clasping counter frame

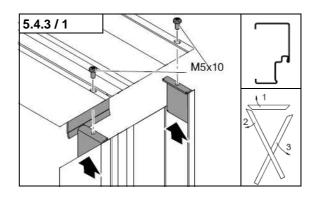


5.4.1 - 5.4.2

- Interconnect the frames.
- Screw the frames together.

5.4.3 Closed frame

- The frame type "clasping closed frame" must be assembled **in the opening**.
- Place the upper frame part in the wall opening.
- Insert the frame side parts into the upper frame part.
- Screw the frames together.



5.5 Installing the frame

- Place the dor into the opening.
- Align the frame to the one metre level.
- Align the frame to all sides.
- Secure the correct position.
- Check the required clearances.

Reference:

- Refer to section 3.1 for correct alignment of the door
- The required clearancs are described in Section 3.1.

The connection to the wall must be carried out in the specified sequence.

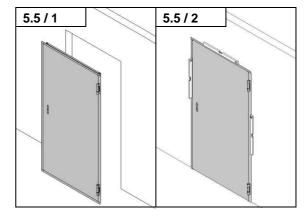
The door leaf must be against the frame.

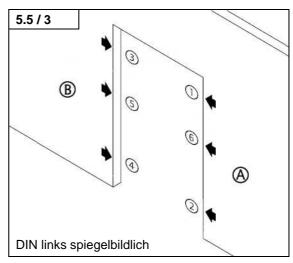
Reference:

Refer to Section 3.1 for wall plug assembly.

Note:

- The wall plug must expand parallel to the opening edge.
- The fastening sequence must be adhered to:A - Hinge side/B–Lock side
- The lock side of the frame must be directed towards the door leaf.











5.5.1 Corner frame on masonry and concrete

Reference:

- The anchor positions are described in table 3.
- The sequence is described in image 5.3 / 3.
- The required wall plugs are described in Section 3.1.

5.5.1.1 Wall anchor with wall plugs

Bend the wall anchors.

Note:

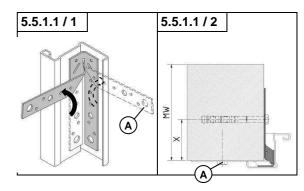
For security doors, the frame should be secured at the front (A) as well.

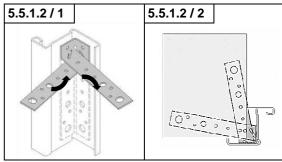
• Screw the frame to the wall in the correct sequence at the specified fixing points.

Minimum wall plug length: 100 mm

5.5.1.2 Wall anchor with mortar

- Bend the wall anchors.
- Embed the wall anchors in mortar.





5.5.1.3 SMW diagonal

Note:

• Use adjusting screws to fix the frame (B).

Always observe the factory set anchor positions.

• Screw the frame to the wall in the correct sequence at the specified fixing points.

Minimum wall plug length: 100 mm

• Place the cover (C) over the frame holes.

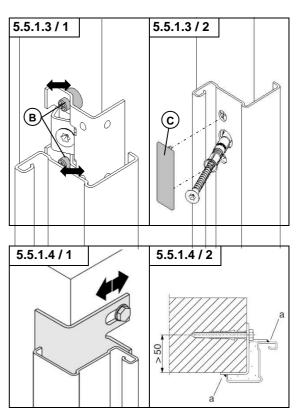
5.5.1.4 SMW buffers

• Screw the anchors to thewall at the specified fixing points

Minimum wall plug length: 100 mm

• Weld the frame to the anchor in the specified sequence.

Weld seam length (a) > 20 mm



5.5.2 Corner and closed frame on autoclaved aerated concrete



5. Installation

Reference:

The rear attachment of the closed and counter frame is described in section 5.5.6.

5.5.2.1 SMW diagonal

Minimum wall plug length: 160 mm



Reference:

The principle of "SMW diagonal" is described in section 5.5.4.3.

5.5.2.3 Anchor brackets with wall plugs

Attach the anchor brackets to the wall at the specified fixing points. Drill through the anchor bracket into the wall. Scew the anchor bracket to the wall.

