

SOLEAL

evolution

THE UNIVERSAL
WINDOW



IMAGINE WHAT'S NEXT



TECHNAL



SOLEAL CASEMENT

/ A MULTIPLE CHOICE
OF SOLUTIONS

AN ALL-IN-ONE CONCEPT

SOLEAL proposes differentiating solutions for your wide-ranging projects.

SOLEAL is available in 2 versions: visible opening and minimal opening to adapt to all types of architectures. This offer has many applications: 1 and 2-leaf windows and patio doors, continuous horizontal windows, integrated or overlapping assemblies, fixed-light frames, with overpanel or side fixed lights, horizontal and vertical pivot frame, Italian-style and top-hung frame.

The majority of these applications are available in 2 modules:

- 65 mm with 30 mm thermal break
- 55 mm with 20 mm thermal break.

The patio doors are also offered with PRM threshold (for reduced mobility access).

The installation and cladding environments are the same as for SOLEAL doors and sliders.

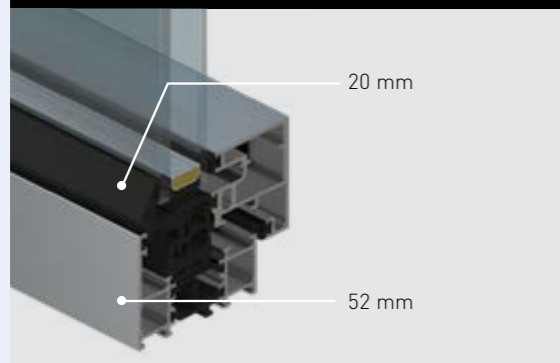
The SOLEAL evolution range combines technical performance and esthetic design providing elegance and modernity for new build or renovation.

A RECOGNIZED GENERATION OF WINDOWS

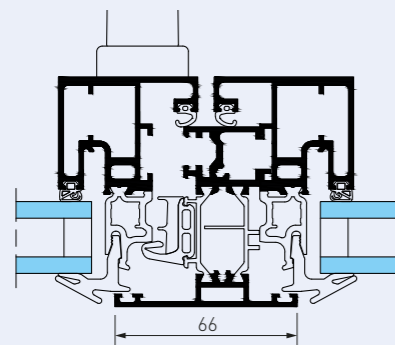
The SOLEAL range offers real thermal, acoustic and weather tightness performances which are the hallmarks of TECHNAL solutions. SOLEAL's high performances meet the current regulatory requirements.



MINIMAL



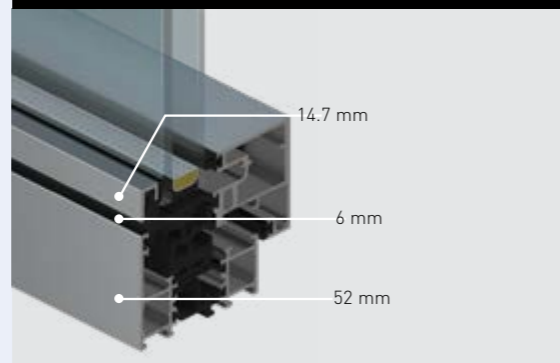
Slim and minimalist lines reminds the steel look of joinery for office buildings. The flashing gasket conceals the sash by merging the opening and fixed parts.



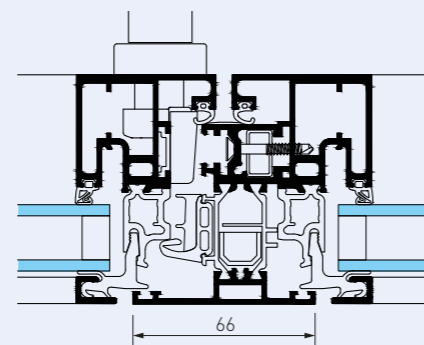
Available in 55 mm and 65 mm versions



MINIMAL CLIP-ON TRIM



Modernity of the joinery thanks to the clip-on-trim which discreetly highlights the presence of the opening sash.

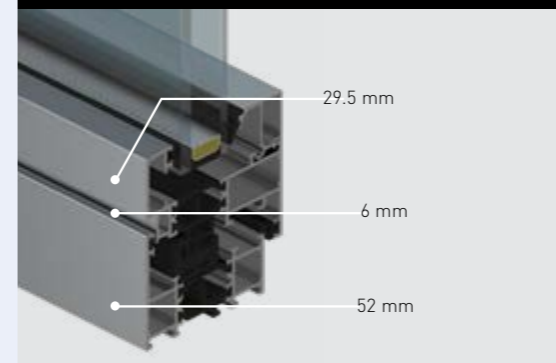


Available in 55 mm and 65 mm versions

Horizontal section views - 2-leaf window or patio door with central rebate

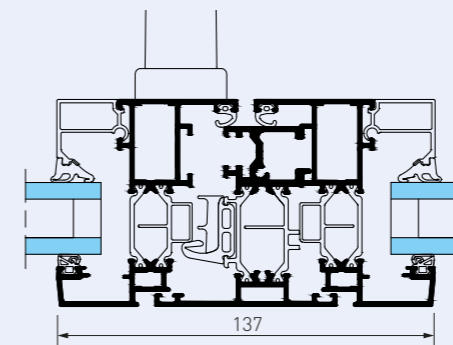


VISIBLE



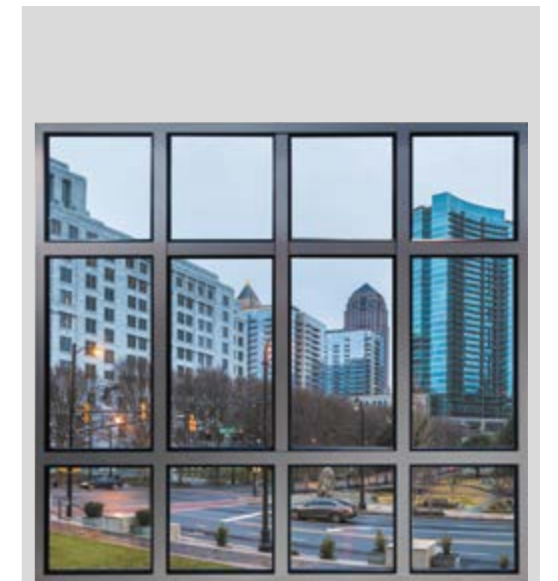
Distinct high quality look with a visible structure balanced between fixed frame and opening sash. Solution available in a concealed hardware version: specific design with concealed accessories*.

*65 mm version

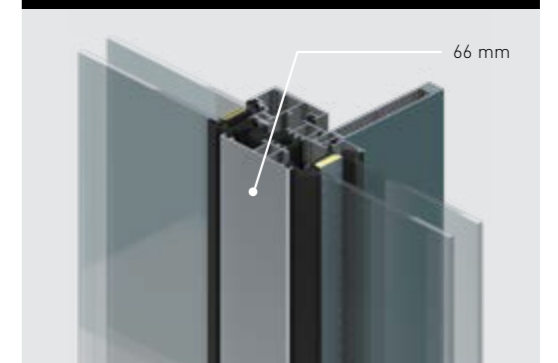


Available in 55 mm and 65 mm versions

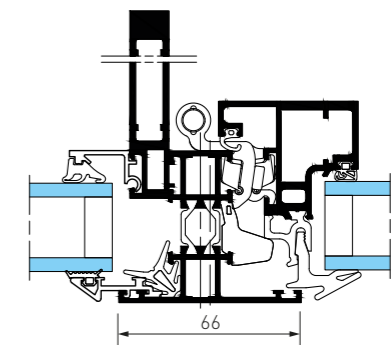
Horizontal section view - 2-leaf window of patio door with central rebate



EQUILIBRE



A harmonious balance between transoms and mullions. An identical exterior visible structure over the entire composition. Composite assemblies for large dimensions while retaining a 66 mm aluminum outer sight line.



Available in 55 mm version

SOLEAL

/ THE UNIVERSAL WINDOW

SOLEAL VISIBLE



SOLEAL MINIMAL



KEY INNOVATIONS AND FEATURES

DESIGN

- Various versions available to adapt to all your projects:
- A minimal opening sash with slim and minimalist lines.
- A "clip-on-trim" minimal opening sash creating a modern effect.
- A visible opening sash with visible structure for a distinct high quality effect. Solution available in a concealed hardware version for a refined design*.
- A minimal "equilibre" version which highlights the symmetry and slenderness of the compositions (55 mm version only).
- Concealed drainage with invisible water evacuation on the opening sashes and on the fixed transoms for all applications.
- Architraves of various designs.

MULTIPLE APPLICATIONS

- Fixed frame.
- Open-in: 1 and 2-leaf open-in, bottom-hung, tilt/turn, composite assemblies.
- Open-out: projected top-hung, parallel* Italian-style frame, 1 and 2-leaf*.
- Special opening applications: tilt/slide*, horizontal* and vertical* pivot frame.
- Fire access opening sash.

THERMAL WEATHER TIGHTNESS AND ACOUSTIC PERFORMANCE

- The SOLEAL casement meets the current and future regulations and permeability criteria for low consumption buildings, and the acoustic reduction requirements in urban environments.

* 65 mm version

LOCKING SYSTEMS AND SAFETY

- Multiple combinations offered, up to 6 locking points with or without key locking.
- Option of handles centered on 2-leaf frame central mullion reduced to 66 mm (minimal opening sash) and 116 mm (visible opening sash).
- TECHNAL-design handles available on all applications for coherent styling whatever the type of opening sash, adaptable to doors and sliders.
- Windows subjected to delayed forcible entry tests with class CR2 results according to the EN-1627-30 standard.
- Fire safety: application certified C+D.

