

Additional installation and maintenance instructions

for fire and smoke protection closures



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Note

- Please refer to the valid "Installation and maintenance instructions for doors and windows" and the "Operating and safety instructions for doors and windows" of Forster Profile Systems Ltd.

Note

- Please note that compliance is required with the valid European and country specific standards and directives (SIA, DIN, SZFF, EN, etc.).

Note

- The figures in this document are simplified and may vary from the original.

1. Structural conditions / static requirements

All elements, including connecting elements, must be capable of accepting all forces acting on them and diverting these forces to building support structures.

The connections and fastenings must be designed to allow tolerance compensation in relation to the building shell.

2. Installation instructions

Fire and smoke protection closures are delivered complete to each construction site. To avoid shipping damage, they should only be transported by professional companies.

In addition fire and smoke protection closures must be stored so that they cannot tilt or slide and are protected against soiling, humidity and damage.

Non harmonised products

The installation may only be carried out by a specialist company, which has a valid licence contract with the corresponding authorisation holder (system house) and employs personnel trained in fire protection.

Harmonised products

The installation of external doors according to EN 16034 in combination with EN 14351-1 (CE marking) may only be carried out by a specialist company, which has a valid licence contract with the corresponding authorisation holder (system house), employs personnel trained in fire protection and is supervised by a notified product certification body (e.g. ift / vkfzip / efectis / ibs / etc.).

2.1 Attachment / anchoring in the building structure

Horizontal and vertical profiles may only be anchored in the building structure using fastening elements approved by building authorities and complying with the specifications contained in the processing guidelines of Forster Profile Systems Ltd.

2.2 Compensating for movements, seals

Structural attachments must be designed so that they cause no damage to the element by changing the shape of the building structure or by temperature loads which could result in increased leakage.

2.3 Installation instructions

- Check frame and wall opening substance.
- Unhook leaf or sash from frame.
- Place frame in wall opening, align frame plumb and horizontally to rule mark and wedge in position.
- Drill holes for top fastening elements and secure frame at top.
- Hook sash in frame and align to obtain uniform shadow gap.
Drill holes for side fastening elements and attach frame at sides and at bottom. Make sure frame is backfilled with non-positive connection and with non-flammable material.
- If the sash is not yet glazed, insert function corresponding to glass and wedge in place. The glazing blocks must comply with country-specific regulations and design guidelines of the glass manufacturer. Supplementary information is obtainable from Forster Profile Systems Ltd.
Adjust the shadow gap between sash and frame as specified in the drawing with a tolerance of +/- 1 mm using the glazed blocks and by adjusting the hinges.
- Work related to doors
 - Fit door closer at the intended position. Please refer to the fitting instructions of the supplied closer type.
 - Fit handle fittings. Observe the fitting instructions of the handle fittings supplied.
 - Adjust the floor seal so that the seal is in full contact along its entire length when the door is closed. The installation dimensions and tolerances are specified in the related drawing and in the manufacturer's installation instructions. Fit the drop seals as late as possible to prevent any damage to them during the construction phase (e.g. by wedges).
- Final inspections / function tests
Check the following:
 - tight fit of the hinges and fittings
 - closing force
 - correct seating of weatherstippings
 - greasing the keeps, bolts and strike plates
 - panic operation and operating forces
 - the self-closing function of the doors from any position (adjust as specified by the door closer manufacturer)
 - the function of the sequence close regulator and the carry bar on double-leaf doors
 - the function of the arrest system according to the manufacturer's specifications
- Seal joints between the building structure and the frame with permanently elastic sealant on both sides. When sealing joints, comply with the manufacturer's processing specifications.

With fire closures, joints must be filled or stuffed with mortar, non-combustible mineral wool or fire protection joint cord complying with Building Material Class A1 as per DIN EN 13501-1 (DIN 4102-1).

On doors with electric fittings (e.g. electric opener, bolt switch contact), make sure that the cable is routed in front of the back-filling.

3. Evaluation of the performance

The manufacturer confirms against the operator, that the fire or smoke protection closure is professionally manufactured and installed with regard to all details and in compliance with all legal regulations.

3.1. Non harmonised products

Assessing the performance of construction products, which do not fall in the scope of a harmonised product standard (example: prEN 14351-2 interior doors or fixed glazings according to EN 1363).

