



beyond
lies the fire



This catalog aims to present the Fuoco program by Secco Sistemi, born from the company's expertise in the production of fire-resistant window and door systems with a reduced visual footprint made of precious metals for architecture.

This is a book about the possibilities that fire protection systems can offer to architectural design, a synthesis of years of experience in both restoration and contemporary architecture.



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dictionary

Fire-resistant windows and doors are architectural elements designed to provide protection against the spread of fire and smoke. Made with fire-resistant materials, such as metals and special glass, they ensure safety in the environment by creating effective barriers in case of fire. Used in public, commercial and residential buildings, they are essential for complying with safety regulations and protecting people and property.



Fire test
laboratory test for EI 90
frame Fire test

Fire Resistance Performance Characteristics

The fire resistance of the products is evaluated based on specific classifications that indicate how the element performs in the event of a fire. The main classifications are:

E (integrity) - The ability of a building element with separation function to prevent the passage of flames, vapors, or hot gases to the non-exposed side, preventing the spread of the fire. The assessment of the integrity typically considers three aspects:

- cracks or openings larger than defined limits
- ignition of a cotton pad,
- persistent flammability on the non-exposed side.

I (insulation) - The ability of an element to limit the heat transfer from the fire-exposed side to the non-exposed side, maintaining surface temperatures within specified limits to prevent ignition of adjacent combustible materials. Two options for the thermal insulation measurement criterion are established for doors and windows during the tests:

- **I₁**, the average surface temperature on the non-exposed side must not exceed 140°C, max peak 180°C. It is measured 25 mm from the edge of the sash.
- **I₂**, the average temperature is up to 140°C, but the max peak is 180°C. It is the measurement criteria used for doors also by Secco Sistemi. On the sash it is measured 100 mm from the edge.

W (radiation) - the ability of an element to limit the heat transmission by radiation to the non-exposed side, keeping the irradiance below a specified threshold to prevent the ignition of nearby flammable materials. Elements meeting **I₁** or **I₂** insulation criterion typically satisfy also **W** for the same duration.

S (smoke tightness) - the ability of an element to reduce or prevent the passage of gas or smoke, ensuring that escape routes and other spaces remain clear. To differentiate the smoke tightness based on operating conditions, two classification levels are used:

- **Sa (Smoke at ambient temperature)** - it is the ability to prevent the passage of smoke at ambient temperature (around 20°C), which helps to limit the spread of cold gases during the initial stages of a fire.
- **Sm (Smoke at medium temperature)** - it evaluates performance at both ambient temperature (20°C) and medium temperature (200°C), simulating advanced stages of a fire, when the smoke becomes heated and dangerous.



Fire Test
temperature detection
sensors for fire test on
fixed frame

C (self-closing) – the ability of a door or closure element to close automatically in case of fire, without human intervention. It must function in every case, even without main power supply to prevent fire/smoke spread through the opening.

Window and Door Classifications

Fire-resistant doors and windows are classified as **EI** and **EW**, based on two different fire resistance performance criteria:

EI (integrity and thermal insulation) - indicates that the window resists fire for a specified time and also provides thermal insulation, preventing the passage of heat.

EW (integrity and radiation) - indicates that the window resists fire and limits the passage of thermal radiation. This type of frame does not provide thermal insulation as EI, but it is useful when maintaining visibility and light.

The numbers associated with EI and EW classifications indicate the duration for which the indicated performance is guaranteed and certified, for example EI 30, EI 60, EI 90. These characteristics are essential for selecting the frames in base of specific safety requirements and current regulations.

Example of a classification for a door: EI260-Sa-C, where **EI₂₆₀** indicates the door's ability to resist fire for 60 minutes (integrity and insulation), **Sa** refers to smoke tightness at ambient temperature, and **C** indicates the self-closing capability.



Burnt glass
glass at the end of the
laboratory test for EI 90



European Certifications

In Europe, certifications are conducted according to the following regulations:

EN 16034 - Standard specifying the performance requirements and characteristics of opening doors and windows with fire resistance and/or smoke control features.

EN 13501-2 - General standard for fire classification of all construction products, including fire-resistant windows and doors.

EN 1363-1 - Defines the general requirements for fire resistance testing of building elements.

EN 1364-1 - Specifies fire resistance testing methods for non-loadbearing walls.

EN 1364-3 - Establishes fire resistance testing procedures for facades.

EN 1634-1 - Specifies fire resistance testing for doors and shutter assemblies.

EN 1634-3 - Assesses the ability of doors and windows to control smoke passage.

EN 15269-5 - Regulates the extended application of fire resistance test results for doors and shutter assemblies.

EN 15254-4 - Regulates the extended application of fire resistance tests results for fixed windows.



Certificate
Example of a certificate
attesting the fire performance
of doors and windows

National Certifications

In addition to European standards, there are specific national regulations for the certification of fire-resistant doors and windows, particularly for interior applications:

Omologa - certifies that the fire door has successfully passed the fire resistance and cycle testing, ensuring compliance with current safety regulations. It is valid only in Italy and is issued by the Ministry of Domestic Affairs.

PV (Procès-Verbal de Classement) - a document released by authorized laboratories in France certifying the fire resistance of products or building elements, such as fire doors. It certifies that the product has passed the tests in accordance with applicable standards. It is mandatory in France for both interior and exterior doors.

UL (Underwriters Laboratories) - it is an independent American organization that develops safety standards and certifies products, materials, and components. UL certification attests that a product has been tested and evaluated according to strict safety standards and is primarily recognized in the USA.



Burnt glass
Detail of a burnt glass

Fire Resistance Test

Certifications for EI and EW fire-rated doors and fixed glazed elements are obtained through rigorous tests that evaluates fire resistance and thermal insulation or radiation control. The fire resistance test is carried out in a laboratory, where samples are exposed to high temperatures under controlled conditions, according to testing methods and classification criteria defined by European standards (EN). During the test, the temperature on the unexposed side is monitored, and it is assessed whether the product maintains its structural integrity and limits heat transmission, ensuring insulation. At the end of the tests, if the doors and windows pass them, the accredited certification body releases a document certifying the EI or EW performance level, along with the resistance time in minutes 30-60-90-120, ensuring the product complies with fire regulations. The test reports can be used as ITT (Initial Type Testing) to obtain CE marking for the product.



classification	test minutes	unexposed side average temperature	fire exposed side average temperature
	1'	0° C	350° C
	5'	5° C	570° C
	10'	10° C	680° C
	15'	20° C	740° C
EI 30	30'	30° C	840° C
EI 60	60'	55° C	940° C
EI 90	90'	80° C	1000° C
	100'	85° C	1020° C
	110'	100° C	1040° C
EI 120	120'	130° C	1050° C

EI120 test - Timeline

fire program

Fire-rated frames have always represented both a challenge and a limitation in architectural projects, often overlooked from an aesthetic perspective due to their strict technical requirements. These frames must endure demanding conditions to guarantee fire protection.

Secco Sistemi, with its consolidated expertise in design, recognized by two Compasso d'Oro awards, offers, through its "Fuoco" program, refined and unique aesthetic solutions, setting a new standard in the industry.

The Fuoco program by Secco Sistemi offers four distinctive systems: XT-AF, EBE-AF, SA-AF, and 4F-AF, each planned to create the ideal fire-rated frame. Each system was designed to address specific challenges, ensuring a continuity in the choice between standard and fire-rated windows and doors.

The performance of the systems in the Fuoco program has been tested by leading European certification laboratories.



comparative table



In the following summary table the systems in Secco Sistemi's Fuoco program are briefly compared. This overview offers a clear view of the key features of the four fire-rated systems, facilitating a first selection. In particular, the "Identity" column—together with materials and dimensions—highlights the design opportunities each system offers.

system	identity	available metals	fire resistance	available certifications	smoke tightness	max dimension one-leaf door** B (base) . H (height) . A (area)	max dimensions two-leaf door** B (base) . H (height) . A (area)	max dimensions fixed** B (base) . H (height)	page
XT-AF	doors and fixed elements with minimal profiles, identical on both sides	corten, zinc-magnesium steel	EI 30 - 60	EN 1634-1 PV* omologa IT	S _a	130 cm - 270 cm - 3 m ²	250 cm - 270 cm - 5,5 m ²	125 cm - 303 cm 165 cm - 128 cm	26
EBE-AF	doors and fixed elements with solid profiles, for large dimensions	brass, stainless steel, corten, zinc-magnesium steel	EI 30 - 60 - 90	EN 1634-1 PV* omologa IT	S _a - S _m	150 cm - 300 cm	295 cm - 315 cm	123 cm - 330 cm 200 cm - 132 cm	58
SA-AF	doors and fixed elements without thermal break with coplanar profiles	stainless steel, corten, zinc-magnesium steel	EW 30 - 60 - 90	EN 1634-1 PV	S _a - S _m	130 cm - 265 cm - 3,2 m ²	235 cm - 236 cm - 5,4 m ²	110 cm - 285 cm 165 cm - 120 cm	88
4F-AF	structural façade compatible with the other Secco fire-rated systems	stainless steel, corten, zinc-magnesium steel	EI 30-60-90 EW 30-90	EN 1634-3	not applicable			195 cm - 355 cm 355 cm - 175 cm	116

* pending

** certified dimensions depending on type, performance, materials and support

design elements

The core purpose of Secco Sistemi's Fuoco program is the dedicated attention to the design of profiles, accessories, and metals—conceived to transform fire-rated frames into prestigious aesthetic elements, rather than mere necessities to which the architect must adapt.

Secco offers a carefully curated selection of solutions that anticipate architectural needs and respond with elegant and innovative products. This approach frees designers from the challenge of fire-rated frames, which often conflict with their design vision, allowing them to integrate safety and aesthetics without compromise.

Secco's Fuoco program stands out for a series of refined details that further enhance the aesthetics and the functionality of the windows and doors, making them distinctive design elements

1. Panic bars crafted in the same finish as the profiles.
2. Glazing beads, reduced to the extreme and applied using a concealed system or elegant screws.
3. Central joint, unique in its kind, with dimensions reduced to the minimum.
4. Cylindrical and slim hinges that contribute to the harmony of the frame.
5. Lateral joint between fixed and opening elements, minimized to the extreme.
6. Floor transom with reduced dimensions to allow continuity between interior and exterior flooring.
7. Finishing cover designed to minimize the visual impact of the self-closing systems.

XT-AF example
with a two-leaf door and lateral fixed elements



metals

The profiles of Secco Sistemi's fire-rated systems are made of solid, durable metals, certified for their resistance to oxidation and corrosion.

For Secco, metals are also a source of design: their natural surfaces shape the appearance of the frame and can capture or reflect the light, displaying warm or austere tones – while maintaining an ever-changing surface that highlights the handcrafted nature of the product.

All metals used are 100% recyclable and highly durable, actualizing the product's sustainability.

In the following pages, we present the metals available for the fabrication of fire-rated profiles, showcasing Secco Sistemi's unique ability to offer an exclusive and unmatched range of finishes.



burnished brass

A rich and sophisticated look, characterized by the burnishing that imparts a dark and deep tone. This finish makes each frame unique, ideal for contemporary and high-end design environments.

copper-zinc alloy OT67 (CuZn33 CW506L), cold-rolled and work-hardened in its raw state, with a burnished finish.

available for fire-rated systems

EBE-AF

satin-finished brass

A noble metal of highly durability, satin-finished brass features a soft, warm finish. Innovative in its use for fire-rated doors, it lends a refined and precious look, combining elegance with functionality.

copper-zinc alloy OT67 (CuZn33 CW506L), cold-rolled and work-hardened in its raw state, with a satin finish.

available for fire-rated systems

EBE-AF

burnished stainless steel

With a matte finish and warm tone, burnished stainless steel is perfect for those seeking an industrial look without compromising on quality. This material is highly resistant to corrosion and maintains its beauty over time.

stainless steel (AISI 316L marine grade): an alloy of iron, chromium, nickel, and molybdenum, cold-rolled with a hand-applied burnished finish.

available for fire-
rated systems
EBE-AF, SA-AF, 4F-AF

scotch-brite stainless steel

This stainless steel is characterized by a brushed finish that reflects light elegantly. It is extremely durable and easy to maintain, making it an excellent choice for applications requiring both aesthetics and strength.

stainless steel (AISI 316L marine grade): an alloy of iron, chromium, nickel, and molybdenum, cold-rolled with a Scotch-Brite finish.

available for fire-
rated systems
EBE-AF, SA-AF, 4F-AF

corten steel

With its rustic and unique appearance, corten steel develops a protective patina that prevents corrosion. It is an innovative choice for fire-rated frames, ideal for modern and natural architectural contexts, lending a distinctive character.

corten steel (Fe 510 X): a carbon steel alloy with high resistance to corrosion (Cor) and tensile yield strength (ten), with an oxidized finish.

available for fire-rated systems

XT-AF, EBE-AF, SA-AF, 4F-AF

painted zinc-magnesium steel

Though common in the industry, our version of painted zinc-magnesium steel stands out for its attention to detail and coating quality. It is a practical and durable solution, ideal for applications requiring both protection and versatility.

zinc Magnesium Steel (DX51D ZM120): hot-dip galvanized carbon steel with added magnesium, processed using the Sendzimir method, with a skin-passed finish. Requires powder or liquid coating.

available for fire-rated systems

XT-AF, EBE-AF, SA-AF, 4F-AF

XT-AF

XT-AF represents a true revolution in the field of fire-rated frames, introducing a key element, design by combining safety and lightness, qualities traditionally unrelated in this sector often limited to functional construction.

The XT-AF profiles, characterized by slim and elegant lines, offer fire resistance up to 60 minutes, setting a new standard in the sector and innovatively blending aesthetics and performance.

Designed exclusively for indoor use, XT-AF presents an uniform glazing bead on both interior and exterior sides, ensuring visual harmony in every context.

AVAILABLE METALS

corten steel

painted zinc-magnesium steel

PERFORMANCE

fire resistance	EI 30-60
smoke tightness	S _a
mechanical resistance: durability	C5 (200.000 cycles)

AVAILABLE CERTIFICATIONS

EN1634-1

PV (pending)

Italian homologation/approval

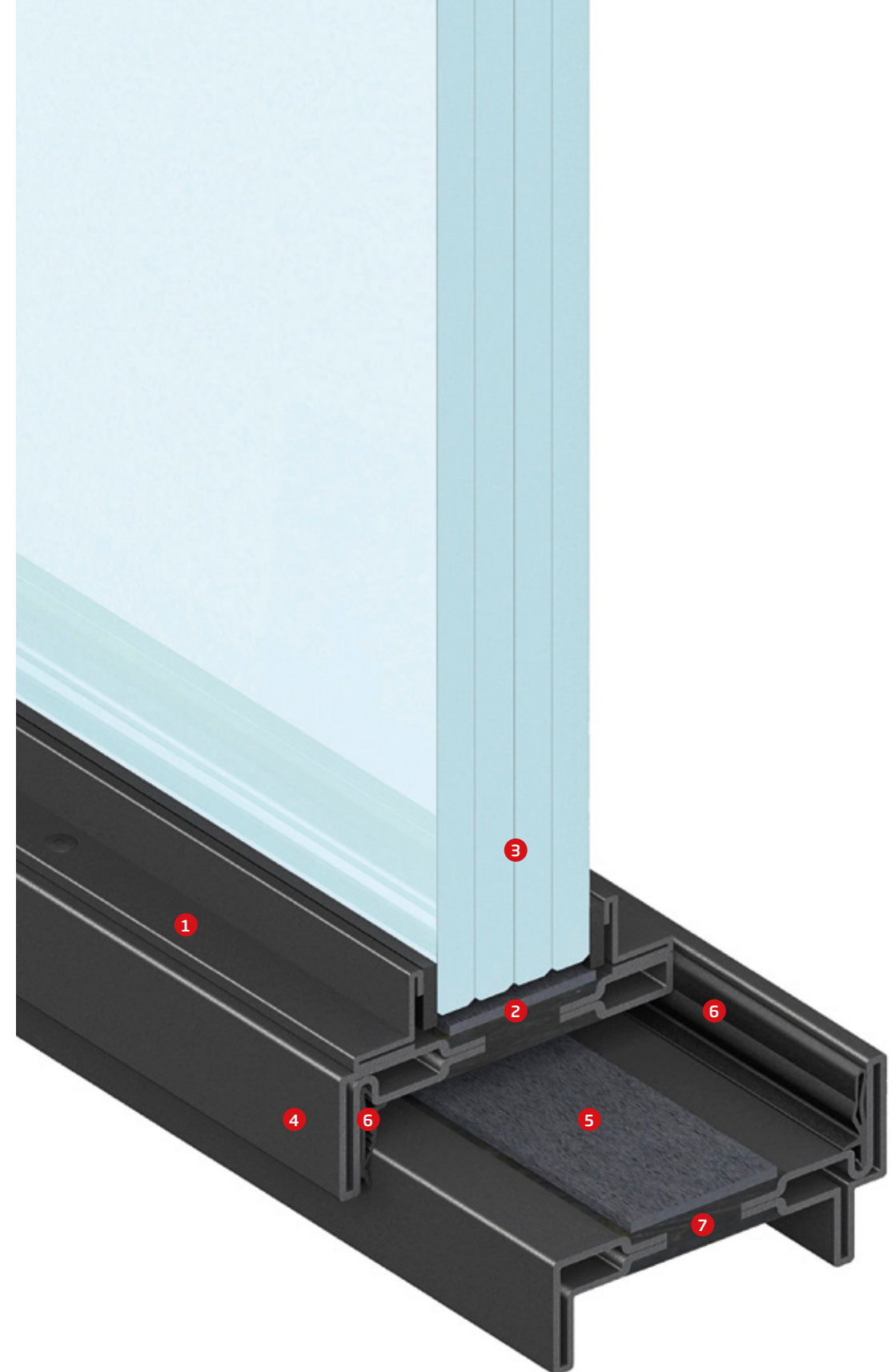


technology^{XT-AF}

The result of years of experience, the technology applied to the XT-AF profiles supports design while enabling high fire-resistance performance—even with minimal profiles and large-sized frames.

XT-AF profiles are produced by cold-forming metals, followed by the insertion of polyurethane resin (7). Sealing is ensured by compression gaskets (6) and intumescent strips (5), the glazing beads (1) are fixed to the frame with hex screws.