ACCESSIBILITY

- Specially adapted for easy access on all available applications:
- Easy opening/closing
- PRM embeddable threshold
- Adaptable handle height

SOLEAL / A TAILOR-MADE DESIGN

PURITY, SLENDERNESS AND ELEGANCE



Minimal version



Minimal clip-on-trim version



Visible version



Concealed drainage



Visible hardware



Concealed hardware

A WIDE CHOICE OF LOCKING SYSTEMS



Stainless steel handle



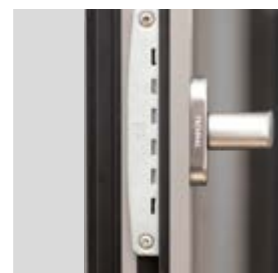
Exclusive TECHNAL-design handle



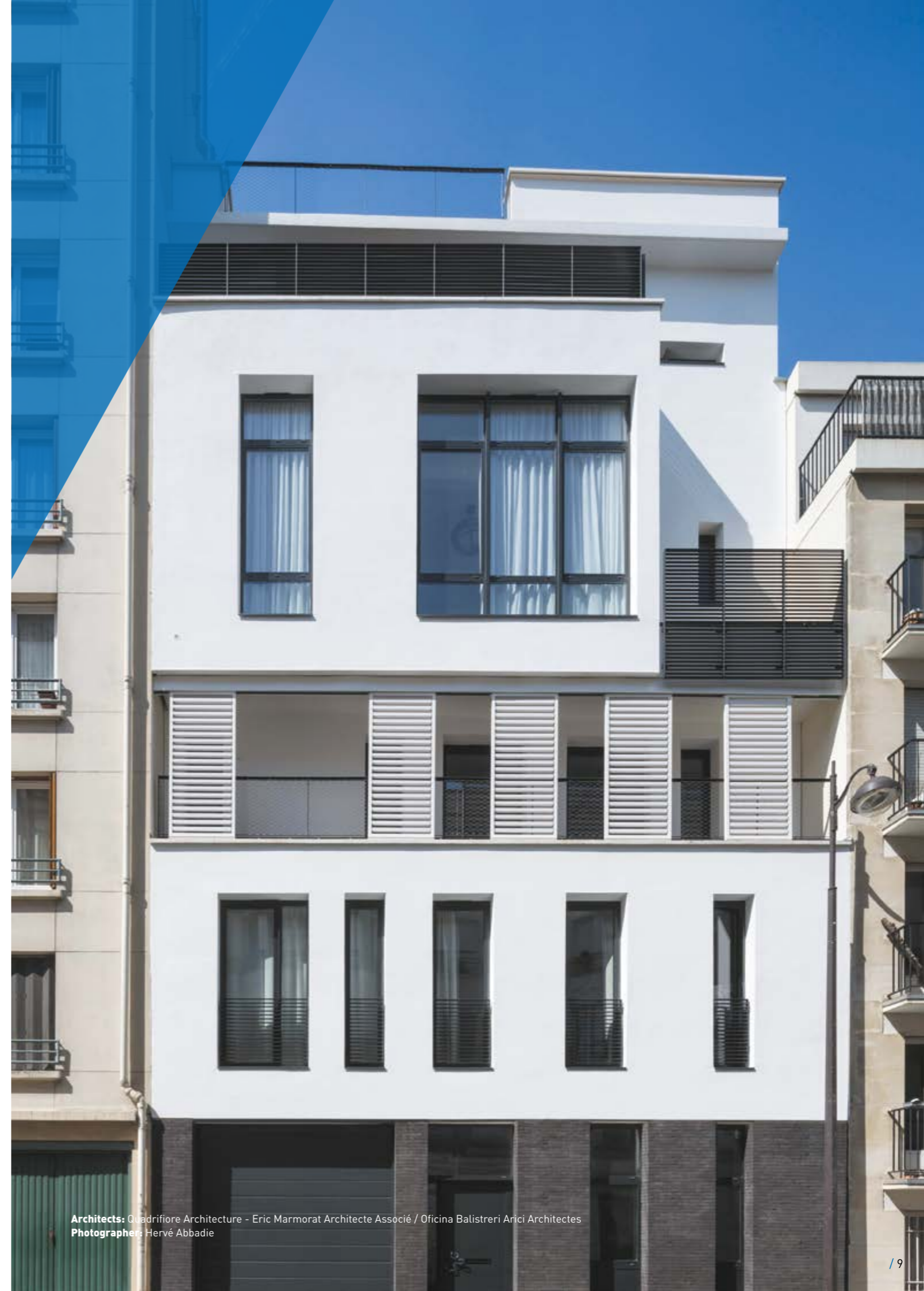
Exclusive TECHNAL-design handle with lock



Classic handle



Locking systems operated by bidirectional espagnolette mechanism

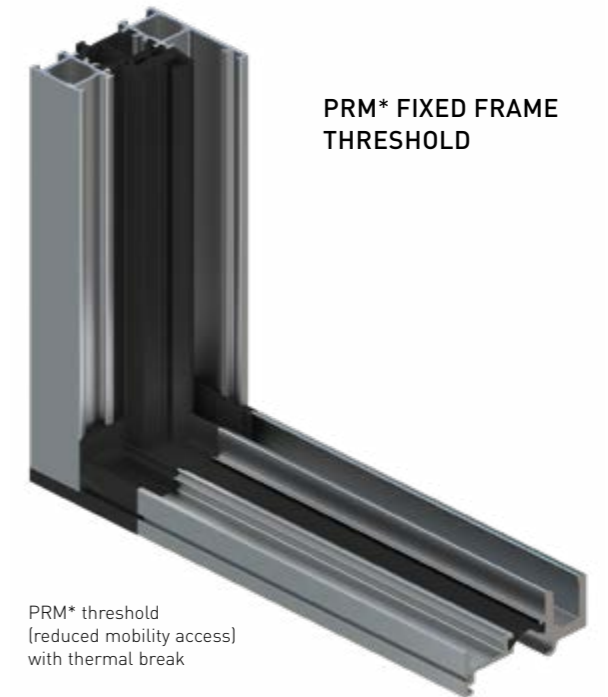




SOLEAL / FOR PERSONS WITH LIMITED MOBILITY

- The SOLEAL PRM* threshold meets the French Decree regulating door and patio door access while ensuring leaktightness.
- Handle height adaptable to the accessibility needs.
- Easy opening/closing.

* Provided that the threshold is partially embedded



PRM* FIXED FRAME
 THRESHOLD

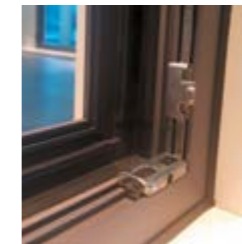
PRM* threshold
 (reduced mobility access)
 with thermal break

SECURITY

- Windows with a variety of locking options with 2 to 6 locking points according to the required reinforcement.
- Windows tested for break-in delaying with class CR2 results according to the EN-1627-30 standard.



Bottom locking point on sash



Bottom locking point on frame



Top locking point



Intermediate locking point on handle side and pivot

SOLEAL CASEMENT 65-55

/ ADAPTABILITY AND DIVERSITY

MULTIPLE APPLICATIONS

- Fixed frame.
- Open-in: 1 and 2-leaf open-in, bottom-hung, tilt/turn, composite assemblies.
- Open-out: Projected top-hung, parallel Italian-style frame⁽¹⁾, 1 and 2-leaf⁽¹⁾.
- Special opening applications: tilt/slide⁽¹⁾ horizontal⁽¹⁾, vertical⁽¹⁾, pivot frame.

⁽¹⁾ 65 mm version

WIDE RANGE

SOLEAL features a customizable design in 3 versions:

- "Contemporary" with slim and elegant lines for office or residential architectural projects.
- "Classic" with curved lines for a cosier appearance for residential projects.
- "Tradition"⁽²⁾ for refurbishing period joinery in historic buildings by identical versions.

⁽²⁾ 55 mm version

MINIMAL OPENING SASH (OPEN-IN) WITH GLASS THICKNESS CAPACITIES:

- up to 42 mm for 65 mm modules
- up to 32 mm for 55 mm modules

VISIBLE OPENING SASH (OPEN-IN AND OPEN-OUT*) WITH GLASS THICKNESS CAPACITIES:

- up to 52 mm for 65 mm modules
 - up to 42 mm for 55 mm modules
- The fixed parts common to the 2 types of opening sash can accommodate glazing up to 52 mm for 65 mm modules.

CONCEALED HARDWARE ON VISIBLE OPENING SASH

Available with 110° opening and maximum weight: 160 kg per leaf. Available for 1 and 2-leaf frames, with side-hung open-in and tilt-turn opening sash.

CONTEMPORARY LINE
Straight and minimal design

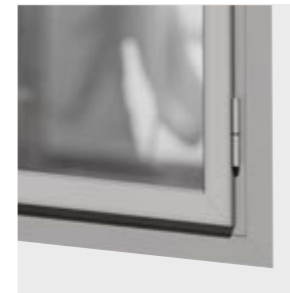
CLASSIC LINE
Smooth and curved design

TRADITION LINE*
Beveled and molded design

EXTERIOR VIEWS



INTERIOR VIEWS



	VISIBLE		MINIMAL CLIP-ON TRIM		MINIMAL		EQUILIBRE*	
	SOLEAL 55	SOLEAL 65	SOLEAL 55	SOLEAL 65	SOLEAL 55	SOLEAL 65	SOLEAL 55	SOLEAL 65
Contemporary	x	x	x	x	x	x	x	
Classic	x	x	x	x	x	x		
Tradition*	x							

* 55 mm version



SOLEAL CASEMENT 65-55

/ ADVANCED PERFORMANCE

LARGE DIMENSIONS

- Possible height up to H. 2.70 m x W. 1.00 m (open-in with 3-leaf hinges).
- Max. weight per leaf up to 130 kg with pivot hinge.

THERMAL AND SEALING PERFORMANCE

SOLEAL 65 mm version

- Optimized heat loss values U_w up to $0.9 \text{ W/m}^2\cdot\text{K}$, $S_w = 0.5$ and $TL_w = 0.61$
1-leaf module 65 window W. 1.25 m x H. 1.48 m, triple glazing ($U_g = 0.5 + \text{warm edge}$)
- Very low air permeability Q4 up to $0.02 \text{ m}^3/(\text{h}\cdot\text{m}^2)$.

SOLEAL 55 mm version

- U_w up to $1.2 \text{ W/m}^2\cdot\text{K}$, $S_w = 0.5$ and $TL_w = 0.61$
1-leaf module 55 window W. 1.25 m x H. 1.48 m, triple glazing ($U_g = 0.6 + \text{warm edge}$)
- Low air permeability Q4 up to $0.06 \text{ m}^3/(\text{h}\cdot\text{m}^2)$.