The assessment of the performance (declaration of performance) must contain following information:

1. Authorisation holder
2. Name and address of the manufacturer / fitter
3. Approval number
4. Product / type
5. Classification (e.g. EI30)
6. Building project / Order Number / ID number
7. Date and signature

3.2. Harmonised products

Assessing the performance of construction products, which fall in the scope of a harmonised product standard (example: exterior doors EN 16034 in combination with EN 14351-1).

The assessment of the performance (declaration of performance) must contain the following information:

Declaration of performance		
LE/DoP-NR. : 000/000/0000-00-00		
1. Product code:	.BS* - xxxxxx/xxx	
2. Product ID No.:		
3. Intended use:	Fire resisting doorset as external pedestrian doorset for use in public and private buildings	
4. Manufacturer:	Company Address Place Telephone Telefax E-Mail	
5. Authorised representative:		
6. System for the assessment of	Performance constancy: 1 and 3	
7. Harmonised standard:	EN16034:2014 and EN 14351-1:2006+A1:2010	
Notified body:	Institute NB-Nr. certificate of constancy of performance of the product (0000-000-000-00-0000-00)	
8. Declared performance		
Essential characteristics	Performance	Harmonised technical specification
8.1 Resistance to fire	EI ₃₀	4.1
8.2 Smoke control	S ₃₀₀	4.2
8.3 Ability to release	released	4.3
8.4 Self-closing	C	4.4
8.5 Durability of ability to release	Release maintained	4.5.1
8.6 Durability of self-closing: - against degradation: (cycling testing) - against ageing (corrosion):	5 achieved	4.5.2.1 4.5.2.2
8.7 Watertightness		4.5
8.8 Dangerous substances	-	4.6
8.9 Resistance to wind load		4.2
8.10 Impact resistance		4.7
8.11 Load-bearing capacity of safety devices	Requirement fulfilled	4.8
8.12 Hight	(mm)	4.9
8.13 Ability to release	Requirement fulfilled	4.10
8.14 Acoustic performance	[dB]	4.11
8.15 Thermal transmittance U _f :	[W/m ² K]	4.12
8.16 Radiation properties: • Solar factor		4.13
• Light transmittance		4.14
8.17 Air permeability		4.14

The performance of the above product is in conformity with the declared performance.
This declaration of performance according to Regulation (EU) No. 305/2011 is issued under the sole responsibility of the manufacturer identified above.

Signed for and on behalf of the manufacturer by:
First Name Name, Company
Place, 05/05/2017

4. Identification of fire and smoke protection doors/windows

4.1 Non harmonised products

Every fire protection and smoke control door and every fire protection and smoke control window must bear permanent identification. Identification must be by means of an identification plate located on the hinge side – normally in the bottom third of the smoke control or fire protection element.

Labelling must be scratch-proof and resistant to solvents and cleaning agents.

Mandatory labelling also applies to fire protection doors with approvals in individual cases (Germany).

The label or identification must contain at least the following information:

- Name of the authorisation holder (manufacturer or supplier)
- Name or contact details, e.g. code or address
- Product and/or designation
- Serial number, reference number or approval number (VKF: Association of Canton Fire Insurances) of the product
- Fire resistance and/or smoke control classification and/or self-closing classification

The manufacturer is responsible for ensuring traceability. Any deviating identification is allowed, provided it is not less than the requirements listed above.

Identification plate on fire protection door / fire resistant door

Switzerland



Germany

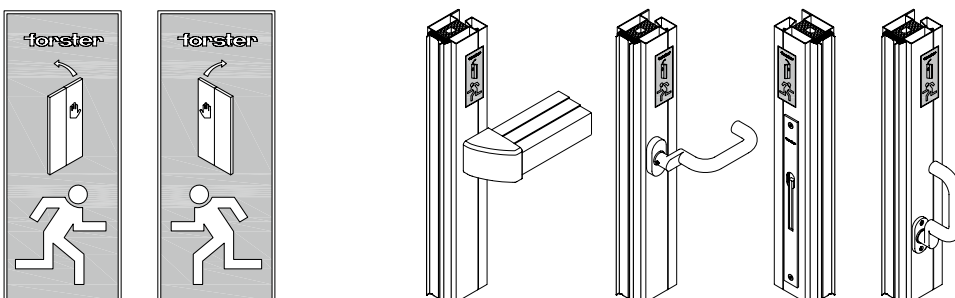


Identification plate of smoke control door

Germany



Fire protection sliding doors with escape route function must bear additional identification in compliance with EN 16005.




