



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

FY 65 WINDOW







FY 65 window, A range of different solutions



Architect: W Architectures Photography: DR Technal

An all-in-one design

The FY 65 window range offers many options for your projects.

FY 65 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 PY 55 doors and sliding systems.



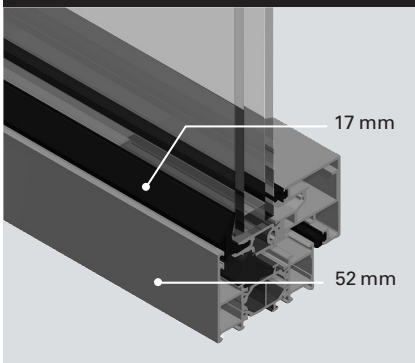
A new generation of windows

The FY 65 range offers exceptional thermal, acoustic and weather performance - properties which come as standard with the new generation of TECHNAL windows. As a result, FY 65 windows not only meet current regulatory demands but anticipate future requirements with its high performance.

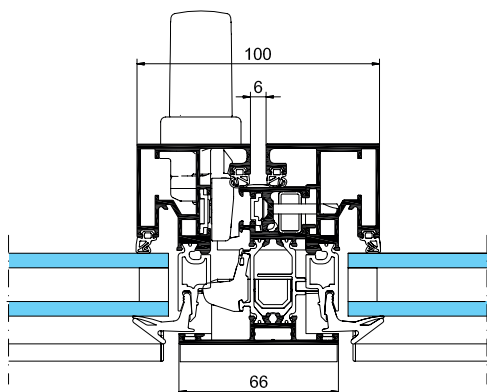
MINIMAL



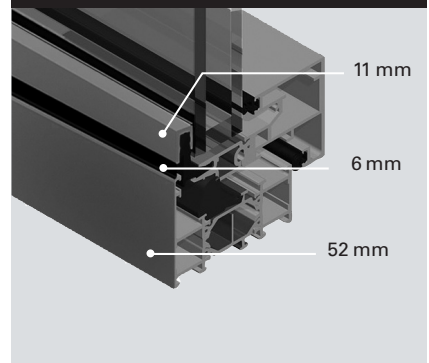
MINIMAL



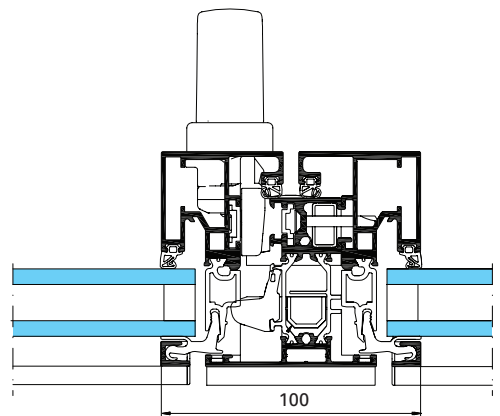
The flashing ensures the seamless integration of the opening frame and the fixed and opening sections appear as one. The fine, minimalist lines are reminiscent of the steel frame construction used for commercial buildings.



CLIP-ON TRIM



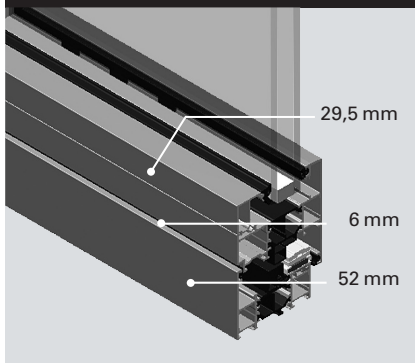
The clip-on trim subtly borders the opening frame, giving it a contemporary feel.



