VELFAC®

WINDOWS FOR LIFE

VELFAC

CATALOGUE

February 2020 onwards

Cover reference project: Queen Margaret Drive, Glasgow / **Architect:** CDA

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FIND EVERYTHING YOU NEED AT **VELFAC.co.uk**

Your online encyclopædia

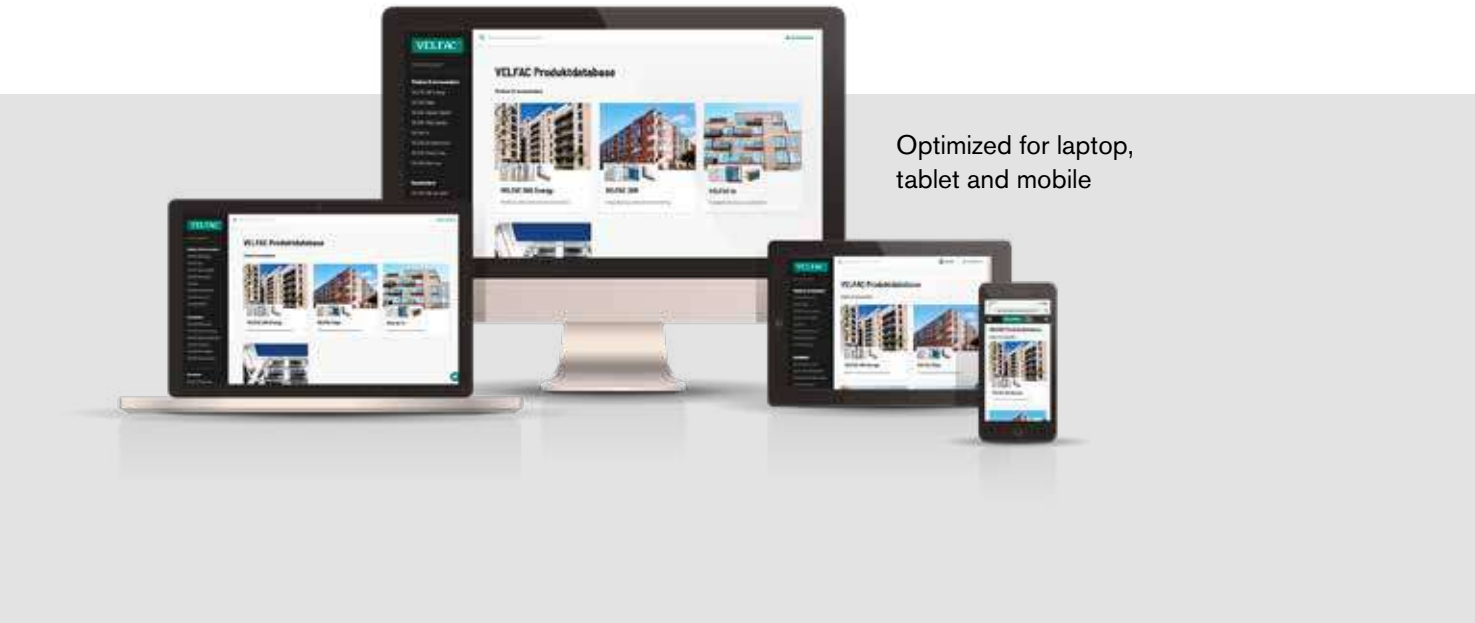
Drawings, product information, technical data – find all the information you need on the VELFAC website, including:

- 2D DWG sectional drawings
- 2D DWG installation drawings
- 3D BIM Revit objects

And more information on
- Product portfolios for commercial, housebuilding and domestic projects
- Opening functions
- Minimum / maximum size charts
- Accessories
- Installation and operation
- Maintenance

Go directly to our product portfolio:

Commercial and Housebuilding projects: VELFAC.co.uk/commercial/windows-and-doors
Domestic projects: VELFAC.co.uk/domestic/technical



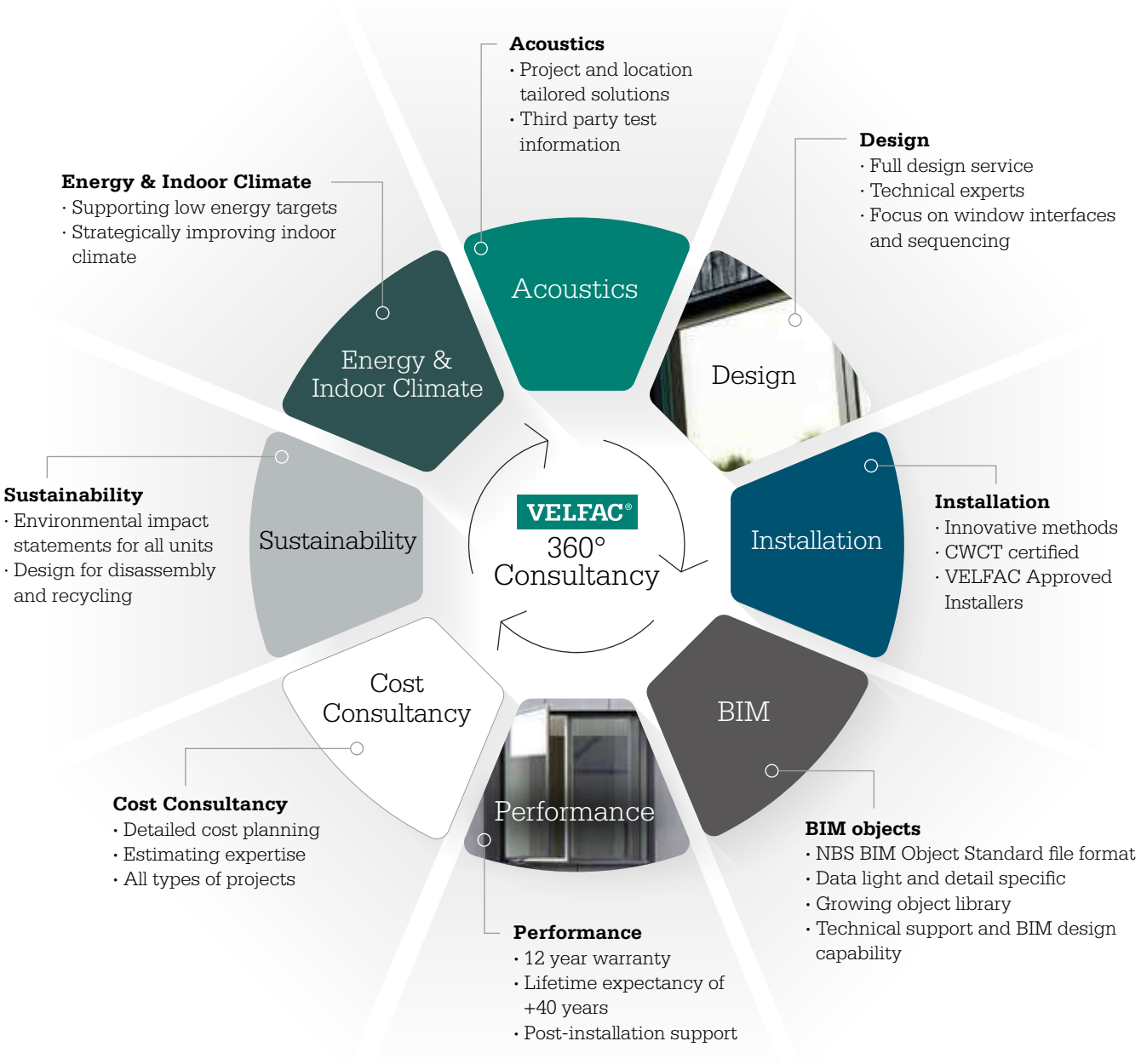
Optimized for laptop, tablet and mobile

PROFESSIONAL ADVICE
– 360 DEGREES CONSULTANCY

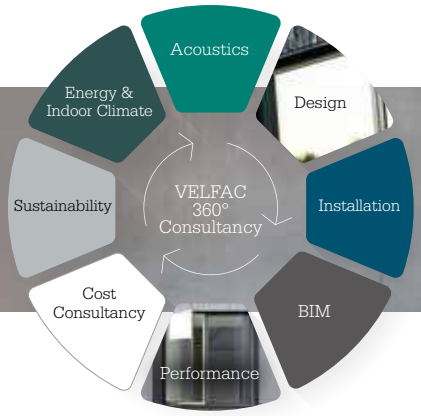
At VELFAC we are experts in glazing, and can provide tailored advice and consultancy at every specification stage – from initial design ideas through to post-installation support. Talk to us as soon as your project starts to take shape and use our product knowledge, and our industry expertise, to specify glazing which meets your budget needs, design vision, and performance targets.

Specification consultants. We employ a team of dedicated Specification Consultants to support Architects throughout any project. For more details contact 01223 897100 or email sales-support@VELFAC.co.uk

CPD from VELFAC. Learn more about the latest developments in window technology in our programme of accredited seminars. For more information contact sales-support@VELFAC.co.uk.



360 DEGREES CONSULTANCY



COST CONSULTANCY

Early stage, **detailed cost planning** can save significant sums over the lifetime of your build, keeping project spend on track and to deadline, and reducing the risk of unexpected budget hikes.

Recognising the value this can deliver to our clients, we have a dedicated **in-house estimating resource**, staffed by experts ready to work on projects of every size.

We can provide up front, accurate project costing – and demonstrate cost performance balance – from the conceptual stage onwards, **providing budget and performance** certainty from the earliest project phase.

INSTALLATION

We continue to develop **innovative installation methods** in response to latest building products and architectural direction to ensure the best possible installation.

Our network of **Approved VELFAC Installers** also provides capacity when needed, and guaranteed levels of service, with **CWCT certification proof** of our ability to work on projects of every size.

As a result, our project-specific **installation advice** results in more efficient and more effective installation, which in turn supports the delivery of more cost-effective and future-proofed projects.

BIM

Our Design Service operates at BIM level using our revised and **updated BIM models**, now available in **NBS file format**. This results in data-light BIM objects which are easier to use and to manipulate, and which allow a faster comparison across product ranges.

Information linked to each BIM object is also available in factsheet format and covers **product details and benefits**, from U-values to guarantees. We regularly update and extend our **BIM object library** – visit bimoject.com to see the full range.

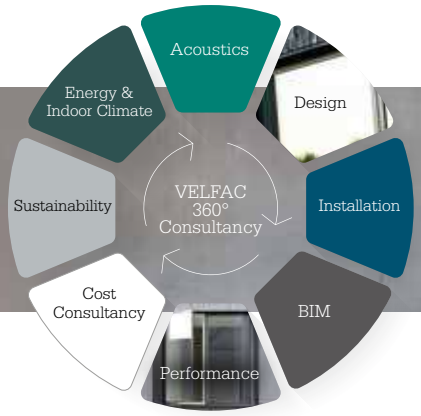
SUSTAINABILITY

The VELFAC system embodies **sustainable design and manufacture**, with every component of our glazing system chosen to limit our **impact on the environment.**

VELFAC units come with an environmental impact statement which provides proof of **sustainable construction and performance**, from our ISO14001-accredited manufacturing facilities to the use of water-based wood treatments.

Units are also deliberately designed for **disassembly and recycling** – another contribution to a less wasteful society.

360 DEGREES CONSULTANCY



DESIGN

After more than 30 years we are **experts in window design**, and our designers work with architects on projects of every size and type.

We **work closely with project teams** to ensure the VELFAC system meets design goals, both **aesthetically** and regarding **installation and performance**, with a particular emphasis on installation and interface.

Where appropriate, we can offer expertise in **structural engineering** and automated design, and have a team of **technical experts available** to come on-site to ensure design specifications are fulfilled.

ACOUSTICS

Effective **acoustic control is essential** for any project built near transport routes, on inner-city sites, or to meet high-density specifications, but can also enhance the **performance of any development**.

The ideal solution must be tailored to project need and location – our experts will specify the right glazing to meet acoustic targets, with all units supplied factory finished to **guaranteed performance standards** proven by extensive third party testing.

Standard VELFAC glazed units already **offer impressive acoustic protection**, and we can advise on enhancing performance with additional or different pane combinations, or specialised lamination and coatings, and on how to exploit the VELFAC acoustic trickle vent to maintain ventilation while **minimising noise pollution**.

Did you know that...

... by involving a consultant at an early stage in the process VELFAC can offer project specific acoustic solutions to ensure technical compliance.

ENERGY AND INDOOR CLIMATE

As a company committed to sustainable performance, we have developed **impressive in-house expertise** in low energy design and improved indoor climate.

We can advise on the best window configuration to **maximise indoor comfort and energy performance**, and can provide free area calculations for naturally ventilated projects.

We can also show how to use the industry-leading VELFAC design to improve and enhance the indoor climate. Our distinctive frame construction delivers **excellent thermal insulation** - U-values as low as 0.82 W/m²K - with no visual compromise, and the stylish slim 54mm sightlines bring significantly **more light into the interior** than traditional alternatives.

THE INDOOR CLIMATE LABEL

At VELFAC our products are Danish Indoor Climate-labelled. In addition, our products have a long service life, which means that they should not need to be replaced for 40 to 60 years.

PERFORMANCE

VELFAC units carry a **12 year warranty**, have an **expected product lifetime of +40 years**, and require only minimal maintenance – proof that robust, worry-free performance is built in to every unit we install.

Sustained performance over the longer term is part of our philosophy and vital to our reputation. **We test all our windows and doors excessively** and provide **unique ID tags** for every unit, making service queries and reordering easier. It is also part of our commitment to **long-term post-installation support**.

WINDOWS FOR EVERY PROJECT

LEADING EDGE DESIGN AND INDUSTRY EXPERIENCE

Meeting every project need. We aim to provide the best window solution at the best price, and can advise on every aspect of window performance, including energy efficiency, security and acoustic control.

Bespoke design. VELFAC composite aluminium/wood windows bring real design freedom. Specify different sizes, shapes and opening functions, and combine these within the same facade with no visual compromise.

Uniform sightlines. All VELFAC units - fixed, opening, manual and motorised - retain identical sightlines. Create seamless facades, window walling and fully glazed features such as atria or stairwells - and add VELFAC glazed, look-alike, or cedar panels for colour, texture and contrast.

Quality. With regular maintenance, VELFAC windows will last for 40 years or more.

+30 years' experience. We've been designing and installing composite windows for over 30 years. Our core product range – the VELFAC 200 system – is continuously updated and improved to meet market needs and regulatory demands.

12 Year warranty including glazing and all ironmongery. One of the best warranties on the market today - evidence of our confidence in our product range.

High **QUALITY DESIGN** meets the **ENERGY DEMANDS** of the future

12 YEAR WARRANTY ON WINDOWS

VELFAC®

Tower Mill, Little Downham, Cambridgeshire
Architect: Freeman Brear Architects

Holland Park Avenue, London
Architect: Broadway Malyan

A WINDOW SYSTEM UNDER CONSTANT EVOLUTION

The VELFAC 200 window system is constantly under development in order to meet evolving client demands and to satisfy changing regulations. Our new triple-glazed system - VELFAC 200 ENERGY - combines impressive insulation with strength and durability, while maintaining the clean, crisp sightlines that make VELFAC windows so distinctive.

VELFAC 200 ENERGY windows are based on the same proven construction used to create the VELFAC 200 system, originally launched in 1985. We've spent the last 30 years optimising this market leading design, and our knowledge and experience is evident in the system you see today.

The VELFAC system is available in three versions:

VELFAC 200 alu,
24mm glazing

- U_w-value: 1.55W/m²K
- Double-glazed unit
- Material: aluminium / wood

VELFAC 200i,
24mm glazing

- U_w-value: 1.40W/m²K
- Double-glazed unit
- Material: aluminium with thermal break / wood

VELFAC 200 ENERGY,
48mm glazing

- U_w-value: 0.82W/m²K
- Triple-glazed unit
- Material: aluminium with thermal break / wood

Chapter House, Lichfield
Architect: Proctor and Matthews

VELFAC DOORS

SOLUTIONS FOR ALL PURPOSES

VELFAC Aluminium entrance doors

VELFAC Aluminium doors are designed for installation where reliability, stability and strength of the door are vital.

Typical situations include the main entrance, side entrance or restricted entrance to commercial, residential or public buildings.

VELFAC Aluminium doors can be coupled with VELFAC 200 windows to create glazed entrance screens or atria.

Glazed entrance doors

VELFAC wood/aluminium entrance doors

VELFAC Ribo entrance doors are designed for installation where a medium strength door is required.

Typical situations include the main entrance to domestic buildings and secondary entrance doors in public buildings or office blocks.

Flush entrance doors are available in a number of external designs and can incorporate a range of glass apertures.

Glazed entrance doors provide maximum daylight, and can be divided by glazing bars with the resulting apertures glazed or panelled.

Flush entrance door with glass aperture

Flush entrance door, plain (without design)

Glazed entrance door

FUNCTION **PRODUCT SYSTEM**

OPENING FUNCTION	outward opening	inward opening	VELFAC 200 DGU	VELFAC 200 ENERGY	VELFAC Ribo	VELFAC In	VELFAC aluminium door
Casement door	x		x	x			
Sliding casement door			x	x			
Sliding door					x		
Patio door	x	x			x		
Juliette door w/tilt function		x				x	
Glazed entrance door	x	x			x		x
Flush door	x	x			x		

VELFAC wood/aluminium casement doors

VELFAC 200 sliding casement door in combination with fixed units.

VELFAC 200 casement door in combination with fixed units.

VELFAC In tilt and turn Juliette doors and windows feature the distinctive slim frame design together with an inward opening function.

VELFAC Ribo patio doors are available as inward or outward opening, seen here as a Juliette solution in combination with VELFAC 200 windows.

VELFAC WINDOWS
DESIGNED TO LAST

Thousands of customers test VELFAC windows every day. Throughout Europe, millions of windows have stood the test of time, but despite this track record, we still maintain a demanding testing programme to ensure our system continues to meet - and exceed - all necessary regulatory standards.

VELFAC windows have been tested by Europe's most rigorous standards agencies, which have analysed all aspects of window design and performance. In many cases we routinely test special requirements for the qualities of our windows - impact, fire safety and noise reduction are some of the areas we have tested.

The VELFAC system has received approval from:

- Element, Willenhall, Buckinghamshire
- Wintech Engineering Limited, Telford
- BM TRADA, High Wycombe
- BRE, Herts
- Rise Research Institues of Sweden, Boraas, Sweden
- Teknologisk Institut, Aarhus, Denmark (DTI)
- DELTA, Aarhus, Denmark
- DBI, Hvidovre, Denmark

Please call us if you have any questions about the testing programme, or test evidence of windows for your project on 01223 897100. An overview over our test results can be found on page 93-98.

VELFAC offers a CWCT accredited solution. The 62m² large window wall made with 8 complete window units, 20 individual sashes, 6 large opening functions and 5 panel solutions is tested for air permeability, water tightness and wind resistance.

Window façade exposed to CWCT water load test. Water nozzles are located directly in front of the façade and water pumps with a flow rate of at least 3.4 litres/m²/minute.

VELFAC frames exposed to high winds, rain and sun. This tests the durability of different surface treatments.

Our R&D Department develops the majority of VELFAC ironmongery to ensure it is ideally suited to the style and function of the VELFAC system, and all items are regularly tested both by VELFAC and by independent testing bodies. Here, VELFAC ironmongery is exposed to salt-laden winds and coastal weather conditions.

CE & DoP

The documentation is at hand. You can read more about our extensive testing program and see the results in all test areas at VELFAC.co.uk, where you will also find the Declaration of Performance documents (DoP) for all products in our range and our accreditation certificates.

The acoustic performance of VELFAC units is tested, and documented to support precise noise control solutions. We can provide windows that meet the project's specific acoustic requirements and offer a competitive solution.

VELFAC composite windows and doors guarantee the safety performance required to meet the Building regulation Part Q, and the exacting standards of UK Police flagship initiative Secured by Design (SBD) – all without any change to the distinctive ultra-thin frame design. This means the VELFAC system can be used in SBD developments – regarded by potential purchasers as a guarantee of additional safety and security both in and outside the building.

Secured by Design

SBD

Official Police Security Initiative

VELFAC 200 ENERGY casement door ready to open and close 20,000 cycles during an internal test at VELFAC, which is an integral part of the development process.

We salt spray test all exterior brackets after a Cyclic corrosion testing (evaluation value 10, EN/ISO 10289). The CCT test mimics the actual environmental impact in that the brackets are not only exposed to the salt spray, but also varying temperatures and alternating dry and humid environments. After the test (480 hours) all VELFAC brackets must still be without a trace of rust.

All our windows are drop tested, this tests the capability of the ironmongery to stop the window falling from the facade should any piece of ironmongery fail. VELFAC windows are proven to be safe and secure.

FLEXIBILITY AND
DESIGN FREEDOM

External colours and surface finishes
The external aluminium sashes are surface treated in a hard-wearing Polyester-powder coating available in a wide range of RAL colours, metallic finish in RAL 9006 & 9007, or anodised silver or bronze.

All classic RAL-colours

VELFAC Granite

Anodised

Internal colours and surface finishes
The wood frames are treated with a clear lacquer to enhance the warmth of the natural grain, or painted in one of a range of RAL colours to match the interior decor.

Popular internal surface finishes

Internal VELFAC 200 glazing beads

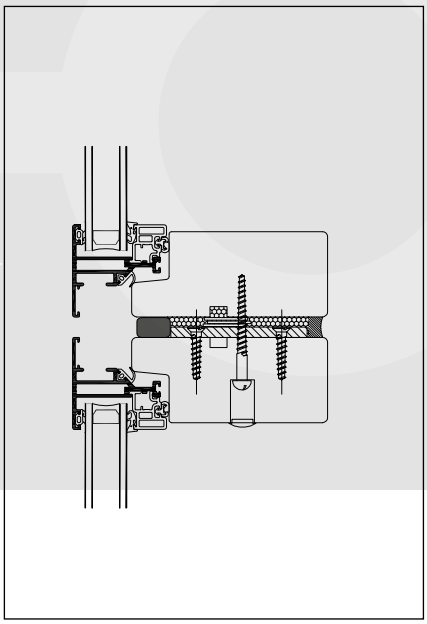
The right combination
Spacer profiles are available in light grey or black, with glazing beads also available in light grey, black, and in white, enabling completely black or white windows to be specified.

Shapes
VELFAC windows can be manufactured in a wide range of shapes to suit the architectural style of the building, or ready to be used in combination to create glazed features. Most shaped windows are fixed units, although opening units can be specified.

REFERENCE **PROJECT**

Project name: The Raymond Fenton Youth and Community Centre, Gloucestershire. **Architect:** White Design.

Reinforcement coupling detail

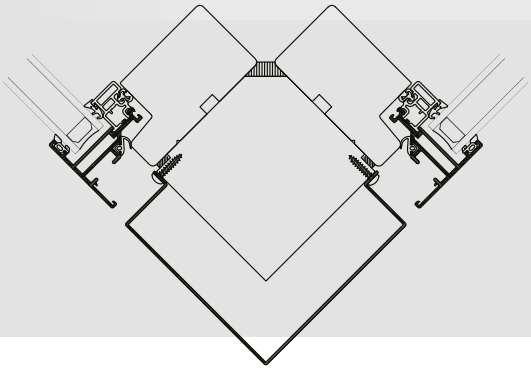


The drawings shown are standard interfaces.
Projects specific interfaces are made on request.

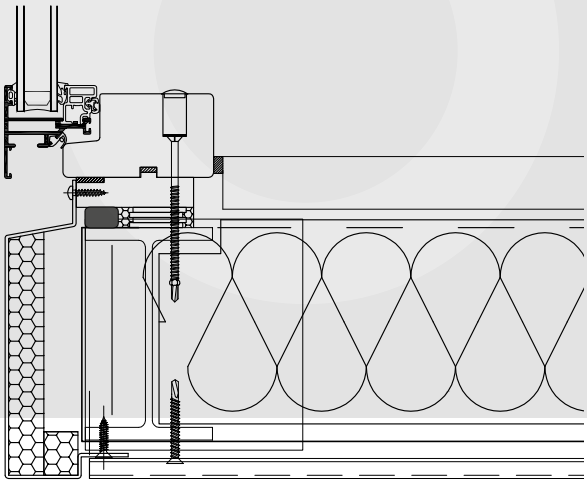
REFERENCE **PROJECT**

Project name: INTO, Newcastle University. **Architect:** Faulkner Browns Architects.

Corner post solution



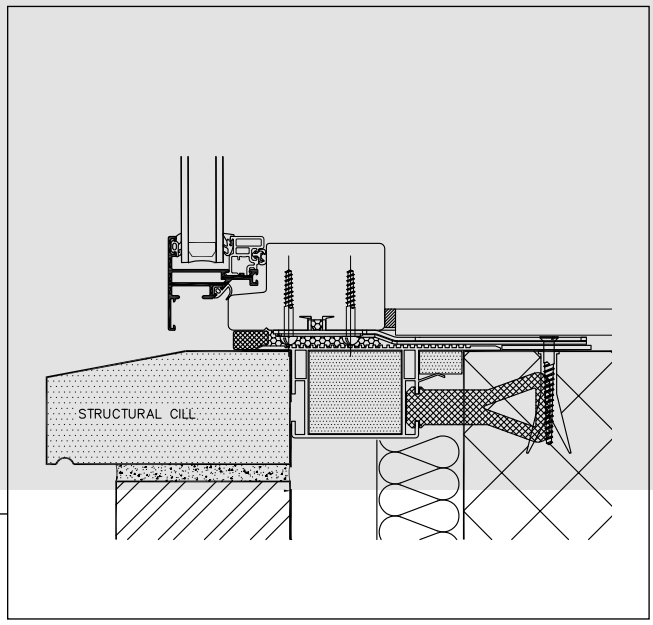
Cantilevered frames



REFERENCE **PROJECT**

Project name: Kearns Village, Rossendale. **Developer:** Skipton Properties.

Stone cill



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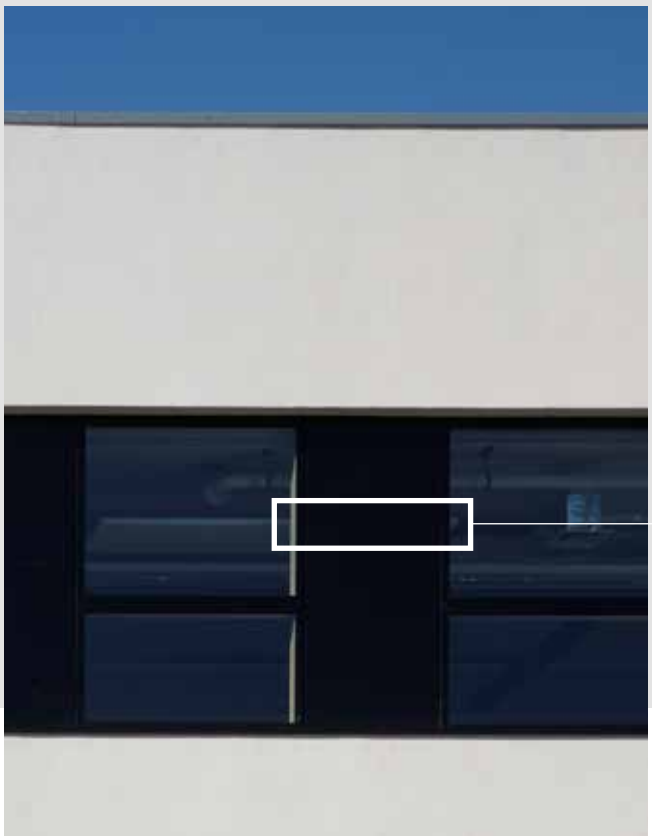
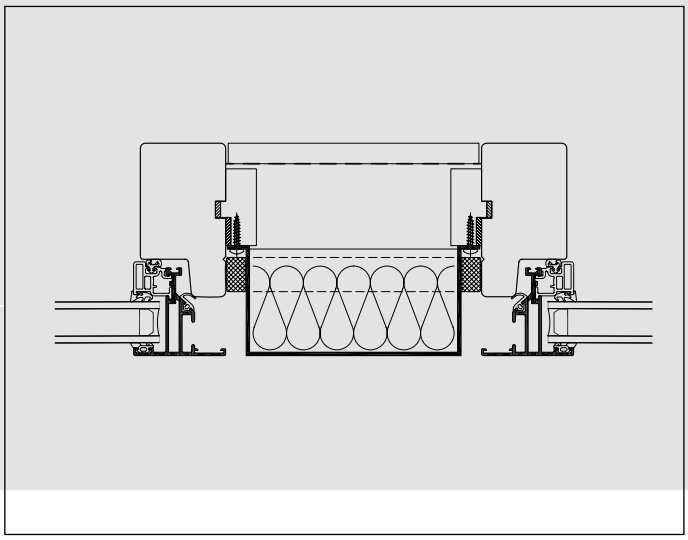
REFERENCE **PROJECT**

Project name: Bohunt School, Worthing. **Architect:** ECE Architecture.