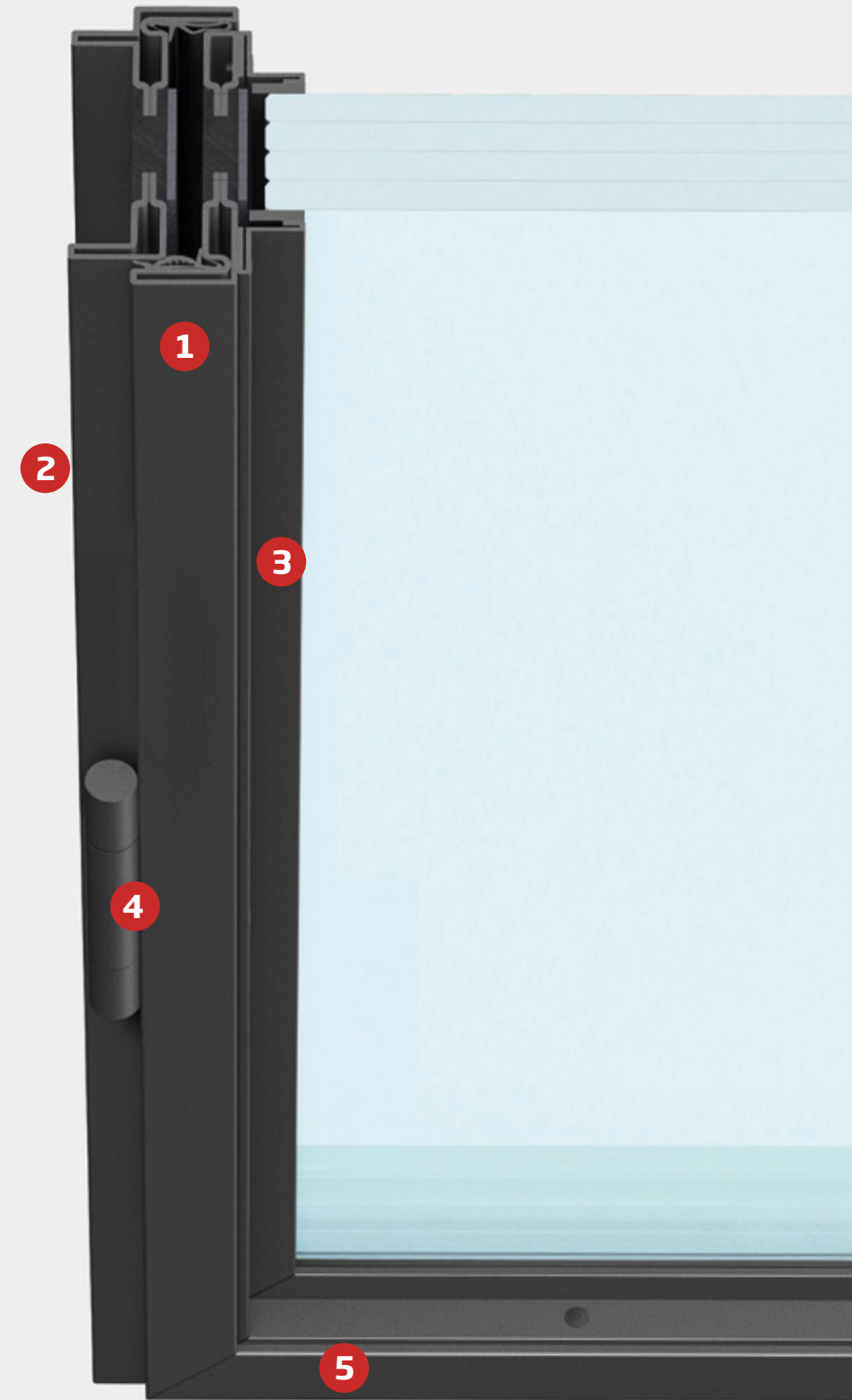
- 1. glazing bead
- 2. glazing slot
- 3. monolithic fire-rated glass
- 4. internal external overlap
- 5. intumescent strip
- 6. compression gaskets
- 7. fire-resistant polyurethane



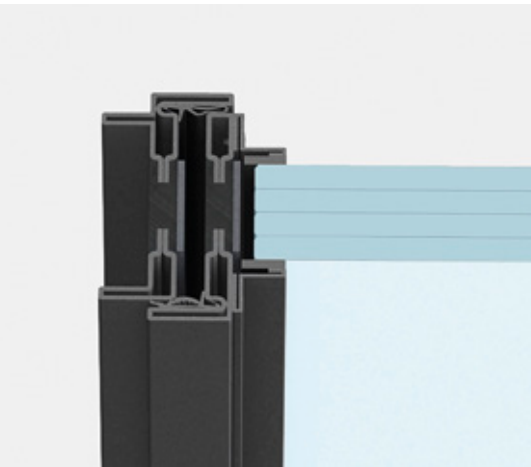
design^{XT-AF}

Planned down to the smallest detail, XT-AF frames with fire protection up to EI60 echo the sharp-edged profiles and slim dimensions of traditional steel windows, enriching them with fire resistance performance that is innovative for this product category. The system is completed by elegant hinges and coordinated glazing beads, enhancing both its aesthetics and functionality.

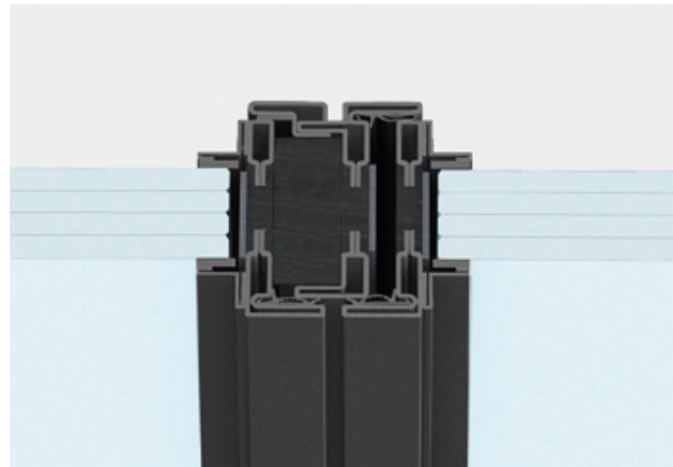
- 1. frame and sash with extremely slim visible sections
- 2. sharp-edged profiles
- 3. dedicated glazing beads, uniform on both interior and exterior sides
- 4. minimalist hinges
- 5. lowered door threshold



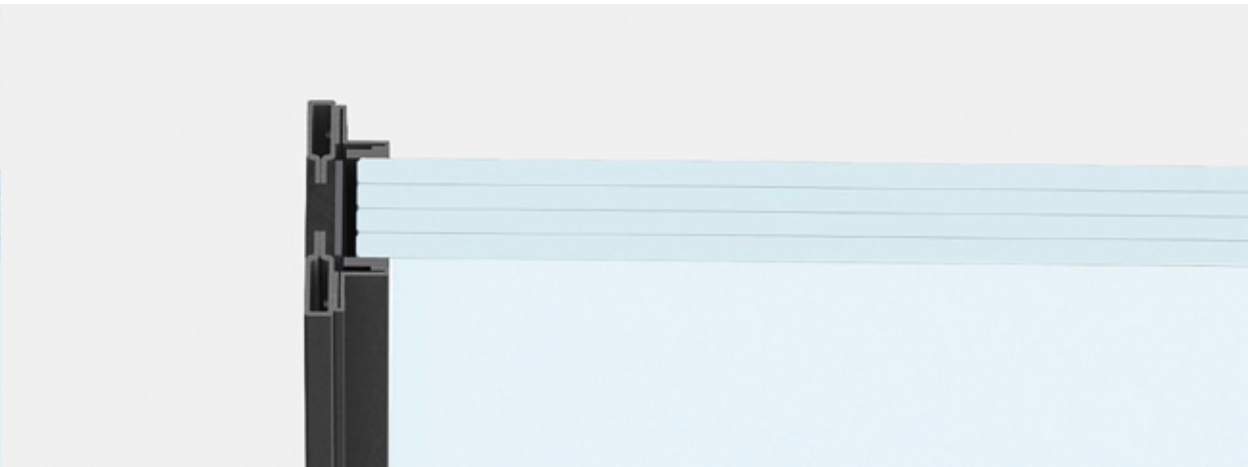
design^{XT-AF}



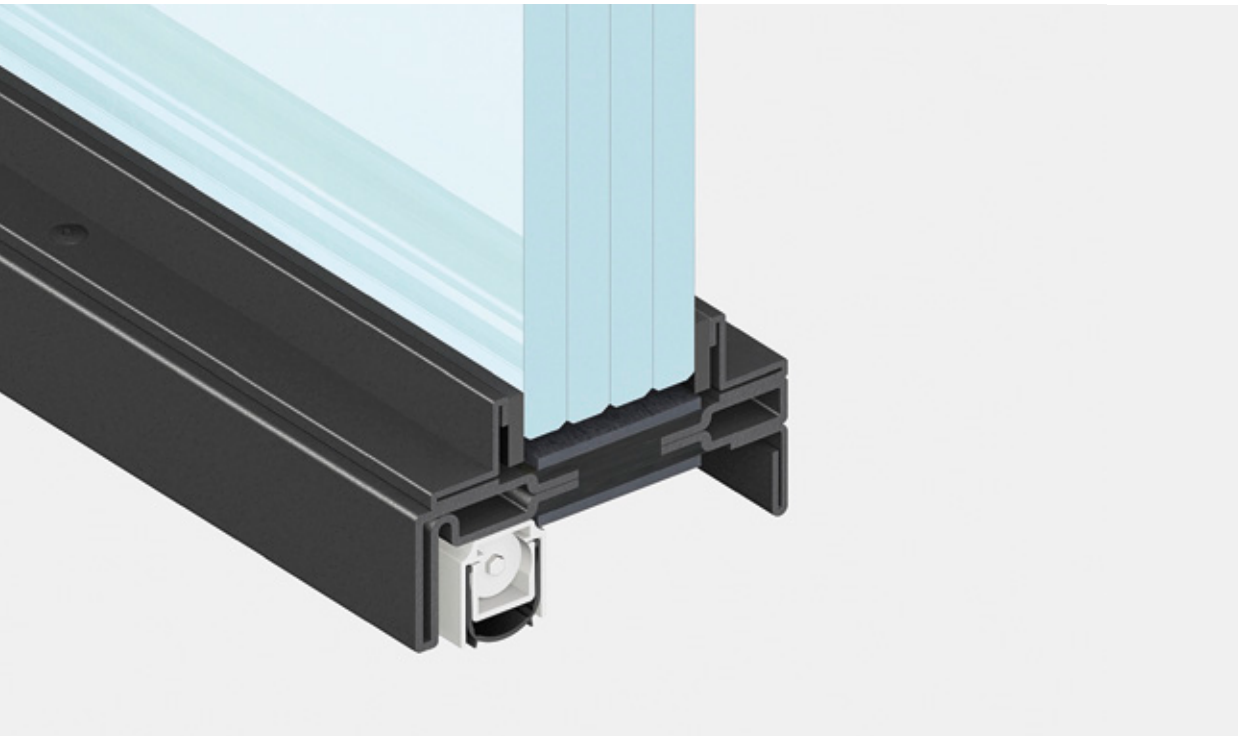
door lateral node
visible section: 53 mm



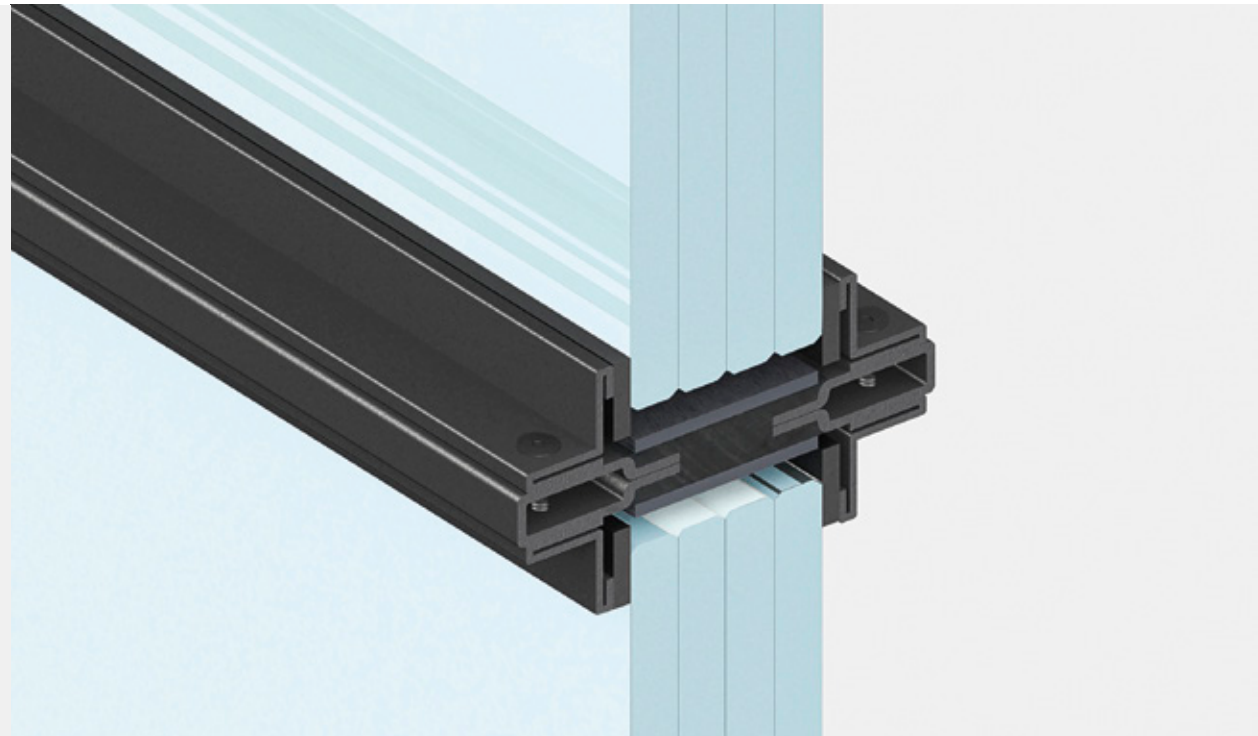
double-leaf door central node
visible section 83 mm



fixed
visible section 23 mm



threshold
visible section 39 mm



glazing bar
visible section 38 mm



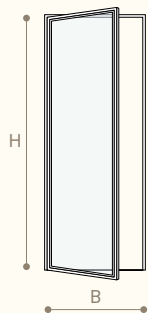
XT-AF
detail | open door leaf



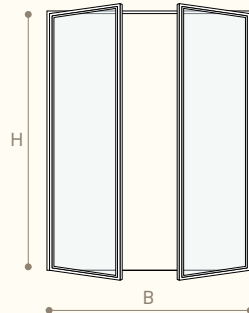
XT-AF
detail | door jamb with lateral fixed element

dimensions^{XT-AF}

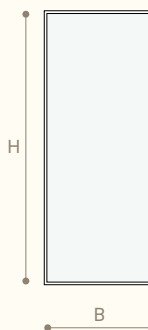
The XT-AF system allows the creation of large-sized doors and fixed elements. Doors can reach maximum dimensions of 250 cm in width and 270 cm in height, while fixed elements can reach up to 303 cm in height and 165 cm in width.



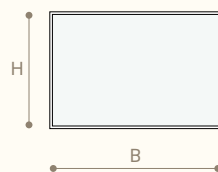
single-leaf door
maximum allowed surface area $\leq 3 \text{ m}^2$
with $B \leq 130 \text{ cm}$ and $H \leq 270 \text{ cm}$



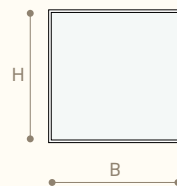
double-leaf door
maximum allowed surface area $\leq 5,5 \text{ m}^2$
with B between 155 and 250 cm and $H \leq 270 \text{ cm}$



fixed element
(vertical shape)
 $B \leq 125 \text{ cm}$ and $H \leq 303 \text{ cm}$



fixed element
(horizontal shape)
 $B \leq 165 \text{ cm}$ and $H \leq 128 \text{ cm}$

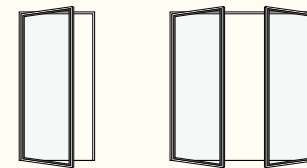


fixed elements (custom shape)
maximum allowed surface area $\leq 3 \text{ m}^2$
with B between 45 and 165 cm
and H between 45 and 303 cm

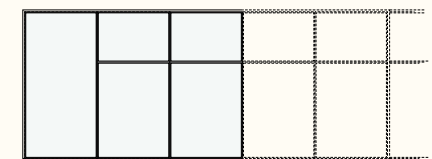
extensions according to EN 15269-5 and EN 15254-4
max certified dimensions vary depending on type, performance, materials, and supporting structure.

types^{XT-AF}

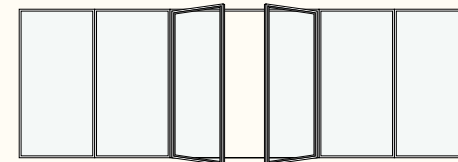
Doors and fixed elements can be combined to create the preferred frame design, offering a wide range of design solutions. This flexibility allows for an innovative reinterpretation of the fire-rated frame concept. Fixed and operable elements can be joined without the need to double the profile, enabling the creation of glazing with a light and elegant appearance.



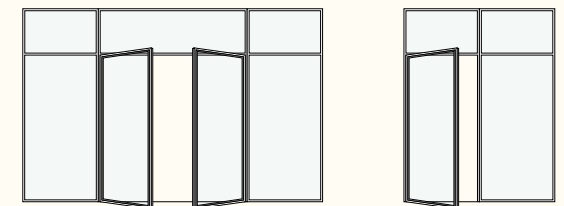
single- or double-leaf doors



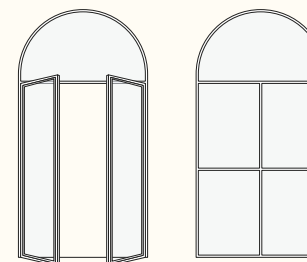
fixed frames



doors with fixed elements without profile doubling



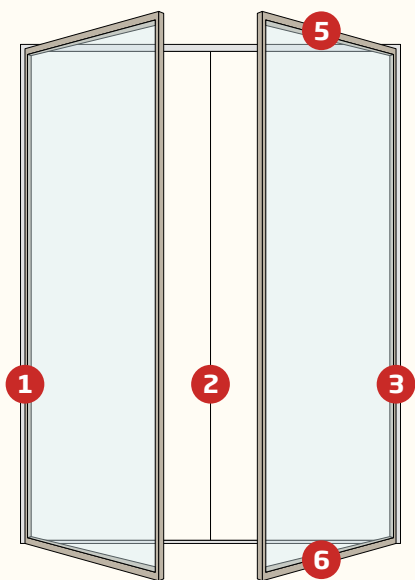
doors with transoms



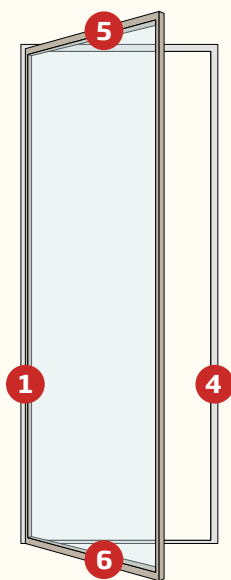
arched top for transom and fixed frames

typical sections^{XT-AF}

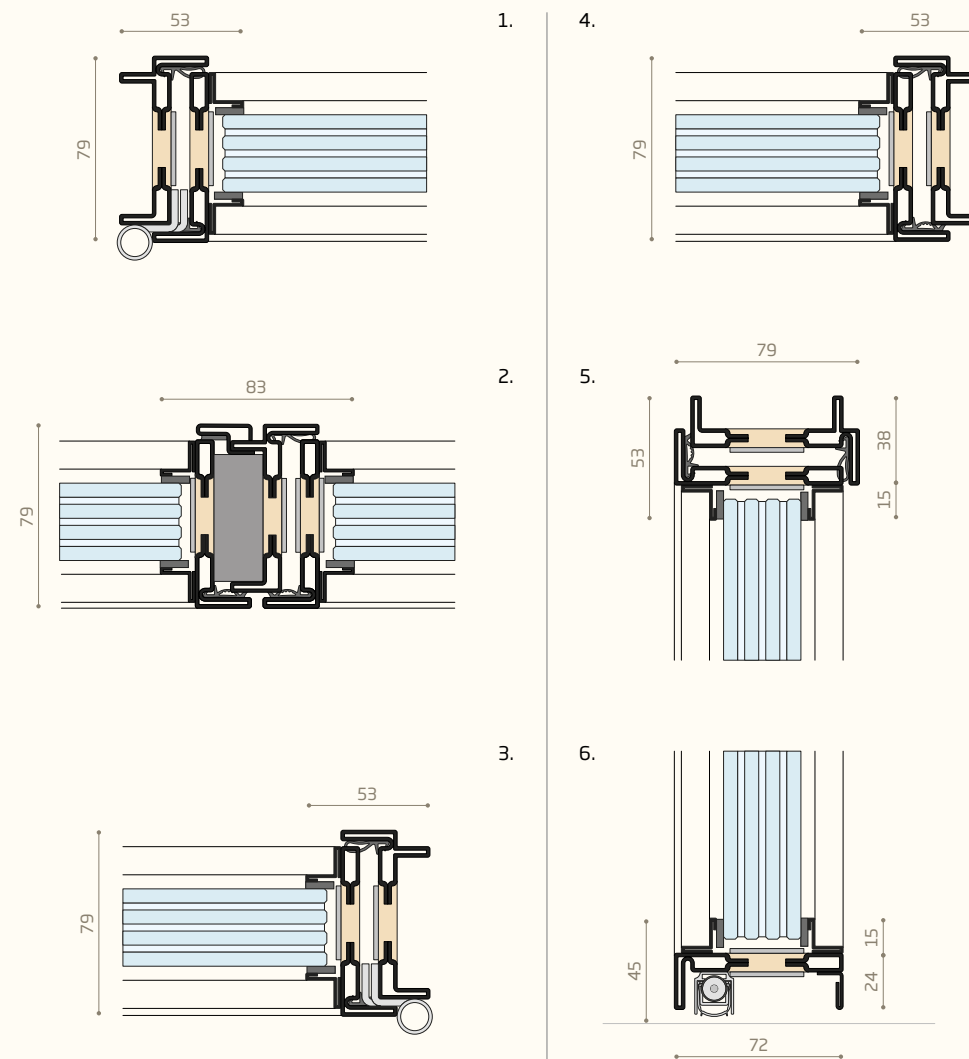
The profile sections are minimized, which is where the name of the system eXTreme comes from. The lateral joint of the doors has a thickness of just 53 mm and can also include the lateral fixed element. The central joint between the two leaves measures only 83 mm, while the divisions between the fixed elements feature a profile of just 38 mm.