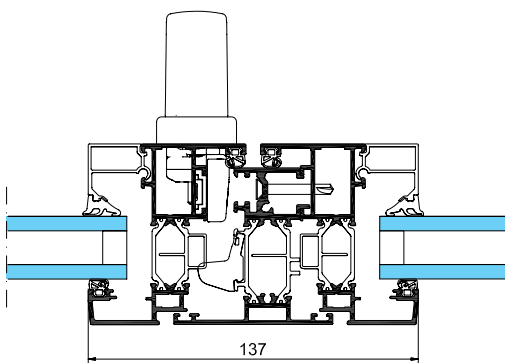
VISIBLE



VISIBLE

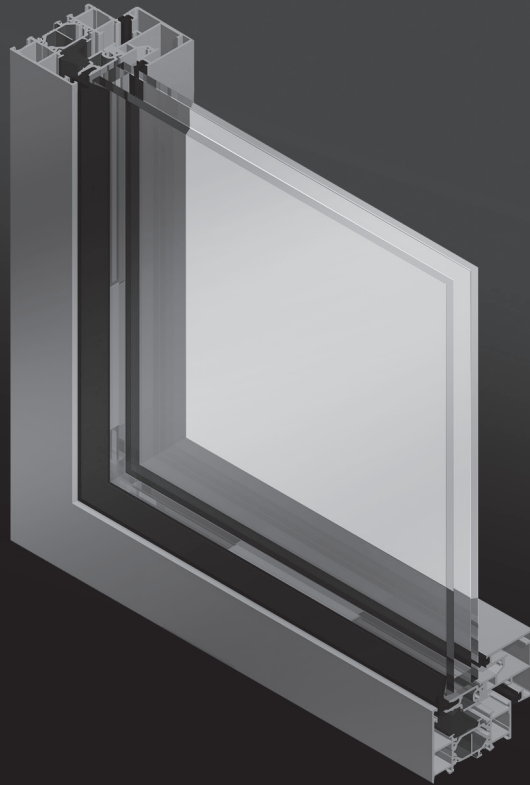


The visual impact of the opening and outer frames has been carefully balanced resulting in an assembly purveying opulence and high quality.

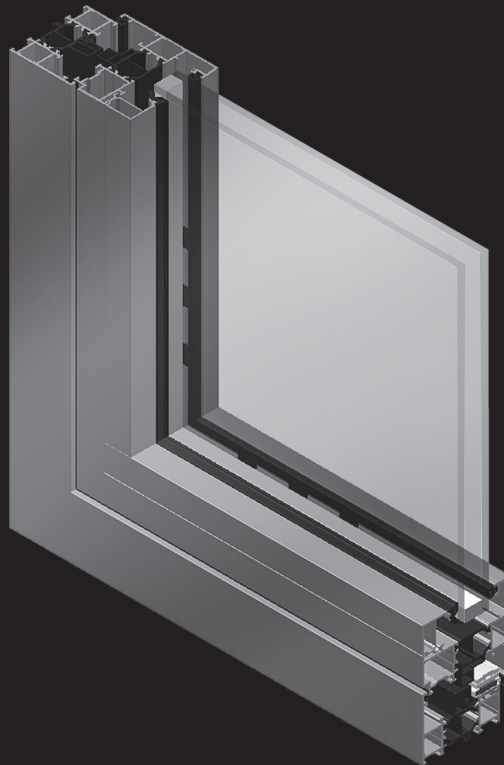


FY 65, high performance window

FY Minimal
65 mm



FY 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.



FY 65, made-to-measure design

Purity, finesse and subtlety



Minimal version



**Clip-On Trim
Minimal Version**



Visible version



Concealed drainage



Subtle edges



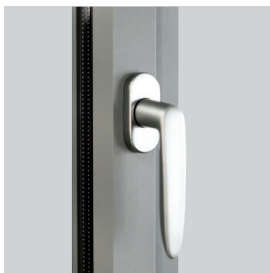
Concealed fittings

8

A wide range of locking systems



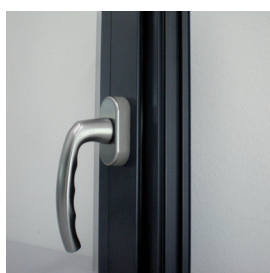
Stainless steel handle



**Exclusive Technal-designed
handle**



**Exclusive Technal-designed
handle with lock**



Classic handle



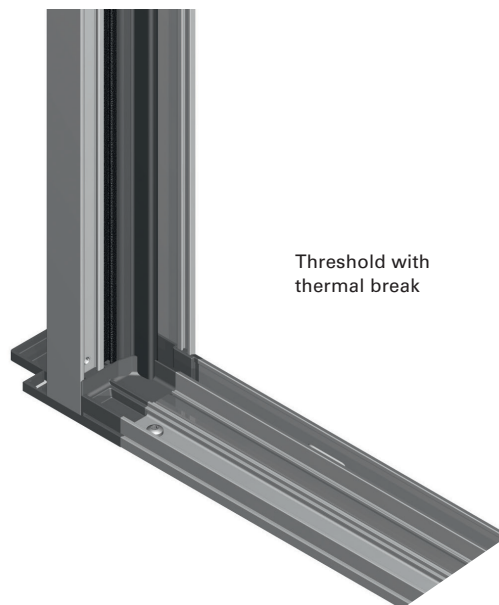
**Bi-parting espagnolette
locking**





FY 65 threshold

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



Threshold with thermal break

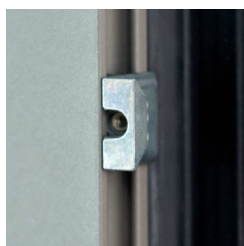
Security

■ 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



FY 65 WINDOW

Advanced performance

Thermal and weather performances

- Optimised thermal loss values up to $0.9 \text{ W/m}^2 \cdot \text{°K}$, $S_w = 0.41$ and $LT_w = 0.54$ with triple glazing ($U_g = 0.5 + \text{warm edge}$).
- 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.

