RAICO

SYSTEM OVERVIEW

www.raico.com

CONTENT

CALWER PASSAGE
Installed: FRAME^{+} 75 WB, THERM^{+} A-V
Photos (cover): Jürgen Pollak Photography & Film

Dear readers,

RAICO solutions are constantly evolving - just like this system overview. It contains the current RAICO product portfolio with all relevant information on windows, doors and façades.

Find your perfect façade solution with the proven top products from the THERM$^+$ series. open up possibilities with the RAICO window and door system FRAME$^+$, or break completely new ground with the sustainable façade systems ELEMENT$^+$.

In addition to the most important product benefits, technical data, test values, designs and variants, there are even more values waiting to be discovered. Take a look behind the RAICO façade and find out what makes working with us so unique. Plus inspiring reference projects and sustainable ideas for sophisticated architecture. Are you ready?

We hope you enjoy planning, designing and discovering,

Hagen Weber Bernd Schweinberger

WE SEE OURSELVES NOT JUST AS PART OF YOUR SOLUTION, BUT AS PART OF YOUR TEAM!

Conceived by RAICO

- MADE FOR PEOPLE

Whatever we do at RAICO, we do it together. Because we are team players. Because we are reliable partners. Because we believe in sincere and personal co-operation. Through which people can realise themselves, and we realize our entrepreneurial goals.

Over the years, it is not only the international RAICO reference properties that have become a special figurehead, but also the special quality of the encounters between employees and customers.

RAICO THINKS CONSTRUCTIVELY AND SOLUTION-ORIENTED.

We have the right solution in stock for every challenge. But we are not satisfied with just that. Thanks to our constructive collaboration with our clients, customers, architects and interior designers, we are constantly adding new systems and variants.

The RAICO research and development team has registered more than 100 patents and property rights over the past 30 years. From the add-on system for timber and steel façades up to aluminium façades, windows and doors. Are you looking for a very special solution that goes beyond the range in our system overview? Then we can also develop this together with you.

RAICO Pfaffenhausen Photos: RAICO

Façade THERM+ ELEMENT+

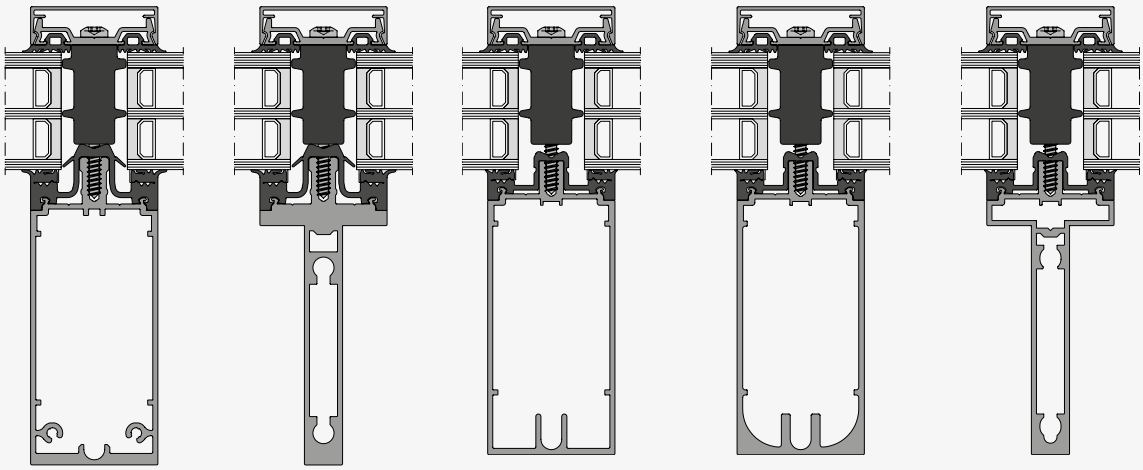
RAICO façade systems combine innovation, flexibility and high functionality.

With THERM+ and ELEMENT+, we offer modular system solutions for aluminium, steel and timber constructions that guarantee individual design freedom, simple processing and convincing impressive efficiency. Whether aluminium, steel or timber constructions or environmentally friendly unitised façades - our products meet high standards of design, energy efficiency and process reliability. Thanks to well thought-out technologies and intelligent details, the systems enable precise planning and quick installation, even for demanding large-scale projects.

SCHAFBERGBAHN VALLEY STATION
Installed: THERM^{+} S-I, THERM^{+} H-I, FRAME^{+} 120 RI
Photos: Albrecht Schnabel

THERM+ A-I/A-V Aluminium façade

Calwer Passage Photo: Jürgen Pollak Photography & Film



THERM+ 50 A-I
with insulating block P

THERM+ 50 A-I
with insulating block P and T structural profile

THERM+ 50 A-V
with insulating block P

THERM+ 50 A-V
with insulating block P and reinforced structural profile

THERM+ 50 A-V
with insulating block P and T structural profile

Highlights

- **Maximum thermal insulation** with insulating block variant up to $U_{m,t}$ = 0.85 W/(m²K) incl. screw influence
- **All profiles** can be used **for mullions and transoms**
- **Large selection of** rectangular and T-shaped **support profiles**
- **Stable T-connector technology** in different variants
- **Comprehensive system accessories** *(e.g.* e.g. *sun protection devices, scaffolding fixations)*
- **Integrated drainage** in the hat gasket commonly used by in three levels
- **Continuous thermal insulation** using RAICO insulation block technology
- **Reinforced variant** for high static requirements *(A-V)*
- **Passive house certified** system-wide *(A-V)*

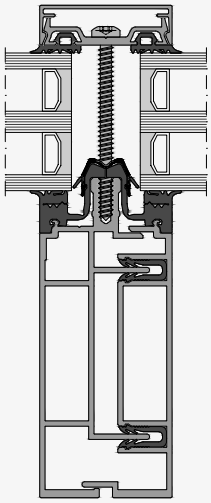
Technical data

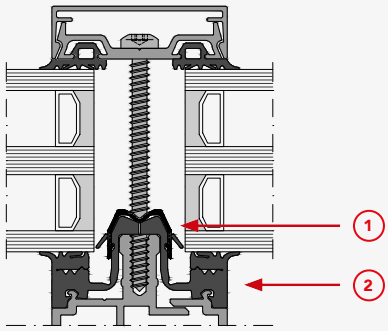
	System width (mm)	Profiledeep rectangle (mm)	Expansion profile profile depth (mm)	Profiledeep profile T (mm)	Profile width T-profiles (mm)	Installation-thickness (mm)	Glass weights (mm)	Drainage levels	Polygon façade	Glass roof application	Winter garden application
A-I	50/56	25 - 250*	75 - 200	50 - 200	50	4 - 64	up to 600	2 or 3	up to 45°	up to 2° inclination	Yes
A-V	50/56	25 - 200	100 - 200	50 - 175	50	10 - 64	up to 600	2 or 3	up to 45°	-	-
A-V reinforced	50/56	100 - 200	-	-	-	10 - 64	up to 600	2 or 3	up to 45°	-	-

*for system width 56

Expansion mullion
THERM$^+$ A-I

Maximum glazing-ready pre-assembly of complete mullion-transom elements. Simple plug-in system with half-mullion gasket for pressing onto the aluminium expansion mullion and synthetic cover profile for attaching to the gasket. All properties such as tightness, thermal insulation and ease of processing are identical to the basic system.





1 Synthetic cover profile

2 Half gasket for mullion

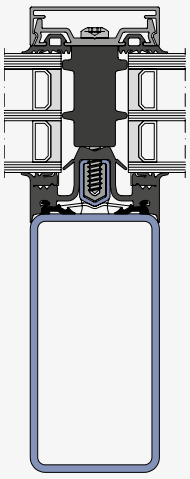
The T-connector - innovation up to the smallest detail

A key feature of THERM$^+$ aluminium façades are the innovative T-connectors.
Their technology has been optimised up to the smallest detail and offers a wealth of advantages:

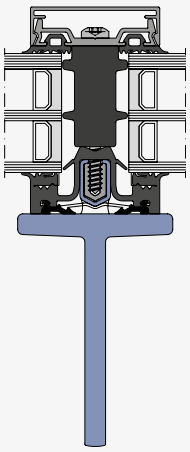
- Identical for **THERM$^+$ A-I/A-V** in all system widths
- **Simple joint connection** with straight cuts, without notching the profiles
- **Several variants** for different requirements and mounting types
- **THERM$^+$ A-V as a statically reinforced variant possible** for vertical façades with high static requirements
- T-connectors can **also be used as rod material for static reinforcement of load-bearing profiles**, for base and head brackets and for profile joints
- **Also for slanted angles and polygon** façades
- **T-connector for high vertical loads** up to 600 kg tested and approved by building authorities
- **Prefabrication** of transport-stable elements possible in the workshop
- **Optically perfect T-connectors** thanks to optimised transom installation over the entire depth
- **Entire load chain with AbZ** from the system's own T-connectors via the glass load transfer up to the compression moulding screw connection

THERM+ S-I Steel façade

Hotel Prinz Rudolf Photos: Davide Perbellini



THERM+ 50 S-I
with insulating block P



THERM+ 50 S-I
with insulating block P and T structural profile

Highlights

- **Maximum thermal insulation** with insulating block variant up to $U_{m,t}$ =0.82 W/(m²K) incl. screw influence
- **Attachment construction for any steel support profile** system widths 50, 56, 76 and 96 mm
- **Integrated drainage** in the continuous hat gasket on three levels
- **Passive house certified** in the system widths 50 and 56
- **T-shaped steel profiles** with a face width of 60 mm and a depth of 90 or 120 mm **for filigree glass façades**
- **Safe and easy glass load transfer for high pane weights** with system's own T-connectors for invisibly screwed transom connections up to 1,019 kg
- **Continuous thermal insulation** using RAICO- insulating block
- **Complete load chain with AbZ and European Technical Assessment (ETA):** Welding to the structural system, system's own T-connectors, glass load transfer, Press strip screw connection

Technical data

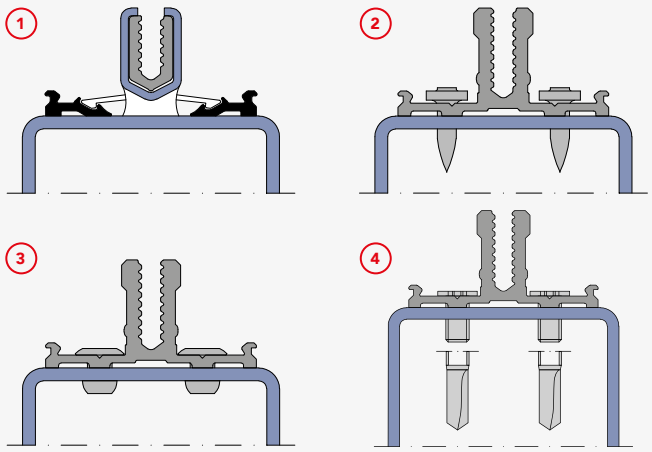
	System width [mm]	For steel-profiles from [mm]	T-shaped steel profiles [mm]	Installation-thickness [mm]	Glassweights [kg]	Drainage levels	Polygon façade	Glass roof application	Winter applicationgarden
S-I	50/56/ 76/96	50 Width	Width: 60, Depth: 90/120	4 - 64	up to 1,500*	2 or 3	up to 45°	up to 2° Inclination	Yes

*welded T-connectors and glass carrier, structural analysis required

Fastening variants
for add-on base profiles

System variants
The THERM+ S-I offers various mounting variants for basic profiles.

1. **Welding with base profile**
2. **HILTI setting pin technology**
3. **With blind rivet**
4. **Thread-forming screw**

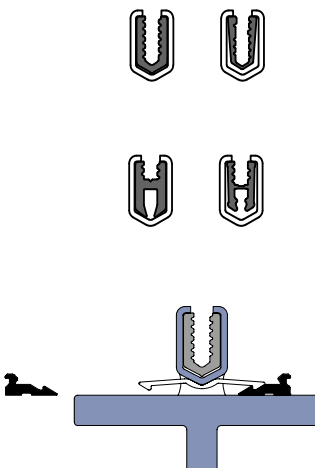


Perfect corrosion protection thanks to plastic material base profile

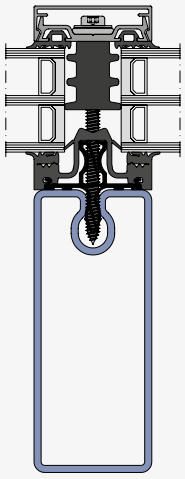
Thanks to its special material properties and the immense variety of shapes, steel offers an extraordinary range of design freedom.

The unique attachment principle of the THERM+ systems was developed from practical requirements in order to pass on this variety of applications without restriction for glass façades, while at the same time achieving safe and simple installation and maximum corrosion protection.

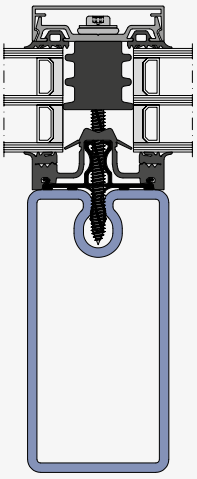
- Perfect structural corrosion protection thanks to the distance between the structural profile and the system base profile, meaning no components lying on top of each other *(see Fig. 1)*
- Patented system base profile with stainless steel jacket and factory-rolled aluminium screw channel, for easy installation and secure fastening
- High screw extraction values and secure screw insertion thanks to aluminium screw channel



THERM+ FS-I Steel façade



THERM+ 50 FS-I
with insulating block P



THERM+ 56 FS-I
with insulating block P

Highlights

- **No welding** required during production
- All **profiles can be used for mullions and transoms**
- **Sharp-edged profiles** due to small radii
- **Sendzimir galvanised profiles** ensure corrosion protection
- **Integrated screw channel in the steel tube,** thus reducing planning, manufacturing and installation costs
- **Passive house certified** in all system widths
- **Maximum thermal insulation** with insulating block variant up to $U_{m,t}$ =0.75 W/(m²K) incl. screw influence
- **Entire load chain with European technical assessment** (ETA), special steel connector SC / SCL also for heavy filling weights
- **Integrated drainage** in the continuous Cap seal on three levels
- **Extensive accessories from the THERM+ series** such as sun protection devices

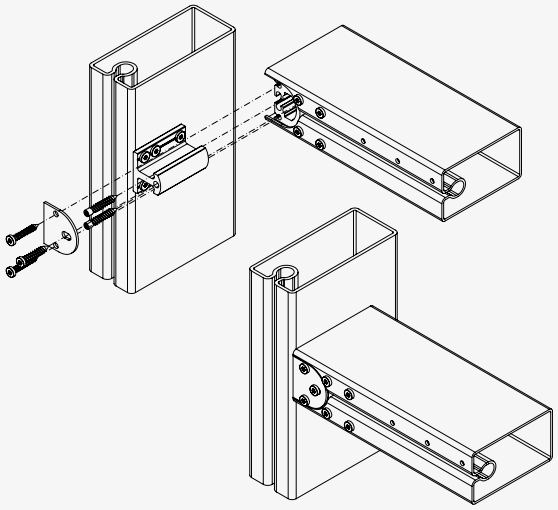
Technical data

	System width [mm]	For steelprofile from [mm]	Installation-thickness [mm]	Glass weights [kg]	Drainage levels	Polygon façade	Application Glass roof	Application Conservatory
FS-I	50/56	50 and 60 width	4 - 64	up to 1,019	2 or 3	up to 45°	up to 2° Inclination	Yes