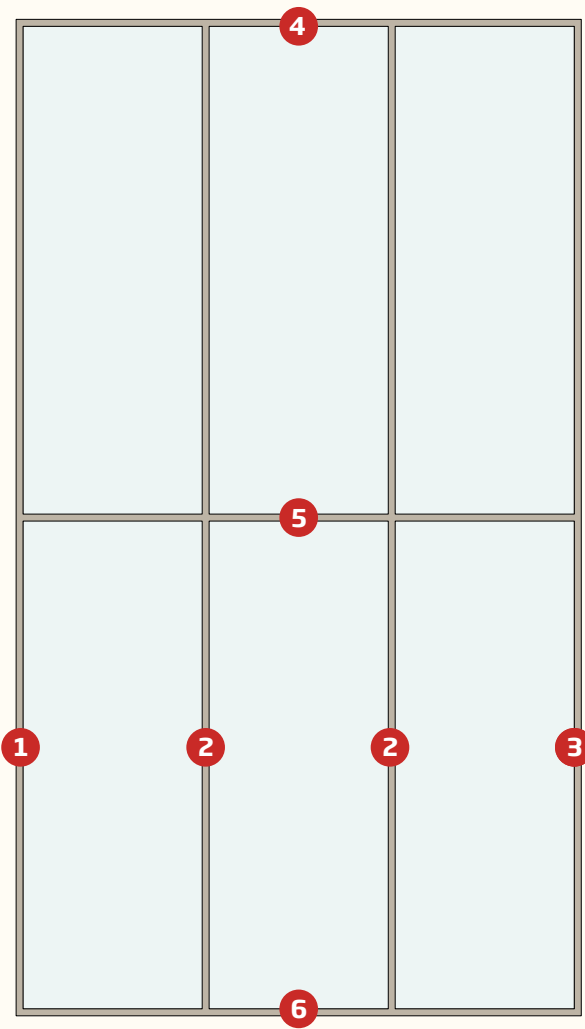
double-leaf door



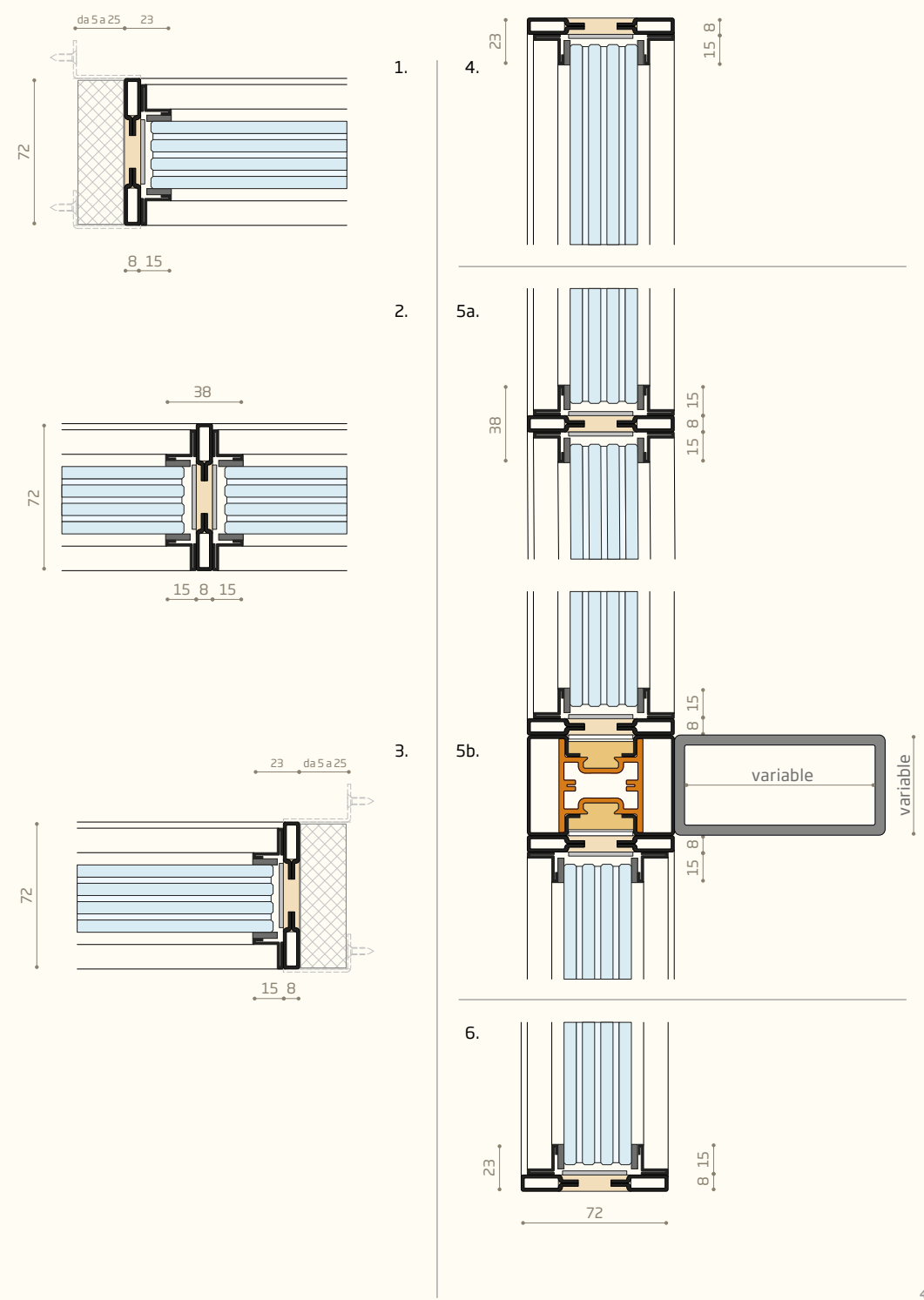
single-leaf door



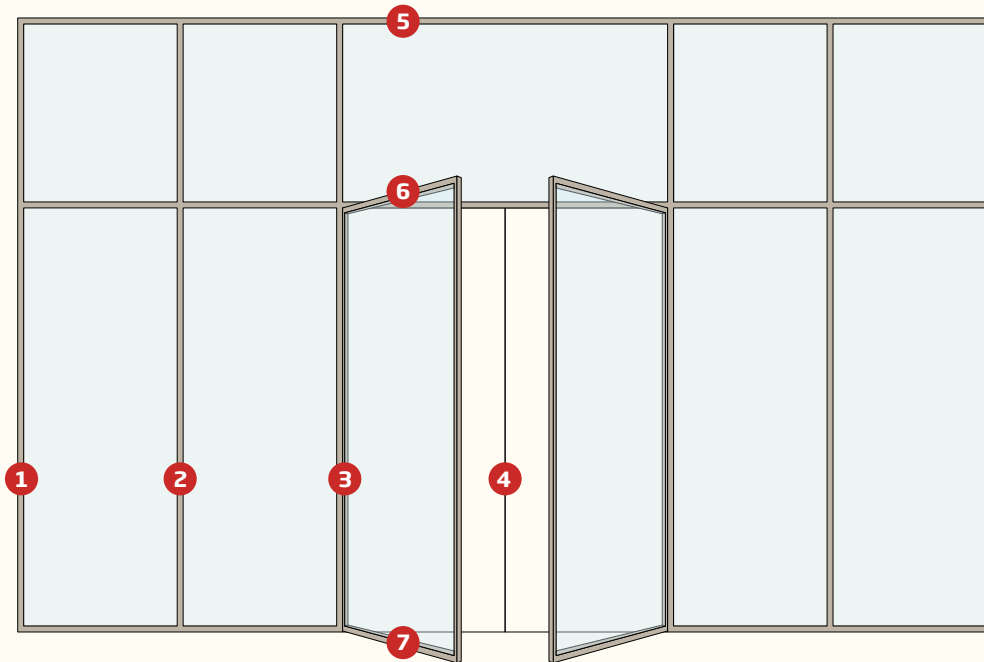
typical sections XT-AF



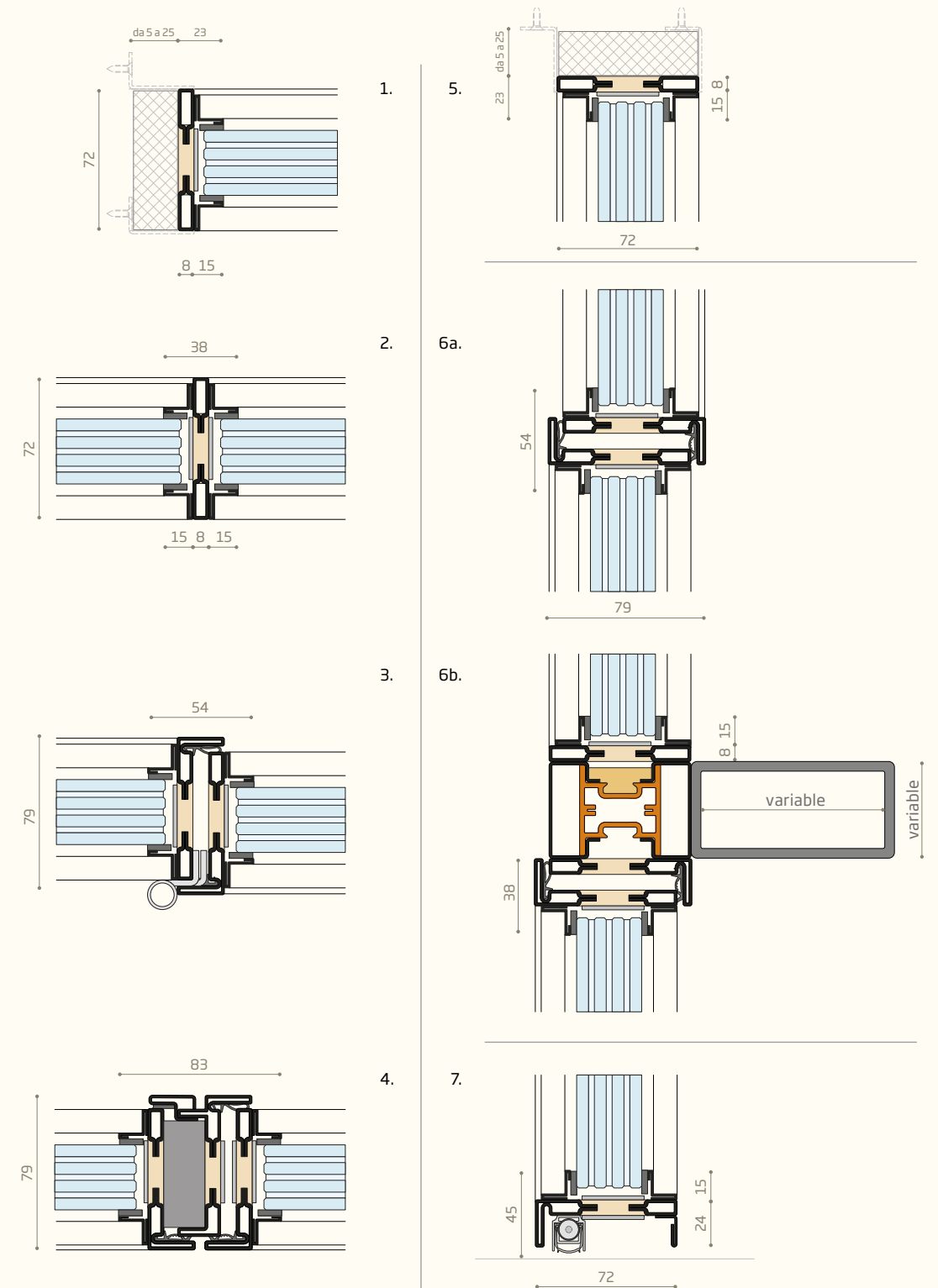
fixed glazing
section 5 may vary between 5a (standard) and 5b (reinforced),
depending on the size of the transom



typical sections^{XT-AF}



fixed glazing with double-leaf door and transom
 section 6 may vary between 6a (standard) and 6b (reinforced),
 depending on the transom dimensions

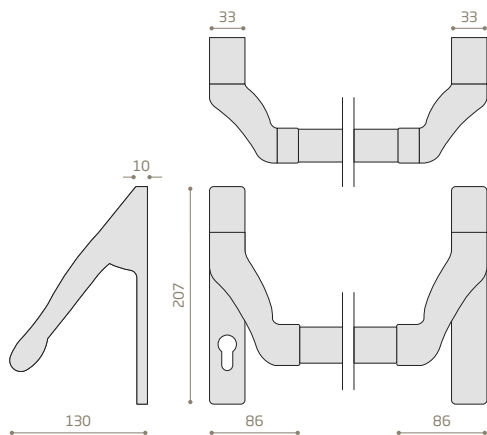


handles

The panic bars of fire-rated doors are designed to ensure both functionality and safety, combining sturdiness with ergonomic design for easy and secure access in case of emergency. Made from fire-resistant materials, they provide excellent grip and comply with safety regulations. The minimal design integrates harmoniously with the window profiles, contributing to a clean and contemporary aesthetic.

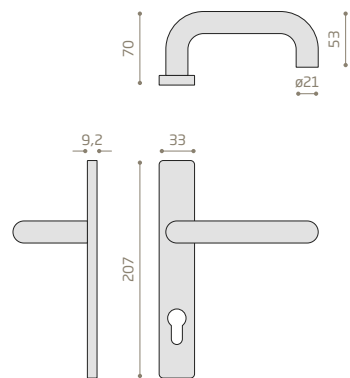
lever panic bar

Ensures quick and safe opening; the ergonomic shape of the lever makes unlocking and operating the door easy, even with minimal applied force. Available in satin aluminum finish or painted to match the door, for perfect integration with the frame.



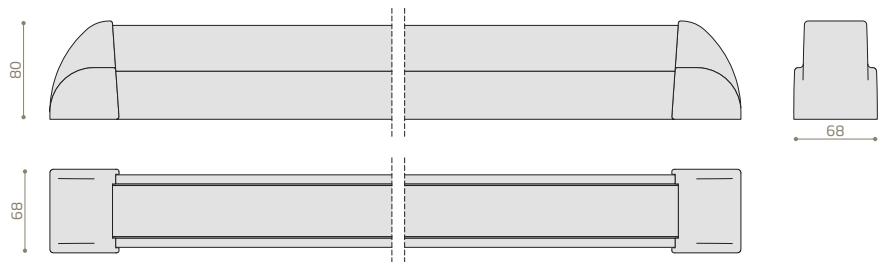
handle compatible with panic bars

Allows the door to be opened from the opposite side of the panic bar. The elegant backplate, which connects the handle to the lock block, ensures aesthetic continuity with the panic bar. Available in satin steel finish or painted to match the door, for perfect integration with the frame.



panic bar handle

Designed to allow immediate exit through direct pressure along the full width of the door leaf, it ensures maximum mechanical reliability and a wider usable evacuation space. Available in satin aluminum finish or painted to match the door, for perfect integration with the frame.

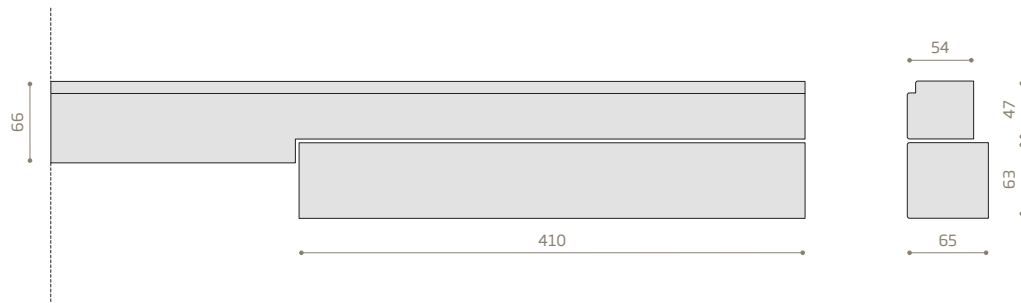


door closers

The door closers used on fire-rated doors ensure automatic and controlled closing of the leaf, as required by fire protection regulations. Suitable for single or double-leaf doors, they ensure the proper sequential alignment of the leaves and help maintain the performance of the frame.

door closer with cover

Equipped with an articulated arm mechanism, it ensures smooth and secure automatic door closing. The cover, matched to the door's color, protects the internal components and ensures aesthetic integration with the frame.

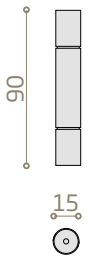


hinges

An essential structural element, the hinge supports the weight of the leaf and ensures its consistent movement over time. Certified to withstand a high number of opening and closing cycles, the hinges are designed with micrometric adjustments on multiple axes, contributing to the stability, precision, and durability of the frame.

hinge

Made of steel, the hinge has a very compact size, just 15 mm in diameter, and is designed to be painted in the same finish as the frame, ensuring visual continuity and maximum aesthetic integration.

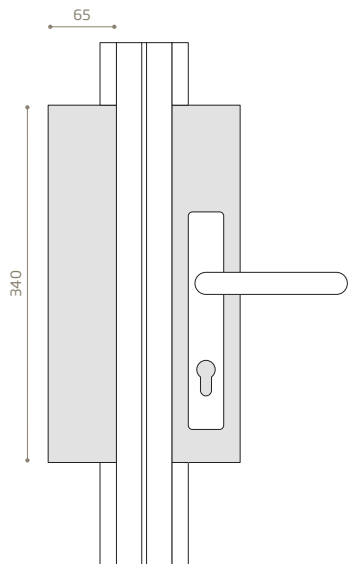


lock plate

In XT doors, the profile geometry requires the application of a cover plate to protect the lock, which protrudes from the frame. This element not only ensures the safety and integrity of the locking system but also serves as a mounting base for handles and panic bars.

lock plate

Designed to fully cover the lock body, the plate is present on both sides of the door and, in the case of double leaves, is also extended to house the mechanisms of panic bars and bolts. Each plate is made in the same finish as the door, with proportions carefully studied to preserve the symmetry and uniformity of the overall frame design.







EBE-AF

The EBE-AF system offers a range of doors and glazed partitions that provide effective protection against flames and smoke, while keeping the temperature on the unexposed side under control.

Thanks to the careful selection of materials and internal components, it enables the construction of fire-resistant frames rated EI 30, 60, and 90, using thermal break profile technology.

