

RAICO

The Professionals' Profile

Systems for sophisticated architecture





The Professionals' Profile.

“ In everything we do,
we never lose sight of what
our company characterizes:
The man is at the centre
of all action. ”



Managing directors
Dr. Stefan Lackner and Manfred Hebel

Dear Ladies and Gentlemen,

with great commitment, creative ideas and individual experiences and skills, our employees contribute to living our corporate slogan “The Professionals’ Profile” every day.

From the first planning to the realization of the project and beyond, a competent and experienced team supports you in personal contact with a comprehensive service range. That is a consultancy service which is not only particularly appreciated but is also considered to be outstanding. In doing so, our customers are impressed by the high level of competence, sense of responsibility and passion. Mutual appreciation, openness and reliability are decisive factors in the communication and essential part of our corporate values.

People from various countries and different cultures and with different languages and traditions work in our company. They all have only one target: To fill our customers with enthusiasm all over the world.

To achieve this, they cooperate across all departments, exchange views regularly and benefit mutually from the knowledge and know-how of their colleagues. Concerning all these activities, the main emphasis is put on only one target: The best solution for our customers and their demands and requirements.


Dr. Stefan Lackner


Manfred Hebel

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Credits & Projects





MedEl – Innsbruck, AT



THERM⁺

Curtain wall system

Based on its consistent modular design the THERM⁺ curtain wall system provides you with almost unlimited possible combinations using its various components. With this unique flexibility you will find the most suitable, safe, viable and economic solution for every individual project.



Office and seminar building AVWL – Münster, GER



Galerie Lafayette – Metz, FR



Egger Headquarter – St. Johann/Tyrol, AT



Sports hall – Ulm, GER



University of Nottingham – Nottingham, UK



Library "Alte Feuerwache" – Berlin, GER



The THERM+ aluminium curtain wall stick system combines maximum application of the range with straight forward planning and manufacture, providing high processing reliability due to the consistent modular technology.

Advantages

- Efficient heat insulation up to passive-house certification with $U_f = 0.80 \text{ W/(m}^2\text{K)}$ (considering screw influence).
- Stepless thermal insulation by means of RAICO Insulation Block Technology.
- Profiles are all suited for mullion and transom usage.
- A large selection of rectangular and T-shaped mullion profiles is available.
- Excellent aesthetics to the flush faced transoms through sharp edge horizontal cuts.
- Numerous options for the T joint connector assembly.
- Maximum inertia values by means of optimised profile design.
- Wide range of system accessories available.
- Integrated drainage system within continuous three level gaskets.

THERM+ A-V

Is ideal for slim, economic curtain wall solutions, featuring reduced internal gasket dimensions and an optimised cost benefit ratio for regular façade applications.

50 A-V with insulating block P 50 A-V with insulating block P and T profile 50 A-V with insulating block P and T profile

THERM+ A-I

Offers exceptional freedom of design for curtain walls, conservatories and sloped glass roofs with an inclination down to 2°, even with demanding structural or constructional requirements.

50 A-I with insulating block P 50 A-I with insulating block P and T profile

Pressure and cover profiles for curtain wall and roof applications

- A large selection of cover cap profiles for both system widths.
- Bespoke profiles available on a short lead time for specific projects.
- Aesthetically pleasing flat pressure profile with only 4 mm glass offset.
- Optimal sealing of the cross-point via special accessories.
- Find more types in the catalogue: THERM+ curtain wall system.

Technical Data

	System width in mm	Rectangular profile depth in mm	Expansion profile depth in mm	T-profile depth in mm	T-profile width in mm	Infill thickness in mm	Glass weight in kg	Drainage levels	Polygonal assembly	Application Glass roofs	Application Conservatories
A-V	50/56	25 – 200	100 – 200	50 – 175	50	10 – 64	up to 550	2 or 3	up to 45°	–	–
A-V reinforced	50/56	100 – 200	–	–	–	10 – 64	up to 600	2 or 3	up to 45°	–	–
A-I	50/56	25 – 200	75 – 200	50 – 200	50	6 – 64	up to 600	2 or 3	up to 45°	up to 2° inclination	yes

T-connector — Innovation down to the last detail

A distinctive feature of the THERM+ aluminium curtain wall system is the innovative T-connection technology. Every single detail in its development has been analysed to provide an abundance of advantages:

- Identical for THERM+ A-V/A-I in all system widths.
- Easy butt joint with straight profile cuts, no notching required.
- Various options for structural requirements and assembly methods.
- THERM+ A-V is also available with a reinforcement option for high structural requirements.
- Extremely rigid connections due to the spreader-clamp mechanism when screw fixed.
- T-connectors for vertical loads up to 600 kg. (Verified under German Type Approval).
- Aesthetically pleasing joints due to the optimum contact between mullion and transom across the entire profile.
- The T-connector profiles can be used for structural reinforcement, head and sill fixings as well as expansion joint spigots.





The THERM⁺ mullion-transom curtain wall system using steel combines the advantages of set-on-top construction with those offered by curtain wall systems with integrated screw ports. Additionally, the fixture technique of the steel curtain wall system makes it possible to select from standard steel profiles.

Advantages

- Efficient heat insulation up to passive-house certification with $U_f = 0.80 \text{ W/(m}^2\text{K)}$ (considering screw influence).
- Set-on-top construction for any steel support profile with a width from 50 mm.
- Integrated drainage system in continuous three level gasket.
- Stepless thermal insulation by means of RAICO Insulation Block Technology.
- Safe and easy glass load transmission for heavy panes up to 800 kg, and with supplementary components up to 1,500 kg.

THERM⁺ S-I

For all curtain walling and glass roofs with an inclination down to 2°, with standard steel profiles from 50 mm wide.

50 S-I with insulating block P

THERM⁺ S-I Steel profiles in T-shape

With an face width of 60 mm and a depth of 60/90/120 mm, these profiles are ideally suited for sophisticated glass façades. Other custom made profiles upon request.

50 S-I with insulating block P and T profile

Variants

THERM⁺ S-I Base Profile Options

The base profiles are available in pre-rolled stainless steel with integrated aluminium screw port, or in mild steel for galvanised finishes, with a retro fit aluminium screw port.

THERM⁺ S-I Interior Gasket Options

Type "S" with synthetic clip-on gasket retainer profile.

Type "L" as above, but with gasket lips to follow large corner radii of steel profiles.

Type "D" alternative positioning gasket to fix directly onto the steel profile.

Technical Data

	System width in mm	For steel profiles from in mm	Steel profiles in T shape in mm	Infill thickness in mm	Glass weight in kg	Drainage levels	Polygonal assembly	Application Glass roofs	Application Conservatories
S-I	50/56/76/96	50 width	width: 60, depth: 60/90/120	6 – 64	up to 1.500	2 or 3	up to 45°	up to 2° inclination	yes

Perfect corrosion protection thanks to essay principle

With its specific material properties, steel offers an extremely rich variety of forms and therefore a diverse range of creative possibilities. The unique patented fixture principle of the THERM⁺ system has been developed from real-life requirements in order to extend those possibilities further without limiting itself to glazed curtain walling, and at the same time to reach a safe but simple assembly as well as providing maximum protection against corrosion.

- Perfect protection against corrosion due to a 3 mm safety distance between structural profile and system base profile, thus no metal components in direct contact with each other (see fig. 1).
- Patented base profile system with stainless steel clad aluminium screw port, for easy fabrication and reliable manufacture.
- Option for galvanised structures in coastal areas or within swimming pool environment: the S235JR mild steel shroud with retro fit powder coated aluminium screw port.
- Spot-welding fixation for reduced production times.
- High screw retention values and smooth screw fastening due to the aluminium screw channel.
- Easy and efficient fabrication with practical system tools.

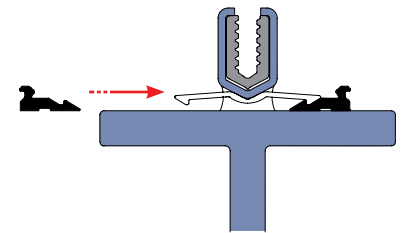


fig. 1: Perfect protection against corrosion





THERM⁺ H-V/H-I
TIMBER CURTAIN WALL

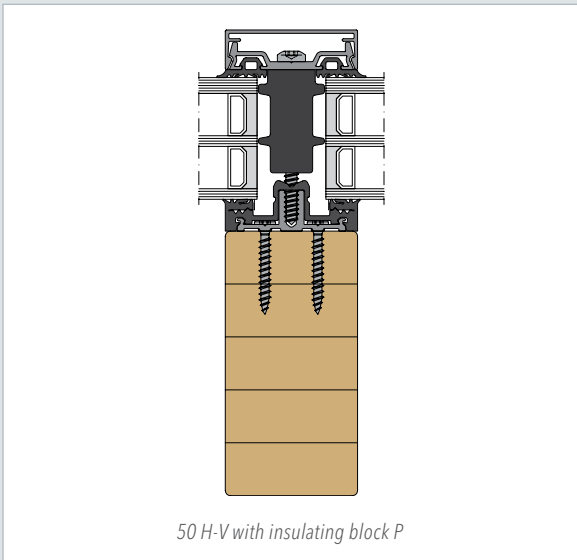
The THERM⁺ timber curtain wall system provides an approved glazing technology application to structural frames made of any timber based material. For a sustainable and lasting function the consistent system design assures strict separation between the structural elements and the functional components of aluminium profile located gaskets.

Advantages

- Efficient thermal insulation to Passive House certification with $U_f = 0.80 \text{ W/(m}^2\text{K)}$ (considering screw influence).
- Stepless thermal insulation by means of RAICO Insulation Block Technology.
- Two types of screw fixed aluminium base profiles; with or without profile locator.
- Screw fixings officially endorsed by European Technical Approval, for timber product derivatives having widths of 50 mm.
- Quick and easy fitting of the base profiles. Also suitable for assembly with magazine fed electric screwdrivers.
- No external components penetrate through to the timber frame.
- Integrated drainage system in continuous three level gasket.

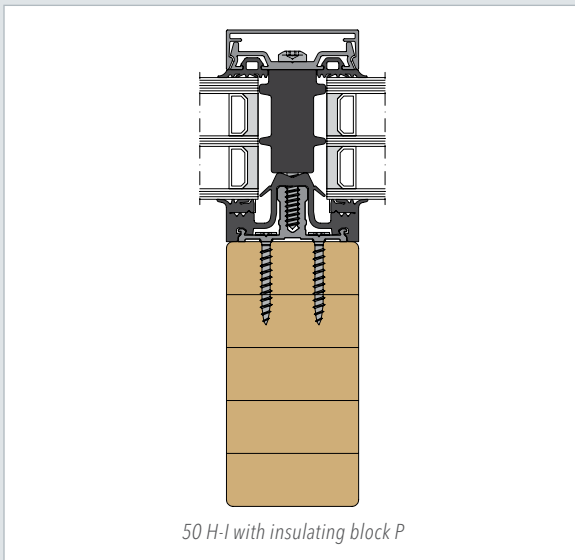
THERM⁺ H-V

is ideal for slim-line, economical curtain walls, with reduced interior gasket dimensions.

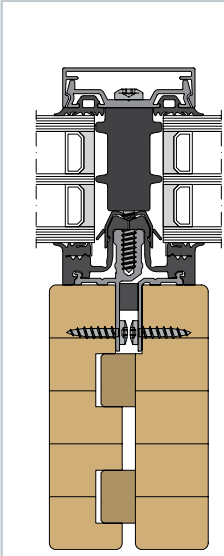


THERM⁺ H-I

for curtain walls and sloped glass roofs with an inclination down to 2°, thus also ideal for any type of timber-aluminium conservatory.

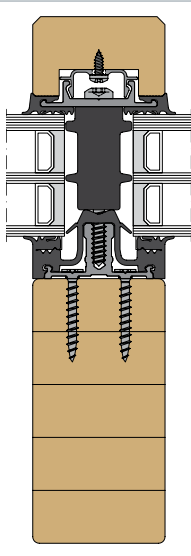


Variants



Coupling mullion

An ideal aid for efficient assembly. Pre-fabricated frames can be finished in the workshop with split coupling mullions, base profiles, interior gaskets and glass supports. On site these frames are simply coupled, glazed and finished with pressure profiles.



Timber Cover Profiles

can be produced in a sustainable and dependable way with THERM⁺. The glazing technology is based on aluminium and EPDM components. The decorative timber profile is retained by a concealed profile.

Technical Data

	System width in mm	For timber profiles from - in mm	Infill thickness in mm	Glass weight in kg	Drainage levels	Polygonal assembly	Application Glass roof	Application Conservatories
H-V	50/56/76	50 width	6 – 64	550/600	2 or 3	up to 45°	–	–
H-I	50/56/76/96	50 width	6 – 64	550/600	2 oder 3	up to 45°	up to 2° inclination	yes

The RAICO timber connector TC

The connectors between mullion and transoms on timber curtain walling must fulfil additional specific requirements. The dead load of the infill units is positioned in front of the timber structure, and the connectors must compensate for this torsional effect in addition to wind pressure and suction forces:

- Two patented RAICO connector options: SOLO and KOMBI for glass weights up to 481 kg.
- For THERM⁺ H-V/H-I.
- For transom depth from 60 up to 300 mm.
- Minimum preparation: rebated grooves at each end of the transom and drilled holes to both the mullion and transom.
- Simplified assembly: fix mullions, insert transom, secure transom with nail screws, finished.
- Automatic flush position of the transom due to the integrated stop device.
- Option to prefabricate into transportable units.
- Aesthetically correct joints due to T connector pressure across the profiles.



Timber connector TC SOLO



Timber connector TC KOMBI



The standard THERM⁺ system can easily be upgraded to Passive House Certified standard with minimal additional components. Passive House projects can therefore be fitted with energy saving glazing in a generous, cost effective way, independent of their supporting projects.

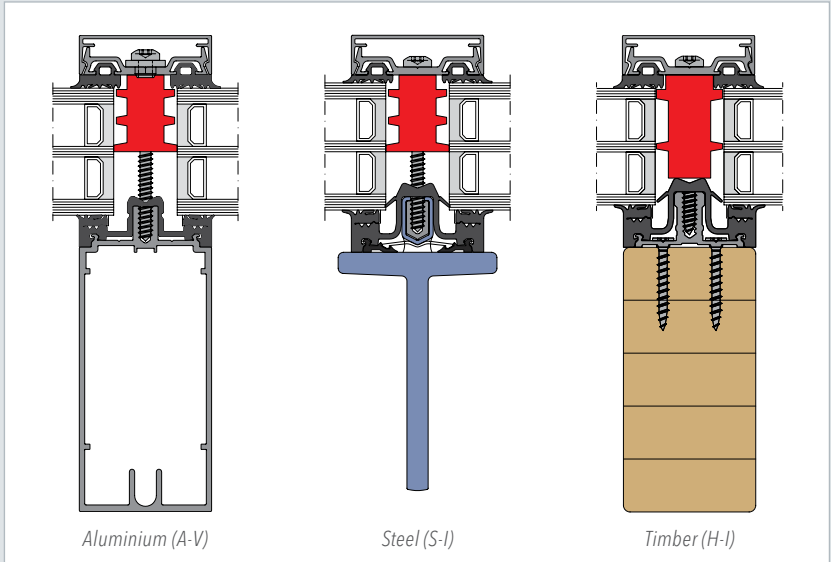
Advantages

- Certified by the European Passive-House Institute Dr. Feist in Darmstadt.
- Certified with triple glazing, argon gas filling and acrylic spacer.
- Installations achieves high levels of air tightness (Blower Door Test).
- Specific accessories (sealing membranes and connection panel profiles) maintain integral Passive House quality.
- Application in glass curtain wall and glass roof possible.
- All pressure and cover profiles from the standard systems can be applied.

Passive House Certification based on the latest criteria.

The whole range of THERM⁺ curtain wall systems has been certified in accordance with the latest criteria set by Dr. Wolfgang Feist's Passive House Institute. The comfort criteria in passive house of $U_{CW} = 0.80 \text{ W/(m}^2\text{K)}$ is fulfilled by our THERM⁺ A-V and THERM⁺ S-I systems available in sight-line widths of 50 and 56 mm, as well as by THERM⁺ H-V with system widths of 50, 56 and 76 mm.

All certifications have considered the influence of screw fixings using RAICO's standard pressure plate screws and RAICO's own synthetic glass carriers.



Thermal insulation values

according to DIN EN ISO 10077-2 incl. screw influence

	System width in mm	U _f -value in W/(m²K)
A-V	50/56	up to 0.85
S-I	50/56	up to 0.88
H-V	50/56/76	up to 0.87
H-I	50/56/76	up to 0.88



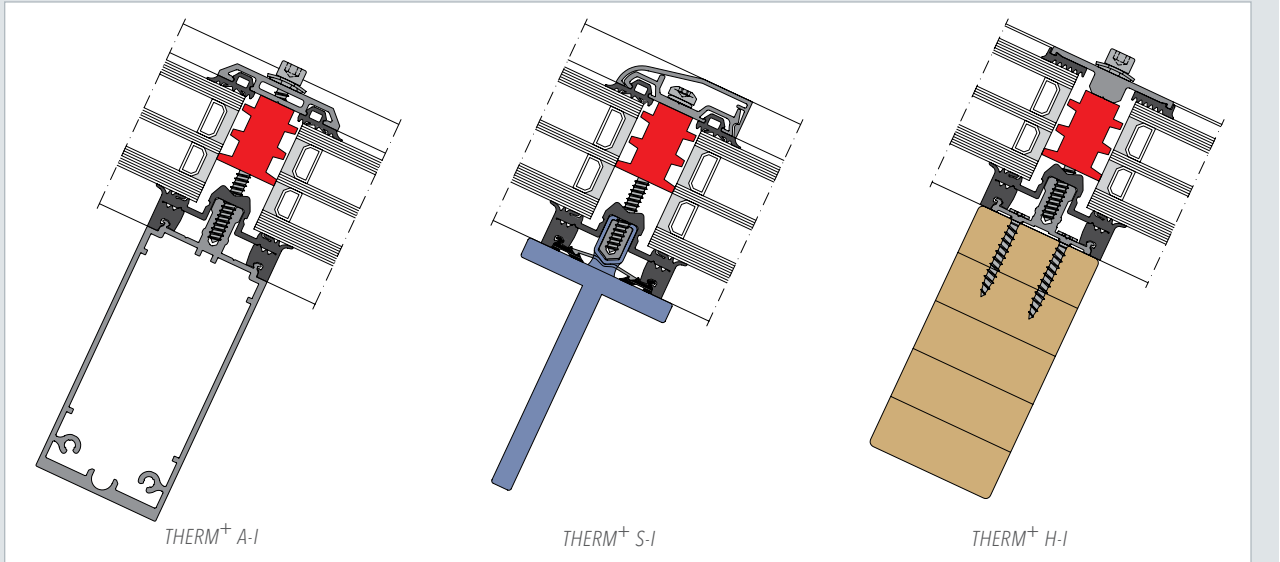
The creation of bright, light-flooded rooms with all-spanning glass roofs is one of the central challenges of modern architecture. In order to be able to realise the most diverse designs into reality, the mullion-transom systems THERM⁺ A-I, S-I and H-I are available for architects and planners.