T-connector

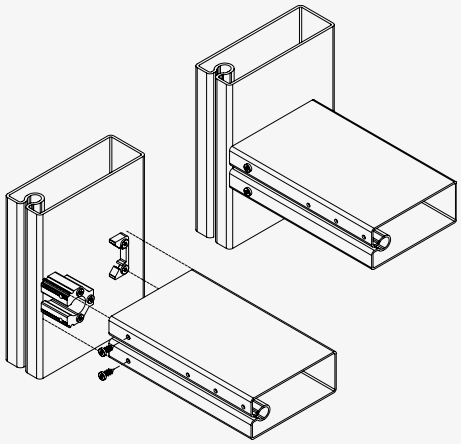
Standard connector SC

- Connecting element of the mullion-/transom profiles
- Variably adjustable fixing part for tolerancing internal pipe dimensions
- Intelligent connector concept for tolerance absorption in the façade grid
- Threaded tube and commercially available steel profile for contact pressure and as expansion transom screwable & stable during transport
- Suitable for retrofitting deadbolts



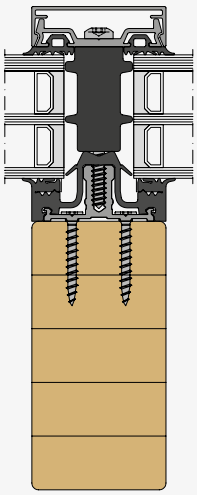
SCL conductor connector

- Connecting element for mullion/transom profiles
- Intelligent connector concept for tolerance absorption in the façade grid
- Threaded tube and commercially available steel profile for contact pressure and as expansion transom screwable & stable during transport
- Suitable for conductor mounting

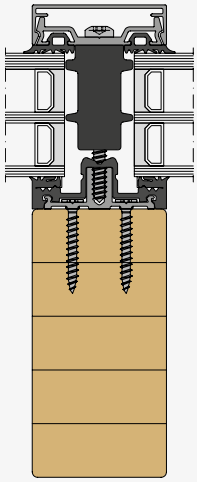


THERM+ H-I/H-V Timber façade

Bert Baumhäuser Photos: Christian Flatscher



THERM+ 50 H-I
with insulating block P



THERM+ 50 H-V
with insulating block P

Highlights

- **Passive house certified** in the system widths 50, 56 and 76
- **Maximum thermal insulation** with insulating block variant up to $U_{m,t}$ =0.77 W/(m²K) incl. screw influence
- **Two types of aluminium base profiles for screwing on:** With or without guide foot in the area of the wooden structural profile
- **Quick and easy screw connection of the base profiles**, also possible with a magazine screw driver
- **Nocomponents extending** from the exterior up to the timber construction through
- **Integrated drainage** in the continuous Hat gasket on three levels
- **Continuous thermal insulation** using RAICO insulating block
- **AbZ approved:** Screw connection for all wood structural profiles from 50 mm width; entire load chain; glass load transfer; wood screw connection

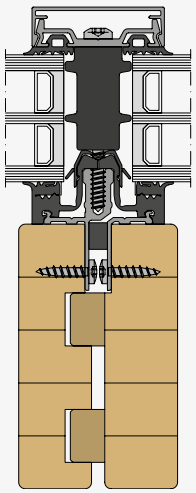
Technical data

up to 600	System width (mm)	For woodprofiles from (mm)	Installation-thickness (mm)	Glass weights (kg)	Drainagerungs-levels	Polygonfaçade	Glass roof application	Winter garden application
H-I	50/56/76/96	50 Width	4 - 64	up to 600	2 or 3	up to 45°	up to 2° inclination	Yes
H-V	50/56/76	50 Width	10 - 64	up to 600	2 or 3	up to 45°	-	-

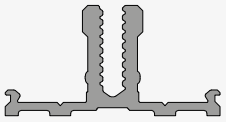
VARIANTS

Coupling posts are the ideal installation aid for rationalised construction. Prefabricated frames are preassembled with split coupling mullions, base profiles, interior gaskets and glass supports and only need to be coupled, glazed and fitted with Press mouldings on site.

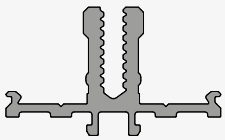
Base profiles compatible with all system variants. Special sealing grooves allow for east sliding in of the silicone-free interior gasket made of EPDM. Slotted hole punching for integrated expansion compensation. Available in two variants, with or without guide foot.



Coupling post



Base profile without foot



Base profile with foot

THE TIMBER CONNECTOR TC

INNOVATIONup to the smallest detail

The timber mullion-transom connector must fulfil special requirements, especially for timber-glass façades. The loads in front of the timber structure caused by insert elements and the resulting torsional forces in the transom must be safely transferred and at the same time wind pressure loads and wind suction loads must be reliably transferred to the structural system:

- Suitablefor THERM+ H-I / H-V
- **Automatic flush alignment** thanks to integrated length stop
- **Prefabrication of transport-stable elements** possible in the workshop
- **Perfect T-connectors** thanks to transom contact pressure on the entire depth
- **For transom depths from 60 up to 500 mm**
- **Two patented RAICO timber connector variants:** SOLO and KOMBI can be used for glass loads up to 600 kg, depending on the design
- **Minimal preparations:** Milling in the transom and drilling in the mullion and transom
- **Simple installation:** screw on mullion and transom component, insert transom, screw in place, tighten

TC SOLO timber connector

TC KOMBI timber connector

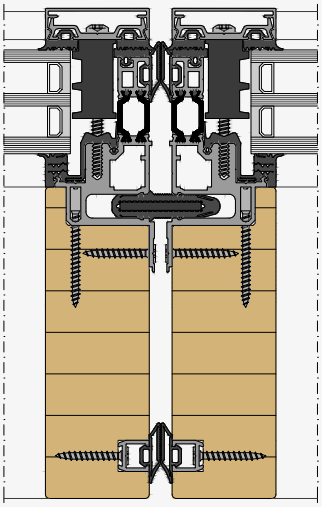
ELEMENT+ H-I Timber unitised façade

Key Visual, Rendering

Technical data

	Element-dimensions	Element weight	Resistance against wind	Air permeability[1]	Impact resistance[2]	Driving rain tightness[3]	Aluminium savings
ELEMENT+ H-I	3 x 4 m	up to approx. 1,000 k	2.5 kN/m²	AE 1.800	E5 / 15	RE 1.800	approx. 60 %

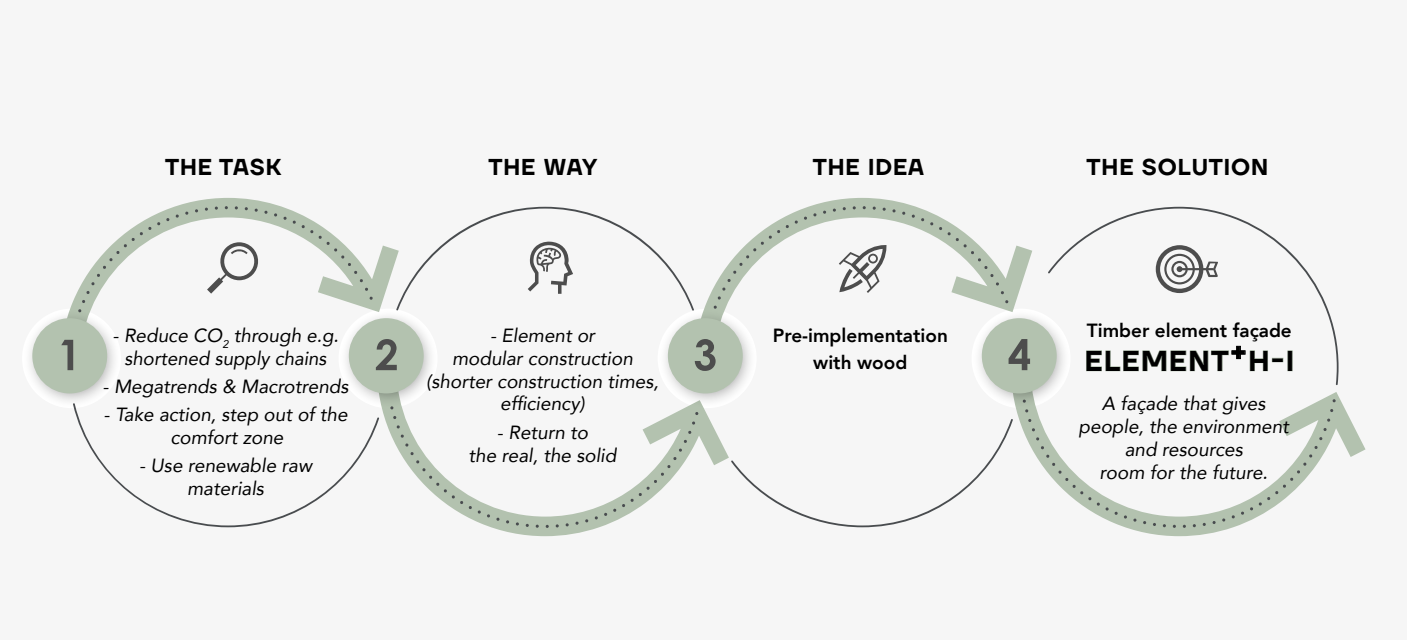
[1] according to EN 12152 [2] according to EN 14019 [3] according to EN 12154



ELEMENT+ H-I

Highlights

- **Suitable for large projects** due to a very high degree of prefabrication
- **Optimised for just-in-time installation**
- **Face width frame:** 50 mm
- **Possible infill thicknesses:** 40-64 mm
- Based on the proven **RAICO THERM^{+} H-I façade system**
- **Passive house certified**
- **Target Cradle to Cradle product certification in silver** - collaboration with EPEA GmbH - Part of Drees & Sommer *in progress
- **EPD** *(Environmental Product Declaration)* **in accordance with DIN EN ISO 14025** and **DIN EN 15804** - collaboration with ift Rosenheim GmbH *in progress
- **Thermal insulation values** of $U_{m,t}$ = approx. 1.70 W/m²K



MODULAR | GENUINE | SUSTAINABLE

FAQ on the timber element façade

What relative advantage does the product have against- over other manufacturers or comparable products?

With ELEMENT^{+} H-I, aluminium is not clad with timber, but the timber acts as a load-bearing component. The aluminium attachment is only for the functional level (weather protection, building physics/thermal insulation), which saves a lot of aluminium compared to standard aluminium unitised façades. In addition, the product achieves excellent driving rain tightness, proven with class RE1800.

Are there certain requirements for using the product?

Maximum panel dimensions of 3.0 m x 4.0 m (W x H) and a maximum panel weight of 1,000 kg are possible.

Due to fire protection regulations, the product can currently only be used for buildings above the high-rise limit in close coordination with all project participants and the building authorities.

COMPONENTS

Combination options down to the smallest detail

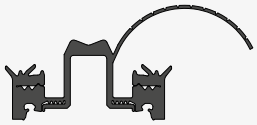
With its consistently modular design, the THERM^{+} system offers almost unlimited combination options for the various components. In this way, you can achieve the right practical and economical solution for every individual requirement.

Gasket für mullion

Gasket for transom

Transom flag seal

Gasket for transom
26mm high

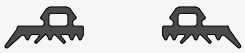


Base point lugs-gasket

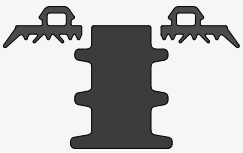
Polygon seal

Gaskets for transoms and mullions

- Optimised shape for maximum thermal insulation and easy processing
- Complete and continuous sealing of the structural profile
- Two flag seal variants for alterna tive transom or base point drainage
- Proven drainage technology in two or three levels by simple notching
- Special accessories for all applications, e.g. sealing elements for transoms
- Available in the materials EPDM or silicone



Standard exterior gasket

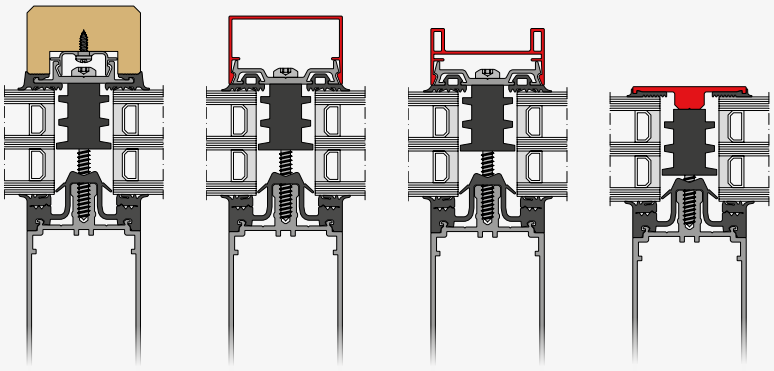


Insulating block PH

Insulating block P

External seal variants

- Certified passive house façade
- Gradual adjustment of the insulation values
- Economical solution
- Maximum thermal insulation up to $U_{m,t=}$ 0.75 W/(m²K) incl. screw influence
- Various exterior gaskets and insulating block variants available



Timber cover profile

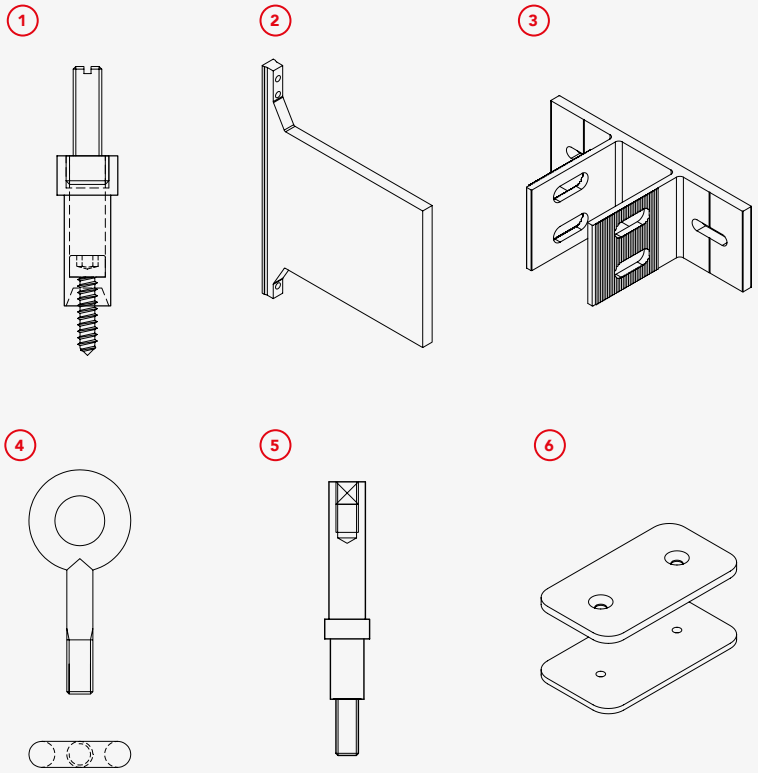
Cover profile 50/30

Cover profile U-shaped

Flat press-moulding

Pressed and cover profiles for façade and roof applications

- Large selection of different moulds for all system widths
- Customised solutions for specific properties, available in a short time
- Visually attractive flat pressure profile with only 4.5 mm glass protrusion
- Optimum cross-point sealing with special accessories
- Other models in the THERM+ product range



Accessories for façade and roof applications

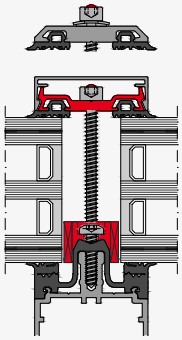
1. Sun protection devices: For all THERM+ systems of the I and V series
2. Fixture unit: For all THERM+ systems in all face widths
3. Fixation brackets: For all THERM+ systems of the I and V series
4. Scaffolding fixation: For all system widths
5. Canopy fixture: For all THERM+ aluminium systems in all face widths
6. Suction discs: For all THERM+ systems of the I and V series

FAÇADE VARIANTS

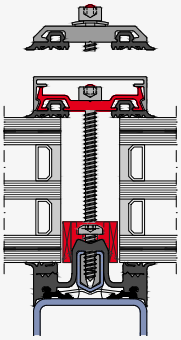
Versatile solutions for your individual requirements

The THERM$^+$ façade systems offer a wide range of variants that are specifically geared towards security, energy efficiency and design. Whether burglar-resistance, fire protection, structural glazing, passive house standard or glass roof construction - each variant can be flexibly combined with the basic systems. This ensures maximum design freedom combined with high functionality.