4.2 Harmonised products

Labelling / Declaration of Performance and CE Marking (EN 16034 in combination with EN 14351-1)


Before mounting, the CE marking plate must be affixed on the fire and smoke protection door or window visibly, legibly and indelibly. On the packaging a label must be affixed with at least the same information.

The declaration of performance and the CE marking must be provided to the customer (paper or electronically). A unique code or a numbering enables the customer a clear allocation between the declaration of performance and the CE marking.

Example: CE marking plate of an external door

	Sample Door Manufacturer / Samplestreet 123 / M-12345 Sampletown
xxx	Fire resisting doorset as external pedestrian doorset „unico EI30“ - „BS“-xxxxxx/xxx
	EI ₂ 30-C5-S ₂₀₀

Example: CE marking of an external door

	
xxx	
Year Sample Door Manufacturer Sample Street 123 M-12345 Sampletown Samplecountry	
„BS“ – xxxxxx/xxx LE/DoP-NR. : 000/000/0000-00-00 Fire resisting doorset as external pedestrian doorset for use in public and private buildings EN 16034:2014	
Resistance to fire:	EI ₂ 30
Smoke control:	S _a / S ₂₀₀
Ability to release:	released
Self-closing:	C
Durability of ability to release:	release maintained
Durability of self-closing:	
- against degradation: (cycling testing)	5
- against ageing (corrosion):	achieved
EN 14351-1:2006+A1:2010	
Watertightness:	3A
Resistance to wind load:	B3 / C3
Impact resistance:	2
Height:	2'100 [mm]
Acoustic performance:	32 dB (-1;-5)
Thermal transmittance U _D :	1.8 [W/m²K]
- Radiation properties – Solar factor:	0.55
- Radiation properties – Light transmittance:	0.75
Air permeability:	1

5. Maintenance instructions

5.1 Country-specific fire protection standards

Compliance with country-specific laws and standards relating to fire and smoke protection closures is also mandatory in every case. The approvals applicable in a particular country are decisive.

Switzerland

Extract from Swiss Fire Protection Standard of VKF/AEAI: Association of Canton Fire Insurances, Bern:

Art. 19 Due diligence	<p>1 Fire, open flames, heat, electricity and other energy sources, flammable and explosive substances as well as machines, equipment etc. shall be handled in such a way as to prevent fires or explosions.</p> <p>2 Owners and users of buildings and systems shall ensure that the safety of persons, animals and assets is ensured.</p>
Art. 20 Maintenance obligation	Owners and users of buildings and systems are responsible for maintaining facilities for structural, technical and preventive fire protection and domestic systems in good condition in accordance with their intended use and keeping them operational at all times.
Art. 21 Supervision obligation	A person that supervises another shall ensure that the latter is instructed and can exercise the necessary caution.

Failure to carry out regular servicing and maintenance may result in the following consequences:

Extract from Swiss Code of Obligations (OR)

Art. 58 Plant owner's obligation	<p>1 The owner of a building or an other plant shall restore damage which was caused by the defective plant or production or improper maintenance.</p> <p>2 He shall be entitled to obtain restitution from others who are responsible to him for such damage.</p>
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The owner is fully liable if persons sustain injury or assets are damaged as a result of improper maintenance. This represents strict liability and the plant owner shall be liable, irrespective of whether he is accused of carelessness or not. The precondition for liability shall be solely the relationship between the damage and improper maintenance of the plant. The care applied plays a role in all eventuality when it is a question of whether and to what extent damage is assumed by the insurance company.

However, the plant owner shall retain the right of recourse to other persons if they are responsible for defects to the plant, for example faulty maintenance by the tenant or the specialist company entrusted with maintenance*.

* Specialist companies are exclusively companies which have a valid licence contract with the corresponding authorisation holder (system house) and employs personnel trained in fire protection (metal-working companies licensed for the fire and smoke protection systems of Forster Profile Systems Ltd).