ACOUSTIC PERFORMANCE ADAPTED TO THE URBAN ENVIRONMENT

SOLEAL 65 mm version

- Very good anti-noise fencing: up to 43 dB (RA, Tr) of acoustic reduction.
1-leaf tilt/turn module 65 mm Visible version with silence glazing

SOLEAL 55 mm version

- Acoustic reduction: up to 40 dB (RA, Tr)
1-leaf tilt/turn module 55 mm Visible version with silence glazing

SECURITY

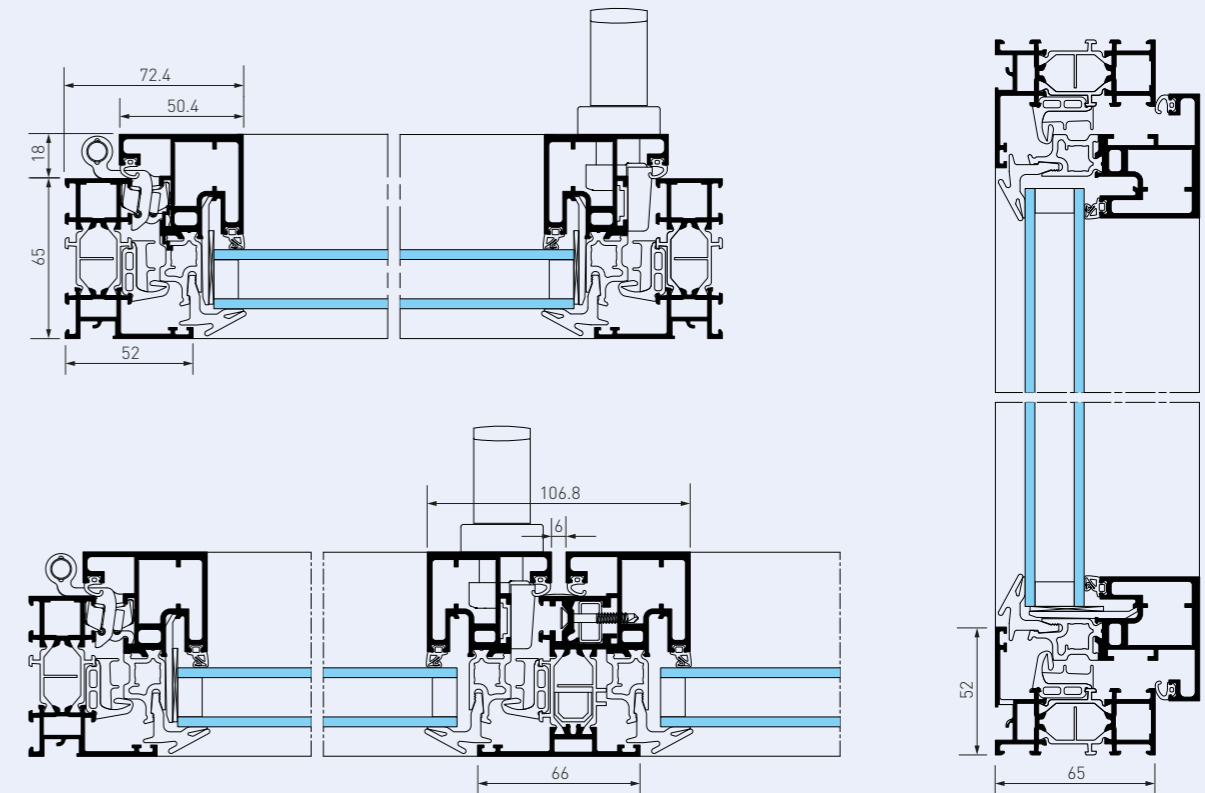
Level 2 break-in resistance class according to the EN-1627-30 standard for:

- 1-leaf tilt/turn window and patio door
- Top-hung, Italian-style window

SECTIONS

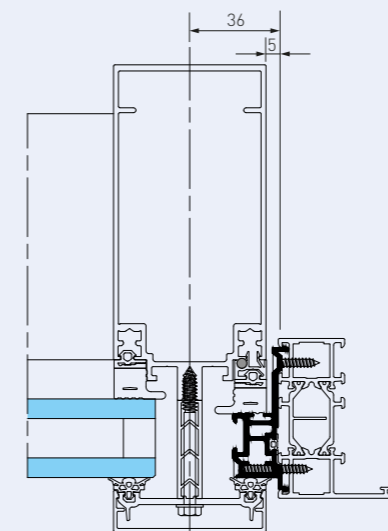
SOLEAL 65 MINIMAL OPEN-IN

1 AND 2-LEAF WINDOW AND PATIO DOOR

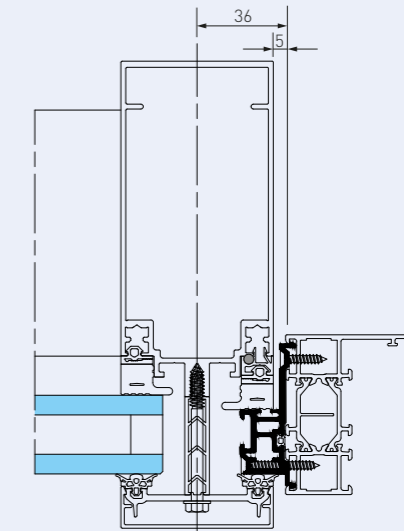


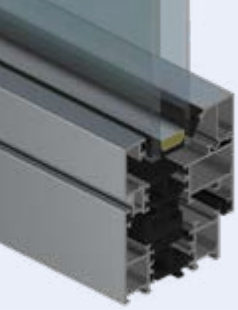
INTEGRATION INTO CURTAIN-WALL FACADE (SPINAL)

Open-in



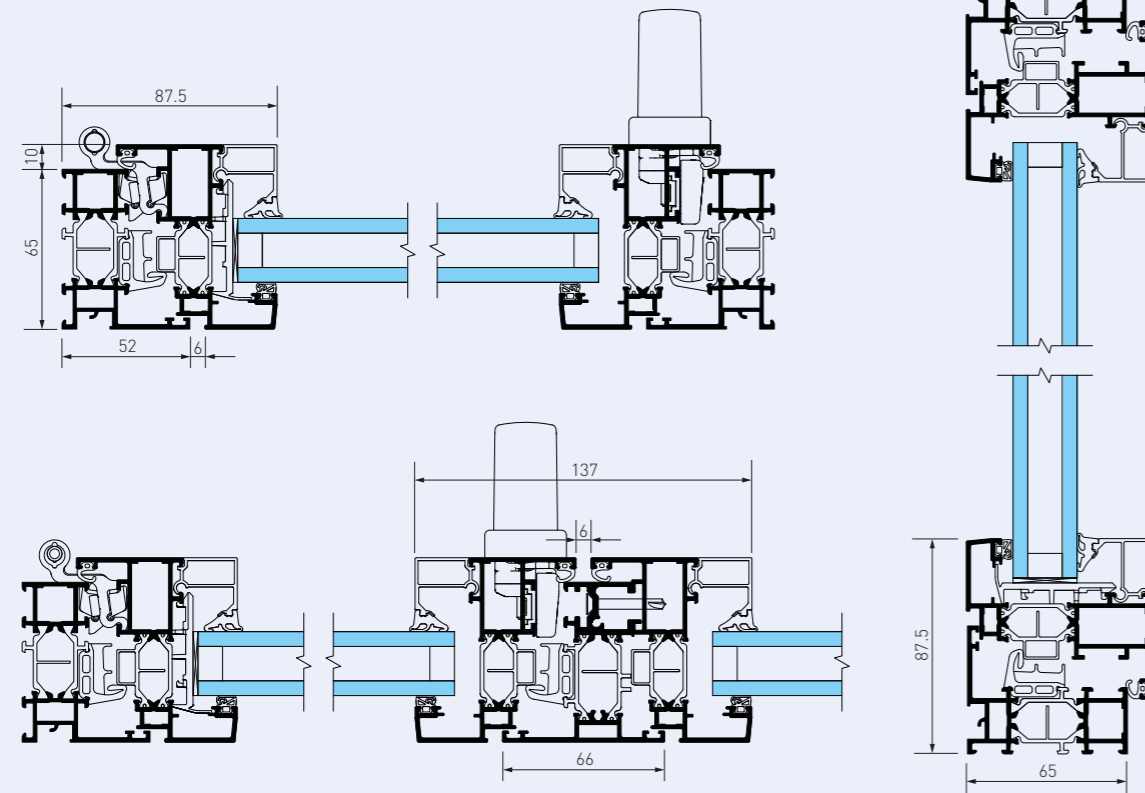
Open-out



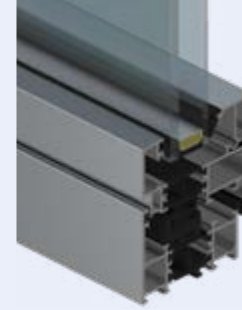
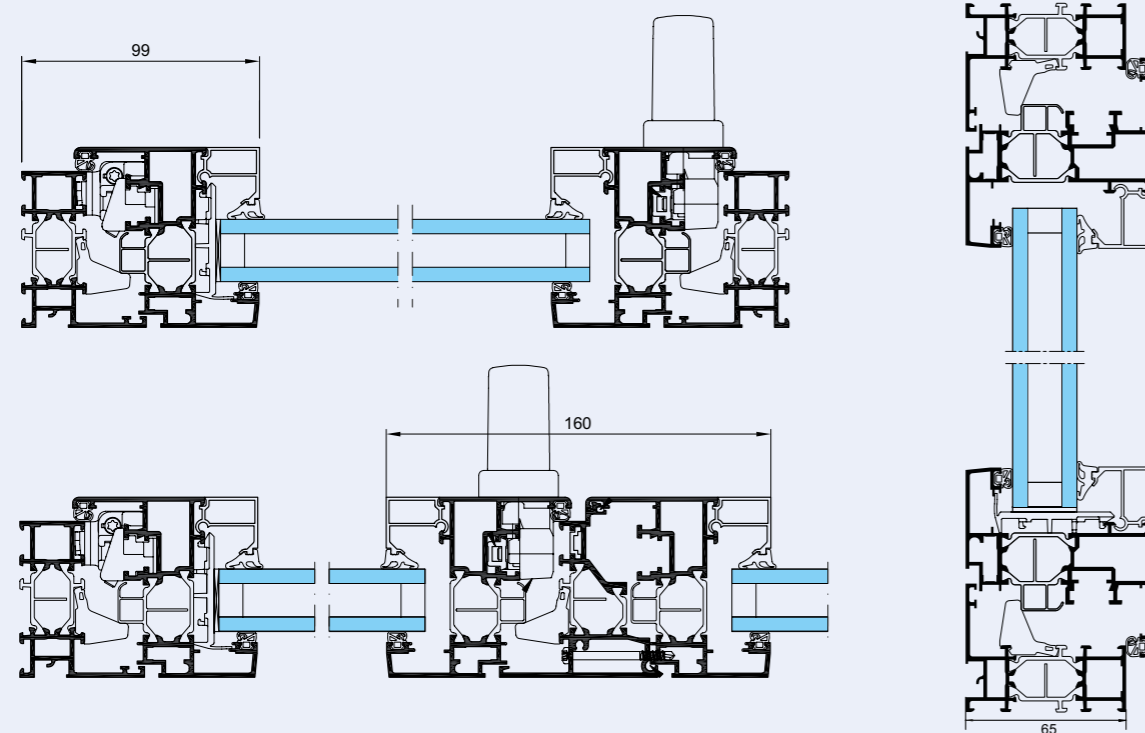