Advantages

- Tested with an inclination of only 2°, with outstanding results and classifications. (Accessories such as sun protection devices and building connection components were included in the testing).
- The system structure is identical to the THERM⁺ standard systems.
- The low pitch construction is made feasible with bevelled pressure profiles, flat pressure profiles, silicone joints or any combination of these.
- Outlets at the end of the pressure profiles provide efficient drainage and avoid stagnant water.
- Natural and smoke ventilation can be achieved by inserting our aesthetically pleasing WING 105 DI opening roof-light which has also been tested down to 2° from horizontal.

Wide range of possibilities

The THERM⁺ glazing system offers a surprisingly wide range of possible variations. By selecting one or more of our base profile systems, identical construction for mullion-transom curtain wall and glass roofs are possible. Options include an aluminium system offering a large range of support profiles, a set-on-top steel base profile for any commercially available steel support profiles, or a base profile designed to fit on to a range of timber products. With regard to the curtain wall system, the thermal insulation can be set to any individual requirement by selecting the appropriate accessories without the need to change the base profiles.

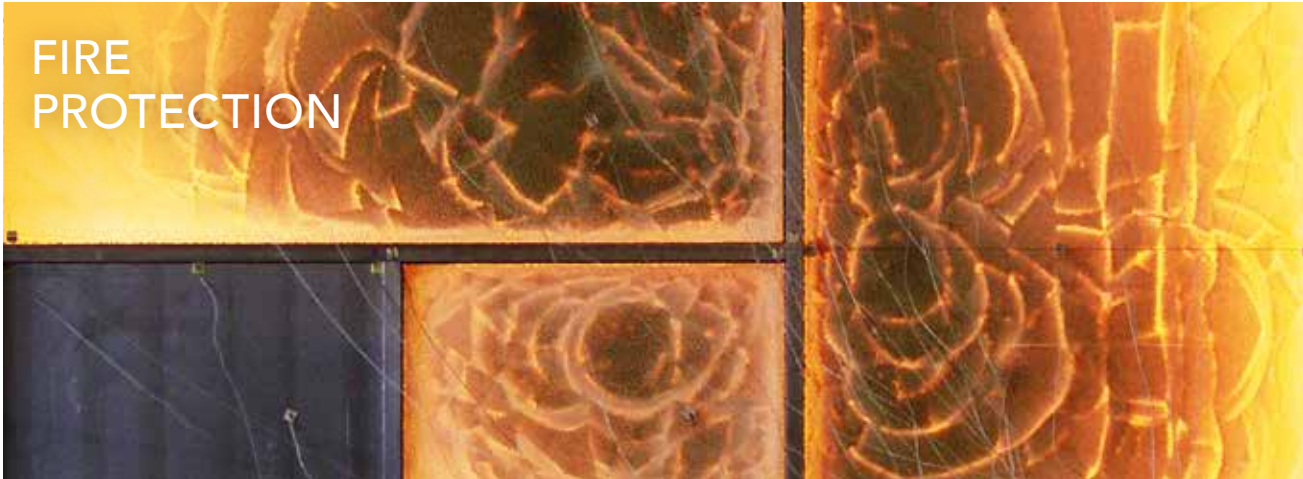




The THERM⁺ Structural Glazing SG2 curtain wall systems feature the most intricate glazing technique. A narrow silicone joint is the only visible line between the insulation glass panes. Retention of the internal pane is enabled easily, quickly and securely with the use of SG glazing toggles. By utilising the SG insulating block, curtain walls achieve outstanding thermal insulation values.

Advantages

- Can be combined with any of our other system variations, with any pressure profiles and also with suction discs.
- Efficient and safe glass fixation with structural glazing toggles.
- High heat insulation up to $U_f = 0.90 \text{ W/(m}^2\text{K)}$ (considering screw influence).
- Available in 50 and 56 mm versions of all THERM⁺ systems.
- For double or triple glazing, from 32 to 64 mm thickness.
- Application in glass curtain wall and glass roof possible.



Minor additions to the standard THERM⁺ system are all that is needed to construct fire resistant curtain wall in a range of protection classes. The maximum size of 1,920 mm x 3,000 mm glazing panels provides a new dimension in fire protection.

Advantages

- The design of fire protection curtain wall is identical to the standard systems, thus requiring a minimum of additional cost and fabrication effort.
- Application of standard gaskets.
- Tested glass dimensions
A-V: up to 1,400 x 3,000 mm
S-I: up to 1,500 x 3,000 mm
H-I: up to 1,500 x 3,000 mm or 1,920 x 3,000 mm
- No visual difference between the variations.
- All standard structural profiles can be applied.
- Maximum freedom of design with storey height screens.

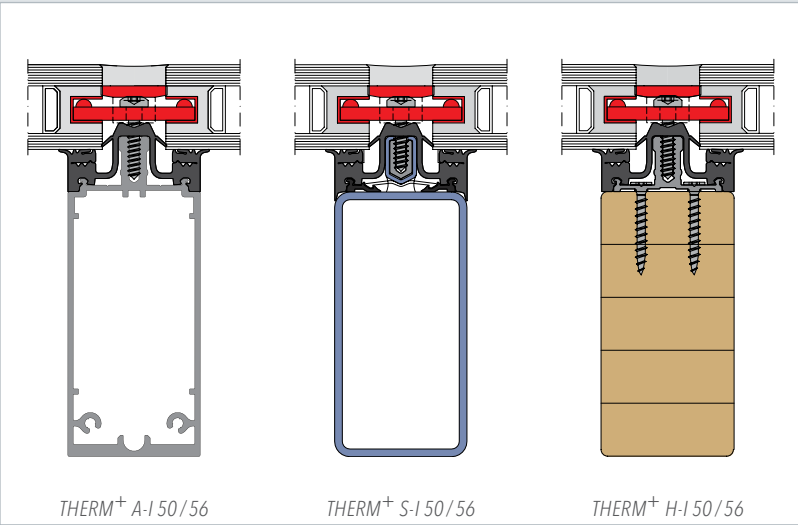
Technical Data

	System width	Fire resistance class	Max. glass formats	General approval
A-V	50/56 mm structural profiles from 50 mm	EI30	1,400 x 3,000 mm	Classification report No. 14-002042-PR01 (ift Rosenheim)
S-I	50/56 mm structural profiles from 60 mm	E30/EW30/EI30	1,500 x 3,000 mm	Classification report No. C-11-003319-PR01 F14-01-de-01
H-I	50/56 mm structural profiles from 60 mm	F30/G30	1,500 x 3,000 mm	German general approval No. Z-70.4-166
H-I	50/56 mm structural profiles from 60 mm	F30/G30	1,920 x 3,000 mm	Classification report No. C-16-002772-PR01 (ift Rosenheim)

Variety of possible combinations

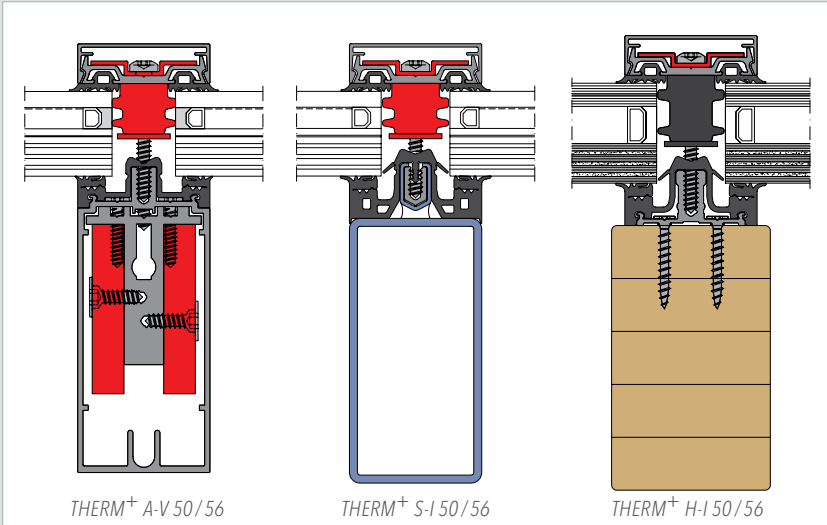
SG2 curtain wall may be combined with any other version of the system, as well as pressure plate / cover caps and suction discs.

SG curtain wall is available in system widths of 50 and 56 mm, suitable for glazing units from 32 to 64 mm thick.



Technology in detail

- Aluminium:** Aluminium glass carrier, short length stainless steel reinforcement to pressure plate, intumescent strip in glazing rebate.
- Steel:** Aluminium glass carrier, short length stainless steel reinforcement to pressure plate, intumescent strip in glazing rebate.
- Timber:** Aluminium glass carrier, short length stainless steel reinforcement to pressure plate, intumescent strip in glazing rebate.



BURGLAR
RESISTANCE



All THERM⁺ curtain wall variants may be made burglar resistant in accordance with the German resistance categories WK2 and WK3 by adding a few supplementary system components. Providing maximum creative possibilities, all system widths and all types of pressure plates with clip on cover caps, visible screw fixings, as well as flat profile pressure plates (in WK2) may be used.

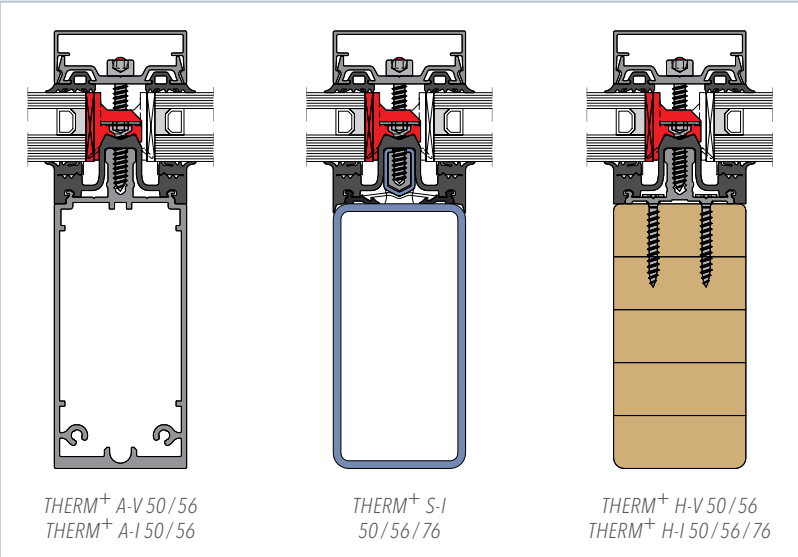
Advantages

- Extension of the standard systems by using additional shims with glass carriers and captivated ball bearing screw heads.
- No visual difference between the variations.
- System width and infill thickness as for standard systems.
- For WK3 supplementary reinforcement to the pressure profile and captivated ball bearing screw heads.
- Manufacture is identical to the standard system, thus production and assembly is rationalised to the standard system.
- The production of glass roofs in class WK2 and WK3 is also available.
- Wide selection of pressure and cover profiles.

Technology in detail

The burglar resistance curtain wall can be equipped with following opening insertion windows in class WK2:

- Aluminium window system FRAME⁺ (see page 20)
- Top-hung projecting window WING (see page 50)
- Top-hung / side-hung / bottom-hung projecting window WING 50 SK (see page 51)



Approvals / Certification / CE-labelling

based on product standard for curtain walling EN 13830

	THERM ⁺ A-V	THERM ⁺ A-I	THERM ⁺ S-I	THERM ⁺ H-V	THERM ⁺ H-I
Thermal insulation incl. screw influence	up to $U_i = 0.80 \text{ W/(m}^2\text{K)}$	up to $U_i = 0.95 \text{ W/(m}^2\text{K)}$	up to $U_i = 0.80 \text{ W/(m}^2\text{K)}$	up to $U_i = 0.80 \text{ W/(m}^2\text{K)}$	up to $U_i = 0.80 \text{ W/(m}^2\text{K)}$
Wind resistance	1.875 / 2.813 kN/m ²	1.875 / 2.813 kN/m ²	2.5 / 3.75 kN/m ²	2.5 / 3.75 kN/m ²	2.5 / 3.75 kN/m ²
Resistance against impact	interior I5, exterior E5	interior I5, exterior E5	–	interior I5, exterior E5	interior I5, exterior E5
Air permeability	AE (>600)	AE (>600)	AE (>600)	AE (>600)	AE (>600)
Water tightness	RE 1,650	RE 1,650	RE 1,950	RE 2,100	RE 2,100
Airborne sound insulation	$R_w(C;C_{tr}) = 41 (-3; -7) \text{ dB}$ $R_w(C;C_{tr}) = 49 (-2; -4) \text{ dB}$	–	$R_w(C;C_{tr}) = 41 (-3; -7) \text{ dB}$ $R_w(C;C_{tr}) = 51 (-1; -4) \text{ dB}$	–	$R_w(C;C_{tr}) = 36 (-1; -3) \text{ dB}$ $R_w(C;C_{tr}) = 41 (-2; -5) \text{ dB}$ $R_w(C;C_{tr}) = 41 (-3; -7) \text{ dB}$ $R_w(C;C_{tr}) = 46 (-1; -5) \text{ dB}$ $R_w(C;C_{tr}) = 49 (-2; -4) \text{ dB}$
Fall protection (TRAV)	yes, without additional measures				
German general approval	curtain wall system Z-14.4-504 T-connector Z-14.4-461	curtain wall system Z-14.4-454 T-connector Z-14.4-461	curtain wall system Z-14.4-446	curtain wall system Z-14.4-516	curtain wall system Z-14.4-455
European Technical Approval	–	–	–	ETA-13/0765	ETA-13/0765
Fire resistance	EI30	–	E30 / EW30 / EI30	–	F30 / G30 / EI30
Burglar resistance	RC2 / RC3	RC2 / RC3	RC2 / RC3	RC2 / RC3	RC2 / RC3

Product standard for curtain walling EN 13830:
Features and classification for CE-Labeling (tested with an inclination of 2°)

	Test type/Standard	THERM ⁺ A-I	THERM ⁺ S-I	THERM ⁺ H-I
Nr. 4.1	Wind resistance (EN 13116)	Wind pressure up to 2.6 kN/m ² Wind suction up to 3.9 kN/m ²	Wind pressure up to 2.6 kN/m ² Wind suction up to 3.9 kN/m ²	Wind pressure up to 2.6 kN/m ² Wind suction up to 3.9 kN/m ²
Nr. 4.4	Air permeability (EN 12152)	Class AE (2,100)	Class AE (2,100)	Klasse AE (2,100)
Nr. 4.5	Water penetration (EN 12154)	Up to class RE 2,550 ¹⁾	Up to class RE 2,550 ¹⁾	bis Klasse RE 2,550 ¹⁾

¹⁾ Test deviant from EN 12155 with a water amount of 3,4 l/(m² min). The standard specifies a water amount of 2 l/(m² min).



Isabelle – Munich, GER



FRAME⁺

Window system

With the award winning FRAME⁺ aluminium window system, RAICO meets architectural demands whilst setting bench marks in the industry for thermal performance requirements. FRAME⁺ offers a convenient range of thermal performance levels for opening lights, fixed glazing and roof-lights where thermal transfer coefficients of $U_f = 0.79 \text{ W/(m}^2\text{K)}$ are possible.



B+B Hotel – Ulm, GER



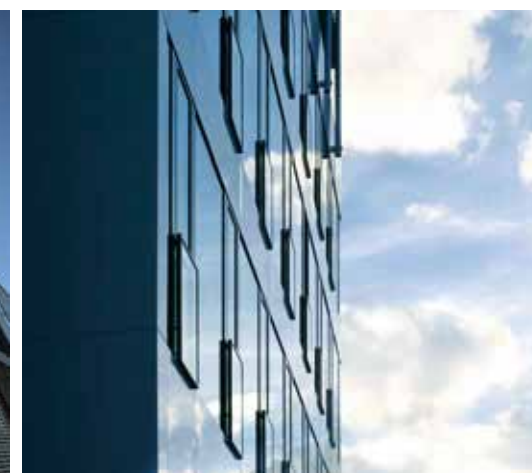
Pariser Höfe – Stuttgart, GER



Lohn AG – Baden-Baden, GER



MTZ service centre – Oerlenbach, GER



French Consulate – Stuttgart, GER



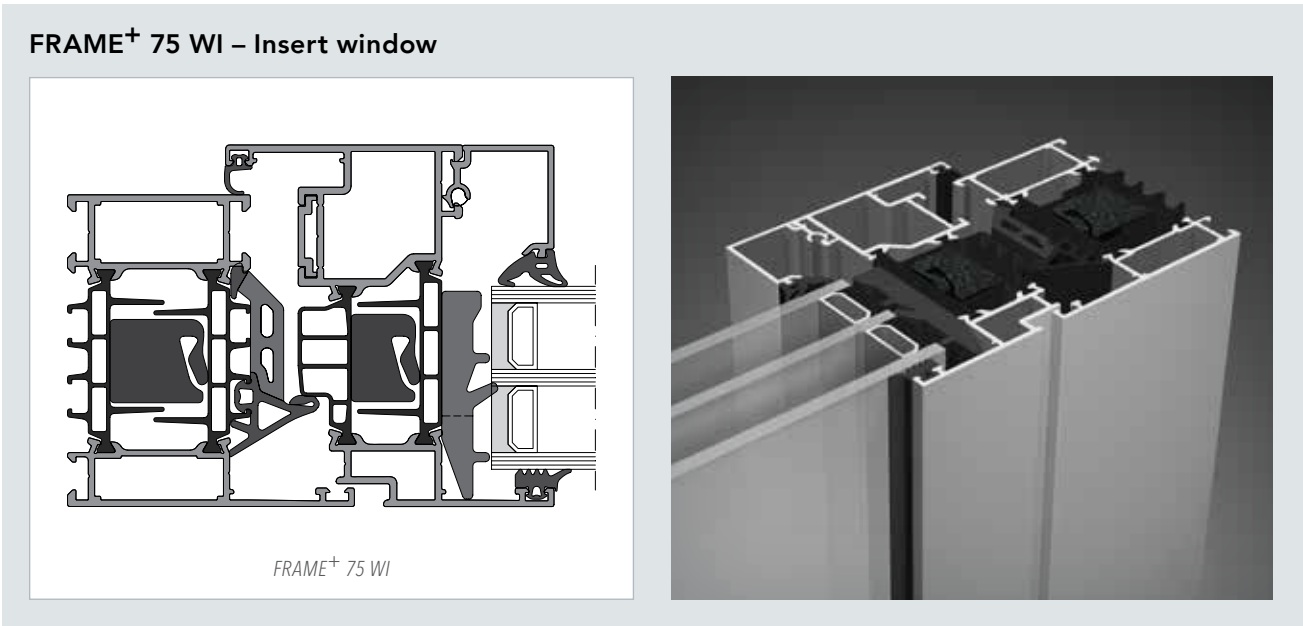
Tricor AG – Bad Wörishofen, GER



The innovative FRAME⁺ system concept with its modular composition. The system profiles consist of identical interior and exterior aluminium extrusions and can be adapted to the required depth and thermal insulation by selection of the THERMORIT insulation bars.

