



Architect: A.D.H. - Photography: DR TECHNAL

SOLEAL

HIGH PERFORMANCE WINDOW





SOLEAL window, A range of different solutions



Architect: W Architectures Photography: DRTechnal

An all-in-one design

The SOLEAL range offers many options for your projects.

SOLEAL is available in two main styles, the visible opening window and the minimal opening window, thus accommodating all your aesthetic needs.

This range is characterised by the number of options available: one and two leaf windows and balcony doors, into curtain walling or composite units, on cills, with transom or side light, fixed lights, top, side and bottom hung, projecting or on butt hinges, pivot, parallel opening, tilt/turn and tilt/slide.

The installation and finishing options are the same for both SOLEAL doors and sliding systems.

A new generation of windows

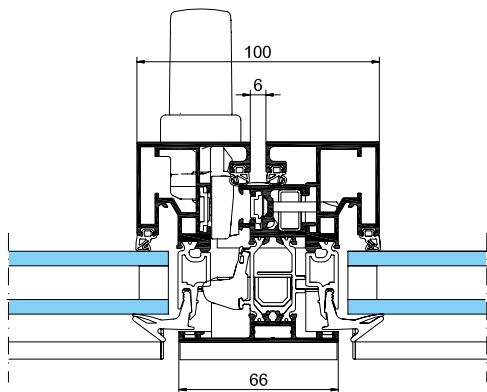
The SOLEAL range offers exceptional thermal, acoustic and weather performance - properties which come as standard with the new generation of TECHNAL windows. As a result, SOLEAL not only meets current regulatory demands but anticipates future requirements with its high performance.



MINIMAL



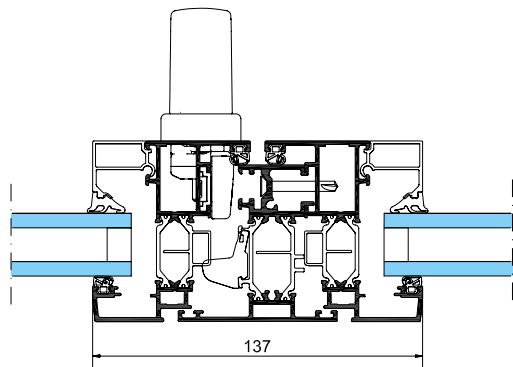
The flashing ensures the seamless integration of the opening frame and the fixed and opening sections appear as one. The fine, minimalist lines are reminiscent of the steel frame construction used for commercial buildings.



VISIBLE

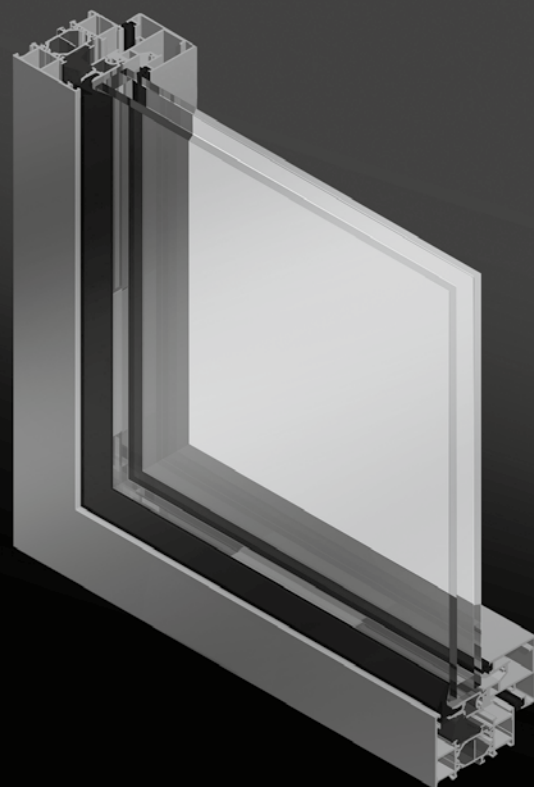


The visual impact of the opening and outer frames has been carefully balanced resulting in an assembly purveying opulence and high quality.

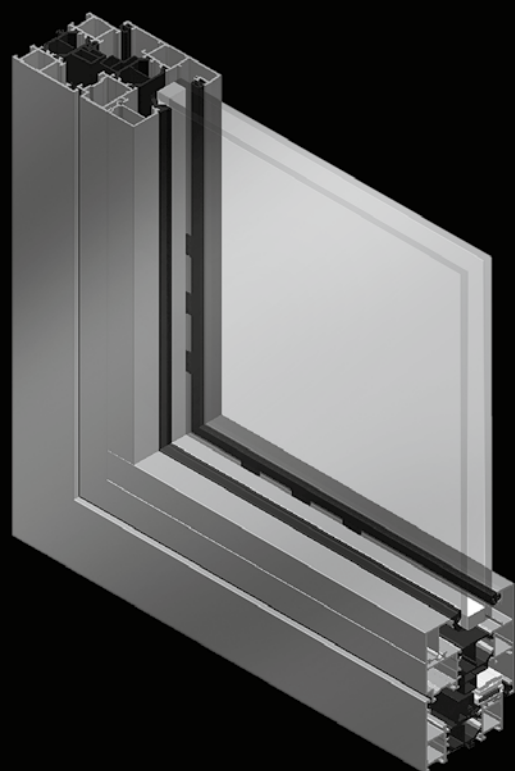


SOLEAL, high performance window

SOLEAL Minimal
65 mm



SOLEAL Visible
65 mm



Key features and innovations

Design

- Several versions are available to meet all your projects' requirements:
 - Minimal: a minimalist opening frame with fine and subtle lines.
 - A minimalist opening frame with "clip-on trim" creating a contemporary feel.
 - A visible opening frame, for a stylish and high quality finish.
 - Option of concealed fittings for a minimalist design and option of large sizes (up to 2.5 x 1.4m and 160kg).
- Concealed hardware reduces risk of damage and injury - a safer choice for schools and health and custodial premises.
- Concealed drainage for invisible water removal from opening as well as fixed frames.
- Flashings available in different shapes and styles.