EBE-AF is available in all dimensional variants of the series **EBE 65, 75, 85, 100** and in all metals of the Secco Sistemi range, seamlessly integrating with standard EBE frames, without visual dissonance, thanks to the consistency in shapes, thicknesses, and finishes.

AVAILABLE METALS

brass (satin-finished or burnished)

corten steel

stainless steel (burnished or scotch-brite)

painted zinc-magnesium steel

PERFORMANCE

fire resistance EBE-AF (65-75-85)

EI 30-60

fire resistance EBE-AF (100)

EI 90

smoke tightness

S_a - S_m

mechanical resistance: durability

C5 (200.000 cicli)

AVAILABLE CERTIFICATIONS

EN 1634-1

PV (pending)

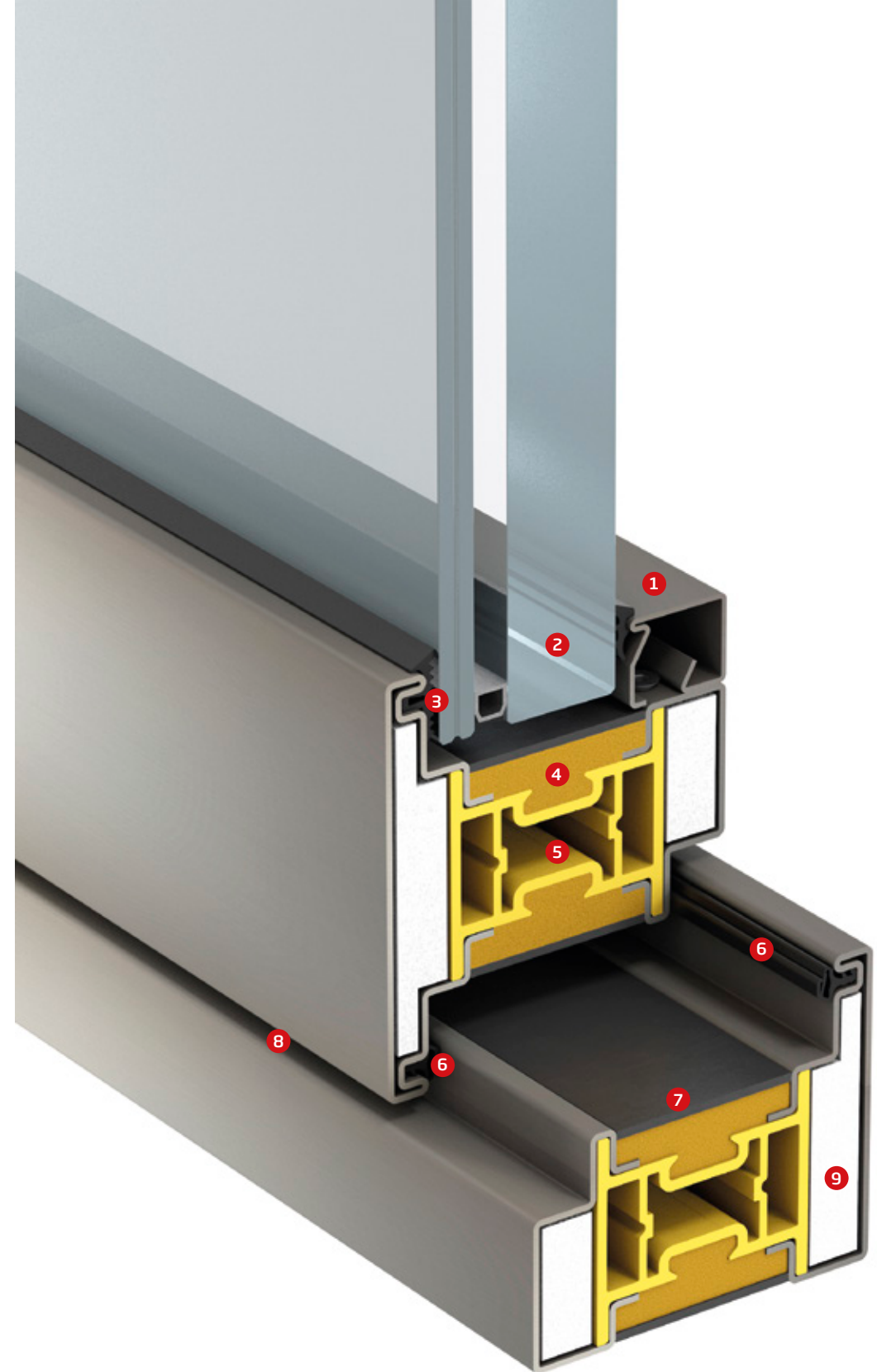
Italian homologation



technology^{EBE-AF}

The EBE-AF thermal break profiles are made of two metal shells, obtained through cold-forming, joined together by a polyamide extrusion (5) bonded to the shells with polyurethane resin (4). Sealing is ensured by compression gaskets (6) and intumescent strips (7). The glazing beads (1) are fixed to the frame with concealed screws, ensuring strength and reliability.

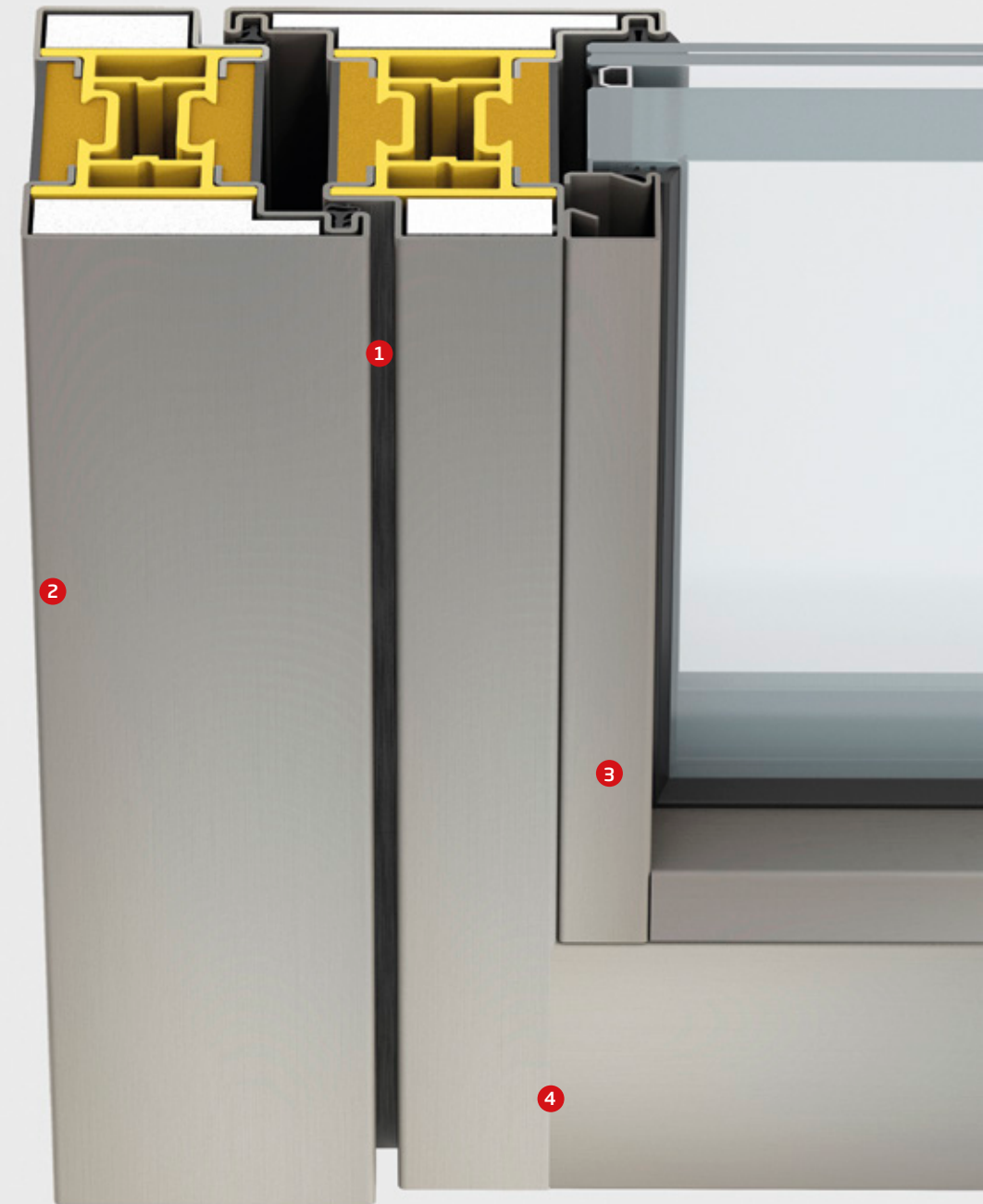
- 1. glazing bead
- 2. fire-rated glass
- 3. gasket
- 4. fire-resistant polyurethane structural thermal break
- 5. fire-resistant polyamide structural thermal break
- 6. compression gaskets
- 7. intumescent strip
- 8. internal and external coplanarity
- 9. inert cooling material



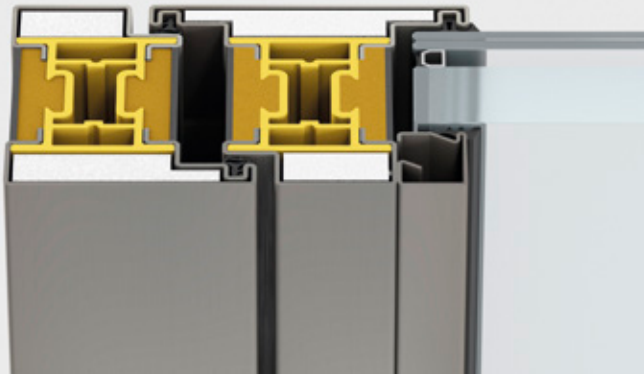
design^{EBE-AF}

The EBE-AF system combines elegance and functionality, offering flush frame and leaf profiles for a uniform and contemporary appearance. The rounded-edge profiles and concealed glazing beads ensure a clean and refined finish. Cylindrical hinges and the base panel, with the same visible dimension as the vertical profiles, contribute to a harmonious design.

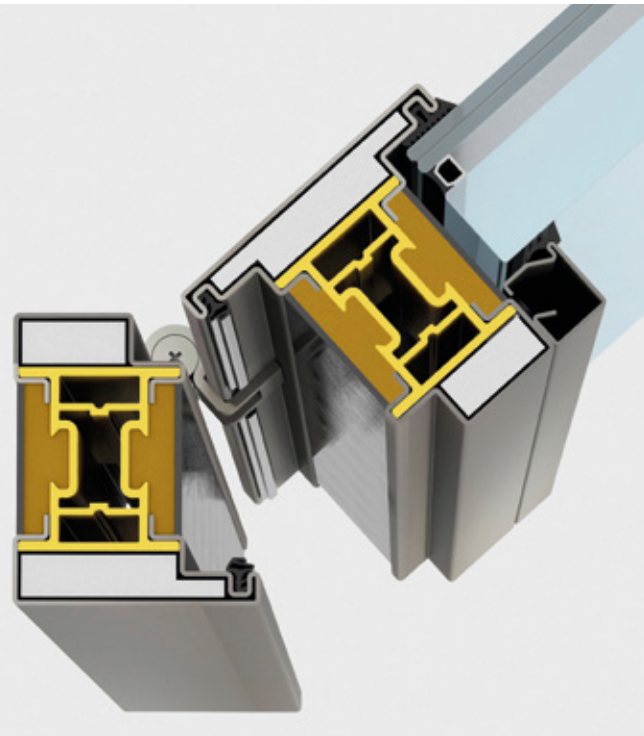
- 1. flush frame and leaf profiles
- 2. profiles with rounded edges
- 3. glazing beads with concealed installation
- 4. base panel with the same visible width as the vertical profiles



example of door side profile



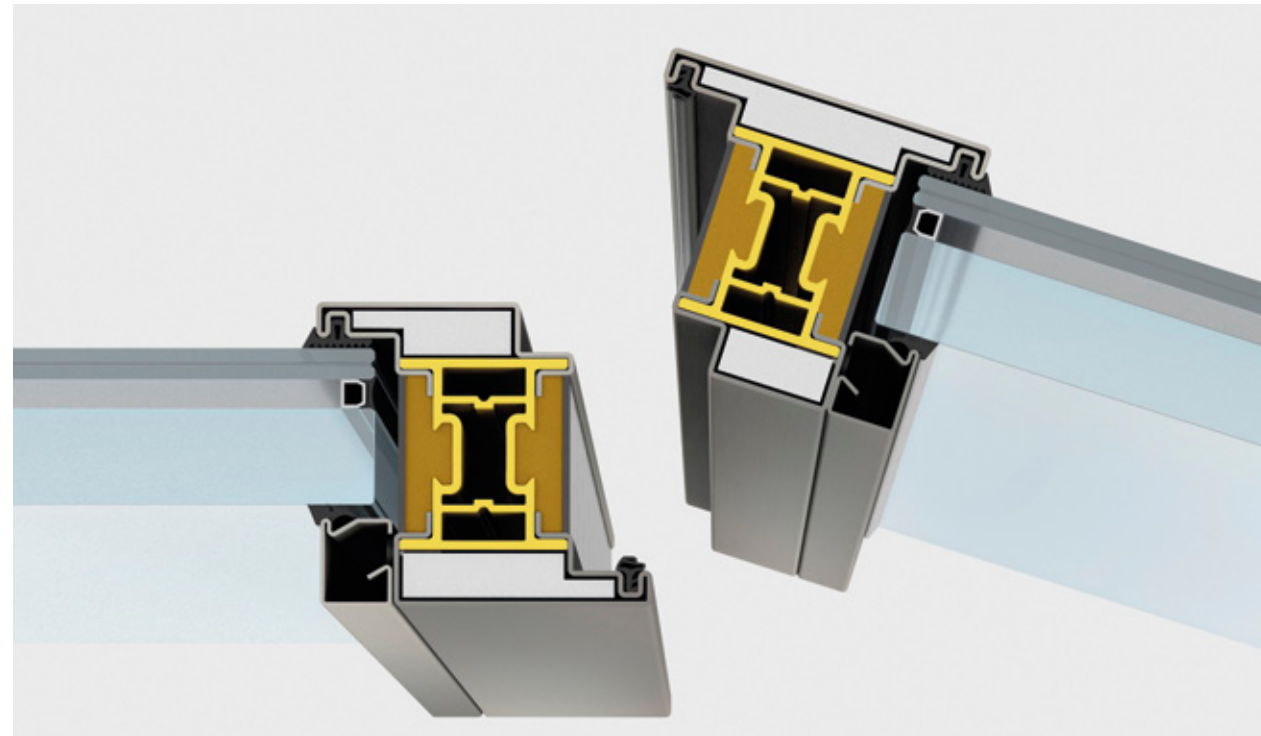
closed door lateral node
sec. 134 mm



open door lateral node



closed double-leaf door central node
sec. 156 mm



open double-leaf door central node



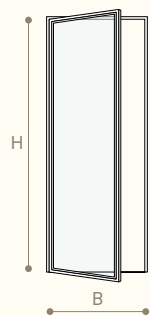
EBE-AF - satin-finished stainless steel
external view



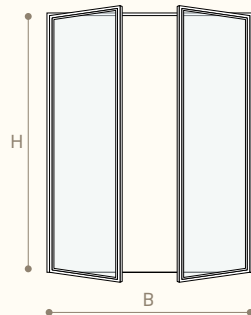
EBE-AF - satin-finished stainless steel
internal view

dimensions^{EBE-AF}

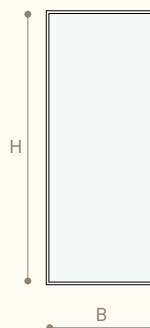
EBE-AF system allows the creation of large-size doors and fixed elements. Doors can reach maximum dimensions of 295 cm in width and 315 cm in height, while fixed elements can achieve up to 330 cm in height and 200 cm in width.



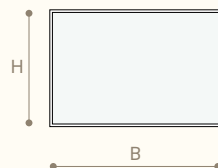
single-leaf door
B ≤ 150 cm and H ≤ 300 cm



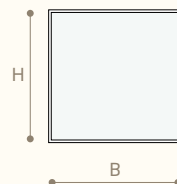
double-leaf door
B between 160 and 295 cm
and H ≤ 315 cm



fixed element
(vertical shape)
B ≤ 123 cm and H ≤ 330 cm



fixed element
(horizontal shape)
B ≤ 200 cm and H ≤ 132 cm

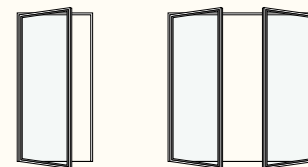


fixed frames (custom shape)
maximum allowed surface area ≤ 3,3 m²
with B between 55 and 200 cm
and H between 55 and 330 cm

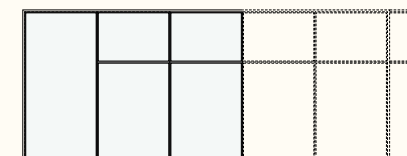
extensions according to EN15269-5 and EN15254-4
max certified dimensions vary depending on type, performance, materials, and supporting structure.

types^{EBE-AF}

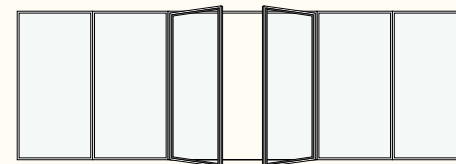
Doors and fixed elements can be combined to create the desired frame design, offering a wide range of design solutions. This flexibility allows for innovation in the concept of fire-resistant frames. Fixed and operable elements can be connected without the need to double the profile, enabling the creation of glazed units with a light and elegant appearance.