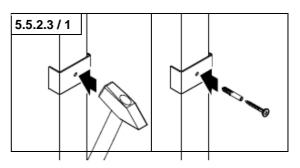
Minimum wall plug length: 100 mm

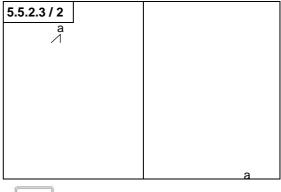
Weld the frame with a spacer (C) onto the anchor bracket in the correct sequence.

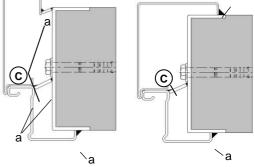
Weld seam length (a) > 20 mm

Reference:

- The anchor positions are described in able 3.
- The sequence is described in image 5.5 / 3.
 The required wall plugs are described in Section 3.1.







Corner and closed frame on installation wall

B

Note:

The DIN direction cannot be changed.

5.5.3.1 LBW mounting plates

• Screw the installation plates to the frame.

b

Note:

Always observe the factory set anchor positions.

Screw the frame to the wall profiles in the specified sequence.

Fastening material

Self tapping screws 4.8 x 38 and adjusting screw M6 x 45 (pre-drilled Ø5.5)



Reference:

The sequence is described in image 5.3. Counter frame installation is described in section 5.5.6.

5.5.3.2 LBW screw assembly UZ

- Insert the frame backfill into the frame profiles.
- Place the upper frame part in the wall opening.
- **Insert** the side parts of the frame into the upper part of the frame.
- Screw the frame corners together.



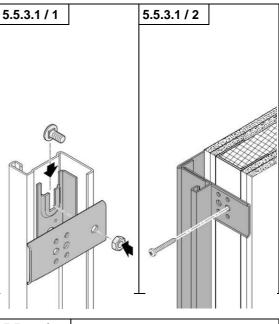
Note:

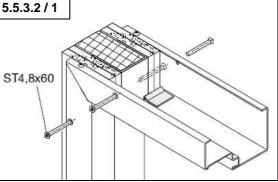
Always observe the factory set anchor positions.

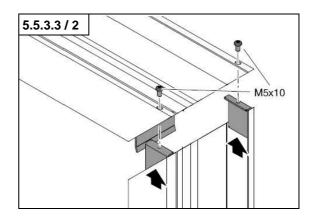
• Screw the front and rear frame piece to the wall profile.

Fastening material

Self tapping screws 4.8 x 60









5.5.4 Concealed steel/wooden girders or stanchions

Note: The DIN direction cannot be changed. Always observe the factory set anchor positions.



Reference:

Refer to section 3.1 when installing the frame to the steel girders and to wooden girders.

The described installation methods are used to illustrate the principle.

5.5.4.1 Steel girders/stanchions

There must be a flange area of the girder available at the fixing points; otherwise junction plates min. 40×5 (A) must be welded on by the customer.



Fastening material

M6 x ... countersunk screws (the lenth depends on the cladding thickness of the stanchion/girder)

5.5.4.2 Wooden girders/stanchions

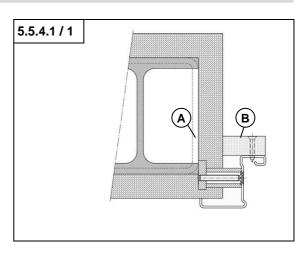
Fastening material

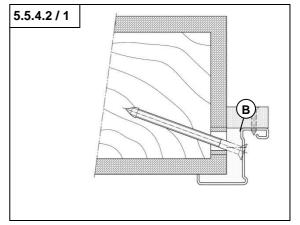
Ø8 x ... countersunk screws (the length depends on the cladding thickness of the stanchion/girder)

b
U

Note:

The supplied gypsum board strip (B) must be screwed to the rear.





5.5.5 Counter frame and corner frame assembly

5.5.5.1 Screwed / welded counter frame



Note:

When using mineral wool or gypsum board, it must be inserted **prior** to connection. When using mortar, it is applied **after** screwing parts together.

- Position the counter frame (A) in the opening.
- Align the counter frame to the corner frame (B).
- Connect the counter frame to the corner frame (B).