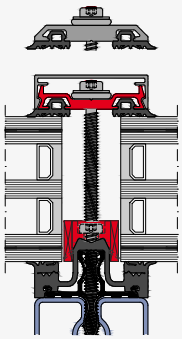
BURGLAR-RESISTANCE No one can avoid these solutions



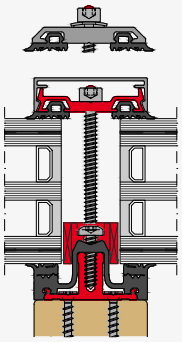
THERM$^+$
50/56 A-I
50/56



THERM$^+$
50/56/76 S-I



THERM$^+$
50/56 FS-I



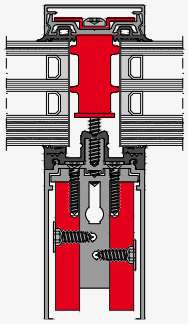
THERM$^+$
50/56/76 H-I
50/56/76 H-V

RC3 cuts

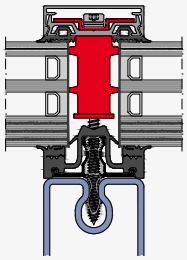
The THERM$^+$ basic system can be upgraded to a burglar-resistant façade in resistance classes RC2 and RC3 with minor additions. For maximum design freedom, all pressure profile variants with clipped cover profile or visible screw connection as well as flat pressure profiles can be used.

- Can be combined with all other system variants and pressure profiles
- For infill thicknesses from 32 up to 64 mm, double or triple glazing
- Simple and efficient glass fixings
- **High Thermal insulation** up to $U_{m,t}$ = 0.90 W/(m²K) (incl. screws influence)
- Available for **all THERM$^+$ series** in system widths 50 and 56 mm
- Can be used in glass façades and glass roofs

FIRE PROTECTION Fire and flame for invisible safety architecture



THERM$^+$
A-V FR30



THERM$^+$
FS-I FR30

The THERM$^+$ basic system can be upgraded to a fire protection façade in various classes with minor additions. With maximum glass formats of up to 1,920 x 3,000 mm, the aluminium, steel and timber façades also offer the greatest possible design freedom as a fire protection version.

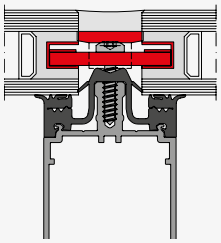
- Fire protection system identical to the basic system, ensuring minimal additional costs and processing effort
- No visual difference between the variants
- Use of standard gaskets
- Few additional components necessary
- Size Freedom of design up to floor-to-ceiling glazing

Product	Supports profile width	System width	Fire protection	Max. Glass formats	Evidence
THERM$^+$ A-V FR30	from 50 mm	50/56	EI30	1.400 x 3,000 mm	14-002042-PR01
THERM$^+$ S-I FR30	from 50 mm	50/56	EI30	1.500 x 3,000 mm	17-002326-PR01
THERM$^+$ FS-I FR30	from 50 mm	50/56	EI30	1.500 x 3,000 mm	17-002326-PR01
THERM$^+$ H-I/H-V FR30	from 58 mm	50/56/76	EI30	1.920 x 3,000 mm	19-005056-PR01
THERM$^+$ FS-I FR60	from 50 mm	50/56	EI60	1.400 x 3,000 mm	23-002382-PR01

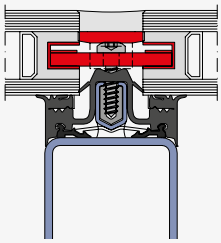
STRUCTURAL GLAZING Filigree appearance with solid insulation values

THERM$^+$ Structural Glazing SG2 façades offer the most filigree glazing technology. Only a narrow silicone joint remains visible between the insulating glass panes. The inner pane is fixed simply, quickly and securely using special screw-in SG glass retainers. Thanks to the insulating system with SG insulating block, the façades achieve excellent thermal insulation values.

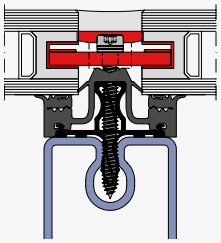
- Can be combined with all other system variants as well as with pressure profiles or suction discs
- For infill thicknesses from 32 up to 64 mm, Double or triple glazing
- Simple and efficient glass fixings with screw-in and secured SG glass retainers
- High Thermal insulation up to $U_{m,t}$ = 0.90 W/(m²K) *(incl. screws influence)*
- Available for all THERM$^+$ series in system widths 50 and 56 mm
- Can be used in glass façades and glass roofs



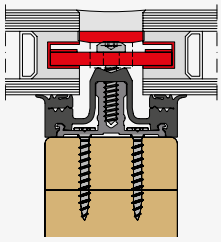
THERM$^+$
50/56 A-I/A-V



THERM$^+$
50/56 S-I

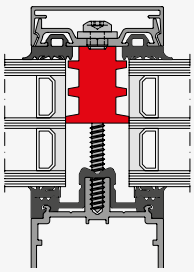


THERM$^+$
50/56 FS-I

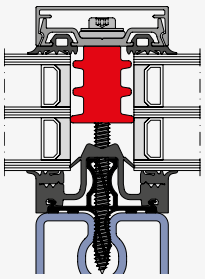


THERM$^+$
50/56 H-I/H-V

PASSIVE HOUSE An energy gain for sustainable architecture



THERM$^+$
A-V



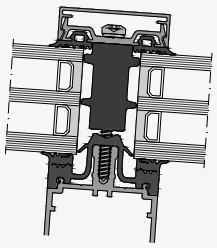
THERM$^+$
FS-I

The THERM$^+$ basic system can be upgraded to a certified passive house façade with minimal additions. Passive houses can thus be generously and economically equipped with energy-efficient fixed glazing, regardless of their structural system.

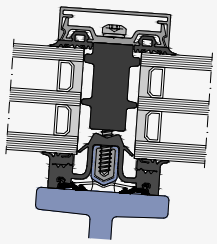
- **Certified by the passive house Institute Dr Feist**, Darmstadt for façades and glass roofs
- **Certified with triple glazing**, argon filling and plastic edge composite
- **Further system variants** *(e.g. press and cover moulding selection) as for the basic* systems
- **First passive house-certified** "Opening element in the glass roof"
- **Particularly airtight design** for blower door tests
- **Facilitated holistic Passive House suitability** thanks to special accessories

Technical data	A-V	S-I	FS-I	H-I	H-V
System width (mm)	**50/56**	**50/56**	**50/56**	**50/56/76**	**50/56/76**
$U_{m,t}$-value in W/(m²K)	**up to 0.89**	**up to 0.82**	**up to 0.75**	**up to 0.77**	**up to 0.80**

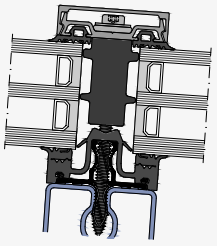
GLASS ROOF CONSTRUCTION Our bright spot in the roofing sky



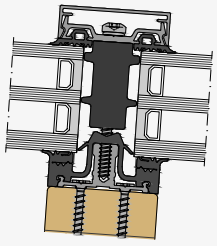
THERM$^+$
50/56 A-I
50/56



THERM$^+$
50/56/76 S-I



THERM$^+$
50/56 FS-I



THERM$^+$
50/56/76 H-I
50/56/76 H-V

The creation of bright, light-flooded rooms with glass roofs that span a wide area is one of the central challenges of modern architecture. The THERM$^+$ A-I, S-I, FS-I and H-I mullion/transom systems are available to architects and planners to realise a wide variety of designs.

- Technically identical to the **THERM$^+$** basic systems
- Version with **special** bevelled **pressure profiles, flat pressure profiles, silicone** joints or combinations of these variants
- **Drainage channels** at the end of the transom pressure mouldings **drain** the glass areas and **prevent waterlogging**
- For **ventilation and smoke evacuation** (NSHEV), the **FRAME$^+$ 100/120 RI** single is a safe and visually seamless addition, **tested at a 2° roof pitch**
- **Tested at 2° inclination** with excellent results and classifications *(accessories such as sun protection fastenings and building connections(s) also tested)*

TECHNICAL DATA
Façade systems

TESTS / APPROVALS / CE SYSTEM CERTIFICATES
in accordance with EN 13830 Product standard for curtain walls

	THERM+ A-I	THERM+ A-V	THERM+ S-I	THERM+ FS-I	THERM+ H-I	THERM+ H-V	ELEMENT+
Thermal insulation incl. screw sinfluence	up to $U_{m,t}$ = 0.85 W/(m²K)	up to $U_{m,t}$ = 0.89 W/(m²K)	up to $U_{m,t}$ = 0.82 W/(m²K)	up to $U_{m,t}$ = 0.75 W/(m²K)	up to $U_{m,t}$ = 0.77 W/(m²K)	up to $U_{m,t}$ = 0.80 W/(m²K)	up to $U_{m,t}$ = 1.53 W/(m²K)
Resistance against wind load	1.875/2.813 kN/m²	1.875/2.813 kN/m²	2.5/3.75 kN/m²	2.5/3.75 kN/m²	2.5/3.75 kN/m²	2.5/3.75 kN/m²	2.5 / 3.75 kN/m²
Impact resistance	Interior I5, Exterior E5	Interior I5, Exterior E5	Interior I5, Exterior E5	-	Interior I5, Exterior E5	Interior I5, Exterior E5	Interior I5, Exterior E5
Air permeability laxity	AE (> 600)	AE (> 600)	AE (> 600)	AE (> 600)	AE (> 600)	AE (> 600)	AE (> 600)
Driving rain tightness	RE 1,650	RE 1,650	RE 1,950	RE 1,950	RE 2,100	RE 2,100	RE 1,800
Airborne sound insulation	$R_w(C;C_{tr})$= 44(-2;-5)dB	$R_w(C;C_{tr})$= 45(-2;-6)dB	$R_w(C;C_{tr})$= 47(-2;-6)dB	$R_w(C;C_{tr})$= 47(-1;-3)dB	$R_w(C;C_{tr})$= 46(-1;-5)dB	$R_w(C;C_{tr})$= 46(-1;-5)dB	on request
Crash safety according to TRAV	Yes, without additional measures						
Building approval visible approval	Facade system Z-14.4-454 T-connector Z-14.4-461	Facade system Z-14.4-504 T-connector Z-14.4-461	Facade system Z-14.4-446	-	Façade system Z-14.4-455	Facade system Z-14.4-516	on request
European technical approval/assessment	-	-	ETA-19/0554 ETA 19/0555	ETA-19/0554 ETA 19/0555	ETA-13/0765	ETA-13/0765	on request
Fire protection	-	EI30	E30 / EW30 / EI30	EI60	E30 / EW30 / EI30	E30 / EW30 / EI30	-
Intrusion inhibition	RC2/RC3	RC2/RC3	RC2/RC3	RC2/RC3	RC2/RC3	RC2/RC3	-

TEST at 2° inclination for curtain walls EN 13830:
Characteristics and classification for CE marking

	Feature/n. Standard	THERM+ A-I	THERM+ S-I	THERM+ FS-I	THERM+ H-I
No. 4.1	Resistance to wind load (EN 13116)	Wind pressure up to 2.6 kN/m² Wind suction up to 2.7 kN/m²	Wind pressure up to 2.6 kN/m² Wind suction up to 2.7 kN/m²	Wind pressure up to 2.6 kN/m² Wind suction up to 2.7 kN/m²	Wind pressure up to 2.6 kN/m² Wind suction up to 2.7 kN/m²
No. 4.4	Air permeability (EN 12152)	Class AE (2,100)	Class AE (2,100)	Class AE (2,100)	Class AE (2,100)
No. 4.5	Driving rain tightness (EN 12154)	up to class RE 2.550 [1]	up to class RE 2.550 [1]	up to class RE 2.550 [1]	up to class RE 2.550 [1]

[1] Test deviating from EN 12155 with a water volume of 3.4 l/(m² min). The standard specifies a water volume of 2 litres/(m² min).

Window FRAME+

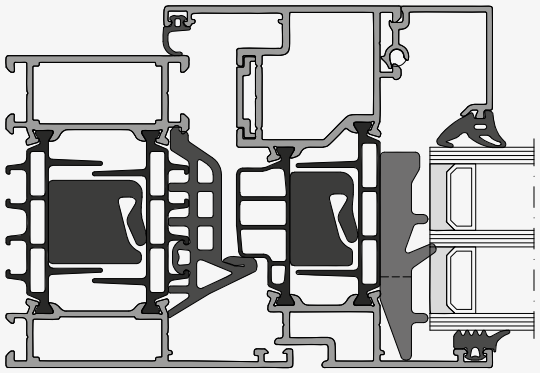
The FRAME+ window system combines innovative technology with sophisticated design.

With modular system concepts and versatile variants, we offer solutions for a wide range of architectural requirements - from delicate face widths to elegant concealed sash windows without visible glazing beads. Thanks to precise integration into our systems, our window systems open up maximum design freedom. Whether timeless all-glass look, slim frame constructions or concealed drive technology - RAICO windows stand for technical excellence and aesthetic perfection.

OERTLI LEAN FACTORY
Installed: FRAME^{+} 120 RI
Photos: Joshua Loher

FRAME+ 75 WI Insertion window

Mönchengladbach Police Headquarters Photos: BLB North Rhine-Westphalia/Arnold Glas



FRAME+ 75 WI

The innovative FRAME+ system concept with a modular structure: The system profile consists of identical aluminium interior and exterior shells and is adapted to the building depth and thermal insulation by the THERMORIT insulating bars.

