# Additional installation and maintenance instructions

for fire and smoke protection closures



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#### Note

02/24

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.

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# 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 / SIPIZ / 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

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- 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 backfilling.



# 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:

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# 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 & Switzerland).

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

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Germany
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#### 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



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# 4.3 Installation confirmation in accordance with DIN 18093

#### Germany

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An installation confirmation in accordance with DIN 18093 is required for all fire and/or smoke resistant closures in Germany

#### See annexe 9.2

Installation confirmation in accordance with DIN 18093							
Installation	onfirmation						
This confirma over to the cli recorded in the	tion and the m ant before initia e client's docu	anufacturer's inst ting use and, if ne mentation.	allation and n cessary, pass	naintenanc ed onto the	e instructions responsible l	to be attact ouilding supe	hed must be ervisory auth
Construction Postcode, to	project in/city and stre	et of the installation	on location:				
Location in the	e property (e.g	. part of the buildi	ng, floor, door	number):			
Installation da	te/period:						
Identification Manufacture	of the fire and/	or smoke resistan	t closure	0.0000			
Product type	and/or designa	tion:					
Serial numbe	or reference r	number of the proc	duct:	0701071			
Fire resistance	e and/or smok	e control classifica	ation and class	sification of	the self-closi	ng:	
Information o Name and ac	the company dress of the co	and installer mpany that install	ed the fire an	d/or smoke	resistant clos	sure:	
Name of the	nstaller/s who i	installed the fire a	nd/or smoke r	esistant clo	sure:		
Installer con It is hereby c professionally the assembly	firmation onfirmed that th according to instructions.	ne above-mention	ed fire and/or	smoke res	istant closure	has been ir	nstalled and a



# 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	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 as way as to prevent fires or explosions.
	2 Owners and users of buildings and systems shall ensure that the safety of persons, animals and assets is ensured.
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	1 The owner of a building or an other plant shall restore damage which was caused by the defective plant or
Plant owner's	production or improper maintenance.
obligation	
	2 He shall be entitled to obtain restitution from others who are responsible to him for such damage.

The owner is fully liable if persons sustain injury or assets are damage 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).

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# 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 Leaflets in the Annex).

Maintenance is the responsibility of the operator. As far as possible, a service contract (e.g. Metaltec, 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.

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.

The following table shows responsibilities for tasks:

Task	Responsibility		
Safety inspection	Trained person or specialist company		
Maintenance/repair	I rained person or specialist company		
Repairs	Specialist company		

#### 5.3 Intervals

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.

The frequency of the safety inspection and maintenance/repair depends on the installation situation and the number of door actuations.

The intervals depend on the extent of chemical and mechanical environmental stress. However, they must be performed at least 1 x annually or after 50,000 actuations.

For fire resistant closures in escape and emergency routes in accordance with EN 179 und EN 1125, we recommend shorter intervals according to the following table:

Use	Interval
Building with normal use	6 months or 50,000 actuations
Building with special use (schools, hospitals, public buildings	3 months or 50,000 actuations
open to the public and assembly places, etc.)	

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



# 5.4 Safety inspection, maintenance/repair

The safety inspection and maintenance must be documented and the records must be kept 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

- · The seals must be checked for defects (e.g. cracks, wear), 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.
- · Check the lowering floor seal for its trigger function and full contact with the floor and re-adjust.

#### 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.
- 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.

Note: maintenance of the fire resistant closure must be considered separately.

#### 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.



#### Identification plate

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

You must have defects/malfunctions (e.g. stiffness, noise generation) remedied immediately by authorised fire protection specialist companies.

The safety inspection, maintenance/repair must be recorded in a report.

#### 5.5 Repairs (rectification of defects)

Defective or faulty parts may only be changed by an authorised specialist company (licensed by the Forster Profile Systems Ltd systems house and Metaltec, ÜK, etc.) and in consultation with the manufacturer of the fire resistant closure. Only original parts from Forster Profile Systems Ltd may be used. The repairs must be recorded in a report

# 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 surfacemounted or placed in existing recesses.
- Route cables on door leaf (including drilling a hole Ø ≤ 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 funcion

#### Normal function

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#### 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)









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# 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