Concealed fittings

- Available with 110° opening and maximum weight = 160 kg.
- Offers variety of frames:
1 leaf, 2 leaves, french and tilt and turn opening.

Multiple configurations

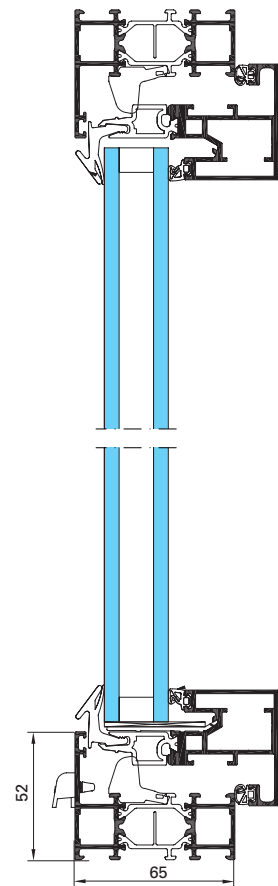
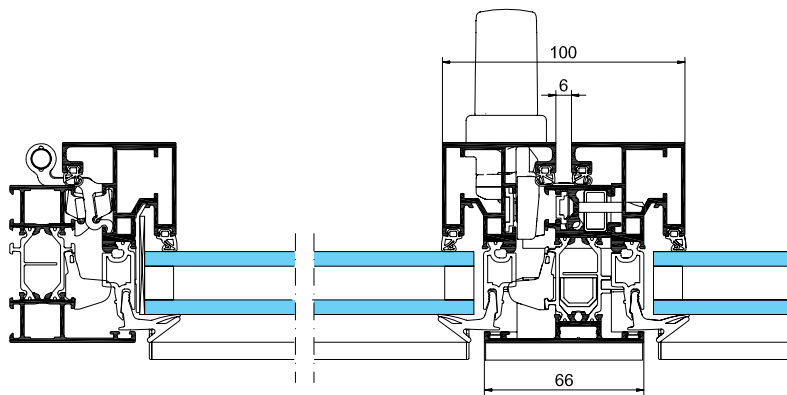
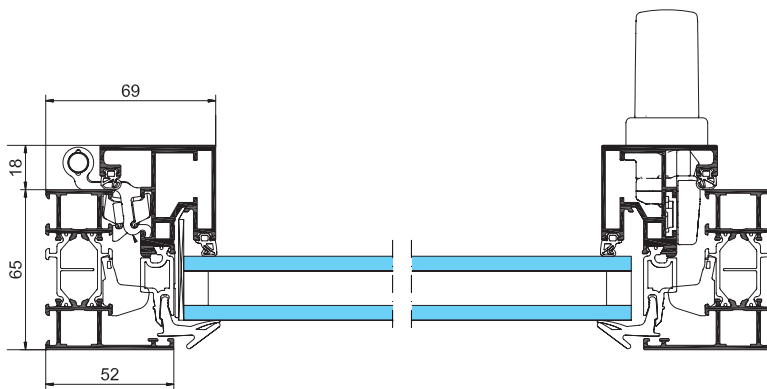
- Fixed casement.
- 1 and 2 leaf.
- Composite assemblies with transom or side lights.
- Top hung butt hinges.
- Projecting top hung.
- Parallel opening.
- Horizontal and vertical pivot (visible or concealed pivot available).
- Tilt/slide.