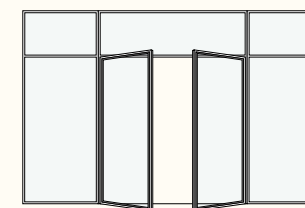
single or double-leaf doors



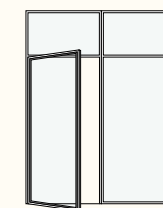
fixed frames



doors with fixed elements without profile doubling

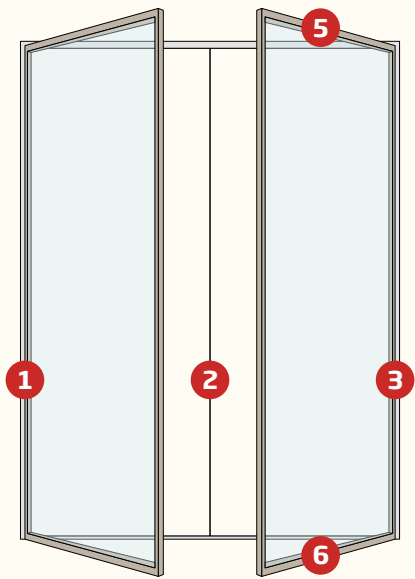


doors with transom

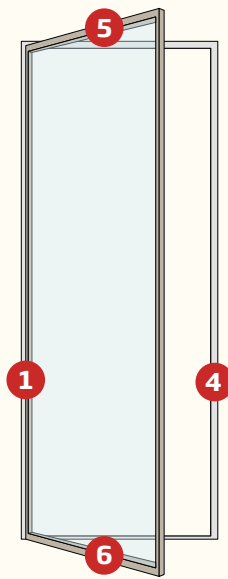


typical sections^{EBE-AF}

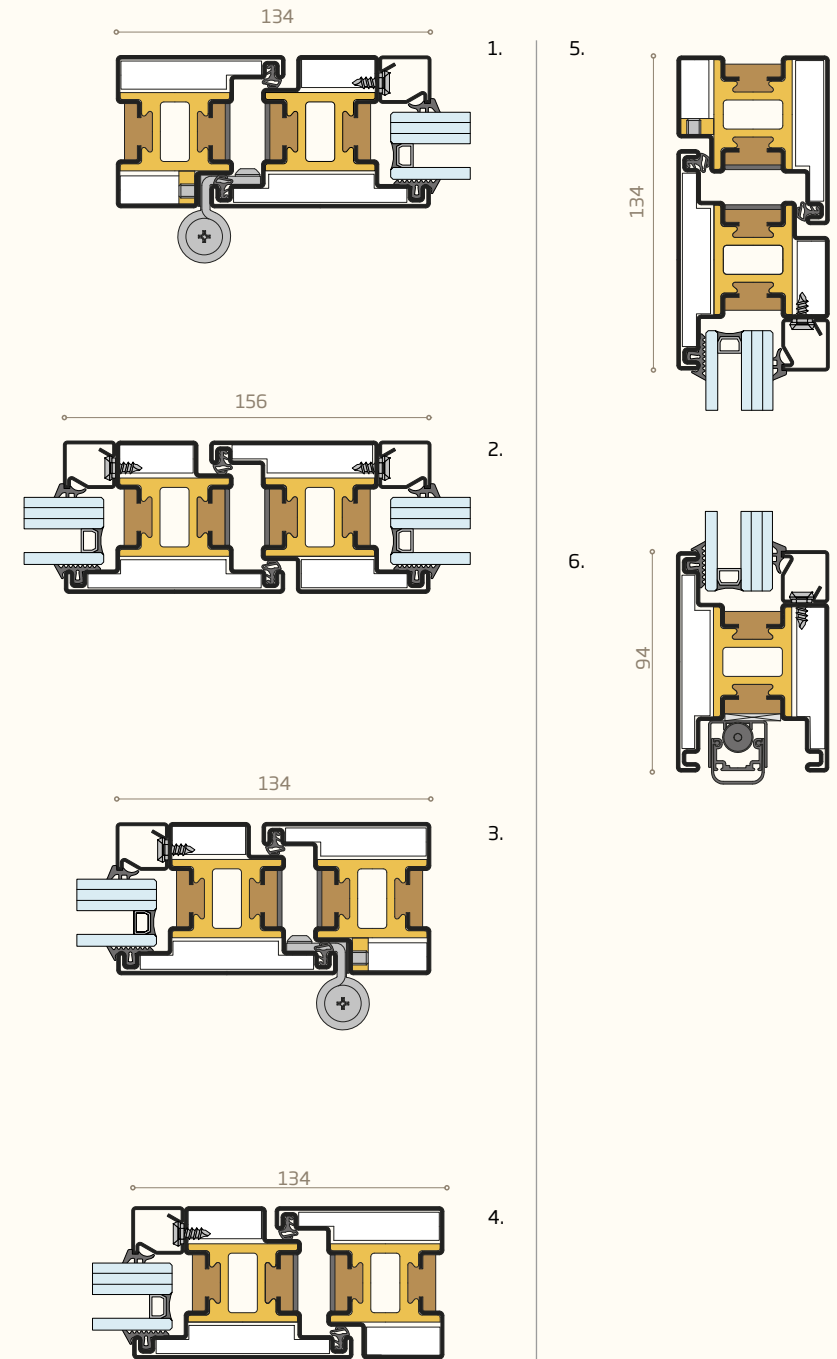
The profile sections are compact in size: the lateral node of the doors has a thickness of 134 mm, the central node between the two leaves measures 156 mm, and the divisions between fixed elements feature a 94 mm profile.



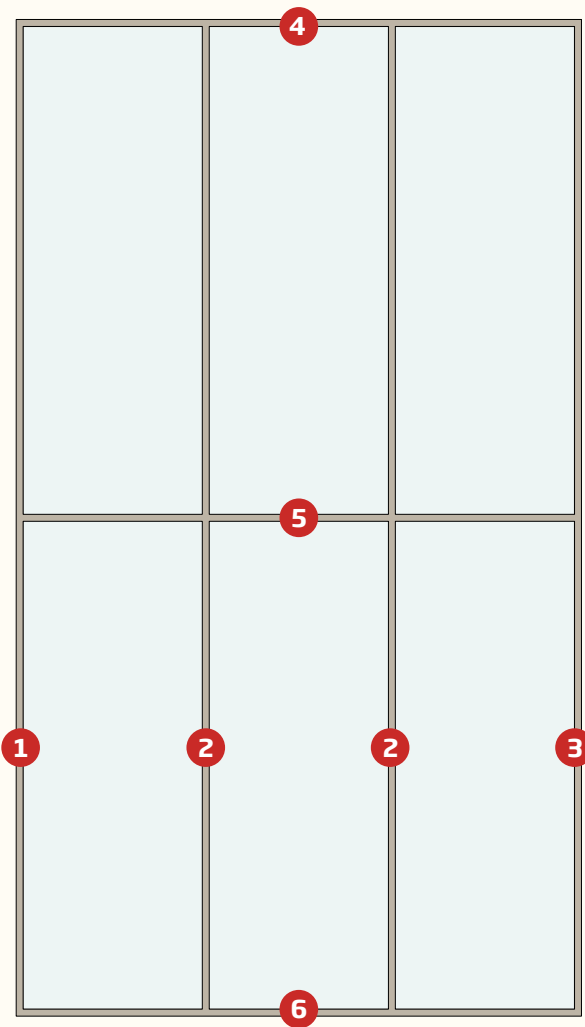
double-leaf door



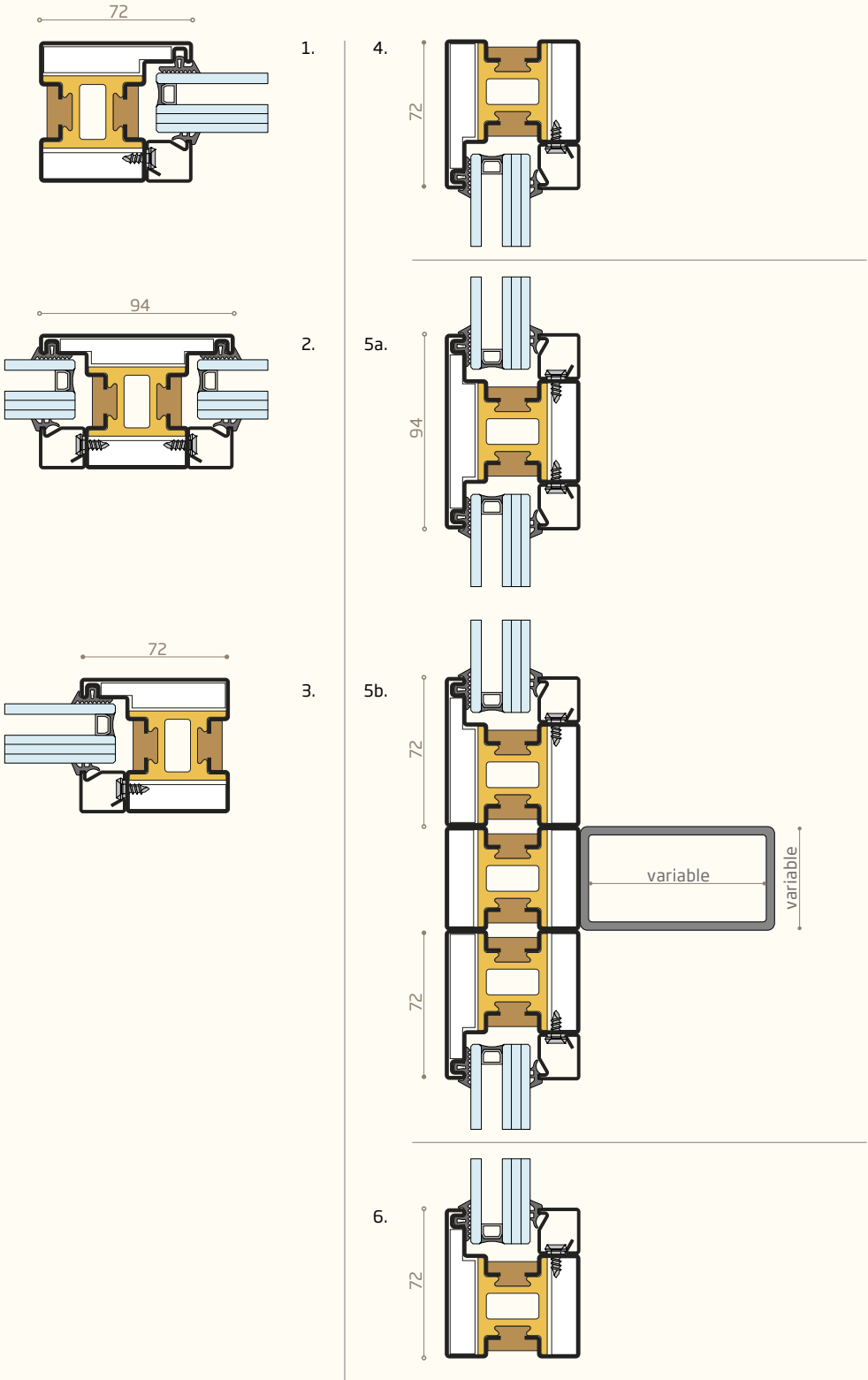
double-leaf door



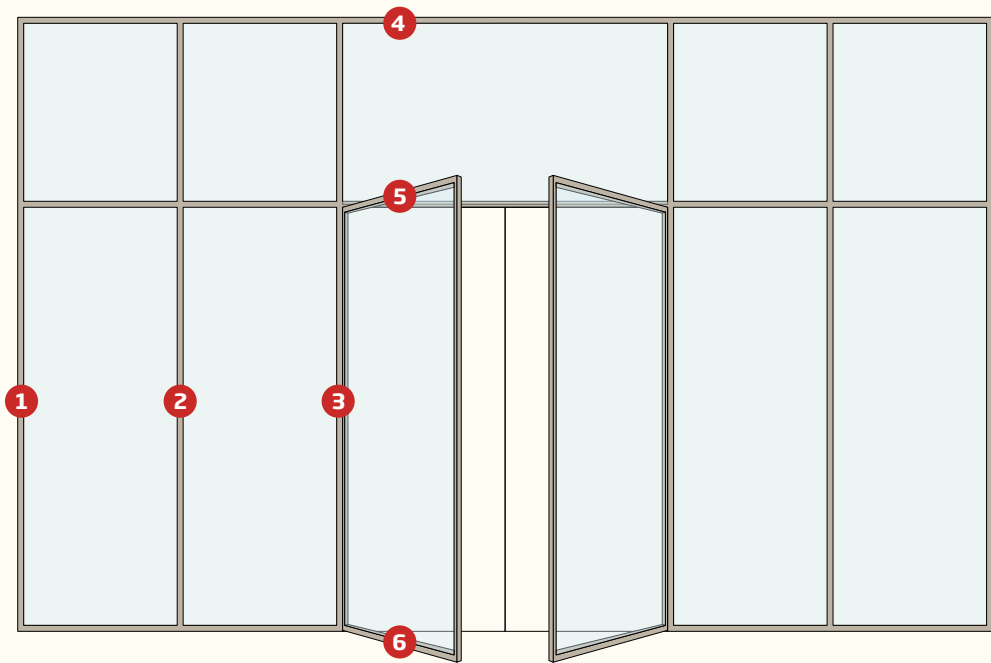
typical sections EBE-AF



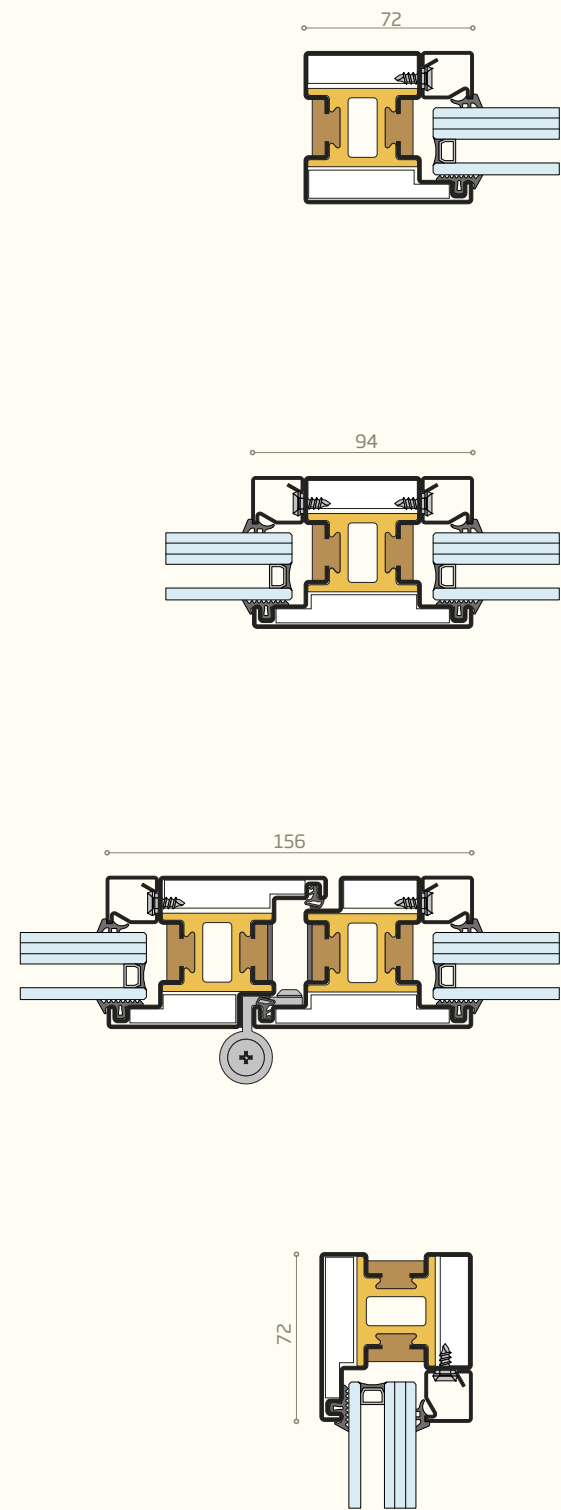
fixed glazing
section 5 may vary between 5a (standard) and 5b (reinforced),
depending on the size of the transom



typical sections EBE-AF



fixed glazing with double-leaf door and transom
section 5 may vary between 5a (standard) and 5b (reinforced),
depending on the transom dimensions



1.

2.

3.

4.

5a.

5b.

6.

156

72

134

94

variable

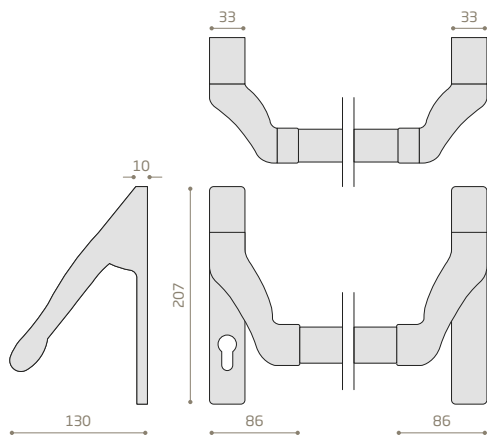
variable

handles

The panic bars of fire-rated doors are designed to ensure both functionality and safety, combining sturdiness with ergonomic design for easy and secure access in case of emergency. Made from fire-resistant materials, they provide excellent grip and comply with safety regulations. The minimal design integrates harmoniously with the window profiles, contributing to a clean and contemporary aesthetic.

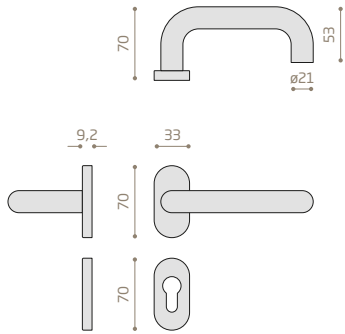
lever panic bar

Ensures quick and safe opening; the ergonomic shape of the lever makes unlocking and operating the door easy, even with minimal applied force. Available in satin aluminum finish or painted to match the door, for perfect integration with the frame.



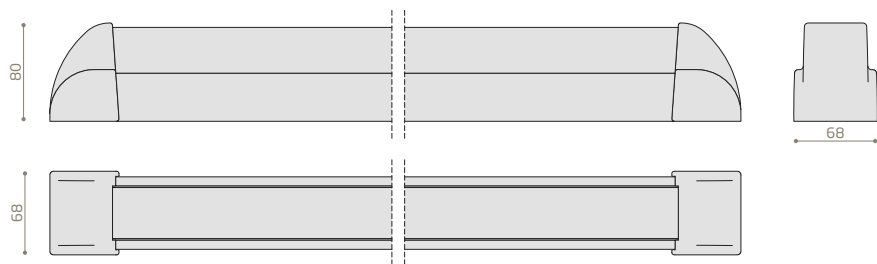
handle compatible with panic bars

Allows the door to be opened from the opposite side of the panic bar. The elegant backplate, which connects the handle to the lock block, ensures aesthetic continuity with the panic bar. Available in satin steel finish or painted to match the door, for perfect integration with the frame.



panic bar handle

Designed to allow immediate exit through direct pressure along the full width of the door leaf, it ensures maximum mechanical reliability and a wider usable evacuation space. Available in satin aluminum finish or painted to match the door, for perfect integration with the frame.

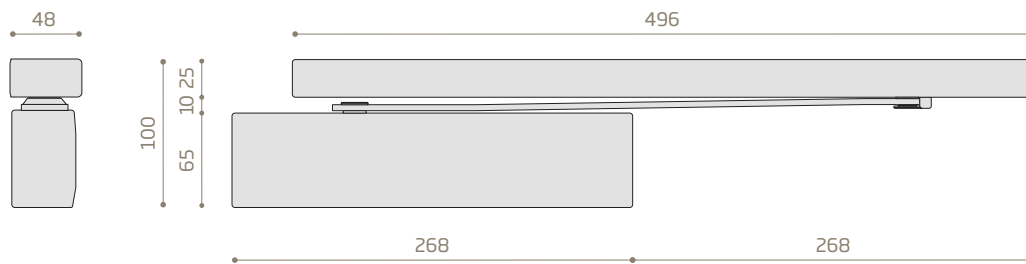


door closers

The door closers used on fire-rated doors ensure automatic and controlled closing of the leaf, as required by fire protection regulations. Suitable for single or double-leaf doors, they ensure the proper sequential alignment of the leaves and help maintain the performance of the frame.

exposed door closer

Equipped with an articulated arm mechanism, it ensures smooth and secure automatic door closing. The cover, matched to the door's color, protects the internal components and ensures aesthetic integration with the frame.



concealed door closer

Integrated automatic closing system inside the leaf or the frame. Invisible when the door is closed, it allows controlled closing without altering the aesthetic of the frame, ensuring consistent functionality and performance.

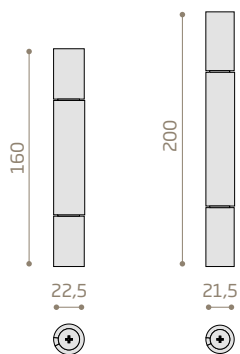


hinges

An essential structural element, the hinge supports the weight of the leaf and ensures its consistent movement over time. Certified to withstand a high number of opening and closing cycles, the hinges are designed with micrometric adjustments on multiple axes, contributing to the stability, precision, and durability of the frame.

hinges

The hinges range in size from 160 to 200 mm, depending on load capacity, and are made of Corten steel or stainless steel, with finishes available in burnished, satin, polished, or painted to match the frame. This ensures visual continuity and maximum aesthetic integration.







SA-AF

The SA-AF system is an innovative solution for glazed doors and partitions, designed to provide effective protection with EW 30-60-90 fire resistance classification and smoke control ratings Sa and Sm. Since it is not thermally broken, it is best suited for interior applications.