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# 9.1 Leaflet for Germany

	Stamp – manufacturing plant
Leaflet	
on maintaining fire resistant doors	
State-of-the-art fire resistant doors are advanced safety-related systems which requered their potentially life-saving function. The owner of the property is responsible for report (Building Code of North Rhine-Westphalia). They can either perform the main themselves or transfer responsibility for this to a specialist company.	ire regular maintenance to maintain pair in accordance with Art. 3 BauO tenance work required for the repair
<ol> <li>In order to ensure perfect functionality, professional maintenance with an interva quired.</li> </ol>	al of a maximum of 12 months is re-
Insofar as functional limitations are determined (e.g. stiffness, unusual noise ge ny shall be commissioned to carry out the inspection immediately.	eneration, etc.), a specialist compa-
2. Failing to perform regular maintenance can result in the following consequence	es:
The owner is liable to third parties for any damages of an unlimited amount re- resistant door from the point of view of a violation of the legal duty to maintain	sulting from a malfunction of the fire n safety.
The warranty is excluded if defects are the result of insufficient maintenance	(see DIN 4102, part 18, no. 1.2).
• Once it has established that a fire resistant door is not functioning properly, prevention measures which can go as far as to prevent usage.	the building authority can take risk
<ul> <li>Limited functionality of the fire safety devices can result in the fire insurer bei 7(1.a) AFB (General conditions for fire insurance) 87).</li> </ul>	ng relieved of their obligations (Art.
<ol> <li>Upon request, the supplier of your fire resistant doors will be happy to present y cifically tailored to your situation. As required, maintenance instructions with infenance independently can be provided free of charge.</li> </ol>	ou a maintenance offer that is spe- ormation on performing the mainte-
I have received and taken note of the Leaflet above	
Place/date Signate	ure/stamp







#### 9.3 Leaflet for Switzerland

			Stamp – manufacturing plant
	Leaflet	t	
on the	e service contract for fire ar	nd smoke protection c	loors
Modern fire and smoke protection and care to retain their sometin responsibility of the correspond Standard (integral part of VKF The owner or user may carry of himself or commission a specia	on doors are highly developed nes life-saving function. The r ling building owner or user a fire prevention regulations / i ut the necessary servicing, m list company* accordingly	systems which require naintenance of fire and s specified in Art. 19-2 n force since 1 Januar aintenance and care w	regular servicing, maintenance I smoke protection doors is the 1 of the Swiss Fire Prevention y 2005, and is legally binding). ork required for proper upkeep
<ol> <li>In order to ensure permanent door elements at intervals or</li> </ol>	trouble-free functionality, prof maximum 12 months or after	essional maintenance is 50,000 operations.	s required for heavily frequented
If functional impairments are cialist company* must be imn	detected (e.g. heavy movemened nediately entrusted with carryi	ent, unusual noises, etc. ng out an inspection.	.), an authorised person or spe-
2. Failure to carry out regular se	ervicing, maintenance and care	e may lead to the follow	ing consequences:
<ul> <li>The owner may be liable for smoke protection doors, pr safety.</li> </ul>	or any damages to third partie ovided the damage arises fro	es if the damage is cau m a violation of the owr	sed by malfunctions in fire and ner's legal duty to ensure public
Warranty may be excluded	if defects can be traced back	to insufficient maintena	nce.
<ul> <li>The building insurer (or the and/or fire protection door b withdrawal of its operating</li> </ul>	property insurer) may resort t be identified. In extreme cases approval.	o hazard prevention me this may lead to the pro	easures, should a smoke control ohibition of the door's use or the
The restricted functionality cover or a release of the but	of fire protection and/or smoke uilding insurers to indemnify in	e control facilities may re case of damages.	esult in a reduction of insurance
<ol> <li>On request, the supplier of yo to your requirements. If need tions on how to carry out main</li> </ol>	our fire protection doors will so ed, we will provide you with a ntenance yourself.	ubmit to you a maintena free copy of a maintena	ance quotation specially tailored ance manual containing instruc-
I have received and taken note	of this leaflet.		

\* 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).



# Steel is our nature.

For us, steel is a matter of the heart. We develop long-lasting systems for attractive and energy-efficient architecture.

Forster Profile Systems develops and manufactures safe, energy-efficient solutions in steel and stainless steel for doors, windows and facades in Switzerland. Forster works with its own branches in over 20 countries – and exclusive sales partners in around 10 more. In-house consultants are on hand to assist our customers at sites ranging from Europe and the Middle East to Asia and North America. Forster systems are used for building shells and interiors. This includes market-leading solutions that meet

the strictest requirements and standards in terms of thermal insulation, plus safety applications such as fire protection, burglar resistance and bullet resistance. The product range is rounded off by matching accessories. Our customers and business partners in architecture, planning and construction can also count on comprehensive services for their respective industry.