5.2 Competence

The Client / Owner shall be instructed by the manufacturer of the necessity of maintenance in order to retain the functionality of the entire element. He shall be informed of the necessary measures – preferably in written form – (see data sheets in the Annex).

Maintenance is the responsibility of the operator. As far as possible, a service contract (e.g. SMU, ÜK, etc.) shall be concluded between the Owner / Operator and an authorised specialist company.

A service contract is recommended or even prescribed by law for arrest systems (this may vary in individual countries). Arrest systems shall be continuously kept in operational condition by the operator. The manufacturer's specifications shall be complied with regarding minimum inspection cycles.

Moreover, the operator is obliged to have a visual inspection and maintenance of fire resistant screens in buildings carried out at least once a year by an authorised specialist company. This helps to detect and rectify possible faults in good time and also ensures an optimum service life.

If fire resistant screens fail to be inspected properly, the operator may be faced with assuming liability in case of personal injury or damage to property.

5.3 Inspections

Fire protection doors can only fulfil their tasks (life-saving and space enclosing effects) if their functionality and readiness for operation are ensured at all times.

Inspections must be carried out by a professional or a trained specialist. The frequency of inspections is dependent on the installation situation and the number of door operations. We recommend intervals of max. 1 month for door elements complying with EN 179 and EN 1125.

Regular inspections are recommended for the following installation situations:

- Doors in emergency escape and rescue routes, doors in buildings with special uses (e.g. schools, hospitals, public buildings with public traffic and places of assembly, etc.): every 3 months or after 50,000 operations.
- Doors in buildings with normal use: every 6 months or after 50,000 operations.

Defects / faults (e.g. heavy action, noises) shall be immediately rectified by authorised specialist fire protection companies. Even if no defects are detected, the doors must be fully serviced:

- after 50,000 operations or
- at least once a year

The interval for inspections to be performed must be defined in a contract..

5.4 General

Defective or deficient parts may only be replaced by an authorised specialist company (licensed by the Forster Profile Systems Ltd system house and SMU, ÜK, etc.) and in consultation with the manufacturer of the fire resistant screen. Only genuine parts from Forster Profile Systems Ltd may be used. The inspections and measures must be recorded in a report (e.g. logbook).

Moving fittings must be serviced to reduce wear and their susceptibility to corrosion. Cleaning and care intervals are dependent on the degree of chemical and mechanical strain from the environment. However, it shall take place at least once a year.

5.5 Maintenance tasks

The following work must be carried out once a year or after max. 50,000 opening operations. The work must be documented and the records placed in safe keeping by the operator.

Visual inspection

- Check the general condition of the elements (damage, paint damage, corrosion, cracking, cracks and runs in the glass).
- Check attachments to the building structure (seat of screws and fastening elements).

Seals for fillings and adjoining building components

- Inspect silicone seals, glazing gaskets and ceramic fibre tapes for damage (cracks, vandalism, etc.).
- Inspect glazing beads for correct seating.

Shadow gaps

- Check shadow gaps between frame and leaf or sash and in face plate area.
- Adjust the hinges in case of deviations.

Hinges and locking pins

- Check the attachment of hinges and locking pins.
- Hinges with plastic bearing bushes are maintenance-free. Never oil or grease them.
- Hinges without plastic bearing bushes must be lubricated with grease (lubrication set 909240).
- Only use cleaning agents which contain no corrosive substances.

Seals

- Check seals for contact pressure and flexibility.
- Treat seals regularly with a silicone stick or polymer lubricant to prevent them from becoming prematurely brittle. It is best to lightly clean them with water.
- Completely replace brittle, defective or missing seals.
- Check the lowering floor seal for its trigger function and full contact with the floor and re-adjust or replace as required.

Door closer, sequence close regulator, carry bar

- Check the attachment of fitting components for secure fit.
- The door must be self-closing from any position (observe specifications in the installation instructions of the door closer).