SOLEAL 65 VISIBLE
OPEN-IN

1 AND 2-LEAF WINDOW AND PATIO DOOR

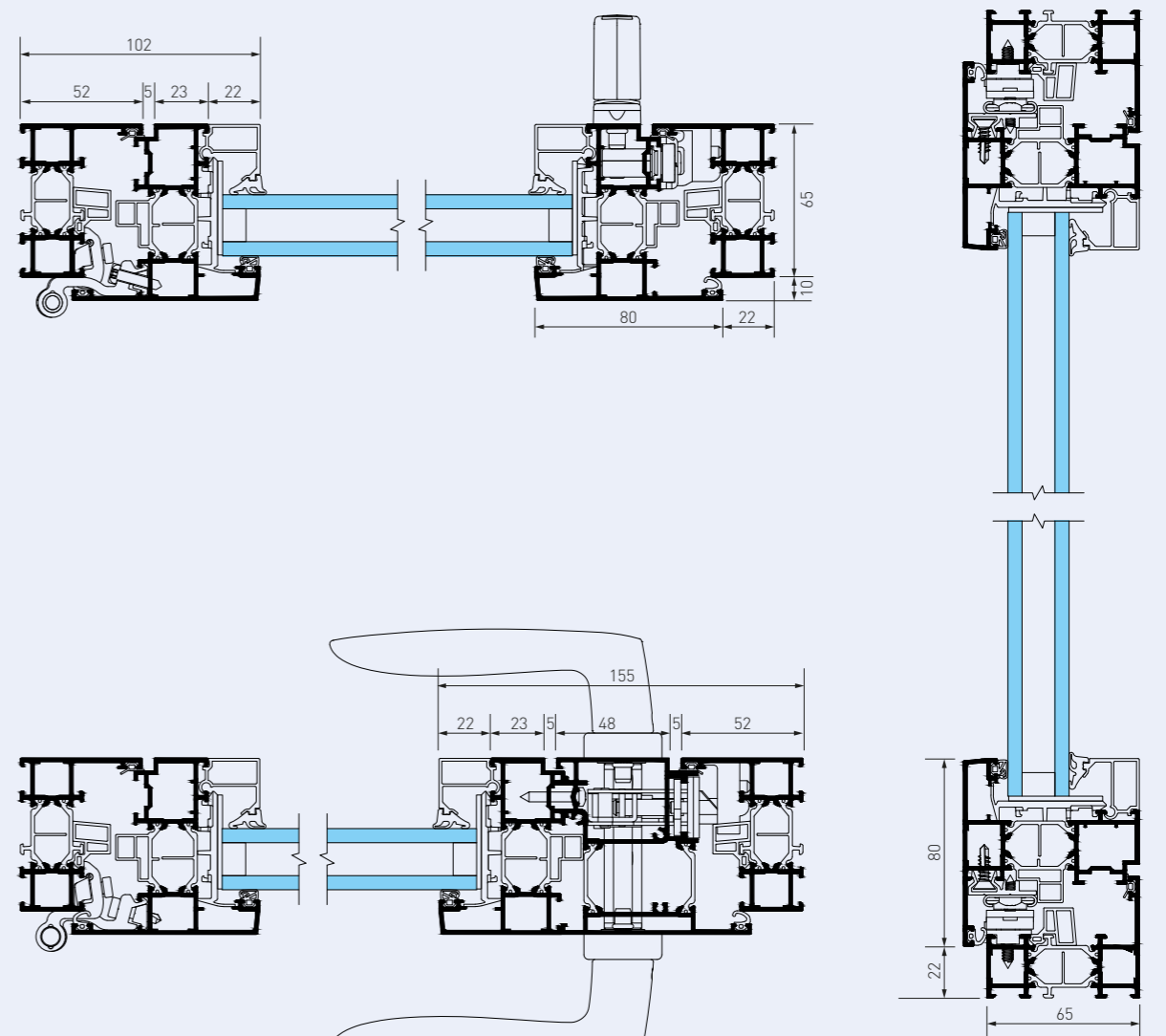


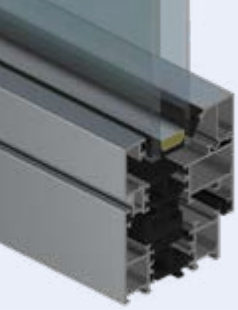
CONCEALED HARDWARE



SOLEAL 65 VISIBLE
OPEN-OUT

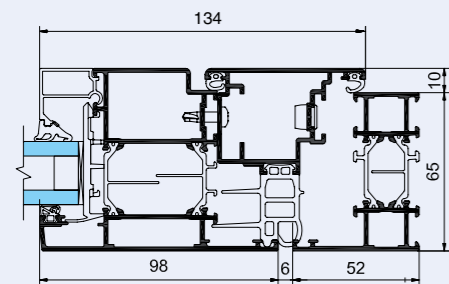
1 AND 2-LEAF WINDOW AND PATIO DOOR



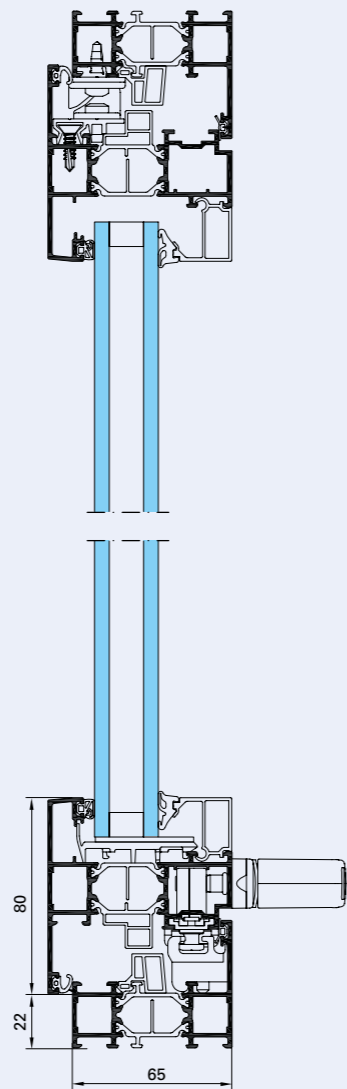


SOLEAL 65 VISIBLE

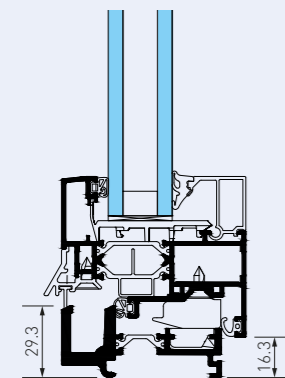
HORIZONTAL AND VERTICAL PIVOT FRAME



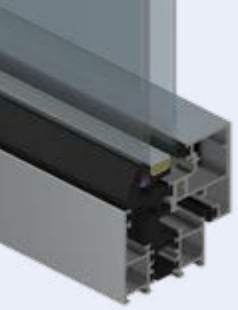
TOP-HUNG ITALIAN-STYLE FRAME OPEN-OUT



2-LEAF PATIO DOOR WITH PRM THRESHOLD OPEN-IN



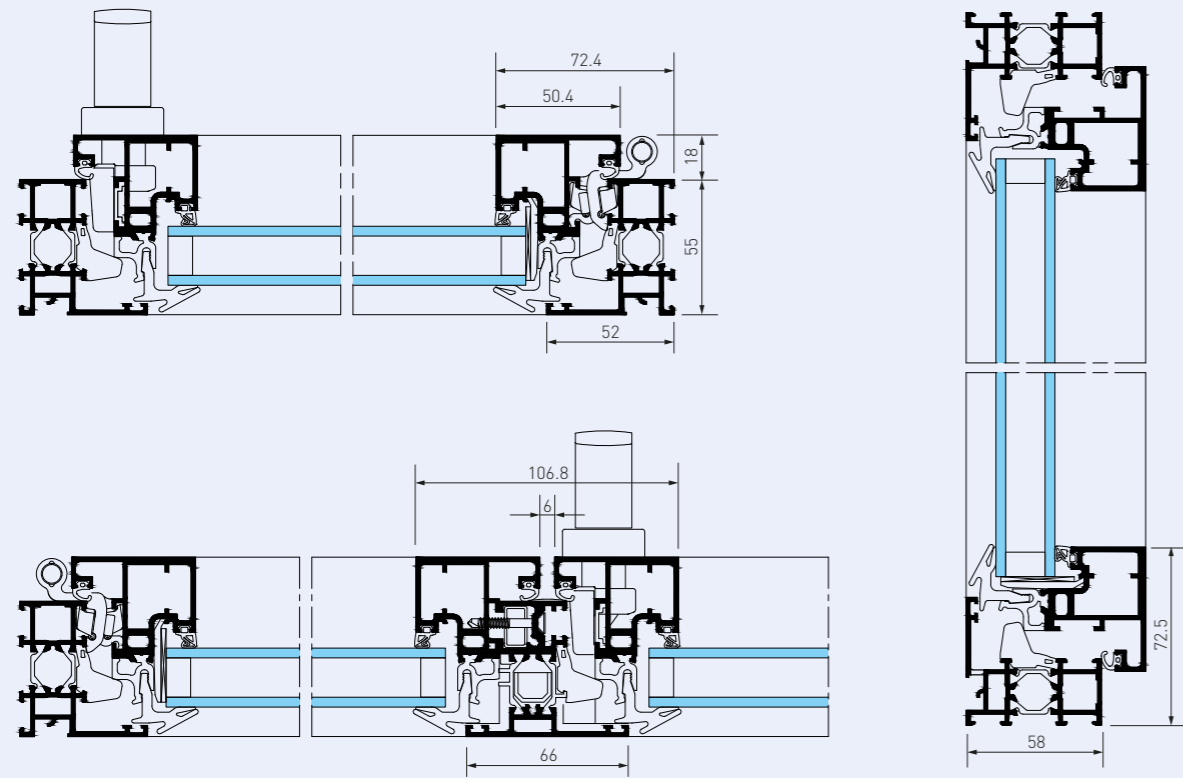
Architectural agency: AIA Architectes
Photographer: Erick Salliet



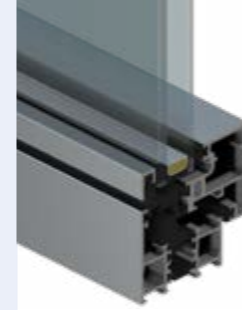
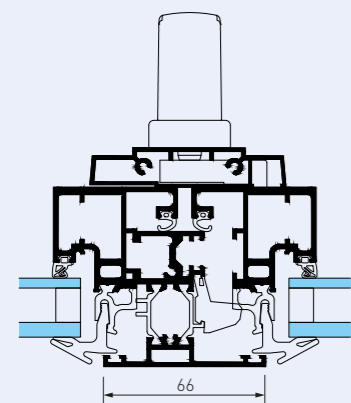
SECTIONS