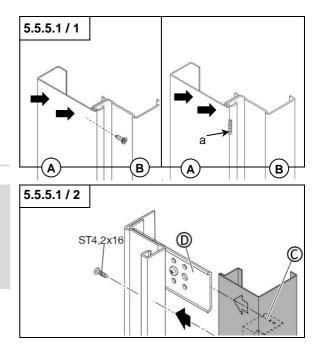
Fastening material

4.2 x 16 self tapping screws*alternatively* Weld seam length (a) \ge 20mm (max. every 500 mm)



Note:

- Always observe thedistances specified by the manufacturer.
- The connectors (C) and (D) are special components and only required for attachment to installation walls.





5.5.6 Installing the counter frame

- Reference:
- The anchor positions are described in table .1 / 2.
 - The counter frame and corner frame connection is described in section 5.5.5.1.

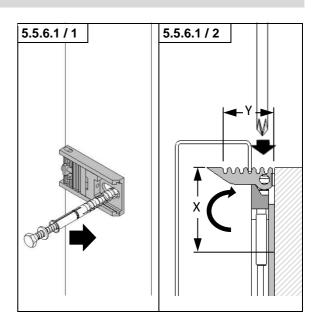
5.5.6.1 Fold anchor Installation in masonry / concrete / autoclaved aerated concrete

- Determine the wall distance.
- Screw the fold anchor to the wall.

Fastening material

10 mm plastic wall plug with corresponding screw

- X = Adjustable range, Y = Wall distance
- Open the fold anchors.
- Position the counter frame on the corner frame and connect them.
- Adjust the fold anchor so that it snaps into place in the plaster angle.



5. Installation

Installation on widened counter frame

- Determine the wall distance.
- Screw the fold anchor to the wall.
- Open the fold anchors.
- Adjust the fold anchor.
- Position the counter frame on the corner frame and connect them.

5.5.6.2 Push anchor

- Connect the counter frame (B) with the corner frame (C).
- Position the push anchor (A) on the counter frame (B).
- Bend the push anchor (A).
- Screw the push anchor (A) into position.
- Fastening material
- 10 mm plastic wall plug with corresponding screw

5.6 Backfilling the frame

General information on frame backfilling

- Prior to backfilling the frames with mortar, spread them sufficiently to ensure stability.

- Dowel brackets can be visible after installation and do not have to be plastered over

- After curing, complete backfilling cannot be tested simply by tapping the frame and listening, since there is not necssarily a shear resistant connection between the frame profile and the filling mortar.
- Backfillings with gypsum boards may contain small bubbles or gaps at the joints of the strips, since they are compensated by the fire protection effect of the gypsum board material.
- Frame backfilling with mortar must be carried out as described n the illustrations (i.e. plastering in the soffit is not required).



Attention!

The door should not be opened until the mortar has cured.

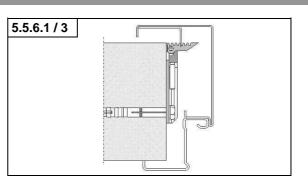
Backfilling	,,			Concealed steel/wooden girders			Installation walls			
	Only corner frame	Counter frame	Corner frame with counter frame	Only corner frame	Counter frame	Corner frame with counter frame	Only corner frame	Counter frame	Corner frame with counter frame	Closed frame
Fire doors	Mortar without Mineral Mortar / Mineral wool / Mineral wool / Mineral wool / GKB / Gypsum / 1) wool GKB Mortar							/psum /		
Smoke protection doors	Mortar									
Burglar resistant doors	Mortar									
Sound insulation doors	Mortar									
Multi-purpose doors	PUR									

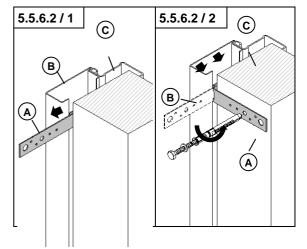
¹⁾ Corner frame with mortar



Attention!

The functionality of the door must be carefully checked before backfilling takes place. Spread the frame slightly to prevent it being bent and twisted.





Smoke protection doors

Wall sealing joints (A) must be sealed on one side using a permanently elastic sealing compound (e.g. acrylic)

Sound insulation doors

Sound insulation doors should always be backfilled. Use a sealant or plaster to seal the connection between the wall and the frame.