Multiple configurations

- Fixed lights.
- 1 and 2 leaves.
- Composite and ribbon with transom or side lights.
- Projecting top-hung.
- Parallel opening.
- Horizontal and vertical pivot (visible or concealed pivot available).
- Tilt/slide.

Locking systems and security

- Various combinations are available up to 6-point, with or without key, locking systems.
- Handles centred on the central mullions of 2-leaf windows with minimum sight lines of 66 mm (minimal opening frame) and 137 mm (visible opening frame) are available as an option.
- The Technal-exclusive handles are available for all configurations ensuring style consistency and can be adapted for use on doors and sliding systems.
- Windows subjected to burglar resistance tests achieving a classification of RC2 in accordance with the EN-1627-30 standard.

Innovation

- 4 patents for innovative window vision.
- 2 patents pending for aesthetic ideals.

SOLEAL, made-to-measure design

Purity, finesse and subtlety



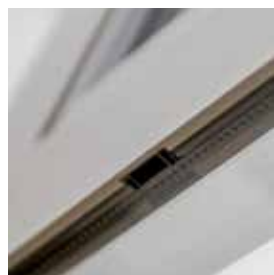
Minimal version



Clip-On Trim
Minimal Version



Visible version



Concealed drainage



Subtle edges



Concealed fittings

A wide range of locking systems



Exclusive Technal-designed
handle



Exclusive Technal-designed
handle with lock



Classic handle



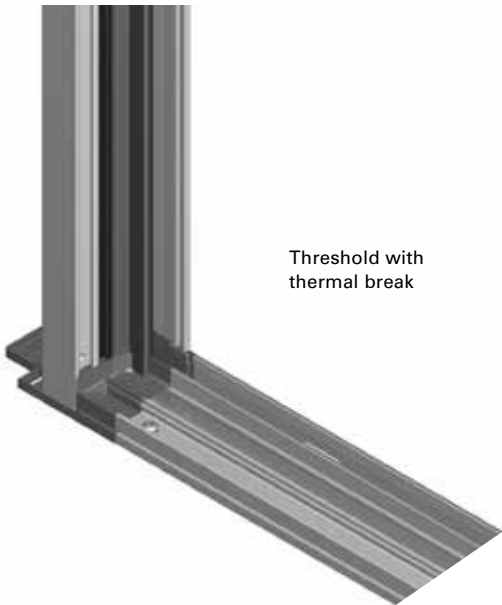
Bi-parting espagnolette
locking





SOLEAL threshold

The thresholds used on SOLEAL balcony doors ease access whilst ensuring optimum weather tightness.



Security

■ Windows can be fitted with 2- to 6-point locking depending on the desired level of security.

■ Windows have been subjected to burglar resistance tests achieving a classification of RC2 in accordance with the EN-1627-30 standard.



Top point



Mid-point between the handle and mechanism



Bottom of opening frame



Bottom of outer frame





SOLEAL 65 WINDOW

Advanced performance

Thermal and weather performances

- Optimised thermal loss values up to $0.9 \text{ W/m}^2\cdot^\circ\text{K}$, $\text{Sw} = 0.41$ and $\text{LTw} = 0.54$ with triple glazing ($\text{Ug} = 0.5 + \text{warm edge}$).
- Very low air permeability meeting 2012 thermal regulations Q4 up to $0.02 \text{ m}^3/(\text{h}\cdot\text{m}^2)$.

Acoustic performance suited to urban environments

- Very good sound-proofing: up to 43 dB (RA, Tr) of acoustic attenuation.
- Test on window with 88.1/-20/-66.2 sound-proof glazing.

Two versions of opening frames

- To meet all market needs, many of the configurations of the SOLEAL 65 range are available in open-in and open-out versions.
- Minimal open-in frame glazing infill up to 42 mm.
- Visible opening frame (open-in and open-out) glazing infill up to 52 mm.
- The fixed light sections common to both Minimal and Visible can accommodate glazing up to 52 mm.