Technical data

U_f-value[2]	≥ 1.0 W/(m²K)
Building depth	75 mm
Applications	Wall window Façade insert element
APPLICATION LIMITS[3]	
Max. Weight turn-tilt surface-mounted fitting	130 / 160 / 200 kg*
Max. Turning weight surface-mounted fitting	130 / 160 / 200 / 300 kg*
Max. Weight concealed fitting	150 / 180 kg
Max. Sash dimensions[4]	1.600 x 2,100 mm / 1.100 x 3,000 mm
Infill thickness sash	22 - 68 mm
Infill thickness fixed glazing	10 - 56 mm

[2] Thermal insulation according to DIN ISO 10077-2
[3] Additional requirements (oversizes) on request
[4] For permissible sash sizes, see the hardware diagram in the corresponding planning documents
* 130 / 160 kg with standard fitting, up to 200 / 300 kg with reinforced fitting

Examinations

in accordance with EN 14351-1 product standard for windows and external doors

Air permeability[1]	Class 4
Resistance to wind load[1]	up to class C5
Impact resistance[1]	Class 5
Driving rain tightness[1]	up to E 900
Operators[1]	Class 1 and 2
Airborne sound insulation[2]	$R_w(C;C_{tr})$ up to 45 db
Mechanical strength[1]	Class 4
Burglar resistance	Class RC2 / RC3
Long-term performance according to EN 12400	Class 2

[1] Tested according to RAL GZ 695
[2] The values are based on the standard dimensions of 1.23 x 1.48 m

Highlights

- Stepless thermal insulation
- **Innovative system components** such as the **THERMORIT** bar material with significantly reduced heat transmission values
- Integration of **efficient insulation zones**
- **Consistent thermal optimisation** of the modular system
- Available as a **system product or prefabricated element**

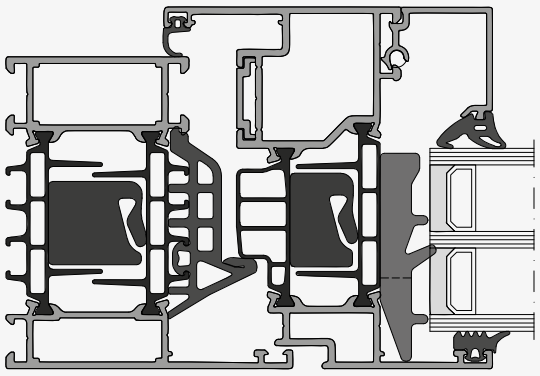
Variants

Burglar Resistance
By using additional components, the RAICO window system can be equipped with burglar-resistant properties in resistance classes RC2 and RC3.

Balcony Door Threshold
The threshold is one of the most sensitive areas of French windows. Particularly in the threshold area, there are high demands for tightness and thermal insulation. With our new barrier-free threshold, we provide a product that meets all the requirements of modern, safe, and ergonomic building design.

FRAME+ 75 SF Insertion window


Office building Photos: Johannes Hopermann


FRAME+ 75 SF

FRAME+ with filigree slim design: With the FRAME+ 75 SF, we offer you a window system with an extremely slim look. The face width of the outer sash of just 23 mm enables the realisation of timelessly elegant architecture with high-quality detailing.

Technical data

U_f- value[2]	≥ 1.0 W/(m²K)
Building depth	75 mm
Applications	Wall window Façade insert element
APPLICATION LIMITS[3]	
Max. Weight turn-tilt surface-mounted fitting	130 / 160 / 200 kg*
Max. Turning weight surface-mounted fitting	130 / 160 / 200 / 300 kg*
Max. Weight concealed fitting	150 / 180 kg
Max. Sash dimensions[4]	1.450 x 1,900 mm / 1.100 x 3,000 mm
Infill thickness sash	28 - 48 mm
Infill thickness fixed glazing	10 - 56 mm

[2] Thermal insulation according to DIN ISO 10077-2
[3] Additional requirements (oversizes) on request
[4] For permissible sash sizes, see the hardware diagram in the corresponding planning documents
* 130 / 160 kg with standard fitting, up to 200 / 300 kg with reinforced fitting

Examinations

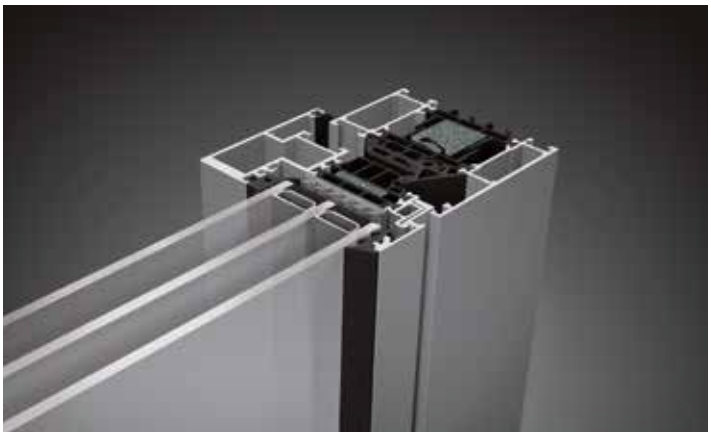
in accordance with EN 14351-1 product standard for windows and external doors

Air permeability[1]	Class 4
Resistance to wind load[1]	up to class C5
Impact resistance[1]	Class 5
Driving rain tightness[1]	up to E 750
Operating forces[1]	Class 1
Airborne sound insulation[2]	$R_w(C;C_{tr})$ up to 45 db
Mechanical strength[1]	Class 4
Burglar resistance	-
Long-term performance according to EN 12400	Class 2

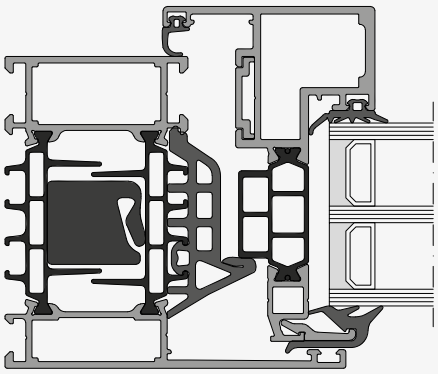
[1] Tested according to RAL GZ 695
[2] The values are based on the standard dimensions of 1.23 x 1.48 m

Highlights

- **Extremely slim external view** of the sash with a face width of just 23 mm
- **Increased airtightness and easy-to-clean design** without visible glazing beads in the sash
- **All sashes can be finished in two colours** without the need for an elaborate half-shell coating
- **All outer frames** from the proven **FRAME+ 75 WI can be used**
- **Mitre-cut exterior glazing bead** with stabilising corner sheet



FRAME+ 75 WB Concealed sash window



FRAME+ 75 WB

Children's Hospital/Mother and Child Centre Swabia Photos: Mark Wohlrab

The concealed sash window offers very filigree view widths and has no visible glazing beads. This variant is also available as a floating window, as a dummy mullion and with a sash bar. The opening and fixed elements of the installed wall window have an identical face width.

Highlights

- Version as a wall window or with Clamping outer frame as a façade insert element
- No visible glazing beads
- Very filigree face widths
- Can be designed as dummy mullion sash

Variants

Burglar Resistance
By incorporating additional components, the RAICO window system can be equipped with burglar-resistant properties in resistance classes RC2 and RC3.

Technical data

U_f- value[2]	≥ 1.5 W/(m²K)
Building depth	75 mm
Applications	Wall window Façade insert element Casement sash
APPLICATION LIMITS[3]	
Max. Weight turn-tilt surface-mounted fitting	130 / 160 / 200 kg*
Max. Turning weight surface-mounted fitting	130 / 160 / 200 / 300 kg*
Max. Weight concealed fitting	150 / 180 kg
Max. Sash dimensions[4]	1.450 x 1,900 mm / 1.100 x 3,000 mm
Infill thickness sash	22 - 44 mm
Infill thickness fixed glazing	4 - 50 mm

[2] Thermal insulation according to DIN ISO 10077-2
[3] Additional requirements (oversizes) on request
[4] For permissible sash sizes, see the hardware diagram in the corresponding planning documents
* 130 / 160 kg with standard fitting, up to 200 / 300 kg with reinforced fitting

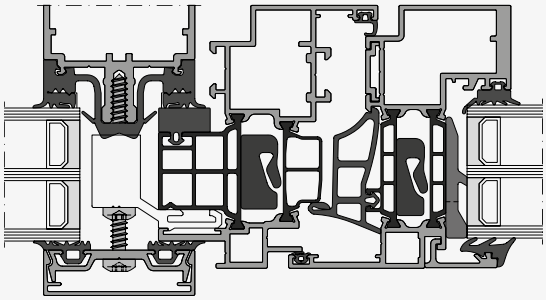
Examinations

in accordance with EN 14351-1 product standard for windows and external doors

Air permeability[1]	Class 4
Resistance to wind load[1]	up to class C5
Impact resistance[1]	Class 3
Driving rain tightness[1]	up to E 900
Operators[1]	Class 1 and 2
Airborne sound insulation[2]	$R_w(C;C_{tr})$ up to 46 db
Mechanical strength[1]	Class 4
Burglar resistance	Class RC2 / RC3
Long-term performance according to EN 12400	Class 2

[1] Tested according to RAL GZ 695
[2] The values are based on the standard dimensions of 1.23 x 1.48 m

FRAME+ 75 WA Outward opening



FRAME+ 75 WA outward opening

In the FRAME+ 75 WA outward opening version, the opening variants turn, tilt, tilt and drop-down are available.

Highlights

- Version with integration outer frame as façade insert element
- Sash glazing possible from the interior and exterior
- Narrow face widths with block sash design, no visible glazing beads

Siemens Headquarters Photos: RAICO

Technical data

U_f- value[2]	≥ 1.4 W/(m²K)
Building depth	75 mm
Applications	Façade insert element
APPLICATION LIMITS[3]	
Max. Weight turn surface-mounted fitting	80/130 kg
Max. Weight tilt surface-mounted fitting	80/130 kg
Max. Folding weight surface-mounted fitting	80/130 kg
Max. Weight countersinking-folding surface-mounted fitting	180 kg
Max. Sash dimensions[4]	2.500 x 2,000 mm / 2.000 x 2,500 mm
Infill thickness sash	22 - 68 mm
Infill thickness fixed glazing	-

[2] Thermal insulation according to DIN ISO 10077-2
[3] Additional requirements (oversizes) on request
[4] For permissible sash sizes, see the hardware diagram in the corresponding planning documents

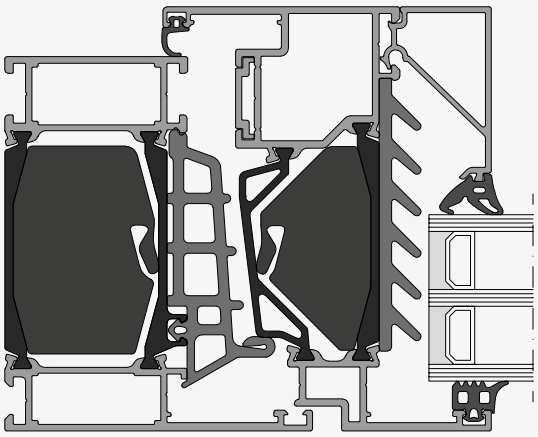
Examinations

in accordance with EN 14351-1 product standard for windows and external doors

Air permeability[1]	Class 4
Resistance to wind load[1]	up to class C4
Impact resistance[1]	-
Driving rain tightness[1]	up to E 900
Operating forces[1]	Class 1
Airborne sound insulation[2]	-
Mechanical strength[1]	-
Burglar resistance	-
Long-term performance according to EN 12400	Class 2

[1] Tested according to RAL GZ 695
[2] The values are based on the standard dimensions of 1.23 x 1.48 m

FRAME+ 90 WI Insertion window



FRAME+ 90 WI

Secondary school – Photos: Préface Sàrl

The FRAME+ 90 WI aluminium window system impresses with its outstanding energy efficiency, cost-effectiveness and maximum savings on investment and energy costs compared to standard windows.

Highlights

- **Outstanding thermal insulation** thanks to 60 % by volume of the innovative THERMORIT bar material
- **Large infill thicknesses** up to 80 mm (in the sash)
- Available as **system goods or prefabricated elements**
- **Simplified and flexible installation** in different infill thicknesses, system widths and façade types possible thanks to variable system components
- Profiles **can be coated and anodised** in combination

Variants

Burglar Resistance

By incorporating additional components, the RAICO window system can be equipped with burglar-resistant properties in resistance classes RC2 and RC3.

Passive House

Climate change and the energy transition present comprehensive challenges, particularly for energy-efficient construction and renovation. Our Passive House-certified window system meets these demands, achieving the highest energy-saving potential.

Balcony Door Threshold

The threshold is one of the most sensitive areas of French windows. Particularly in this area, there are high requirements for tightness and thermal insulation.

Technical data

U_f- value[1] passive house	0.79 W/(m²K)
U_f- value[2]	≥ 0.70 W/(m²K)
Building depth	90 mm
Applications	Wall window Façade insert element
APPLICATION LIMITS[3]	
Max. Weight turn-tilt surface-mounted fitting	130 / 160 / 200 kg*
Max. Turning weight surface-mounted fitting	130 / 160 / 200 / 300 kg*
Max. Weight concealed fitting	150 / 180 kg
Max. Sash dimensions[4]	1.600 x 2,100 mm / 1.100 x 3,000 mm
Infill thickness sash	34 - 80 mm
Infill thickness fixed glazing	36 - 65 mm

[1] Determined with glass U_g = 0.7 W/(m²K)
[2] Thermal insulation according to DIN ISO 10077-2
[3] Additional requirements (oversizes) on request
[4] For permissible sash sizes, see the hardware diagram in the corresponding planning documents
* 130 / 160 kg with standard fitting, up to 200 / 300 kg with reinforced fitting

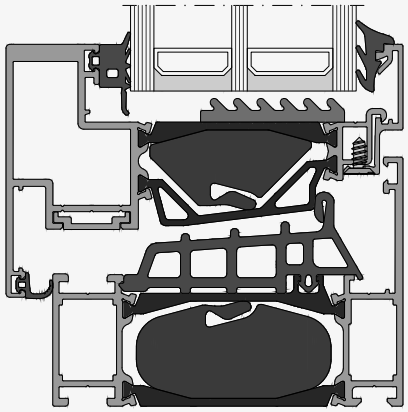
Examinations

in accordance with EN 14351-1 product standard for windows and external doors

Air permeability[1]	Class 4
Resistance to wind load[1]	up to class C5
Impact resistance[1]	-
Driving rain tightness[1]	up to E 1200
Operating forces[1]	Class 1
Airborne sound insulation[2]	$R_w(C;C_{tr})$ up to 43 db
Mechanical strength[1]	Class 4
Burglar resistance	Class RC2 / RC3
Long-term performance according to EN 12400	-

[1] Tested according to RAL GZ 695
[2] The values are based on the standard dimensions of 1.23 x 1.48 m

FRAME+ 90 SF Insertion window



FRAME+ 90 SF

Visual elegance thanks to the perfect symbiosis of glass and frame.

Highlights

- Increased airtightness and easy-to-clean design without visible glazing beads in the sash
- All sashes can be finished in two colours without elaborate half-shell coating
- All outer frames from the tried and tested FRAME+ 90 WI window system can be used
- Mitre-cut exterior glazing bead with stabilising corner sheet

Technical data

U_f- value[2]	-
Building depth	90 mm
Applications	Wall window
APPLICATION LIMITS[3]	
Max. Weight turn-tilt surface-mounted fitting	130 / 160 / 200 kg*
Max. Turning weight surface-mounted fitting	130 / 160 / 200 / 300 kg*
Max. Weight concealed fitting	150 / 180 kg
Max. Sash dimensions[4]	1.450 x 1,900 mm / 1.100 x 3,000 mm
Infill thickness sash	43 - 62 mm
Infill thickness fixed glazing	36 - 65 mm

[2] Thermal insulation according to DIN ISO 10077-2
[3] Additional requirements (oversizes) on request
[4] For permissible sash sizes, see the hardware diagram in the corresponding planning documents
* 130 / 160 kg with standard fitting, up to 200 / 300 kg with reinforced fitting

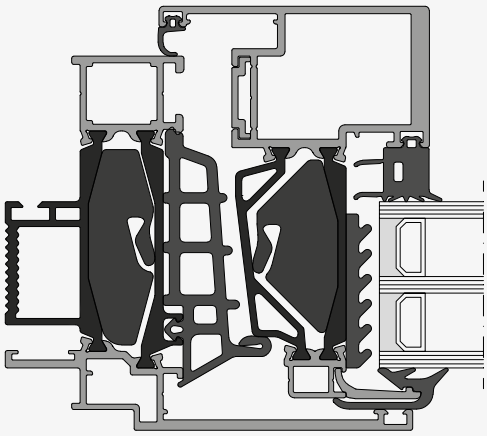
Examinations

in accordance with EN 14351-1 product standard for windows and external doors

Air permeability[1]	Class 4
Resistance to wind load[1]	up to class C5
Impact resistance[1]	-
Driving rain tightness[1]	up to E 900
Operating forces[1]	Class 1

[1] Tested according to RAL GZ 695

FRAME+ 90 WB Concealed sash window



FRAME+ 90 WB

The **FRAME+ 90 WB** concealed sash window version offers very filigree face widths and has no visible glazing beads. The opening and window elements of the installed wall window have an identical face width.