SOLEAL 55 MINIMAL

1 AND 2-LEAF WINDOW AND PATIO DOOR



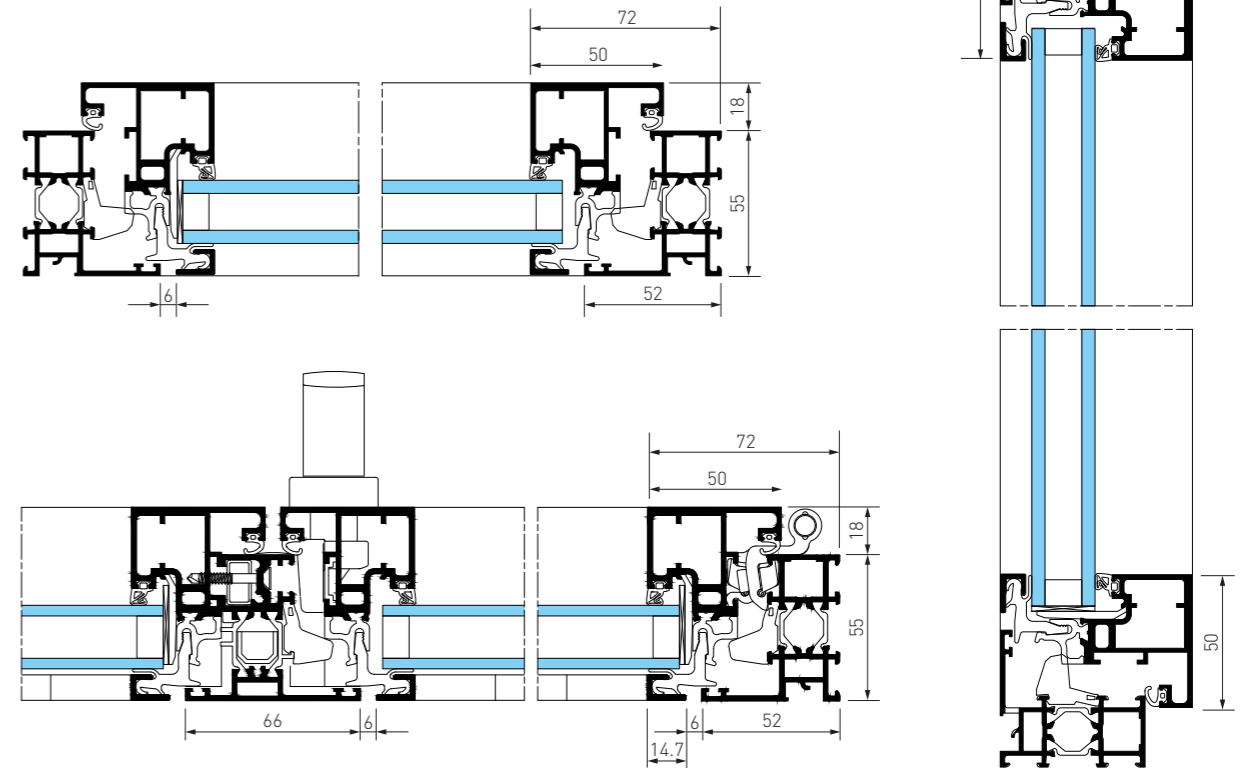
CENTERED HANDLE OPTION



SECTIONS

SOLEAL 55 MINIMAL
CLIP-ON TRIM VERSION

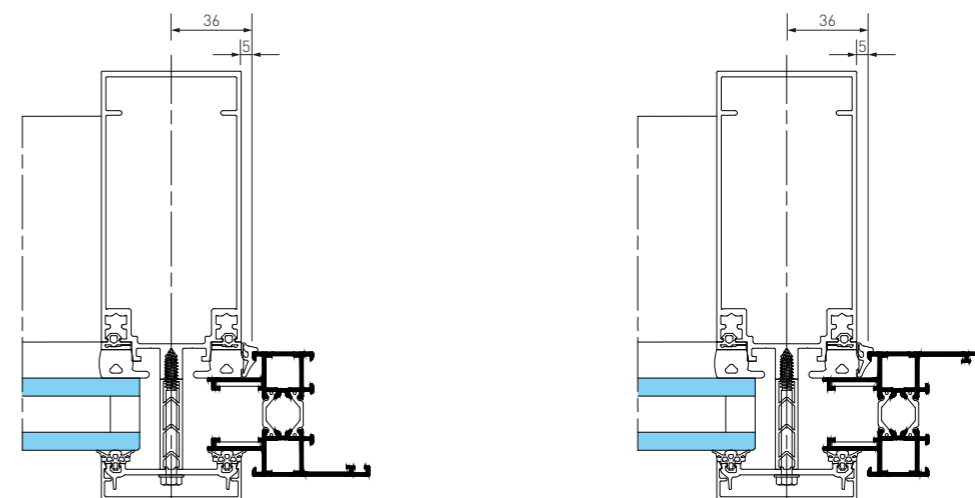
1 AND 2-LEAF WINDOW AND PATIO DOOR

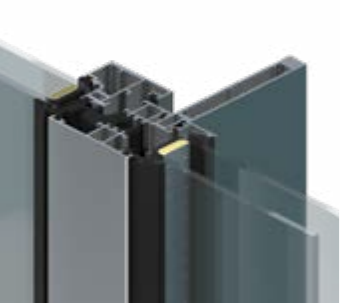


INTEGRATION INTO CURTAIN-WALL FACADE (SPINAL)

Open-in

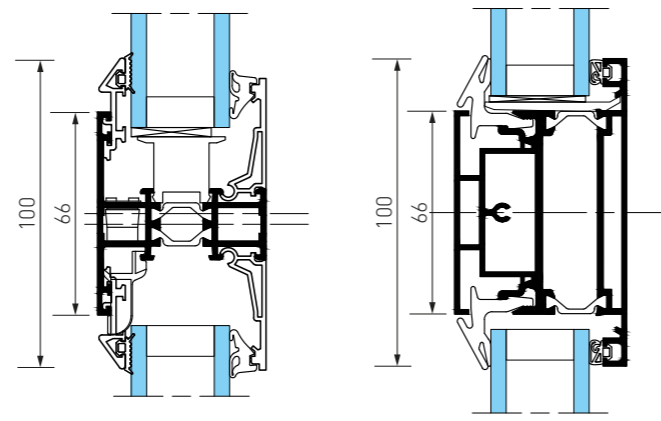
Open-out





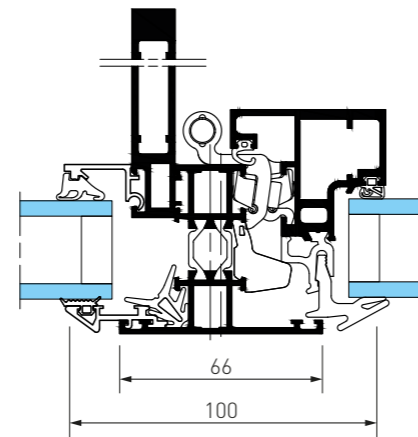
SOLEAL 55 MINIMAL EQUILIBRE VERSION

- This "equilibre" version has symmetrical outer sight line widths of 66 mm on all applications.
- The integration of the minimal opening sashes gives the composite frame slim and elegant lines.
- The different vertical or horizontal 95 or 120 mm interior reinforcement solutions, allow façade panels to be designed on a floor-to-floor height (3 m).
- The drainage completely integrated in the transom gives a smooth and flat exterior appearance

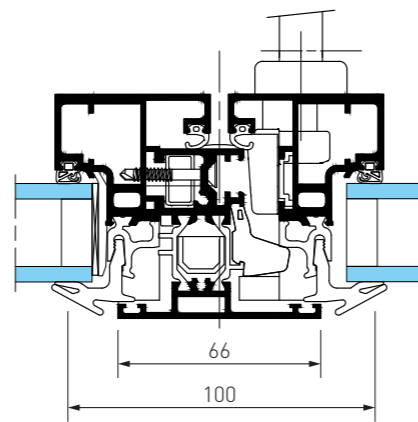


1 Fixed transom 66 mm with concealed drainage

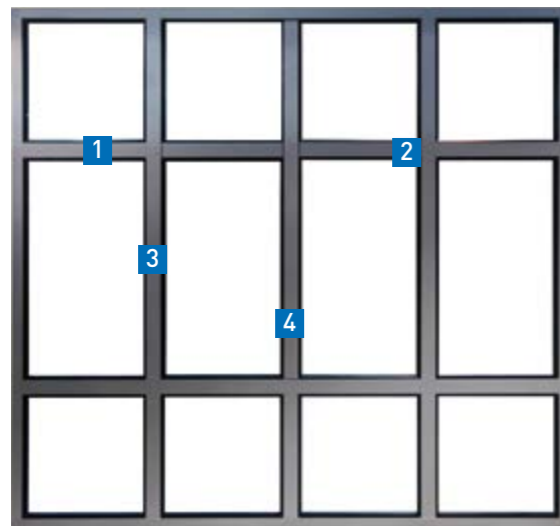
2 Opening sash transom



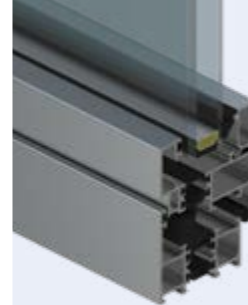
3 Flat exterior appearance of the 66 mm mullion with aluminum reinforcement



4 Slim opening sash central mullion 2-leaves = 66 mm

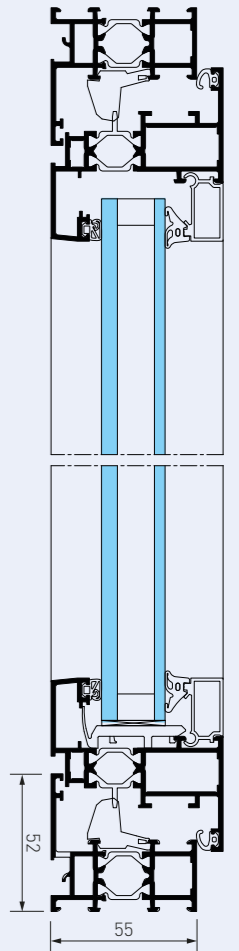
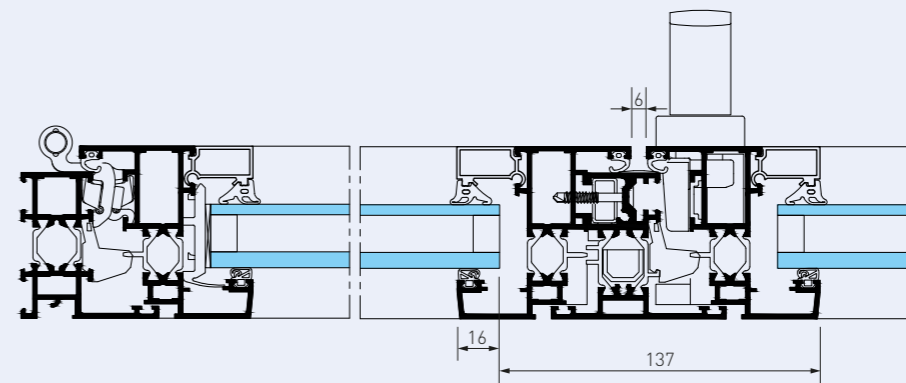
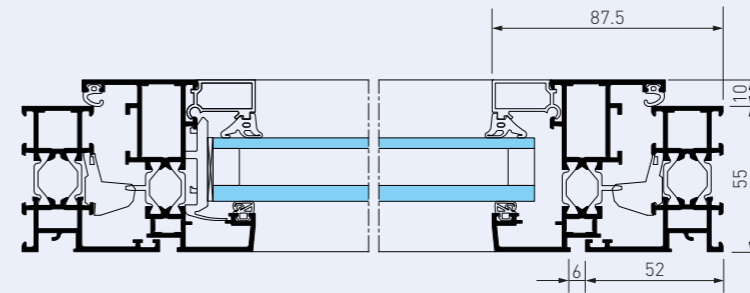


Composite frame with 2 open-in leaves with bottom fixed-light and fixed side parts

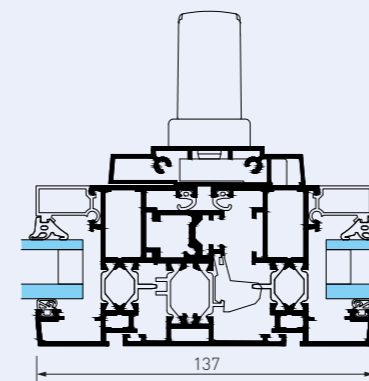


SOLEAL 55 VISIBLE

1 AND 2-LEAF WINDOW AND PATIO DOOR



CENTERED HANDLE OPTION

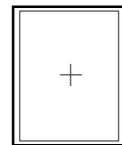


APPLICATIONS 65 and 55

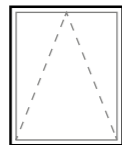
All these applications are available with concealed drainage.
All patio door applications can be supplied with PRM threshold.