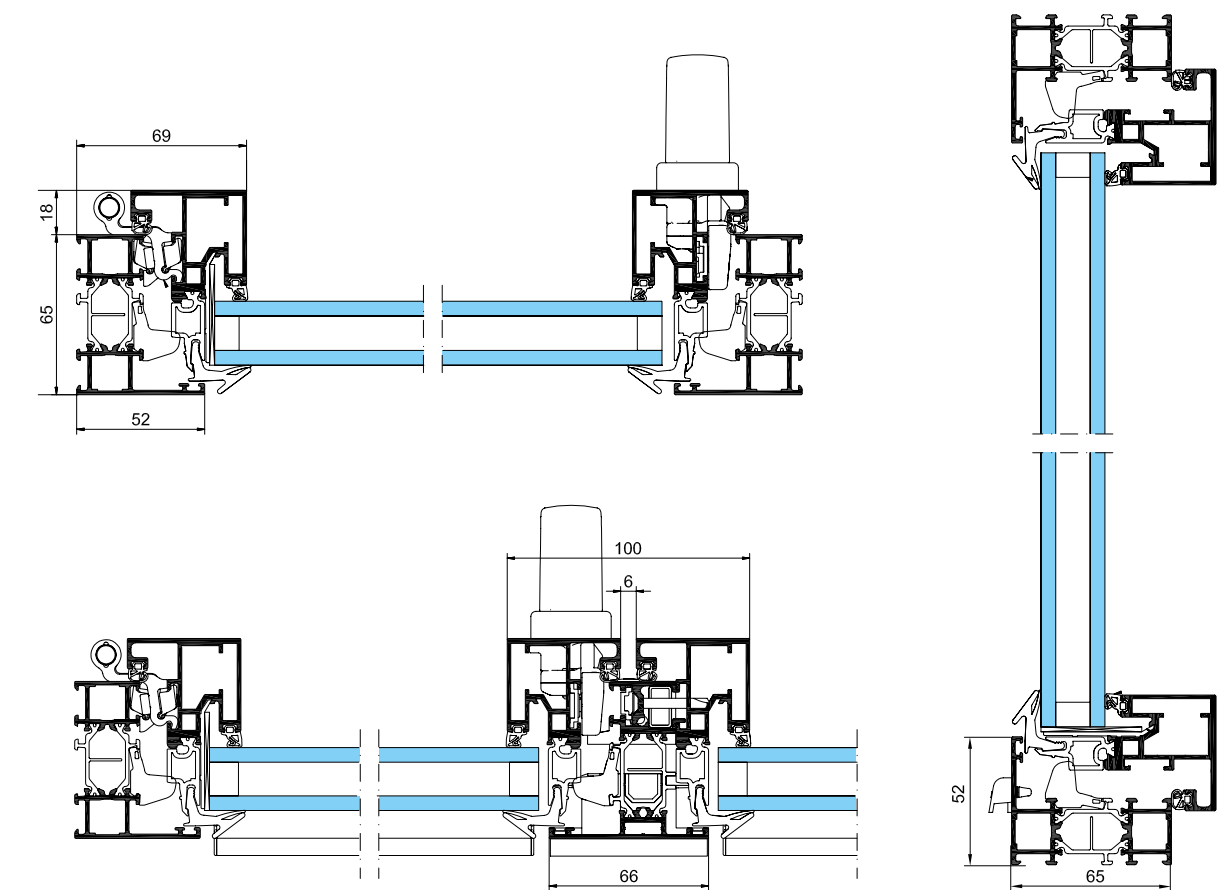
Multiple configurations

- Fixed casement.
- 1 and 2 leaf.
- Composite assemblies with transom or side lights.
- Top hung butt hinges.
- Projecting top hung.
- Parallel opening.
- Horizontal and vertical pivot (visible or concealed pivot available).
- Tilt/slide.

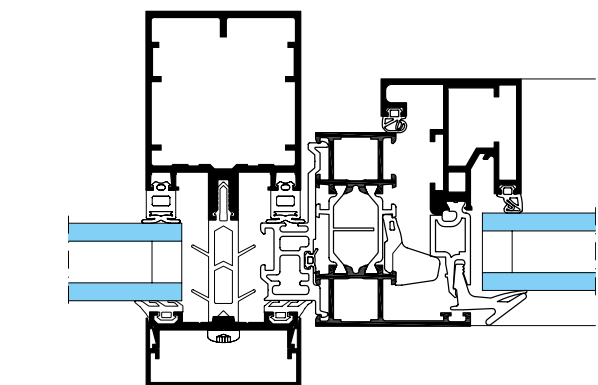
Cross-sections

SOLEAL 65 MINIMAL Open-in

1 and 2 leaf window and balcony door

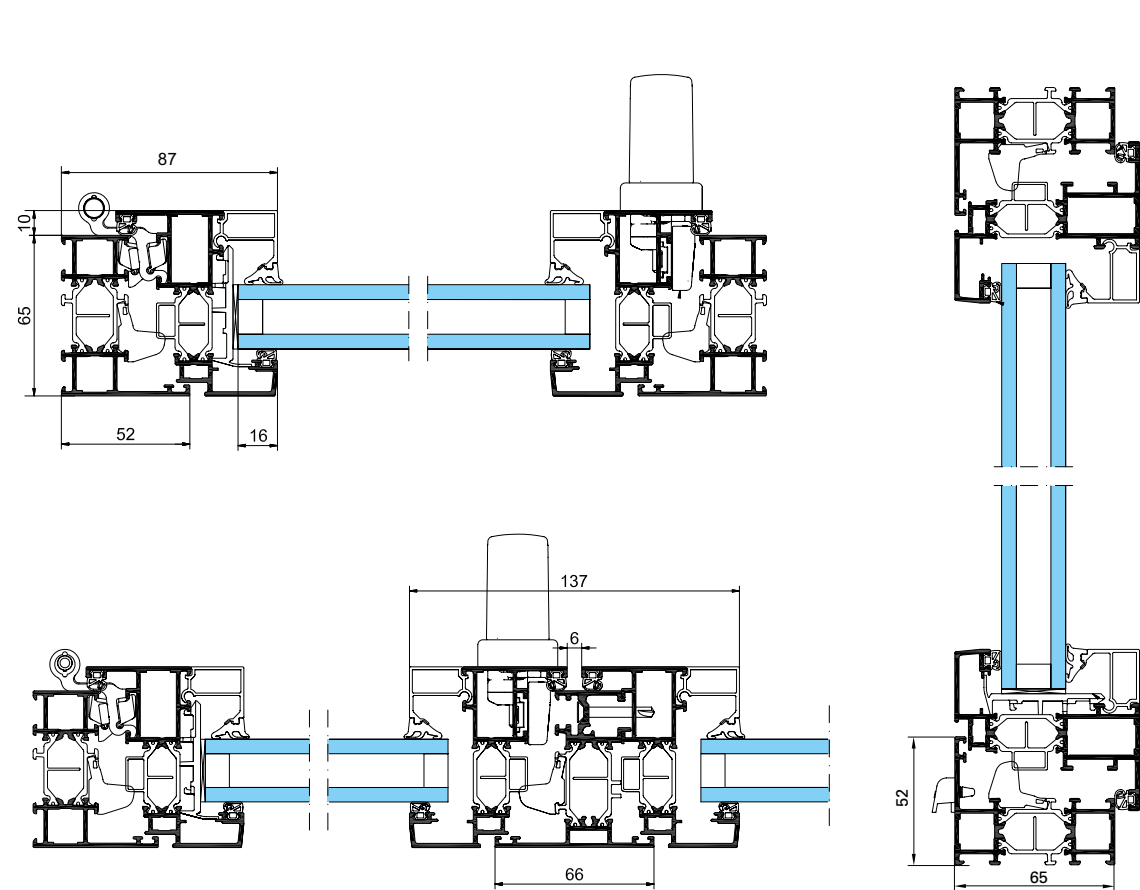


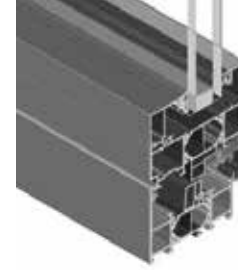
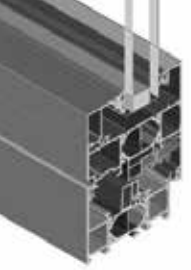
Integration into GEODE MX curtain walling
Open-in and open-out