Cross-sections

FY 65 MINIMAL

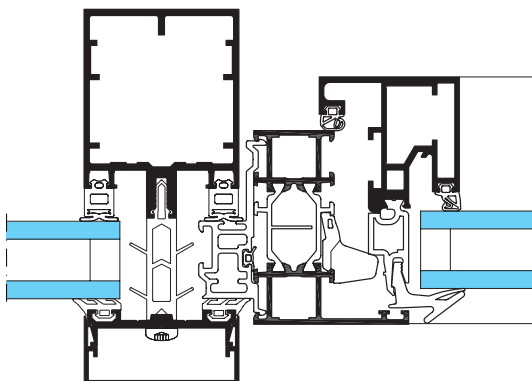
Open-in

1 and 2 leaf window and balcony door



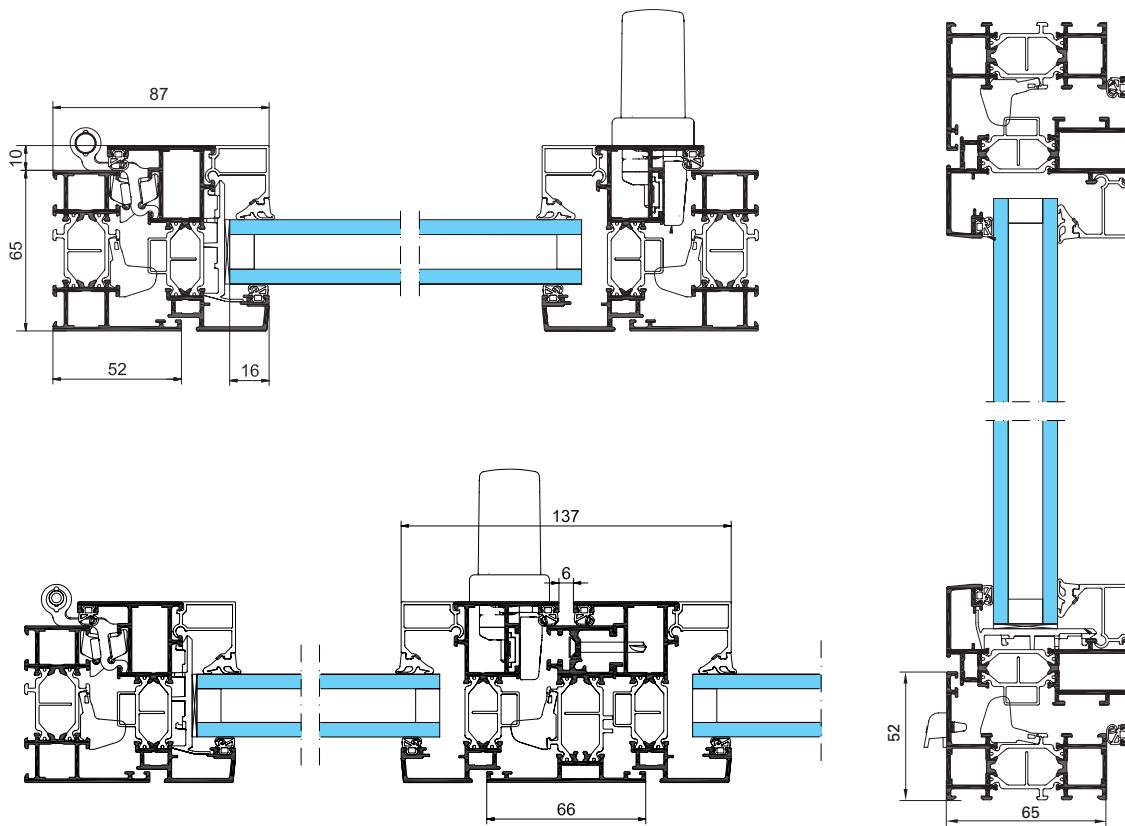
Integration into MX curtain walling

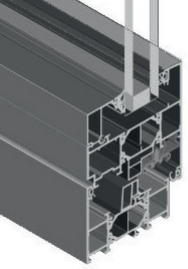
Open-in and open-out



FY 65 VISIBLE Open-in

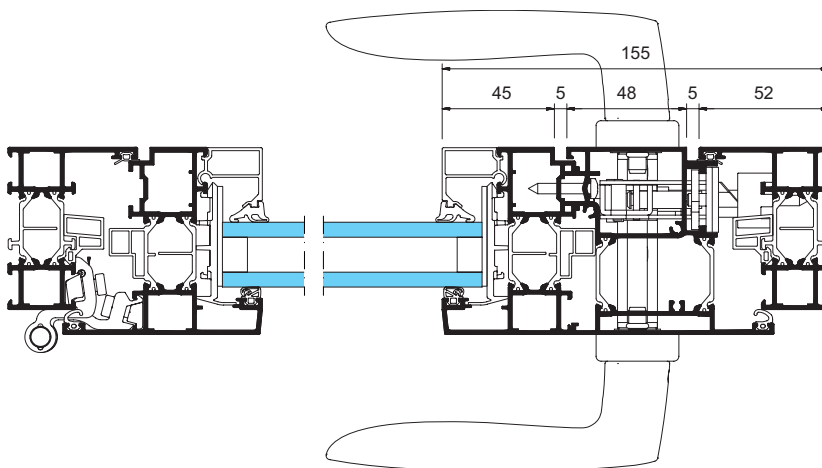
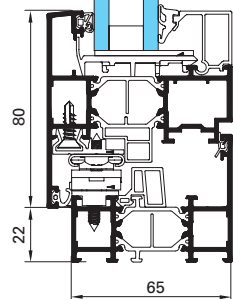
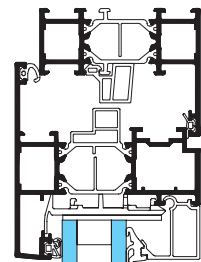
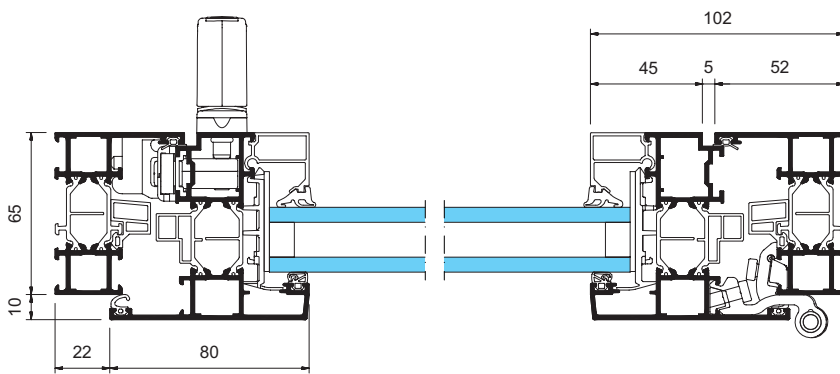
1 and 2 leaf window and balcony door