Advantages

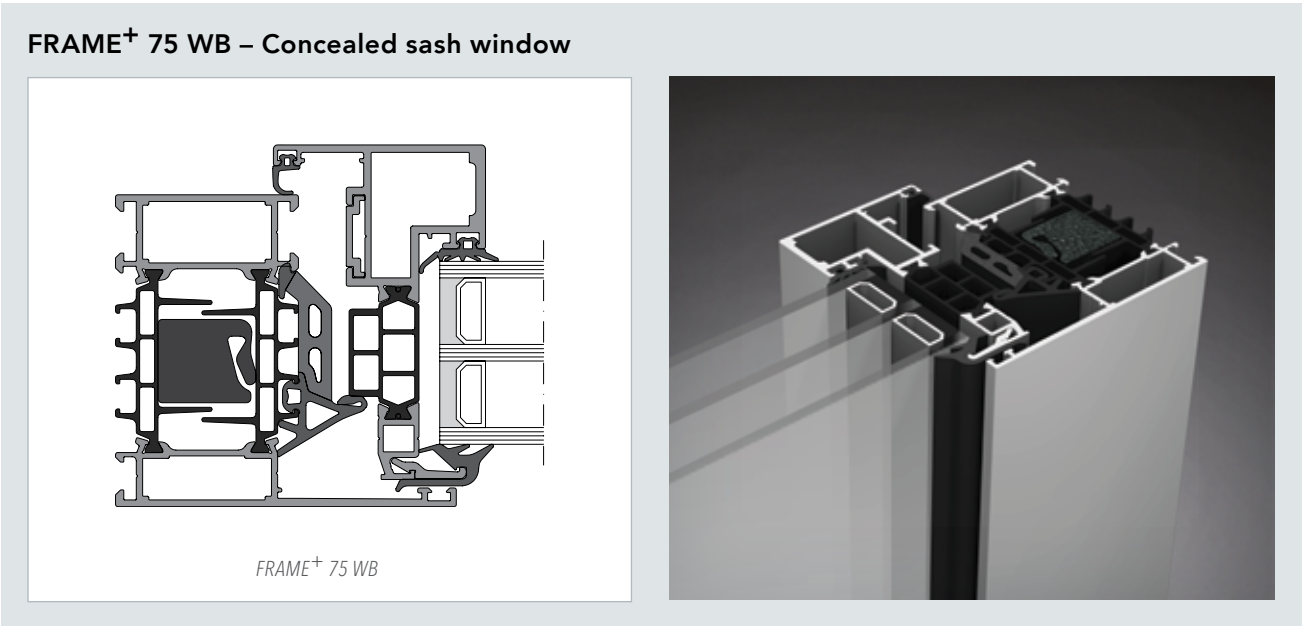
- Maximum energy savings with variable adjustment of the insulation values down to $U_f = 0.81 \text{ W/(m}^2\text{K)}$.
- System depth 75 mm.
- Stepless thermal insulation.
- Innovative system components, such as THERMORIT insulation bars featuring distinctly reduced heat transmission values.
- Co-extruded centric gaskets.
- Consistent thermal optimization of the modular system.
- Integration of efficient insulation areas.
- A range of opening options is available.
- Available as system for self-fabrication or as assembled units.



Using FRAME⁺ 75 WB as a concealed sash window offers very filigree elevation widths, not showing any visible window bars. This version is also available as a floating window, with overlapping casement, and with decorative glazing bars. For built-in punched opening windows, the opening elements and window elements have an identical face width.

Advantages

- High-insulation windows with $U_f = 1.1 \text{ W/(m}^2\text{K)}$.
- System depth 75 mm.
- Application as window for punched openings or, with outer frame extension, for integration into curtain wall.
- No visible glazing beads.
- Very slim visual appearance.
- Available as a dummy mullion sash.

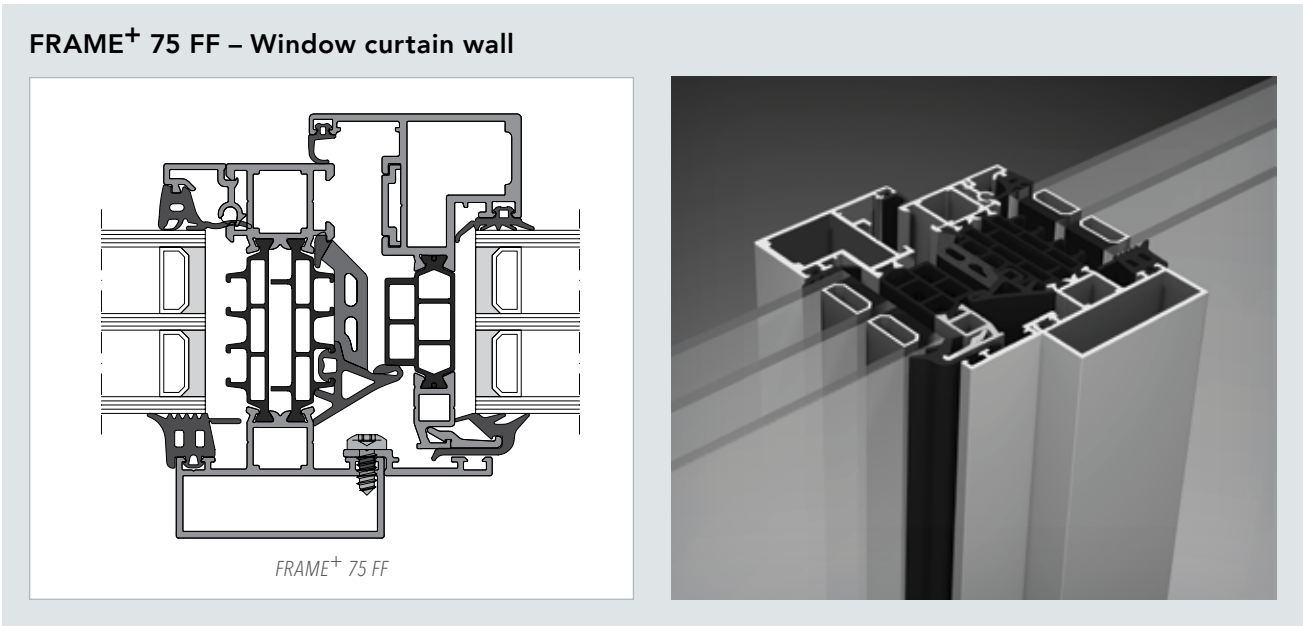




The version FRAME+ 75 FF offers additional advantages of this trendsetting window technology, such as a slim-line mullion-transom design model featuring elevation widths of only 50 mm, and an U_f value of up to $0.98 \text{ W/(m}^2\text{K)}$.

Advantages

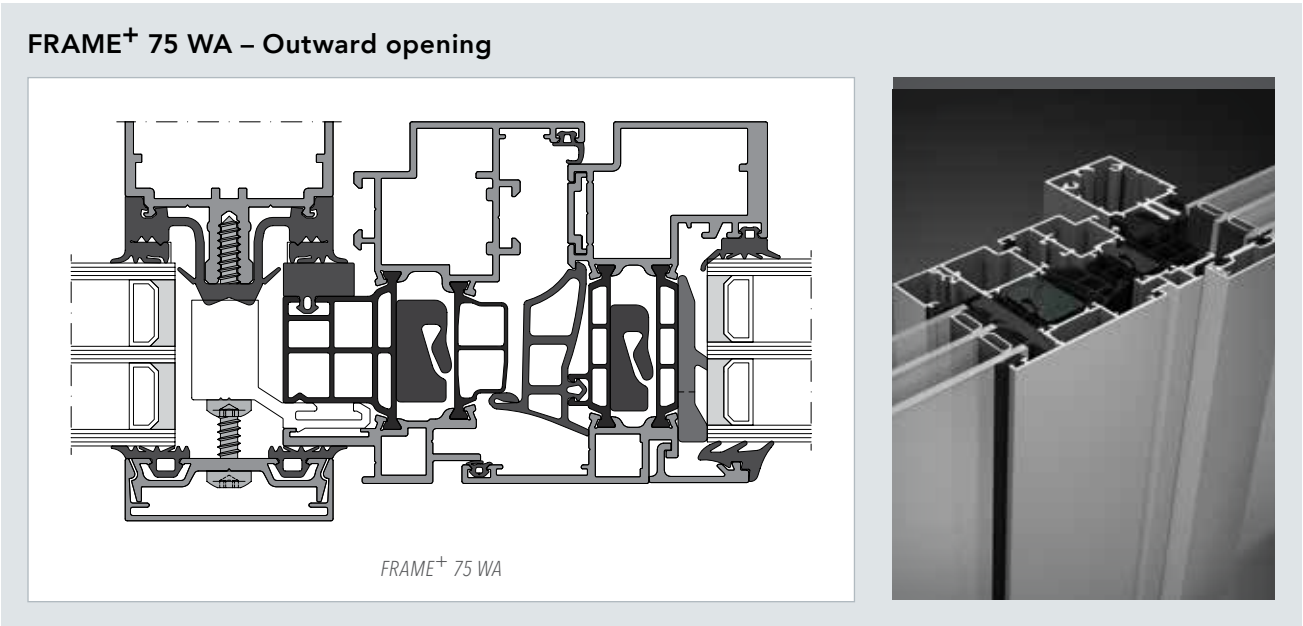
- Window curtain wall system with stick system appearance and an external visual width of only 50 mm.
- System depth 75 mm.
- Ideal for economic ribbon windows up to storey height.
- High-insulation windows with U_f up to $0.98 \text{ W/(m}^2\text{K)}$.
- Slim curtain wall appearance with sashes or fixed glazing.
- Comprehensive diversity of design with various cover profiles from the THERM+ curtain wall system.
- Available as a dummy mullion sash.



The FRAME+ 75 WA version offers several usage as bottom-hung, top-hung, side-hung, top-hung projecting all outward openings. Energy savings by variable adjustment of the insulation values up to $U_f = 1.4 \text{ W/(m}^2\text{K)}$.

Advantages

- High-insulation windows with U_f down to $1.4 \text{ W/(m}^2\text{K)}$.
- System depth 75 mm.
- Opening options: bottom-hung, top-hung, side-hung, top-hung projecting.
- Internal or external glazing options.
- Minimal sight lines.
- Available with curtain wall adapter outer frame profile.





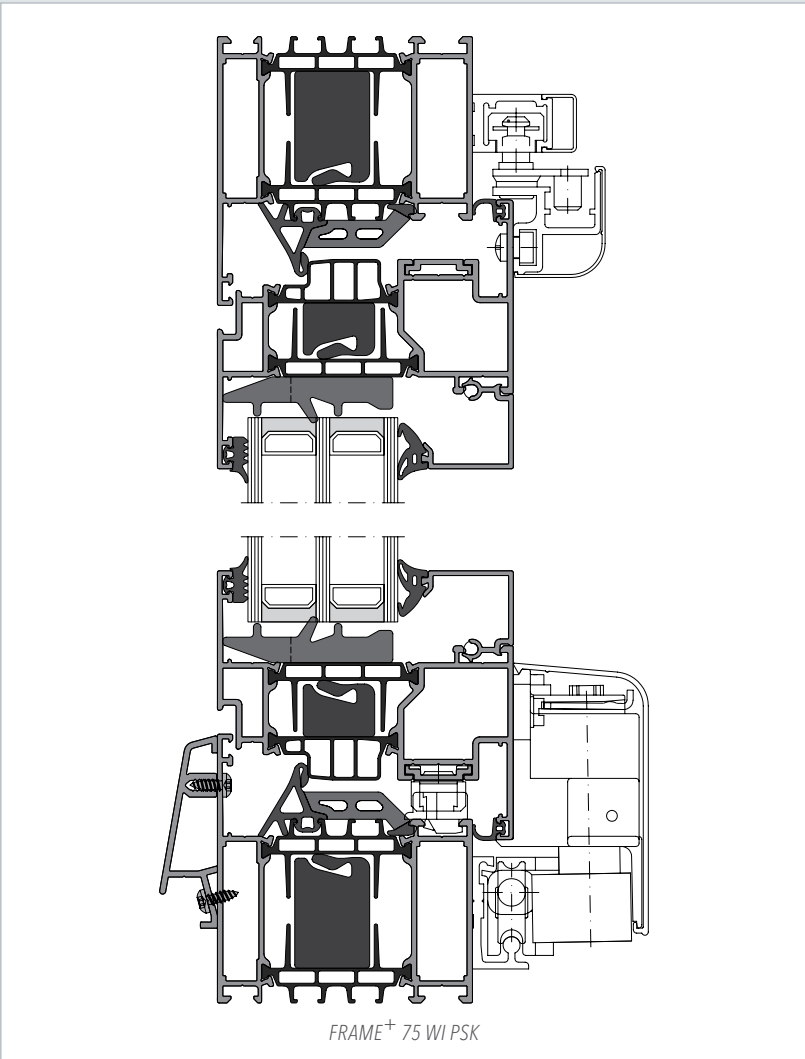
FRAME+ 75 WI PSK
PARALLEL TILT AND
SLIDE DOOR

With its choice of space saving opening methods (slide to step through / tilt to provide ventilation) coupled with its outstanding thermal performance and its very high air tightness qualities, the parallel tilt and slide door is ideally suited for use as a terrace or balcony door.

Advantages

- Outstanding insulating properties.
- Innovative, space-saving runner technology.
- Large openings up to a sash width of 2 m.
- High sash weights up to 200 kg.
- For sash weights over 150 kg, hardware assisted operation for ease of use.
- Excellent ventilating properties using a storm proof tilting position.
- Highly impermeable by circumferential medial gasket technology.
- Broad range of applications for extensive terrace and balcony openings in the private and commercial buildings.
- Various ways of opening:
 - space-saving due to slide position
 - long-term ventilation in tilt position

FRAME+ 75 WI PSK —
The sliding door from the standard series FRAME+



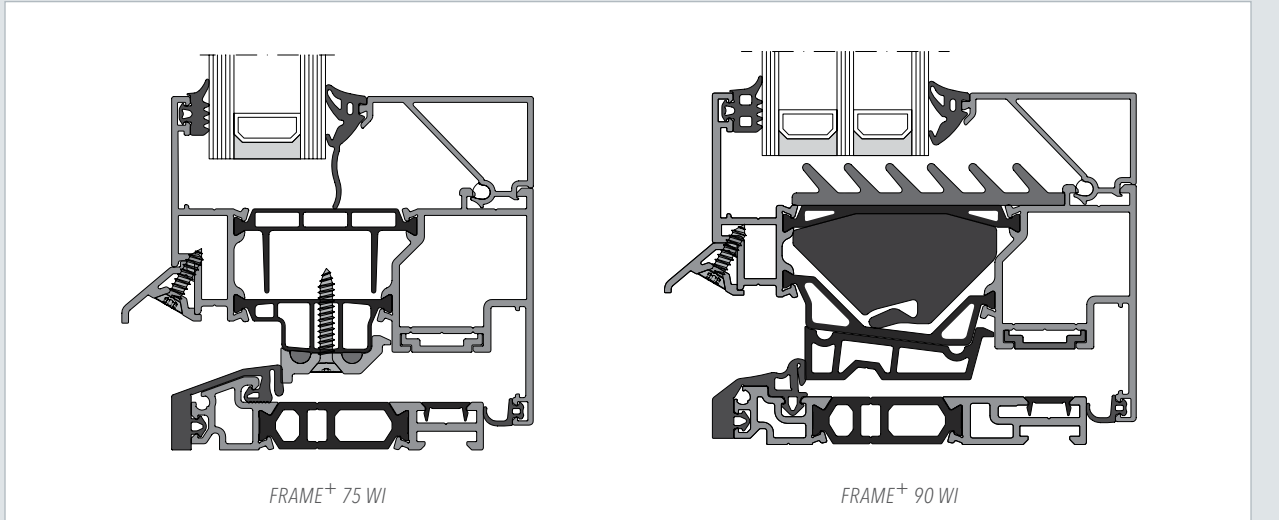
FRAME+ 75 WI / 90 WI
BARRIER-FREE THRESHOLD

The threshold belongs to the most sensitive parts of french doors. Especially in the threshold area thermal insulation and air tightness is a real challenge. With our new barrier-free threshold we are offering a product that meets all requirements on modern and safe construction ergonomics.