SOLEAL 65 VISIBLE Open-in

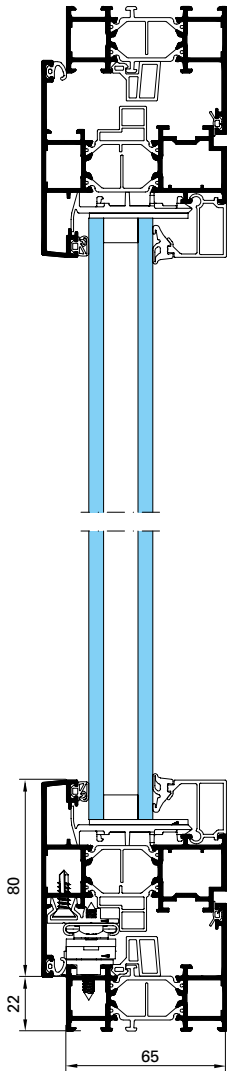
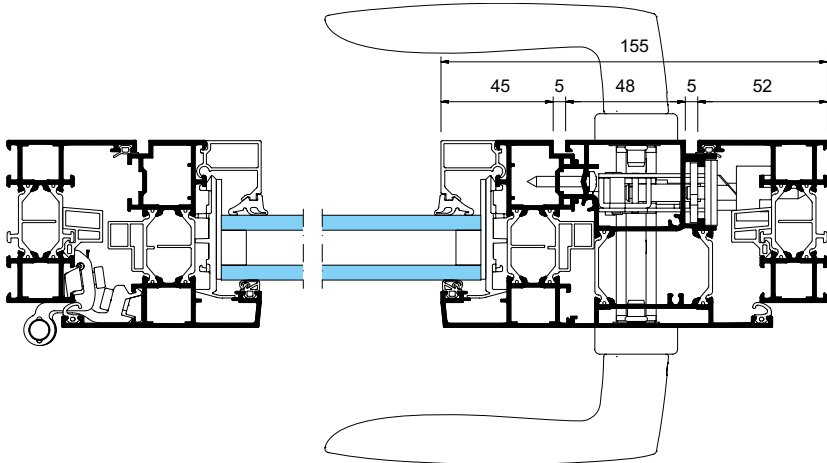
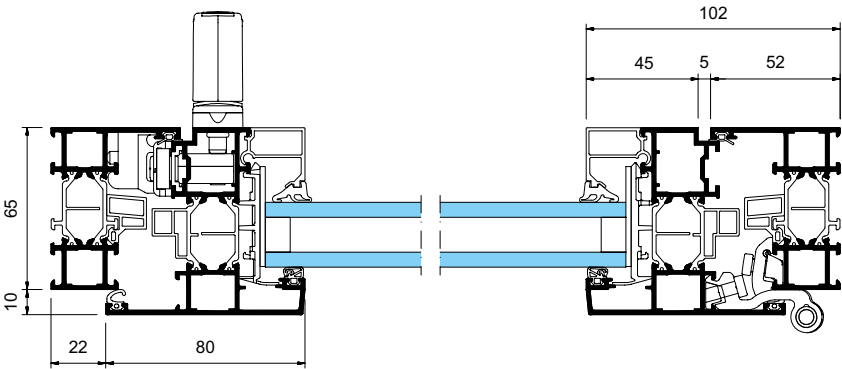
1 and 2 leaf window and balcony door