In addition to offering excellent fire safety performance, SA-AF stands out for its premium finishes, available in Corten steel or stainless steel, allowing seamless integration into any architectural project by combining durability with refined aesthetics.

AVAILABLE METALS

corten steel

stainless steel (burnished or scotch-brite)

painted zinc-magnesium steel

PERFORMANCE

fire resistance EW 30-60-90

smoke tightness $S_a - S_m$

mechanical resistance: durability C5 (200.000 cicli)

AVAILABLE CERTIFICATIONS

EN 1634-1

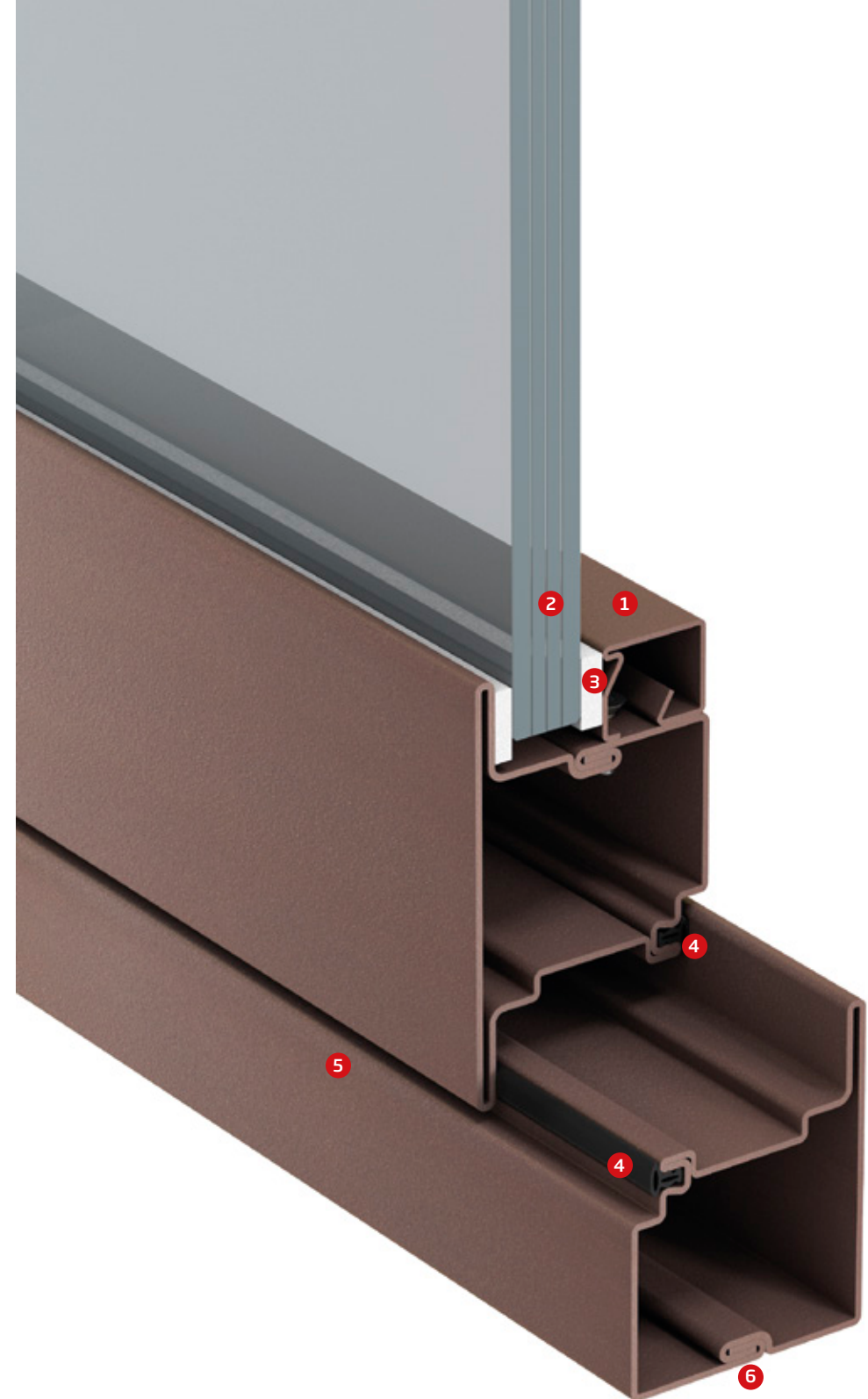
PV



technology^{SA-AF}

The tubular profiles of the SA system are produced through cold-forming of metals, with tubular sections obtained via continuous mechanical joining of the profile (6). Sealing is ensured by ceramic (3) and contact gaskets (4). The glazing beads (1) are fixed to the frame with concealed screws, ensuring strength and reliability.

- 1. glazing bead
- 2. fire-rated glass
- 3. ceramic gaskets
- 4. compression gaskets
- 5. internal and external coplanarity
- 6. structural mechanical joint



design^{SA-AF}

The SA-AF system stands out for the combination of elegance and functionality. The flush configuration of frame and leaf contributes to a uniform aesthetic, while concealed glazing beads ensure a refined finish. The welding of mullions and transoms at their junction points guarantees solidity and visual cleanliness of the frame, making SA-AF an interesting choice for projects requiring high performance and refined design.

- 1. flush frame and leaf profiles
- 2. glazing beads with concealed installation
- 3. profiles welded together



example of door side profile



closed door lateral node
sec. 131 mm



open door lateral node



closed double-leaf door central node
sec. 151 mm



open double-leaf door central node



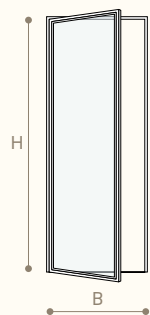
SA-AF - corten steel
external view



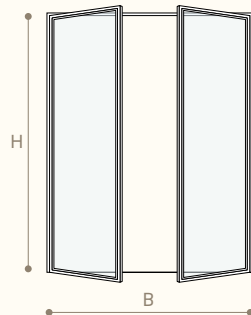
SA-AF - corten steel
internal view

dimensions^{SA-AF}

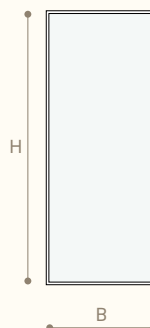
SA-AF system allows the creation of large-size doors and fixed elements. Doors can reach maximum dimensions of 236 cm in width and 265 cm in height, while fixed elements can achieve up to 285 cm in height and 165 cm in width.



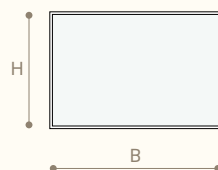
single-leaf door
maximum allowed surface area $\leq 3,2 \text{ m}^2$
with $B \leq 130 \text{ cm}$ and $H \leq 265 \text{ cm}$



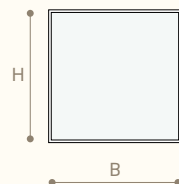
double-leaf door
maximum allowed surface area $\leq 5,4 \text{ m}^2$
with B between $236 \text{ e } 160 \text{ cm}$ and $H \leq 233 \text{ cm}$



fixed element
(vertical shape)
 $B \leq 110 \text{ cm}$ and $H \leq 285 \text{ cm}$



fixed element
(horizontal shape)
 $B \leq 165 \text{ cm}$ and $H \leq 120 \text{ cm}$

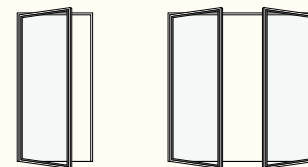


fixed elements (custom shape)
maximum allowed surface area $\leq 2,55 \text{ m}^2$
with B between 55 and 165 cm
and H between 55 and 285 cm

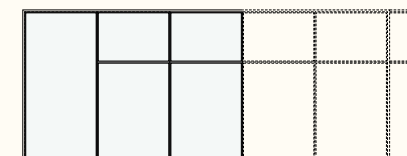
extensions according to EN15269-5 and EN15254-4
max certified dimensions vary depending on type, performance, materials, and supporting structure.

types^{SA-AF}

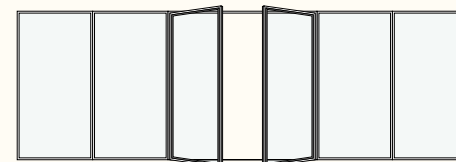
Doors and fixed elements can be combined to create the desired frame design, offering a wide range of design solutions. This flexibility allows for innovation in the concept of fire-resistant frames. Fixed and operable elements can be connected without the need to double the profile, enabling the creation of glazed units with a light and elegant appearance.



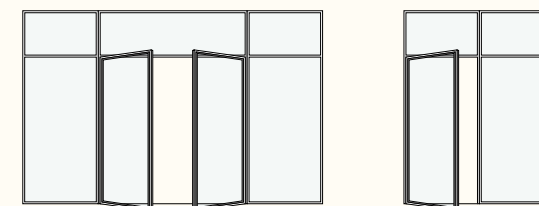
single or double-leaf doors



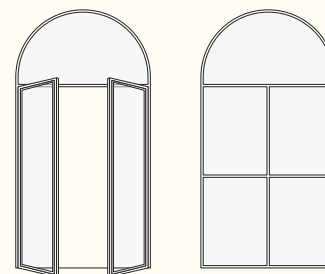
fixed frames



doors with fixed elements without profile doubling



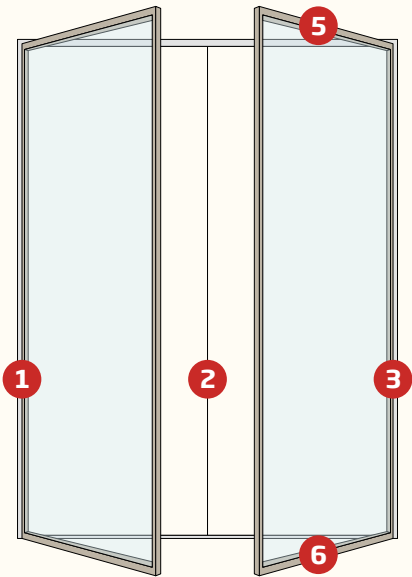
doors with transoms



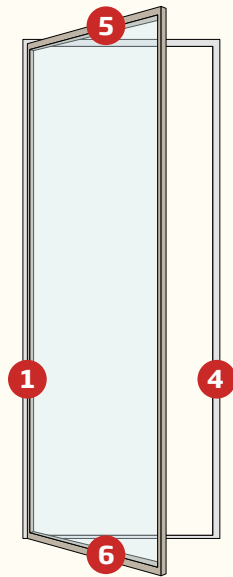
arched top for transoms and fixed frames

typical sections^{SA-AF}

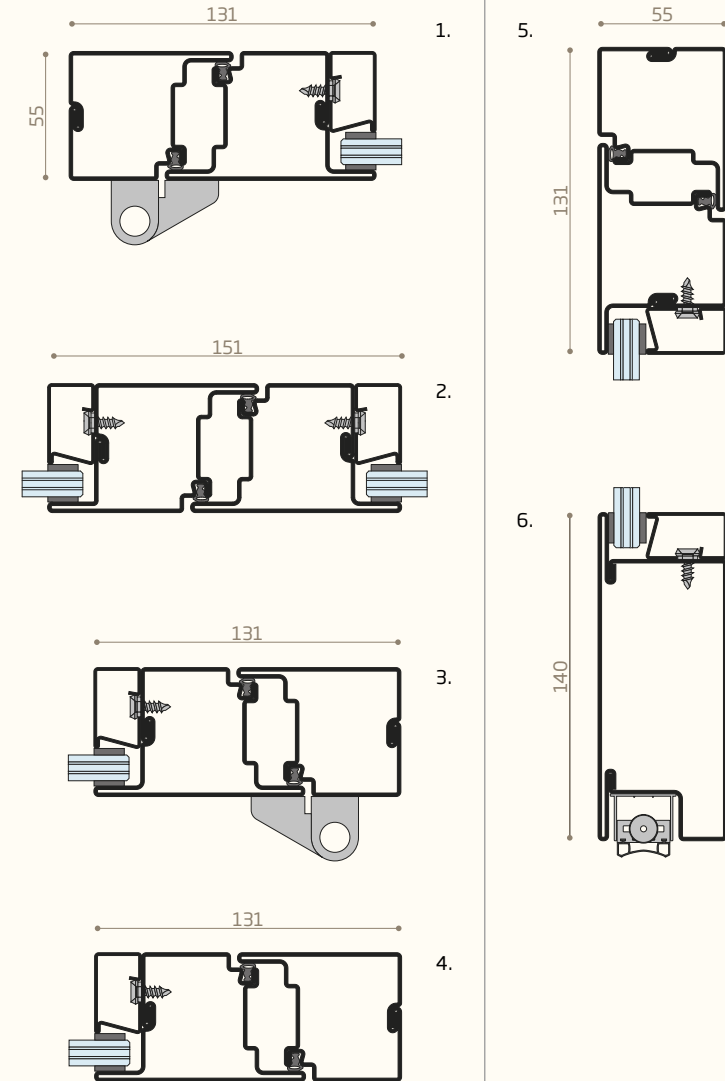
The profile sections are compact in size: the lateral node of the doors has a thickness of 131 mm, the central node between the two leaves measures 151 mm, and the divisions between fixed elements feature a 90 mm profile.



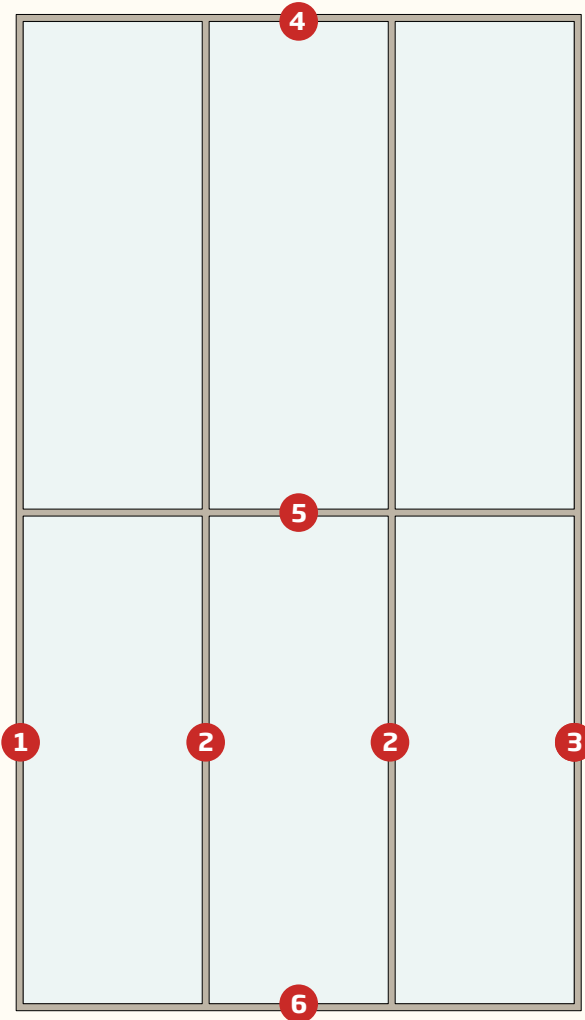
double-leaf door



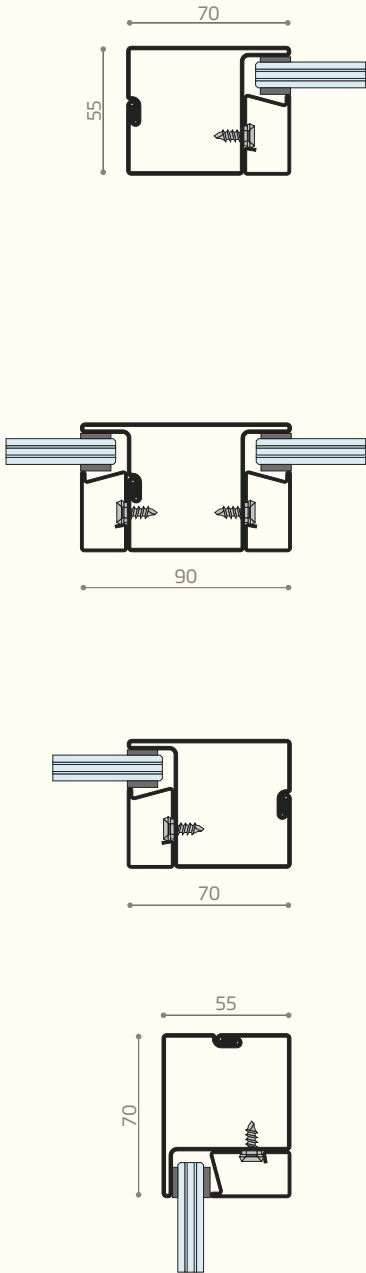
single-leaf door



typical sections SA-AF



fixed glazing
section 5 may vary between 5a (standard) and 5b (reinforced),
depending on the size of the transom



1.

2.

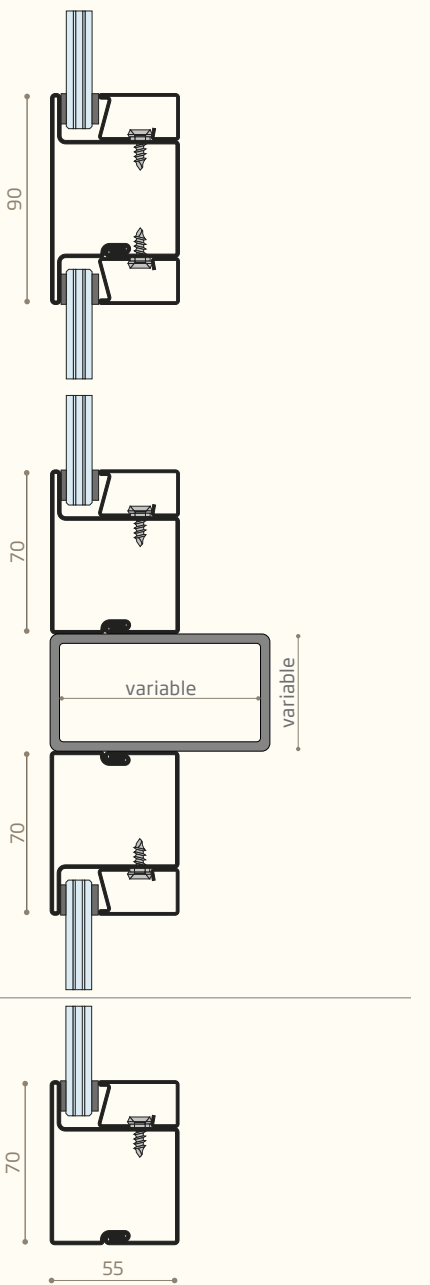
3.

4.

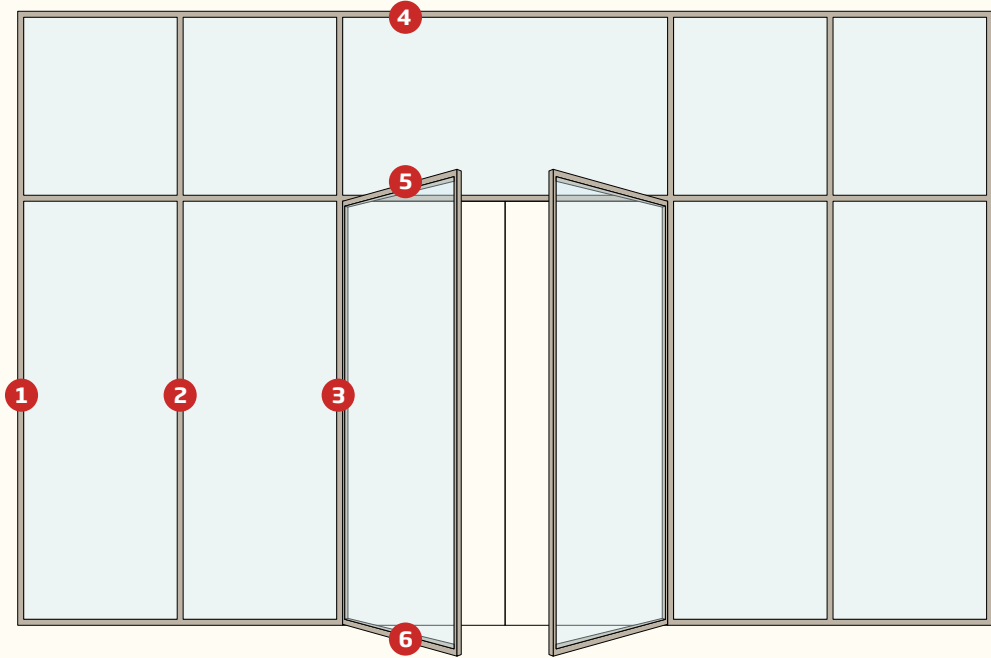
5a.