REPRESENTATIONS VIEWED FROM THE EXTERIOR

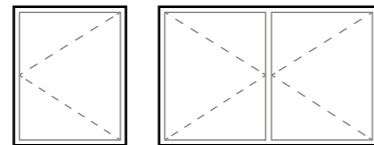
OPEN-IN



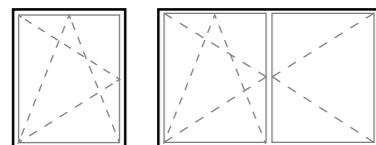
Fixed frame



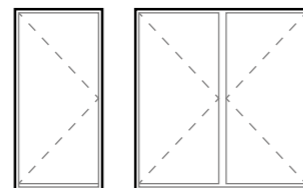
Tilt window



1 and 2-leaf side-hung open-in window and patio doors



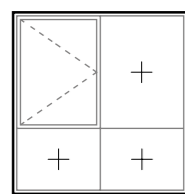
1 and 2-leaf tilt/turn or turn/tilt window and patio door



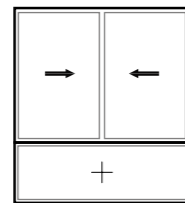
1 and 2-leaf patio door with threshold



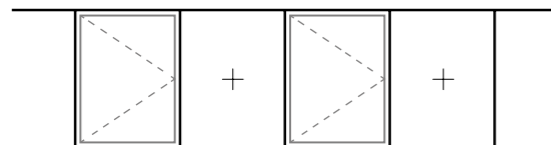
1-leaf patio door with threshold and lockable mullion



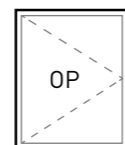
Composite frame side-hung open-in



Composite frame slider

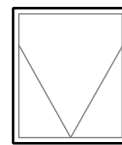


Running strip

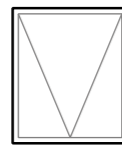


Fire access opening sash

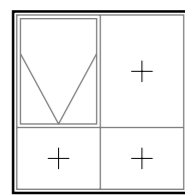
OPEN-OUT



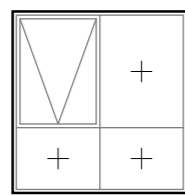
Top-hung, Italian-style window



Top-hung window



Composite frame top-hung, Italian-style window



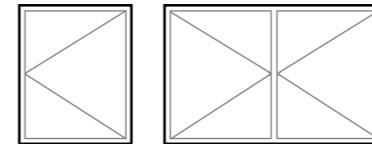
Composite frame top-hung window

SPECIAL APPLICATIONS 65

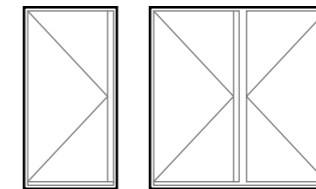
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All patio door applications can be supplied with PRM threshold.

REPRESENTATIONS VIEWED FROM THE EXTERIOR

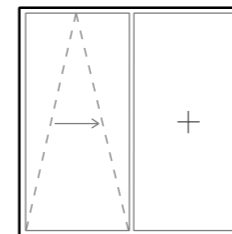
OPEN-OUT



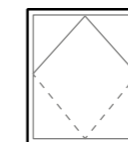
1 and 2-leaf side-hung window



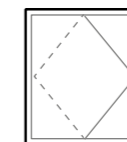
1 and 2-leaf patio door with threshold and lockable mullion



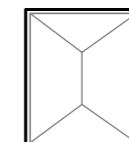
Tilt-and-slide



Horizontal Pivot Window



Vertical Pivot Window

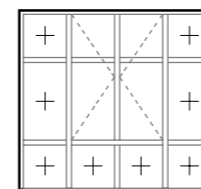


Parallel Window

SPECIAL APPLICATIONS 55

REPRESENTATIONS VIEWED FROM THE EXTERIOR

OPEN-IN

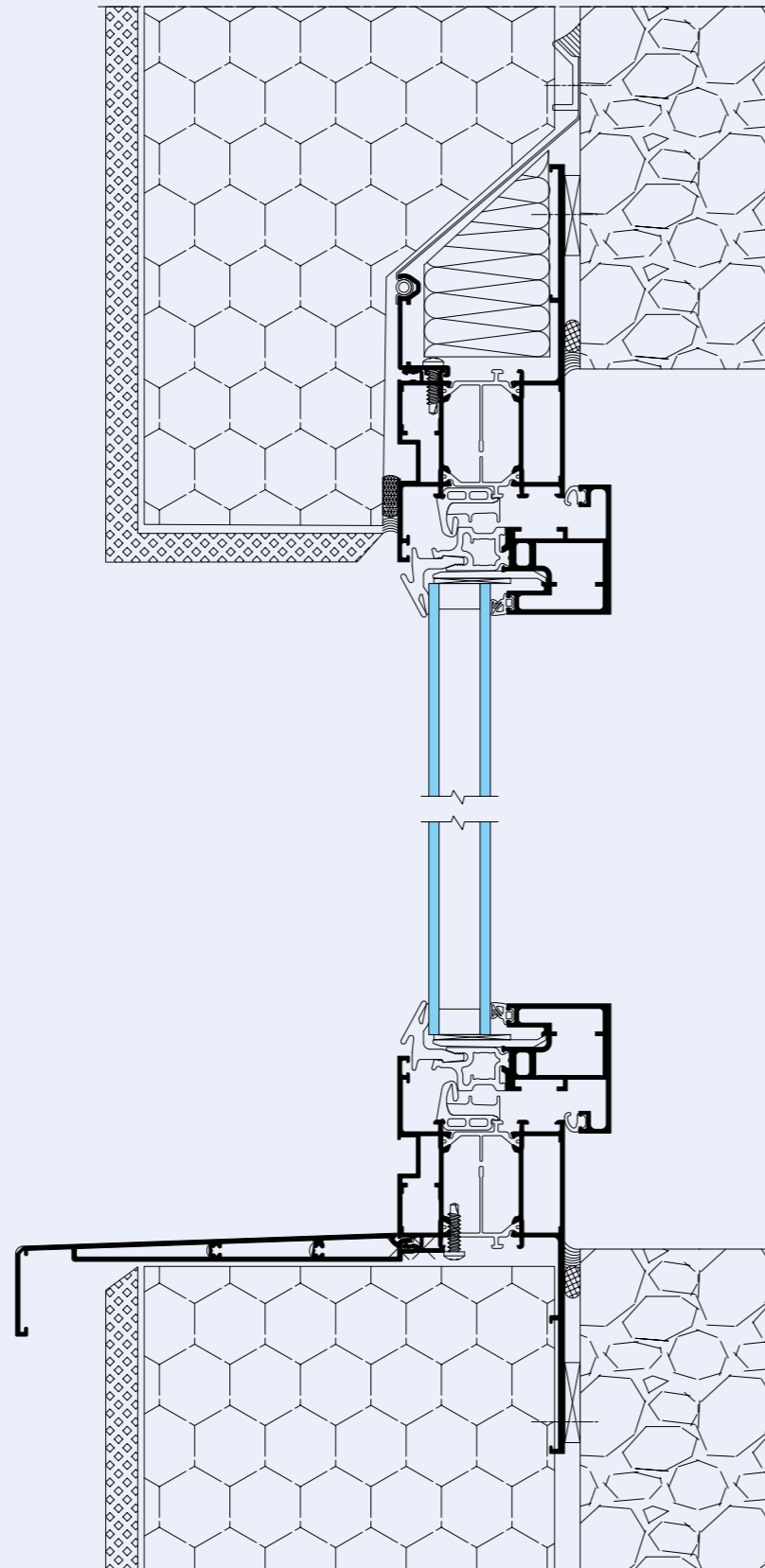


Composite frame equilibre version

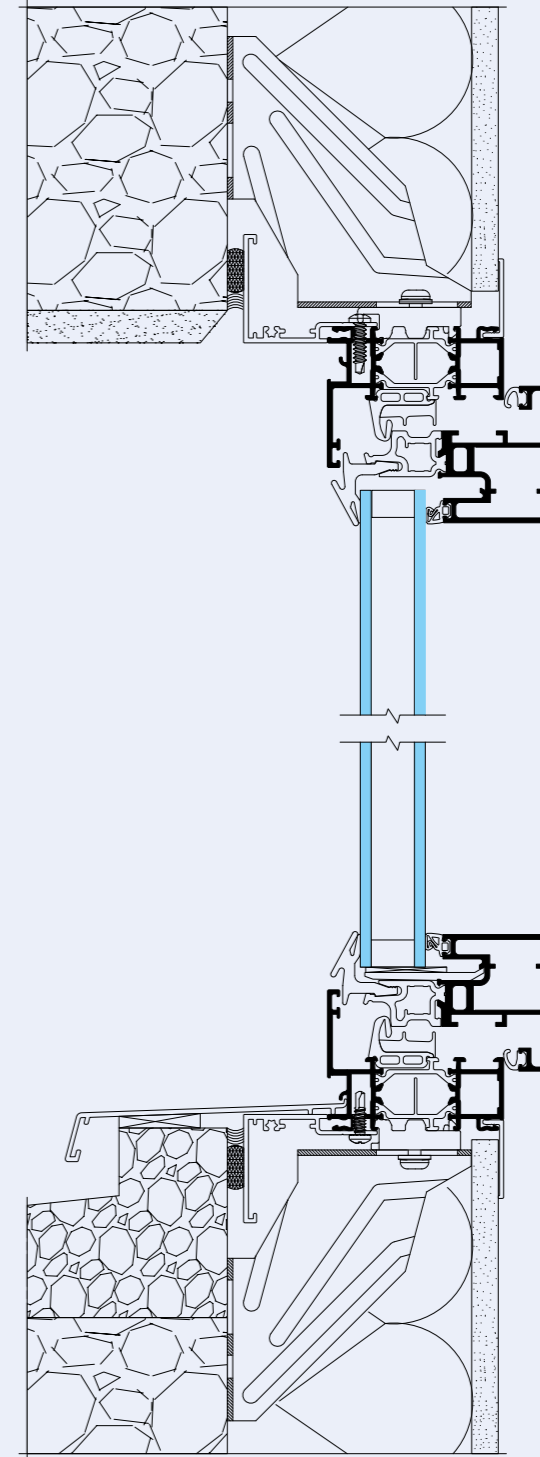
SOLEAL CASEMENT

/ TYPES OF INSTALLATION (IDENTICAL FOR 55 AND 65 MM)