Advantages

- The thermally separated aluminium sill is possible for barrier-free threshold acc. to DIN 18040 with a maximum height of 20 mm.
- Increased safety due to additional horizontal locking.
- Standard fittings applicable as surface mounted or concealed option for an attractive appearance.
- Application as window for punched openings or, with outer frame extension, for integration into curtain wall.
- Substructure of sill with standard enlargement of FRAME+ series.
- Visually attractive solution by small face widths.
- System depth 75 mm.
- Infill thicknesses 22 to 68 mm.
- Opening options:
 - One-leaf: turn and turn-tilt
 - Double-leaf: turn-tilt/turn and turn/turn.
- Available as system for self-fabrication or as assembled units.
- Maximum sash dimensions of 1,100 x 2,500 mm / 1,450 x 2,200 mm.
- Tested U_f values
 - 75 WI: 1.8 W/(m²K)
 - 90 WI: 1.4 W/(m²K)

FRAME+ 75 WI / 90 WI – Accessibility in RAICO quality



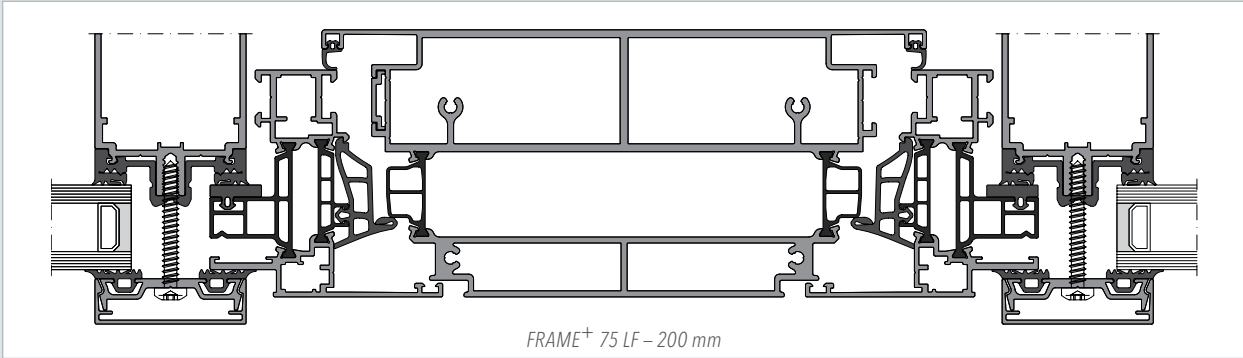


Completing the FRAME⁺ product series, two ventilation flaps are available for the curtain wall system THERM⁺ (elevation width of 200 mm) and the aluminium window system FRAME⁺ (elevation width of 300 mm). The ventilation flap gives an extraordinary impression regarding a façade's design, due to its characteristic narrow elevation width.

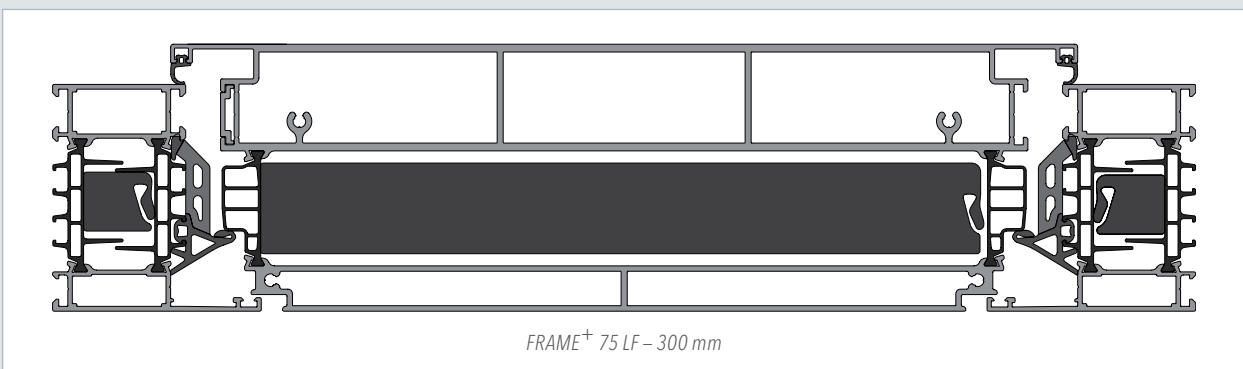
Advantages

- Storey height ventilation with a single thermally broken profile without the need for a frame or glazing beads.
- Inside and outside homogeneous, flat surface.
- Burglar resistant.
- Impact resistant fixed opening width of 120 mm (for FRAME⁺ 75 LF 200).
- U values down to $U_f = 0.86 \text{ W/(m}^2\text{K)}$.
- With outer frame profile also possible for integration into curtain wall.
- Available for self-fabrication or as pre-assembled units.

FRAME⁺ 75 LF 200 — Insertion element for the curtain wall system (face width 200 mm)



FRAME⁺ 75 LF 300 — Insertion element for the punched opening window (face width 300 mm)

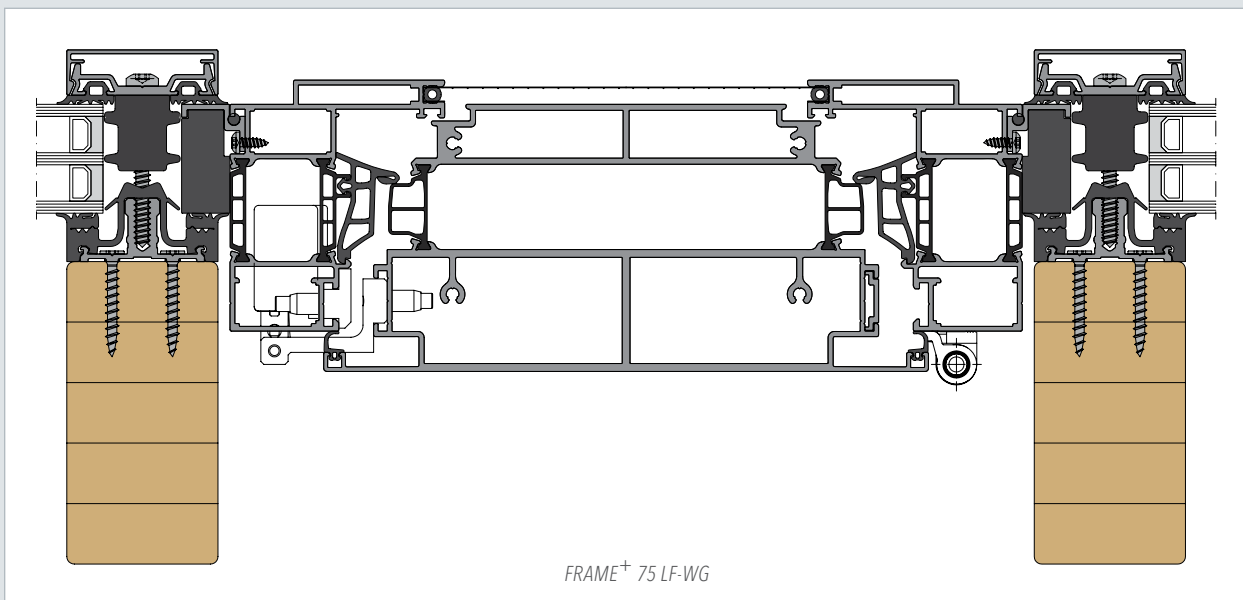


The new automatic ventilation flap deliberately combines inconspicuous design with the highest possible level of functionality. It has invisible integrated motor technology and a special outer frame design, enabling the incorporation of an insect protection or perforated sheet metal plate. It ensures the optimal ventilation and aeration of buildings.

Advantages

- By the fixed opening width of 120 mm without further action in the open condition, the flap is burglary and impact-proof.
- The motor drive is perfectly integrated under the continuous center gasket, invisible in the fixed frame.
- Available as system for self-fabrication or as pre-assembled units.
- By running a highly insulated composite airfoil without frame and glazing beads and both sides homogeneous planar surfaces results in a particularly inconspicuous design.
- Integrable inconspicuous insect protection with a 80% open area ventilation.
- Tested values
 - U_f value = $1.4 \text{ W/(m}^2\text{K)}$
 - Air permeability = class 4
 - Wind resistance: class C5/B5
 - Water tightness up to E 900
 - Operating forces: class 1 and 2
 - Resistance against impact: class 5.

FRAME⁺ 75 LF-WG — Quick automatic ventilation



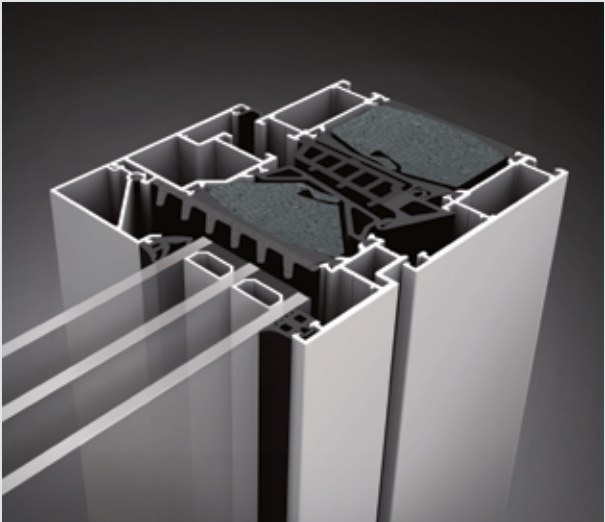
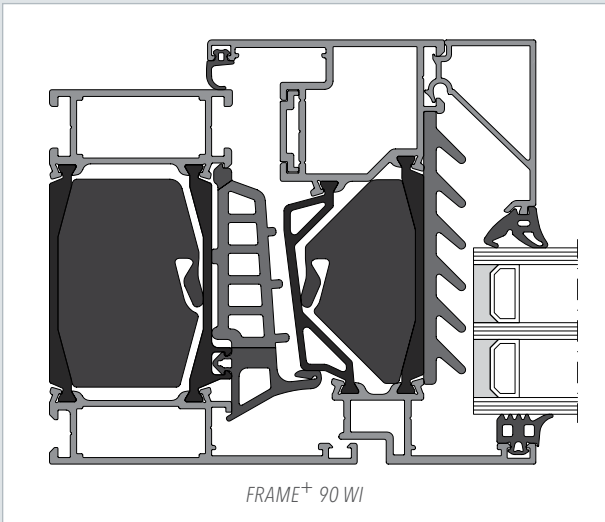


The solution's outstanding energy efficiency was one of the reasons for the new FRAME+ 90 WI aluminum window system being awarded the "Component Award 2014". Additionally it is exceptionally economical and maximizes overall savings at the level of both investment and energy costs compared to standard windows.

Advantages

- Outstanding thermal insulation with a volume fraction of 60% of the innovative material used for THERMORIT bars: $U_w = 0.75 \text{ W/(m}^2\text{K)}$ / $U_f \text{ value} = 0.79 \text{ W/(m}^2\text{K)}$.
- Maximum thermal insulation and glass infill thicknesses up to 80 mm (in the sash).
- High performance thermal insulation insert with a depth of 60 mm.
- Simplified, more flexible installation into curtain wall with range of variable system components.
- Available in system form for self-fabrication, or as prefabricated units.
- Clean and easy corner cleat bonding using innovative adhesive injection method into synthetic distribution channel.
- Opening variants: Turn-tilt/Turn/Tilt-turn (tilt first)/Tilt/Parallel tilt and slide door.
- Suitable for composite coating and anodising.

FRAME+ 90 WI – Certificated insert window

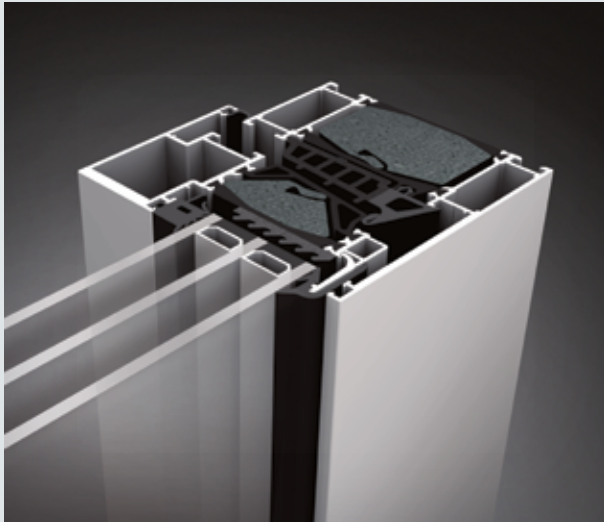
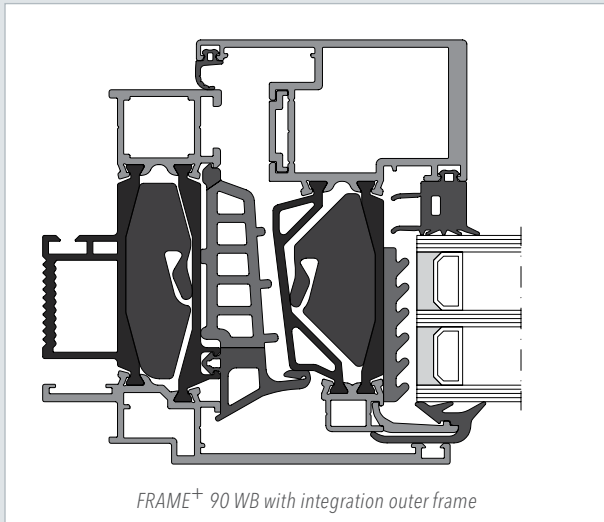


Using FRAME+ 90 WB as a concealed sash window offers very filigree elevation widths, not showing any visible window bars. This version is also available as a floating window, with overlapping casement, and with decorative glazing bars.

Advantages

- Outstanding thermal insulation with a volume fraction of 60% of the innovative material used for THERMORIT bars: $U_w = 0.76 \text{ W/(m}^2\text{K)}$ / $U_f \text{ value} = \geq 0.89 \text{ W/(m}^2\text{K)}$.
- One piece coextruded medial gasket with insulating foam percentage.
- Individual design options for the interior outer frame profile by using colour adaptable cover profiles.
- Safe glazing technology in conformity with the standards offering large ventilation spaces and an exterior gasket frame with corner vulcanisation.
- Insulation of the glazing rebate by glazing rebate insulating block with large ventilation spaces and insulation of the hollow profile sections by high thermal insulating insertions.
- Fitting variants:
 - Concealed fitting, thereby invisible parts, low-maintenance.
 - Surface-mounted fitting with enhanced version of the standard corner bearing enables higher sash weights and increased stability.

FRAME+ 90 WB – Outstanding concealed sash window

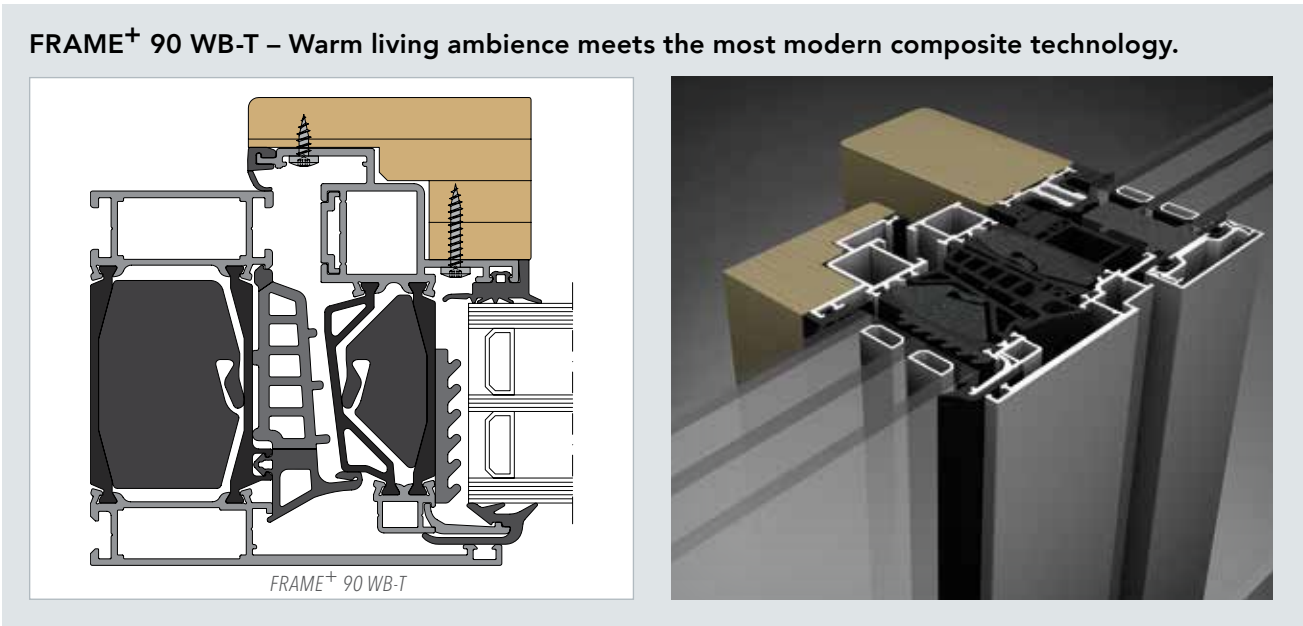




In the new RAICO aluminium timber window FRAME⁺ 90 WB-T, a warm living ambience meets the most modern composite technology made of highly thermally insulating THERMORIT. Enjoy cosiness in the interior area provided by the use of wood, and classical functionality due to weatherproof aluminium on the outside.