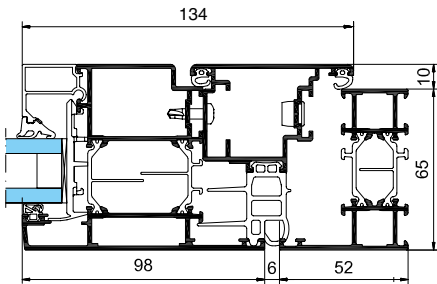
SOLEAL 65 VISIBLE

1 and 2 leaf window and balcony door open out

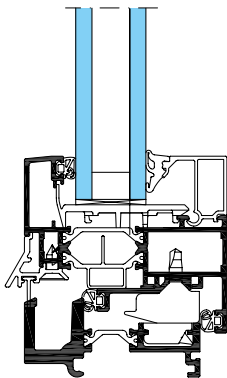


SOLEAL 65 VISIBLE

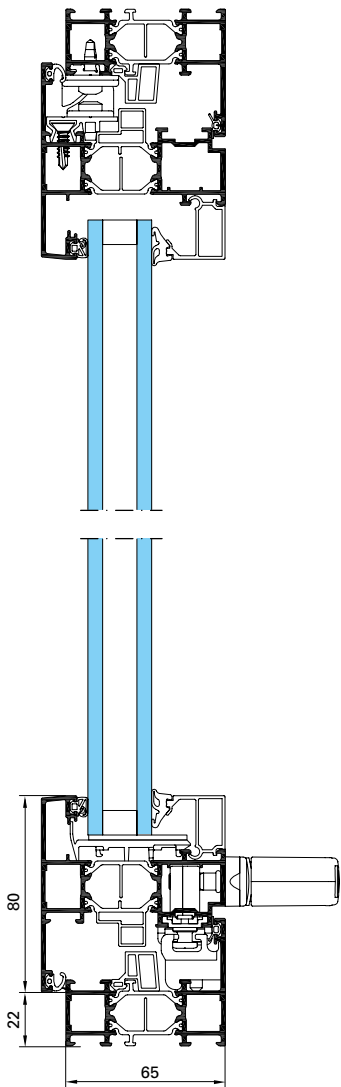
Pivot window



2-leaf balcony door with threshold Open-in

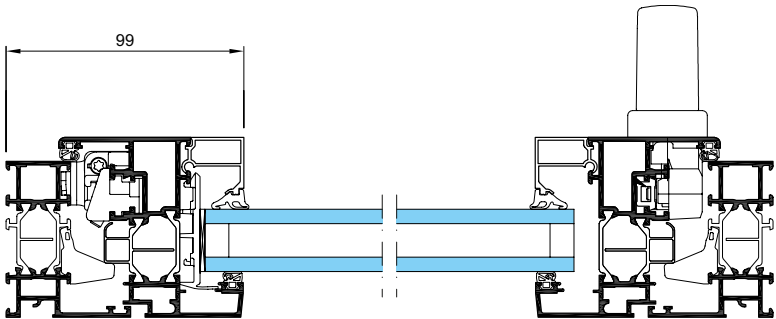


Top-hung Open-out

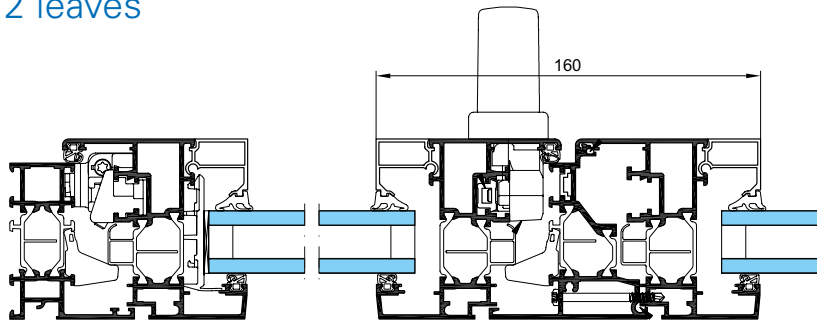


SOLEAL 65 VISIBLE
Concealed Fittings

1 leaf



2 leaves

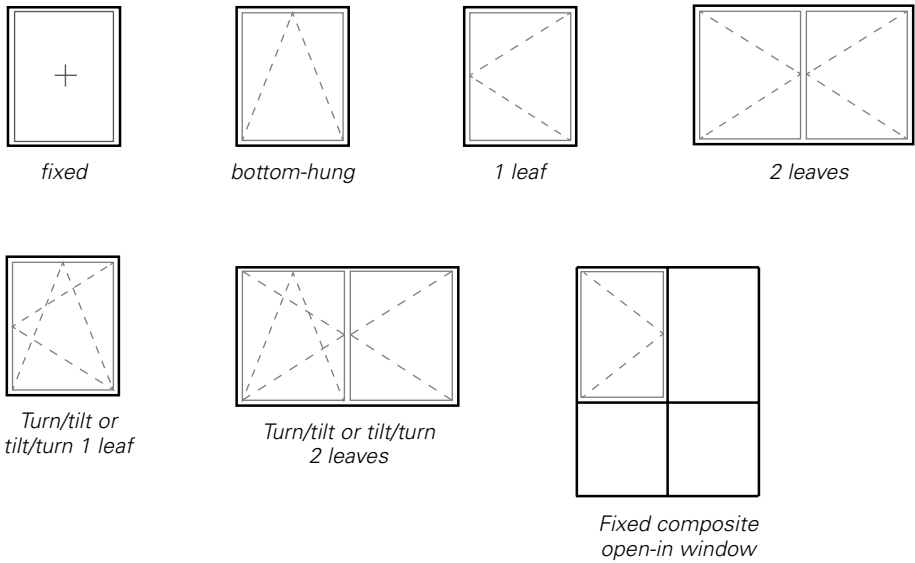


Configurations

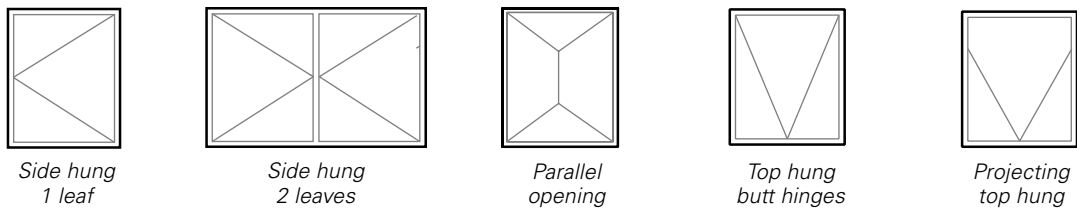
All configurations feature concealed drainage.