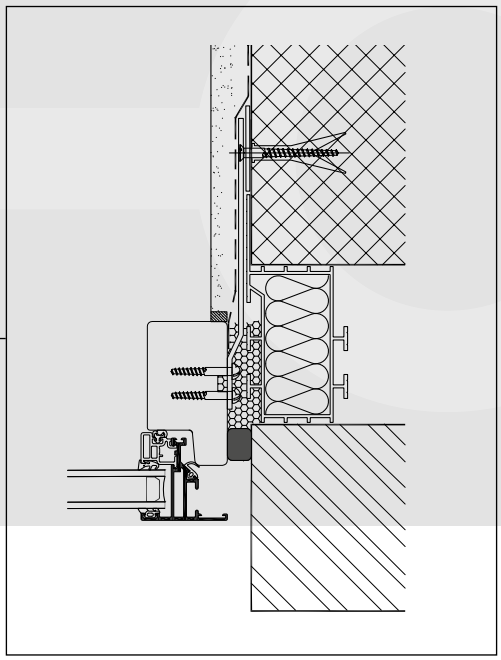
Window with top-hat pressing



REFERENCE **PROJECT**

Project name: The Cloisters, Holmewood House School, Tunbridge Wells, Kent. **Architect:** Studio Partington.

Brick detail at the jamb



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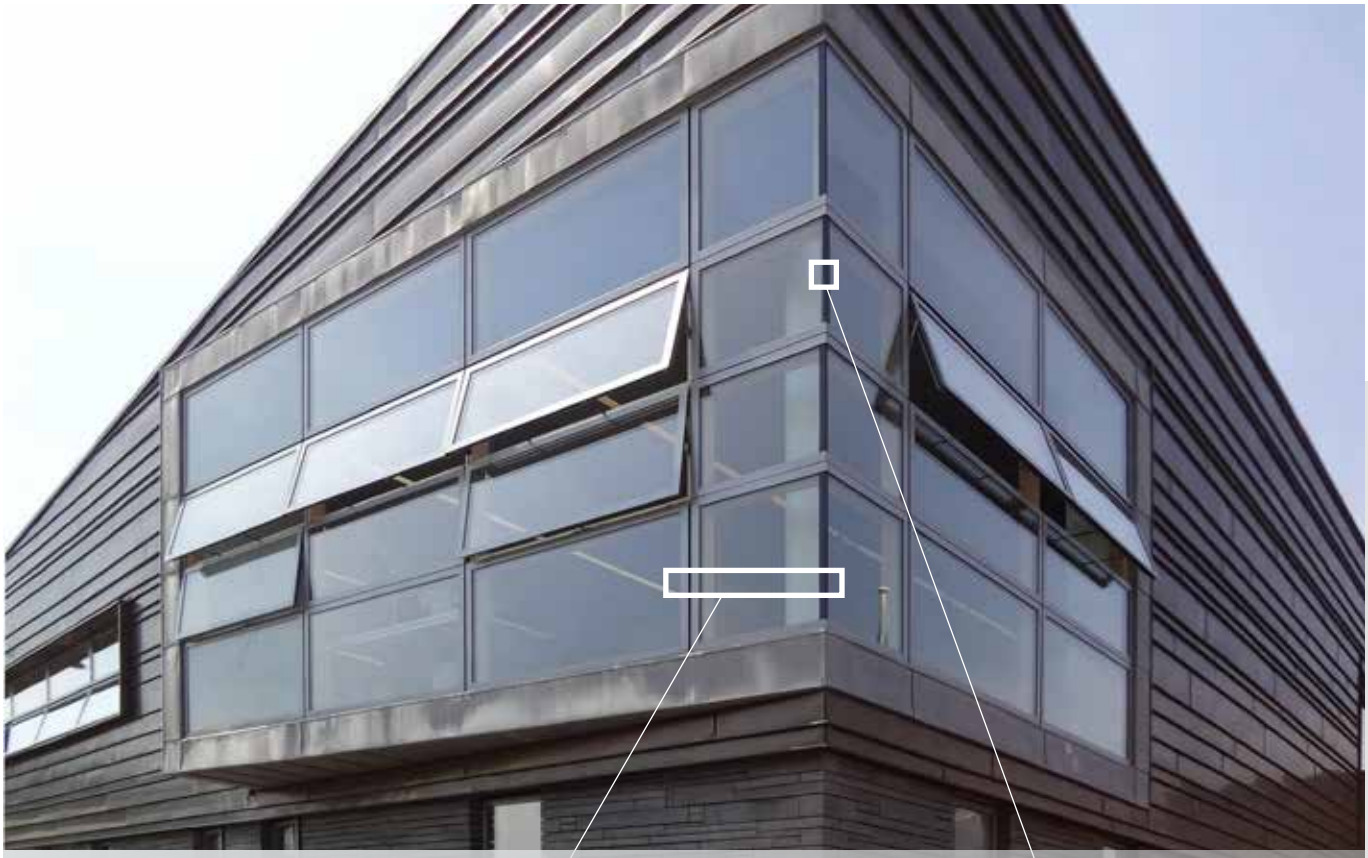
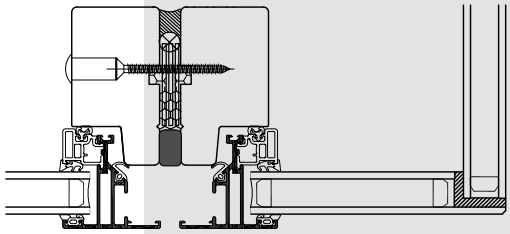
REFERENCE **PROJECT**

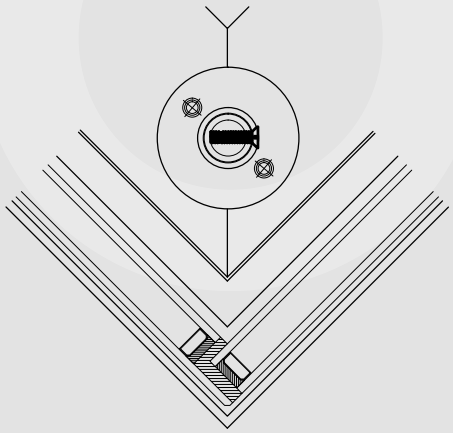


Project name: Bathgate Partnership Centre, Bathgate. **Architect:** BDP, Glasgow.

Corner window detail



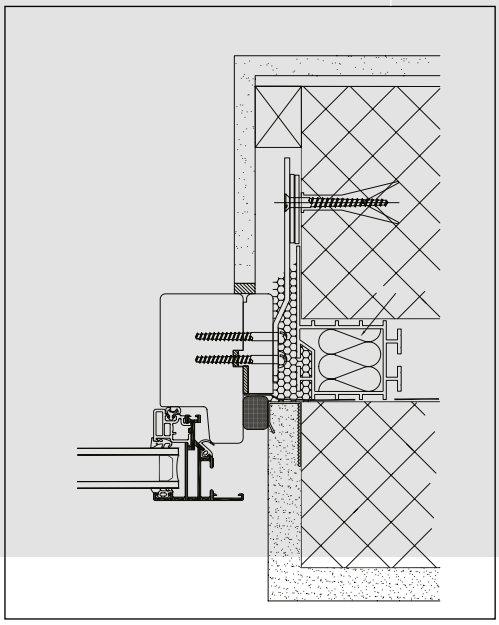
Corner window detail, structural fixing



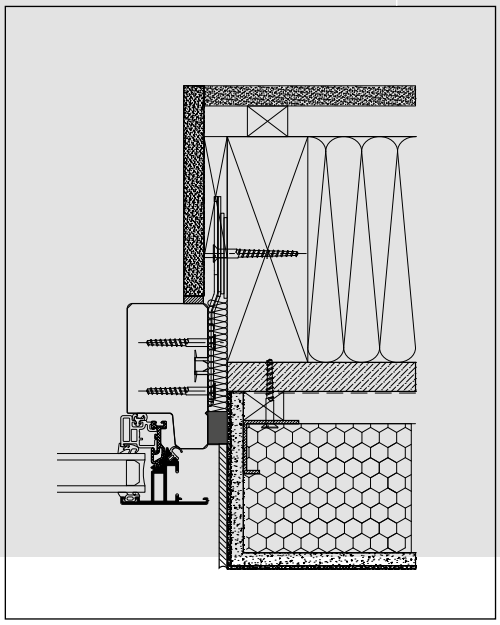
REFERENCE **PROJECT**

Project name: Holland Park Avenue, London. **Architect:** Broadway Malyan.

Render detail at jamb (1)



Render detail at jamb (2)

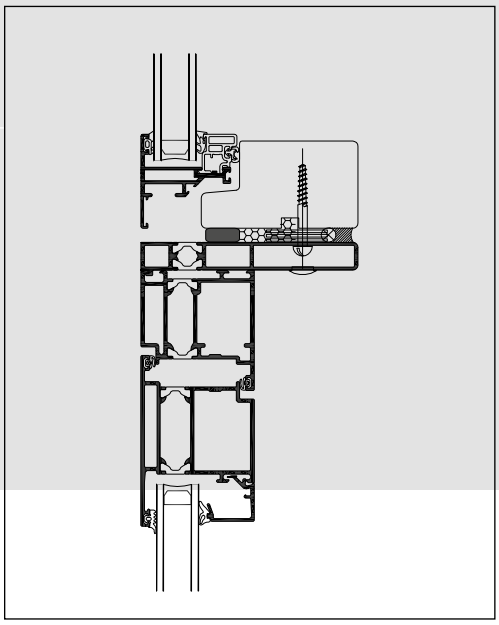


The drawings shown are standard interfaces.
Projects specific interfaces are made on request.

REFERENCE **PROJECT**

Project name: Ewell Grove Primary School, Ewell, Surrey. **Architect:** HLM

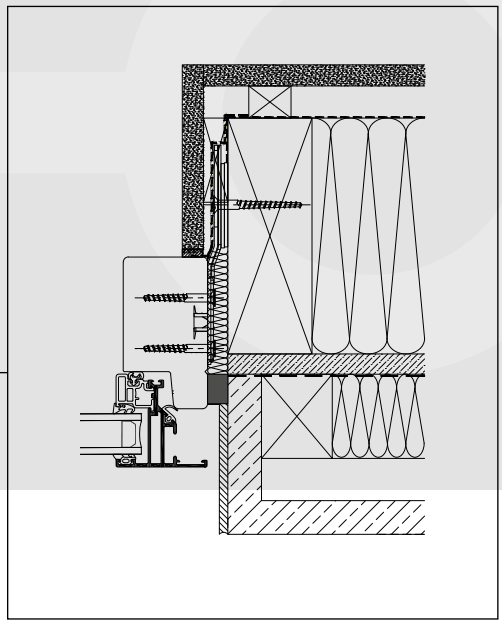
Coupling VELFAC 200 and VELFAC Aluminium door



REFERENCE **PROJECT**

Project name: Bruyn's Court, South Ockendon. **Architect:** Bell Phillips Architects.

Timber cladding at jamb



The drawings shown are standard interfaces.
Projects specific interfaces are made on request.

FULL MODULARITY AND WINDOW WALLING

WIDE RANGE OF SHAPED WINDOWS

WEATHER-RESISTANT ALUMINIUM ON THE OUTSIDE

NATURAL WOOD ON THE INSIDE

VELFAC 200 SYSTEMS

THE ORIGINAL COMPOSITE WINDOWS

Top: Deaconess House, Edinburgh / The Kalyvides Partnership

Bottom: Beechdown, Challaborough, Devon / Developer Beachdown Ltd

CLEAN CRISP AND UNIFORM SIGHTLINES

ELEGANT GLASS-TO-GLASS CORNER WINDOW SOLUTIONS

COMPREHENSIVE 12 YEARS WARRANTY

MINIMALISTIC DESIGN STYLISH AND SOPHISTICATED

SLIM SASHES PROVIDE MAXIMUM DAYLIGHT

MOTORISED WINDOWS WITH FULLY CONCEALED MOTORS

EXTERNALLY CONCEALED CLICK VENTS

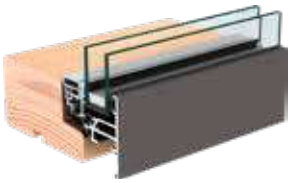
BI-PARTING SLIDING DOOR OPENS UP TO 2.5 METRES

VELFAC 200 / VELFAC 200 ENERGY – OVERVIEW

CHARACTERISTICS

- Minimalistic design - stylish and sophisticated
- Uniform sightlines regardless of opening function
- Meets requirements of NHBC 6.9 for curtain walling and CWCT
- Market leading warranty of 12 years
- Uw values down to 0.82 W/m²K
- Available as 24mm double and 48mm triple layer glazing

SASH VARIATIONS



VELFAC 200
24mm double glazed unit

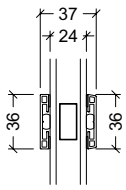
VELFAC 200 ENERGY
48mm triple glazed unit

GLAZING BARS AND WINDOWS

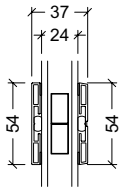
36mm

54mm

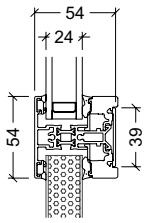
116mm



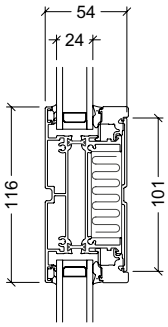
36mm energy glazing bar
24mm glazing



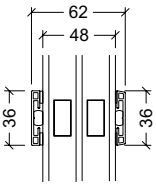
54mm energy glazing bar
24mm glazing



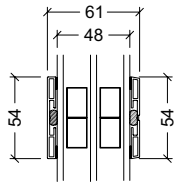
54mm glazing bar
24mm glazing



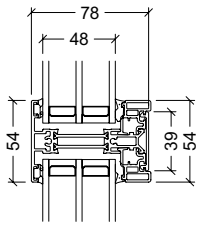
116mm glazing bar
24mm glazing



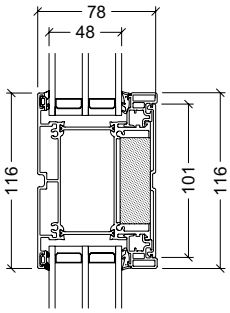
36mm energy glazing bar
48mm glazing



54mm energy glazing bar
48mm glazing



54mm glazing bar
48mm glazing



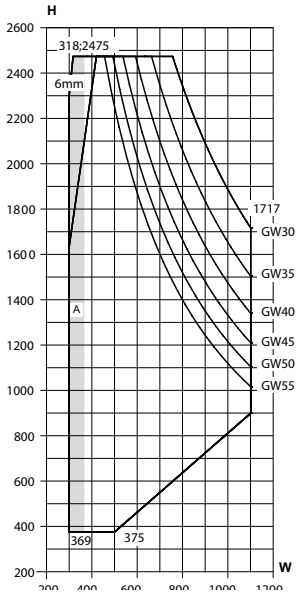
116mm glazing bar
48mm glazing

VELFAC 200 / VELFAC 200 ENERGY – OPENING FUNCTIONS

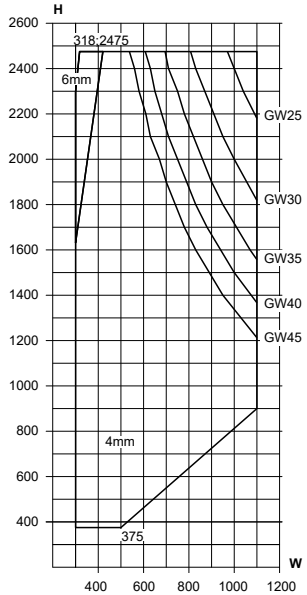
SIDEHUNG WINDOW

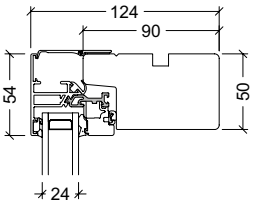
- The sash opens up to 90°
- Concealed hinges
- An adjustable friction brake allows random opening position
- The espagnolette has a built-in ventilation position

Min./max. sizes, 48mm glazing

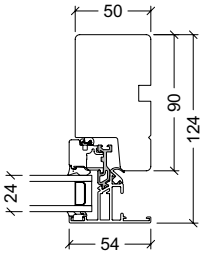


Min./max. sizes, 24mm glazing

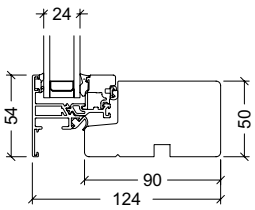




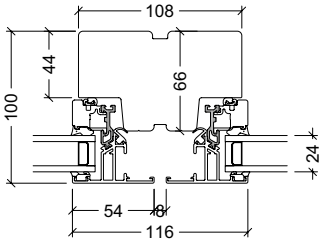
Head



Jamb



Cill

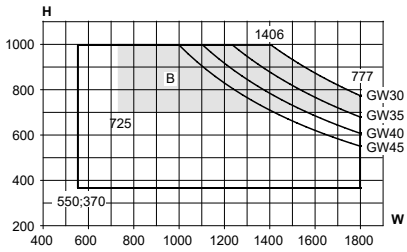


66mm mullion

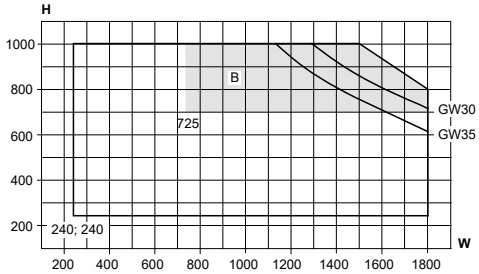
BOTTOMHUNG WINDOW

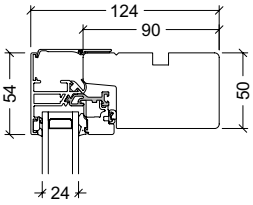
- Used for smoke ventilation (grey area B)
- Supplied with electric motor for smoke ventilation

Min./max. sizes, 48mm glazing

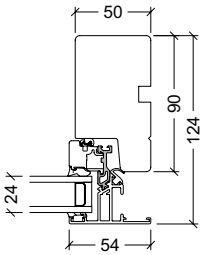


Min./max. sizes, 24mm glazing

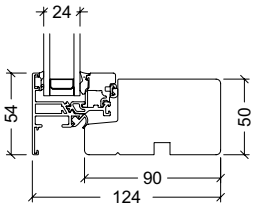




Head



Jamb



Cill

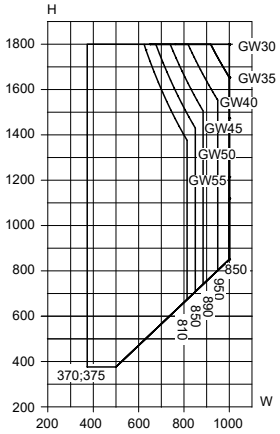
GW = glass weight (see page 80)
A = with circular catch handle
B = suitable for smoke ventilation

VELFAC 200 / VELFAC 200 ENERGY – OPENING FUNCTIONS

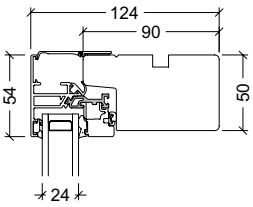
SIDE-GUIDED WINDOW

- To open, the sash moves on guide rails mounted on the head and cill
- The sash stops at approx. 90°
- When fully opened, a 15cm (minimum) gap allows cleaning from the inside
- The espagnolette has a built-in ventilation position
- An adjustable friction brake allows random opening position

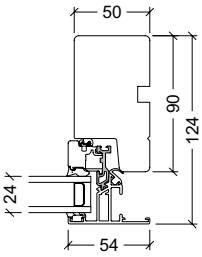
Min./max. sizes, 24mm and 48mm glazing



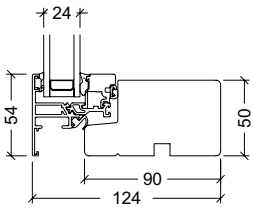
When fully opened, a gap allows external cleaning from the inside.



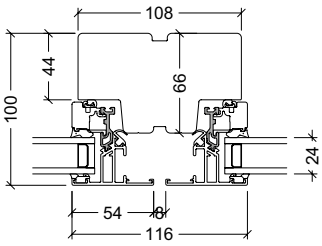
Head



Jamb



Cill

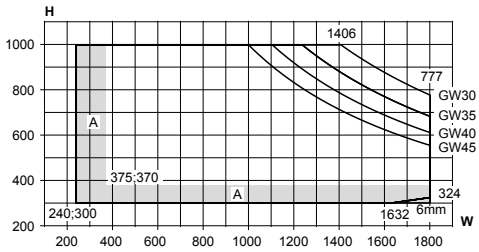


66mm mullion

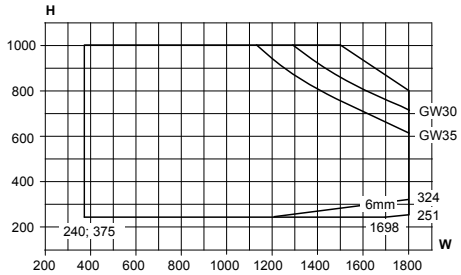
TOPHUNG WINDOW

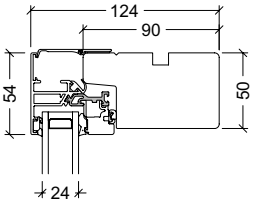
- The sash opens up to 85°
- The espagnolette has a built-in ventilation position
- Opportunity for rescue opening in low, wide windows, where the top-guided windows cannot fulfill the requirement

Min./max. sizes, 48mm glazing

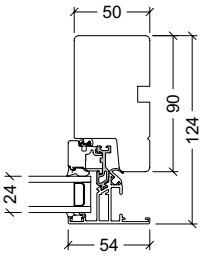


Min./max. sizes, 24mm glazing

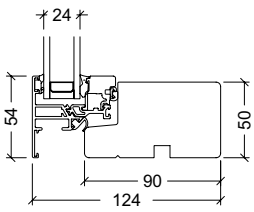




Head



Jamb



Cill

GW = glass weight (see page 80)
A = With circular catch handle and friction brake

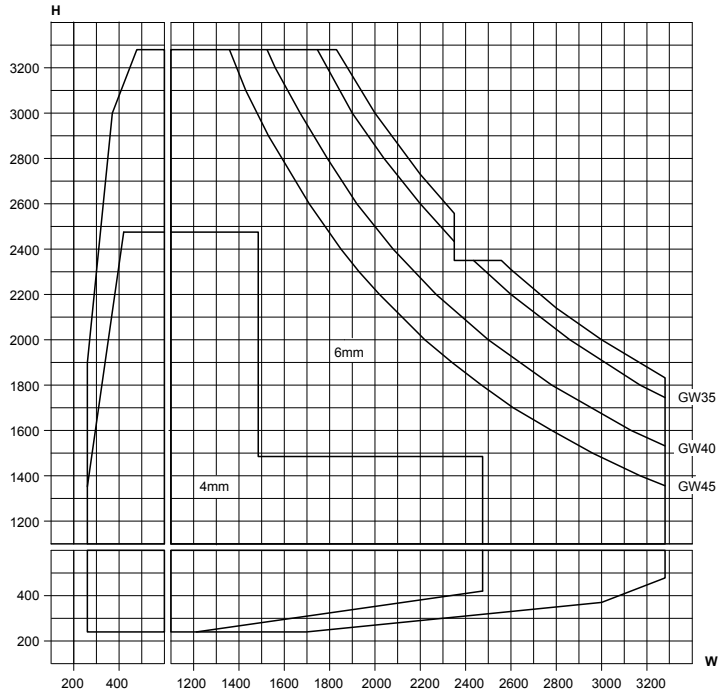
VELFAC 200 / VELFAC 200 ENERGY – OPENING FUNCTIONS

FIXED CASEMENT

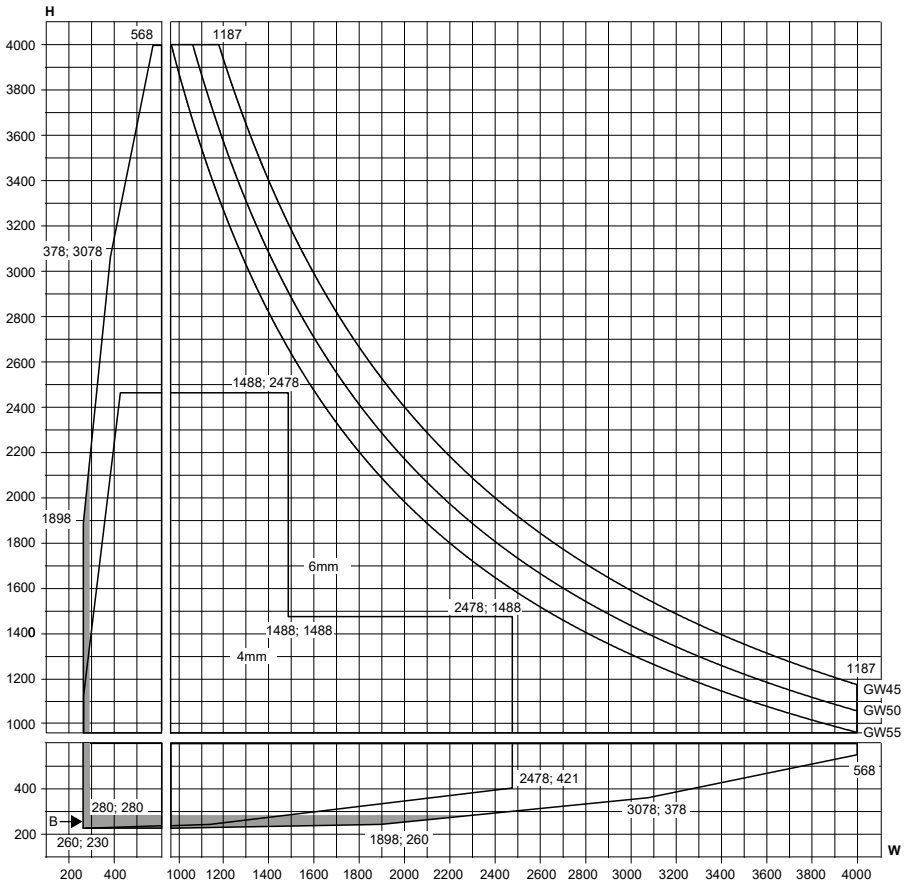
- The frame and sash are integrated
- Appears identical to all VELFAC 200 window types