5b.

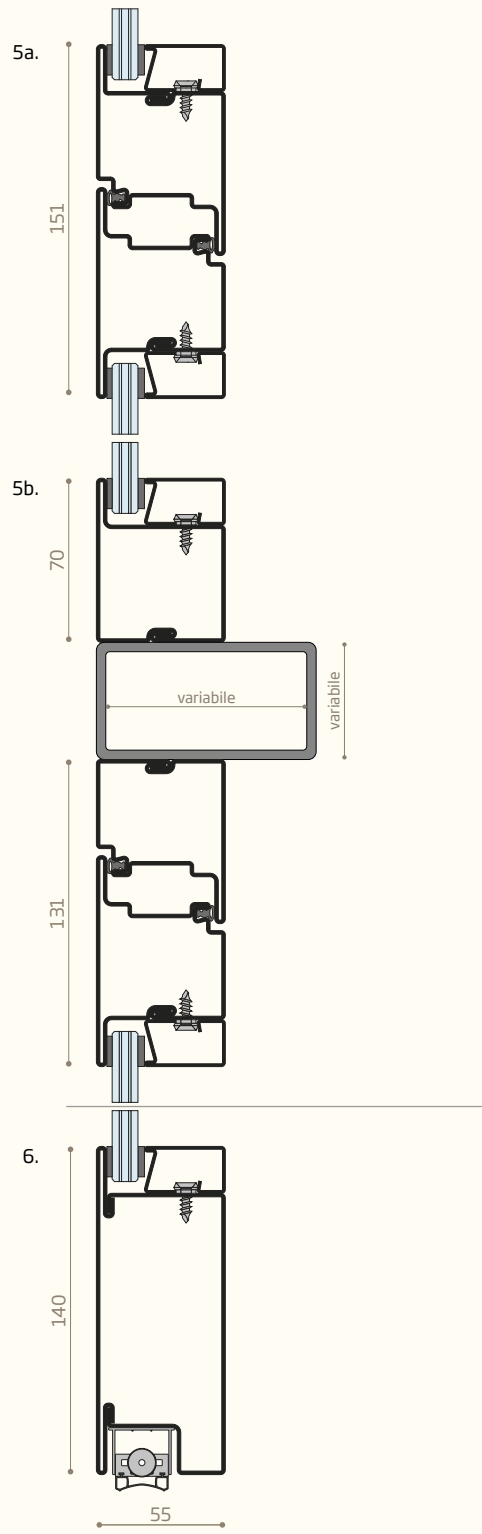
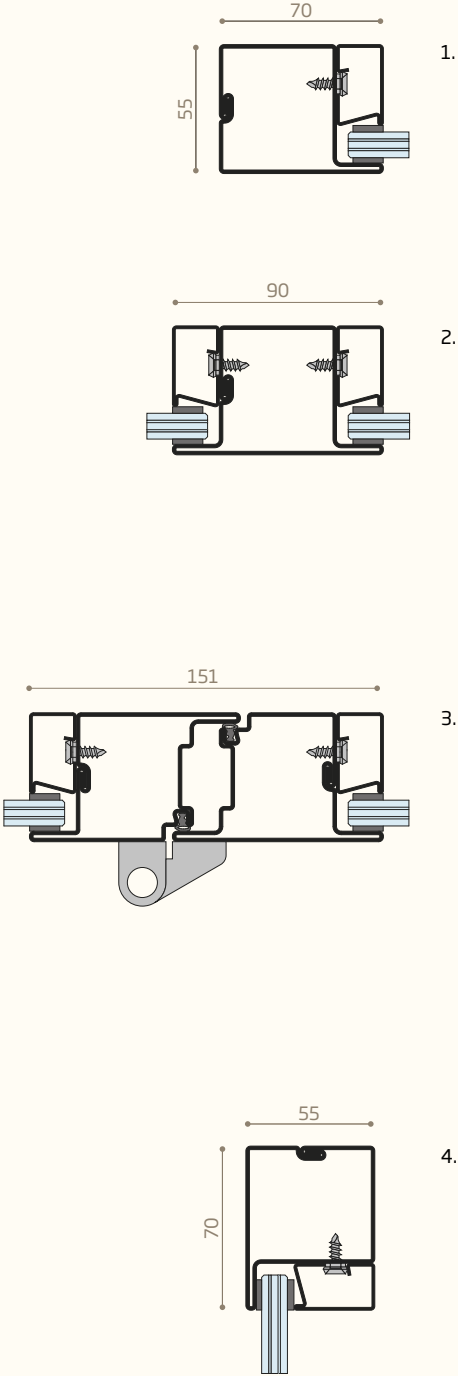
6.



typical sections SA-AF



fixed glazing with double-leaf door and transom
section 5 may vary between 5a (standard) and 5b (reinforced),
depending on the transom dimensions

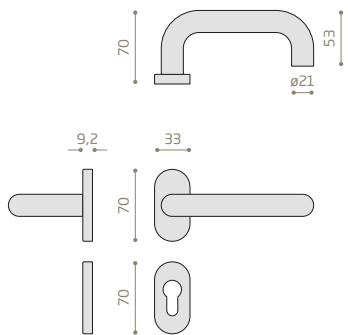


handles

The handles of fire-rated doors are designed to ensure both functionality and safety, combining sturdiness with ergonomic design for easy and secure access in case of emergency. Made from fire-resistant materials, they provide excellent grip and comply with safety regulations. The minimal design integrates harmoniously with the window profiles, contributing to a clean and contemporary aesthetic.

handle

Available in satin-finished stainless steel or painted to match the door, for perfect integration with the frame.

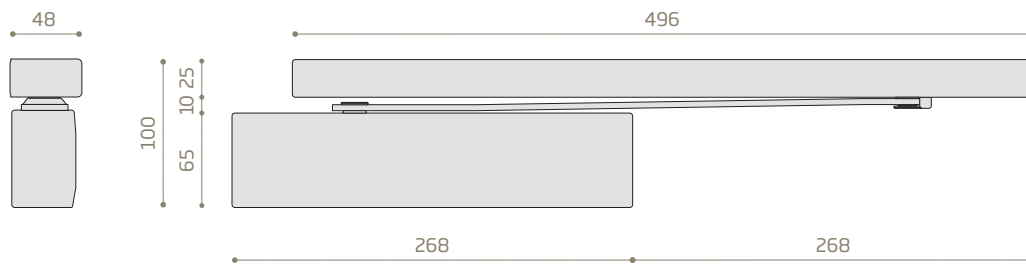


door closers

The door closers used on fire-rated doors ensure automatic and controlled closing of the leaf, as required by fire protection regulations. Suitable for single or double-leaf doors, they ensure the proper sequential alignment of the leaves and help maintain the performance of the frame.

exposed door closer

Equipped with an articulated arm mechanism, it ensures smooth and secure automatic door closing. The cover, matched to the door's color, protects the internal components and ensures aesthetic integration with the frame.

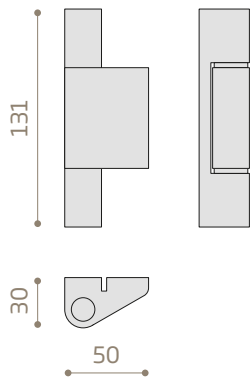


hinges

An essential structural element, the hinge supports the weight of the leaf and ensures its consistent movement over time. Certified to withstand a high number of opening and closing cycles, the hinges are designed with micrometric adjustments on multiple axes, contributing to the stability, precision, and durability of the frame.

hinge

Made of steel, the hinge has compact dimensions and is designed to be either burnished or painted to best match the finish of the frame, ensuring visual continuity and maximum aesthetic integration.







4F-AF

Secco Sistemi's structural façade represents an innovative design solution, ensuring high fire resistance performance and incorporating an elegant, contemporary design. It can be perfectly combined with other Secco fire-rated system EBE-AF, for the integration of operable door elements.

AVAILABLE METALS

corten steel

stainless steel (burnished or scotch brite)

painted zinc-magnesium steel

PERFORMANCE

fire resistance

EI 30-60-90 EW 30-60

AVAILABLE CERTIFICATIONS

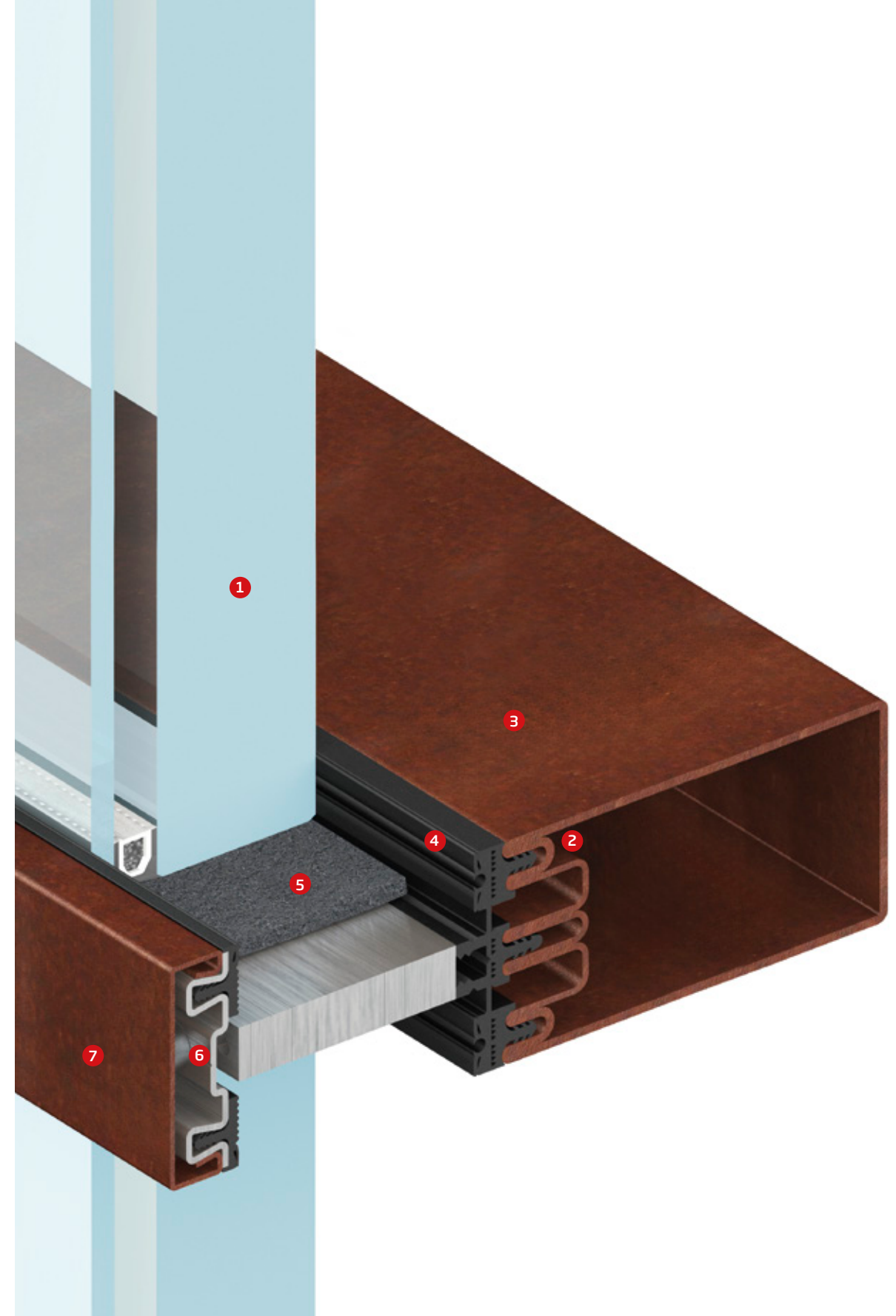
EN 1634-3



technology^{4F-AF}

The 4F-AF curtain wall with mullions and transoms is self-supporting and fire-resistant, certified EI 30-60-90 and EW 30-60. It features structural sections with depths ranging from 100 to 180 mm and a thickness of 50 mm. The tubular profiles are made through cold forming of metals, the tubular shape achieved by continuous laser welding of the profile (2). Sealing is ensured by gaskets (4) and intumescent tapes (5). The glass (1), with a thickness of up to 56 mm, is inserted from the front and secured to the mullions and transoms by a steel pressure plate (6) with integrated gasket holder. The external cover (7) is available in four materials: brass, corten steel, stainless steel, and painted zinc-magnesium steel, and features a snap-fit attachment.

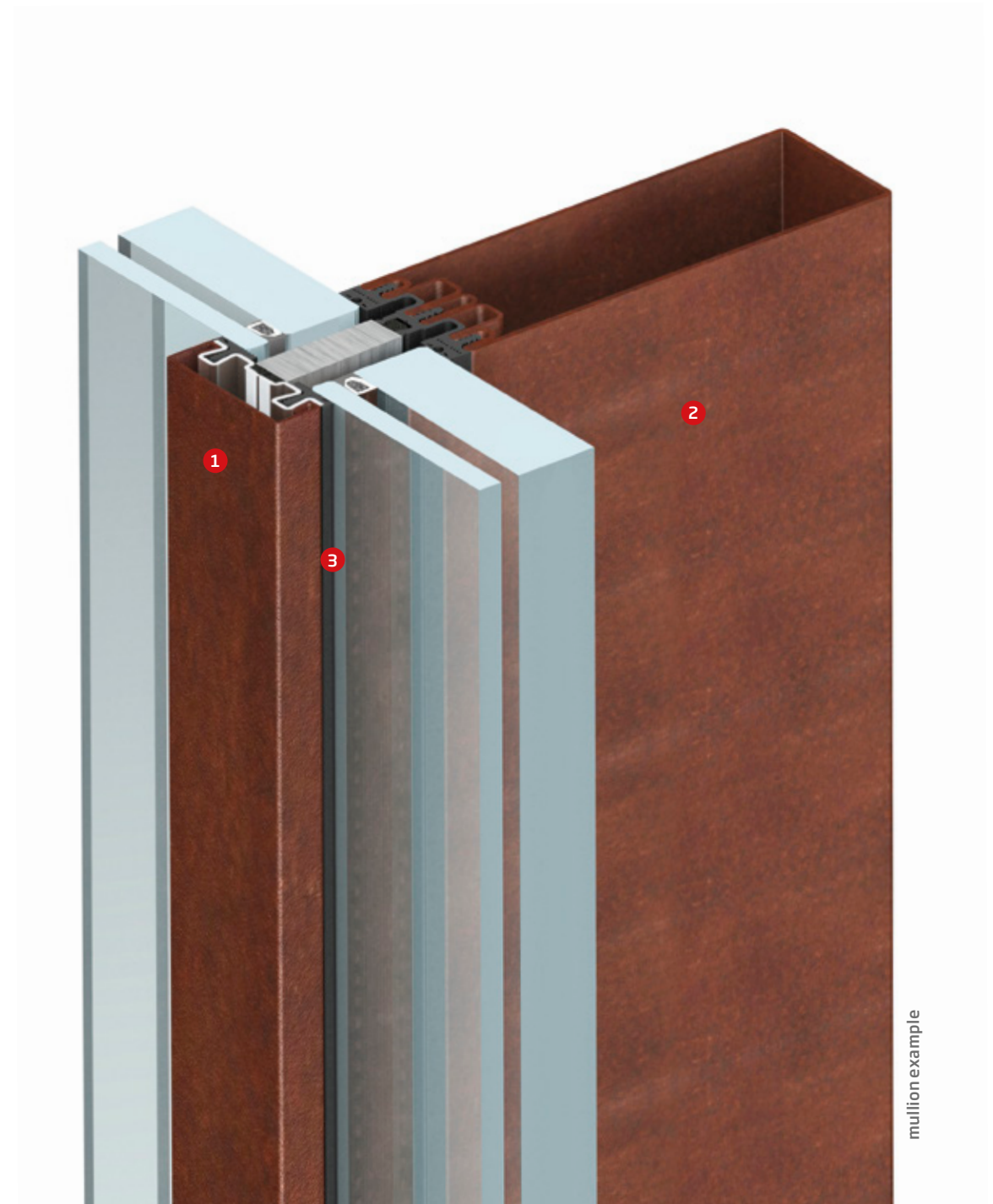
- 1. fire-rated glass
- 2. laser-welded joint
- 3. 100-120-150-180 mm structural profile
- 4. EPDM perimeter gasket system for airtightness and water drainage
- 5. intumescent tape around the perimeter of the glass
- 6. pre-drilled metal pressure plate with integrated gasket holder
- 7. snap-fit cover



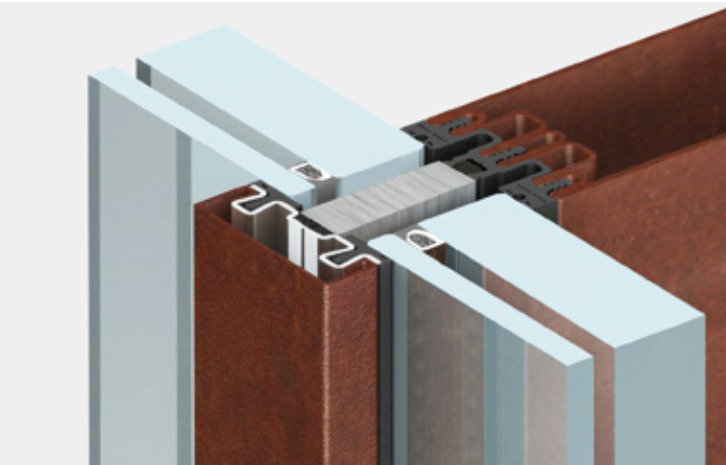
design^{4F-AF}

The 4F-AF façade stands out for its elegance and strength, unique in its kind, it is made from high-quality materials such as stainless steel and Corten, featuring clean, linear shapes and reduced visible dimensions, featuring a slim 50 mm front profile. The refined design is reflected in the joint between mullions and transoms, achieved using fully concealed stainless steel brackets.