External view diagrams

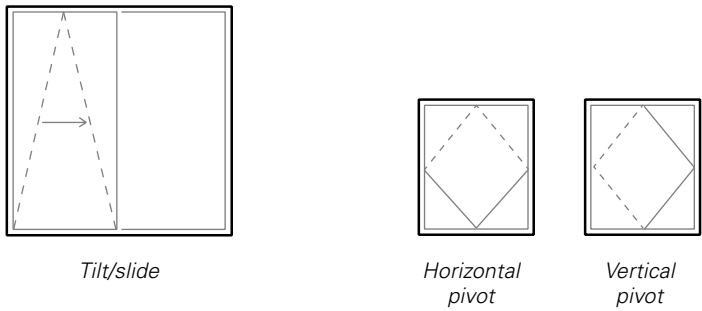
Open-in



Open-out



Special openings

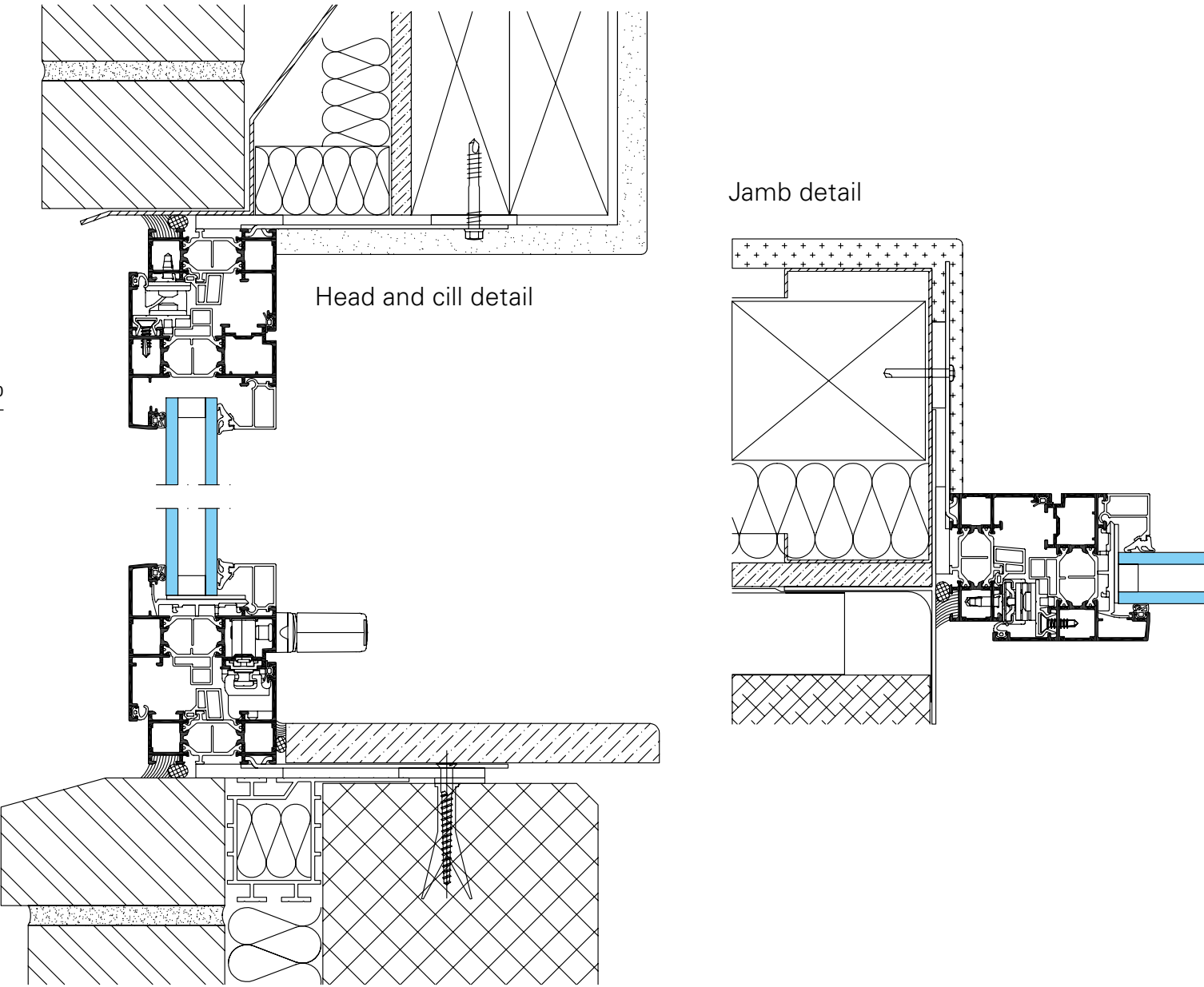




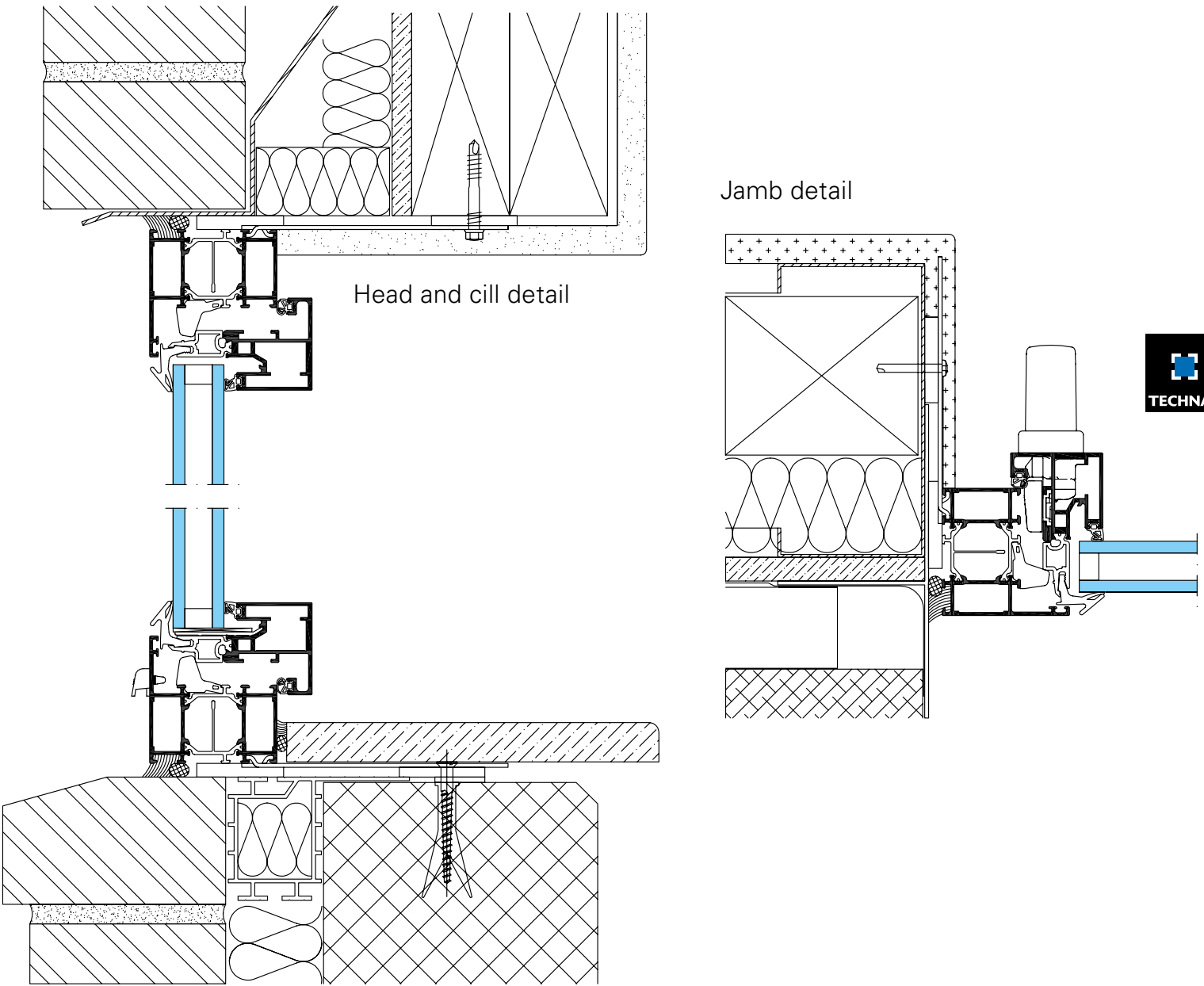
SOLEAL WINDOW

Site installation - Typical perimeter details

Soleal 65 Visible Open-out



Soleal 65 Minimal Open-in



SOLEAL 65 WINDOW

Performance

Uw: Window thermal loss
Sw: Solar factor
LTw: Light transmission

WEATHER PERFORMANCE A.E.V. (AIR, WATER, WIND)					
Frame under ITT (Initial Type Test)					
Configurations	Size H x W in m		Report n°	Q4	Q100
Special Openings	H x W	Classification			
Horizontal pivot (visible pivot)	1.7 x 2	A ₃ E _{8A} V _{C4}	404/12/276-4 FCBA	0.41	3.54
Vertical pivot (concealed pivot)	2.2 x 1.8	A ₄ E _{6A} V _{C4}	404/12/413-5 FCBA	0.08	0.72
Visible Open-in					
1 leaf Tilt/Turn window	1.6 x 1.2	A ₄ E ₁₀₅₀ V _{C4}	404/12/111-1 FCBA	0.06	0.52
1 leaf Tilt/Turn window	1.6 x 1.2	A ₄ E ₁₀₅₀ V _{C5}	404/11/231-2 FCBA	0.06	0.53
2 leaves balcony doors	2.25 x 1.6	A ₄ E _{9A} V _{C2}	404/11/231-1 FCBA	0.28	2.4
1 leaf balcony door with side light	2.25 x 2	A ₄ E _{9A} V _{B3}	404/12/461-3 FCBA	0.08	0.65
Visible open in-Concealed fittings					
1 leaf Tilt/Turn window	1.8 x 1.3	A ₄ E ₁₂₀₀ V _{C4}	404/14/29-1 FCBA	0.063	0.54
1 leaf Tilt/turn balcony door	2.5 x 1.4	A ₄ E ₁₂₀₀ V _{C4}	404/14/29-3 FCBA	0.015	0.13
Minimal Open-in					
1 leaf Tilt/Turn Window	1.6 x 1.2	A ₄ E ₇₅₀ V _{C4}	404/12/111-2 FCBA	0.03	0.28
1 leaf balcony door with side light	2.25 x 2	A ₄ E _{9A} V _{B3}	404/12/461-1 FCBA	0.02	0.15
Visible Open-out	W x H	Classification			