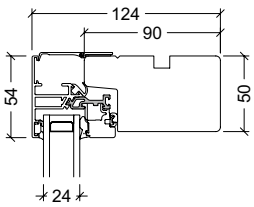
GW = glass weight (see page 80)
B = elements with multiple sashes only

Min./max. sizes, 24mm glazing

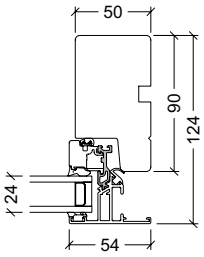


Min./max. sizes, 48mm glazing

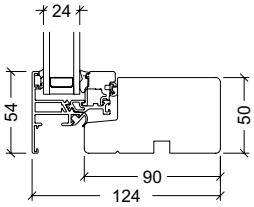




Head



Jamb



Cill

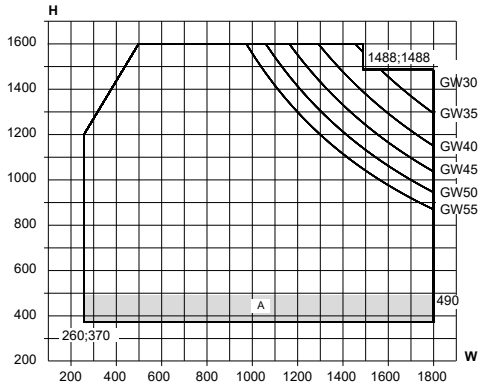
VELFAC 200 / VELFAC 200 ENERGY – OPENING FUNCTIONS

TOP-GUIDED WINDOW

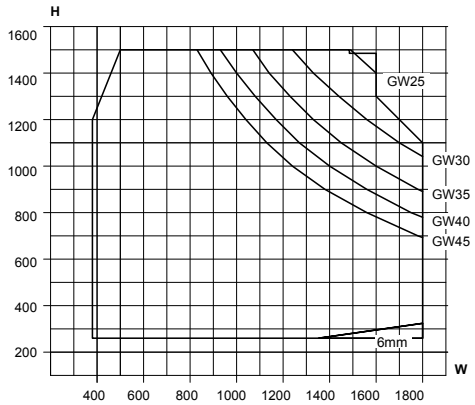
- When opened the sash provides a ventilation gap at the head
- The espagnolette has a built-in ventilation position
- The balance arms have built-in adjustable friction brakes allowing random opening position

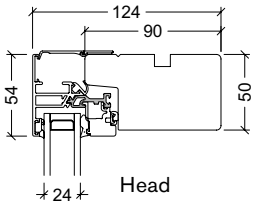
GW = glass weight (see page 80)
A = With circular catch handle and friction brake

Min./max. sizes, 48mm glazing

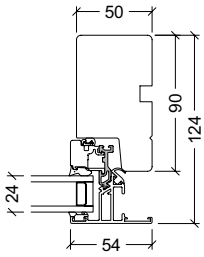


Min./max. sizes, 24mm glazing

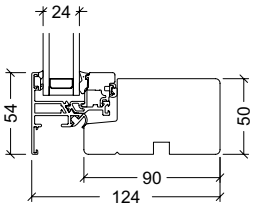




Head



Jamb



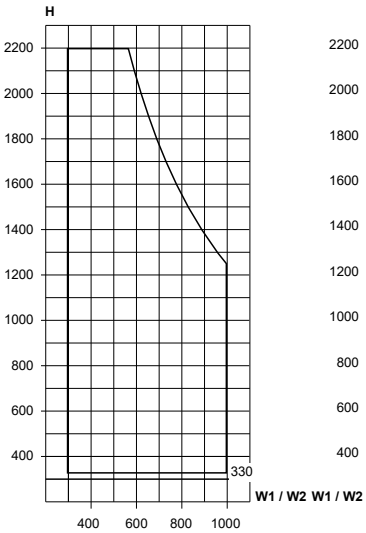
Cill

GLASS TO GLASS CORNER WINDOW

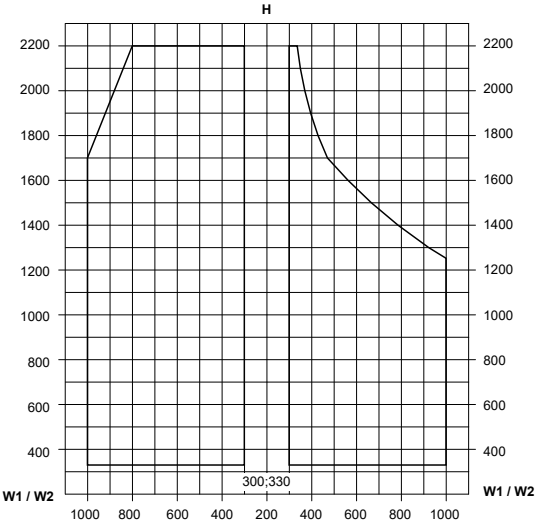
- Can be used where an external view is required without disruption from corner posts
- The window allows maximum light to enter and can be used as an architectural feature

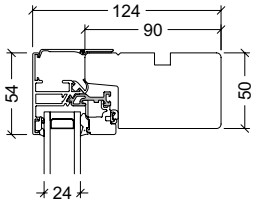
Min./max. sizes, 24mm glazing

Symmetric

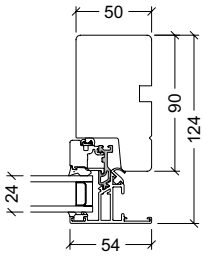


Asymmetric





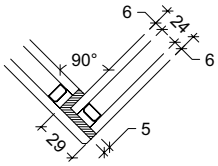
Head



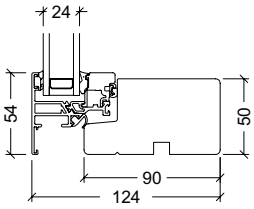
Jamb

Min./max. sizes, 48mm glazing

Construction rules:
250mm ≤ H ≤ 2400mm
300mm ≤ W ≤ 1000mm
W1+W2 ≤ 2000mm
W1+W2 ≥ 800mm



Glass to glass corner



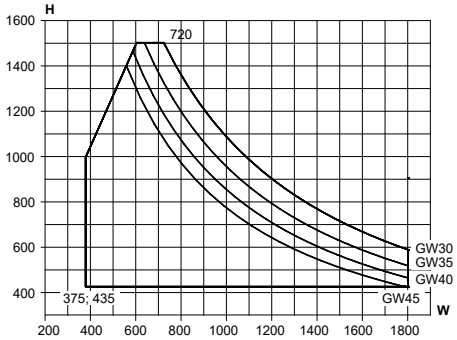
Cill

VELFAC 200 / VELFAC 200 ENERGY – OPENING FUNCTIONS

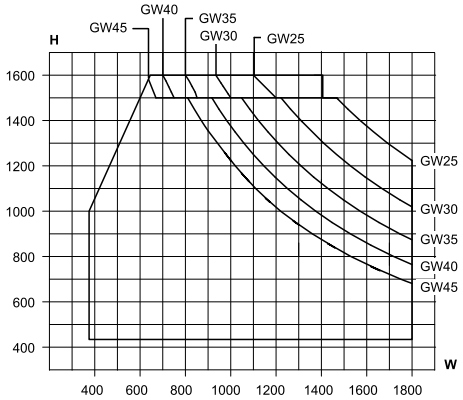
TOPHUNG FULLY REVERSIBLE WINDOW - UNIFORM SIGHTLINES

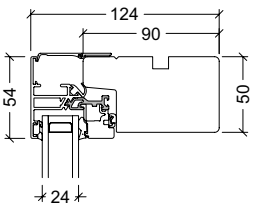
- The sash can be rotated by up to 170° to allow cleaning from the inside
- A safety restrictor is triggered when the window is opened approx. 5cm
- The window can be reversed to the cleaning position where an automatic catch keeps the window in place
- The espagnolette has a built-in ventilation position
- Max. setback 100mm to avoid oversail clash

Min./max. sizes, 48mm glazing

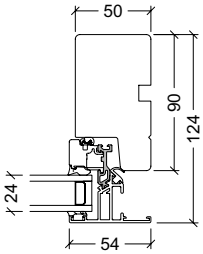


Min./max. sizes, 24mm glazing

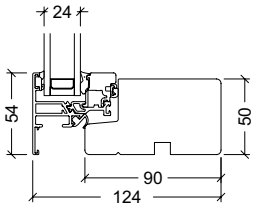




Head



Jamb

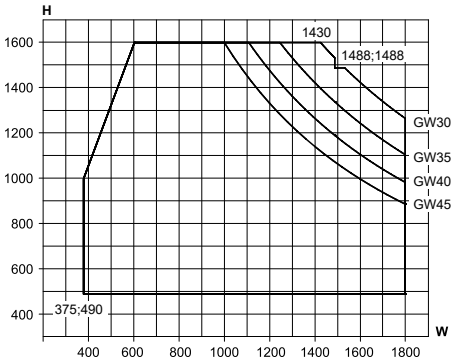


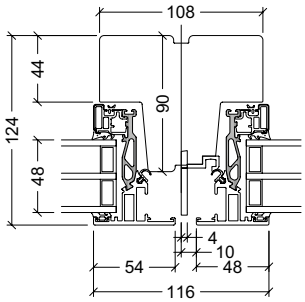
Cill

TOPHUNG FULLY REVERSIBLE WINDOW - WITH NO OVERSAIL - WITH 48MM SIGHTLINES

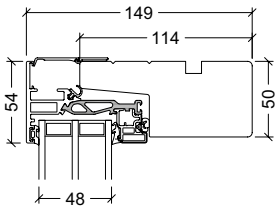
- Same function as standard reversible window, however with no oversail
- Rotating arms mean 48mm jamb sightline
- Available as triple glazed only
- Due to the rotating arms a sealing of minimum 10mm is required

Min./max. sizes, 48mm glazing

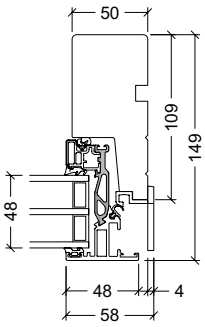




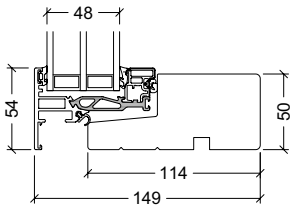
Mullion with uniform sightline window to the left and tophung fully reversible window with slightly different sightlines to the right



Head



Jamb. NB. the sash is 4mm slimmer in both sides than the standard sash

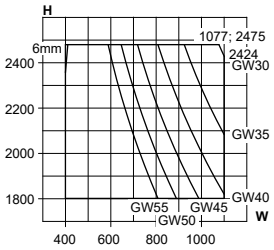


Cill

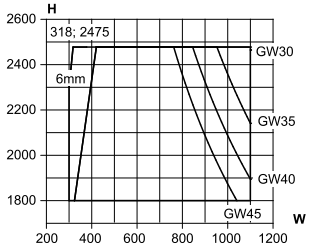
VELFAC 200 / VELFAC 200 ENERGY – OPENING FUNCTIONS

CASEMENT DOOR, 1-LEAF

Min./max. sizes, 48mm glazing

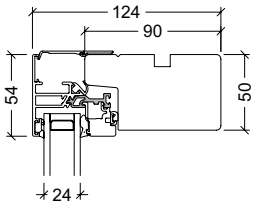


Min./max. sizes, 24mm glazing

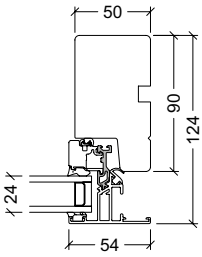


- The sash opens up to 90°
- Concealed hinges
- An adjustable friction brake allows random opening position
- Can be supplied to allow 180° opening but is then not fitted with friction arm
- The espagnolette has a built-in ventilation position
- Supplied with 15mm or 52mm threshold
- Optional handle operated brake (48mm triple glazing only)

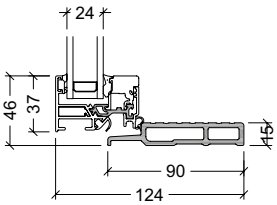
GW = glass weight (see page 80)



Head



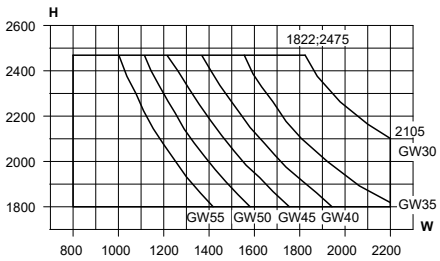
Jamb



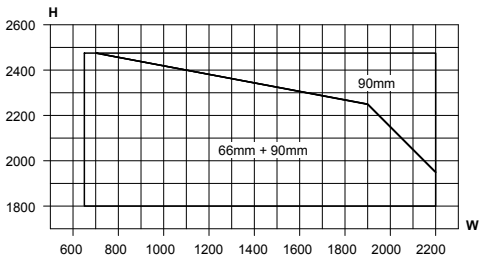
15mm threshold

CASEMENT DOOR, 2-LEAF

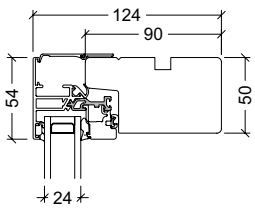
Min./max. sizes, 48mm glazing



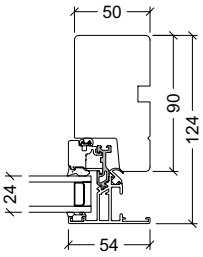
Min./max. sizes, 24mm glazing



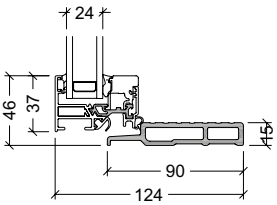
- Please refer to Casement door, 1-leaf for information
- Freeing the flushbolt in the French casement mullion allows the slave door to be opened



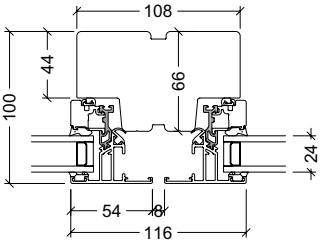
Head



Jamb



15mm threshold

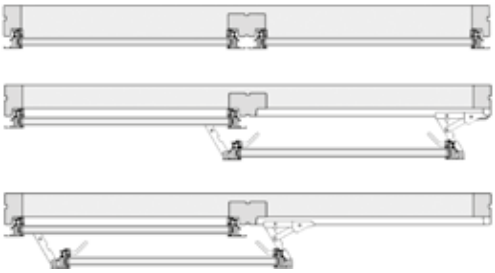


66mm mullion

VELFAC 200 / VELFAC 200 ENERGY – OPENING FUNCTIONS

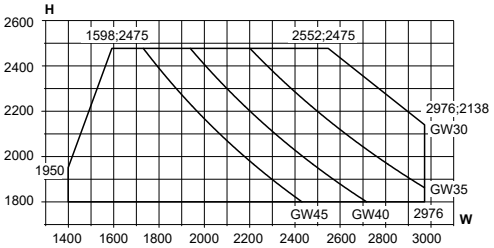
SLIDING CASEMENT DOOR WITH 70MM THRESHOLD, 1-LEAF

- The sliding door provides up to 1.2m free opening
- The frame profile of the door matches that of the VELFAC 200 window series
- When opened, the master door moves outwards from the frame, and then slides across the adjacent fixed sash (with 24mm glazing 102-112mm out, with 48mm glazing 116-126mm out)

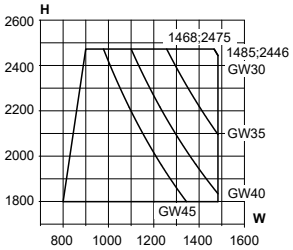


How to open the sliding casement door (shown here as 1-leaf)

Min./max. sizes, 48mm glazing
Complete unit

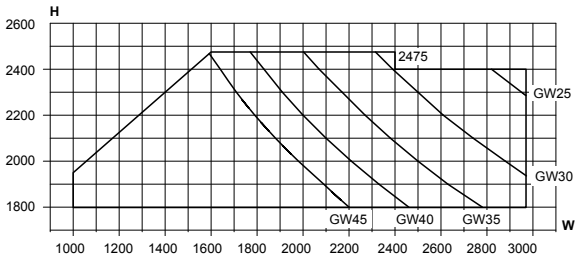


Min./max. sizes, 48mm glazing
Opening sash



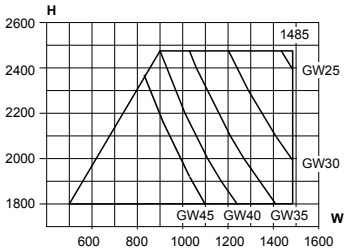
N.B. All asymmetric sashes and large symmetric sashes will be supplied separately and must be fixed on site.

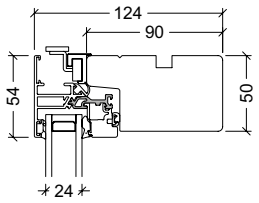
Min./max. sizes, 24mm glazing
Complete unit



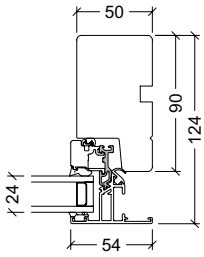
GW = glass weight (see page 80)

Min./max. sizes, 24mm glazing
Opening sash

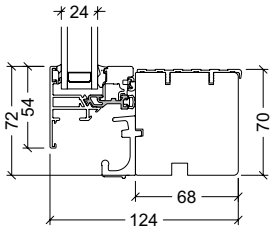




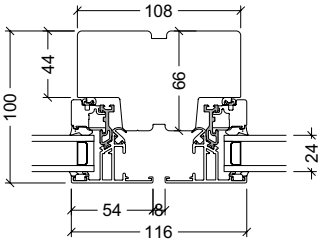
Head



Jamb



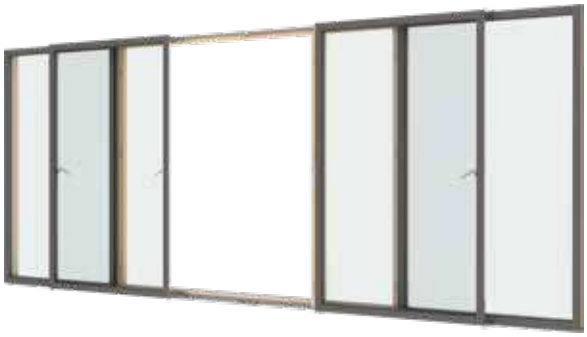
70mm threshold



66mm mullion

VELFAC 200 / VELFAC 200 ENERGY – OPENING FUNCTIONS

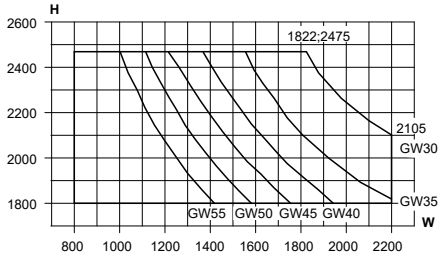
SLIDING CASEMENT DOOR WITH 70MM THRESHOLD, 2-LEAF



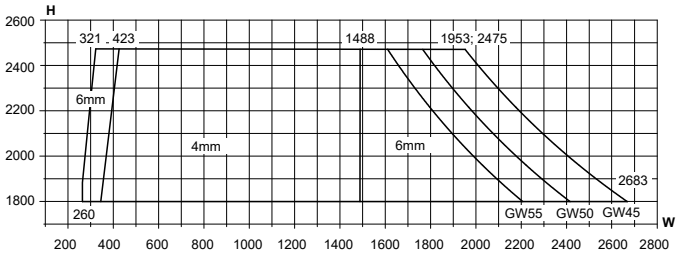
- The sliding door provides up to 2.5m free opening
- Max. width 6m for total screen including sidelights
- The frame profile of the door matches that of the VELFAC 200 window series
- When opened, the master door moves outwards from the frame, and then slides across the adjacent fixed sash (with 24mm glazing 96mm out, with 48mm glazing 116mm out)
- Freeing the flushbolt in the French casement mullion allows the slave door to be opened similarly

GW = glass weight
(see page 80)

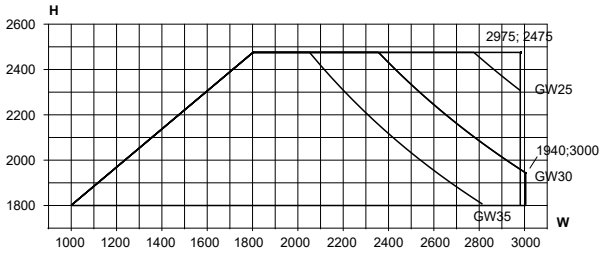
Min./max. sizes, 48mm glazing
2 opening sashes with French casement



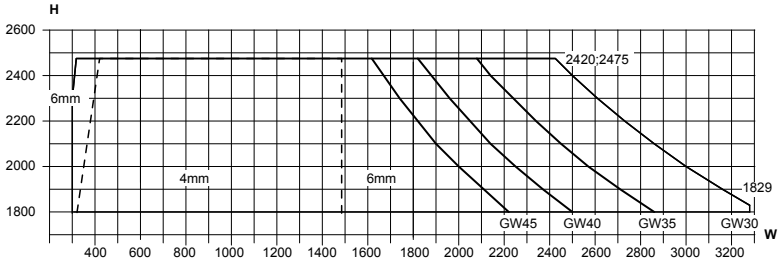
Min./max. sizes, 48mm glazing
Fixed sash for sliding door and side light

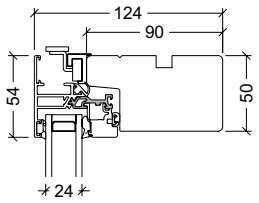


Min./max. sizes, 24mm glazing
2 opening sashes with French casement

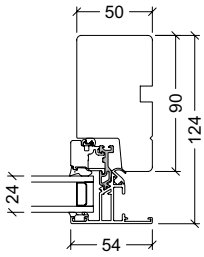


Min./max. sizes, 24mm glazing
Fixed sash for sliding door and side light

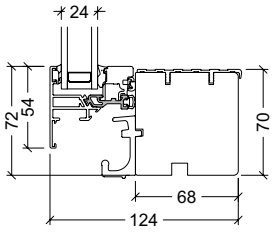




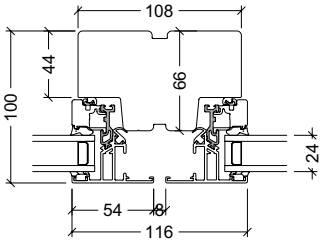
Head



Jamb



70mm threshold



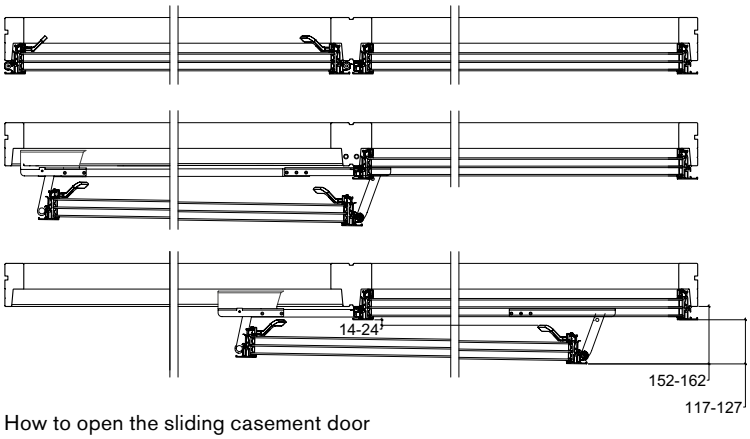
66mm mullion

VELFAC 200 ENERGY – OPENING FUNCTIONS

SLIDING CASEMENT DOOR WITH 24MM THRESHOLD, 1-LEAF

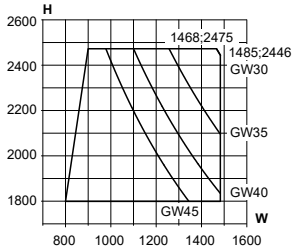
- The sliding door provides up to 1.2m free opening
- The frame profile of the door matches that of the VELFAC 200 window series
- Only available with 48mm glazing
- The 24mm threshold allows for installation with level access
- When opened, the master door moves outwards from the frame, and then slides across the adjacent fixed sash (117-127mm out)
- Threshold must be supported along the full width

GW = glass weight
(see page 80)

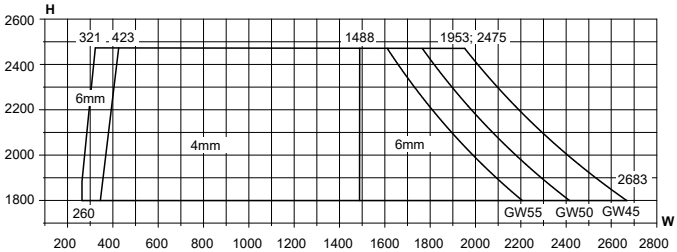


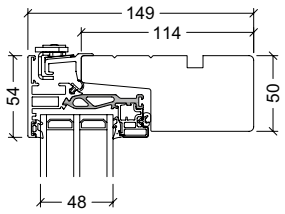
How to open the sliding casement door

Min./max. sizes, 48mm glazing
Opening sash

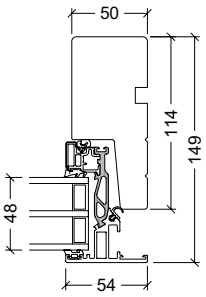


Min./max. sizes, 48mm glazing
Fixed sash for sliding door

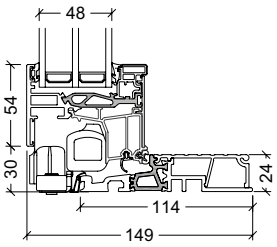




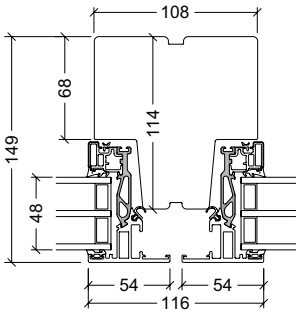
Head



Jamb



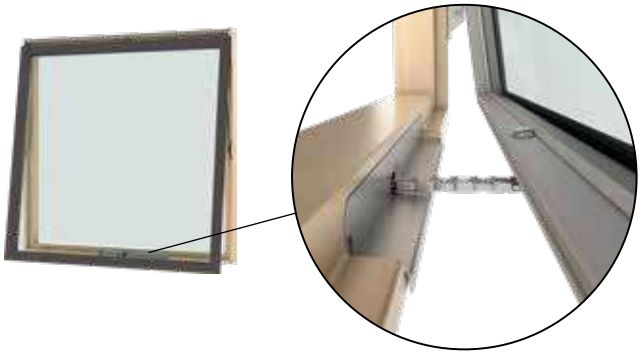
24mm threshold



114mm transom (mullion)

VELFAC 200 – MOTORISED SMOKE VENT

SASH FUNCTIONS, MIN./MAX. SIZES, CLASSIFICATION



Application. VELFAC motorised smoke vents maintain the identical sightlines of the VELFAC 200 system, and can therefore be used in combination with other window units without affecting the uniform external façade.