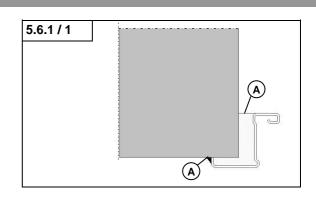
Security doors

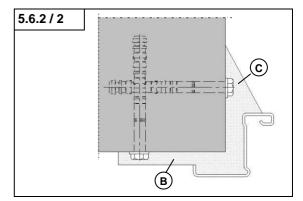
Security door frames must be backfilled in a pressure-resistant manner.

The screws must be plastered on the danger side (B or C).

B Danger side-hinge side

C Danger side-opposite hinge side





5.7 Seals

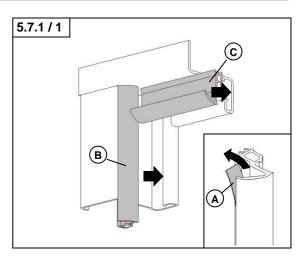


Attention!

To ensure correct functioning of the seals, do not paint over them. Remove seals prior to painting and only reinsert them once the paint is fully dry. Only use original seals.

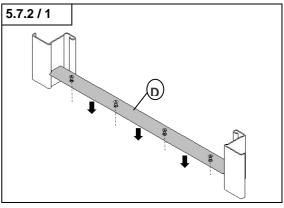
5.7.1 Frame seals

- Remove the strip (A)
- · Cut the seals to the correct length
- Press the side seals (B) and upper or lower seals (C) into the grooves



5.7.2 Sliding treshold seals

- Install the raised seal (D) on the floor bracket, flush to the front.
- Use a permanently elastic sealing compound to seal the gap between the floor and the raised seal (D)





5.8 Installing fittings

Sound insulation

Sound insulation doors must be equipped with profile cylinders.



Smoke protection

Smoke protection doors must be equipped with profile cylinders.



Security doors

Secuirty doors must be fitted with special security fittings.

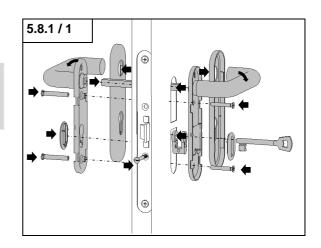


5.8.1 Latch set with tumbler insert

Verweis:

Für die Montage und das Einstellen ist die zugehörige Anleitung zu berücksichtigen.

• Montieren Sie die Drückergarnitur



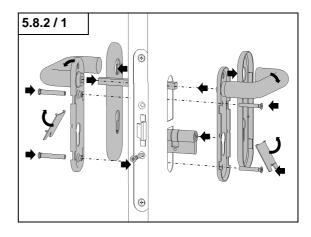
5.8.2 Latch set with profile cylinder



Reference:

Please observe the respective instructions during installation and setup.

• Assemble the latch handle

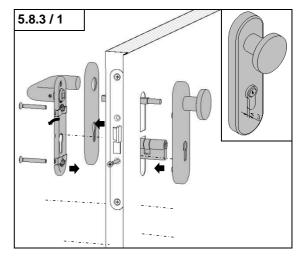


5.8.3 Security fitting

Security doors

The following conditions must be fulfilled in order to achieve the desired protection class:

- The plate with anti drilling protection (A) must be attached on the danger side.
- Security hardware and profile cylinders must comply with the requirements in section 3.2.
- The profile cylinder should not protude more than 3 mm from the outer plate.
- Assemble the security fittings

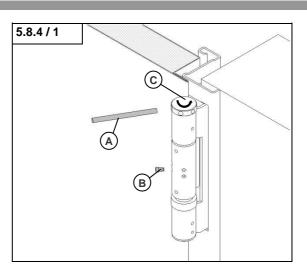


5.8.4 Setting the spring hinge

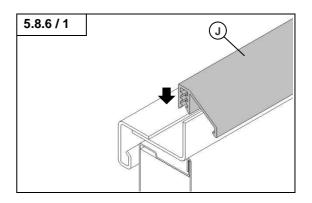
The door must be tensioned so that it closes automatically from an opening angle of $> 30^{\circ}$.

The tensioning tool A) and the lock pin (B) are supplied with the latch set.

- Tension the spring by turning (approx. 270°) the tensioning wheel (C) in the opening direction.
- Insert the lock pin (B).