Highlights

- **Version with integration outer frame** as façade insert element
- **Safe and standard-compliant glazing technology** with large ventilation spaces and corner-vulcanised sealing frame on the outside
- **Individual design options for the outer frame inner profile** via colour-adjustable cover profile
- **Insulation of the glazing rebate using a glazing rebate insulation block** with large ventilation spaces and profile cavities in combination with highly insulating inserts

Variants

Passive house
Climate change and the energy transition present comprehensive challenges, particularly for energy-efficient construction and renovation. Our Passive House-certified window system meets these demands, achieving the highest energy-saving potential.

Technical data

U_f- value[1] passive house	≥ 0.75 W/(m²K)
U_f- value[2]	≥ 0.89 W/(m²K)
Building depth	90 mm
Applications	Wall windows, casement sashes, façade insert element
APPLICATION LIMITS[3]	
Max. Weight turn-tilt surface-mounted fitting	130 / 160 / 200 kg*
Max. Turning weight surface-mounted fitting	130 / 160 / 200 / 300 kg*
Max. Weight concealed fitting	150 / 180 kg
Max. Sash dimensions[4]	1.450 x 1,900 mm / 1.100 x 3,000 mm
Infill thickness sash	40 - 60 mm
Infill thickness fixed glazing	-

[1] Determined with glass U_g = 0.7 W/(m²K)
[2] Thermal insulation according to DIN ISO 10077-2
[3] Additional requirements (oversizes) on request
[4] For permissible sash sizes, see the hardware diagram in the corresponding planning documents
* 130 / 160 kg with standard fitting, up to 200 / 300 kg with reinforced fitting

Examinations

in accordance with EN 14351-1 product standard for windows and external doors

Air permeability[1]	Class 4
Resistance to wind load[1]	up to class C5
Impact resistance[1]	-
Driving rain tightness[1]	up to E 1200
Operating forces[1]	Class 1
Airborne sound insulation[2]	$R_w(C;C_{tr})$ up to 43 dB
Mechanical strength[1]	Class 4
Burglar resistance	Class RC2/RC3
Long-term performance according to EN 12400	Class 2

[1] Tested according to RAL GZ 695
[2] The values are based on the standard dimensions of 1.23 x 1.48 m

FRAME+ 90 WB-T Concealed sash window


West Buckland School - Photos: MRJRundell

Technical data

U_f- value[2]	≥ 1.5 W/(m²K)
Building depth	75 mm
Applications	Wall window Façade insert element Casement sash
APPLICATION LIMITS[3]	
Max. Weight turn-tilt surface-mounted fitting	130 / 160 / 200 kg*
Max. Turning weight surface-mounted fitting	130 / 160 / 200 / 300 kg*
Max. Weight concealed fitting	150 / 180 kg
Max. Sash dimensions[4]	1.450 x 1,900 mm / 1.100 x 3,000 mm
Infill thickness sash	22 - 44 mm
Infill thickness fixed glazing	4 - 50 mm

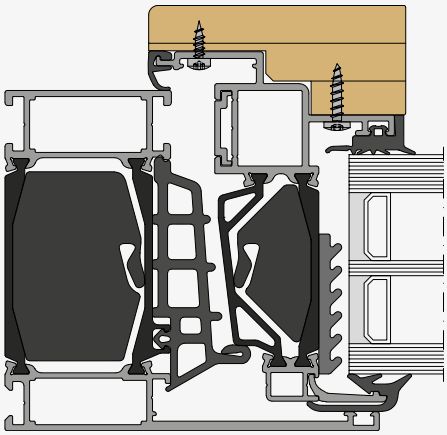
[2] Thermal insulation according to DIN ISO 10077-2
[3] Additional requirements (oversizes) on request
[4] For permissible sash sizes, see the hardware diagram in the corresponding planning documents
* 130 / 160 kg with standard fitting, up to 200 / 300 kg with reinforced fitting

Examinations

in accordance with EN 14351-1 product standard for windows and external doors

Air permeability[1]	Class 4
Resistance to wind load[1]	up to class C5
Impact resistance[1]	Class 3
Driving rain tightness[1]	up to E 900
Operators[1]	Class 1 and 2
Airborne sound insulation[2]	$R_w(C;C_{tr})$ up to 46 db
Mechanical strength[1]	Class 4
Burglar resistance	Class RC2 / RC3
Long-term performance according to EN 12400	Class 2

[1] Tested according to RAL GZ 695
[2] The values are based on the standard dimensions of 1.23 x 1.48 m



FRAME+ 90 WB-T

The concealed sash window offers very filigree view widths and has no visible glazing beads. This variant is also available as a floating window, as a dummy mullion and with a sash bar. The opening and fixed elements of the installed wall window have an identical face width.

Highlights

- Version as a wall window or with clamping outer frame as a façade insert element
- No visible glazing beads
- Very filigree face widths
- Can be designed as dummy mullion sash

Variants

Burglar resistance
By incorporating additional components, the RAICO window system can be equipped with burglar-resistant properties in resistance classes RC2 and RC3.

FRAME+ 75/90 LF Ventilation flap


RAICO sample workshop Photos: RAICO

Highlights

- Deformation resistant design as standard.
- Homogeneous interior view without visible hinges and control elements.
- Three circumferential sealing levels ensure high tightness and long-lasting functionality with low operating forces.
- Thermal and sound insulation measures can be easily retrofitted by simply removing the outer shell, even when installed.
- Designed as a fall-protection opening element by testing in accordance with IFT Guideline 18/1.
- As an insert element for mullion/transom construction or as a perforated element.
- Energy savings possible through night-time cooling.
- Protection against vandalism thanks to an electronic slip clutch.
- Face widths of 170 mm and 300 mm (for 75) or 190 mm and 300 mm (for 90) as standard (other face widths available)
- Optionally available in RC2
- Available as system goods or prefabricated elements

Technical data

Max. Height	3,000 mm
opening angle	up to 135°
Face width with building	170 mm
depth 75 mm	300 mm
Face width with building	190 mm
depth 90 mm	300 mm

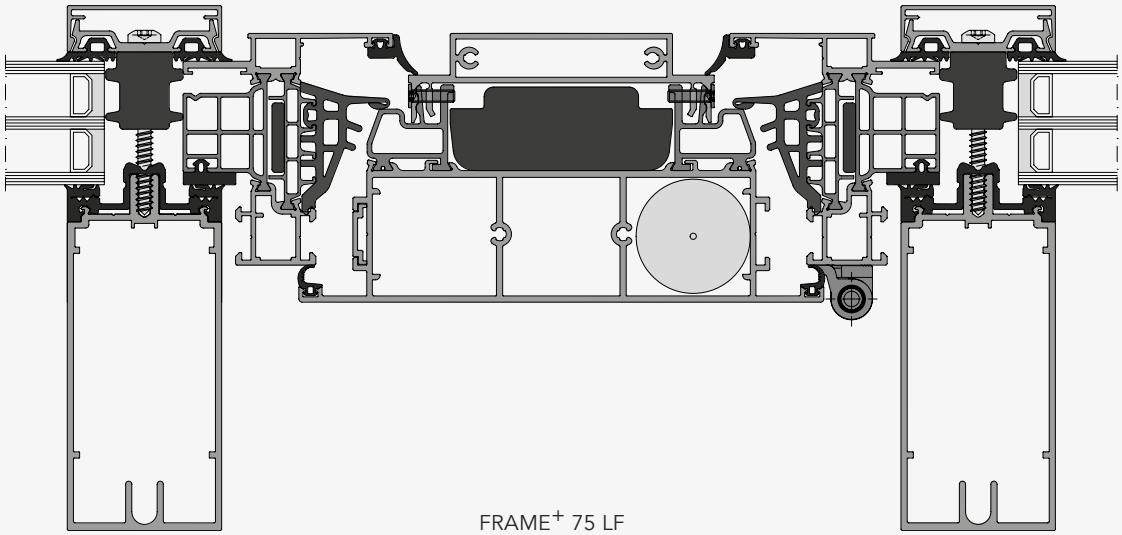
Examinations

Resistance to wind load	up to C5 / B5 / A5
Air permeability	up to class 4
Driving rain tightness	up to E 900
Operating forces	up to class 2
Long-term performance	up to class 3
Burglary protection	RC2
Sound insulation with a building depth of 75 mm	up to 42 dB (75 LF 170)* up to 40 dB (75 LF 300)*
Sound insulation with a building depth of 90 mm	up to 42 dB (90 LF 190)* up to 42 dB (90 LF 300)*
Thermal insulation	up to 0.94 W/m²K

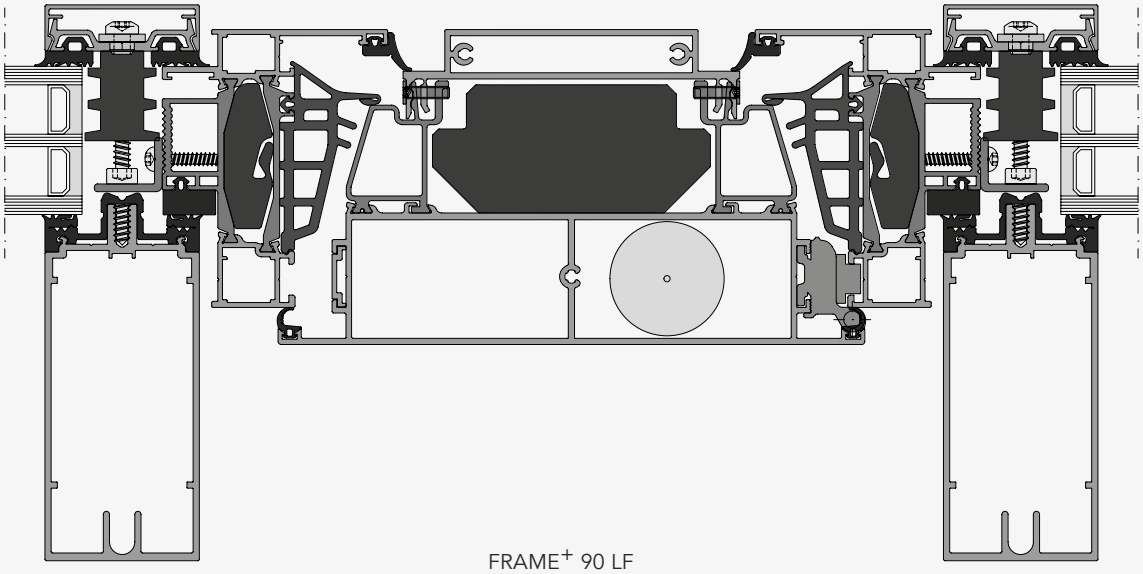
*with additional measures

Smart design

for Smart Buildings:
The intelligent microprocessor control system teaches itself



FRAME+ 75 LF



FRAME+ 90 LF

FRAME+ 75/90 LF Ventilation flap

① ② ③ ④ ⑤

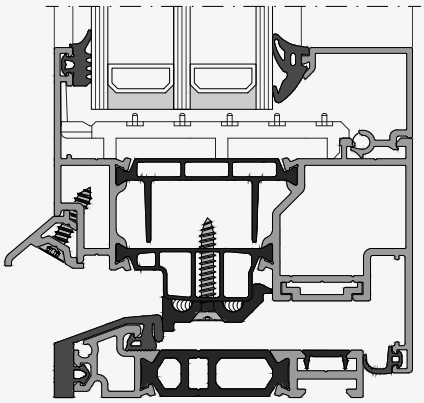
The structure of the sash

① Removable outer shell ② Subsequent integration of insulation and soundproofing

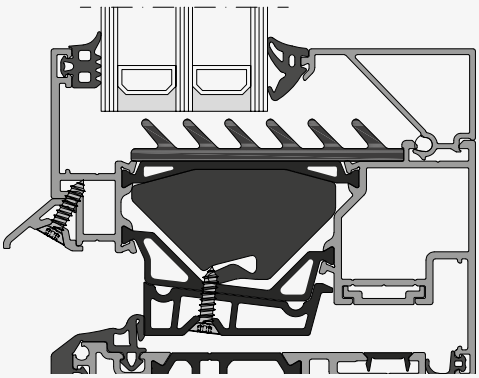
③ Top cover with integrated motor & locking unit ④ Stop gasket inner shell ⑤ and bottom cover

FRAME+ 75 / 90 Balcony door threshold

The threshold is one of the most sensitive areas of french windows. Particularly in the threshold area, there are high requirements for tightness and thermal insulation. With our balcony door threshold, we offer you a product that meets all the requirements of modern and safe building ergonomics.



FRAME+ 75 WI

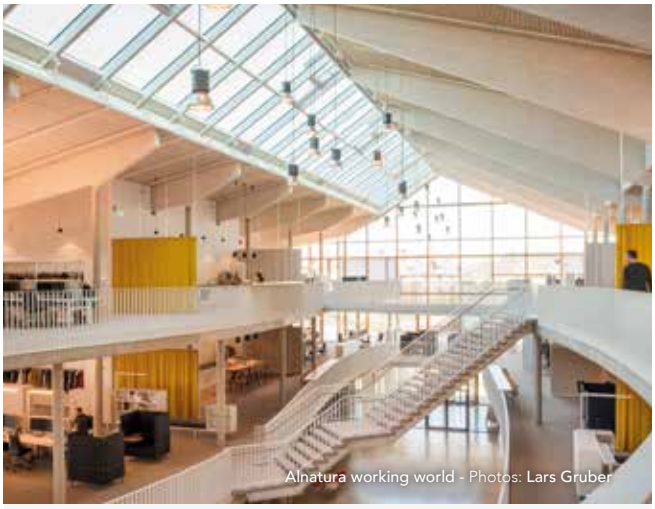


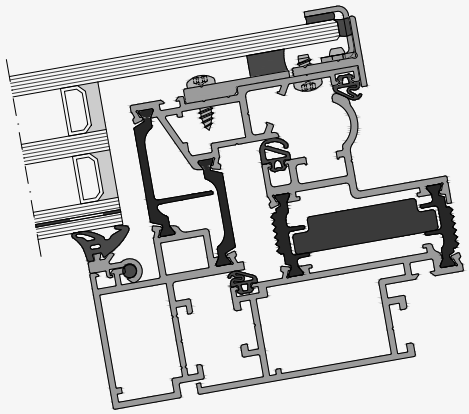
FRAME+ 90 WI

Highlights

- **Thermally insulated aluminium threshold** with a maximum height of 20 mm
- **Increased tightness thanks to unique, horizontal additional locking** - this allows for larger sash widths
- **Visually appealing solutions** thanks to narrow face widths
- The **standard fitting can be surface-mounted and concealed** for an attractive appearance
- **Version as wall window or with clamping panel frame** as façade insert element
- **Sleeper substructure with standard extensions** from the **FRAME+** series
- **Opening variants:** 1-leaf turn and turn/tilt 2-leaf Turn/tilt/turn and turn/turn
- **Maximum sash dimensions** of 1,100 x 2,500 mm / 1,450 x 2,200 mm
- **Available as system goods or prefabricated elements**
- **Tested U_f values** 75 WI: 1.8 W/(m²K) 90 WI: 1.4 W/(m²K)

FRAME+ 100/120 RI Rooflight window


Alnatura working world - Photos: Lars Gruber


FRAME+ 100/120 RI

Technical data

U_f- value[1] passive house	= 1.0 W/(m²K)
U_f- value[2]	≥ 1.4 W/(m²K)
Building depth	88 / 100 / 120 mm
Applications	Opening element in the glass roof
APPLICATION LIMITS[3]	
Max. Weight turn surface-mounted fitting	225 kg
Max. Weight tilt/fold surface-mounted fitting	225 kg
Max. Sash dimensions[4]	3.500 x 1,500 mm / 2.100 x 2,500 mm
Infill thickness sash	10 - 80 mm
Infill thickness fixed glazing	11 - 68 mm

[1] Determined with glass Ug = 0.7 W/(m²K)
[2] Thermal insulation according to DIN ISO 10077-2
[3] Additional requirements (oversizes) on request
[4] For permissible sash sizes, see hardware diagram in the corresponding planning documents

Examinations

in accordance with EN 14351-1 product standard for windows and external doors

Air permeability	Class 4
Resistance to wind load	up to class C3/C4*
Impact resistance	-
Driving rain tightness	up to E 1500
Operators	-
Airborne sound insulation[1]	$R_w(C;C_{tr})$ up to 43 db
Mechanical strength	-
Burglar resistance	Class RC2
Long-term performance according to EN 12400	Class 3

[1] The values are based on the standard dimensions of 1.23 x 1.48 m
* Values are tested maximum values/max. classification. The classification must be carried out in accordance with the requirements of the LV.