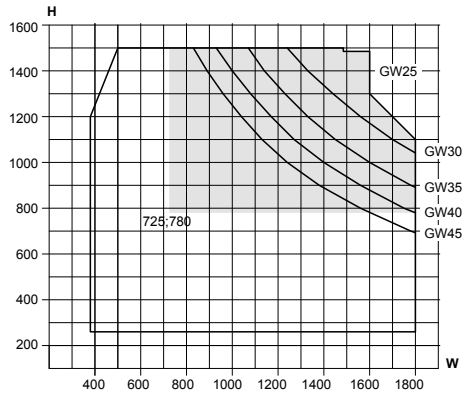
Function. VELFAC smoke vents are tested and CE marked in accordance with EN12101-2:2003. Smoke vents are programmed to open on receipt of a signal from smoke detectors via a central computer. All VELFAC smoke vents are operated using 500mm chains, providing a clear opening of 440mm at the opening side. Aerodynamic free area calculations are made in combination with opening function and window size - please call VELFAC for accurate figures.

Min./max. sizes shown are for double glazed (DGU) opening functions. There will be limitations regarding max. sizes and glass weight limits for triple glazed (TGU) opening function. Please refer to min./max. sizes under the opening function.

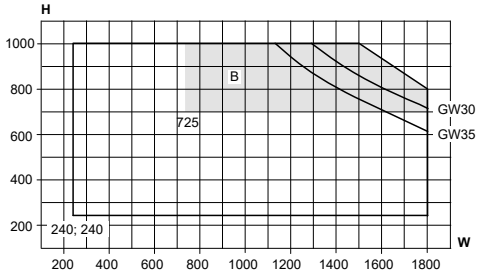
Sash functions

- Sidehung window (DGU + TGU)
- Bottomhung window (DGU + TGU)
- Side-guided window (DGU)
- Tophung window (DGU)
- Top-guided window (DGU + TGU)
- Tophung fully reversible window (DGU)

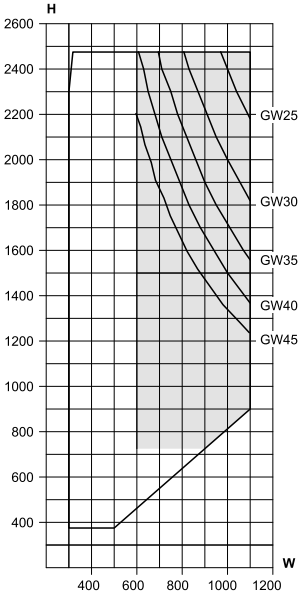
Min./max. sizes
Top-guided window



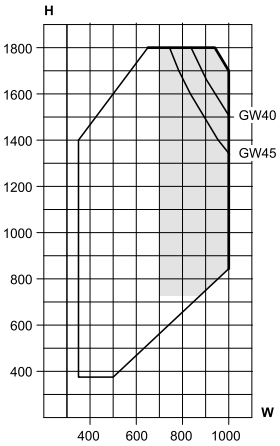
Min./max. sizes
Bottomhung/tophung window



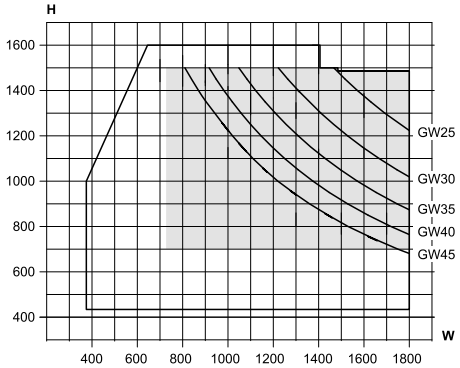
Min./max. sizes
Sidehung window



Min./max. sizes
Side-guided window



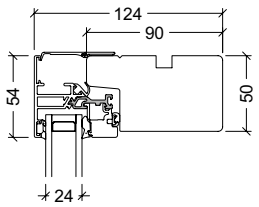
Min./max. sizes
Tophung fully reversible window



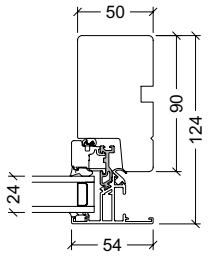
= Min./max. sizes for smoke vent

VELFAC 200 – FRAMES, MULLIONS AND TRANSOMS

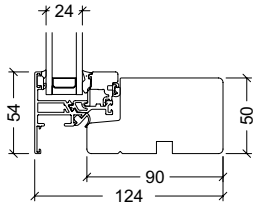
FRAMES, 24MM GLAZING



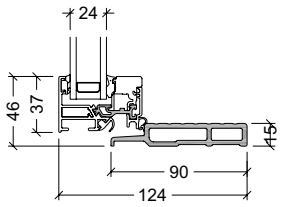
Head



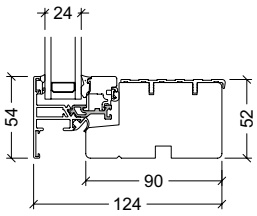
Jamb



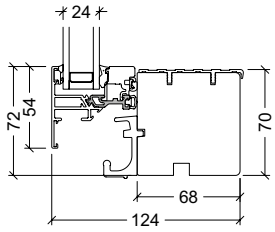
Cill



15mm threshold, casement door

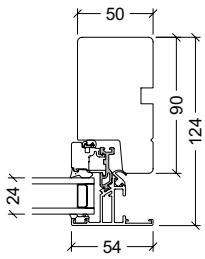


52mm threshold, casement door

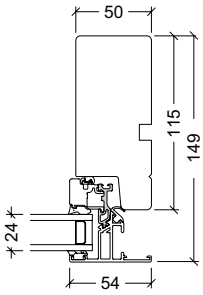


Threshold, sliding casement door

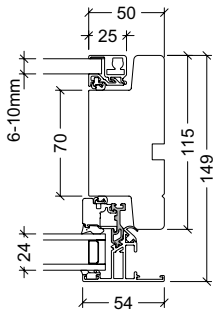
FRAME VARIATIONS



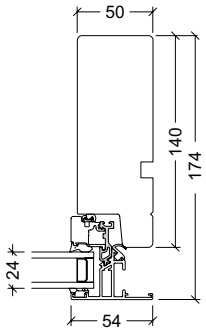
90mm frame



115mm frame

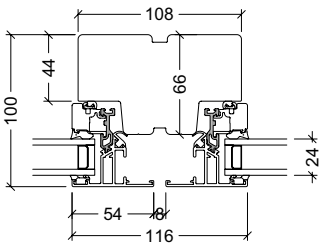


115mm frame with internal sash

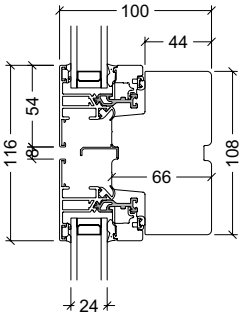


140mm frame

MULLIONS AND TRANSOMS

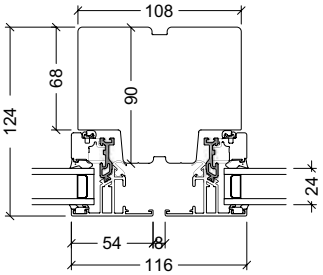


66mm mullion

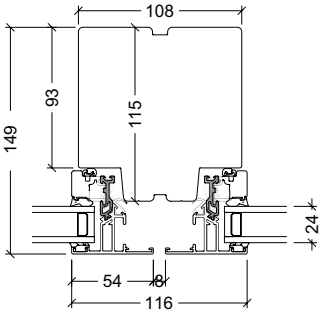


66mm transom

MULLION AND TRANSOM VARIATIONS



90mm mullion (transom)

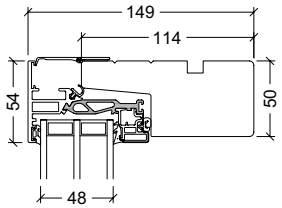


115mm mullion (transom)

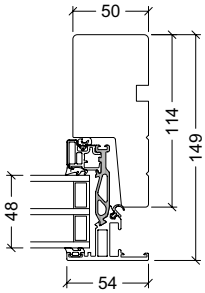
Scale: 1:5

VELFAC 200 ENERGY – FRAMES, MULLIONS AND TRANSOMS

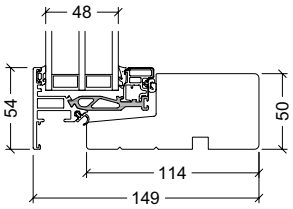
FRAMES, 48MM GLAZING



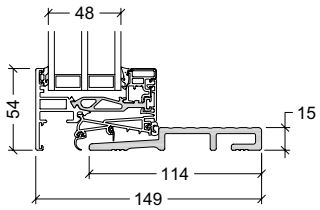
Head



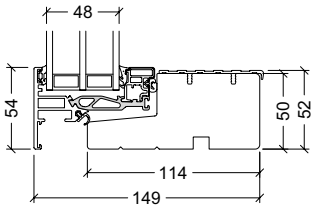
Jamb



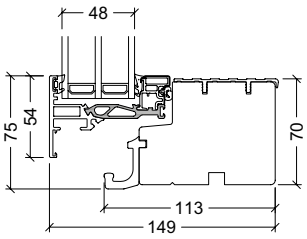
Cill



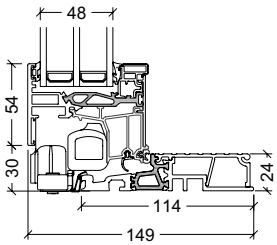
15mm threshold, casement door



52mm threshold, casement door

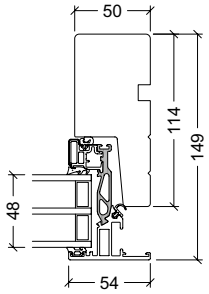


70mm threshold, sliding casement door

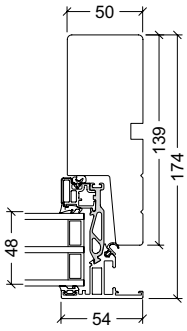


24mm threshold, sliding casement door

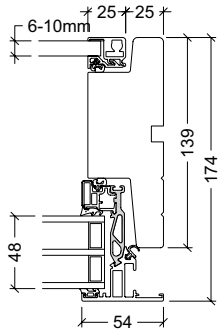
FRAME VARIATIONS



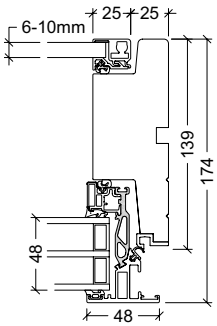
114mm frame



139mm frame

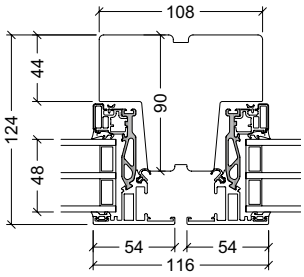


139mm frame with internal sash (standard)

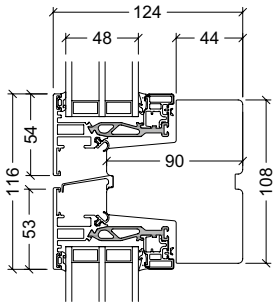


139mm frame with internal sash (slightly different sightlines)

MULLIONS AND TRANSOMS

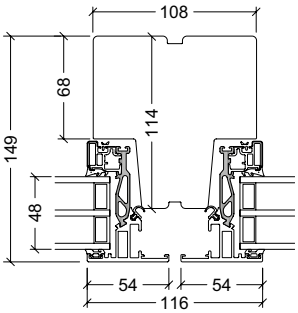


90mm mullion for windows only

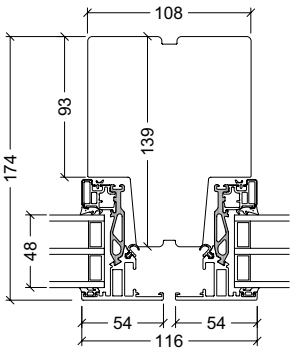


90mm transom

MULLION AND TRANSOM VARIATIONS



114mm transom (mullion)



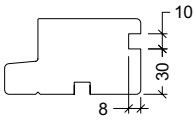
139mm transom (mullion)

Scale: 1:5

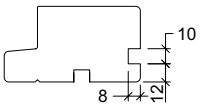
VELFAC 200 / VELFAC 200 ENERGY – FRAME OPTIONS

VELFAC 200 - GROOVES, REBATES AND FRAME EXTENSION PACKERS

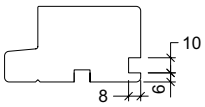
Please note that the grooves, rebates and packers are shown in 90mm, but are also available with 115mm and 140mm frames.



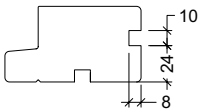
Groove type 30x10x8



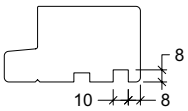
Groove type 12x10x8



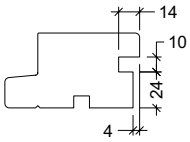
Groove type 6x10x8



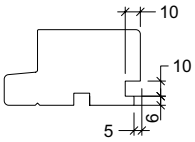
Groove type 24x10x8



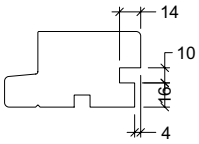
Groove type 10x8x8 E



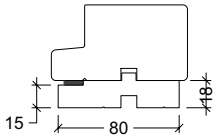
Cill groove type
24x10x14/4



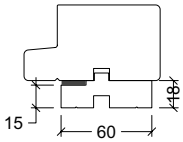
Cill groove type
6x10x10/5



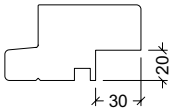
Cill groove type
16x10x14/4



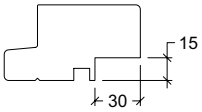
Packer type 18x80



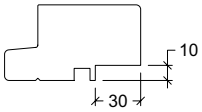
Packer type 18x60
Also available for sliding casement doors



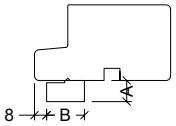
Rebate type 20x30



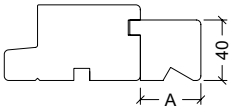
Rebate type 15x30



Rebate type 10x30



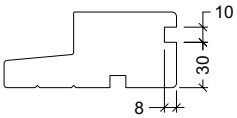
Packer type 14x25 (AxB)
Packer type 20x35 (AxB)



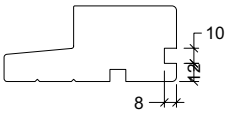
Packer type D40x40 (A)
Packer type D40x60 (A)

VELFAC 200 ENERGY - GROOVES, REBATES AND FRAME EXTENSION PACKERS

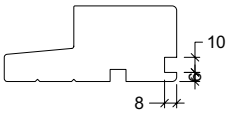
Please note that the grooves, rebates and packers are shown in 114mm, but are also available with 139mm frame.



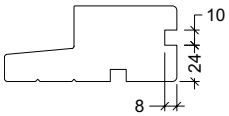
Groove type 30-10-8



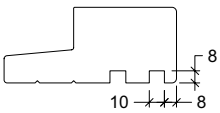
Groove type 12-10-8



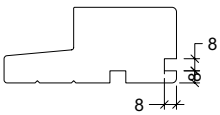
Groove type 6-10-8



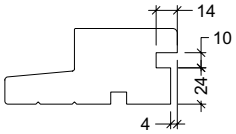
Groove type 24-10-8



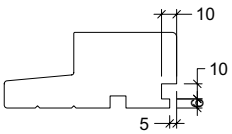
Groove type 10-8-8 E



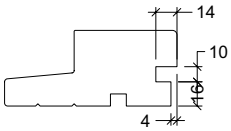
Groove type 8-8-8



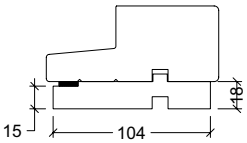
Cill groove type
24x10x14/4



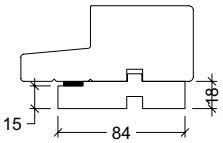
Cill groove type
6x10x10/5



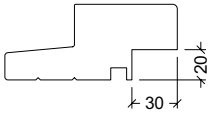
Cill groove type
16x10x14/4



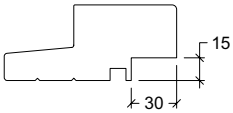
Packer type 18x104



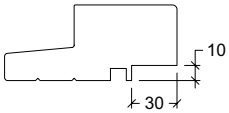
Packer type 18x84
Also available for sliding casement doors



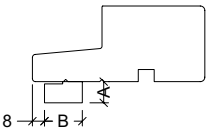
Rebate type 20x30



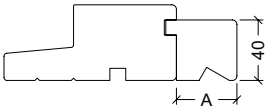
Rebate type 15x30



Rebate type 10x30



Packer type 14x25 (AxB)
Packer type 20x35 (AxB)



Packer type D40x40 (A)
Packer type D40x60 (A)

Scale: 1:5

VELFAC 200 / VELFAC 200 ENERGY – ACCESSORIES

ESPAGNOLETTES, SECURITY FITTINGS AND ACCESSORIES

Espagnolette. Standard in all open functions.

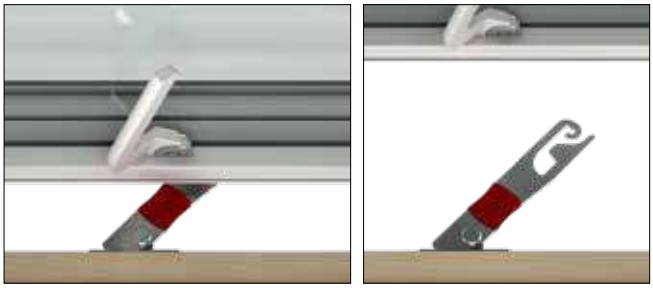
Espagnolette with lock. Supplied with lock and key for extra security.

Espagnolette with child-lock. Supplied with child-lock button.

Espagnolette for cylinder lock. Supplied with or without lock and key.

External handle for casement and sliding casement door. Supplied separately.

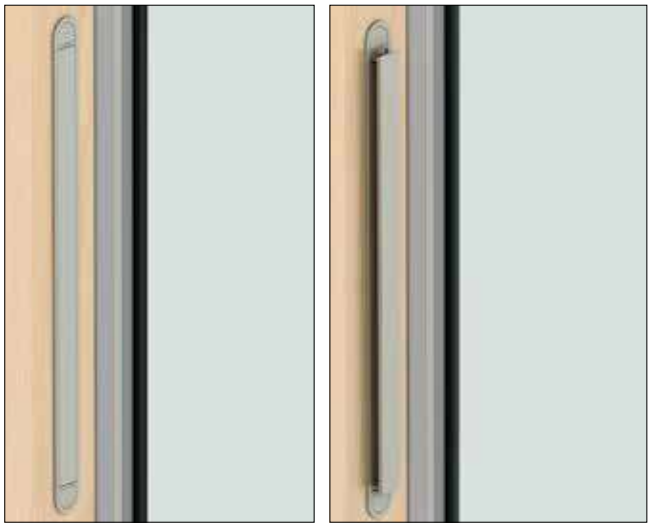
Flushbolt for operation of the mullion in 2-leaf elements.



Standard restrictor w/ventilation position lock. Not available for sliding casement door.

Electric opener for remote operation for windows. Can be computer controlled for fully naturally ventilated projects. Fully concealed in the frame. Three chain lengths offering 60mm, 210mm and 440mm clear opening.

Lockable restrictor. Not available for sliding casement door.



Click vent. Anodized surface finish. Fully concealed.
Free ventilation opening in elements with 24mm glazing: 4000mm².
Free ventilation opening in elements with 48mm glazing: 3000mm².
For the equivalent free opening, please refer to our website.

Ventilation position. The striking plate allows a 5mm night ventilation opening for all espagnolette handles.

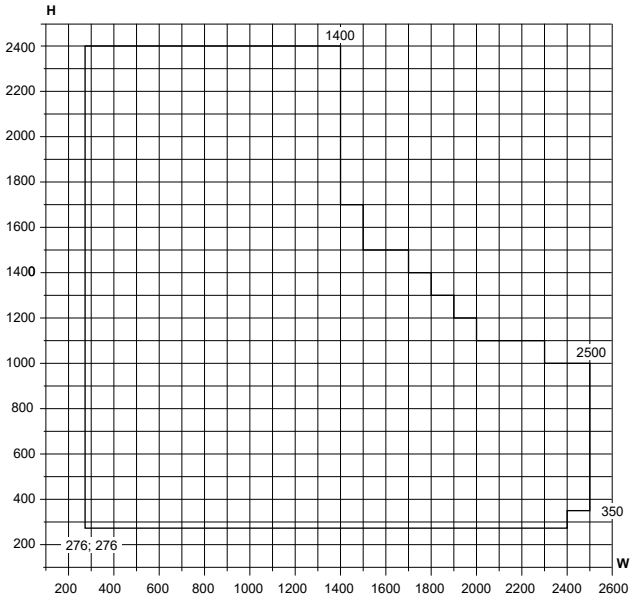
Acoustic trickle vent. The vent is machined into a timber packer with an external aluminium profile in the same colour as the window sashes. Documentation on air flow can be requested. Achieves a sound reduction value of Dn,e,w 40 dB.

VELFAC FIRE ELEMENTS

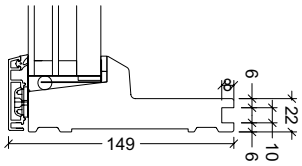
FIXED FIRE ELEMENT

- Only as a fixed light
- External exposure: meet the fire resistance classification EI30/EW30
- Internal exposure: meet the fire resistance classification EI60/EW60
- Triple glazed units only
- Glazing options: STANDARD, SUN or SATIN

Min./max. sizes

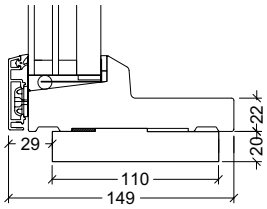


GROOVE



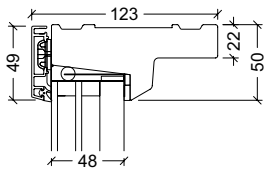
Type 6x10x8

PACKER

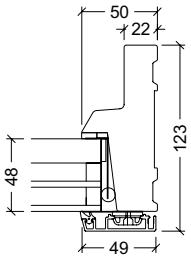


Type 20x110

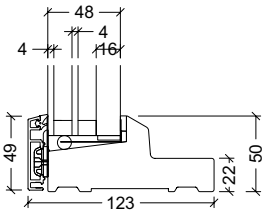
FRAMES, 48MM GLAZING



Head, fixed
123mm frame

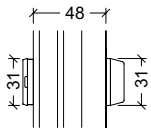


Jamb, fixed
123mm frame



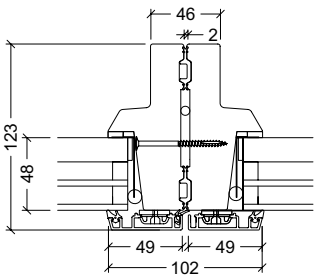
Cill, fixed
123mm frame

GLAZING BARS

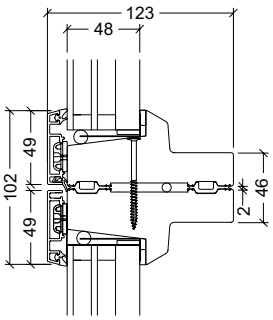


31mm glazing bar

MULLIONS AND TRANSOMS

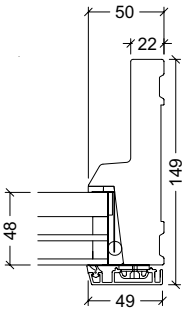


123mm mullion

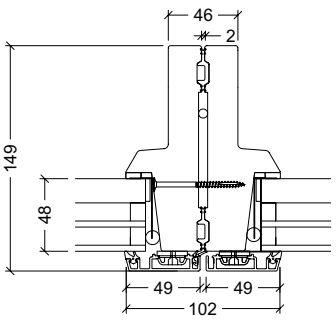


123mm transom

FRAME, MULLION AND TRANSOM VARIATIONS



149mm frame



149mm mullion (transom)

VELFAC IN

INWARD OPENING WINDOWS AND JULIETTE DOORS

Top: Skt. Petersborg Plads, Copenhagen, Denmark / Årstiderne Arkitekter

Bottom: Meadow Lane, Edinburgh / jmarchitects

VELFAC IN – OVERVIEW

CHARACTERISTICS

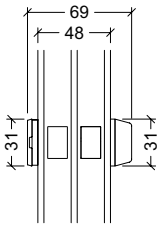
- Inward opening windows and juliette door in wood/aluminium
- The tilt function provides effective ventilation
- Available with safety barrier preparation
- Ideal for window cleaning in multi-storey buildings
- Uw values down to 0.8 W/m²K
- 48mm triple glazing

Inward opening system with tilt function

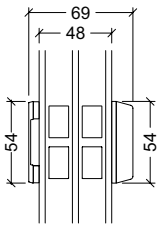
SASH VARIATIONS AND GLAZING BARS

48mm triple glazed opening unit

48mm triple glazed fixed unit



31mm energy glazing bar

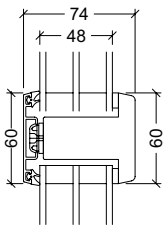


54mm energy glazing bar

31mm energy glazing bar

54mm energy glazing bar

60mm glazing bar (not available with fixed frame)



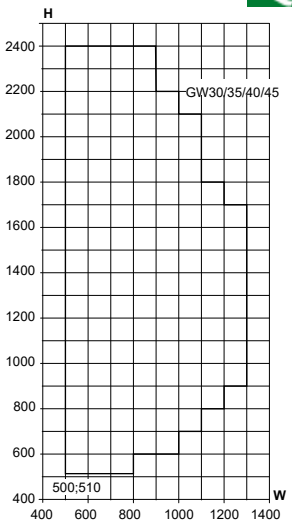
60mm glazing bar (not available with fixed frame)

VELFAC IN – OPENING FUNCTIONS

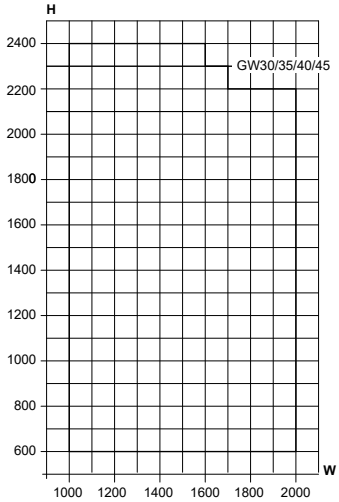
SIDEHUNG WINDOW

- Is designed to allow safe cleaning of the window from the inside
- Inward opening up to 90°

Min./max. sizes, 1-leaf



Min./max. sizes, 2-leaf rebated

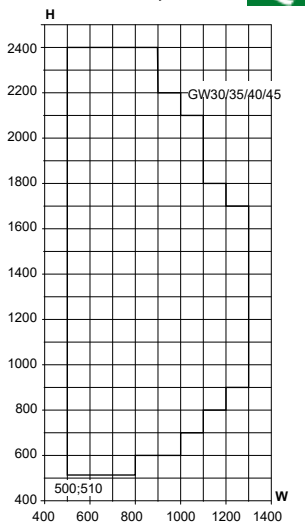


GW = glass weight (see page 80)
For GW heavier than GW45, there might be limitations.