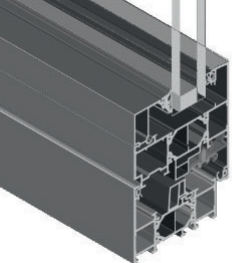




FY 65 VISIBLE

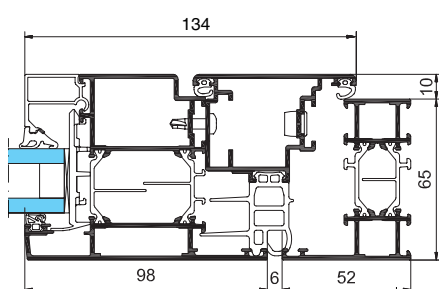
1 and 2 leaf window and balcony door open out



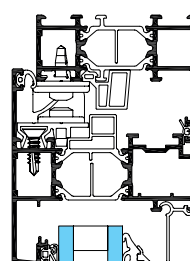


FY 65 VISIBLE

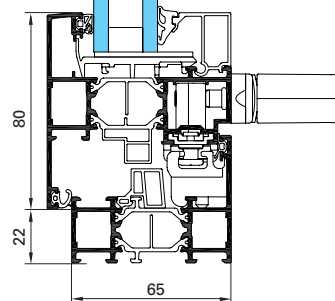
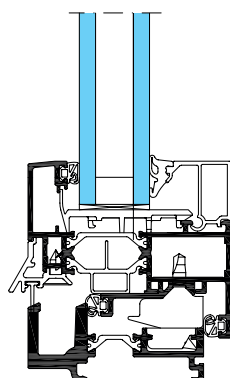
Pivot window



Top-hung Open-out

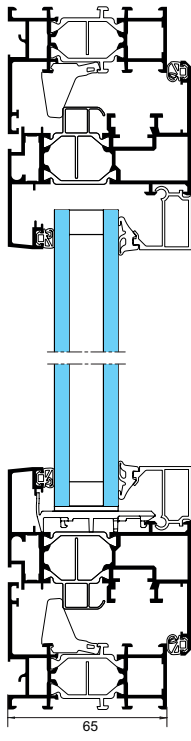
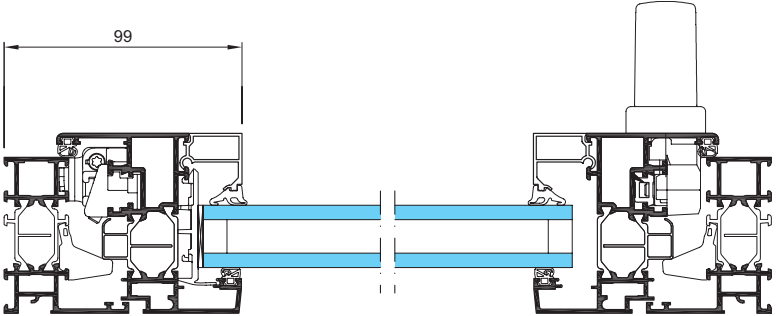


2-leaf balcony door with threshold Open-in

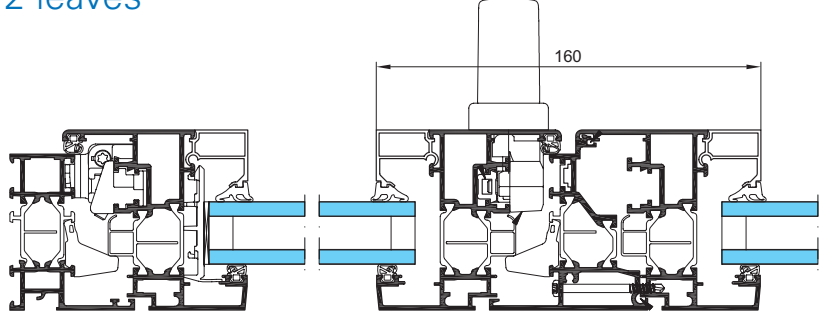


FY 65 VISIBLE Concealed Fittings

1 leaf



2 leaves

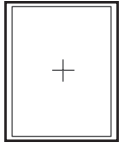


Configurations

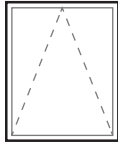
All configurations feature concealed drainage.