With the **FRAME+** 100/120 RI rooflight window, RAICO once again opens up completely new possibilities for functional and aesthetic roof surface design - thanks to its special building depth, passive house certification and the simple, elegant window look, which also blends in perfectly with the tried-and-tested **THERM+** systems for roofs and façades.

Highlights

- Innovative THERMORIT web material with very low thermal conductivity and can be coated and anodised as a composite
- Step glass one-sided or all-round with identical aperture and sash frame
- Non-rectangular window design possible
- Two glazing variants with a choice of cover strip screw fittings (visible or concealed)
- High level of tightness thanks to three sealing levels with corner-vulcanised medial gasket
- First passive house-certified "opening element in the glass roof"

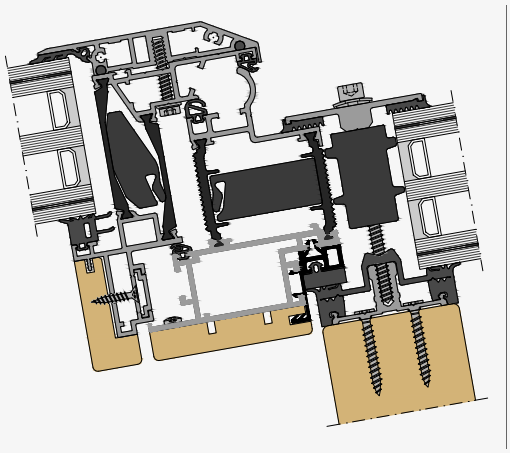
Variants

Burglar resistance
By using additional components, the RAICO window system can be equipped with burglar-resistant properties in resistance classes RC2 and RC3.

Passive house
Climate change and the energy transition pose comprehensive challenges, especially for energy-efficient construction and renovation. Our passive house-certified window system fulfils these requirements and thus realises the highest energy-saving potential.

FRAME+ 100/120 RI-T Timber rooflight window


Hotel Silberhorn Photos: HPGasser AG


FRAME+ 100/120 RI-T

Technical data

U_f- value[2]	≥ 1.4 W/(m²K)
Building depth	100 / 120 mm
Applications	opening element in the glass roof
APPLICATION LIMITS[3]	
Max. Weight turn surface-mounted fitting	225 kg
Max. Weight clip/folding surface-mounted fitting	225 kg
Max. Sash dimensions[4]	3.500 x 1,500 mm / 2.100 x 2,500 mm
Infill thickness sash	10 - 80 mm
Infill thickness fixed glazing	11 - 68 mm

[2] Thermal insulation according to DIN ISO 10077-2
[3] Additional requirements (oversizes) on request
[4] For permissible sash sizes, see the hardware diagram in the corresponding planning documents
* 130 / 160 kg with standard fitting, up to 200 / 300 kg with reinforced fitting

Examinations

in accordance with EN 14351-1 product standard for windows and external doors

Air permeability	Class 4
Resistance to wind load	up to class C3/4*
Impact resistance	-
Driving rain tightness	up to E 1500
Operators	-
Airborne sound insulation[1]	$R_w(C;C_{tr})$ up to 43 db
Mechanical strength	-
Burglar resistance	Class RC2
Long-term performance according to EN 12400	Class 3

[1] The values are based on the standard dimensions of 1.23 x 1.48 m
* Values are tested maximum values/max. classification. The classification must be carried out in accordance with the requirements of the LV.

The interior panelling made of real wood makes the FRAME+ 100/120 RI-T a design highlight that fits perfectly into the THERM+ H-I/H-V timber façade system.

Highlights

- Aluminium-timber window with identical processing technology to a standard aluminium window
- Interior real wood panelling as a decorative element, perfectly adapted to the façade appearance with a large selection of different types of wood
- Interior real wood frame with simple screw-fastening technology in production or on site, can also be replaced at a later date
- Integral sash made of dimensionally stable aluminium-THERMORIT composite construction without taking the interior timber frame into account, therefore replaceable at any time
- Glass thickness compensation on the outer frame via clip-in special seals

Variants

Burglar resistance
By using additional components, the RAICO window system can be equipped with burglar-resistant properties in resistance classes RC2 and RC3.

TECHNICAL DATA

Quality in detail

The FRAME$^+$ window series guarantees you not only high energy savings thanks to maximised thermal insulation, but also a great deal of design freedom. The following table illustrates the values achieved and possible applications of the different systems.

	FRAME$^+$ 75 WI Insertion window	**FRAME$^+$ 75 SF** Insertion window	**FRAME$^+$ 75 WB** Block-window	**FRAME$^+$ 75 WA** opening to a	**FRAME$^+$ 90 WI** Insert **window**	**FRAME$^+$ 90 SF** Insert **window**	**FRAME$^+$ 90 WB** Block-window	**FRAME$^+$ 90 WB-T** Wooden-blockwindow	**FRAME$^+$ 100/120 RI** Roof windows	**FRAME$^+$ 100/120 RI-T** Wooden rooflight windows
System values										
U_w-Value [1] passive house in W/(m²K)	-	-	-	-	= 0,79	-	= 0,75	-	= 1,0	-
U_f-Value [2] in W/(m²K)	≥ 1,0	≥ 1,0	≥ 1,5	≥ 1,4	≥ 0,70	≥ 1,7	≥ 0,89	≥ 0,88	≥ 1,40	≥ 1,40
Building depth [mm]	75	75	75	75	90	75	90	90	88/100/120	100/120
Applications										
Wall window	X	X	X		X	X	X	X		
Façade Use element	X	X	X	X	X	X	X	X		
Casement sash			X				X	X		
Windows-façade										
Opening element in the glass roof									X	X
Application limits 3										
Max. Weight turn-tilt surface-mounted fitting [kg]	130/160/200 *	130/160/200 *	130/160/200 *	-	130/160/200 *	130/160/200 *	130/160/200 *	130/160	225	225
Max. Weight of turn-mounted fitting [kg]	130/160/200/300 *	130/160/200/300 *	130/160/200/300 *	130	130/160/200/300 *	130/160/200/300 *	130/160/200/300 *	130/160	225	225
Max. Weight concealed-fitting [kg]	150/180	150/180	150/180	-	150/180	150/180	150/180	150/180	-	-
Max. Sash dimensions [mm] [4]	1.600 x 2,100 mm/ 1,100 x 3,000 mm	1.450 x 1,900 mm/ 1,100 x 3,000 mm	1.450 x 1,900 mm/ 1,100 x 3,000 mm	2.500 x 2,000 mm/ 2,000 x 2,500 mm	1.600 x 2,100 mm/ 1,600 x 3,000 mm	1.450 x 1,900/ 1,100 x 3.000	1.450 x 1,900 mm/ 1,100 x 3,000 mm	1.450 x 1,900 mm/ 1,100 x 3,000 mm	3.500 x 1,500 mm/ 2,100 x 2,500 mm	3.500 x 1,500 mm/ 2,100 x 2,500 mm
Sash infill thickness [mm]	22 - 68	28 - 58	24 - 56	22 - 68	34 - 80	40 - 72	40 - 60	40 - 60	10 - 80	10 - 80
Infill thickness fixed glazing [mm]	10 - 56	10 - 56	4 - 50	-	36 - 65	36 - 65	-	-	11 - 68	11 - 68

[1] Determined with glass U_g = 0.7 W/(m²K)

[2] Thermal insulation according to DIN ISO 10077-2

[3] Additional requirements (oversizes) on request

[4] For permissible sash sizes, see the hardware diagram in the corresponding planning documents

* 130/160 kg with standard fitting, up to 200/300 kg with reinforced fitting

Examinations

	FRAME+ 75 WI Application **window**	**FRAME+ 75 SF** Insert **window**	**FRAME+ 75 WB** Block-window	**FRAME+ 75 WA** opening to a	**FRAME+ 90 WI** Application **window**	**FRAME+ 90 SF** Insert **window**	**FRAME+ 90 WB** Block-window	**FRAME+ 90 WB-T** Wooden-blockwindow	**FRAME+ 100/120 RI** Roof windows	**FRAME+ 100/120 RI-T** Wooden rooflight windows
Air permeability air perme-ability[1]	Class 4	Class 4	Class 4	Class 4	Class 4	Class 4	Class 4	Class 4	Class 4	Class 4
Resistance against wind load[1]	up to Class C5	Class C5	up to Class C5	Class C4	up to Class C5	Class C5/B5	up to Class C5	up to Class C5	Class C3/C4 *	Class C3/C4 *
Impact resistance [1]	Class 5	-	Class 3	-	-	-	-	-	-	-
Driving raintightness [1]	up to E 900	up to E 750	up to E 900	up to E 900	up to E 1200	up to E 900	up to E 1200	up to E 900	up to E 1500	up to E 1500
Operating forces[1]	Class 1 and 2	Class 1	Class 1 and 2	Class 1	Class 1	Class 1	Class 1	Class 1	-	-
Airborne sound insulation[2]	$_{Rw}(C;_{Ctr})$ up to 45 dB	$_{Rw}(C;_{Ctr})$ up to 45 dB	$_{Rw}(C;_{Ctr})$ up to 46 dB	-	$_{Rw}(C;_{Ctr})$ up to 43 dB	-	$_{Rw}(C;_{Ctr})$ up to 43 dB	-	$_{Rw}(C;_{Ctr})$ up to 43 dB	$_{Rw}(C;_{Ctr})$ up to 43 dB
Mechanical stress[1]	Class 4	Class 4	Class 4	-	Class 4	-	Class 4	-	-	-
Burglary-inhibition	Class RC2/RC3	Class RC2/RC3	Class RC2/RC3	-	Class RC2/RC3	-	Class RC2/RC3	Class RC2/RC3	Class RC2	Class RC2
Continuous radiotion according to EN 12400	Class 2	Class 2	Class 2	Class 2	-	-	-	-	Class 3	Class 3

[1] Tested according to RAL GZ 695

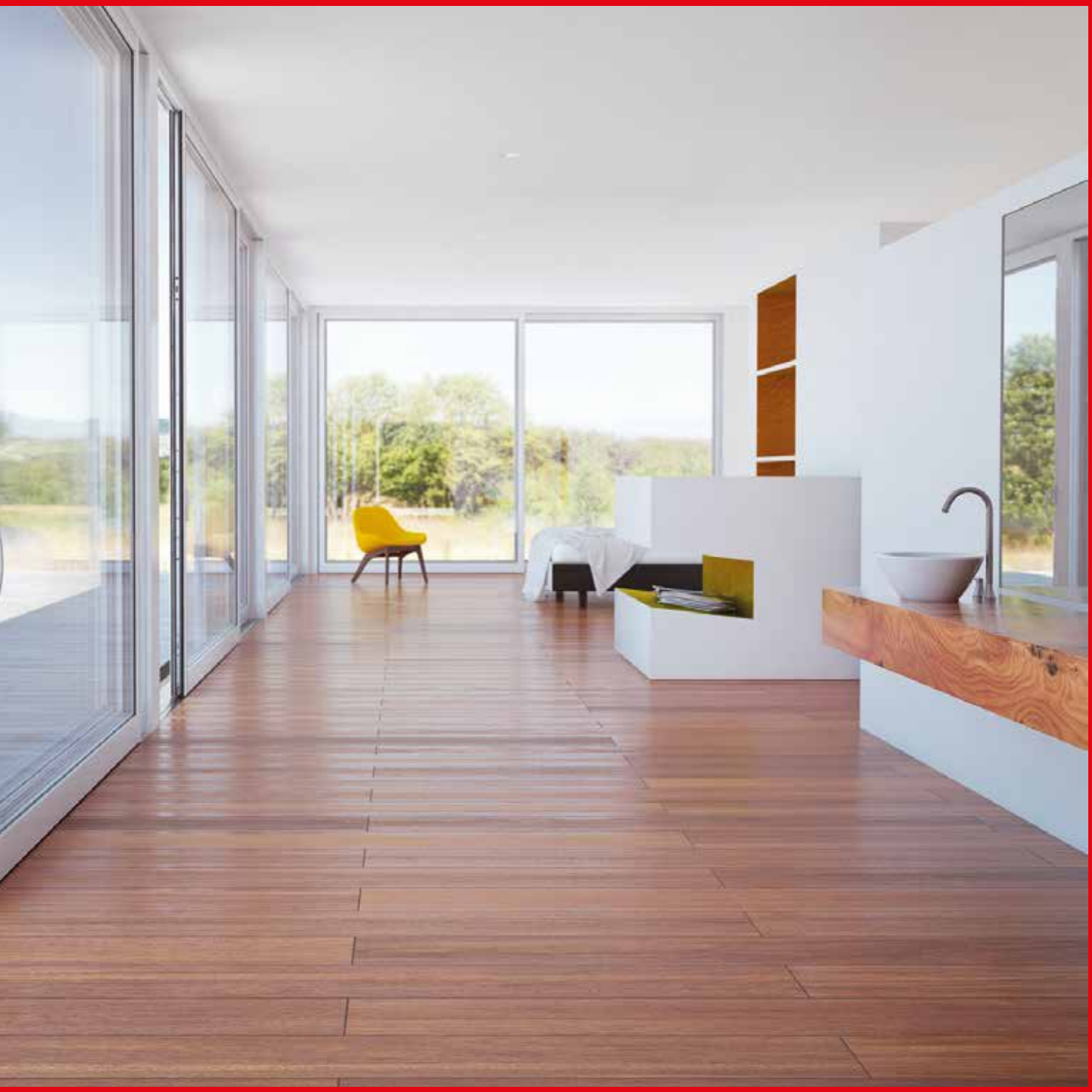
[2] The values are based on the standard dimensions of 1.23 x 1.48 m

* Values are tested maximum values/max. classification.
Classification must be carried out in accordance with the requirements of the LV.

Door
FRAME+
SLIFT

RAICO door systems combine high-quality workmanship, modern design and versatile application options.