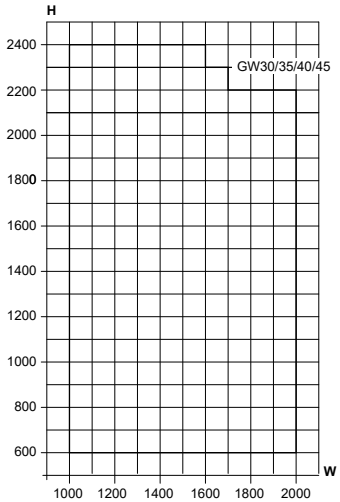
TILT AND TURN WINDOW

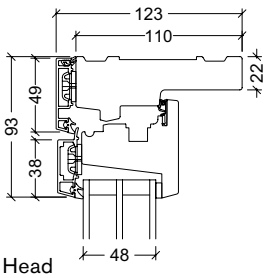
- Is designed to allow safe cleaning of the window from the inside
- Inward opening up to 90°
- Tilt function providing a ventilation gap of approx. 25mm

Min./max. sizes, 1-leaf



Min./max. sizes, 2-leaf rebated



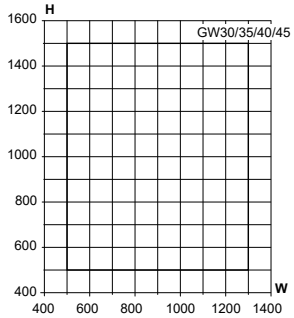


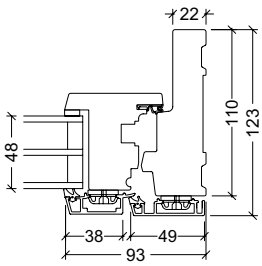
Head

BOTTOMHUNG WINDOW

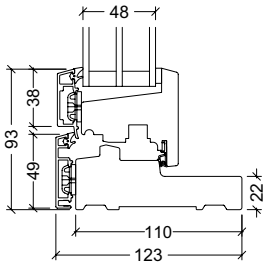
- Ideal for basement windows
- The window has a tilt function which provides a ventilation gap of approx. 25mm

Min./max. sizes





Jamb



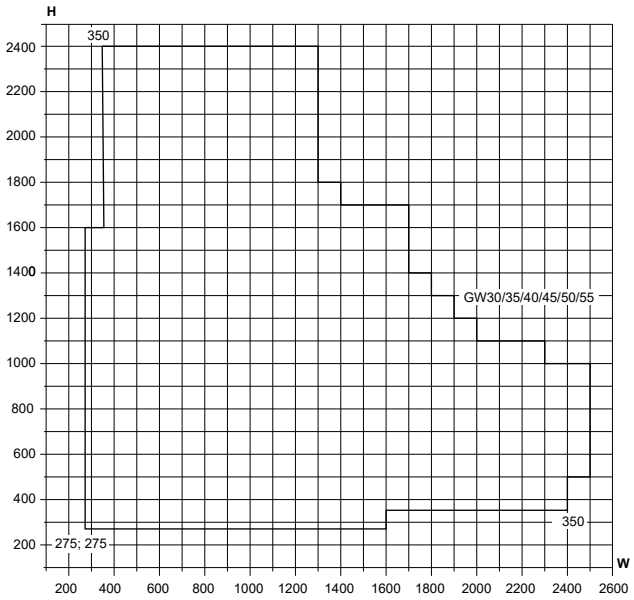
Cill

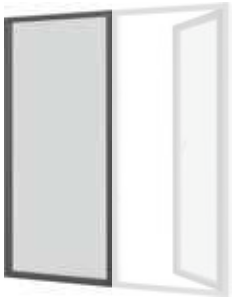
VELFAC IN – OPENING FUNCTIONS

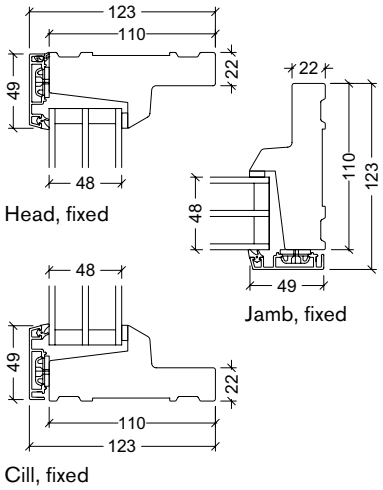
FIXED LIGHT

- Only as fixed light
- Because the fixed light has a single frame profile, it has the benefit of slim sightlines
- Can be incorporated above, below and beside a VELFAC In window
- Can be incorporated beside or above a VELFAC In casement door (see photo)

Min./max. sizes



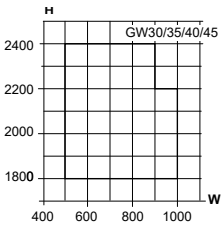




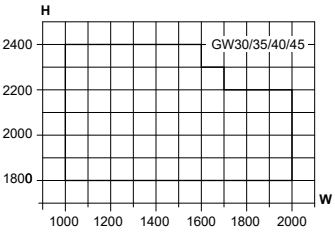
TILT AND TURN JULIETTE DOOR

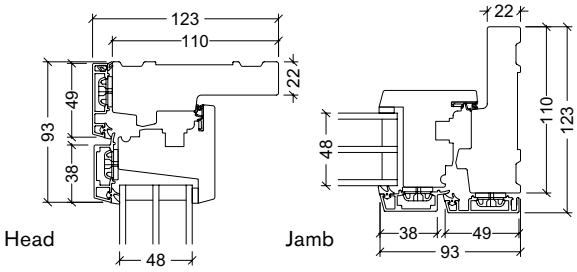
- Ideal for French balconies in multi-storey buildings
- Designed to allow safe cleaning of the door
- Inward opening up to 90°
- Tilt function providing a ventilation gap of approx. 30mm
- The threshold is supplied in mahogany for additional durability

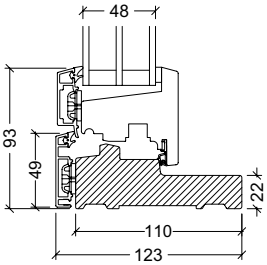
Min./max. sizes, 1-leaf



Min./max. sizes, 2-leaf



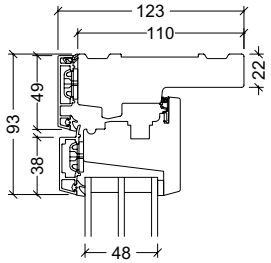




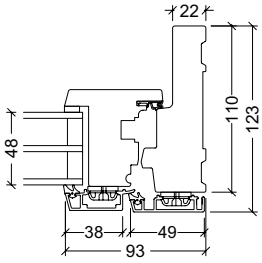
Threshold, casement door, mahogany

VELFAC IN – FRAMES, MULLIONS AND GLAZING BARS

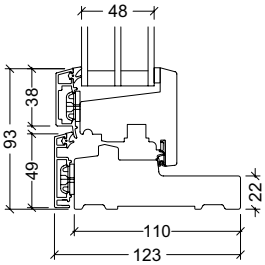
FRAMES



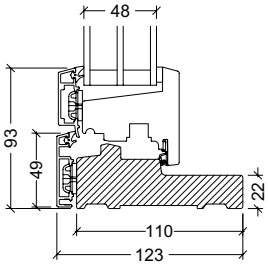
Head



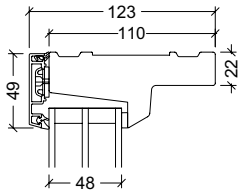
Jamb



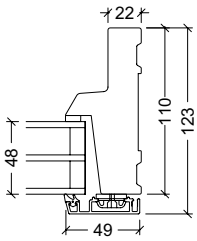
Cill



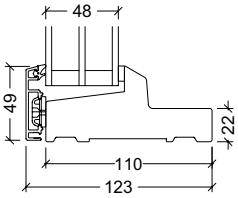
Threshold, casement door, mahogany



Head, fixed

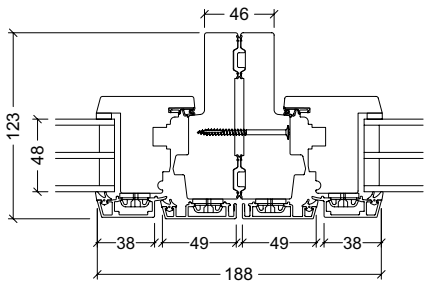


Jamb, fixed

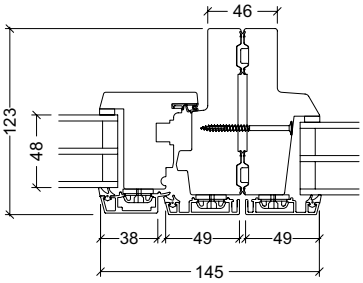


Cill, fixed

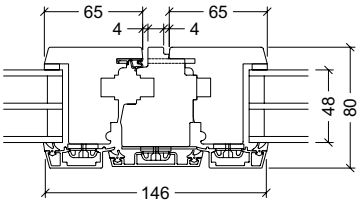
MULLIONS



Mullion, opening sashes

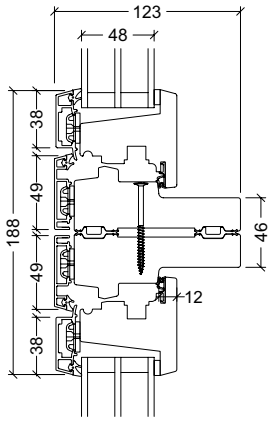


Combination mullion

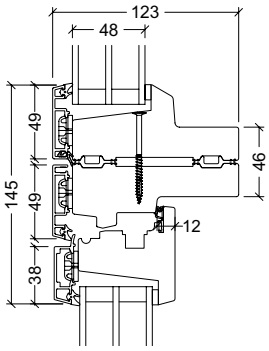


Mullion with French casement

TRANSOMS



Transom, opening sashes

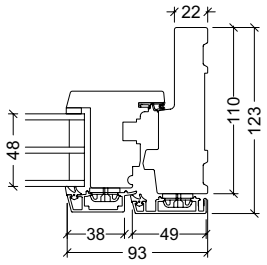


Combination transom

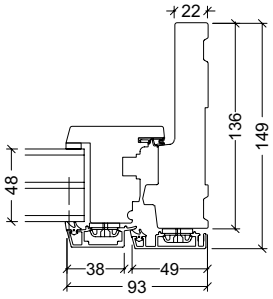
Scale: 1:5

VELFAC IN – FRAMES AND MULLIONS + ACCESSORIES

FRAME VARIATIONS

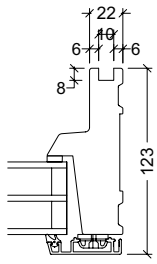


123mm frame

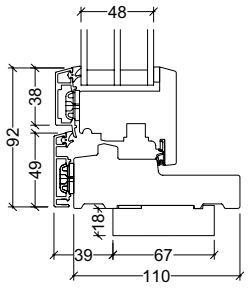


149mm frame

GROOVE AND FRAME EXTENSION PACKER

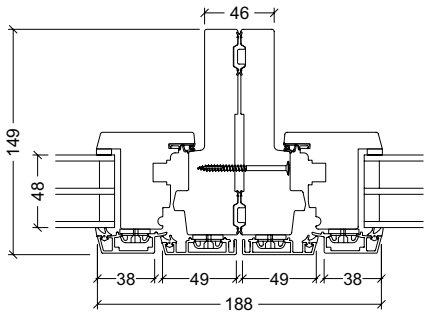


Groove type 6x10x8

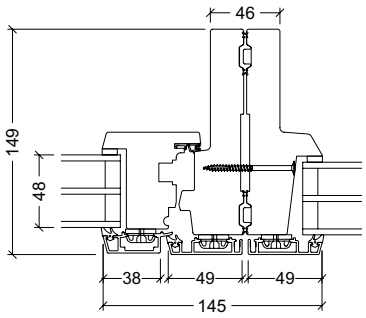


Cill packer type 18x67

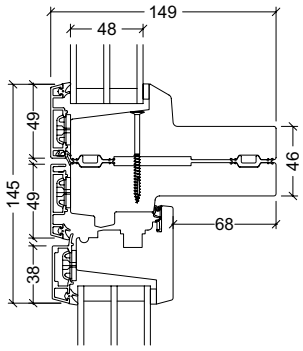
MULLIONS AND TRANSOMS VARIATIONS



Mullion



Combination mullion



Combination transom

ESPAGNOLETTES AND ACCESSORIES

Standard ID-handle. Natural anodised aluminium surface finish.

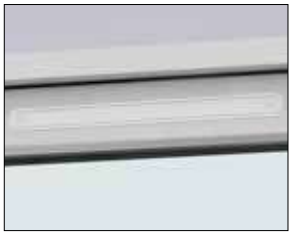
ID-handle with child-lock. Natural anodised aluminium surface finish.

ID-handle with lock. Natural anodised aluminium surface finish.

Handle with lock, key operated turn function (TBT). Allows immediate tilt position. To open the window sidehung, the key must first be turned. Natural anodized aluminium surface finish.

90° opening restrictor. Standard in sidehinged sashes.

Preparation for barrier solution. Fittings and packers are supplied, barrier should be sourced from another supplier.



Click vent. Anodised surface finish. The vent outside is fully concealed with a cover section.
Free ventilation opening: 2020mm². For the equivalent free opening, please refer to our website.

Scale: 1:5

VELFAC ALUMINIUM DOORS

ENTRANCE DOORS FOR COMMERCIAL, PUBLIC AND RESIDENTIAL BUILDINGS

Top: St Wilfrid's Catholic School, Crawley / Curl la Tourelle Head Architecture

Bottom: Wimbledon College of Arts, London / Penoyre & Prasad

1-LEAF DOOR WITH ANTI-FINGER TRAP HINGES AND VELFAC 200 SIDE AND TOP LIGHTS

2-LEAF DOOR WITH ANTI-FINGER TRAP HINGES, AND FULL HEIGHT PULL HANDLES

1-LEAF DOOR WITH BARREL HINGES AND VELFAC 2OO SIDE LIGHT

1-LEAF DOOR WITH 160MM GLAZING BAR, PANIC BAR AND BARREL HINGES IN A VELFAC 200 SCREEN

1-LEAF DOOR WITH BARREL HINGES, LEVER HANDLE AND A VELFAC 200 TOP LIGHT

2-LEAF ESCAPE DOOR WITH PANIC BARS AND CLOSERS IN A VELFAC 200 SCREEN

VELFAC ALUMINIUM GLAZED ENTRANCE DOORS

CHARACTERISTICS

- Entrance doors where reliability, stability and strength of the door are vital
- Outward or inward opening, single or double leaf
- Glazed entrance doors. If divided by glazing bars the resulting apertures can be glazed or panelled
- 24mm double or 48mm triple glazed units
- VELFAC Aluminium doors can be coupled with VELFAC 200 windows to create glazed entrance screens

N.B. The VELFAC Aluminium Door System only sold with an order for VELFAC 200.

LAUNCH OF NEW ALUMINIUM DOOR

Introduction to the VELFAC Aluminium door

We are happy to let you know, that in the spring we are replacing our VELFAC 500 door with the better performing VELFAC Aluminium door.

The new VELFAC Aluminium entrance doors are designed for installation where reliability, stability and strength of the door are vital. The doors can as always be coupled with VELFAC 200 windows to create glazed entrance screens for receptions or atria.

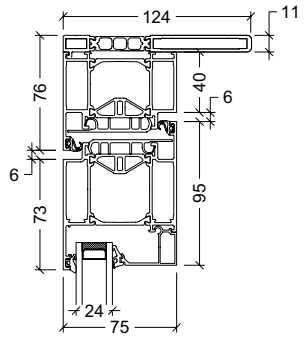
Typical situations include the main entrance, side entrance or restricted entrance to commercial, residential or public buildings. And when required a SBD or Part Q accredited door is available.

An extensive range of ironmongery and lockboxes secure the many functionalities of the doors, including a variety of panic escape or access control solutions. Just let us know your door requirements and we will create the door, that meets your expectations.

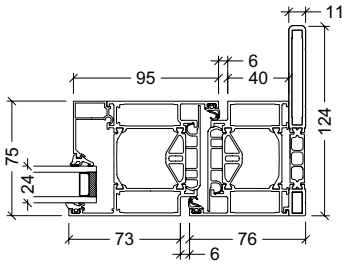
Scale: 1:5

VELFAC ALUMINIUM DOOR – DOUBLE GLAZED FRAMES

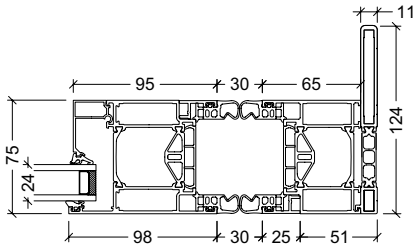
INWARD OPENING DOORS - DOUBLE GLAZED



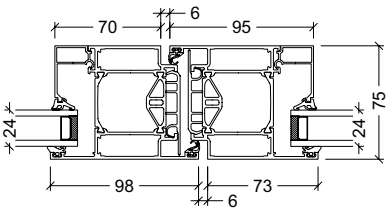
Head



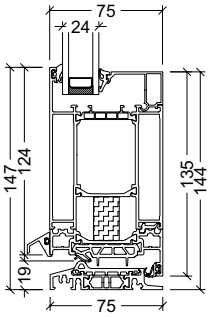
Jamb



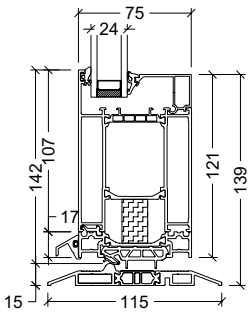
Jamb with finger protection



Rebated meeting style

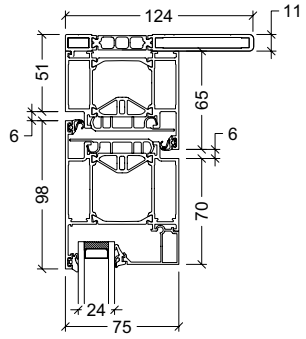


19mm threshold with thermal break

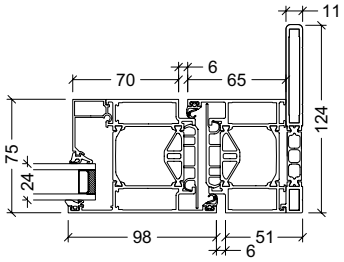


15mm ramped threshold with thermal break

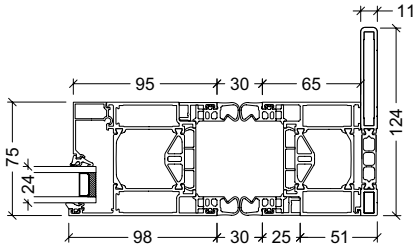
OUTWARD OPENING DOORS - DOUBLE GLAZED



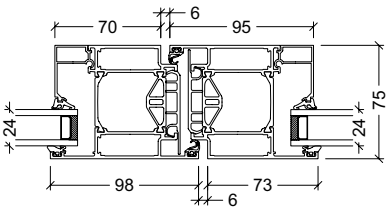
Head



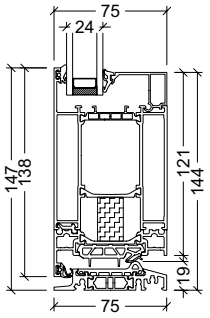
Jamb



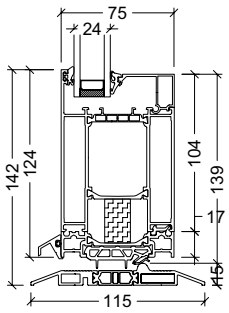
Jamb with finger protection



Rebated meeting style



19mm threshold with thermal break

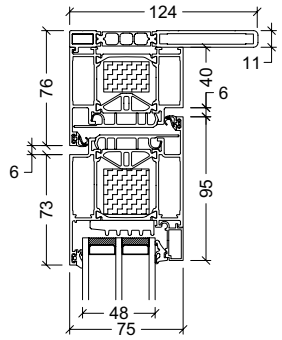


15mm ramped threshold with thermal break

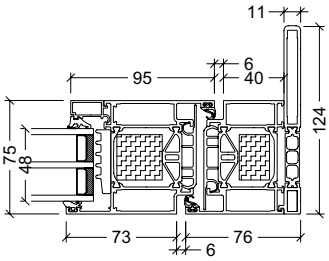
Scale: 1:5

VELFAC ALUMINIUM DOOR – TRIBPLE GLAZED FRAMES

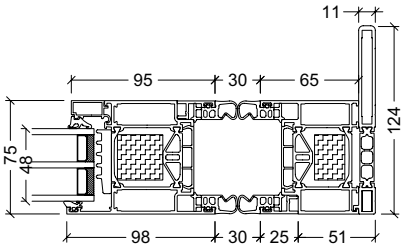
INWARD OPENING DOORS - TRIPLE GLAZED



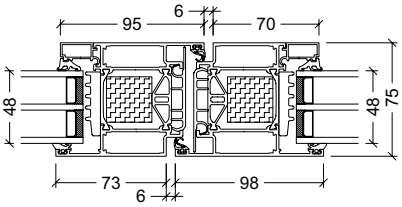
Head



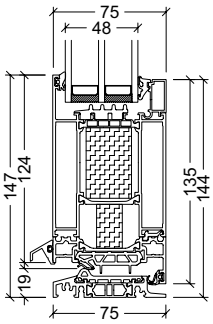
Jamb



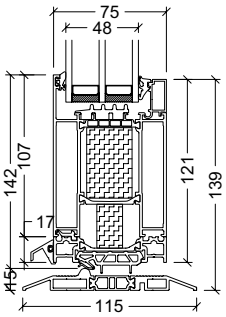
Jamb with finger protection



Rebated meeting style

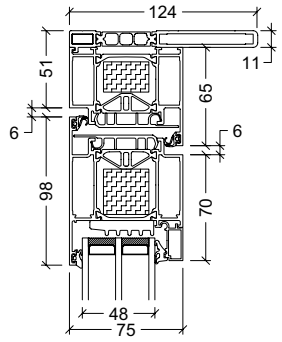


19mm threshold with thermal break

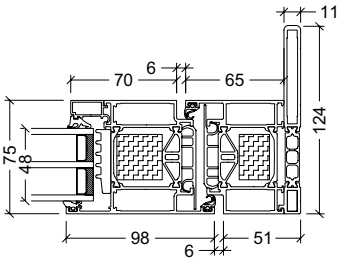


15mm ramped threshold with thermal break

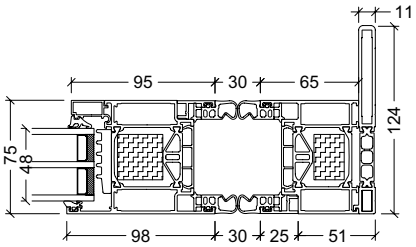
OUTWARD OPENING DOORS - TRIPLE GLAZED



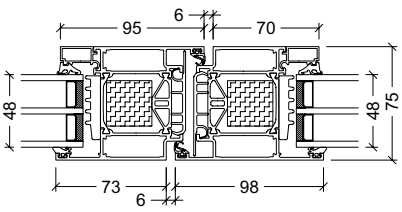
Head



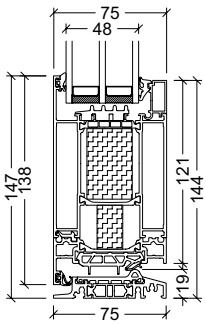
Jamb



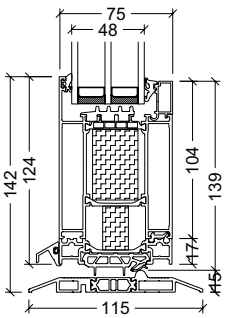
Jamb with finger protection



Rebated meeting style



19mm threshold with thermal break



15mm ramped threshold with thermal break

Scale: 1:5

VELFAC ALU DOOR – MIN./MAX.-SIZES + FRAME DEPTHS

MIN./MAX. SIZES

Standard doors and security doors

Outward opening doors

Element width* (W)	Min.	Max.
1-leaf	714	1514**
2-leaf (master/slave)	1020 (647/373)	2520 (1247/1273)
Element height* (H)	Min.	Max.
	1600	2582

*Including frame, extensions and threshold.
** SBD doors: max. = 1314.

Inward opening doors

Element width* (W)	Min.	Max.
1-leaf	752	1564**
2-leaf (master/slave)	1070 (697/373)	2570 (1297/1273)
Element height* (H)	Min.	Max.
	1600	2582

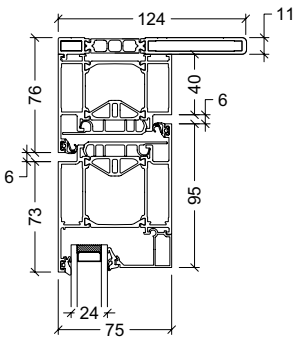
*Including frame, extensions and threshold.
** SBD doors: max. = 1352.

Outward opening escape doors

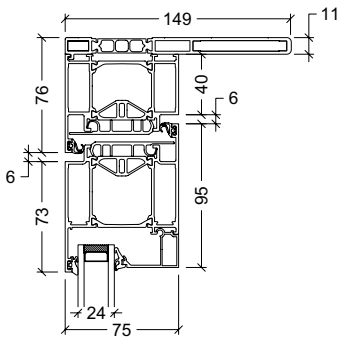
Element width* (W)	Min.	Max.
1-leaf	1024	1514
2-leaf (master/slave)	1720 (957/763)	2550 (1247/1273)
Element height* (H)	Min.	Max.
	2066	2582

*Including frame, extensions and threshold.

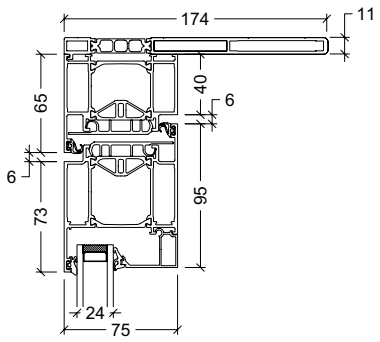
FRAME DEPTHS



124mm frame



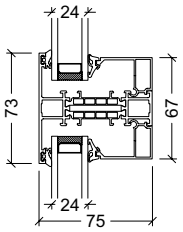
149mm frame



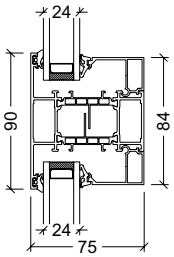
174mm frame

VELFAC ALUMINIUM DOOR – GLAZING BARS

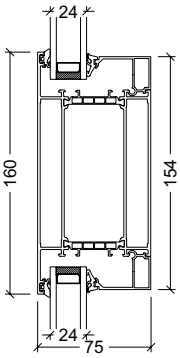
GLAZING BARS



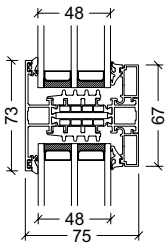
73mm



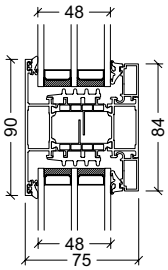
90mm



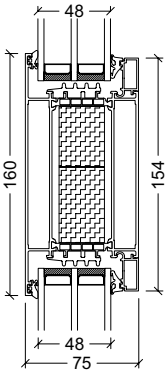
160mm



73mm



90mm



160mm

Scale: 1:5

VELFAC ALUMINIUM DOOR – ACCESSORIES

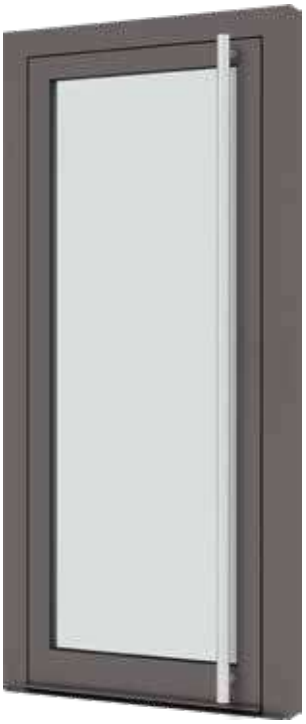
HANDLES AND ACCESSORIES

Lever handle. Natural anodised surface finish.