Advantages

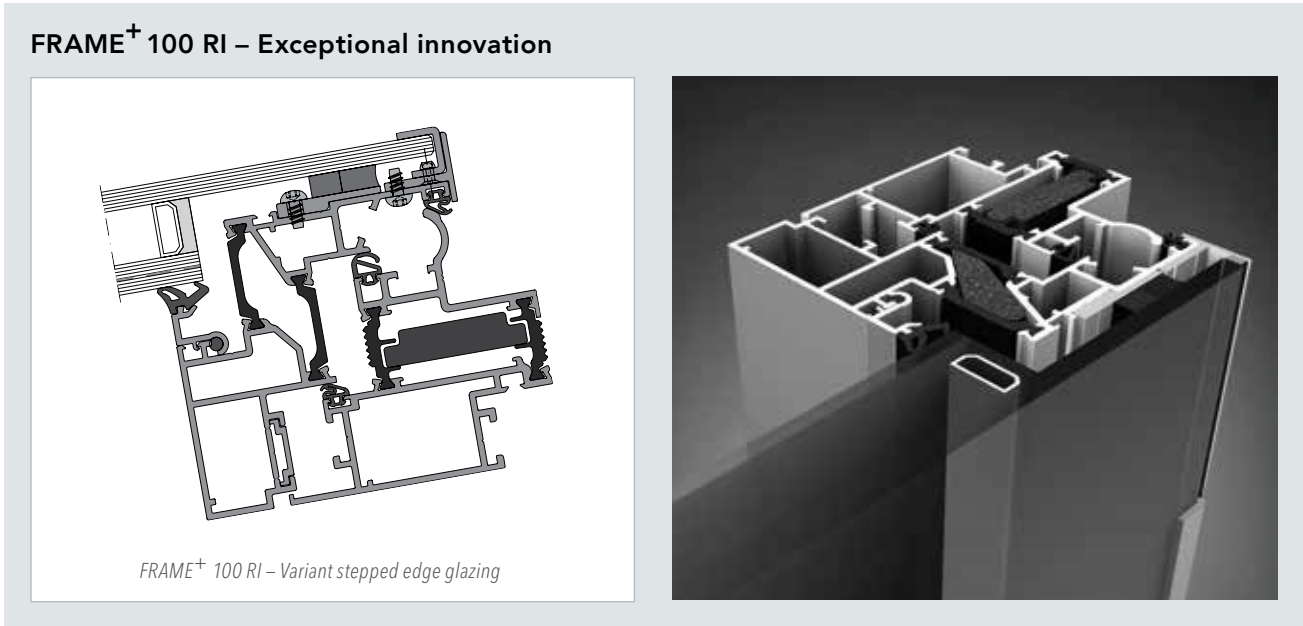
- Aluminium timber window with identical processing technology of standard aluminium windows.
- Outstanding thermal insulation with a volume fraction of 60% of the innovative material used for THERMORIT bars:
 $U_w = 0.77 \text{ W/(m}^2\text{K)}$
 $U_f \text{ value} = 0.89 \text{ W/(m}^2\text{K)}^*$.
- Real wood cladding on the inside as a decorative element, perfectly suited to the optical appearance of the curtain wall. Wide range of different types of wood.
- Individual design options for the interior outer frame profile by using colour adaptable cover profiles.
- Real wood cladding on the inside with simple screw connection technique on production or construction site, exchangeable after installation.
- One piece coextruded medial gasket with insulating foam percentage.
- Compensation of glass infill thickness by special clip gaskets.
- Opening possibilities: Tilt and turn/turn/tilt before turn/tilt.
- Available as system for self-fabrication or as pre-assembled units.



The new window system combines excellently optimised product characteristics with an abundance of design options. As in all variants of the FRAME⁺ families, the 100 RI also excels by its elegant and slim appearance, paired with good working details, which equally fulfils the demanding requirements of architects and fabricators alike.

Advantages

- Innovative insulating bar material THERMORIT with very low thermal conductivity and suitable for composite coating and anodising.
- Two different glazing variants due to the option for the screw connection of the cover profile (visible or concealed).
- Tested with a roof inclination of up to 2° it forms the perfect complement to the THERM⁺ glass roof systems.
- High degree of tightness by three peripheral seal levels with medial gasket frame.
- High burglar resistance (RC2) possible.
- Maximum airflow effect due to an opening angle of up to 90°. Tested for natural ventilation as well as a smoke and heat exhaust ventilator acc. to DIN EN 12101-2.
- Various opening possibilities due to mounting options on all four sides, manual or with motor drive. Wide selection of linear or chain drives.
- System depth 100 mm
- First passive house certified "opening element in the glass roof"
- Available as system for self-fabrication or as pre-assembled units.

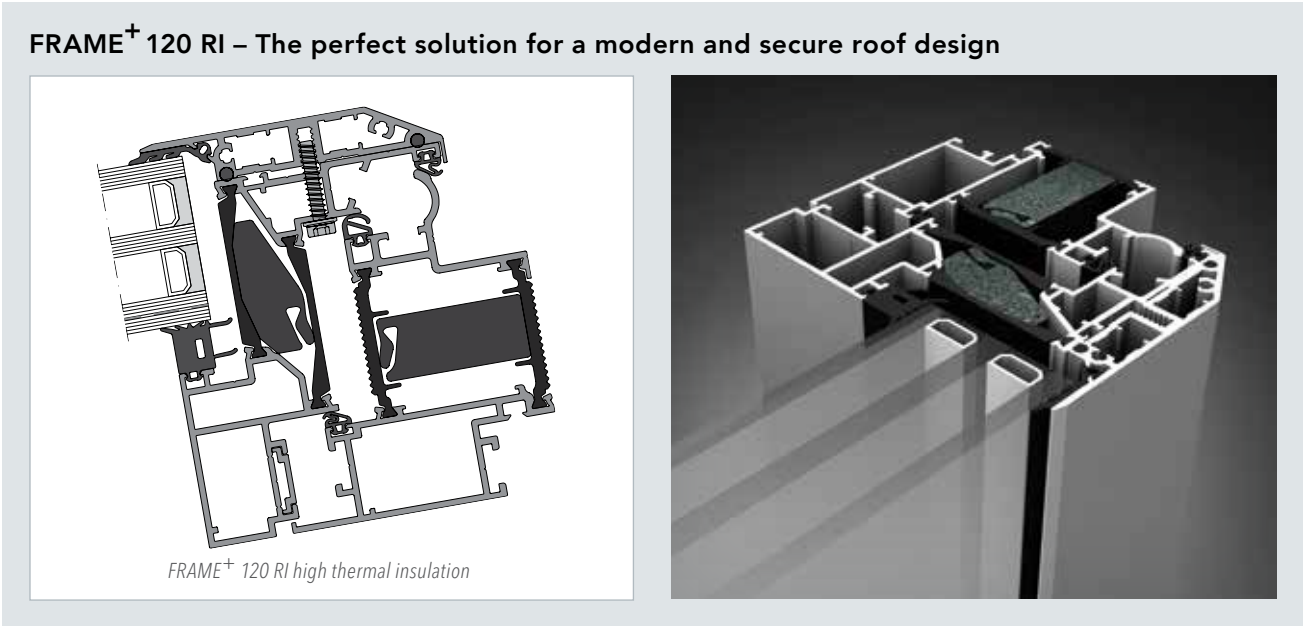




With its new FRAME⁺ 120 RI roof light window, RAICO is once again opening up a range of new possibilities in the field of functional and aesthetic roof design – thanks to their special depth of section, passive house certification and lean, elegant appearance which perfectly matches the proven THERM⁺ roof and curtain wall systems.

Advantages

- Innovative insulating bar material THERMORIT with very low thermal conductivity and suitable for composite coating and anodising.
- Two different glazing variants due to the option for the screw connection of the cover profile (visible or concealed).
- Tested with a roof inclination of up to 2° it forms the perfect complement to the THERM⁺ glass roof systems.
- High degree of tightness by three peripheral seal levels with medial gasket frame.
- High burglar resistance (RC2) possible.
- Maximum airflow effect due to an opening angle of up to 90°. Tested for natural ventilation as well as a smoke and heat exhaust ventilator acc. to DIN EN 12101-2.
- Various opening possibilities due to mounting options on all four sides, manual or with motor drive. Wide selection of linear or chain drives.
- System depth 120 mm
- First passive house certified "opening element in the glass roof"
- Available as system for self-fabrication or as pre-assembled units.



FRAME⁺ 120 RI – The perfect solution for a modern and secure roof design

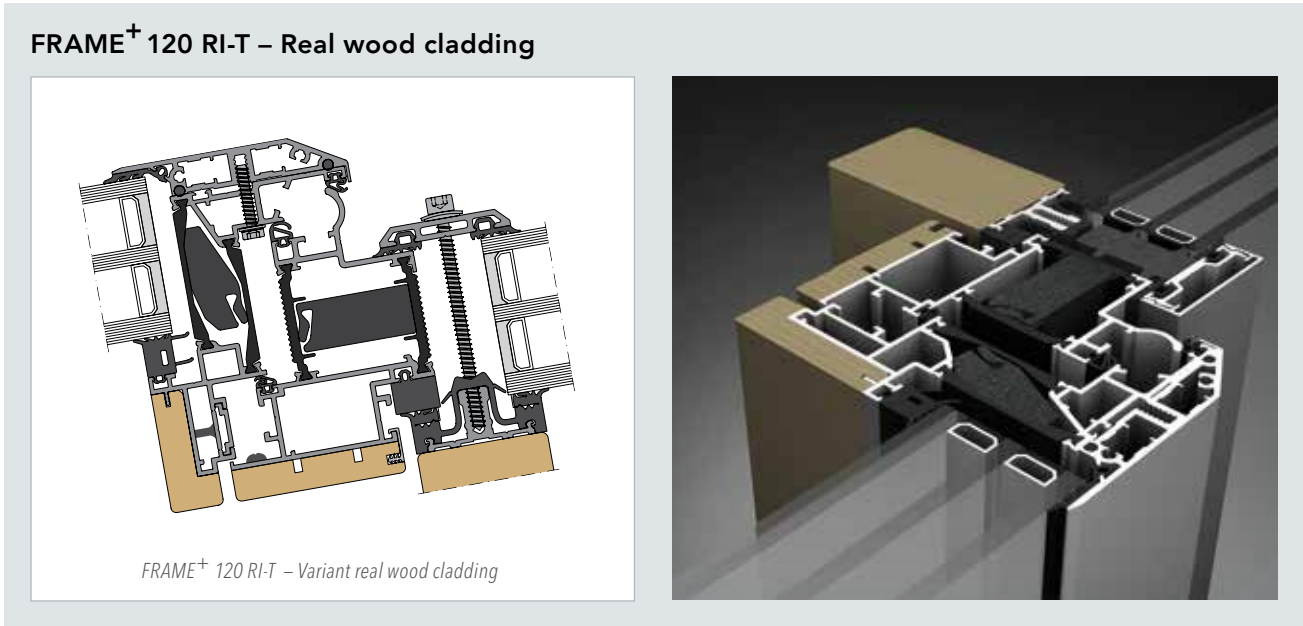
FRAME⁺ 120 RI high thermal insulation



The interior real wood cladding turns the FRAME⁺ 100/120 RI into a design highlight that is ideally integrated in the THERM⁺ H-I/H-V timber curtain wall system.

Advantages

- Aluminium timber window with identical processing technology of standard aluminium windows.
- Outstanding thermal insulation with a volume fraction of 60% of the innovative material used for THERMORIT bars: U_f value = 1.4 W/(m²K).
- Real wood cladding on the inside as a decorative element, perfectly suited to the optical appearance of the curtain wall. Wide range of different types of wood.
- Tested with a roof inclination of up to 2° it forms the perfect complement to the THERM⁺ glass roof systems.
- Individual design options for the interior outer frame profile by using colour adaptable cover profiles.
- Real wood cladding on the inside with simple screw connection technique on production or construction site, exchangeable after installation.
- One piece coextruded medial gasket with insulating foam percentage.
- Compensation of glass infill thickness by special clip gaskets.
- Available as system for self-fabrication or as pre-assembled units.



FRAME⁺ 120 RI-T – Real wood cladding

FRAME⁺ 120 RI-T – Variant real wood cladding

Quality in detail

The FRAME⁺ window series also guarantees a high degree of design freedom, in addition to a high energy saving thanks to maximized thermal insulation. The following table shows the achieved values and possible applications of the different systems.

	FRAME ⁺ 75 WI Aluminium window	FRAME ⁺ 75 WB Concealed sash window	FRAME ⁺ 75 FF Window curtain wall	FRAME ⁺ 75 WA Outward opening	FRAME ⁺ 90 WI Aluminium window	FRAME ⁺ 90 WB Aluminium window	FRAME ⁺ 90 WB-T Al. timber window	FRAME ⁺ 100/120 RI Roof light window	FRAME ⁺ 100/120 RI-T Roof light window timb
System values									
U _f -Wert passive house in W/(m²K)	–	–	–	–	= 0.79	= 0.75	–	–	–
U _f -Wert ¹ in W/(m²K)	≥ 0.81	≥ 1.1	≥ 0.98	≥ 1.4	≥ 0.70	≥ 0.75	≥ 0.89	≥ 1.40	≥ 1.40
Building depth in mm	75	75	75	75	90	90	90	from 88	from 88
Applications									
Punched opening window	X	X			X	X	X		
Curtain wall insertion element	X	X		X	X	X	X		
Casement sash		X	X			X	X		
Window curtain wall			X						
Opening element in the glass roof								X	X
Applicationlimits ²									
Max. weight turn-tilt surface- mounted fitting in kg	130/160/ 200 *	130/160/ 200 *	130/160/ 200 *	–	130/200 *	130/200 *	130	225	225
Max. weight turn surface- mounted fitting in kg	130/160/ 200/300 *	130/160/ 200/300 *	130/160/ 200/300 *	130	130/200/ 300 *	130/200/ 300 *	130	225	225
Max. weight consealed fitting in kg	150	150	150	–	150	150	150	–	–
Max. sash dimensions ³ in mm	1,600 x 2,100/ 1,600 x 3,000	1,450 x 1,900/ 1,450 x 3,000	1,450 x 1,900/ 1,450 x 3,000	2,500 x 2,000/ 2,000 x 2,500	1,600 x 2,100/ 1,100 x 2,500	1,600 x 2,100/ 1,100 x 2,500	1,600 x 2,100/ 1,100 x 2,500	3,500 x 1,500/ 2,100 x 2,500	3,500 x 1,500/ 2,100 x 2,500
Infill thickness sash in mm	22 – 68	24 – 44	24 – 44	22 – 68	34 – 80	40 – 60	40 – 60	10 – 80	10 – 80
Infill thickness fixed glazing in mm	10 – 56	4 – 50	10 – 56 (4,5) 4 – 50 (10,5)	–	36 – 65	–	–	11 – 68	11 – 68

¹ Thermal insulation based on DIN ISO 10077-2
² Applications outside these limits, would be subject to an assessment by our Technical Department.
³ For authorized sash sizes, see fitting diagram in the relevant planning documents.
* 130 kg with standard fitting up to 200 / 300 kg with reinforced fitting

Tests

The FRAME⁺ window system has undergone rigorous testing according to the product standard for windows and exterior doors EN 14351.1 and achieved the following classification. These values are at the same time the base for simplified CE marking of windows.

	FRAME ⁺ 75 WI Aluminium window	FRAME ⁺ 75 WB Concealed sash window	FRAME ⁺ 75 FF Window curtain wall	FRAME ⁺ 75 WA Outward opening	FRAME ⁺ 90 WI Aluminium window	FRAME ⁺ 90 WB Aluminium window	FRAME ⁺ 90 WB-T Al. timber window	FRAME ⁺ 100/120 RI Roof light window	FRAME ⁺ 100/120 RI-T Roof light window timb
Air permeability	Class 4	Class 4	Class 4	Class 4	Class 4	Class 4	Class 4	Class 4	Class 4
Resistance to wind load	Class C5/B5	Class C5/B5	Class C5/B5	Class C4/B4	Class C5/B5	Class C5/B5	Class C5/B5	Class C3/C4 *	Class C3/C4 *
Resistance against impact	Class 5	Class 3	Class 3	–	Class 5	Class 5	Class 5	–	–
Water tightness	up to E 1350	up to E 1350	up to E 1350	up to E 900	up to E 1200	up to E 1200	up to E 1200	up to E 1500	up to E 1500
Operating forces	Class 1 and 2	Class 1 and 2	Class 1 and 2	Class 1	Class 1	Class 1	Class 1	–	–
Airborne sound insulation ²	R _w (C;C _{tr})= 33(-1;-4) dB R _w (C;C _{tr})= 45(-1;-4) dB	R _w (C;C _{tr})= 38(-1;-4) dB R _w (C;C _{tr})= 42(-1;-4) dB	R _w (C;C _{tr})= 38(-1;-4) dB R _w (C;C _{tr})= 42(-1;-4) dB	–	R _w (C;C _{tr}) up to 45 dB	R _w (C;C _{tr}) up to 45 dB	R _w (C;C _{tr}) up to 45 dB	R _w (C;C _{tr}) 37 up to 43 dB	R _w (C;C _{tr}) 37 up to 43 dB
Mechanical strength	Class 4	Class 4	Class 4	–	Class 4	Class 4	Class 4	–	–
Burglar resistance	Class WK2	Class WK2	Class WK2	–	Class RC 2	Class RC 2	Class RC 2	Class RC 2	Class RC 2
Continuous- operational testing EN 14400:2002-10	Class 2	Class 2	Class 2	Class 2	–	–	–	Class 3	Class 3

¹ Tested to RAL GZ 695
² The values are referred to the standard size of 1.23 x 1.48 m
* Values are maxium tested/max. classification
The classification must be realized according to the requirements of the specifications.



Primary school – Neubiberg, GER



FRAME⁺

Door system

The FRAME⁺ door system is based on the well proven concept of the FRAME⁺ window series. The door profiles are designed to match the window profiles. In addition, many products from the window range are compatible with the door system. When used as an insert element, the door series can be integrated perfectly into the tried and tested THERM⁺ passive house curtain wall system.



Private home



Furniture Store Finke – Hamm-Rhynern, GER



medXpert – Eschbach, GER



Umweltarena – Spreitenbach, CH



PARC Peninsula Aquatic Recreation Centre – Frankston, AUS



Private home



FRAME+ 75 DI fulfils all the requirements for a high quality entrance door. Special profile contours enable simple installation. The series is characterised by short production times and efficient manufacturing. Smooth rebate geometries enable fast installation of all types of hardware in the rebate. Large internal chambers within the profiles provide acceptance of all fittings, such as electrical door release mechanisms.

Advantages

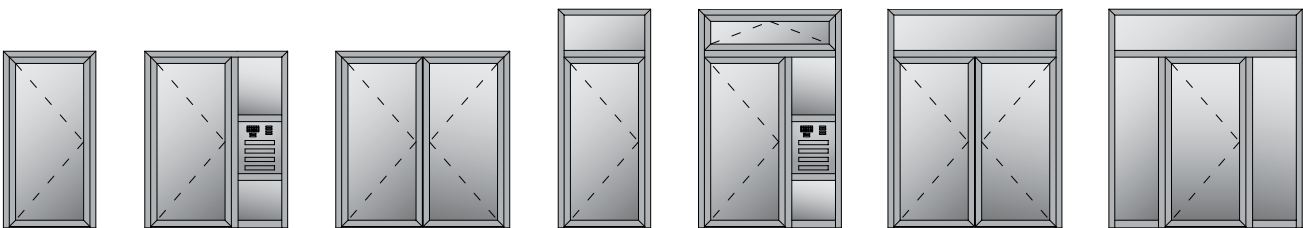
- Featuring U_D values down to $0.69\text{ W/(m}^2\text{K)}$ to meet passive house standards.
- Buildings, curtain wall and residential project installations.
- Extensive design options within the series.
- Standard fittings.
- Ease of manufacture with innovative features.
- Sturdy composite profiles ensuring long-lasting functionality.
- Tested to EN 12208 for water tightness:
 - Inward opening door to Class 9A (600 Pa)
 - Outward opening door to Class 8A (450 Pa)
- Inward and outward opening double doors.
- Inward and outward opening rebated dummy sidelight doors.
- Optional rebated meeting stiles.
- Integral sidelights and fanlights.
- Outward opening escape doors to EN 179 / 1125.
- Inward and outward opening single doors.