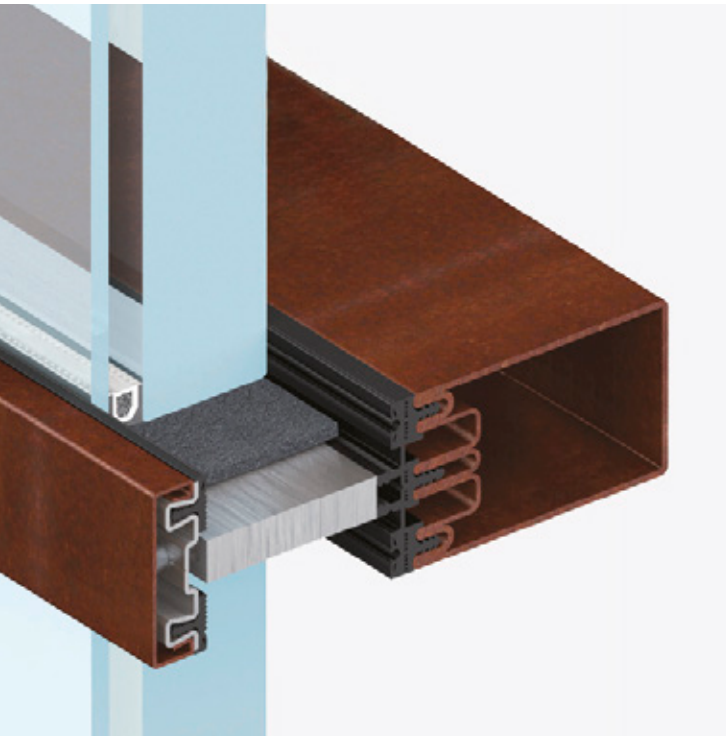
- 1. external cover of only 50 mm, available in four materials: brass, corten, stainless steel and painted zinc-magnesium steel
- 2. internal mullion/transom can have a depth of 100, 120, 150, 180 mm
- 3. gaskets



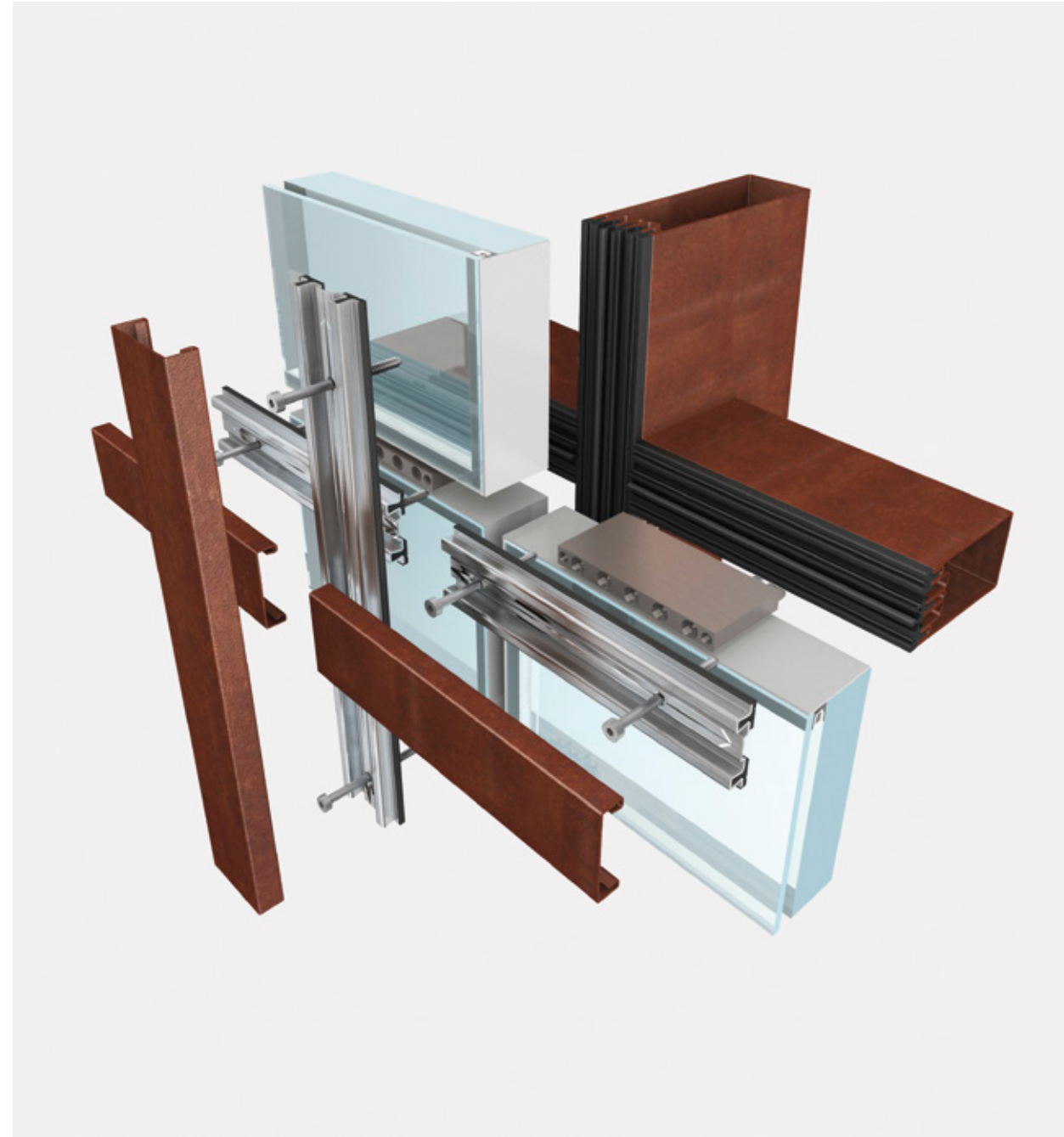
design^{4F-AF}



mullion
sec. 50 mm



transom
sec. 50 mm



exploded view of components
façade



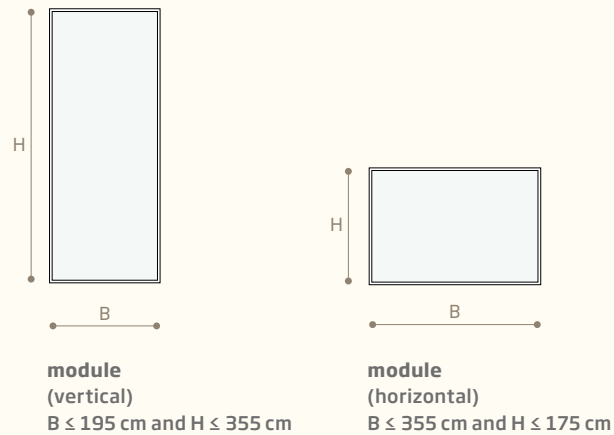
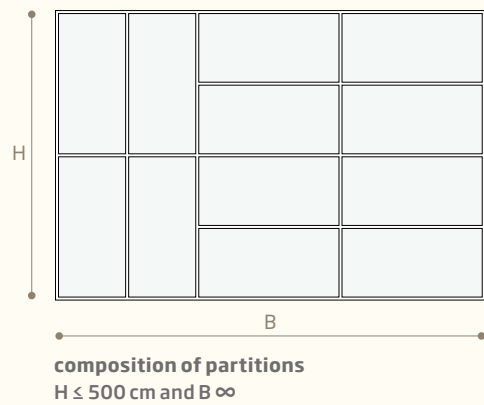
4F-AF - stainless steel
external view



4F-AF - painted zinc-magnesium steel
internal view

dimensions^{4F-AF}

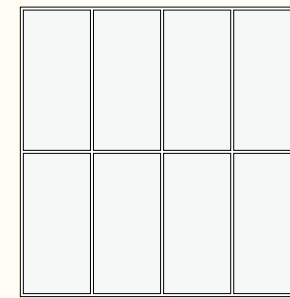
4F-AF system allows the creation of large-size façades, the single glass panels can reach maximum dimensions of 355 cm in width and 355 cm in height.



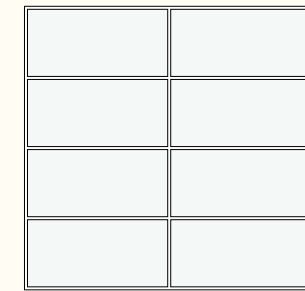
extensions according to EN1364-3
max certified dimensions vary depending on type, performance, materials, and supporting structure.

configurations^{4F-AF}

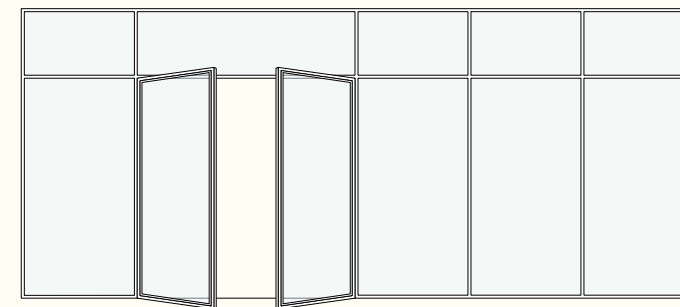
The façade is constructed with mullions and transoms that can be combined to create the desired grid layout, within the feasible dimensions, also allowing the integration of openings made with the EBE-AF system.



façade with single transom



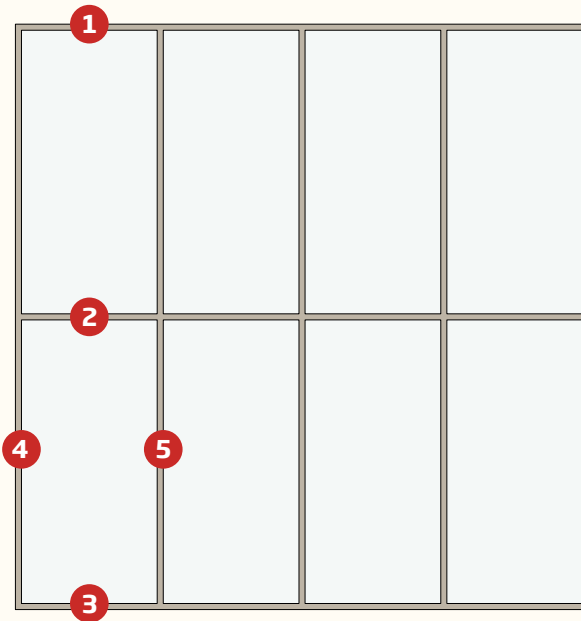
façade with multiple transoms



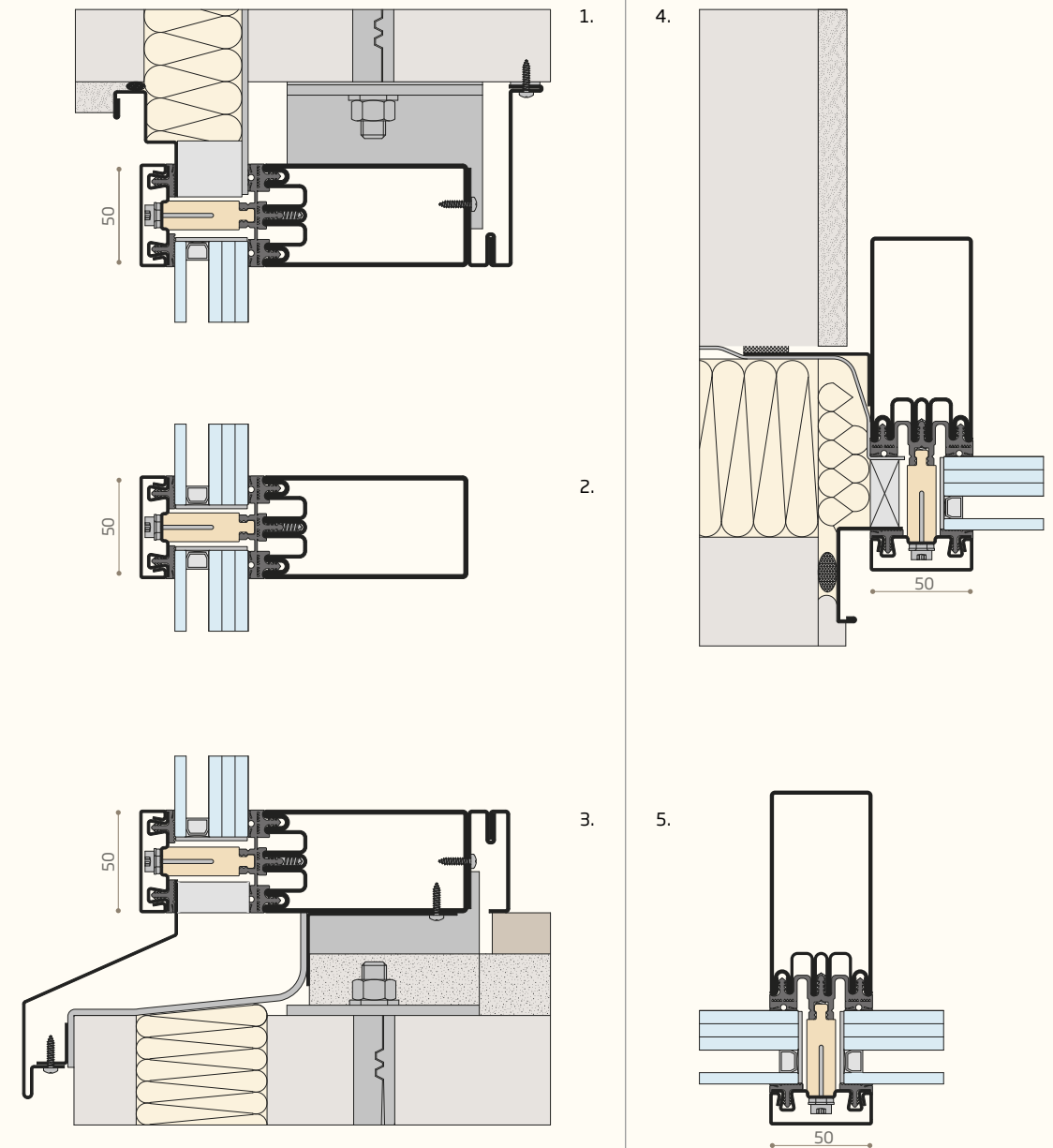
façade with door insert

typical sections^{4F-AF}

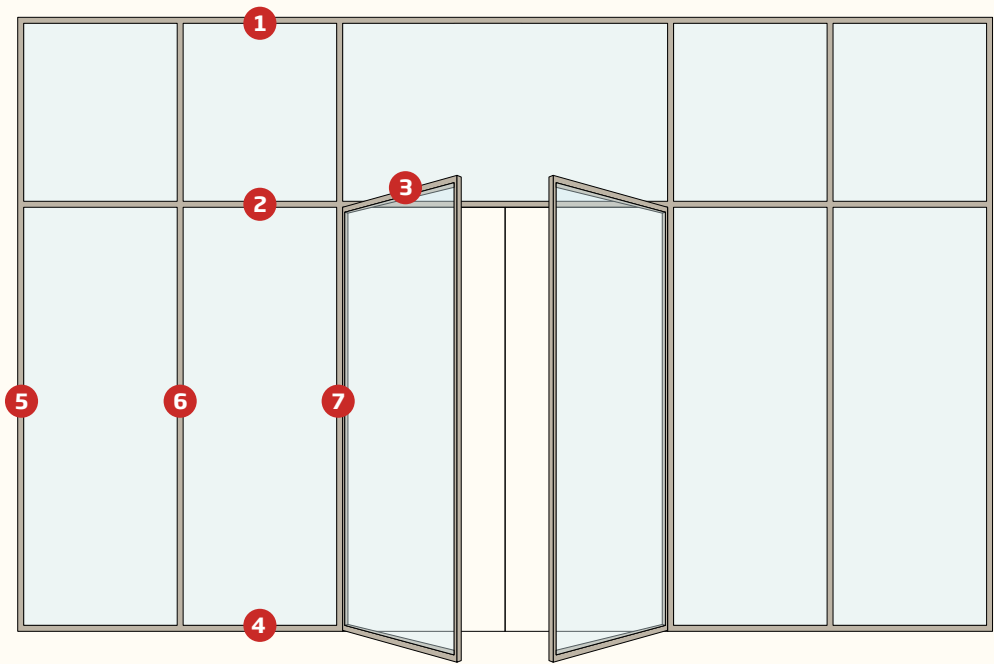
The façade profile sections always feature a front thickness of 50 mm, while the depth may vary according to the structural requirements of the façade.



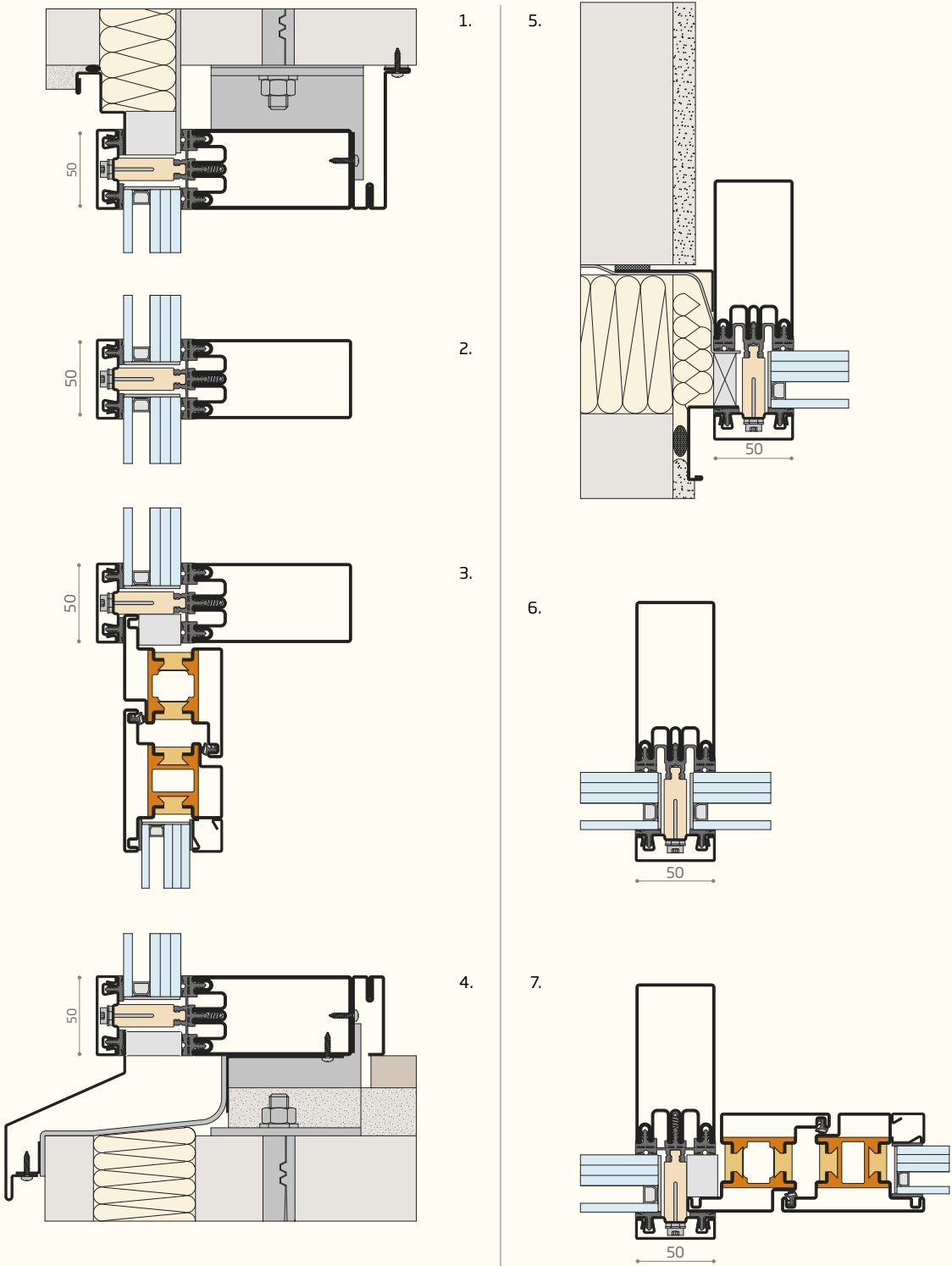
façade mullions and transoms



typical sections 4F-AF



mullion-and-transom façade with double-leaf door and transom window









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For 70 years it contributes to the evolution of window engineering: it invents systems and profiles that become reference models for the industry and Secco continues to improve them, for interpreting projects and trends in contemporary architecture and restoration.

Secco Sistemi produces every year 1 million linear meters of profiles in over 300 models that allow to realize 35 different types of openings in 4 precious metals - painted zinc-magnesium steel, stainless steel, corten steel and brass - and in 9 finishes. It adapts its industrial capacity to the artisanal sensibility to solve and produce more than 50 special projects every year.

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