Stainless steel handle. Polished surface finish.

Emergency escape handle. Only available for outward opening doors. Natural anodised surface finish.

Europrofile cylinder. Keyed external, thumbturn internal. Nickel-plated surface finish, key in stainless steel.



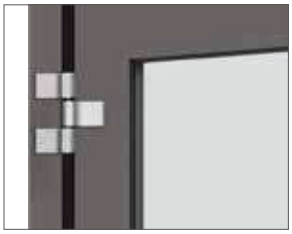
Full height pull handle in stainless steel. Semigloss brushed surface finish.

300mm cranked pull handle in stainless steel. Semigloss brushed surface finish. Also available as 650mm handle.

300mm circular pull handle in stainless steel. Semigloss brushed surface finish.

Panic bar for outward opening doors only. Natural anodised aluminium surface finish.

Barrel hinge with or without security bolt. Natural anodised surface finish.



Anti-finger trap hinge. Natural anodised surface finish.

Letter box in 160mm glazing bar only. Natural anodised surface finish.

Standard door closer for inward and outward opening doors. Silver painted surface finish.
NB. We have a range of door closers with different functionality and looks. Please ask for further information regarding your project.

VELFAC RIBO WOOD/ALUMINIUM DOORS

MAIN ENTRANCE DOORS FOR DOMESTIC BUILDINGS AND SECONDARY ENTRANCE DOORS FOR COMMERCIAL, PUBLIC AND RESIDENTIAL BUILDINGS

Top: Packhorse Lane, Marcham / Allister Godfrey Architect

Bottom: Harrowdene Road, London / Developer: Harrow Property Developers

INWARD OPENING FLUSH DOOR IN A VELFAC 200 SCREEN

INWARD OPENING GLAZED ENTRANCE DOOR

INWARD OPENING FLUSH ENTRANCE DOOR AND VELFAC 200 FIXED SIDE LIGHT

OUTWARD OPENING 2-LEAF GLAZED ENTRANCE DOOR AND VELFAC 200 WINDOW TOP LIGHT

INWARD OPENING FLUSH ENTRANCE DOOR AND VELFAC 200 FIXED SIDELIGHTS

INWARD OPENING GROOVED FLUSH ENTRANCE DOOR AND VELFAC 200 FIXED SIDELIGHTS

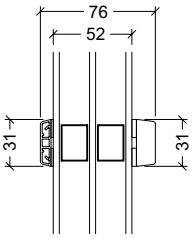
VELFAC WOOD / ALU DOORS – OVERVIEW

CHARACTERISTICS

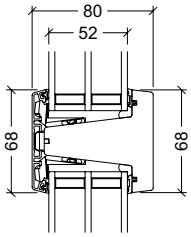
- Main entrance doors for domestic buildings
- Secondary entrance doors in public buildings and office blocks
- Outward or inward opening, single or double leaf
- Flush entrance doors in a number of external designs and a range of glass apertures
- Glazed entrance doors. If divided by glazing bars the resulting apertures can be glazed or panelled
- Available with 32mm double and 52mm triple glazed units
- VELFAC Ribo doors can be coupled with VELFAC 200 windows to create glazed entrance screens

N.B. The VELFAC Ribo Door System is only sold with an order for VELFAC 200.

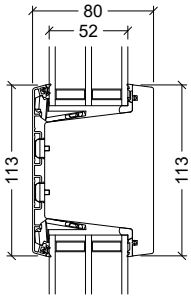
GLAZING BARS FOR GLAZED ENTRANCE AND PATIO DOORS



31mm energy glazing bar, 3 layer glazing



68mm glazing bar, 3 layer glazing



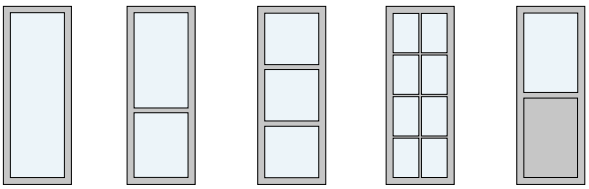
113mm glazing bar, 3 layer glazing

Scale: 1:5

VELFAC WOOD / ALU DOORS – DESIGN

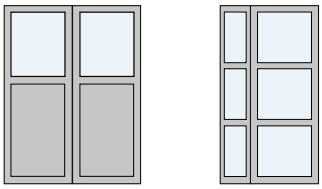
EXAMPLES OF STANDARD GLAZED DOORS AND GLAZING BAR CONFIGURATIONS

Configuration examples



1. 2. 3. 4. 5.

Examples of 2-leaved glazed doors

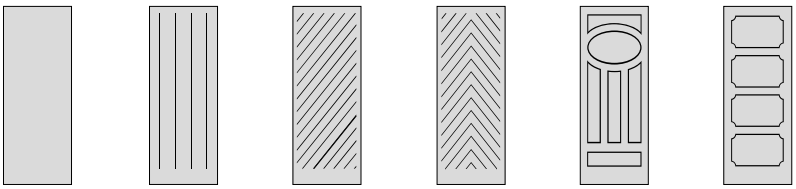


Symmetric double door

Asymmetric double door

STANDARD FLUSH DOOR DESIGNS AND WINDOW TYPES

Standard flush door designs



Plain
Code 10

Vertical
Code 20

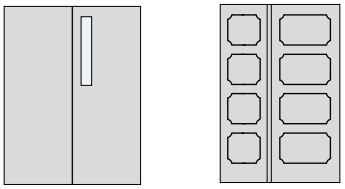
Sloping
left/right
Code 30/31

Herringbone
Code 40

Classic
Code 50

Antique
Code 60

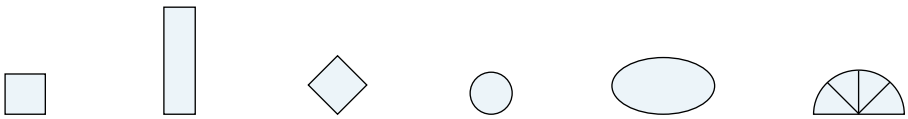
Examples of 2-leaved flush doors



Symmetric

Asymmetric

Standard flush door window types



Square
Code 10

Rectangle
Code 20

Diamond
Code 30

Circle
Code 40

Oval
Code 50

Half Moon
Code 70
Code 60 without glazing bars

There are some limitations when combining design and window shape. Please call VELFAC for further information.

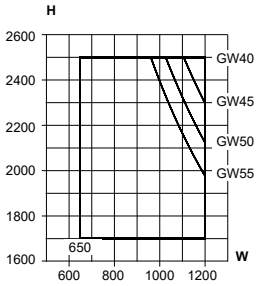
VELFAC WOOD / ALU DOORS – OPENING FUNCTIONS

GLAZED ENTRANCE DOORS

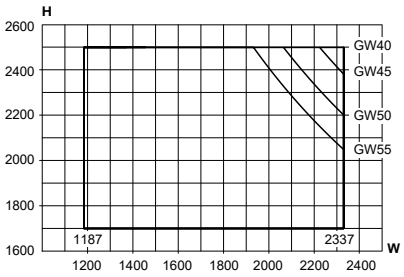
Outward opening

Inward opening

Min./max.-sizes, 1-leaf



Min./max.-sizes, 2-leaf



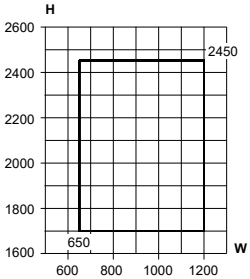
- Comprises timber sections with external aluminium profiles
- Can be divided by glazing bars with the resulting apertures glazed or panelled
- Outward or inward opening
- 3 closing points. Can be supplied with single closing point
- Lock box for oval cylinder
- Threshold: 18mm (outward opening) / 22.5mm (inward opening)

FLUSH ENTRANCE DOORS

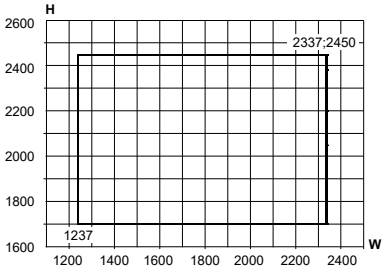
Outward opening

Inward opening

Min./max.-sizes, 1-leaf



Min./max.-sizes, 2-leaf



- Comprises timber sections with external aluminium profiles to the outer frame only
- Leaves are provided with a timber veneer
- The plain or grooved external finish is available in several designs and incorporates a range of glass apertures
- The internal finish is either plain or vertically grooved
- Inward or outward opening
- With optional kick-plates internally and externally
- 3 closing points. Can be supplied with single closing point
- Lock box for oval cylinder
- Threshold: 18mm (outward opening) / 22.5mm (inward opening)

GW = glas weight
(see page 80)

VELFAC WOOD / ALU DOORS – ACCESSORIES

HANDLE AND ACCESSORIES FOR ENTRANCE DOORS

Lever handle and cylinder. 6-lever cylinder in stainless steel.

Lever handle and internal thumbturn. 6-lever cylinder in stainless steel.

Flushbolt for operation of the mullion in 2-leaf doors.

Click vent. For outward opening doors only. Natural anodised surface finish. Free ventilation opening 4000mm². Documentation on air flow can be requested.

Spy hole for flush doors only. Polished brass.

Letter plate. For flush doors only. Position is UK Royal Mail compliant.

Door closer here on the inward opening door. Supplied separately. Surface finish in painted silver.

180° hinge for outward opening doors.

Door chain YALE WS6 for inward opening doors. Satin chrome finish.

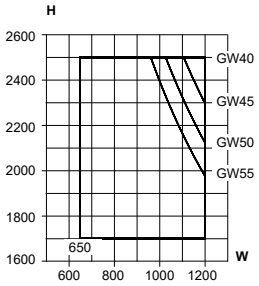
Acoustic trickle vent. The vent is machined into a timber packer with an external aluminium profile in the same colour as the door frame. Documentation on air flow can be requested. Achieves a sound reduction value of Dn,e,w 40 dB.

VELFAC WOOD / ALU DOORS – OPENING FUNCTIONS

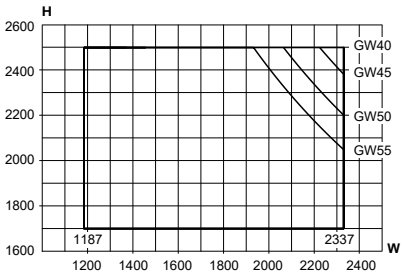
PATIO DOORS

Outward opening Inward opening

Min./max.-sizes, 1-leaf



Min./max.-sizes, 2-leaf



- Available as inward and outward opening
- The inward opening is suitable for Juliette door solutions
- Internal espagnolette handles with oval cylinder-lock as standard, and optional external handles to provide access
- For Juliette doors however typically with espagnolette window handle only
- Handle operated brake, which means the door can be held open anywhere between 0-90° (not available in combination with 180° hinge)
- Threshold: 18mm (outward opening) / 22.5mm (inward opening)
- Hinges: 180° is optional in outward opening doors

GW = glas weight
(see page 80)

HANDLE AND ACCESSORIES FOR THE PATIO DOORS

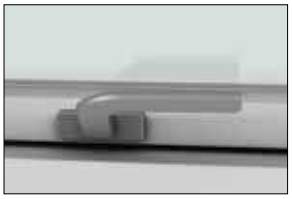
Espagnolette handle with cylinder-lock seen from inside. 6-lever cylinder in stainless steel.

Espagnolette handle with cylinder-lock seen from outside. With blank cover or cylinder.

Flushbolt for operation of the mullion in 2-leaf doors.

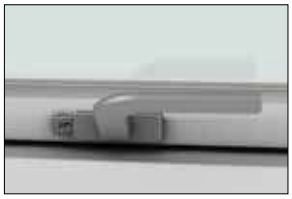
Click vent. For outward opening doors only. Natural anodised surface finish. Free ventilation opening 4000mm². Documentation on air flow can be requested.

180° hinge for outward opening doors. Not available with handle operated brake.



Espagnolette window handle. Standard in Juliette doors.

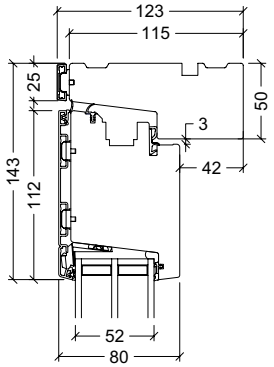
Espagnolette window handle with child-lock. Supplied with child-lock button.



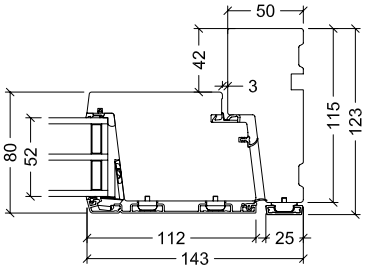
Espagnolette window handle with small lock. Supplied with lock and key for extra security.

VELFAC WOOD / ALU DOORS – FRAMES AND MULLIONS

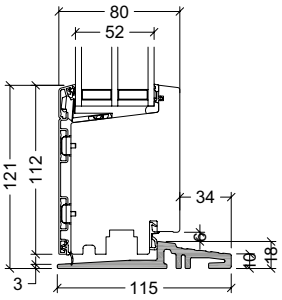
GLAZED ENTRANCE AND PATIO DOOR - OUTWARD OPENING



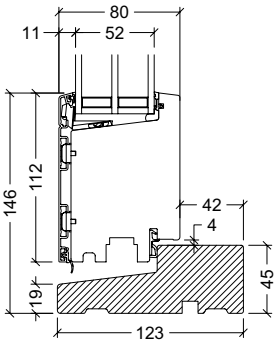
Head



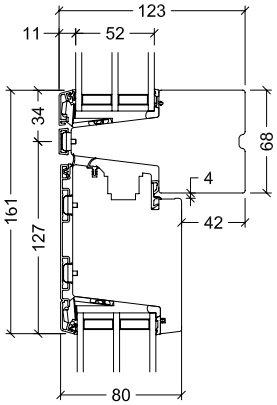
Jamb



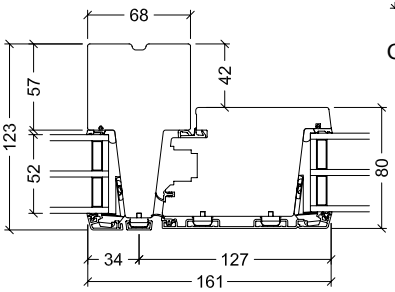
18mm HELO® threshold



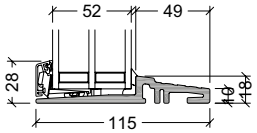
45mm threshold, hardwood



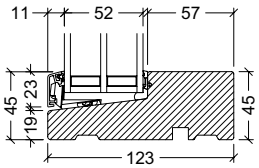
Transom, fixed sidelight



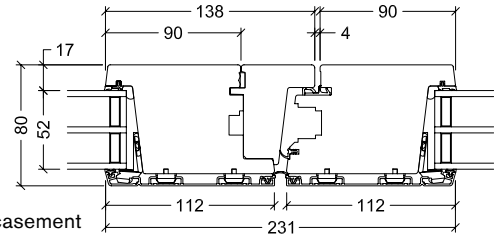
Mullion, fixed sidelight



Cill, fixed sidelight

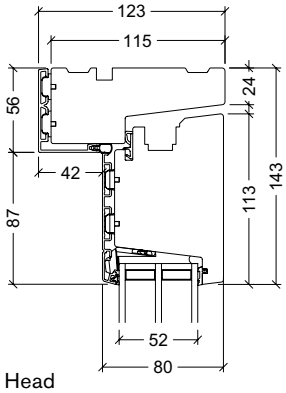


Cill, fixed sidelight

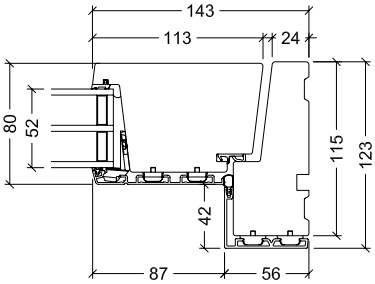


Mullion, French casement

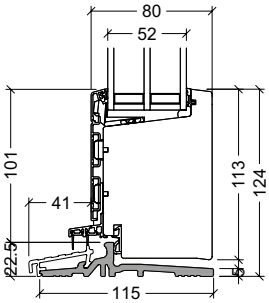
GLAZED ENTRANCE AND PATIO DOOR - INWARD OPENING



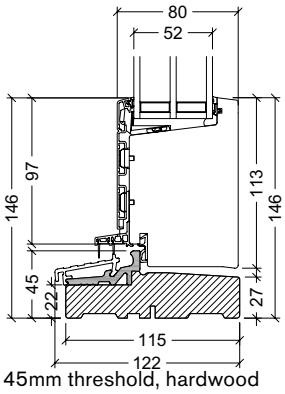
Head



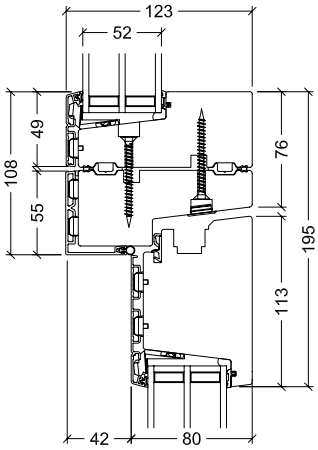
Jamb



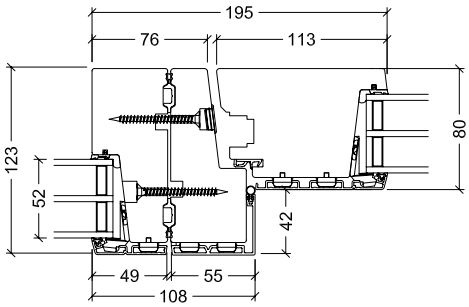
22.5mm HELO® threshold



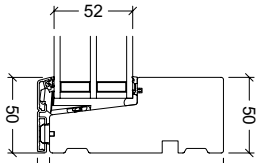
45mm threshold, hardwood



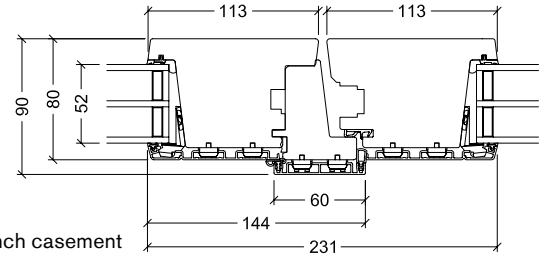
Transom, fixed sidelight



Mullion, fixed sidelight



Cill, fixed sidelight

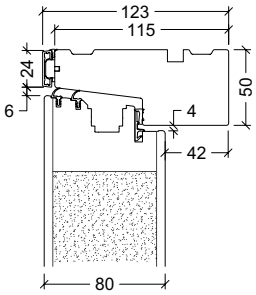


Mullion, French casement

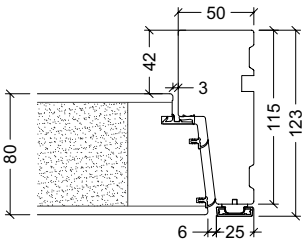
Scale: 1:5

VELFAC WOOD / ALU DOORS – FRAMES AND MULLIONS

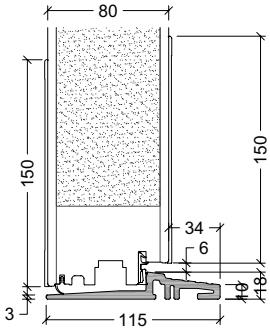
FLUSH ENTRANCE DOOR - OUTWARD OPENING



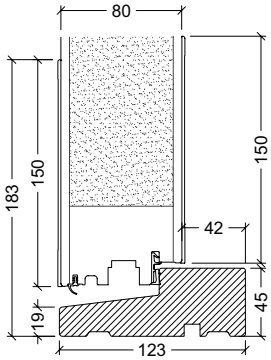
Head



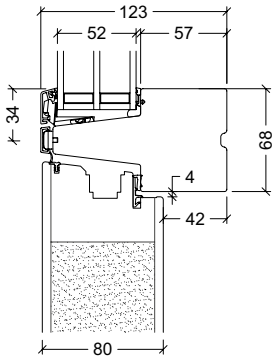
Jamb



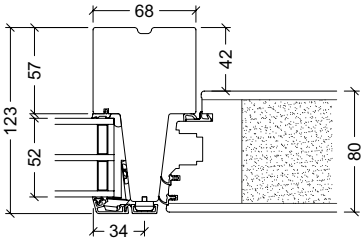
18mm HELO® threshold



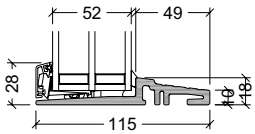
45mm threshold, hardwood



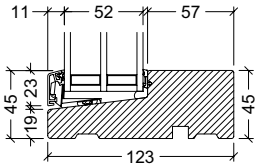
Transom, fixed sidelight



Mullion, fixed sidelight



Cill, fixed sidelight



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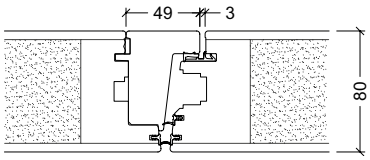
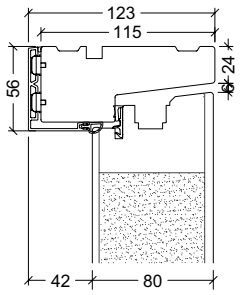


Mullion, French casement

FLUSH ENTRANCE DOOR - INWARD OPENING



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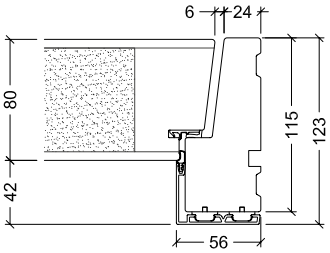
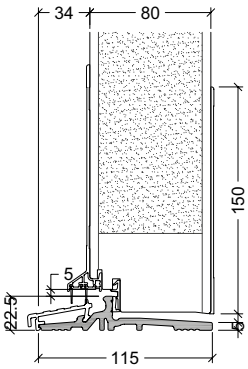
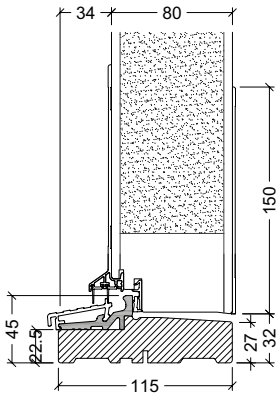


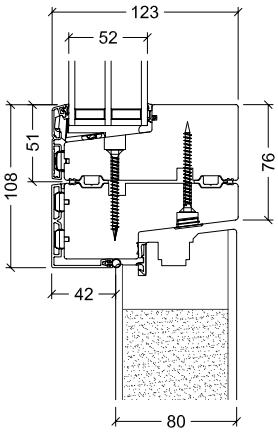
Jamb



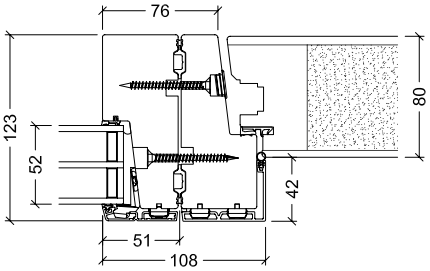
22.5mm HELO® threshold



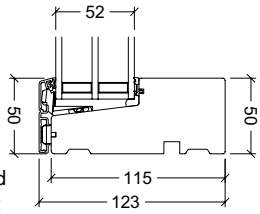
45mm threshold, hardwood



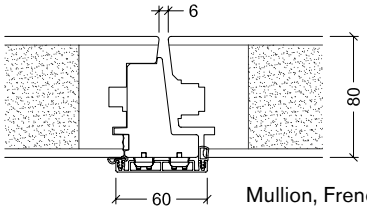
Transom, fixed sidelight



Mullion, fixed sidelight



Cill, fixed sidelight

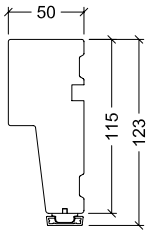


Mullion, French casement

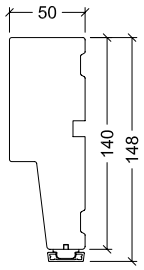
Scale: 1:5

VELFAC WOOD / ALU DOORS – FRAME OPTIONS

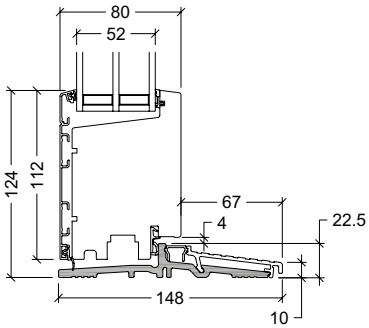
FRAME VARIATIONS - OUTWARD OPENING



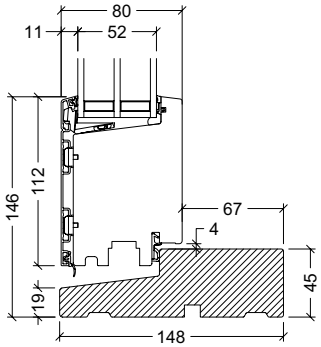
123mm side frame



148mm side frame

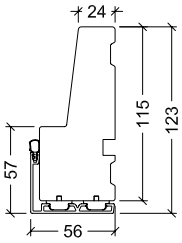


22.5mm threshold for 148mm frame

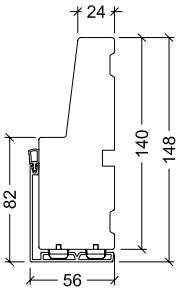


45mm threshold for 148mm frame

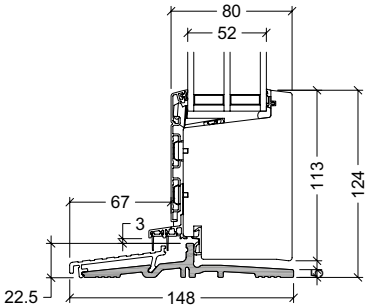
FRAME VARIATIONS - INWARD OPENING



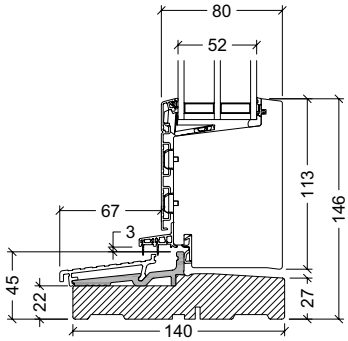
123mm side frame



148mm side frame



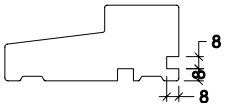
22.5mm threshold for 148mm frame



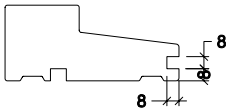
45mm threshold for 148mm frame

GROOVES AND FRAME EXTENSION PACKERS

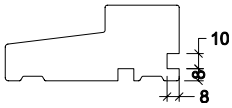
Please note that the grooves and packers are shown in 115mm (123mm) frame, but are also available with 140mm (148mm) frames.