3D-concept

- High degree of tightness due to innovative sealing concept.
- Improved insulation of up to $U_f = 1.4\text{ W/(m}^2\text{K)}$.
- Large dimensions, up to 3.0 m height.



Selection of door combinations



Individuality and appearance are of high importance when considering the design of entrance doors, to enable symbiosis with the building. The FRAME+ door system offers creative options through the large range of profiles that can be perfectly combined with decorative door panels.

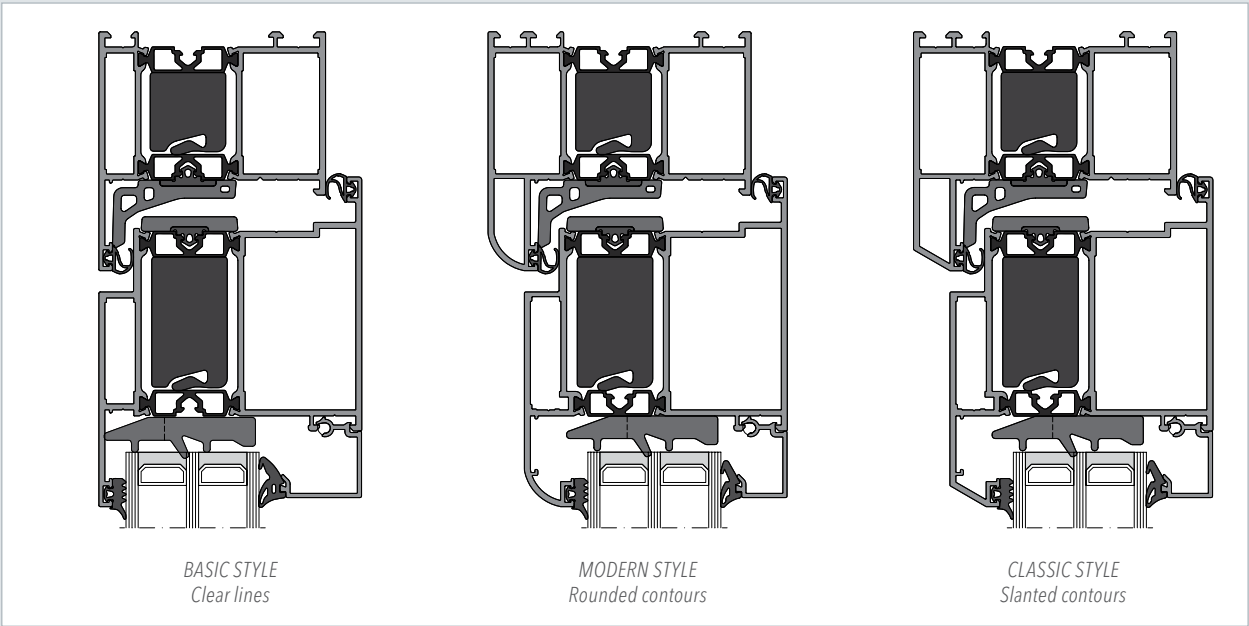
Aluminium front doors with an individual design

Three different design versions offer a wide range of individual design options. Nearly any design – from an expressive linear composition to soft flowing shapes – can be created with the FRAME+ door system.

- Three different design types:
 - Basic Style – lineal profile.
 - Modern Style – softer edges with curved contours.
 - Classic Style – distinguished lines with bevelled contours.
- Optional grey gaskets to minimise optical contrasts.
- All design variations are compatible in any combination.



Design variant Basic Style





The threshold is one of the most vulnerable parts of an entrance door. In particular, the threshold requires high levels of weather tightness and thermal performance. RAICO has chosen a totally new path to address these problems, and has developed a completely new threshold concept, resulting in an even higher level of impermeability.

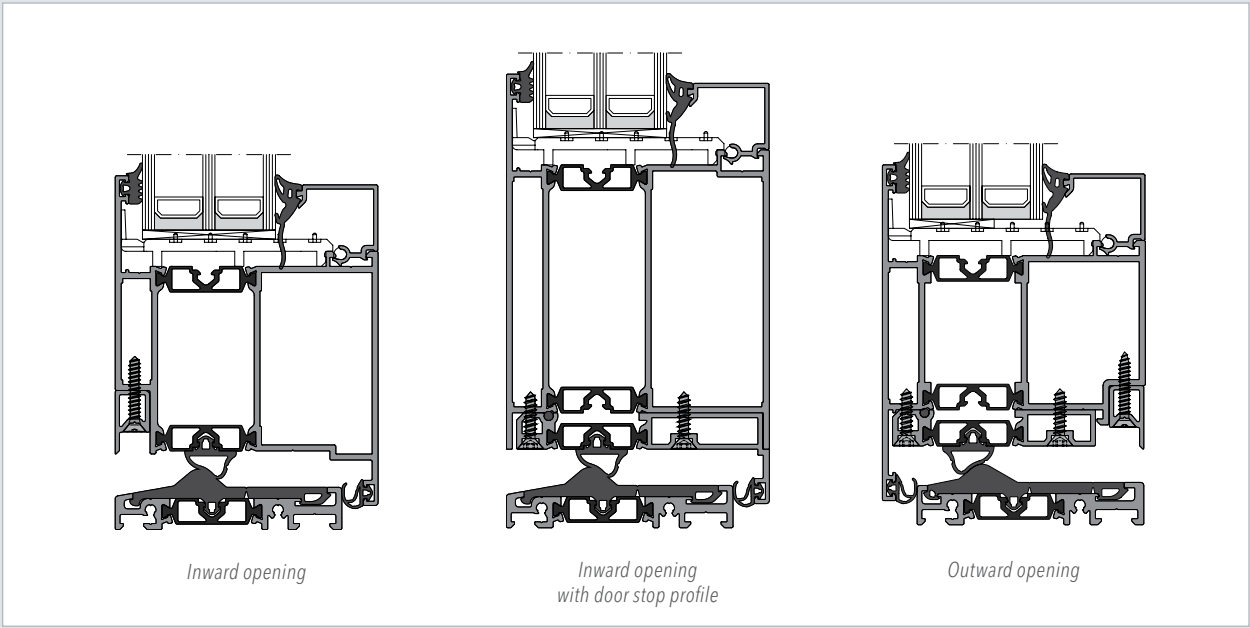
Innovative threshold concept

The door threshold needs to ensure perfect weather tightness. With its excellent insulation within the threshold area, reliable protection against driving rain and draught is guaranteed, reducing expensive heat losses. The low profile ensures comfortable barrier free access.

- Highest degree of weather tightness.
- Barrier free accessibility.
- Excellent insulation to threshold areas, down to 1.6 W/(m²K).
- Retro fit exchangeable threshold connector – easy assembly.
- Thermally separate aluminium threshold with replaceable gasket.
- Threshold base structure options.



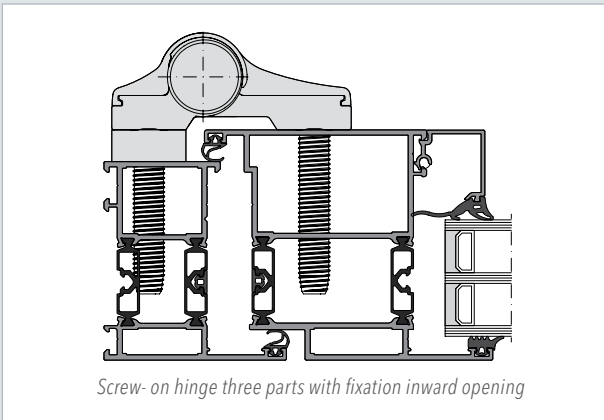
Basic Style with doorsill



Door hinge requirements are highly complex – from both functional and aesthetic perspectives. The FRAME⁺ 75 DI door system fittings fulfil these requirements perfectly. For example, they offer a variety of setting options and can accommodate heavy sash weights as well as provide aesthetically pleasing stainless steel finishes.

Face fixed flag hinges

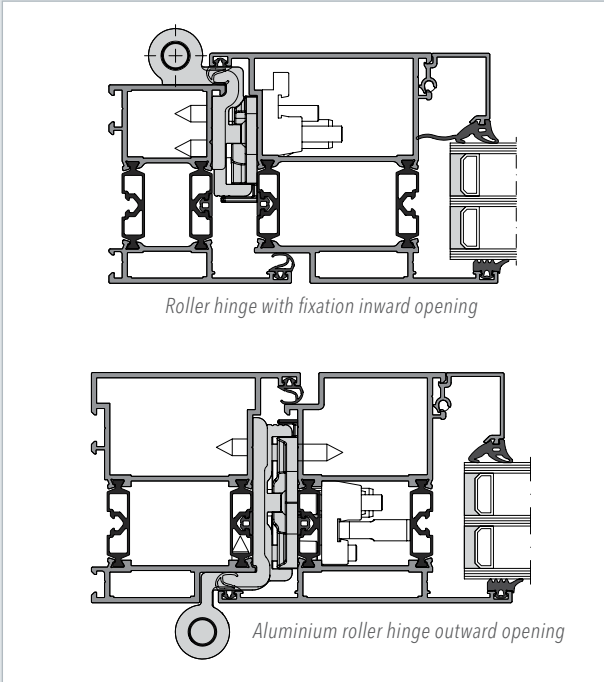
- Intricate shapes through optimised dimensions.
- Inward and outward opening options.
- Anchor screw or mounting plate fixings.
- Large colour range in aluminium or stainless steel finish.
- Two and three part hinge options.
- Post installation three way adjustment.
- Maximum weight of 200 kg.



Screw-on hinge three parts with fixation inward opening

Roller Hinge

- Inward or outward opening profile adapted hinges.
- Direct screw fixing to outer frame without hinge plates.
- Sash fixing utilises a multifunctional hinge body with integral adjustment.
- Large colour range in aluminium or stainless steel finish.
- Generous post installation multi-directional adjustment. (Rebate adjustment ± 2 mm, height adjustment ± 3 mm)
- Efficient production utilising pre-assembled hinge parts.
- Material optimisation in the 7 mm rebate enables a very high load capacity up to 250 kg.
- Integrated visual control of hinge adjustment on the sash hinge body.
- Stainless steel option with high load bearing capacity up to 250 kg.
- Air permeability test to class 3.

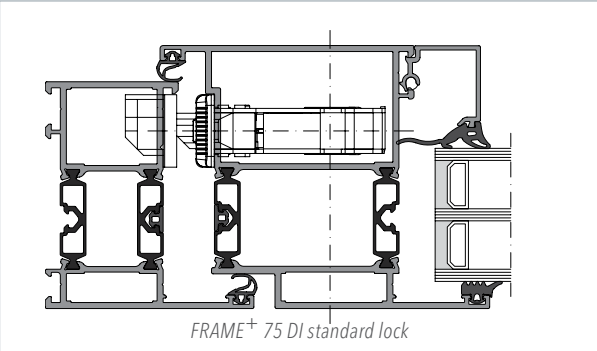




FRAME⁺ profiles have been designed to accommodate open market standard fittings. Smooth rebate construction enables fast and easy installation of a wide range of products (i.e. concealed door locks) Using a standard milling template for all lock types provides optimised fabrication as well as offering simple replacement or change of use options. A large range of accessories caters for individual customer requirements.

Standard lock for inward or outward opening doors

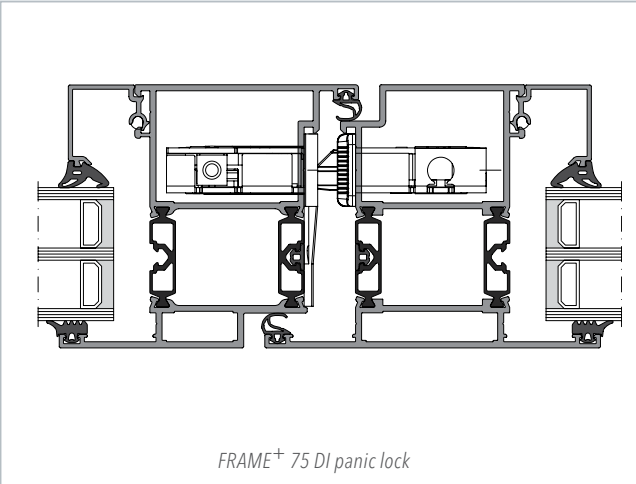
- Standardised profile processing for locks and strike plates.
- Latch lock / dead locks.
- Multi point locking system with shoot or hook bolts.
- Automatic locking with or without electrical release mechanism.



FRAME⁺ 75 DI standard lock

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

- Emergency exit and panic doors.
- Tested in accordance with EN 179 / 1125 for ability to release.
- Latch lock / dead locks with shift function E.
- Latch lock / dead locks with changeover function B.
- Single and multi point locking.
- Integral electrical release and monitor options.
- Automatic locking to the slave leaf of a pair of doors with full or partial escape mechanism.



FRAME⁺ 75 DI panic lock

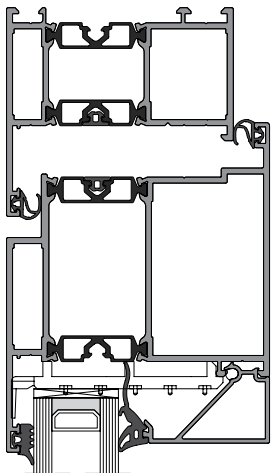


BURGLAR RESISTANCE

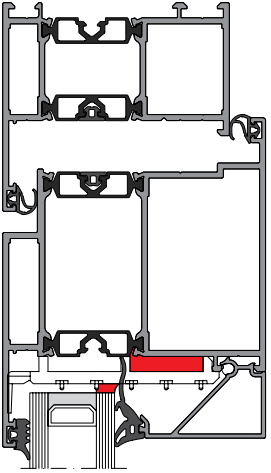
Feel secure by night and day. With innovative technology, the RAICO door system can be individually equipped with burglar resistant components to suit your security requirements. With analogue installation options in all design variations, you don't have to forgo any creative freedom.

Optimum safety based on the latest Know-How

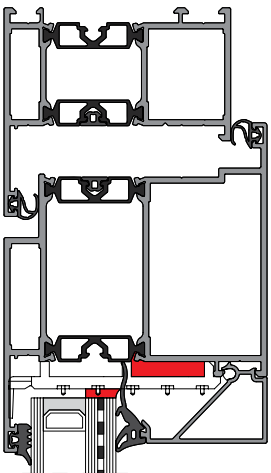
Just by adding a few supplementary system components the RAICO door system can be equipped with burglar resistant properties in resistance classes RC1, RC2 and RC3. Maximum creative freedom is enabled via analogue installation options with Modern Style and Classic Style design variants.



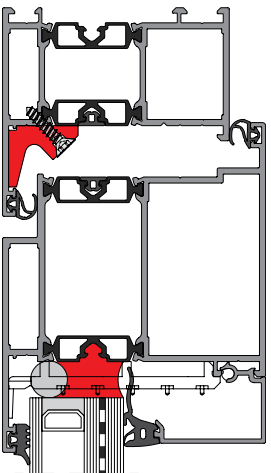
RC1N – Standard glass additional blocking



RC2N – Standard glass additional blocking + bonding



RC2 – Special glass additional blocking + bonding

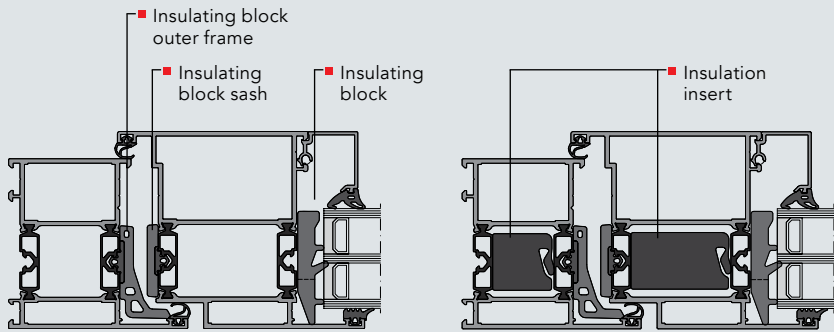


RC3 – Special glass, rebate reinforcement; additional blocking + circular bonding

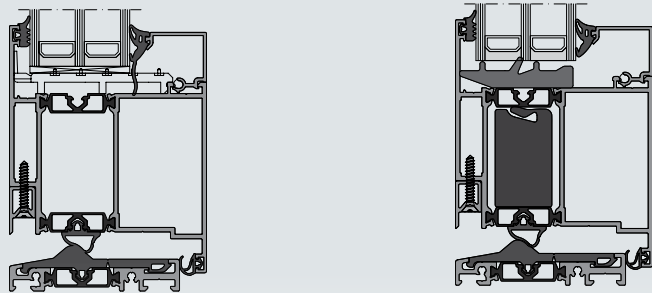
Thermal insulation for door system FRAME⁺ 75 DI

Individual thermal insulation

- Incremental adjustment of insulation values – to meet the project specific requirements.
- Featuring U_D values down to 0.69 W/(m²K) for use in passive-houses.