Locks, handles, bar knobs, push bars, additional latches, drive bolt locks, switch latch in the fixed leaf, emergency exit closures EN 179, anti-panic door closures EN 1125 (all fittings)

- Check fastening screws for tight fit and completeness.
- Check whether there are any visible traces of forced entry or damage.
- Check closing function and latch play. If the play is too great, tightness is no longer ensured. Remedy: check the condition of the latches and seals and replace as required.
- Clean and lightly grease locking latches (vertical, horizontal), bolts and keeps.
- Check all functions, e.g. anti-panic function or opening from the fixed leaf (if adjusted in this way).
- Only use cleaning agents which contain no corrosive substances.

Sliding door drive, sensors, contacts and wiring

- In compliance with EN 16005, §4.2.1, DIN 18650, § 5.1.3 and ASR A1.7, power operated doors must be inspected and maintained by the drive manufacturer before first commissioning and as required, but at least once a year. We advise the operator to conclude a service contract with the drive manufacturer.

Identification plate

- Check that the identification plate is fitted in the rebate and contains all the relevant information.

5.5 Maintenance tasks

Notes on fittings made of stainless steel

We advise you to carry out regular care using commercially available products. Tests have shown that preservation and the use of small doses of products such as Cillit, Enablit, Stahlfix and 3M can produce good results when it comes to cleaning effects. Never use steel wool, steel brushes or similar when cleaning since they damage the protective coating and this abrasion promotes the formation of extraneous rust.

Fitting parts not included in the Forster portfolio

Carry out inspection, care and servicing of fitting parts – electromagnetic door holders, magnetic contacts (Reed contacts), motorised locks, electric swing leaf drive motors, electric auxiliary devices, mechatronic components (e.g. electric locking cylinders, door releases), etc. – depending on the supplier's specifications.

6. Permitted changes and additions to fire resistant screens

Comply with country-specific laws and standards relating to fire and smoke protection closures.

Extract for Germany:

The following modifications and additions may be carried out on manufactured and installed fire protection closures in compliance with their general building supervisory approval – after consultation with the approval applicant (see label):

- Attach contacts, e.g. magnetic contacts and keep contacts (bolt contacts) for closure monitoring, provided they can be surface-mounted or placed in existing recesses.
- Route cables on door leaf (including drilling a hole – $\varnothing \leq 10$ mm – from a door leaf edge or surface into the lock recess).
- Screw, rivet or adhere signs on the door leaf.
- Screw, rivet or adhere protective strips (up to about 250 mm wide or high), fitted up to maximum in handle height, made of max. 1.5 mm thick sheet metal, e.g. kick strips or edge protection.
- Fit protective bars, provided suitable attachment points are available.
- Add Z-frame and steel corner frames and attach wall abutment profiles on wooden frames.
- Adhere profiles made of wood, plastic, aluminium or steel in all shapes and positions on glass panes.
- Attach holding plates for adhesive magnets of arrest systems (with general building supervisory certificate of usability) at the attachment points provided in the door leaf.