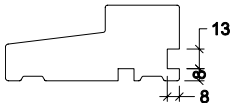
Groove type 8x8x8
Outward opening doors



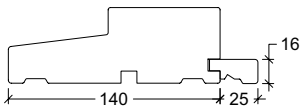
Groove type 8x8x8
Inward opening doors



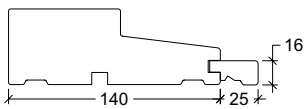
Groove type 8x10x8
Outward opening doors



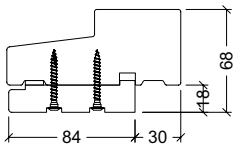
Groove type 8x13x8
Outward opening doors



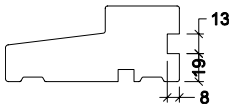
Depth packer type 16-25
in groove type 8x8x8
Outward opening doors
(for 140mm frame only)



Depth packer type 16-25
in groove type 8x8x8
Inward opening doors
(for 140mm frame only)



Cill packer type 18x84



Groove type 19x13x8
Outward opening doors

Scale: 1:5

VELFAC PANELS

PANELS FOR WINDOWS AND DOORS

Top: Centre for Health Related Research, Uni. of Hertfordshire, Hatfield / AD Architects Bottom: Ninewells, Cambridge / PRP Architects

VELFAC PANELS

VELFAC 200 FAÇADE WITH VENTILATED ALUMINIUM PANELS

VELFAC 200 FACADE WITH VENTILATED 'LOOK-ALIKE' PANELS (SHADOW-BOX)

VELFAC 200 FAÇADE WITH LOUVRE PANEL AND NON-VENTILATED CEDAR PANEL

FAÇADE WITH VELFAC 200 WINDOWS AND RAINSCREEN PANELS

PANELS - VELFAC 200 + VELFAC ALUMINIUM DOOR

TYPES OF PANELS PER SYSTEM

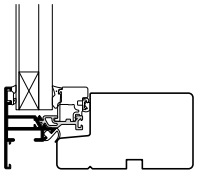
PANEL ELEMENT	WINDOW- / DOOR SYSTEM			PANEL BOARDS						
	VELFAC 200	VELFAC Aluminium door	Aluminium	Laminated board	Enamel glass	Shadow-box	Cedar	Louvre panel	Backboard	Internal door
Ventilated panel	x		x	x	x	x			x	
Sandwich panel	x	x	x							
Non-ventilated panel	x						x		x	
Louvre panel	x	x						x	x	
Louvre panel w/internal door	x							x		x
Rainscreen panel	x		x						x	
Secured by Design	x	x	x	x	x		x			

MATERIALS FOR VELFAC 200 AND VELFAC ALUMINIUM DOOR PANELS

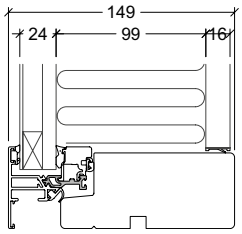
Board information	Materials	Colours	Thickness of board	Weight
Aluminium plate	Powder coated or anodised aluminium. N.B. Minimal resistance to kicks or ball dents, etc	Same colour and finish range as VELFAC window sashes.	Sandwich: 1.5mm Ventilated: 2mm Rainscreen: 2mm	1.5mm: 4 kg/m² 2mm: 5.4 kg/m²
Laminated board	A compact resin laminated board, specially designed for external use. Resistant to most common chemicals, kicks, ball dents and vadalism.	More than 40 colour option. Please ask VELFAC for further information.	Ventilated: 6mm	6mm: 8.4 kg/m²
Enamel glass	Toughened glass with painted reverse.	RAL 7011 RAL 9005 RAL 7016 RAL 9010 RAL 7024 RAL 9016 RAL 7026 RAL 9018 RAL 7031 RAL 7035	Ventilated: 6mm	6mm: 15 kg/m²
Shadow-box (Look-alike)	A double glazed unit with 6mm clear glass externally and 6mm enamel glass internally.		Shadowbox: 24mm	25 kg/m²
Cedar	A diffusion open, composite timber board faced with cedar slats and no visible fixings.	Untreated Western Redwood Cedar	Non-ventilated: 24mm	15 kg/m²
Louvre panel	Aluminium. 30mm between the blades. Insect screen included.	Natural anodised or powder coated in a wide selection of RAL colours		12 kg/m²

VENTILATED PANEL - VELFAC 200

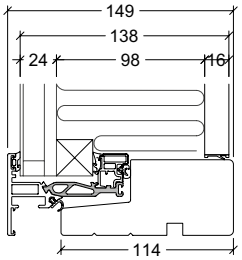
DETAILS, MIN./MAX.-SIZES AND U_{PANEL}-VALUES



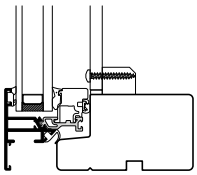
VELFAC 200
Ventilated panel
without backboard



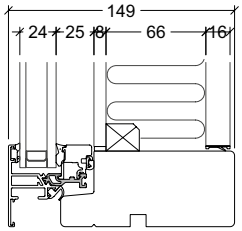
VELFAC 200
Ventilated panel with back-
board



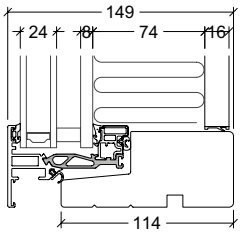
VELFAC 200 ENERGY
Ventilated panel with back-
board



VELFAC 200
Shadow-box without
backboard



VELFAC 200
Shadow-box with
backboard



VELFAC 200 ENERGY
Shadow-box with
backboard

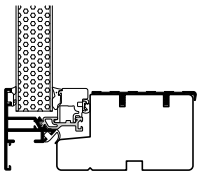
HxW and WxH measured in mm	Max. for panel element with backboard VELFAC 200 / 200 ENERGY
Enamel glass	2500 × 1340
Aluminium plate	2500 × 1340
Laminated plate	2500 × 1340
Shadow-box	2500 × 1340

Panel with insulation (λ=0.0037) and back-board	U_{panel}-value (centre value in W/m²K)			
	VELFAC 200		VELFAC 200 ENERGY	
Element depth	124mm	149mm	149mm	174mm
Enamel glass (24mm)	0.40	0.32		
Enamel glass (48mm)			0.32	0.26
Aluminium plate	0.40	0.32	0.32	0.26
Laminated plate	0.40	0.32	0.32	0.26
Shadow-box	0.56	0.41	0.37	0.30

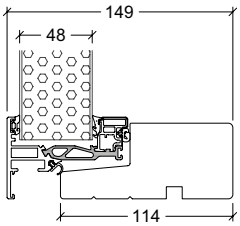
Scale: 1:5

SANDWICH PANELS - VELFAC 200 + ALUMINIUM DOOR

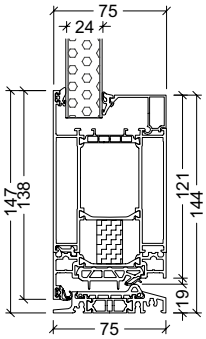
DETAILS, MIN./MAX.-SIZES AND U_{PANEL}-VALUES



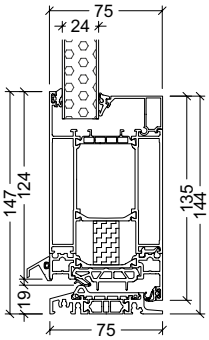
VELFAC 200
Sandwich panel



VELFAC 200 ENERGY
Sandwich panel



VELFAC Aluminium door,
outward opening
Sandwich panel



VELFAC Aluminium door,
inward opening
Sandwich panel

HxW and WxH measured in mm	Max. for panel element VELFAC 200 / 200 ENERGY	Max. for panel plate VELFAC Aluminium door
Aluminium plate	1500 x 3000	1500 x 3000

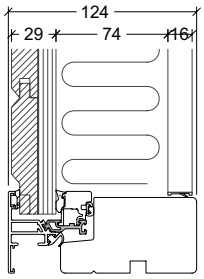
Min./max. sizes for the selected opening function may influence the size.
Min./max. sizes for door panels = Min./max. sizes for the door

Sandwich panel	U_{panel}-value (centre value in W/m²K)			
	VELFAC 200 / 200 ENERGY		VELFAC Aluminium door	
Glazing	24mm	48mm	24mm	48mm
Aluminium plate	0.99	0.52	0.99	0.52

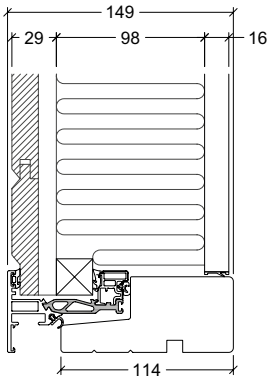
Scale: 1:5

NON-VENTILATED PANEL - VELFAC 200

DETAILS, MIN./MAX.-SIZES AND U_{PANEL}-VALUES



VELFAC 200
Non-ventilated panel
with Cedar



VELFAC 200 ENERGY
Non-ventilated panel
with Cedar

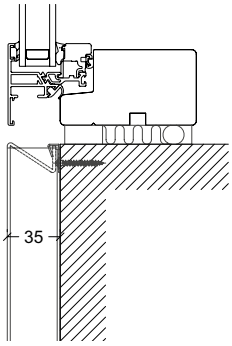
HxW and WxH measured in mm	Max. for panel element with backboard
	VELFAC 200 / 200 ENERGY
Cedar (WxH only)	2500 × 1340

Panel with insulation (λ=0.037) and backboard	U_{panel}-value (centre value in W/m²K)			
	VELFAC 200		VELFAC 200 ENERGY	
Element depth	124mm	149mm	149mm	174mm
Cedar panel	0.51	0.38	0.31	0.25

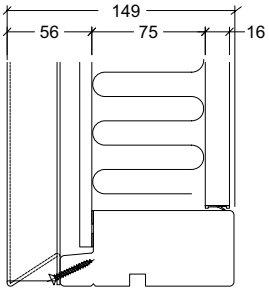
Scale: 1:5

RAINSCREEN PANELS - VELFAC 200

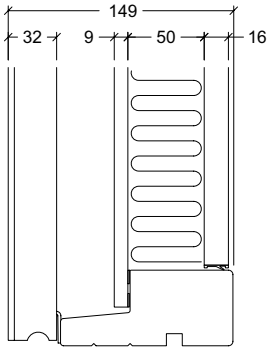
DETAILS, MIN./MAX.-SIZES AND U_{PANEL}-VALUES



VELFAC 200 rainscreen supplied separately for installation on building site



VELFAC 200 rainscreen mounted on frame from factory



VELFAC 200 ENERGY rainscreen mounted on frame from factory

HxW and WxH measured in mm	Max. for VELFAC 200 / 200 ENERGY	
	Aluminium plate in RAL-colour	Aluminium plate, anodised
With frame, WxH	1250 x 2800	1250 x 2800
With frame, HxW	1250 x 2800	
Without frame, WxH	1300 x 2800	1300 x 2800
Without frame, HxW	1300 x 2800	

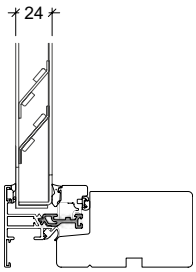
U_{panel}-value (centre value in W/m²K)				
	VELFAC 200		VELFAC 200 ENERGY	
Element depth	124mm	149mm	149mm	174mm
Rainscreen with frame, insulation (λ=0.037) and backboard	0.54	0.39	0.54	0.39

Scale: 1:5

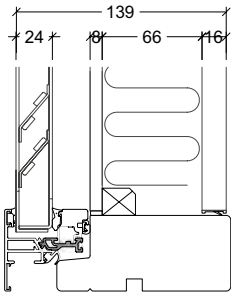
LOUVRE PANELS - VELFAC 200 + VELFAC ALUMINIUM DOOR

DETAILS, MIN./MAX.-SIZES AND U_{PANEL}-VALUES

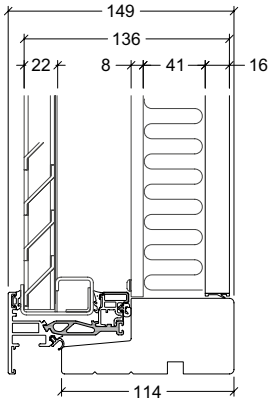
VELFAC 200 with louvre panel



VELFAC 200 louvre panel with fly mesh only

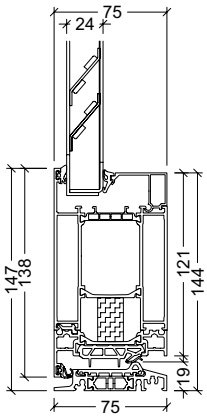


VELFAC 200 louvre panel with intermediate board and backboard



VELFAC 200 ENERGY louvre panel with intermediate board and backboard

VELFAC Aluminium door with louvre panel



Louvre panel with fly mesh only

U_{panel}-value (centre value in W/m²K)				
	VELFAC 200		VELFAC 200 ENERGY	
Element depth	124mm	149mm	149mm	174mm
Panel with insulation (λ=0.037) and backboard	0.70	0.47	0.68	0.47

HxW and WxH measured in mm	Max. for panel element		Max. for panel plate	
	VELFAC 200		VELFAC Aluminium door	
Louvre panel with:	WxH	HxW	WxH	HxW
fly mesh only	2075 x 975	2875 x 975	2000 x 900	2300 x 900
intermediate board	2075 x 975 1360 x 1360	1825 x 1360 2875 x 975		
intermediate board and backboard	2075 x 975 1320 x 1320	1900 x 1320 2590 x 964		

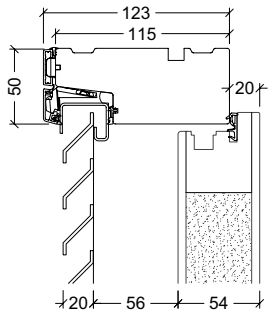
Min./max. sizes for the selected opening function may influence the size.

Scale: 1:5

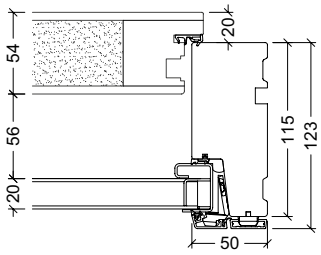
LOUVRE PANEL WITH INTERNAL DOOR

DETAILS, MIN./MAX.-SIZES AND U_{PANEL}-VALUES

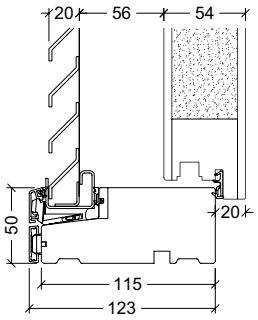
- Grooved 50mm sightlines
- Internal handle in matt chrome surface finish
- The handle is always located at the centre of the internal door(s)
- Handle operated brake, which means the door can be held open anywhere between 0-90° (doors where width <580mm only)
- Internal finish to door can be smooth or when painted with vertical grooves



Head



Jamb



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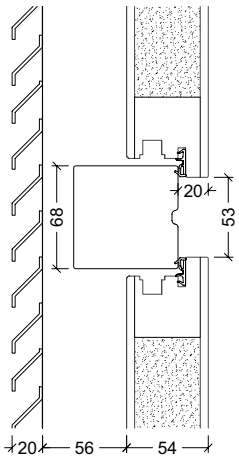
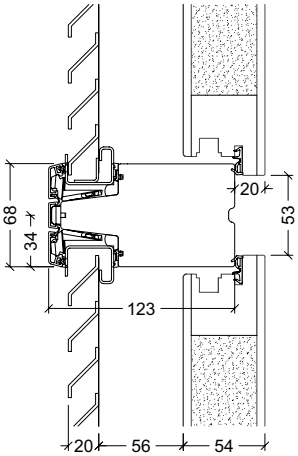


Hidden transom
(1 external panel)



Visible transom
(2 external panels)

	Max. for panel element	
	w/ 1 internal door	w/ 2 internal doors
measured in mm	WxH	WxH
Min. size	350 x 580	350 x 1380
Max. size	872 x 1680	872 x 2872

U_{panel}-value (centre value in W/m²K)
Max. 0.67 for the construction

Scale: 1:5

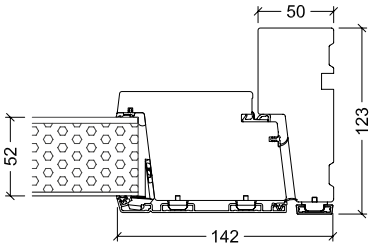
VELFAC RIBO DOOR SANDWICH PANELS

MATERIALS FOR VELFAC RIBO PANELS

Board information	Materials	Colours	Thichness of board	Weight
Aluminium plate + HDF plate	Powder coated or anodised aluminium externally and a HDF plate internally. N.B. Medium resistance to kicks or ball dents, etc.	Same colour and finish range as VELFAC Ribo alu sashes (aluminium) / VELFAC Ribo wood frames (HDF).	Sandwich: 1.5+4mm 32mm panel 52mm panel	 8.9 kg/m² 9.5 kg/m²

DETAILS, MIN./MAX.-SIZES AND U_{PANEL}-VALUES

VELFAC Ribo alu
Sandwich panel



HxW and WxH measured in mm	Max. area	Max. height for the panel plate
Aluminium plate + HDF plate	(1.5m²)	1850mm

Min./max. sizes for the selected opening function may influence the size.

Sandwich panels	U_{panel}-value (centre value in W/m²K)	
Glazing bead	32mm	52mm
Aluminium plate + HDF plate	1.02	0.64

Scale: 1:5

VELFAC GLAZING

THE VELFAC GLAZING CONCEPT

Top: Launchpad Building, Falmouth University, Penryn / BDP

Bottom: Lofthaus, Berlin / Markus Coelen Gesellschaft von Architekten GmbH

VELFAC GLAZING

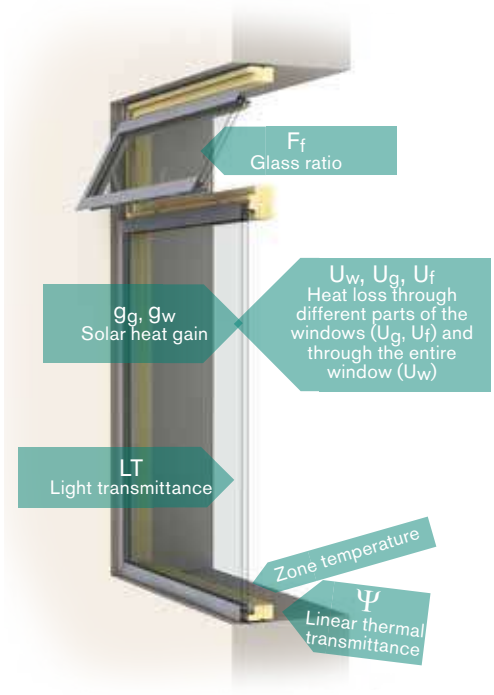
VELFAC GLAZING FOR EVERY NEED

VELFAC windows are supplied with low-energy glazing as standard, but a wealth of additional options are also available. All windows within the VELFAC Glazing concept are compliant with EN 1279.

Our range is divided into two main categories based on two key glass properties: energy efficiency and solar protection. Glass in both categories can be combined with other types of glass to deliver additional benefits such as noise reduction, increased safety and security, or opacity, so that the perfect glazing solution can be created.

Get started with the primary needs and then add additional properties.

WINDOW TERMINOLOGY



CALCULATION OF GLASS WEIGHT

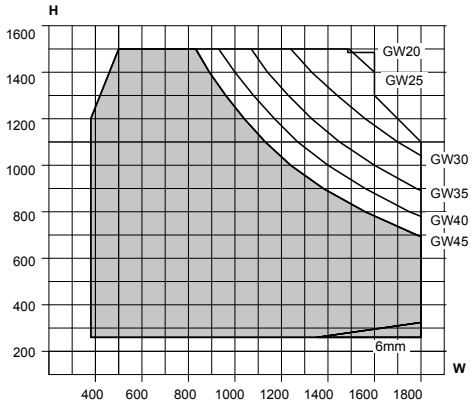
All window glass, including any laminating material, has a weight of 2.5 kg per square metre, per millimetre thickness. The weight of the spacer profile is unimportant and is therefore not measured.

Glazing	Calculation of glass weight (GW)		
4-16-4	= (4+4) x 2.5 kg	= 20 kg/m²	= GW 20
6-14-4	= (6+4) x 2.5 kg	= 25 kg/m²	= GW 25
6.4-14-4	= (6+4) x 2.5 kg	= 25 kg/m²	= GW 25
6-12-6	= (6+6) x 2.5 kg	= 30 kg/m²	= GW 30
4-18-4-18-4	=(4+4+4) x 2.5 kg	= 30 kg/m²	= GW 30
8-8-8.4	=(8+8) x 2.5 kg	= 40 kg/m²	= GW 40
8.8-16-6-14-8.8	=(8+6+8) x 2.5 kg	= 55 kg/m²	= GW 55

6.4, 8.4 and 8.8 panes are laminated panes.

The glass weight influences the maximum size of windows or doors. The GW lines are limiting the element height and width according to the glass weight.

Here you can see how the glass weight of 45 kg/m² limits the min./max. sizes (grey area).



VELFAC STANDARD GLAZING

VELFAC STANDARD GLAZING - CLEAR ENERGY GLAZING

VELFAC STANDARD GLAZING provides a light, pleasant interior and a clear view of the external environment.

VELFAC STANDARD GLAZING has excellent insulation properties achieved by incorporating a heat reflecting coating on the inner surface of the glass and argon gas within the glazing cavity. VELFAC STANDARD GLAZING features provide an improved internal enviroment by reducing down-draught, and can help to reduce heating costs.

VELFAC 200 DGU

Construction	Type of glass	U-value BS/EN673	g-value BS/EN410	LT-value BS/EN410
4-16-4 argon*	Clear/Energy	1.12	0.64	0.82
4-16-4 argon	Energy/Energy North	1.03	0.45	0.70

The U-value for an entire window must be calculated separately. Please call VELFAC for more information.
* Standard in all VELFAC 200 DGU windows.

VELFAC 200 ENERGY

Construction	Type of glass	U-value BS/EN673	g-value BS/EN410	LT-value BS/EN410
4-18-4-18-4 argon*	Energy/Clear/Energy	0.53	0.53	0.74
4-18-4-18-4 argon	Energy Xtra/Clear/Energy Xtra	0.56	0.61	0.75

The U-value for an entire window must be calculated separately. Please call VELFAC for more information.
* Standard in all VELFAC 200 ENERGY windows.

VELFAC SUN

VELFAC SUN - SOLAR PROTECTION

VELFAC SUN is an effective way to reduce the temperature in rooms with larger window sections. The glazing reflects up to 2/3 of the sun's heat while unwanted sunlight is kept out, and plenty of natural light enters to the entire room.

Choose from the different types of solar control glazing, all consisting of glass with coating:

- VELFAC Sun SKN176 is a neutral colour coating, which is very close to the appearance of standard glass, and delivers a natural internal finish and a clear view of the external enviroment.
- VELFAC Sun SKN 154 and SKN 165 are a little darker in colour than Sun SKN176, and therefore offers greater protection against unwanted solar gain. Although the coating remains very transparant, the colours of the external view will be slightly affected.

VELFAC 200 DGU

Construction	Type of glass	U-value BS/EN673	g-value BS/EN410	LT-value BS/EN410
4-16-4 argon	Sun SKN176/Clear	1.04	0.37	0.70
6-14-4 argon	Sun SKN154/Clear	1.07	0.28	0.52

The U-value for an entire window must be calculated separately. Please call VELFAC for more information.

VELFAC 200 ENERGY

Construction	Type of glass	U-value BS/EN673	g-value BS/EN410	LT-value BS/EN410
4-18-4-18-4 argon	Sun SKN176/Clear/Energy	0.50	0.35	0.64
6-18-4-16-4 argon	Sun SKN165/Clear/Energy	0.52	0.32	0.55
6-18-4-16-4 argon	Sun SKN154/Clear/Energy	0.52	0.26	0.47

The U-value for an entire window must be calculated separately. Please call VELFAC for more information.

VELFAC SOUND

VELFAC SOUND - NOISE REDUCTION

Efficient glazing is fundamental to noise control. Glazing is effective at reducing external noise, but the use of thicker glass or different combinations of glass will improve performance.

A standard VELFAC 200 double-glazed unit achieves Rw32, which can be increased to Rw39 by adjusting the thickness of the glass and the glazing rebate. A standard VELFAC 200 ENERGY triple-glazed unit achieves Rw33, which can be increased to Rw43.

Please call VELFAC for solutions to your specific noise reduction requirements.

Acoustic trickle vent. The VELFAC acoustic vent is designed to provide both fresh air and noise control in buildings when combined with VELFAC SOUND windows. The vent achieves a sound reduction value of Dn, e, w 40dB.

VELFAC 200 DGU

Construction	Type of glass	U-value BS/EN673	g-value BS/EN410	LT-value BS/EN410	Rw	Rw + C	Rw + Ctr
4-16-4*	Clear/Energy	1.12	0.64	0.82	32	-1	-5
6-14-4*	Clear/Energy	1.15	0.63	0.81	35	-1	-4
8.8-12-4	Sound Safety/Energy	1.27	0.60	0.81	38	-2	-5

The U-value for an entire window must be calculated separately. Please call VELFAC for more information.
*Standard in all VELFAC 200 windows.
The table shows noise reduction (Rw) values for a VELFAC 200 system window measuring (W x H) = 1230mm x 1480mm.

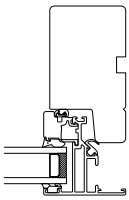
VELFAC 200 ENERGY

Construction	Type of glass	U-value BS/EN673	g-value BS/EN410	LT-value BS/EN410	Rw	Rw + C	Rw + Ctr
4-18-4-18-4*	Energy/Clear/Energy	0.53	0.53	0.74	33	-2	-6
4-18-4-16-6	Energy/Clear/Energy	0.55	0.53	0.74	37	-1	-5
6-12-4-18-8.8	Energy Safety/Clear/Sound Safety Energy	0.61	0.51	0.73	41	-2	-7
8.8-12-4-15-8.8	Sound Safety Energy/Clear/Sound Safety Energy	0.65	0.49	0.72	43	-1	-4
3+1 (4-18-4-18-4 + 6)	Energy/Clear/Energy + Clear Safety	0.48	0.49	0.67	45	-2	-7
3+1 (8.8-12-6-12-8.8 + 6)	Sound Safety Energy/Clear/Sound Safety Energy	0.62	0.45	0.65	50	-1	-6

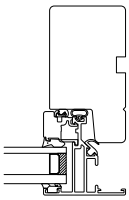
The U-value for an entire window must be calculated separately. Please call VELFAC for more information.
*Standard in all VELFAC 200 ENERGY windows.
The table shows noise reduction (Rw) values for a VELFAC 200 ENERGY system window measuring (W x H) = 1230mm x 1480mm.