	Without insulation insert up to U _f				With insulation insert up to U _f			
	standard W/(m²K)		overlapping wing W/(m²K)		standard W/(m²K)		overlapping wing W/(m²K)	
	inward	outward	inward	outward	inward	outward	inward	outward
Without insulating blocks	2.0	2.0	2.1	2.0	1.6	1.6	1.7	1.7
Insulating block	2.0	2.1	2.0	2.0	1.6	1.7	1.6	1.6
Insulating block outer frame and insulating block sash	1.9	1.9	1.8	1.8	1.4	1.5	1.4	1.4
Insulating block outer frame and insulating block sash and insulating block	1.8	1.8	1.7	1.8	1.3	1.3	1.3	1.4



	Without insulation insert up to U _f				With insulation insert up to U _f			
	standard W/(m²K)		overlapping wing W/(m²K)		standard W/(m²K)		overlapping wing W/(m²K)	
	inward	outward	inward	outward	inward	outward	inward	outward
Without insulating blocks	2.1	2.3	2.2	2.3	1.7	1.9	1.8	2.0
Insulating block	2.0	2.2	2.1	2.2	1.6	1.7	1.7	1.8

Approvals

The FRAME⁺ door system has undergone rigorous testing according to the product standard for windows and exterior doors and achieved the following classifications. These values (regarding to EN 14351-1) are at the same time the base for simplified CE marking of windows.

	Inward opening		Outward opening	
	Single-winged	Two-winged	Single-winged	Two-winged
Air permeability / EN 14351-1	class 4	class 4/3 *	class 4/3 *	class 4/3 *
Resistance to wind load / EN 12210	class C4	class C3	class C4/C3 *	class C3
Water tightness / EN 12208	class 9A	class 7A	class 8A/5A *	class 7A/5A *
Operating forces / EN 12217	class 2	class 1	class 2	class 2
Burglar resistance / EN 1627	class RC3	class RC3	class RC3	class RC3
Sound insulation / EN ISO 717-1	44 dB		44 dB	

*Value is referred to the execution with roller hinge

FRAME ⁺ 75 DI Aluminium door	
System values	
System depth in mm	75
Applications	
Punched opening window	X
Curtain wall insertion element	X
Leaf-enclosing infills	X
Application limits	
Min. width inactive leaf	310 mm ^{1,5}
Min. width active leaf	310 mm ²
Min. height active/inactive leaf	720 mm ³ / 2,010 mm ⁴
Max. width active/inactive leaf	1,400 mm
Max. height active/inactive leaf	2,950 mm
Max. sash weight	250 kg ⁵
Glass infill thickness sash	10 - 68 mm ⁶
Glass infill thickness frame	10 - 56 mm
Leaf-enclosing infill thickness	31 - 77 mm

- ¹ For a clear passage width ≥ 800 mm with 90° opening min. width = 940 mm.
- ² At EN 179 / EN 1125 as well as standard with closing sequence control min. width = 450 mm.
- ³ For a clear passage width ≥ 1,800 mm with interlocking catch lock min. height = 1,821 mm.
- ⁴ At multipoint locking with pusher height 1,050 mm.
- ⁵ Depending on the hinge equipment, see diagram 6,000 in the planning manual "FRAME⁺ 75 DI fittings". More specific requirements (oversized dimensions) on request.
- ⁶ Depending on profile, see selection tables glazing beads in the planning manual "FRAME⁺ 75 DI fittings".



Sparkasse – Oldenburg, GER



WING

Window System

With their comprehensive range of opening types and their numerous design variations the WING integration window systems provide an extremely large spectrum for diverse requirements in curtain wall and glass roofs.



Th. Willy car centre – Bern, CH



Ozeaneum – Stralsund, GER



SchattDecor AG – Thansau, GER



Swinhay – Gloucestershire, UK



Office building – Bad Sankt Leonhard, AT



EnergieForum – Berlin, GER



Thanks to its narrow sight line widths and patented concealed fittings, the WING 50 A window meets the requirements of modern architecture for natural ventilation as well as a smoke exhaust ventilator.

Advantages

- Outward opening window in its most attractive design with stepped edge glazing.
- Economic alternative with standard glass and slim profile design.
- Maximum airflow effect due to an opening angle of 60°.
- Ideal for very large sash formats.
- Concealed hinges, mountable on any side.
- No visible screws or glazing strips.
- Advantages in production and logistics due to SG bonding of WING 50 A-S with split sash frame.
- Available as system for self-fabrication or as pre-assembled units.
- Various motor drives.
- Available for natural ventilation as well as a smoke and heat exhaust ventilator in large sash sizes up to 5.2 m².

Variants: WING 50 A

- Variant 1: WING 50 A-R with standard sealed units and low profile sash frame without glazing beads – the cost saving alternative
- Variant 2: WING 50 A-S with stepped edge glazing.

Variant 1: WING 50 A-R standard glass

Variant 2: WING 50 A-S stepped edge glazing and static adhesion



The innovative glazing technology of WING 50 SK features the option of a glass surface on the outside using structurally bonded stepped edge glazing, or a low profile frame with standard sealed units. The compact frame design gives both options an extremely slim window sight line.

Advantages

- Outward opening projecting window with stepped edge glazing.
- Economic alternative with standard glass and slim profile design.
- No visible screws or glazing beads.
- For large sashes up to 150 kg.
- Very slim design: Inside 52 mm, outside 50 mm.
- Advantages in production and logistics due to SG bonding of WING 50 SK-S with split sash frame.
- Various motor drives and handles available.
- Available as system for self-fabrication or as assembled units.
- Available for natural ventilation as well as a smoke and heat exhaust ventilator in large sash sizes up to 3.5 m².

Variants: WING 50 SK

- Variant 1: WING 50 SK-R with standard sealed units and low profile sash frame without glazing beads.
- Variant 2: WING 50 SK-S with stepped edge glazing.

Variant 1: WING 50 SK-R standard glass

Variant 2: WING 50 SK-S stepped edge glazing and static adhesion



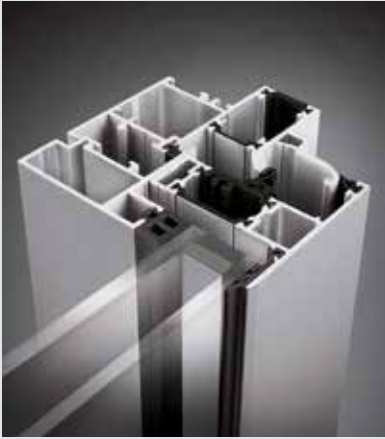
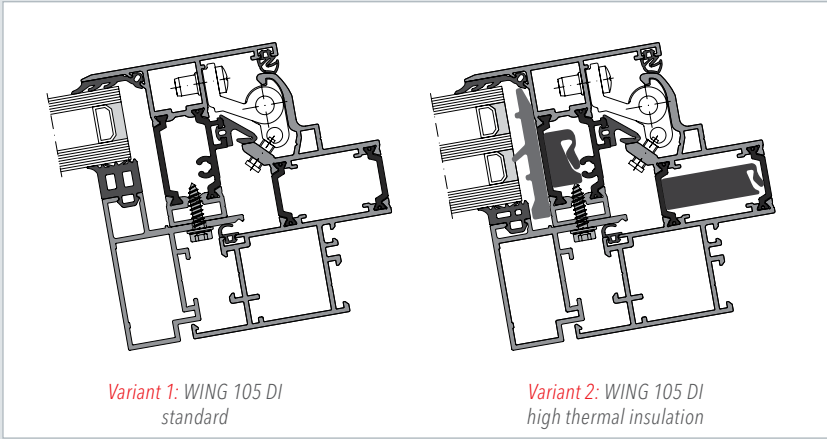
With its low profile height, its large sash dimensions and its specific sealing technique, the WING 105 DI skylight is the perfect solution for almost any application with an inclination down to 2° from horizontal.

Advantages

- Two-frame sash design without any visible screws or glazing beads on the outside.
- Infill thickness 9 to 48 mm
- Reliable drainage due to a special profile design and triple sealing system for safe water tightness.
- Completely integrated hinges, mountable on any side.
- Maximum airflow effect due to an opening angle of 65° (90° available).
- High thermal insulation option WING 105 DI.
- Designed to complement the THERM+ glass roof systems, even down to 2° inclination.
- Available for natural ventilation as well as a smoke and heat exhaust ventilator in large sash sizes up to 4.0 m².
- Only 37 mm of glass offset between the glass roof and the roof light window.
- Available as system for self-fabrication or as pre-assembled units.

Variants: WING 105 DI

- Variant 1: Standard with twofold glazing
- Variant 2: High thermal insulation with threefold glazing and insulation insertion



Quality in detail

	WING 50 A	WING 50 SK	WING 105 DI*
Technical Data			
Max. width in mm	2,700	2,700	2,500
Max. height in mm	2,500	2,700	2,500
Max. sash weight in kg	150 kg (60 kg side hung)	180 kg	165 kg (110 kg side hung)
Opening types	60°	20° / 30° / 45° / 50°	65° (90°)
Infill thickness in mm	24 – 46 mm	24 – 46 mm	9 – 48 mm
Approvals based on product standard for window EN 14351-1			
Wind resistance	Class C4	Class C4	Class C4
Air permeability	Class 4	Class 4	Class 4
Water tightness	E 1,800	E 1,800	E 1,500
Airborne sound insulation	R _w (C;C _{tr})=43(-1;5)dB	R _w (C;C _{tr})=43(-1;5)dB	–
Burglar resistance	WK2	WK2	–
Continuous-operational testing	Class 2	Class 2	–
Thermal insulation	–	–	U _f = 2.7 W/(m²K) up to 3.2 W/(m²K)

* tested with 2° inclination

The NRWG-System

- Efficient natural and smoke ventilation due to wide opening angles of 60° in curtain walling and up to 90° in glass roofs.
- WING 50 A and WING 50 SK available in framed and stepped edge structurally bonded options.
- Top hung / projecting top hung / side hung / bottom hung outward opening options within curtain wall and glass roofs.
- Large window formats possible, up to 3.5 m² in the curtain wall and 4 m² in the glass roof.
- Range of actuator and motor options for high performance requirements.
- Available for self-fabrication or as pre-assembled units.

NRWG — Technical Data

according to EN 12101-2 smoke and heat control systems

	WING 50 A Single flap		WING 50 SK Single flap	WING 105 DI Single flap	WING 105 DI Two-fold single flap		
Opening	Bottom / Top-hung	Roof	Top-hung projecting	Top-hung	Bottom / Top-hung		
Insatallation conditions	–		–	–	Roof / Barrel roof	Saddleback roof	
Position	90°	90°	90°	25 – 60°	2 – 15°	16 – 30°	2 – 30°
Max. width in mm	2,700	1,400	2,700	2,500	2,500 *	2,500 *	2,500 *
Max. height in mm	2,500	2,400	2,700	2,500	5,000 *	2,500 *	5,000 *
Max. sash surface in m²	3.5	1.89	3.5	4 (position 25-30°) 3.75 (position 30-60°)	4 **	4 **	4 **
Max. A _v in m²	–	–	–	–	7.35 *	5.76 *	7.35 *
Max. sash weight in kg	150	60	136	165	165 **	165 **	165 **
Max. opening angle	60°	60°	50°	65° (90°)	65° (90°)	65° (90°)	65° (90°)

* Specifications refer to the complete element (two-fold single flap)

** Specifications refer to the wing of the single flap

Photo credit and project information

Below you will find all reference projects presented in this brochure with detailed information. Further references can be found on our online database: www.objektiv-online.de

THERM⁺

CURTAIN WALL


ICC INTERNATIONAL CRIMINAL COURT – THE HAGUE, NL

BUILDER:
The International Criminal Court
ARCHITECT:
Schmidt Hammer Lassen
FABRICATOR:
Oskomera
BUILD DATE:
2013-2015
RAICO SYSTEM:
THERM⁺ S-I
PHOTOGRAPHY:
Adam Mørk


MED-EL – INNSBRUCK, AT

BUILDER:
MED-EL Elektromedizinische Geräte GmbH
ARCHITECT:
DIN A4 Architektur ZT GmbH, Innsbruck
FABRICATOR:
Stahl und Metallbau Hörburger GmbH, Metallbau Otto Platter GmbH, Metallbau Saller GmbH
BUILD DATE:
2009-2013
RAICO SYSTEM:
THERM⁺ S-I, A-I

PHOTOGRAPHY:
RAICO Bautechnik


OFFICE BUILDING – MÜNSTER, GER

BUILDER:
Apothekerverband Westfalen-Lippe e.V.
ARCHITECT:
Schnoklake Betz BDA
FABRICATOR:
Wilbrand, Münsterland
BUILD DATE:
2015
RAICO SYSTEM:
THERM⁺ H-V
PHOTOGRAPHY:
Gayer Fotografie GbR


GALERIE LAFAYETTE – METZ, FR

BUILDER:
Citynove
ARCHITECT:
Manuelle Gautrand
FABRICATOR:
ACML
BUILD DATE:
2014
RAICO SYSTEM:
THERM⁺ S-I
PHOTOGRAPHY:
Vincent Fillon


EGGER HEADQUARTER – ST. JOHANN, AT

BUILDER:
Fritz EGGER GmbH & Co. OG
ARCHITECT:
Bruno Moser, architekturWerkstatt, Breitenbach
FABRICATOR:
Holzbau Saurer, Höfen
BUILD DATE:
2014-2015
RAICO SYSTEM:
THERM⁺ S-I
THERM⁺ H-I
PHOTOGRAPHY:
EGGER/Christian Vorhofer


SPORTSHALL – ULM, GER

BUILDER:
Stadt Ulm
ARCHITECT:
h4a Gessert + Randecker
FABRICATOR:
Rubner Holzbau GmbH, Augsburg
BUILD DATE:
2015
RAICO SYSTEM:
THERM⁺ H-V

PHOTOGRAPHY:
RUBNER/Conné van d'Grachten


UNIVERSITY – NOTTINGHAM, UK

BUILDER:
Morgan Sindall
ARCHITECT:
Fairhursts Design Group
FABRICATOR:
Pacegrade Ltd
BUILD DATE:
2016
RAICO SYSTEM:
THERM⁺ H-I
PHOTOGRAPHY:
Martine Hamilton Knight


LIBRARY "ALTE FEUERWACHE" – BERLIN, GER

BUILDER:
Bezirksamt Treptow-Köpenick
ARCHITECT:
Chestnutt Niess
FABRICATOR:
Hübner Holzbau GmbH
BUILD DATE:
2015
RAICO SYSTEM:
THERM⁺ H-I
PHOTOGRAPHY:
Christian Laukemper


ICE Q, SÖLDEN, AT

BUILDER:
Bergbahnen Sölden

ARCHITECT:
Obermoser arch-omo zt GmbH, Innsbruck

FABRICATOR:
Gig Fassaden GmbH

BUILD DATE:
2013

RAICO SYSTEM:
THERM⁺ A-I

PHOTOGRAPHY:
Markus Bstieler


FAIR HALL 3A – NUREMBERG, GER

BUILDER:
Messe Nürnberg
ARCHITECT:
Zaha Hadid Büro Hamburg
FABRICATOR:
Roschmann GmbH
BUILD DATE:
2012-2013
RAICO SYSTEM:
THERM⁺ S-I
PHOTOGRAPHY:
Stadt Nürnberg


J. CRAIG VENTER INSTITUTE – USA

BUILDER:
McCarthy Building Companies
ARCHITECT:
ZGF Architects LLP
FABRICATOR:
Pacific Architectural Millwork
BUILD DATE:
2013
RAICO SYSTEM:
THERM⁺ H-I
PHOTOGRAPHY:
Stephen Whalen



FRAME⁺

WINDOW


ISARBELLE – MUNICH, GER

BUILDER:
PANDION IsarBelle GmbH & Co. KG
ARCHITECT:
Hierl Architekten, Munich
FABRICATOR:
Alukonstrukt Kft.
BUILD DATE:
2011-2014
RAICO SYSTEM:
THERM⁺ A-I
FRAME⁺ 75 WI
PHOTOGRAPHY:
RAICO Bautechnik


B+B HOTEL – ULM, GER

BUILDER:
Matthäus Schmid, Baltringen
ARCHITECT:
Mühlich, Fink & Partner
FABRICATOR:
Dodel, Ulm
BUILD DATE:
2013
RAICO SYSTEM:
FRAME⁺ 75 WI
PHOTOGRAPHY:
Matthäus Schmid GmbH & Co. KG


PARISER HÖFE – STUTTGART, GER

BUILDER:
Bayerische Versorgungskammer

ARCHITECT:
KSP Engel und Zimmermann GmbH

FABRICATOR:
Wölz Siegfried Stahl- und Metallbau GmbH & Co. KG

BUILD DATE:
2010-2012

RAICO SYSTEM:
FRAME⁺ 75 WB

PHOTOGRAPHY:
Reiß & Co. Real Estate München GmbH


LOHN AG – BADEN-BADEN, GER

BUILDER:
lohn-ag.de
Verwaltungs-GmbH
ARCHITECT:
Kühnl + Schmidt; Dipl.-Ing. Freie Architekten BDA Karlsruhe
FABRICATOR:
Freyler Metallbau GmbH, Kenzingen
BUILD DATE:
2013-2014
RAICO SYSTEM:
THERM⁺ S-I
THERM⁺ A-V
FRAME⁺ 75 WI
FRAME⁺ 75 DI
PHOTOGRAPHY:
Heinz Heister


MTZ WERKSTATT-ZENTRUM – ÖRLENBACH, GER

BUILDER:
MTZ Metalltechnik Zitzmann GmbH

ARCHITECT:
Rudloff, Wild & Partner Architekten; Diplomingenieure GbR

FABRICATOR:
MTZ Metalltechnik Zitzmann GmbH

BUILD DATE:
2013-2014

RAICO SYSTEM:
THERM⁺ A-V
FRAME⁺ 75 WB
WING 105 DI

PHOTOGRAPHY:
MTZ Werkstattzentrum


FRENCH CONSULATE – STUTTGART, GER

BUILDER:
Bruchteilsgemeinschaft: Stiftung Institut Français, Stuttgart; Landeshauptstadt Stuttgart, Amt für Liegenschaften und Wohnen
ARCHITECT:
Kyra Bullert und Arthur Hagen, Stuttgart
FABRICATOR:
Trumpf Metallbau
BUILD DATE:
2013
RAICO SYSTEM:
FRAME⁺ 75 WB
PHOTOGRAPHY:
RAICO Bautechnik