External view diagrams

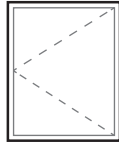
Open-in



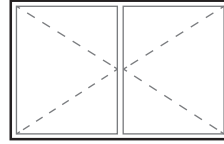
fixed



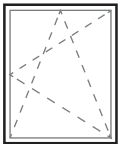
bottom-hung



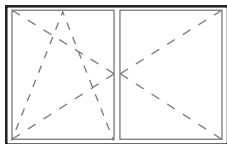
1 leaf



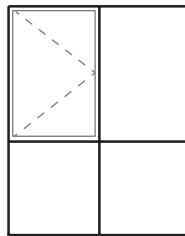
2 leaves



Turn/tilt or tilt/turn 1 leaf

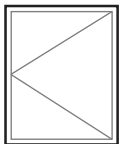


Turn/tilt or tilt/turn 2 leaves

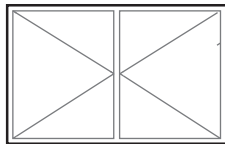


Fixed composite open-in window

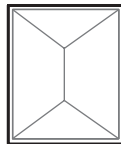
Open-out



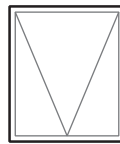
Side hung 1 leaf



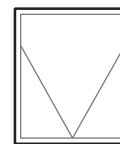
Side hung 2 leaves



Parallel opening

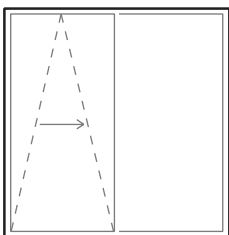


Top hung butt hinges

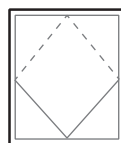


Projecting top hung

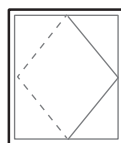
Special openings



Tilt/slide



Horizontal pivot

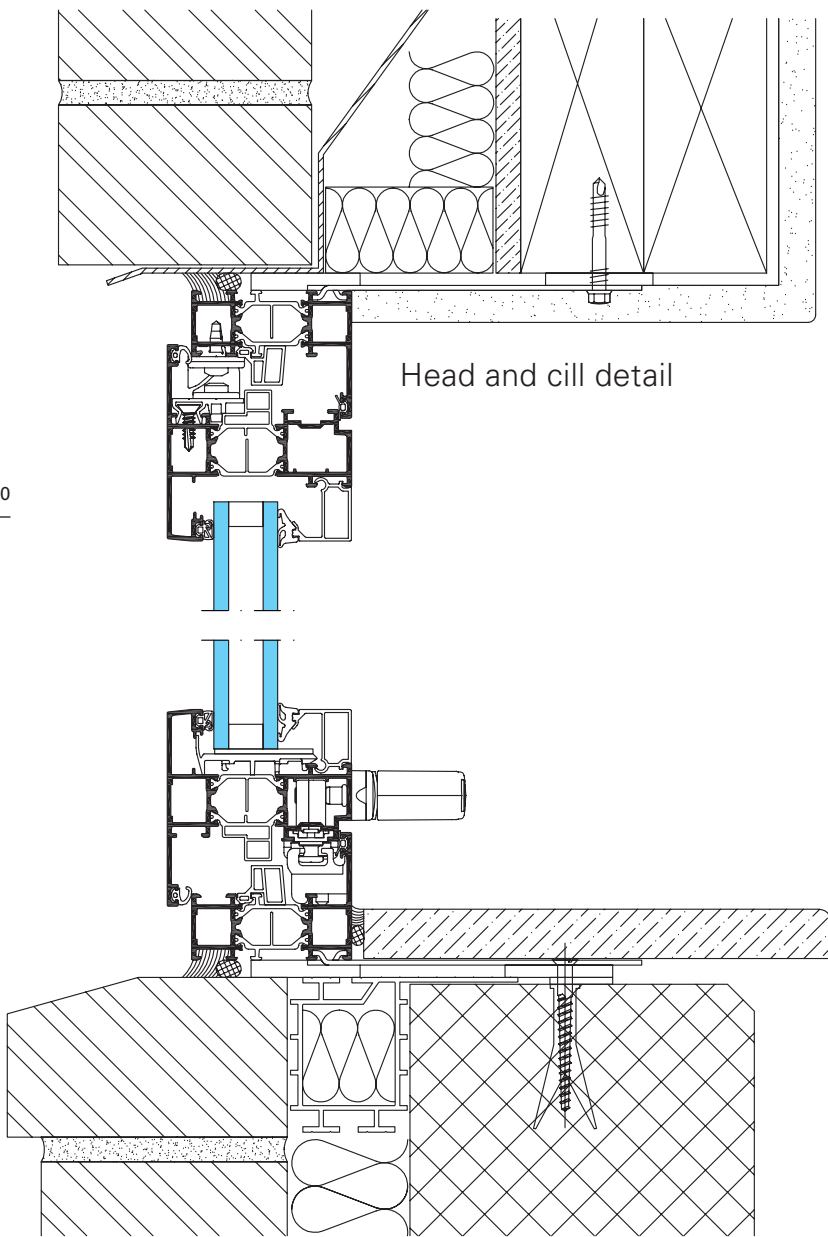


Vertical pivot

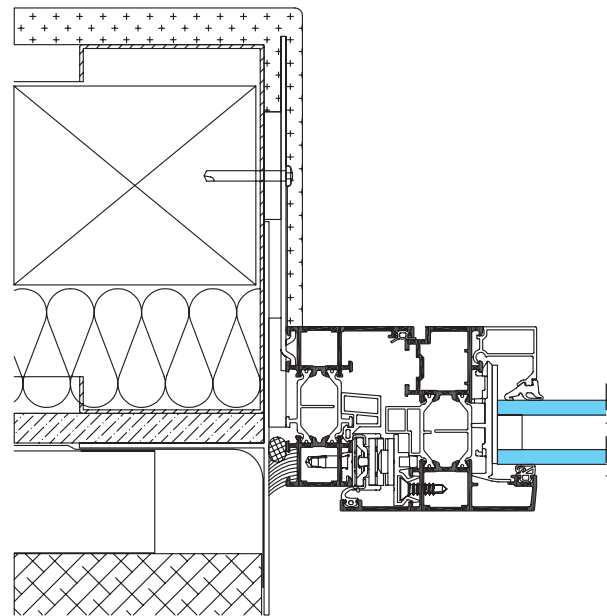
FY 65 WINDOW

Site installation - Typical perimeter details