EXTERIOR INSULATION
INSTALLATION



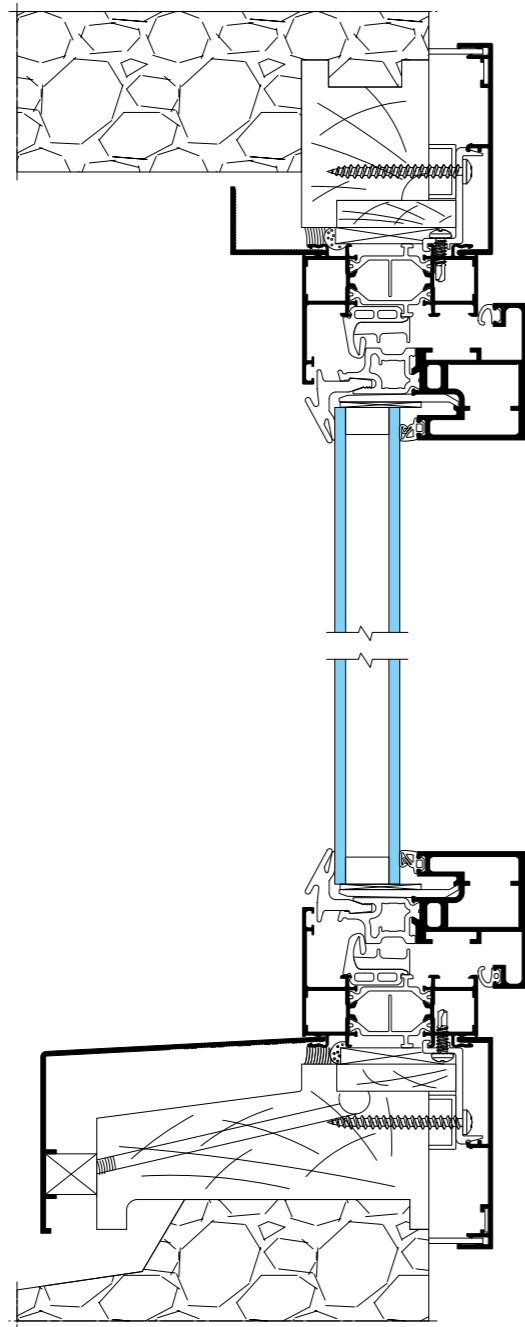
INSIDE FACE
INSTALLATION



SOLEAL CASEMENT

/ TYPES OF INSTALLATION (IDENTICAL FOR 55 AND 65 MM)

INSTALLATION IN CASE OF REFURBISHMENT



Architectural agency: Wilmotte & Associés
Photographer: Philippe Ruault

SOLEAL CASEMENT 55

/ PERFORMANCE

Whether for residential or office buildings, the RT 2012 thermal regulations aim to set a maximum energy consumption level for new buildings. These regulations do not impose a minimum requirement for joinery but TECHNAL's objective

was to provide support for architects with respect to these new requirements. SOLEAL windows therefore help to preserve the permeability of the building's envelope due to its very good Q4 values.

AIR, WATER, WIND SEALING PERFORMANCE (Air. Water. Wind)							
Applications	Dimensions Height x Width in m	Air permeability	Watertightness	Wind resistance	Test report no.	Q4	Q100
SOLEAL Minimal - Open-in							
Window							
Tilt/turn 1-leaf	1.55 x 1.15	Class 4	Class E750	Class C3	404/17/169-1 FCBA	0.07	0.61
Patio door							
Tilt/turn 2-leaf	2.30 x 1.55	Class 4	Class 7A	Class C2	404/17/238-1 FCBA	0.02	0.20
SOLEAL Visible - Open-in							
Window							
Tilt/turn 1-leaf	1.60 x 1.20	Class 4	Class 9A	Class A3	404/09/394-2 FCBA	0.06	0.50
Patio door							
2-leaf side-hung open-in	2.25 x 1.60	Class 4	Class 9A	Class B3	404/09/394-3 FCBA	0.11	0.94
1-leaf side-hung open-in with PRM threshold	2.25 x 1.20	Class 3	Class 8A	Class C2	404/12/276-2 FCBA	0.31	2.64
SOLEAL Visible - Open-out							
Top-hung							
Italian-style window	1.50 x 1.50	Class 4	Class 9A	Class C3	404/09/117 FCBA	0.10	0.85

REFERENCE VALUES FOR AIR PERMEABILITY FOR LOW CONSUMPTION BUILDINGS	Equivalence	
	Q4	Q100*
Single-family housing m ³ (h.m ²)	0.6	5.1
Block of flats m ³ (h.m ²)	1	8.5

*Q100 represents leakage from the frame at 100 Pascals. For Low-Consumption Buildings. Q100 must not exceed 5.1 for single-family housing; 8.5 for blocks of flats (m³/h.m²).

ACOUSTIC PERFORMANCE								
Applications	Designation	Dimensions Height x Width in m	Glazing			Window		
			Rw (C; Ctr)	Ra	Ra. Tr	Rw (C; Ctr)	Ra	Ra. Tr
SOLEAL Minimal and Visible								
Window								
Tilt/turn 1 Minimal version opening leaf	6(16) 4	1.45 x 1.48	34	33	29	34	33	31
Tilt/turn 1 Minimal version opening leaf	64-1SI(12) 10	1.45 x 1.48	42	40	37	42	41	38
Tilt/turn 1 Minimal version opening leaf	12(12) 8	1.23 x 1.48	38	37	35	37	36	35
Tilt/turn 1 Visible version opening leaf	44-1SI(16) 10	1.45 X 1.48	42	40	38	41	40	38
Tilt/turn 1 Visible version opening leaf	6(16) 4	1.45 x 1.48	34	33	29	35	34	31
Tilt/turn 1 Visible version opening leaf	44-1SI(20) 12	1.45 x 1.48	46	44	40	43	43	40
Patio door								
2 Visible version opening leaves	6(16) 4	1.45 x 2.18	34	33	29	36	35	32
2 Visible version opening leaves	44-2SI(14) 10 Argon	1.45 X 2.18	37	42	40	41	40	38

In accordance with EN 14351-1, these window performances are valid for:
 - one Rw+Ctr glazing (for index RA, tr) greater than or equal to the values of the tested glazing - corrections
 - 1 dB for leaf surface area of + 50% to + 100% / - 2 dB for + 100% to + 150% / - 3 dB for + 150% to + 200%

SOLEAL CASEMENT 55

/ PERFORMANCE

Uw: Frame thermal losses
Sw: Solar factor
TLw: Light transmission

THERMAL PERFORMANCE						
Applications	Dimensions Height x Width in m		With Ug = 1.1 + Warm edge	With Ug = 1.0 + Warm edge	With Ug = 0.8 + Warm edge	With Ug = 0.6 + Warm edge
			24 mm glazing	24 mm glazing	32 mm glazing	42 mm glazing
			SW-V	SW-V	SW-V	SW-V
SOLEAL FY55 EVOLUTION						
Visible opening sash						
Window						
1-leaf	1.48 x 1.25	Uw (W/m².K)	1.6	1.6		1.3
		TLw	0.63	0.61		0.58
		Sw	0.57	0.49		0.49
2-leaf	1.48 x 1.53	Uw (W/m².K)	1.7	1.7		1.4
		TLw	0.58	0.56		0.54
		Sw	0.54	0.46		0.46
Patio door						
1-leaf (PRM threshold)	2.18 x 1.25	Uw (W/m².K)	1.6	1.5		1.2
		TLw	0.66	0.64		0.61
		Sw	0.59	0.50		0.50
2-leaf (PRM threshold)	2.18 x 1.53	Uw (W/m².K)	1.7	1.6		1.3
		TLw	0.61	0.59		0.57
		Sw	0.56	0.47		0.47
Minimal opening sash						
Window						
1-leaf	1.48 x 1.25	Uw (W/m².K)	1.8	1.7	1.4	
		TLw	0.66	0.64	0.61	
		Sw	0.59	0.50	0.50	
2-leaf	1.48 x 1.53	Uw (W/m².K)	1.8	1.8	1.5	
		TLw	0.63	0.60	0.58	
		Sw	0.56	0.48	0.48	
Patio door						
1-leaf (PRM threshold)	2.18 x 1.25	Uw (W/m².K)	1.7	1.6	1.3	
		TLw	0.69	0.67	0.64	
		Sw	0.61	0.52	0.52	
2-leaf (PRM threshold)	2.18 x 1.53	Uw (W/m².K)	1.8	1.7	1.4	
		TLw	0.65	0.63	0.61	
		Sw	0.59	0.50	0.50	
1-leaf (PRM threshold) + lock	2.18 x 1.25	Uw (W/m².K)	1.8	1.7	1.5	
		TLw	0.62	0.60	0.58	
		Sw	0.56	0.48	0.48	

THERMAL PERFORMANCE					
Applications	Dimensions Height x Width in m		With Ug = 1.1 + Warm edge	With Ug = 1.0 + Warm edge	With Ug = 0.6 + Warm edge
			24 mm glazing	24 mm glazing	42 mm glazing
			SW-V	SW-V	SW-V
SOLEAL FY55 EVOLUTION					
Visible opening sash					
Other					
Fixed Frame	1.48 x 1.25	Uw (W/m².K)	1.4	1.3	1.0
		TLw	0.71	0.68	0.66
		Sw	0.62	0.53	0.53
Top-hung, Italian-style window	1.48 x 1.53	Uw (W/m².K)	1.7	1.6	1.4
		TLw	0.58	0.56	0.54
		Sw	0.54	0.46	0.46
Top-hung window	1.48 x 1.53	Uw (W/m².K)	1.6	1.5	1.2
		TLw	0.59	0.56	0.54
		Sw	0.53	0.46	0.46