TRICOR AG – BAD WÖRISHOFEN, GER

BUILDER:
TRICOR Packaging & Logistics AG
ARCHITECT:
Jaumann Architekten

FABRICATOR:
RGM Metallbau, Metallbau Wölz
BUILD DATE:
2013

RAICO SYSTEM:
THERM⁺ A-V
FRAME⁺ 75 WB

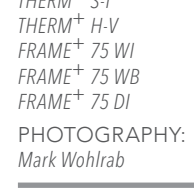
PHOTOGRAPHY:
Dominik Maier/Tricor AG


OFFICE BUILDING – KARLSRUHE, GER

FASSADEN-PLANUNG:
Freyler Metallbau GmbH, Kenzingen
FABRICATOR:
Freyler Metallbau GmbH, Kenzingen
BUILD DATE:
2012
RAICO SYSTEM:
THERM⁺ A-V
FRAME⁺ 75 WI
PHOTOGRAPHY:
Johannes Hopermann


KINDERKLINIK – AUGSBURG, GER

BUILDER:
Klinikum Augsburg
ARCHITECT:
Ludes Architekten-Ingenieure GmbH
FABRICATOR:
Hackenbuchner Fassadenbau GmbH & Co. KG, Dietersburg
BUILD DATE:
2014
RAICO SYSTEM:
THERM⁺ S-I
THERM⁺ A-V
FRAME⁺ 75 WB
FRAME⁺ 75 DI
PHOTOGRAPHY:
Mark Wohlrab


GROB OFFICE BUILDING B6 – MINDELHEIM, GER

BUILDER:
GROB-WERKE GmbH & Co. KG

ARCHITECT:
Dipl.-Ing. (FH) Josef Degendorfer

FAÇADE PLANNER:
IFP - Integrale Fassadenplanung Gerhard Weber & Partner

FABRICATOR:
Franz Kassecker GmbH Stahl- und Metallbau

BUILD DATE:
2015

RAICO SYSTEM:
THERM⁺ A-V
FRAME⁺ 75 WI
FRAME⁺ 75 LF 300
WING 50 A

PHOTOGRAPHY:
RAICO Bautechnik


SPARKASSE – PFORZHEIM, GER

BUILDER:
Haus-GmbH der Sparkasse Pforzheim Calw Grundstücksgesellschaft und Co. KG,
ARCHITECT:
Architektur und Stadtplanungsgesellschaft GmbH, Pforzheim

FAÇADE PLANNER:
Ingenieurbüro Faas & Günther, Schömberg

FABRICATOR:
Freyler Metallbau GmbH, Kenzingen

BUILD DATE:
2009-2010

RAICO SYSTEM:
THERM⁺ S-I
THERM⁺ A-V
FRAME⁺ 75 WB

PHOTOGRAPHY:
Johannes Hopermann


SECONDARY SCHOOL FULLY-SAXON – FULLY, CH

ARCHITECT:
Architektenbüro Lemanarc, Lausanne

FAÇADE PLANNER:
Préface Sàrl, Le Landeron

FABRICATOR:
Progin Sa Metal, Bulle

BUILD DATE:
2015

RAICO SYSTEM:
FRAME⁺ 90 WI
FRAME⁺ 90 WB
PHOTOGRAPHY:
Préface Sàrl,
Le Landeron



ZWUV GRÜN- FLÄCHENAMT – FRANKFURT/ MAIN, GER

BUILDER:
G & L ARS Management
GmbH, Eschborn
ARCHITECT:
schneider + schuma-
cher Planungsgesell-
schaft mbH, Frankfurt
FABRICATOR:
ALU-SOMMER Germany
GmbH, Kolbermoor
BUILD DATE:
2014-2015
RAICO SYSTEM:
THERM⁺ A-I
FRAME⁺ 90 WI
FRAME⁺ 90 WB
VISUALIZATION:
Groß & Partner,
Frankfurt am Main



WEST BUCK- LAND SCHOOL – DEVON, UK

BUILDER:
Pearce Construction Ltd
ARCHITECT:
MRJ Rundell &
Associates
FABRICATOR:
Ridlands Ltd
BUILD DATE:
2011
RAICO SYSTEM:
THERM⁺ H-I
PHOTOGRAPHY:
MRJ Rundell



SIGMUND-FREUD UNIVERSITY – VIENNA, AT

BUILDER:
Hochschulstandort
Vienna
ARCHITECT:
Werkstatt Grinzing WGA
ZT GmbH
FABRICATOR:
STRABAG AG
BUILD DATE:
2014
RAICO SYSTEM:
THERM⁺ A-I
THERM⁺ A-V
WING 105 DI
WING 50 SK
PHOTOGRAPHY:
RAICO Bautechnik



CITY CUBE – BERLIN, GER

BUILDER:
Messe Berlin GmbH
ARCHITECT:
Code Unique Archi-
tekten GmbH, Dresden
FABRICATOR:
Metallbau Windeck
GmbH
BUILD DATE:
2014
RAICO SYSTEM:
THERM⁺ S-I
WING 105 DI
PHOTOGRAPHY:
Metallbau Windeck
GmbH



PASSIVE HOUSE SCHOOL – ROODT-SUR- SYRE, LU

BUILDER:
Commune de Roodt
s/Syre
ARCHITECT:
Bureau Marc
Dieschbourg
FABRICATOR:
Batichemie, Lang
Fenster
BUILD DATE:
2012
RAICO SYSTEM:
THERM⁺ H-I
PHOTOGRAPHY:
Rainer Rehfeld

FRAME⁺ DOOR



PRIMARY SCHOOL – NEUBERG, GER

BUILDER:
Gemeinde Neuberg
ARCHITECT:
Krug & Grossmann
Architekten, München
FABRICATOR:
Pazdera GmbH, Metall-
bautechnik
BUILD DATE:
2007-2008
RAICO SYSTEM:
THERM⁺ H-I
PHOTOGRAPHY:
Peter Franck



FURNITURE STORE FINKE – HAMM- RHYNERN, GER

BUILDER:
finke - Das Erlebnis-
Einrichten GmbH &
Co. KG
ARCHITECT:
Blocher Blocher Partners
FABRICATOR:
Freyler Metallbau
GmbH, Kenzingen
BUILD DATE:
2015
RAICO SYSTEM:
THERM⁺ S-I
THERM⁺ A-I
THERM⁺ A-V
FRAME⁺ 75 DI
PHOTOGRAPHY:
BREMER AG



MEDXPERT – ESCHBACH, GER

BUILDER:
Claudia Reisberg,
Eschbach
ARCHITECT:
a plus Architekten,
Kirchzarten
FABRICATOR:
Freyler Metallbau
GmbH, Kenzingen
BUILD DATE:
2011-2012
RAICO SYSTEM:
THERM⁺ A-I
FRAME⁺ 75 WI
FRAME⁺ 75 DI
PHOTOGRAPHY:
Johannes Hopermann



UMWELTARENA – SPREITENBACH, CH

BUILDER:
W. Schmid AG,
Glattbrugg
ARCHITECT:
rené schmid architekten
ag, Zürich
BUILD DATE:
2012
RAICO SYSTEM:
THERM⁺ S-I
FRAME⁺ 75 WI
PHOTOGRAPHY:
Bruno Helbling



PARC / PENIN- SULA AQUATIC RECREATION CENTRE – FRANKSTON, AUS

BUILDER:
Frankston City Council
ARCHITECT:
Williams Ross Architects

FAÇADE PLANNER:
LAROS Technologies Pty
Ltd., Canberra
FABRICATOR:
Mercury Industry Pty
Ltd. (über Laros)
BUILD DATE:
2012-2014
RAICO SYSTEM:
THERM⁺ A-I
FRAME⁺ 75 DI
PHOTOGRAPHY:
RAICO Bautechnik



LOHN AG – BADEN-BADEN, GER

BUILDER:
lohn-ag.de Verwal-
tungs-GmbH
ARCHITECT:
Kühnl + Schmidt; Dipl.-
Ing. Freie Architekten
BDA Karlsruhe
FABRICATOR:
Freyler Metallbau
GmbH, Kenzingen
BUILD DATE:
2013-2014
RAICO SYSTEM:
THERM⁺ S-I
THERM⁺ A-V
FRAME⁺ 75 WI
FRAME⁺ 75 DI
PHOTOGRAPHY:
Heinz Heister

WING WINDOW



LANDESSPAR- KASSE – OLDEN- BURG, GER

BUILDER:
Landessparkasse zu
Oldenburg
ARCHITECT:
RKW Architekturbüro
Rhode, Kellermann,
Wawrowsky,
Düsseldorf
FAÇADE
PLANNER &
FABRICATOR:
Roschmann Konstruk-
tionen aus Stahl und
Glas GmbH
Oltmanns Metallbau
GmbH, Heilbronn
BUILD DATE:
2007-2009
RAICO SYSTEM:
THERM⁺ S-I
THERM⁺ A-I
WING 105 DI (mit NRW)
WING 50 A-S
PHOTOGRAPHY:
Roschmann Konstruk-
tionen aus Stahl und
Glas GmbH, Gersthofen



TH. WILLY AUTO- ZENTRUM – BERN, CH

BUILDER:
Th. Willy AG Auto-
Zentrum, Schlieren
FABRICATOR:
Scheidegger Metallbau
AG
BUILD DATE:
2011
RAICO SYSTEM:
THERM⁺ A-I
WING 105 DI



OZEANEUM – STRALSUND, GER

BUILDER:
Stiftung Deutsches
Meeresmuseum,
Stralsund
ARCHITECT:
Behnisch Architekten,
Stuttgart
FAÇADE
PLANNER::
EURO-Fassadentechnik
GmbH, Bad Hersfeld
FABRICATOR:
Trube & Kings Fassaden-
technik GmbH, Uersfeld
BUILD DATE:
2005-2008
RAICO SYSTEM:
THERM⁺ S-I
WING 105 DI
PHOTOGRAPHY:
Johannes-Maria
Schlorke



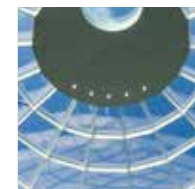
SCHATTDECOR AG – THANSAU, GER

BUILDER:
Schattdecor AG,
Thansau
ARCHITECT:
Bernd Obersteiner,
Munich
FABRICATOR:
Thierron Fassaden-
systeme GmbH, Naila
BUILD DATE:
2007
RAICO SYSTEM:
THERM⁺ S-I
WING 105 DI
WING 50 SK-S
PHOTOGRAPHY:
RAICO Bautechnik



SWINHAY – GLOUCESTER- SHIRE, UK

BUILDER:
private
ARCHITECT:
Roberts Limbrick
Architects
FABRICATOR:
MERO-Schmidlin (UK)
plc
BUILD DATE:
2006
RAICO SYSTEM:
THERM⁺ S-I
PHOTOGRAPHY:
Roberts Limbrick
Architects



OFFICE BUILDING – BAD SANKT LEONHARD, AT

BUILDER:
Geislinger GmbH,
Bad Sankt Leonhard
ARCHITECT:
Atelier Volkmar
Burgstaller ZT GmbH,
Salzburg
FAÇADE
PLANNER:
face of buildings
planning stimakovits
GmbH
FABRICATOR:
SFL Technologies
GmbH, Stallhofen
BUILD DATE:
2016
RAICO SYSTEM:
THERM⁺ S-I
THERM⁺ H-I
PHOTOGRAPHY:
RAICO Bautechnik



ENERGIE- FORUM – BERLIN, GER

BUILDER:
HPE Hanseatica
Property GmbH
ARCHITECT:
Neubau: BRT Archi-
tekten LLP, Hamburg
Altbau: Jentsch
Architekten, Berlin
BUILD DATE:
2003
RAICO SYSTEM:
THERM⁺ S-I
PHOTOGRAPHY:
Rainer Rehfeld



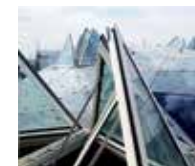
TWO-FIELD SPORTS HALL – MÜNSTER, GER

BUILDER:
City of Münster,
Amt für Immobilien-
management
ARCHITECT:
hartig | wömpner
architekten BDA,
Münster
FABRICATOR:
H.u.J. Grosse Frericks
GmbH, Stadtlohn
BUILD DATE:
2014-2015
RAICO SYSTEM:
THERM⁺ H-V
WING 50 SK-S
PHOTOGRAPHY:
vs. Konzeptionen
Volker Stosberg



THE BOX – BERLIN, GER

BUILDER:
ANH Hausbesitz GmbH
& Co. KG
ARCHITECT:
AHM-Architekten,
Berlin
FABRICATOR:
Rommel GmbH Fenster-
und Fassadenbau,
Großbodungen
BUILD DATE:
2014
RAICO SYSTEM:
WING 50 SK
PHOTOGRAPHY:
Robert Herrmann



HÖFE AM BRÜHL – LEIPZIG, GER

BUILDER:
mfi management für
immobilien AG
ARCHITECT:
Grüntuch Ernst
Architekten, Berlin
FABRICATOR:
Roschmann Stahl und
Glas GmbH, Gersthofen
BUILD DATE:
2011-2012
RAICO SYSTEM:
WING 105 DI
PHOTOGRAPHY:
D+H Mechatronic AG

RAICO available as a free App

RAICO presents itself on interactive mobile features with our RAICO App for iPad! In this way you have all important information such as photographs of reference projects and design details at a glance.



RAICO

Wolkenlos – Teehaus Seeschlosschenbrücke

Timmendorfer Strand

PRODUKTE

OBJEKTE

RAICO

Architekt: Sauerbruch Hutton Architekten, Berlin

Bauherr: ADAC Allgemeiner Deutscher Automobil-Club e.V., München

Kategorie: Büro- und Verwaltungsbauten

RAICO

Unser Produktportfolio

Technologisch innovativ und mit langjähriger Markterfahrung setzen wir mit unseren Fassaden, dem THERM® Fassadensystem, dem FRAME® Aluminiumfenster und -türe sowie dem WING® Einbaufenster-System Maßstäbe bei der Gestaltung von Außenfassaden.

THERM®

Das passivhauszertifizierte Fassadensystem ermöglicht grenzenlose Kombinationsmöglichkeiten und hohe Gestaltungsfreiheit.

FRAME®

Die Serie setzt sich aus innovativen Systemkomponenten und variablen Wärmegewinnungsmöglichkeiten zusammen.

WING®

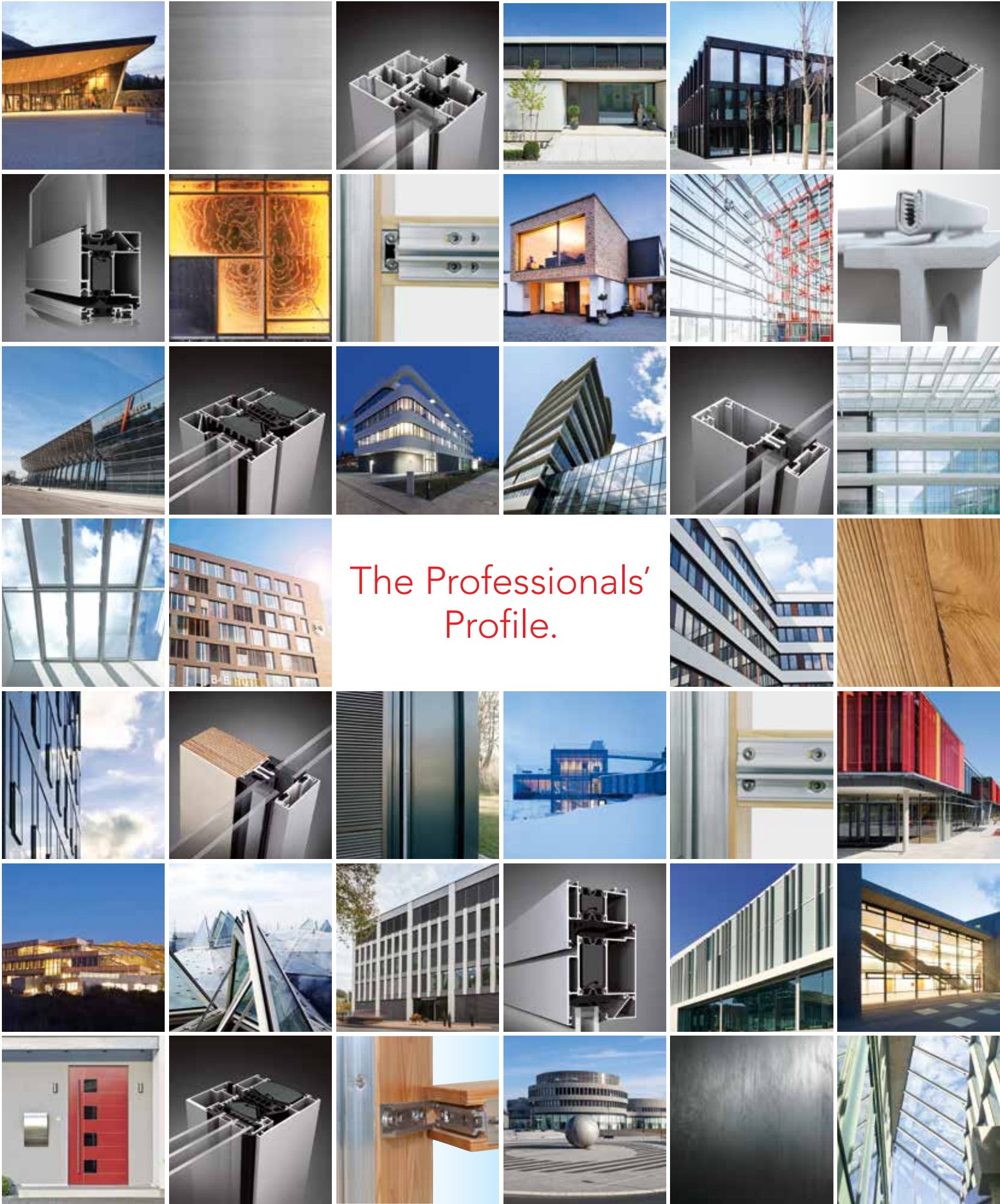
Das System basiert auf einer innovativen Systemkomponente und ermöglicht die Integration von Fenstern und Türen.

RAICO

ADAC Central, München

Standort: München	Land: DE	Architekt: Sauerbruch Hutton Architekten, Berlin	Veranstalter: ADAC Central, München
Fassadenfläche: ca. 20.000 m²	Fassadenfläche: ca. 20.000 m²	Bauherr: ADAC Allgemeiner Deutscher Automobil-Club e.V., München	Bauzeit: 2008 - 2011
RAICO System: THERM® ALU	Baumaterialien: Aluminium	Kategorie: Büro- und Verwaltungsbauten	

Detailansicht: 1/100



The Professionals' Profile.

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