FY 65 Visible Open-out

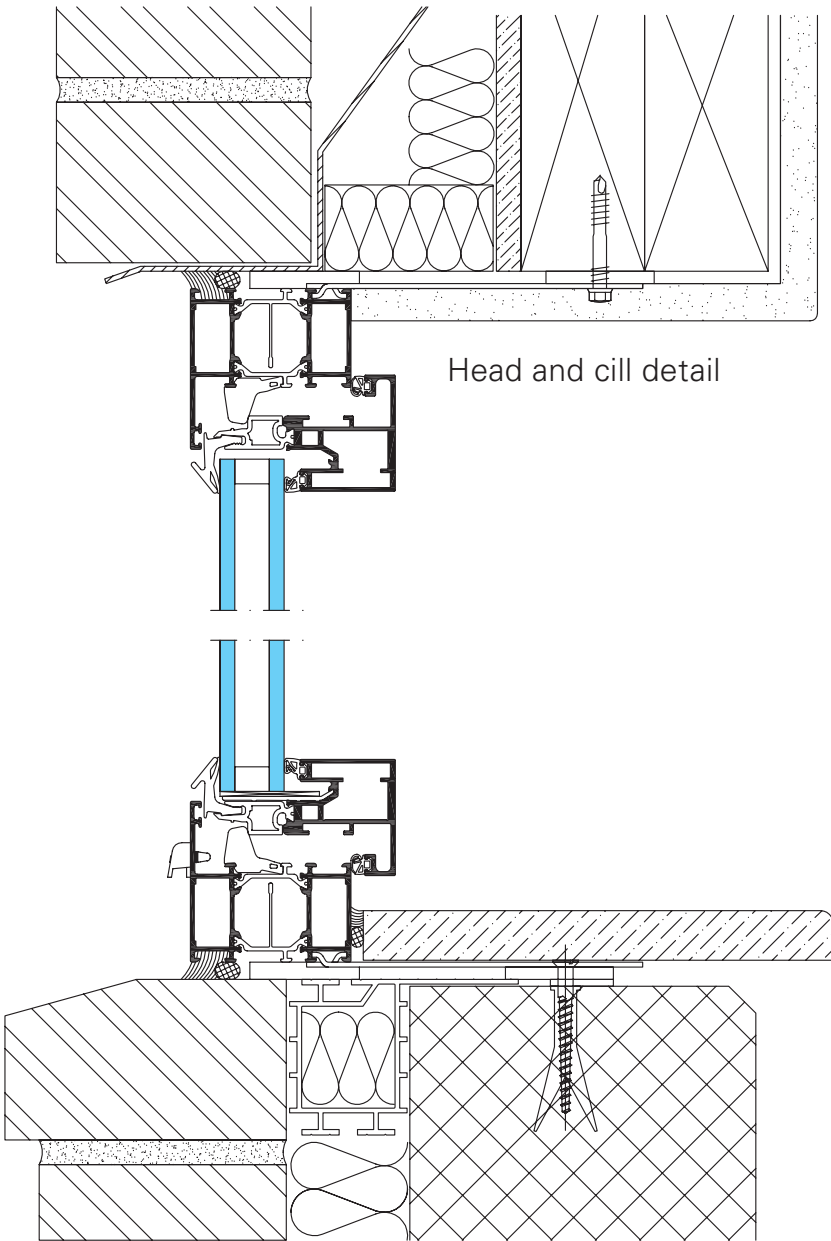


Jamb detail



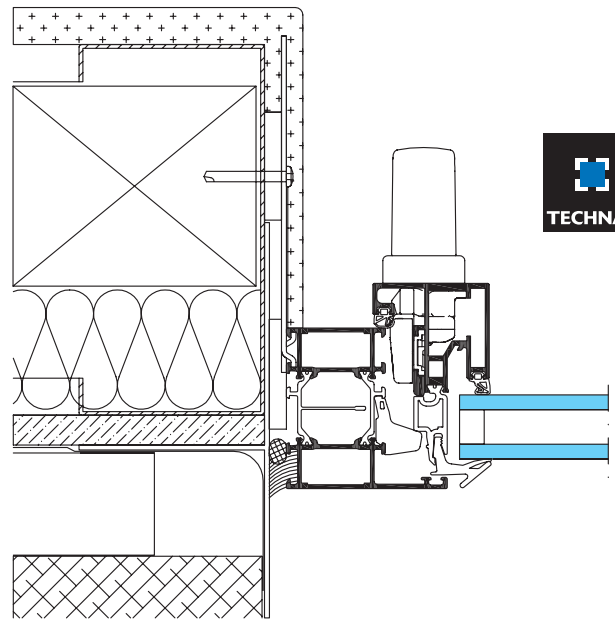


FY 65 Minimal Open-in



Head and sill detail

Jamb detail



FY 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

ACCOUSTIC 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							
1 leaf	1.25 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
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
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	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)	1,5	1,4	1,4	1,1	1,1
		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)	1,6	1,5	1,5	1,3	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							
1 leaf	1.25 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
2 leaves	1.53 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/m ² .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/m ² .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/m ² .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/m ² .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/m ² .