Top-hung (butt hinge opening frame's dimensions)	1.5 x 1.4	A ₄ E ₁₀₅₀ V _{C4}	404/12/276-3 FCBA	0.02	0.19
Projecting top hung	1.8 x 1.6	A ₃ E ₁₀₅₀ V _{C4}	404/12/276-1 FCBA	0.07	0.58

Acoustic Performance								
Frame size W x H (1480 x 1230)								
Configurations	Glazing	Seal AS0180	Glazing performance alone			Window performance		
			RW (C;Ctr)	RA	RA,tr	RW (C;Ctr)	RA	RA,tr
Soleal Visible								
1 leaf tilt/turn VOF	6-16-10		37	36	34	38 (-2;-3)	36	35
1 leaf tilt/turn VOF	44.1 sil-16-12	x	46	44	40	44 (-2;-5)	42	39
Tilt/turn VOF	88.1-20-66.2	x	54	53	49	46 (-1;-3)	45	43
Soleal Minimal								
1 leaf tilt/turn MOF	6-16-10		37	36	34	37 (-1;-3)	36	34

MOF = Minimal Opening Frame
VOF = Visible Opening Frame



THERMAL PERFORMANCE*							
Soleal Visible							
	Size W x H 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	With Ug = 0,5 + Warm edge
			Glazing 24 mm	Glazing 24 mm	Glazing 32 mm	Glazing 42 mm	Glazing 48 mm
			SW-V	SW-V	SW-V	SW-V	SW-V
Window							
1 leaf	1.25 x 1.48	Uw (W/m².K)	1.4	1.3	1.1	1.0	0.9
		Sw	0.48	0.39	0.41	0.41	0.41
		TLw	0.61	0.54	0.54	0.54	0.54
2 leaves	1.53 x 1.48	Uw (W/m².K)	1.5	1.4	1.2	1.1	1.0
		Sw	0.45	0.36	0.38	0.38	0.38
		TLw	0.56	0.50	0.50	0.50	0.50
Balcony door							
2 leaves	1.53 x 2.18	Uw (W/m².K)	1.4	1.4	1.2	1.0	1.0
		Sw	0.47	0.37	0.39	0.39	0.39
		TLw	0.59	0.52	0.52	0.52	0.52
1 leaf	1.53 x 2.18	Uw (W/m².K)	1.4	1.3	1.1	0.9	0.9
		Sw	0.50	0.40	0.42	0.42	0.42
		TLw	0.63	0.56	0.56	0.56	0.56
Special Opening Configurations							
Tilt/turn horizontal and vertical pivot	1.53 x 1.48	Uw (W/m².K)	1.7	1.6	1.4	1.3	1.2
		Sw	0.42	0.34	0.35	0.35	0.35
		TLw	0.5	0.45	0.45	0.45	0.45