7. Safety instructions for fire protection sliding doors

Personal protection / finger protection

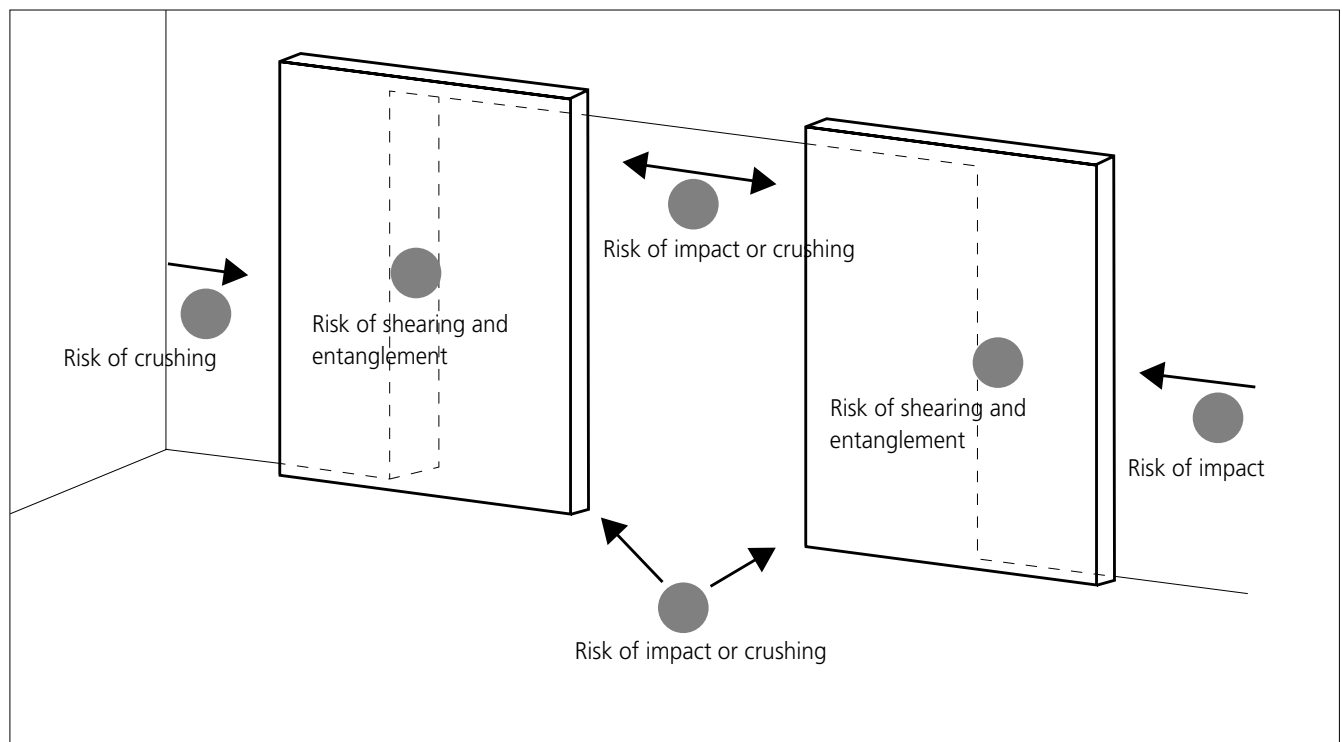
Electrically operated fire-resistant sliding doors must comply with certain safety requirements for use to EN 16005 / DIN 18650-1 to protect against improper use.

The Forster Fuego light sliding door offers various options here which provide reliable protection against hazardous zones in combination with the safety elements provided by the drive manufacturer (figure).

A risk assessment of the hazardous zones and the derived measures must be determined in collaboration with the drive manufacturer.

Sliding doors with electric drives are classified as "machines" according to the definition in Machinery Directive 2006/42/EC. The Directive ensures that proper assembly, maintenance and use does not endanger personal safety.

The sliding door on the building must be commissioned by the drive manufacturer or his authorised representative.



7. Safety instruction for fire protection sliding doors

Functional description for fire resistant sliding doors with escape route function

Normal function

Daytime operation (Fig. 1)

- Sliding function: open/close
- Alternative: continuously open
- Swing leaf locked

Night-time operation (Fig. 2)

- Sliding function: close
- Swing leaf locked
- Escape route only by using emergency button

Fire

Daytime operation (Fig. 3)

- Sliding function: close
- Drive locked (holding position)
- Swing leaf unlocked (escape route free)
- Escape route (access from outside by handle)

Night-time operation (Fig. 3)

- Sliding function: close
- Drive locked (holding position)
- Swing leaf unlocked (escape route free)
- Escape route (access from outside by handle)