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/m ² .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/m ² .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/m ² .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/m ² .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

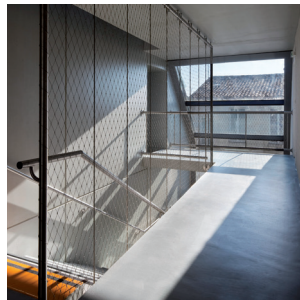
As with all Technal systems, only the best materials and parts are used to minimise maintenance and ensure long-term performance.

- 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.

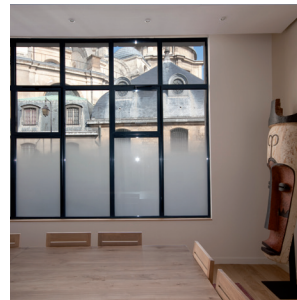
Finishes and colours

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:

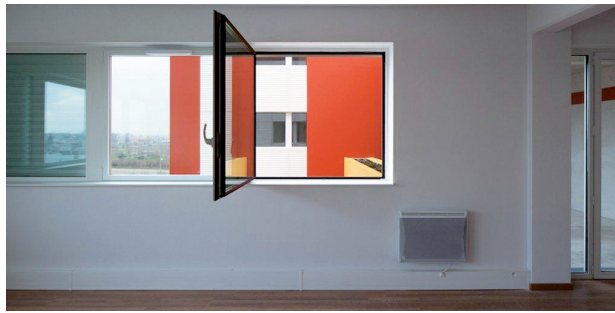
- Natural anodised in accordance with EN 123731: 2001.
- Polyester powder coating finishes in a wide range of colours in accordance with "QUALICOAT" instructions.
- SOLEAL is also available in coated finishes with exclusive Technal colours for a stylish and contemporary look.



1



2



3

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