SOLEAL CASEMENT 65

/ PERFORMANCE

AIR, WATER, WIND SEALING PERFORMANCE (Air, Water, Wind)							
Frame subject to ITT (Initial Type Tests)							
Applications	Dimensions Height x Width in m	Air permeability	Watertightness	Wind resistance	Test report no.	Q4	Q100
SOLEAL Visible - Open-in							
Window							
Tilt/turn 1-leaf	1.70 x 1.45	Class 4	Class E900	Class C5	404/16/295-1 FCBA	0.04	0.39
Patio door							
Tilt/turn 2-leaf	2.30 x 2.00	Class 4	Class E750	Class C2	404/16/295-2 FCBA	0.07	0.61
Side-hung open-in 2-leaf (PRM threshold)	2.30 x 1.60	Class 4	Class 8A	Class C3	404/17/55-3 FCBA	0.11	0.98
1-leaf (PRM threshold) Large dimensions	2.70 x 1.00	Class 4	Class 9A	Class C3	404/17/55-2 FCBA	0.08	0.69
Tilt-and-slide	2.25 x 2.30	Class 4	Class E1200	Class B3	404/13/359-1 FCBA	0.05	0.41
SOLEAL Minimal - Open-in							
Window							
Tilt/turn 1-leaf	1.70 x 1.45	Class 4	Class E900	Class C5	404/16/320-2 FCBA	0.03	0.28
Patio door							
Side-hung open-in 2-leaf (PRM threshold)	2.30 x 1.60	Class 4	Class 8A	Class B3	404/17/81-1 FCBA	0.06	0.54
1-leaf (PRM threshold) Large dimensions	2.70 x 1.00	Class 4	Class 8A	Class C3	404/17/81-3 FCBA	0.09	0.81
SOLEAL Visible - Open-out							
Window							
Composite frame with Italian-style opening sash in fixed light	2.50 x 1.40 (Italian-style 1.50 x 1.40)	Class 4	Class E1050	Class C4	404/12/276-3 FCBA	0.02	0.19
Top-hung	1.80 x 1.60	Class 3	Class E1050	Class C4	404/12/276-1 FCBA	0.07	0.58
Parallel	2.20 x 1.00	Class 3	Class 9A	Class C3	404/13/359-2 FCBA	0.59	5.06
Patio door							
1-leaf with threshold	2.25 x 1.20	Class 3	Class E750	Class C4	404/14/168-1 FCBA	0.07	0.62
Horizontal and vertical pivot frame							
Window							
Horizontal pivot with visible pivot	1.70 x 2.00	Class 3	Class 8A	Class C4	404/12/276-4 FCBA	0.41	3.54
Vertical pivot with concealed pivot	2.20 x 1.80	Class 4	Class 6A	Class C4	404/12/413-5 FCBA	0.08	0.72

AIR, WATER, WIND SEALING PERFORMANCE (Air, Water, Wind)							
Frame subject to ITT (Initial Type Tests)							
Applications	Dimensions Height x Width in m	Air permeability	Watertightness	Wind resistance	Test report no.	Q4	Q100
SOLEAL Visible - Concealed hardware							
Window							
Tilt/turn 1-leaf	1.80 x 1.3	Class 4	Class E1200	Class C4	404/14/29-1 FCBA	0.063	0.54
Patio door							
Tilt/turn 1-leaf	2.50 x 1.40	Class 4	Class E1200	Class C4	404/14/29-3 FCBA	0.015	0.13

REFERENCE VALUES FOR AIR PERMEABILITY FOR LOW CONSUMPTION BUILDINGS	Equivalence	
	Q4	Q100*
Single-family housing m ³ (h.m ²)	0.6	5.1
Block of flats m ³ (h.m ²)	1	8.5

*Q100 represents leakage from the frame at 100 Pascals. For Low Energy Consumption Buildings, Q100 must not exceed 5.1 for single-family housing. 8.5 for blocks of flats (m³/h.m²).

ACOUSTIC PERFORMANCE								
Frame H x L dimensions (1.48 x 1.23)								
Applications	Glazing	AS0180 gasket	Glazing performance only			Window performance		
			RW (C;Ctr)	RA	RA,tr	RW (C;Ctr)	RA	RA,tr
SOLEAL Visible								
Tilt/turn 1 Visible version opening leaf	6-16-10		37	36	34	38	36	35
Tilt/turn 1 Visible version opening leaf	44.1 sil-16-12	x	46	44	40	44	42	39
Tilt/turn 1 Visible version opening leaf	88.1-20-66.2	x	54	53	49	46	45	43
SOLEAL Minimal								
Tilt/turn 1 Minimal version opening leaf	6-16-10		37	36	34	37	36	34
Side-hung open-in window 1 Minimal version opening leaf	66.2 sil 16-44.2 sil	x	49	46	41	45	43	39
Side-hung open-in window 1 Minimal version opening leaf	66.2 sil 16-66.2 sil	x	50	48	43	46	44	40

SOLEAL CASEMENT 65

/ PERFORMANCE

Uw: Frame thermal losses
Sw: Solar factor
TLw: Light transmission

THERMAL PERFORMANCE						
Applications	Dimensions Height x Width in m		With Ug = 1.1 + Warm edge	With Ug = 1.0 + Warm edge	With Ug = 0.6 + Warm edge	With Ug = 0.5 + Warm edge
			24 mm glazing	24 mm glazing	42 mm glazing	48 mm glazing
			SW-V	SW-V	SW-V	SW-V
SOLEAL FY65 EVOLUTION						
Visible opening sash						
Window						
1-leaf	1.48 x 1.25	Uw (W/m².K)	1.4	1.4	1.1	1.0
		TLw	0.63	0.61	0.58	0.58
		Sw	0.56	0.48	0.48	0.48
2-leaf	1.48 x 1.53	Uw (W/m².K)	1.5	1.4	1.1	1.1
		TLw	0.62	0.60	0.57	0.57
		Sw	0.56	0.48	0.48	0.48
Patio door						
1-leaf	2.18 x 1.25	Uw (W/m².K)	1.4	1.3	1.0	0.9
		TLw	0.66	0.63	0.61	0.61
		Sw	0.58	0.50	0.50	0.50
2-leaf	2.18 x 1.53	Uw (W/m².K)	1.5	1.4	1.1	1.0
		TLw	0.58	0.56	0.54	0.54
		Sw	0.53	0.45	0.45	0.45
1-leaf (PRM threshold) + lock	2.18 x 1.25	Uw (W/m².K)	1.6	1.5	1.2	1.1
		TLw	0.61	0.59	0.57	0.57
		Sw	0.55	0.47	0.47	0.47
Minimal opening sash						
Window						
1-leaf	1.48 x 1.25	Uw (W/m².K)	1.5	1.4	1.0	
		TLw	0.66	0.64	0.62	
		Sw	0.59	0.50	0.50	
2-leaf	1.48 x 1.53	Uw (W/m².K)	1.5	1.5	1.1	
		TLw	0.63	0.60	0.58	
		Sw	0.56	0.48	0.48	
Patio door						
1-leaf (PRM threshold)	2.18 x 1.25	Uw (W/m².K)	1.5	1.4	1.0	
		TLw	0.69	0.66	0.64	
		Sw	0.61	0.52	0.52	
2-leaf (PRM threshold)	2.18 x 1.53	Uw (W/m².K)	1.5	1.5	1.1	
		TLw	0.65	0.63	0.60	
		Sw	0.58	0.49	0.49	
1-leaf (PRM threshold) + lock	2.18 x 1.25	Uw (W/m².K)	1.6	1.5	1.2	
		TLw	0.65	0.62	0.60	
		Sw	0.58	0.49	0.49	

THERMAL PERFORMANCE						
Applications	Dimensions Height x Width in m		With Ug = 1.1 + Warm edge	With Ug = 1.0 + Warm edge	With Ug = 0.6 + Warm edge	With Ug = 0.5 + Warm edge
			24 mm glazing	24 mm glazing	42 mm glazing	48 mm glazing
			SW-V	SW-V	SW-V	SW-V
SOLEAL FY65 EVOLUTION						
Visible opening sash with concealed hardware						
Window						
1-leaf	1.48 x 1.25	Uw (W/m².K)	1.5	1.4	1.1	1.1
		TLw	0.61	0.58	0.56	0.56
		Sw	0.54	0.46	0.46	0.46
2-leaf	1.48 x 1.53	Uw (W/m².K)	1.6	1.5	1.3	1.2
		TLw	0.55	0.53	0.51	0.51
		Sw	0.50	0.43	0.43	0.43
2 eclair leaves	1.48 x 1.53	Uw (W/m².K)	1.6	1.5	1.1	1.1
		TLw	0.59	0.57	0.55	0.55
		Sw	0.53	0.45	0.45	0.45
Patio door						
1-leaf	2.18 x 1.25	Uw (W/m².K)	1.4	1.4	1.1	1.0
		TLw	0.63	0.61	0.59	0.59
		Sw	0.56	0.48	0.48	0.48
2-leaf	2.18 x 1.53	Uw (W/m².K)	1.6	1.5	1.2	1.2
		TLw	0.58	0.56	0.54	0.54
		Sw	0.52	0.45	0.45	0.45
2 eclair leaves (PRM threshold)	2.18 x 1.53	Uw (W/m².K)	1.5	1.5	1.1	1.0
		TLw	0.62	0.60	0.58	0.58
		Sw	0.56	0.47	0.47	0.47
Other						
Window						
Horizontal pivot	1.48 x 1.53	Uw (W/m².K)	1.7	1.6	1.3	1.3
		TLw	0.52	0.50	0.48	0.48
		Sw	0.48	0.42	0.42	0.42
Tilt-and-slide	1.48 x 1.53	Uw (W/m².K)	1.5	1.4	1.1	1.0
		TLw	0.58	0.56	0.53	0.53
		Sw	0.52	0.44	0.44	0.44



Architectural agency: CoBe Architecture
Photographer: Luc Boegly

MATERIALS AND COMPONENTS

As with all TECHNAL systems, only high-quality materials and components are used to reduce maintenance and guarantee long-term performance.

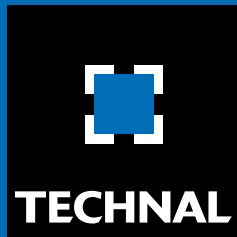
Aluminum profile sections are extruded using building industry 6060 alloys meeting EN 12020, EN 573-3, EN 515 and EN 775-1 to 9.

- Accessories are cast using Zamak 5 meeting EN 12844.
- All seals are EPDM or TPE (ThermoPlastic Elastomer).
- Polyamide insulators are extruded using PA6-6 (0.25 FV)
- Screws are made of stainless steel.

FINISHES AND COLOURS

A wide range of finishes is available to meet the requirements of individual projects, to enhance existing buildings and to offer increased design choice to architects and designers:

- Natural anodised in compliance with EN 123731: 2001.
- Polyester coated finishes in an extensive range of colours, in compliance with QUALICOAT instructions.
- SOLEAL is also available in painted finishes in exclusive TECHNAL colors for a stylish and contemporary appearance.



IMAGINE WHAT'S NEXT

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