Soleal Visible - Concealed fittings							
	Size W x H in m		With Ug = 1,1 + Warm edge Glazing 24 mm SW-V	With Ug = 1,0 + Warm edge Glazing 24 mm SW-V	With Ug = 0,8 + Warm edge Glazing 32 mm SW-V	With Ug = 0,6 + Warm edge Glazing 42 mm SW-V	With Ug = 0,5 + Warm edge Glazing 48 mm SW-V
Window							
1 leaf	1.25 x 1.48	Uw (W/m².K)	1.4	1.4	1.2	1.1	1.0
		Sw	0.47	0.37	0.39	0.39	0.39
		TLw	0.58	0.52	0.52	0.52	0.52
2 leaves	1.53 x 1.48	Uw (W/m².K)	1.5	1.5	1.3	1.2	1.2
		Sw	0.43	0.34	0.36	0.36	0.36
		TLw	0.53	0.47	0.47	0.47	0.47
Balcony door							
2 leaves	1.53 x 2.18	Uw (W/m².K)	1.5	1.3	1.2	1.0	1.0
		Sw	0.49	0.39	0.41	0.41	0.41
		TLw	0.61	0.54	0.54	0.54	0.54
1 leaf	1.25 x 2.18	Uw (W/m².K)	1.4	1.4	1.3	1.2	1.1
		Sw	0.45	0.36	0.38	0.38	0.38
		TLw	0.56	0.49	0.49	0.49	0.49

THERMAL PERFORMANCE*						
Soleal Minimal						
Open-in Configurations	Size W x H 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
		Glazing 26 mm	Glazing 26 mm	Glazing 32 mm	Glazing 42 mm	
		SW-V	SW-V	SW-V	SW-V	
Window						
1 leaf	1.25 x 1.48	Uw (W/m².K)	1.4	1.4	1.2	1.0
		Sw	0.50	0.40	0.43	0.43
		TLw	0.64	0.56	0.57	0.57
2 leaves	1.53 x 1.48	Uw (W/m².K)	1.5	1.4	1.2	1.1
		Sw	0.47	0.38	0.41	0.41
		TLw	0.60	0.54	0.54	0.54
Balcony door						
1 leaf	1.25 x 2.18	Uw (W/m².K)	1.4	1.3	1.1	1.0
		Sw	0.51	0.41	0.45	0.45
		TLw	0.66	0.58	0.59	0.59
2 leaves	1.53 x 2.18	Uw (W/m².K)	1.5	1.4	1.2	1.0
		Sw	0.49	0.39	0.42	0.42
		TLw	0.62	0.55	0.56	0.56
Balcony door with threshold						
1 leaf	1.25 x 2.18	Uw (W/m².K)	1.4	1.4	1.2	1.0
		Sw	0.51	0.41	0.45	0.45
		TLw	0.66	0.58	0.59	0.59
2 leaves	1.53 x 2.18	Uw (W/m².K)	1.5	1.4	1.2	1.1
		Sw	0.49	0.40	0.43	0.43
		TLw	0.62	0.55	0.56	0.56

Soleal Minimal - Clip-on Trim						
Open-in Configurations	Size W x H 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
		Glazing 26 mm	Glazing 26 mm	Glazing 32 mm	Glazing 42 mm	
		SW-V	SW-V	SW-V	SW-V	
Window						
1 leaf	1.25 x 1.48	Uw (W/m².K)	1.4	1.4	1.2	1.0
		Sw	0.50	0.40	0.43	0.43
		TLw	0.64	0.56	0.57	0.57
Balcony door						
1 leaf	1.25 x 2.18	Uw (W/m².K)	1.4	1.3	1.1	1.0
		Sw	0.51	0.41	0.45	0.45
		TLw	0.66	0.58	0.59	0.59
2 leaves	1.53 x 2.18	Uw (W/m².K)	1.5	1.4	1.2	1.0
		Sw	0.49	0.39	0.42	0.42
		TLw	0.62	0.55	0.56	0.56

* Performance data obtained with SW-V Spacer





Materials and components

As with all Technal systems, only the best materials and parts are used to minimise maintenance and ensure long-term performance.

- The aluminium profiles are extruded from 6060 T5 EN 12020, EN 573-3, EN 515 and EN 775-1 to 9 alloys.
- Fittings are cast from EN 12844 compliant Zamak 5.
- All seals are EPDM or TPE (Thermoplastic elastomer).
- The polyamide thermal breaks are extruded from pA6-6 (0.25 FV).
- Screws are made from stainless steel.

Finishes and colours

A wide range of finishes and colours is available to meet individual project requirements, enhancing existing buildings and offering architects and designers greater design freedom:

- Natural anodised in accordance with EN 123731: 2001.
- Polyester powder coating finishes in a wide range of colours in accordance with "QUALICOAT" instructions.
- SOLEAL is also available in coated finishes with exclusive Technal colours for a stylish and contemporary look.



1



2



3

1. Architect: A.D.H. Photography: DRTECHNAL
2. Architect: Pierre Weiler Photography: JC Ballot
3. Architect: Cardete Huet Architectes Photography: DR Technal