The FRAME+ 75 DI door system offers sophisticated functionality with short production times, efficient manufacturing and simple integration of all hardware variants. For visionary architecture, the SLIFT 170 lift and slide door system opens up new design possibilities: Large glass areas, slim profile elevations and maximum building physics performance make it the ideal choice for light-flooded rooms and elegant transitions.

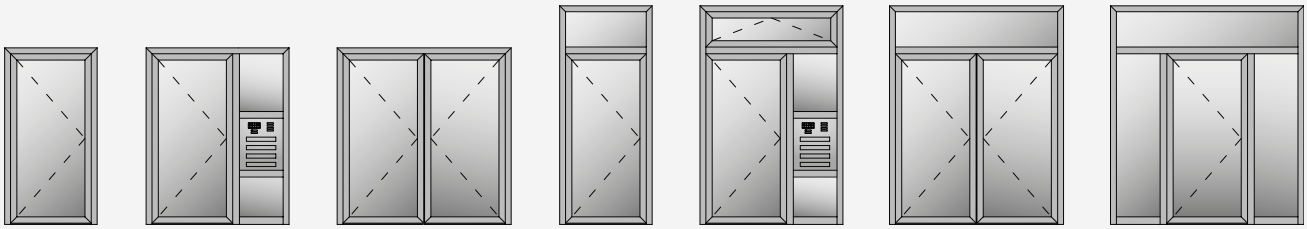


PRIVATE HOUSE
Installed: SLIFT 170
Photos: Hautau GmbH

FRAME+ 75 DI Aluminium door

The FRAME+ 75 DI door system fulfils all the requirements of a high-quality entrance door. This series is characterised by short production times and efficientmanufacturing. Smooth rebate geometries enable easy cleaning and quick installation of all hardware variants in the rebate clearance. The large internal profile chambers provide space to accommodate all hardware components such as electric strikes.

Examples for door combinations



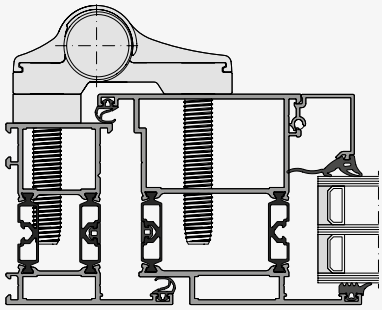
Highlights

- Passive house suitability with UD-values up to 0.69 W/(m²K)
- Property, façade, residential and house construction
- Great design freedom within the system family
- Standard commercial fittings range
- Innovative, processing friendly concept
- Stable composite profiles ensure durable functionality
- Single winged: inward / outward opening
- Double winged: inward / outward opening
- Doors one-sided sash overlapping inward / outward opening
- Doors two-sided sash overlapping inward opening
- Tested driving rain tightness according to DIN EN 12208: Inward opening door / up to class 9A (600 Pa) inward and outward opening door / up to class 8A (450 Pa)
- Combinations with side panel / fanlight
- Panic DIN EN 179 / 1125 to outward opening

HINGES

Everything here revolves around function and design

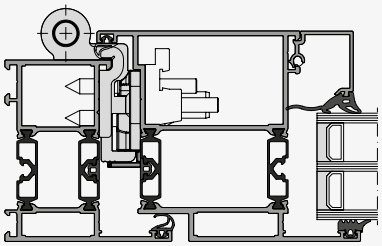
The requirements for door hinges are complex - from both an aesthetic and functional point of view. The fittings of the FRAME+ 75 DI door system fulfil these requirements perfectly. For example, they offer a wide range of adjustment options B. Both high sash weights and high-quality hinges in stainless stell optics can be realised.



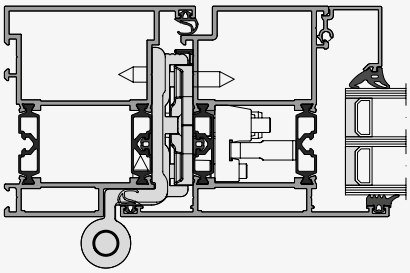
Screw-on hinge
inward opening 3-part with anchor screw

Screw-on hinge

- Filigree shapes thanks to optimised dimensions
- Inward / outward opening
- Optional fastening with anchor screw
- Aluminium in a wide range of colours or stainless stell optics
- 2- and 3-part design
- Three-dimensional adjustment when installed without unhinging the sash
- Sash weights up to 200 kg



Aluminium-roller hinge inward opening



Aluminium-roller hinge outward opening.

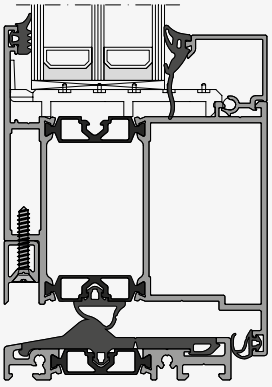
Roller hinge

- Profile-adapted hinge inward / outward opening
- Frame-side mounting with direct screw connection Without hinge plates
- Sash-side fastening via a multifunctional hinge body with integrated adjustment
- Aluminium in a wide range of colours or stainless stell optics
- Generous multidimensional adjustment range in the installed state without unhinging the sash (rebate air adjustment ± 2 mm, height adjustment ± 3 mm)
- Efficient production thanks to preassembled belt parts
- Material optimisation in the 7 mm sealing gap enables a very high load capacity up to 250 kg
- Complete adjustment in the sash hinge part with integrated optical control of the hinge position
- Tested class 3 air permeability

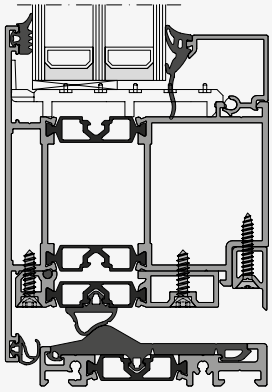
FLOOR CONNECTION / THRESHOLDS

Perfect insulation, maximum tightness

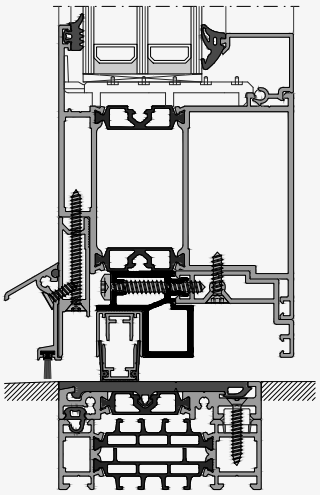
The threshold is one of the most sensitive areas of an entrance door. Particularly in the threshold area, there are high requirements for tightness and thermal insulation. RAICO has developed an innovative doorthreshold concept for even greater tightness in this area.



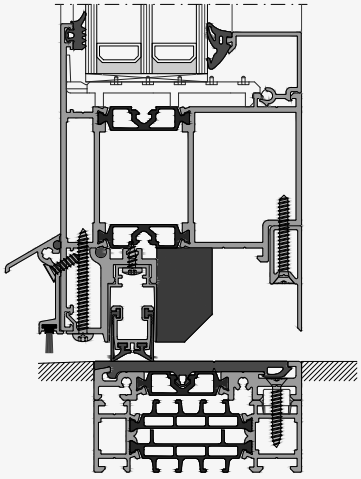
Inward opening



Outward opening



Inward opening
Barrier-free zero threshold



Outward opening
Barrier-free zero threshold

Innovative threshold concept

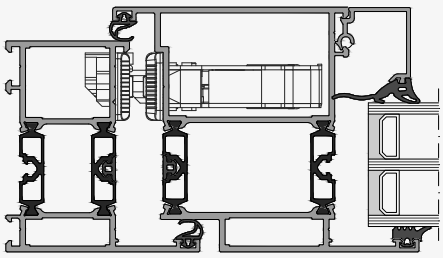
The threshold forms the bottom edge of the door and ensures perfect tightness in wind and weather. The excellent insulation throughout the threshold area also ensures reliable protection against driving rain and draughts, preventing expensive energy losses. The barrier-free access ensures convenient access.

- Highest tightness in driving rain
- Excellent insulation in the threshold area with Uf up to 1.6 W/(m²K)
- Thermally separated aluminium threshold with replaceable gasket
- Sleeper substructure with different enlargement variants
- Subsequently replaceable threshold - easy installation

DOOR LOCKS

Your key to rational security

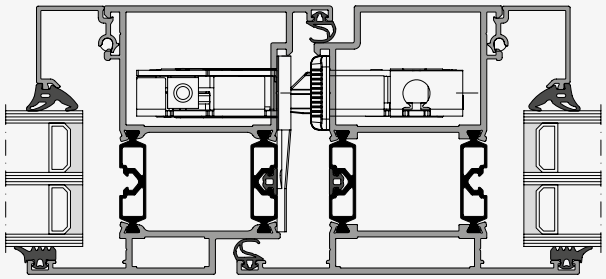
The FRAME+ profile system is matched to standard market hardware geometries. Smooth rebate geometries enable quick and easy installation of even large hardware components (e.g. concealed door closers). A standardised milling pattern for all lock types ensures efficient processing and easy replacement of the locks, even in the event of a change of use. A wide range of accessories enables customisation to meet individual customer requirements.



Standard lock

Standard lock to the interior / to the exterior

- Filigree shapes thanks to optimised dimensions
- Standardised profile machining for locks and strike plates
- Latch/bolt lock
- Multiple bolting with round bolt or Hook bolt
- Automatic locking with or without motorised unlocking



Panic door lock

Emergency exit/panic door lock in accordance with DIN EN 179/1125

- Filigree shapes thanks to optimised dimensions
- Emergency exit and panic doors
- Tested according to DIN EN 179/1125 with the release capability
- Latch/bolt lock with shift function E
- Latch/bolt lock with switchover function B
- Single and multiple bolting
- Optional integration of Electric strikes and Closure monitoring possible
- Automatic inactive leaf locking for double winged version with full and partial panic

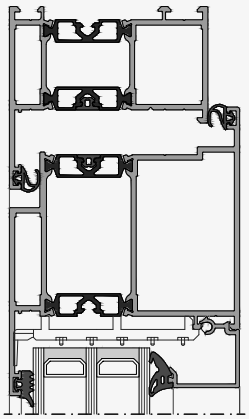
BURGLAR RESISTANCE

Safe is safe

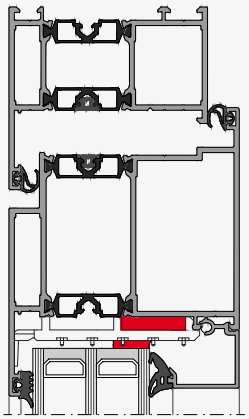
Feel secure day and night. With innovative technology, the RAICO door system with burglar-resistant properties can be customised to suit your security requirements. Thanks to analogue installation options in all design variants, you don't have to sacrifice your design freedom here either.

Optimum safety according to the latest criteria

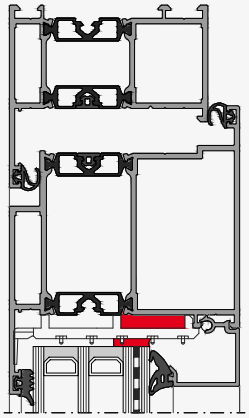
By using a few additional components, the RAICO door system can be equipped with burglar-resistant properties in resistance classes RC1, RC2 and RC3.



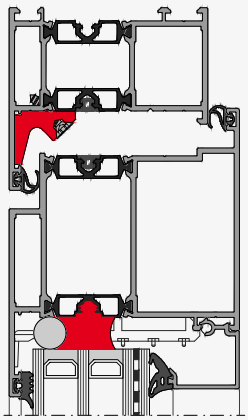
RC1N - standard glass
additional shimming



RC2N - Standard glass
additional shimming + gluing



RC2 - special glass
additional shimming + gluing

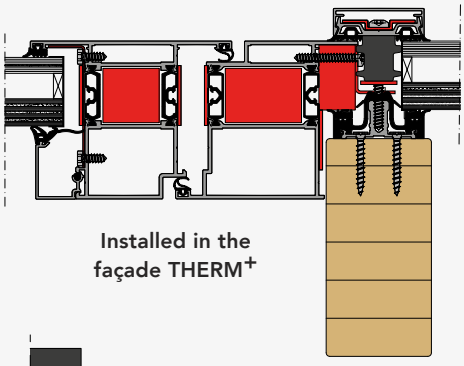


RC3 - special glass,
Rebate reinforcement; additional shimming + circumferential gluing

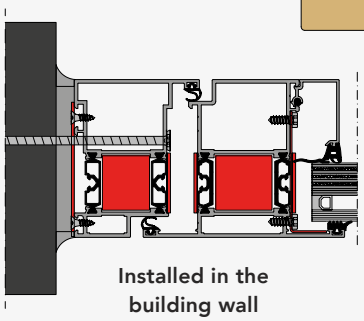
FIRE PROTECTION

Fire and smoke protection – the perfect choice for use in the building envelope.

The FRAME^{+} 75 DI FR30 fire door offers maximum security and functionality for external applications. With CE marking in accordance with EN 13501-2, it fulfils all requirements for smoke tightness and self-closing properties.



Installed in the façade THERM^{+}



Installed in the building wall

Highlights

- CE marking for fire-retardant, smoke-tight and self-closing in external applications in accordance with EN 16034 in combination with EN 14351-1
- When using smoke protection closures$_{Sa/200}$ C5, the use of additional fire protection accessories such as fire protection inserts, profile clips etc. is not necessary
- Thermal insulation Uf ≥ 2.0 W/m²K
- Innovative, user-friendly design
- Stable composite profiles ensure lasting functionality
- Great design freedom within the system family

Requirements	Fire protection closures		Smoke protection-closures
	without smoke protection property	with smoke protection property	
Fire-retardant, tight-closing, self-closing	EI_2 30 S_a C5	×	×
Fire-retardant, smoke-tight, self-closing	×	EI_2 30 S_{200} C5	×
Smoke-tight, self-closing	×	×	S_{200} C5
Tight and self-closing	×	×	S_a C5

Certification according to EN 16034 explained in detail:

EI_2 30 $S_{A/200}$ C5

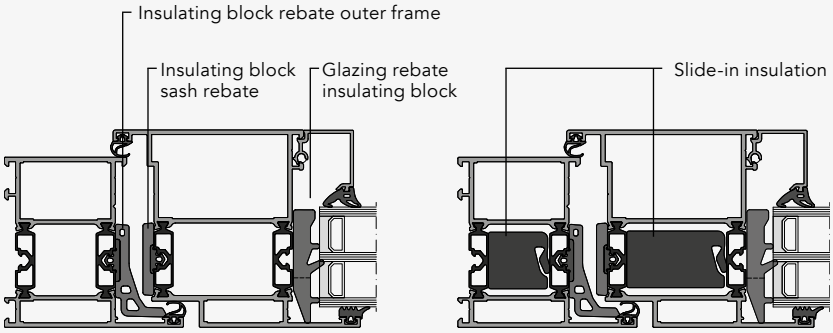
E = Room closure - prevention of fire and gas penetration
I_2 = Insulation - heat transfer reduced in case of fire
30 = Fire resistance - in minutes
S_a = Smoke tightness - at ambient temperature
S_{200} = Smoke tightness - at ambient temperature and 200°C
C5 = Self-closing feature - very frequent operation

Proof of usability according to classification report:
20-004566-PR01 KB-C04-UZ05-en-01

Application example, rendering

TECHNICAL DATA

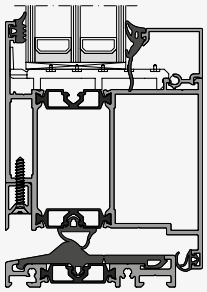
THERMAL INSULATION

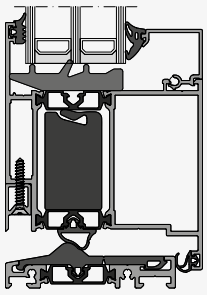


Individual thermal insulation

- A gradual adjustment of the insulation values - tailored to the property-specific requirements
- Passive house suitability with U_D valuesup to 0.69 W/(m²K) tested by ift Rosenheim

	Without insulation insert up to Uf				With insulation insert up to Uf			
	Standard W/(m²K)		Leaf-enclosing W/(m²K)		Standard W/(m²K)		Leaf-enclosing W/(m²K)	
	inward opening	outward opening	inward opening	outward opening	inward opening	outward opening	inward opening	outward opening
Without rebate insulating blocks	2,0	2,0	2,1	2,0	1,6	1,6	1,7	1,7
Glazing rebate insulating block	2,0	2,1	2,0	2,0	1,6	1,7	1,6	1,6
Frame rebate and insulating block sash rebate outer frame	1,9	1,9	1,8	1,8	1,4	1,5	1,4	1,4
Frame rebate and sash rebate and glazing rebate insulating block	1,8	1,8	1,7	1,8	1,3	1,3	1,3	1,4





	Without insulation insert up to Uf				With insulation insert up to Uf			
	Standard W/(m²K)		Leaf-enclosing W/(m²K)		Standard W/(m²K)		Leaf-enclosing W/(m²K)	
	inward opening	outward opening	inward opening	outward opening	inward opening	outward opening	inward opening	outward opening
Without rebate insulating blocks	2,1	2,3	2,2	2,3	1,7	1,9	1,8	2,0
Glazing rebate insulating block	2,0	2,2	2,1	2,2	1,6	1,7	1,7	1,7

EXAMINATIONS

Comprehensive system tests with excellent results prove the quality and practical suitability of FRAME+ door systems. The following classification values *(in accordance with EN 14351-1)* form the basis for CE labelling of the doors.