Fig. 1

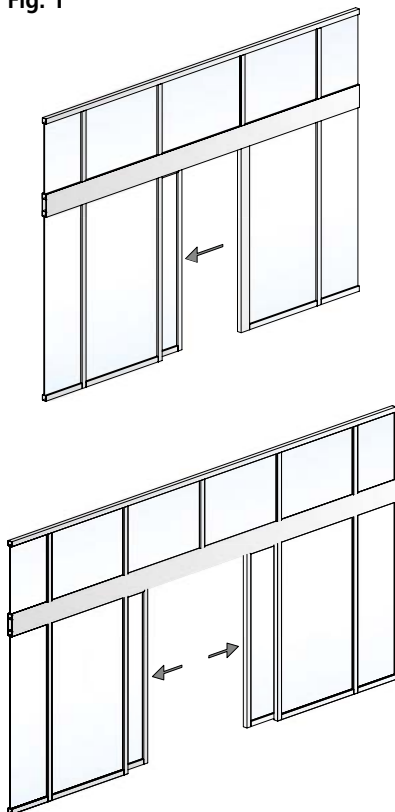


Fig. 2

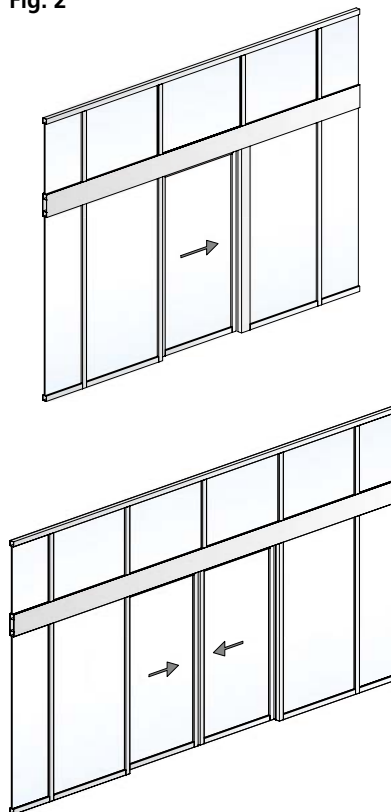
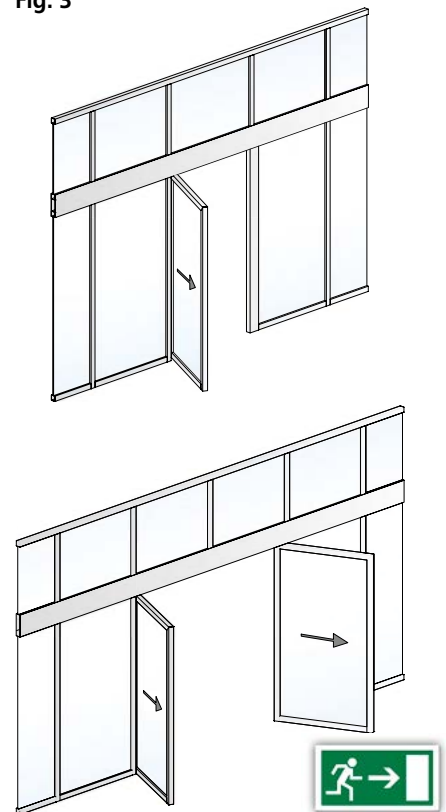


Fig. 3



8. General advice

Forster's series of profiled steel sections and the corresponding accessories have been developed for a wide range of applications in the manufacture of metal structures and façades. These series are designed for processing by specialist firms in the metal-working industry, window construction and similar, who are familiar with the appropriate technical standards, particularly in the field of metal working, door, window and façade construction and where an adequate knowledge of all relevant standards, directives and suppliers' processing instructions can safely be assumed.

All the documentation published by us concerning the combination, erection, arrangement, processing, refinement and assembly of the articles on offer are voluntary services intended as suggestions and ideas for the expert, or else represent a report on combinations and installations already assembled. In all cases when using this documentation, the expert must always critically study whether the suggestions and ideas are suitable and appropriate for the case in point, since loads and stresses vary so greatly that it is impossible in this kind of documentation to cover every eventuality occurring in practice.

Warranty

Unless a written agreement on the contrary has been concluded, the warranty granted by Forster Profile Systems Ltd. applies solely to the extent of the "General Conditions of Sale and Delivery of Forster Profile Systems Ltd." with which the customer is already familiar.

In all cases the warranty only applies provided that original construction parts (profiles, accessories, fittings) are used from the currently valid Forster range. All liability is declined for any damage arising from the use of articles other than Forster original articles. If articles other than Forster original articles are used, test certificates and attestations granted to Foster for constructions built using such articles are deemed to be invalid.

Note

The up-to-dateness, completeness or quality of the contents are not guaranteed. We reserve the right to make technical alterations in the content wholly or partially with no prior notice. We are not liable for damages of any kind, which arise from the use of the information in this document or on the basis of its incompleteness.

The non-observance of the information on the home page of the manufacturer which is currently retrievable, specific for the product, as well as general, in particular with regard to the use for the purpose intended, safety regulations, product performance, product maintenance as well as the duty to inform and instruct, releases the manufacturer from his liability for his product.