5.8.5/1 (H) 222 (H) 222 (H) 222 (130) (H) 142 (130) (H) 142 (H) 142



5.9 Final work

5.9.1 Additional hinge bolt lock for security doors

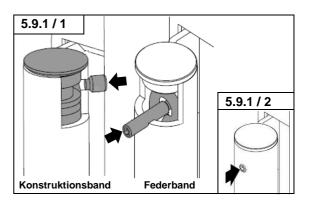
The set screw must not be removed for security doors



Note:

Tapping a brass pin into the set screw and then breaking it off can stop the screw being removed.

• Secure the set screw.



5.8.5 Retrofitting thedoor closer

Reference:

Please observe the respective instructions during installation and setup.

- Create the fastening points by using the closer installation template.
- Two Ø 4.2 holes drilled in the upper door rebate and door leaf
- Two M5 threads in the frame
- Secure the mounting plates (D + E) to both the door leaf and the frame

Fastening material

Door rebate – self tapping screws (F) 4.8×1 Door leaf – blind rivet (G) Ø4 x 10 Frame – countersunk screws (H) M5

5.8.6 Rain protection panel

External doors must be equipped with a rain guard.

• Clamp the aluminium rain guard (J) onto the upper frame part prior to installing the door.



Reference:

The specifications for surface treatment in section 3 must be observed



Function check:

Check correct door functioning Check whether all the installed components function correctly. Check whether all requirements of the desired protection class have been observed.

6. Maintenance

6.1 General

- Maintenance is the responsibility of the property owner. The property owner can carry out the required maintenance tasks or employ a specialist company to do it.
- To ensure correct functioning of the fire protection, smoke protection, security, sound insulated and multi-purpose doors, professional maintenance should be carried out every 12 months (more often for frequently used doors).



6.2 Maintenance work

Attention!

Detected faults must be eliminated immediately to guarantee safe peration. Only suitable cleaning agents should be used for cleaning. The following are not suitable: Cleaning agents with contents that cause corrosion or are otherwise harmful. Scouring agents, abrasive cleaning agents, wire wool or similar products. Petrol, benzene, turpentine or similar products. Use acid-free graphite, grease or resin-free oil for lubrication purposes.

• Clean seal profiles with a clean cloth, warm water and a rinsing agent.

Door components	Required maintenance tasks							
	Function check	Clean	Lubricate / Oil	Re-tighten fastening screws	Rectify	Comment		
Door design								
Frame		х		x	x	Repair surface defects (cracks)		
Wall connection				x	х	Repair defects (loose masonry, cracks)		
Door leaf	x				х	Repair surface defects (cracks)		
Infill (glass, ventilation)		x		x	x	Repair sealing defects (silicone), clean ventilation slots		
Floor threshold	x	x		x	x	Repair surface defects (cracks) (to ensure correct sealing)		
Fittings								
Seals	x		x		х	Replace brittle or damaged seals		
Hinges	х	х	x	x	х	Replace defective parts		
Latch, knob		х		x				
Mortice lock (latch, bolt)	x	x	x	x	x	Check the single-rotating connection of the bolt, replace defective locks, if necessary		
Top door closer	x	x	x	x	x	Check the closing speed (approx. 6 sec from 90°) and the limit stop		
Sliding threshold seal	x	х		х	х	Sealing along the entire		
Spyhole		х						

Declaration of conformity

(in compliance with the EC Construction Products Directive 89/106/EEC)

Manufacturer:

Teckentrup GmbH & Co. KG Industriestraße 50 . D- 33415 Verl-Sürenheide

When intended for use as external doors, the steel multi-purpose doors have been developed, designed and manufactured in accordance with the EC Construction Products Directive 89/106/EEC.

Applied standards:

EN 14351-1:2006 Windows and doors – Product standard, performance characteristics – Windows and external doors without resistance to fire and/or smoke leakage characteristics.

The door should not be used until it has been asscertained that the door has been installed according to our specifications and its operability has been checked. If the product is modified without our approval, this declaration is no longer valid.



Note:

The declaration of conformity only applies for doors with CE mark. The allocation to the declaration of conformity takes place via the ID no. printed next to the CE conformity mark on the door leaf.



Reference:

The declarations of conformity are available for download at www.teckentp.biz.

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