	Inward opening			Outward opening		
	Standard 1-leaf.	Barrier-free zero threshold 1-leaf[1]	Standard 2-leaf.	Standard 1-leaf.	Barrier-free zero threshold 1-leaf[1]	Standard 2-leaf.
Examinations						
Air permeability EN 14351-1	Class 4/3[2]	Class 3	Class 4/3[2]	Class 4/3[2]	Class 3	Class 4/3[2]
Resistance to wind load EN 12210	up to class C4	Class C3/B3	Class C3	Class C4/C3[2]	Class C4	Class C3
Driving rain tightness EN 12208	Class 9A	Class 2A	Class 7A	Class 8A/5A[2]	Class 3A	Class 7A/5A[2]
Operating forces EN 12217	Class 2	Class 3	Class 1	Class 2	Class 1	Class 2
Burglar-resistant EN 1627	Class RC3	-	Class RC3	Class RC3	-	Class RC3

[1] All values tested with screw-on hinge
[2] Value applies to version with roller hinge

	FRAME+ 75 DI
System values	
Building depth	75 mm
Applications	
Wall element	X
Façade insert element	X
Leaf-enclosing infills	X
Application limits	
Min. width active leaf	310 mm[1]
Min. width inactive leaf	310 mm[2]
Min. height active and inactive leaf	720 mm 3 / 2,010 mm[4]
Max. Width active and inactive leaf	1.400 mm
Max. Height active and inactive leaf	2.950 mm
Max. Sash weight	250 kg[5]
Infill thickness sash	10 - 68 mm[6]
Infill thickness frame	10 - 56 mm
Infill thickness leaf-enclosing	31 - 77 mm

[1] For clear width ≥ 800 mm
with 90° opening min. width = 940 mm

[2] For EN 179 / EN 1125 and standard with
closing sequence control min. width = 450 mm

[3] For clear passage height ≥ 1,800 mm with
Transom latch lock min. height = 1,821 mm

[4] For multiple bolting with
Handle height 1,050 mm

[5] Depending on belt equipment,
Additional requirements
(oversizes) on request

[6] Depending on the profile, see selection tables
Glazing beads in the planning manual
"FRAME+ 75 DI fittings"

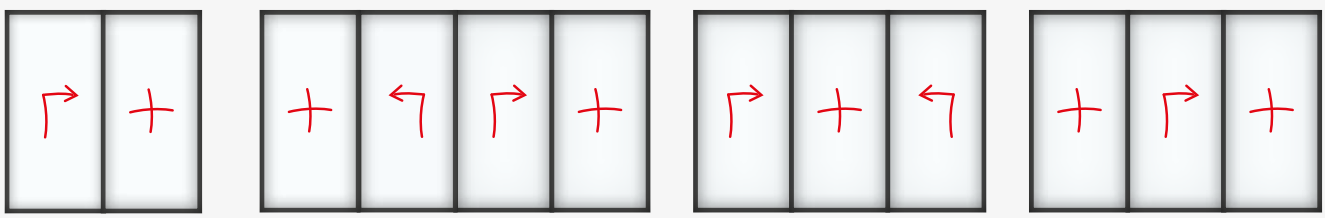
SLIFT 170 Lift and slide door

Discover the brilliant combination of elegance, variability and optimum ease of installation with SLIFT 170: the versatile aluminium lift and slide door system makes constructions with extremely narrow profile face widths possible while meeting the highest building physics requirements.

HIGHLIGHTS

- **Maximum frame dimensions:** 9,100 x 3,300 mm
- **Maximum sash dimensions:** Width 4,500 mm, Height 3,200 mm, Maximum area 10 m^2
- **Maximum sash weight:** 330 kg single trolley, 440 kg tandem trolley
- **Thermally and statically** optimised mullion area
- **Optional thermal insulation** of the profiles incl. connections: Uf value up to 1.9 W/(m^2K) possible *(Ø of all profiles)*
- **Roller** track as **roll-formed stainless steel profile**
- **No visible glazing beads:** High-quality design of the sash as GO variant
- When **using triple glazing** with Ug = 0.5 W/(m^2K), a UW ≥ 0.85 W/(m^2K) **is achieved depending on the size**
- **Invisible integration into building connections** (s) thanks to Direct glazing in the frame profiles. Glass thicknesses: 10 - 56 mm *(GI)*; 22 - 53 mm *(GO)*
- **No visible glazing beads:** High-quality design of the sash as GO variant
- **Can be combined with RAICO window system FRAME$^+$ 75 WI**, simple integration into the **THERM$^+$** mullion/transom system
- **Glazing from the interior** *(GI)* as well as from the **exterior** *(GO)* possible

SCHEME Open for individual design ideas, as desired



Scheme **A/A+** Scheme **C/C+** Scheme **G+** Scheme **K/K+**

LEGEND

Variant +:
Variant with direct glazing in the fixed section (e.g. scheme A+).

Lift & slide sash

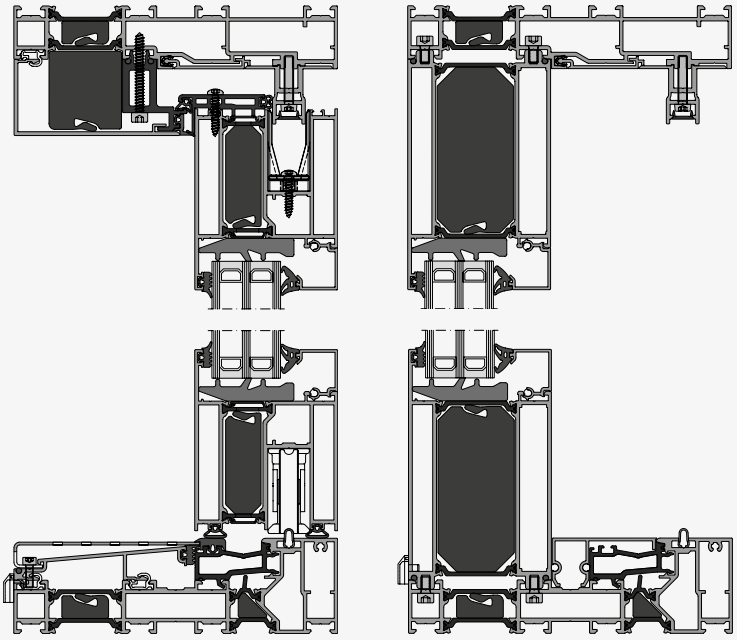
Fixed glazing

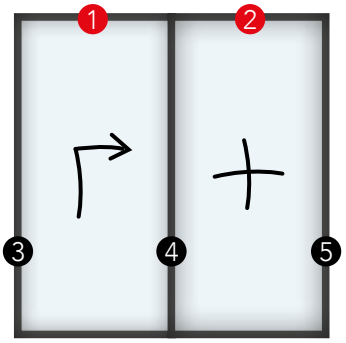
CUTS

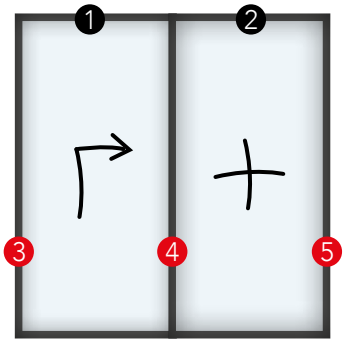
Scheme A - Classic and variable

With this classic door scheme, e.g. in the residentialarea, 50 % of the glazed area can be opened.
The position of the lift and slide sash is variable and can be selected as required.

Vertical cuts



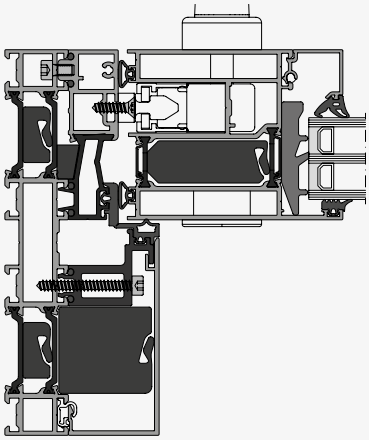


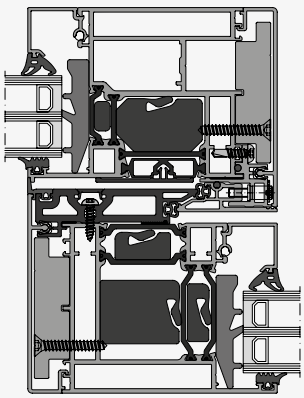


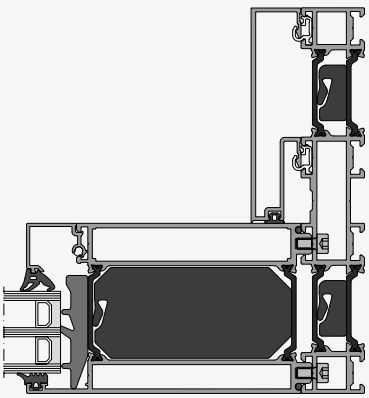
1 Lift and slide sash (FO)

2 Fixed glazing profile (FO)

Horizontal cuts







3 Lift & slide sash

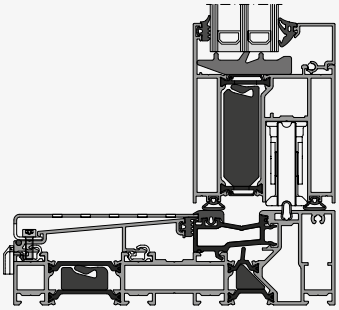
4 Post joint

5 Fixed glazing profile

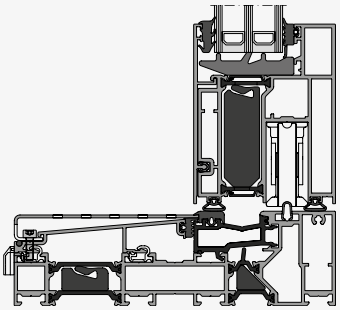
DESIGN PRINCIPLES

Glazing variants

Lift & slide sash (1)

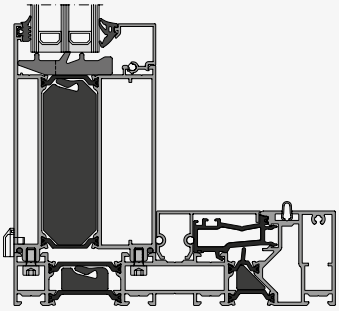


Lift & slide sash
Glazing from the interior (GI)

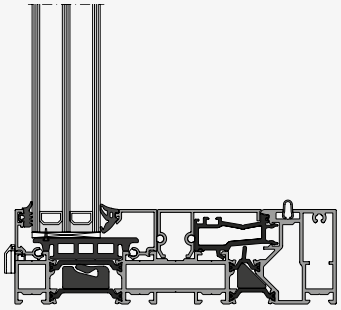


Lift & slide sash
Glazing from the exterior (GO)

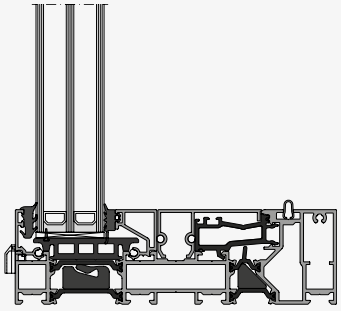
Fixed glazing



(2.1) Fixed glazing profile (GI)



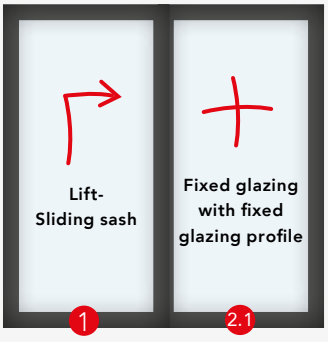
(2.2) Direct glazing from the interior (GI)



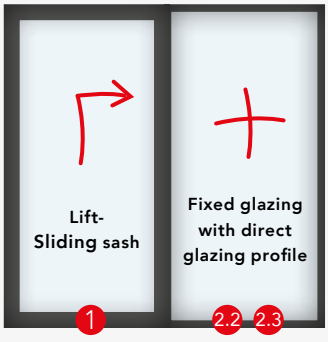
(2.3) Direct glazing from the exterior (GO)

Element views

Scheme A



Scheme A+



FITTINGS & ACCESSORIES

Suitable for every requirement

Comfort Close

Handle recess

Comfort Stop

Handle

Safety Stop

Gear damper

Sample images Photos: FSBGmbH + Co KG, Hautau GmbH

Perfectly combined for individual requirements:

For our SLIFT 170 system, we use specially customised, high-quality hardware components from our partner Hautau. In addition to the standard fitting, you can select the lift and slide sashes with the following additional components:

- Two-sided operation: From the interior and exterior
- **Security door lock:** With profile cylinder or round cylinder *(CH)*
- **Handle recess:** Handling with a pleasant feel
- **Comfort Close:** Gentle, secure closing of the door leaf
- **Comfort Stop:** dampens opening thrust safely and in good time
- **Safety Stop:** Clamp protection for maximum safety
- **Gear damper:** Smooth closing even of heavy sashes
- **Softlift:** Opening heavy sashes with ease
- **Closure monitoring / status Monitoring** possible with switching contacts

For that extra bit of comfort:

On request, we can provide a solution with an attached motorised drive - making it easy to open and close even large-format units. **Good to know:** Otherfittings can alsobe used with SLIFT 170, giving you optimum design freedom for every project.

TECHNICAL DATA

Air permeability	Class 4
Resistance to wind load	Class B4/C4
Driving rain tightness	Class E 750
Long-term performance	Class 2
Operators	Class 1
Sound insulation	Rw up to 44 dB
Thermal insulation	Uw value ≥ 0.85 W/(m²K)

Item no. 002020 - Status 01/2025

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