9. Annex

9.1 Data sheet for Switzerland

Stamp – manufacturing plant

Data sheet

on the service contract for fire and smoke protection doors

Modern fire and smoke protection doors are highly developed systems which require regular servicing, maintenance and care to retain their sometimes life-saving function. The maintenance of fire and smoke protection doors is the responsibility of the corresponding building owner or user as specified in Art. 19-21 of the Swiss Fire Prevention Standard (integral part of VKF fire prevention regulations / in force since 1 January 2005, and is legally binding). The owner or user may carry out the necessary servicing, maintenance and care work required for proper upkeep himself or commission a specialist company* accordingly.

1. In order to ensure permanent trouble-free functionality, professional maintenance is required for heavily frequented door elements at intervals or maximum 12 months or after 50,000 operations.

If functional impairments are detected (e.g. heavy movement, unusual noises, etc.), an authorised person or specialist company* must be immediately entrusted with carrying out an inspection.

2. Failure to carry out regular servicing, maintenance and care may lead to the following consequences:

- The owner may be liable for any damages to third parties if the damage is caused by malfunctions in fire and smoke protection doors, provided the damage arises from a violation of the owner's legal duty to ensure public safety.
- Warranty may be excluded if defects can be traced back to insufficient maintenance.
- The building insurer (or the property insurer) may resort to hazard prevention measures, should a smoke control and/or fire protection door be identified. In extreme cases this may lead to the prohibition of the door's use or the withdrawal of its operating approval.
- The restricted functionality of fire protection and/or smoke control facilities may result in a reduction of insurance cover or a release of the building insurers to indemnify in case of damages.

3. On request, the supplier of your fire protection doors will submit to you a maintenance quotation specially tailored to your requirements. If needed, we will provide you with a free copy of a maintenance manual containing instructions on how to carry out maintenance yourself.

I have received and taken note of this data sheet.

Venue/date

Signature/stamp

* Licensed metal-working companies for Forster fire and smoke protection systems
Specialist companies are exclusively companies which have a valid licence contract with the corresponding authorisation holder (system house) and employs personnel trained in fire protection.

Profilsysteme in Stahl und Edelstahl

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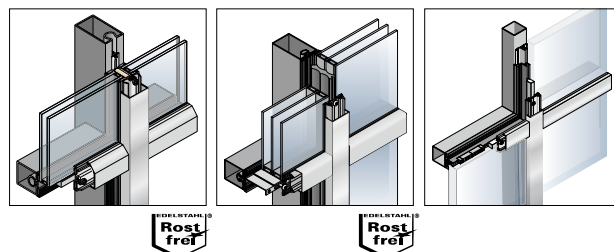
Steel and stainless steel profile systems

Fassaden / Façades / Curtain walls

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forsterthermfix®light



Fenster / Fenêtres / Windows

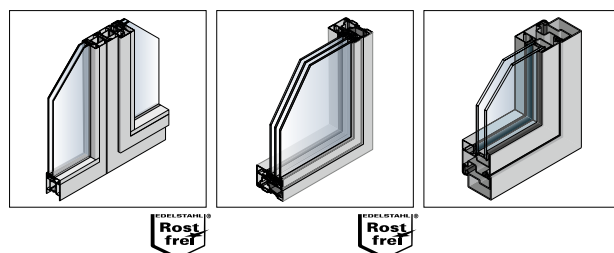
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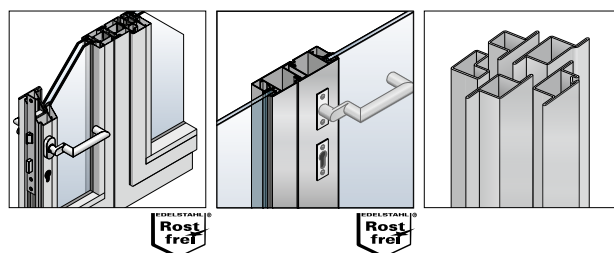
Türen / Portes / Doors

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forsterpresto

forsternorm



Brand- und Rauchschutz / Coupe-feu et pare-flamme / Fire and smoke protection

forsterfuego®light

forsterpresto

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forsterthermfix®light

forsterunico®