VELFAC SOUND + VELFAC FIRE

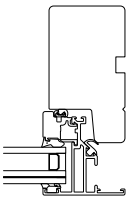
VELFAC SOUND - NOISE REDUCTION



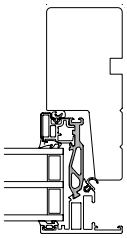
Glazing: 4-16-4
Rw = 32 dB
Rw + C = 31 dB
Rw + Ctr = 27 dB



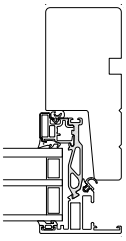
Glazing: 6-14-4
Rw = 35 dB
Rw + C = 34 dB
Rw + Ctr = 31 dB



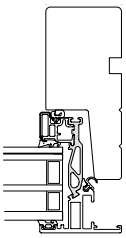
Glazing: 8.8-12-4
Rw = 38 dB
Rw + C = 36 dB
Rw + Ctr = 33 dB



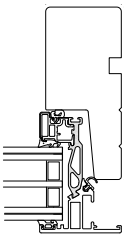
Glazing:
4-18-4-18-4
Rw = 33 dB
Rw + C = 31 dB
Rw + Ctr = 27 dB



Glazing:
4-18-4-16-6
Rw = 37 dB
Rw + C = 36 dB
Rw + Ctr = 32 dB



Glazing:
6-12-4-18-8.8
Rw = 41 dB
Rw + C = 39 dB
Rw + Ctr = 34 dB



Glazing:
8.8-12-4-15-8.8
Rw = 43 dB
Rw + C = 42 dB
Rw + Ctr = 39 dB

VELFAC FIRE - FIRE PROTECTION

VELFAC FIRE glass should be used in areas which secure escape routes, or which protect persons or objects from fire.

A VELFAC Fire element is a fixed triple glazed wood/aluminium light, thus slightly slimmer than a VELFAC 200 System window.

VELFAC FIRE glass meets national and European standards. VELFAC FIRE glass has been tested for integrity and insulation according to BS EN standards 1363-1/2 and 1364-1. The product performance is classified according to procedures given in EN 13501-2:2016.

Approved document B of the Building Regulations gives guidance on fire resistant materials.

VELFAC Fire element

Construction	Type of glass	U_g BS/EN673	g-value BS/EN410	LT-value BS/EN410
4-12-4-12-16	Safety Energy / Safety Energy / Contraflam®	0.83	0.54	0.58
6-12-4-10-16	Sun SKN176 / Safety Energy / Contraflam®	0.74	0.34	0.61
4-12-4-12-17	Safety Energy / Safety Energy / Satin Décor + Contraflam®	0.83	0.53	0.72

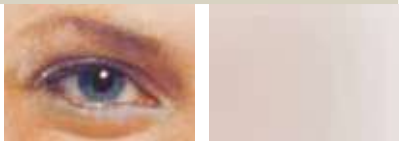
The U-value for an entire window must be calculated separately. Please call VELFAC for more information.

VELFAC DÉCOR + VELFAC FAÇADE

VELFAC DÉCOR - OBSCURE

VELFAC DÉCOR obscure glass should be used in areas where privacy and security are required. VELFAC DÉCOR is available in five different designs: Satin, Pacific, Cotswold or Carré.

In order to get maximum effect of key glass property, VELFAC recommends that obscure glass is fitted as the external or middle layer, when used with VELFAC CLEAR, and as the internal or middle layer when used with VELFAC SUN. These configurations ensure that the performance of the glazed unit is not compromised.


Satin

Pacific

Cotswold

Carré

VELFAC FAÇADE - GLAZED PANELS

VELFAC FAÇADE glass has a non-transparent enamel coating and is used to create glazed panels for visually unbroken façades or façades with a special colour effect. They are especially suitable for concealing floor slabs and other internal structures, or areas behind the façade.

VELFAC FAÇADE enamel glass is available in several RAL colours and is supplied as toughened and heat-soak tested as standard.

The most popular uses of VELFAC FAÇADE are:
- Spandrel panels fitted with 6mm enamel glass
- Look-alike panels - panels with double-glazed units which are usually fitted with solar protection glass on the outside and enamel glass on the inside. This allows closer colour matching to other windows in a façade.

VELFAC 200 DGU and VELFAC 200 ENERGY

Construction	Type of glass	U-value BS/EN673
6mm enamel glazing	RAL 7011, 7016, 7024, 7026, 7031, 7035, 9005, 9010, 9016, 9018	0.40
6-12-6 shadow-box	RAL 7011, 7016, 7024, 7026, 7031, 7035, 9005, 9010, 9016, 9018	0.51

VELFAC SAFETY

VELFAC SAFETY - PERSONAL SAFETY

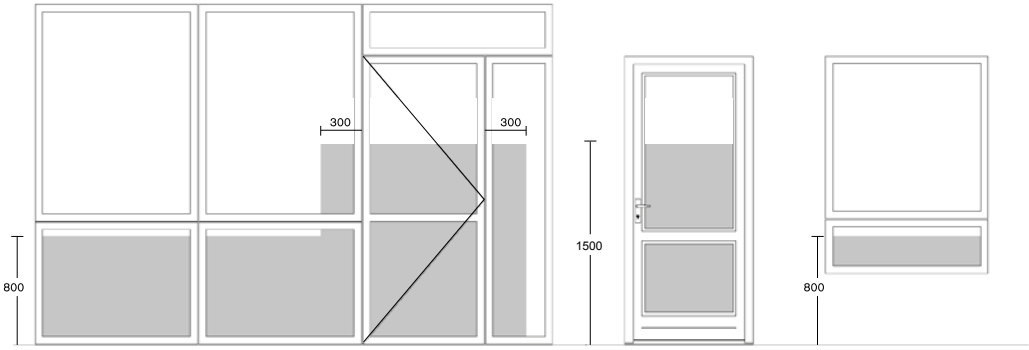
VELFAC SAFETY glass should be used in areas where glazing is at risk from human impact (safe breakage) or where glazing is required to form a physical barrier between levels (containment).

It is typically used in casement doors, sliding casement doors, entrance doors and low positioned windows.

VELFAC SAFETY glass meets a number of National and European standards.

Approved document N of the Building Regulations and BS 6262: Part 4 identify the critical areas and requirements for safety glass. Approved document K of the Building Regulations identifies the requirements for containment. BS 6206 identifies the impact test procedure and classification for safety glass.

Guidelines for the use of safety glass



The illustration shows indicative examples of risk areas through glass panels.

VELFAC 200 DGU

Construction	Type of glass	U-value BS/EN673	g-value BS/EN410	LT-value BS/EN410
4-16-4 argon	Clear Safety/Energy Safety	1.12	0.64	0.82
4-14-6.4 argon	Clear Safety/Energy Safety	1.15	0.64	0.80
6-10-8.4 argon	Clear Safety/Energy Safety	1.43	0.63	0.80

The U-value for an entire window must be calculated separately. Please call VELFAC for more information.

VELFAC 200 ENERGY

Construction	Type of glass	U-value BS/EN673	g-value BS/EN410	LT-value BS/EN410
4-18-4-18-4 argon	Energy Safety/Clear/Energy Safety	0.53	0.53	0.74
4-18-4-18-4 argon	Energy/Clear/Energy Safety	0.53	0.53	0.74
4-18-4-16-6.4 argon	Energy Safety/Clear/Energy Safety	0.55	0.53	0.74
6-14-6-14-8.4 argon	Energy Safety/Clear/Energy Safety	0.61	0.53	0.72

The U-value for an entire window must be calculated separately. Please call VELFAC for more information.

VELFAC COUPLINGS

COUPLING AND CORNER SOLUTIONS

Top: Heriott Watt University Student Accomodation, Edinburgh / RMJM

Bottom: Forest Way School, Coalville / Hunters South Architects

VELFAC COUPLINGS AND CORNERS

COUPLINGS WITHIN THE VELFAC 200 WINDOW SYSTEM

THE VELFAC 200 WINDOW SYSTEM COUPLED WITH THE VELFAC ALUMINIUM DOOR SYSTEM

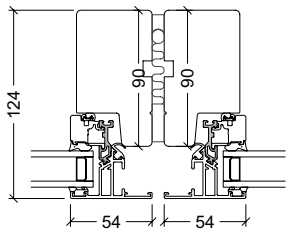
A VELFAC 200 CORNER SOLUTION SEEN FROM OUTSIDE

A VELFAC 200 CORNER SOLUTION SEEN FROM INSIDE

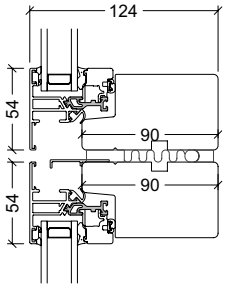
VELFAC 200 COUPLING DETAILS

VELFAC 200 WITH VELFAC 200, VELFAC IN OR VELFAC DOORS

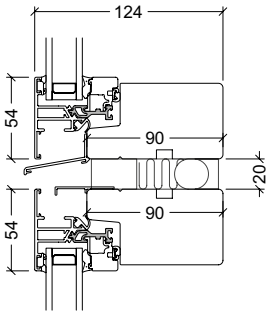
For further information, please refer to our Installation Guide.
Please note that all horizontal couplings between VELFAC 200 and VELFAC Ribo must be fitted with a cover profile.



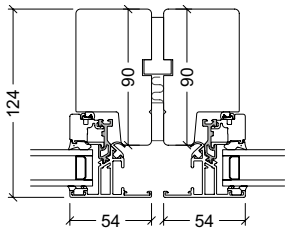
VELFAC 200 - VELFAC 200
Horizontal coupling



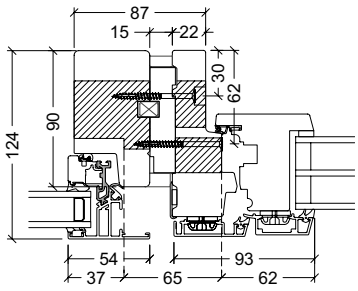
VELFAC 200 - VELFAC 200
Vertical coupling



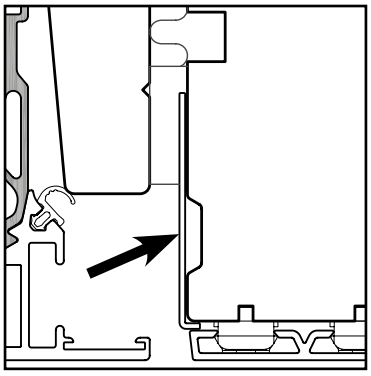
VELFAC 200 - VELFAC 200
Vertical coupling with drip flashing. Drip flashing is required for every 3 m min.



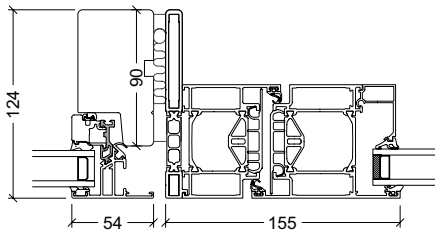
VELFAC 200 - VELFAC 200
Horizontal coupling with coupling profile



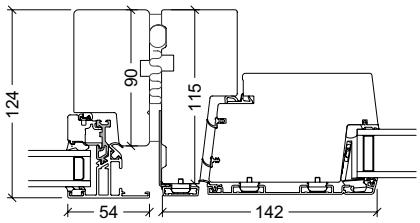
VELFAC 200 - VELFAC In inward opening system



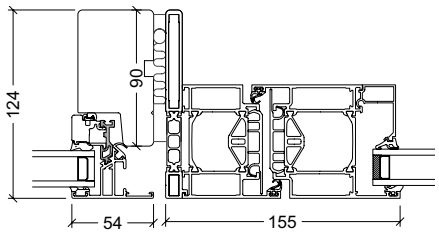
Cover profile. All horizontal couplings between VELFAC 200 and VELFAC Ribo or VELFAC In must be fitted with a cover profile.



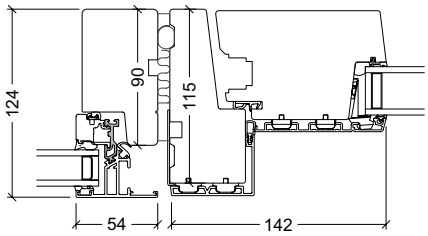
VELFAC 200 - VELFAC Aluminium door
Outward opening door



VELFAC 200 - VELFAC Ribo door
Outward opening door
Must be fitted with a cover profile.



VELFAC 200 - VELFAC Aluminium door
Inward opening door

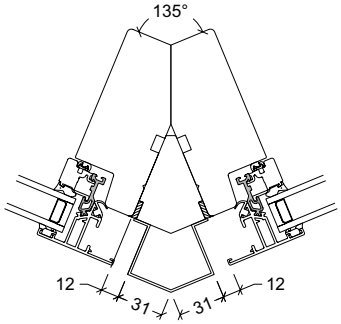


VELFAC 200 - VELFAC Ribo door
Inward opening door
Must be fitted with a cover profile.

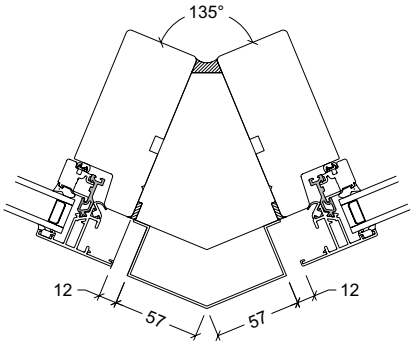
Scale: 1:5

VELFAC 200 CORNER SOLUTIONS

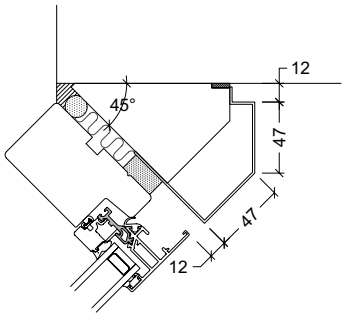
VELFAC 200 - EXTERNAL CORNER SOLUTIONS



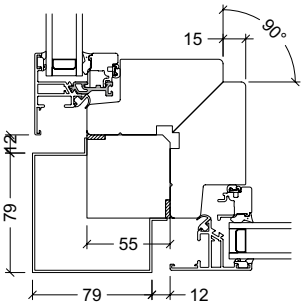
45° corner post, type A2202
45° aluminium pressing, type A1202



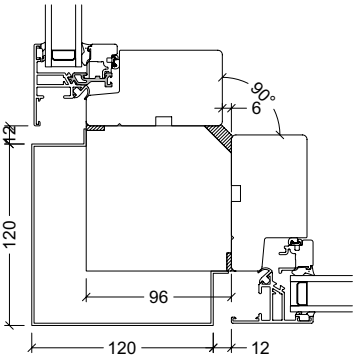
45° corner post, type A2201
45° aluminium pressing, type A1201



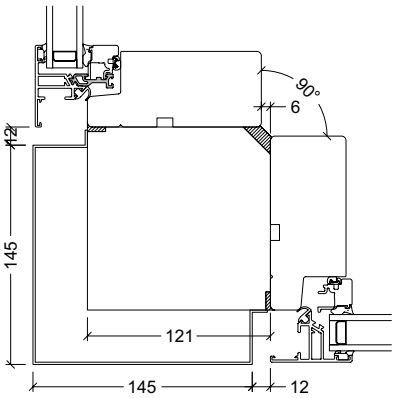
45° corner post, type A2214
45° aluminium pressing, type A1205



90° corner post, type A2001
90° aluminium pressing, type A1001

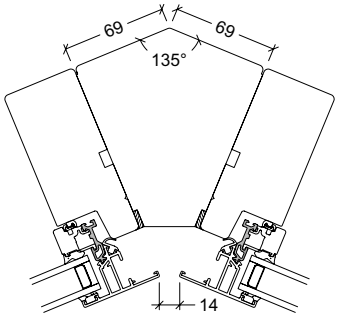


90° corner post, type A2000
90° aluminium pressing, type A1000

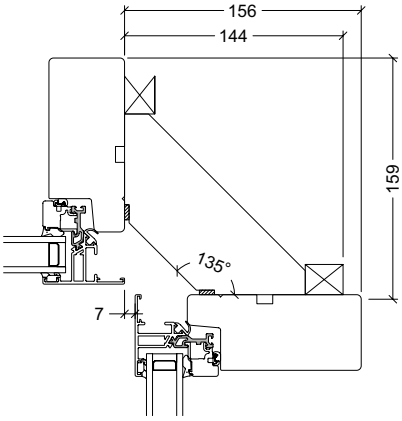


90° corner post, type A2016
90° aluminium pressing, type A1004

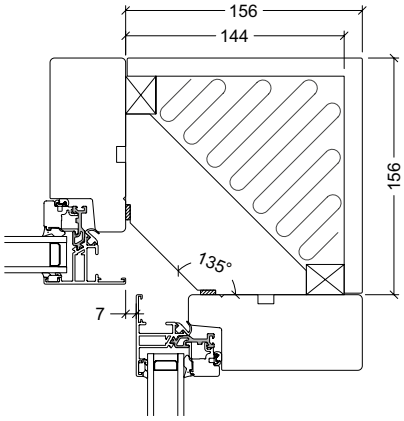
VELFAC 200 - INTERNAL CORNER SOLUTIONS



45° corner post, type A2211



90° corner post without backboard, type A2008



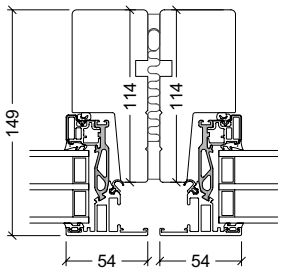
90° corner post with backboard, type A2014

Scale: 1:5

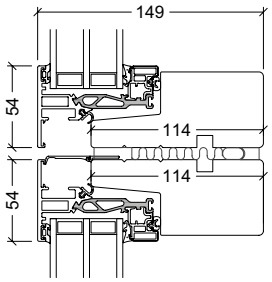
VELFAC 200 ENERGY COUPLING DETAILS

VELFAC 200 ENERGY WITH VELFAC 200 ENERGY, VELFAC IN OR VELFAC DOORS

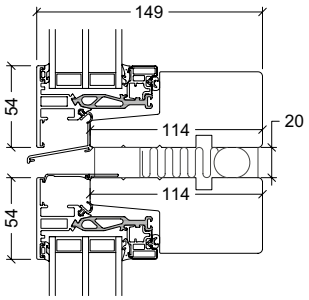
For further information, please refer to our Installation Guide.
Please note that all horizontal couplings between VELFAC 200 and VELFAC Ribo must be fitted with a cover profile.



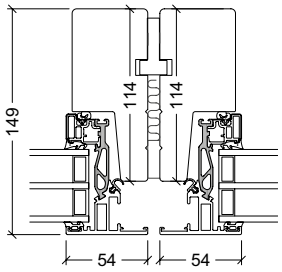
VELFAC 200 ENERGY - VELFAC 200 ENERGY
Horizontal coupling with compriband



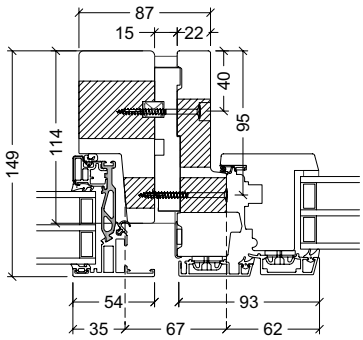
VELFAC 200 ENERGY - VELFAC 200 ENERGY
Vertical coupling



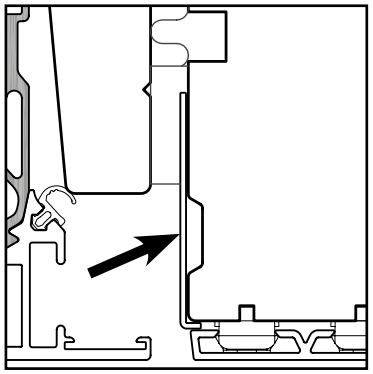
VELFAC 200 ENERGY - VELFAC 200 ENERGY
Vertical coupling with drip flashing. Drip flashing is required for every 3 m min.



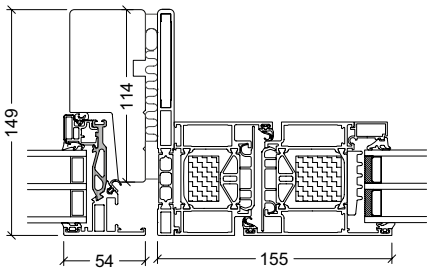
VELFAC 200 ENERGY - VELFAC 200 ENERGY
Horizontal coupling with coupling profile



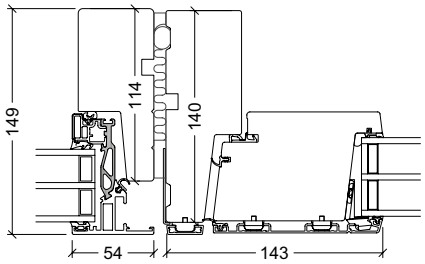
VELFAC 200 ENERGY - VELFAC In inward opening system



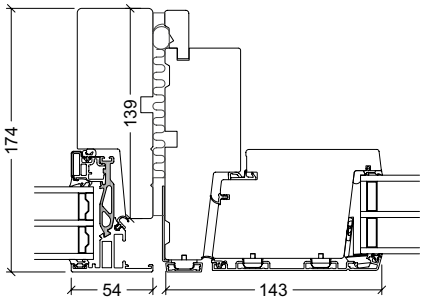
Cover profile. All horizontal couplings between VELFAC 200 and VELFAC Ribo or VELFAC In must be fitted with a cover profile.



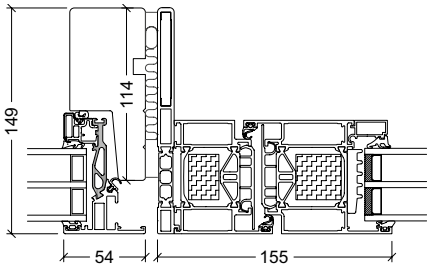
VELFAC 200 ENERGY - VELFAC Aluminium door
Outward opening door



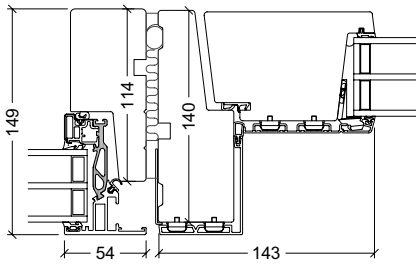
VELFAC 200 ENERGY - VELFAC Ribo
Outward opening door
Must be fitted with a cover profile.



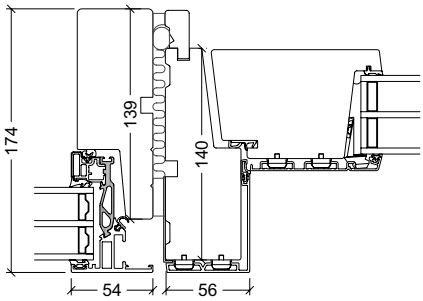
VELFAC 200 ENERGY - VELFAC Ribo
Outward opening door
Must be fitted with a cover profile.



VELFAC 200 ENERGY - VELFAC Aluminium door
Inward opening door



VELFAC 200 ENERGY - VELFAC Ribo
Inward opening door
Must be fitted with a cover profile.

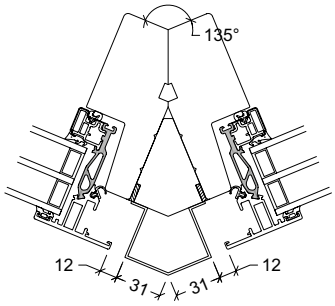


VELFAC 200 ENERGY - VELFAC Ribo
Inward opening door
Must be fitted with a cover profile.

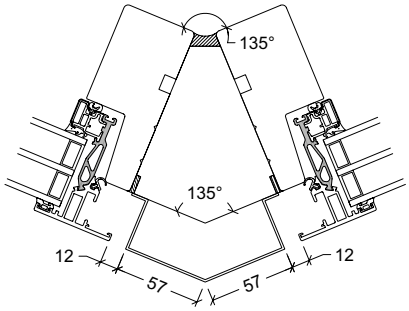
Scale: 1:5

VELFAC 200 ENERGY CORNER SOLUTIONS

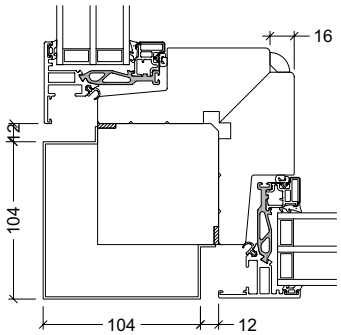
VELFAC 200 ENERGY - EXTERNAL CORNER SOLUTIONS



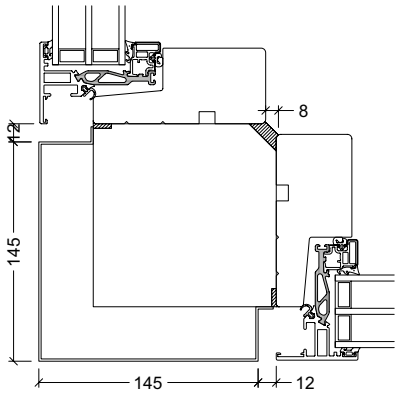
45° corner post, type A2202
45° aluminium pressing, type A1202



45° corner post, type A2201
45° aluminium pressing, type A1201

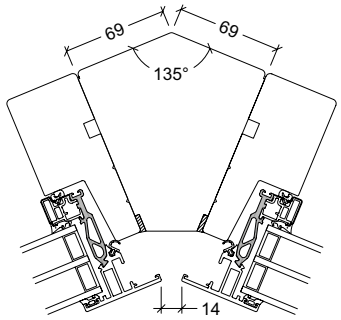


90° corner post, type A2002
90° aluminium pressing, type A1002

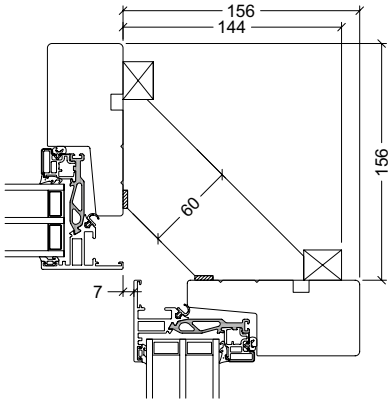


90° corner post, type A2016
90° aluminium pressing, type A1004

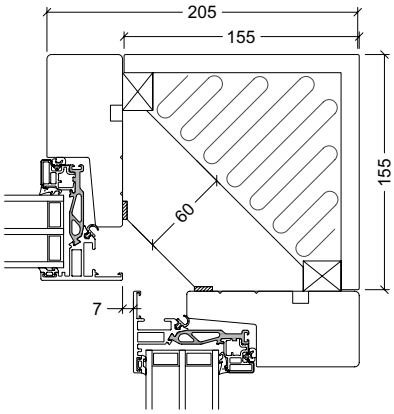
VELFAC 200 ENERGY - INTERNAL CORNER SOLUTIONS



45° corner post, type A2211



90° corner post without backboard, type A2008



90° corner post with backboard, type A2014

Scale: 1:5

TEST INFORMATION

VELFAC TEST RESULTS IN AN OVERVIEW

Top: Hose-test and Static water test at the 6.2m wide x 10m high CWCT test rig

Bottom: Resistance to wind load test and open/close test

TEST INFORMATION – GENERAL TEST

OPERATING FORCES AND AWW TEST

General test. Test Institutes has performed a comprehensive range of tests on the VELFAC 200 and VELFAC 200 ENERGY window, in order to analyse overall performance and indicate how well the window can cope with everyday use.

The tests performed for VELFAC 200 and VELFAC 200 ENERGY are:
- Air permeability
- Water tightness
- Wind resistance
- The strength and the stability of the construction

The weathering and operating forces tests detailed are equivalent to BS6375.

VELFAC 200 alu - DGU

Property	Test / Classification standard	Result and classification
Vertical load	EN 14608 / BS EN 13115	Class 2
Static torsion	EN 14609 / BS EN 13115	Class 2
Operating forces	EN 12046-1 / BS EN 13115	Class 1
	BS EN 1191 / prEN 12400	Repeated open/close 10000 cycles - Class 2
Air permeability	BS EN 1026 / BS EN 12207	+/-600 Pa - Class 4
Water tightness	BS EN 1027 / BS EN 12208	600 Pa - Class 9A
Wind resistance	BS EN 12211 / BS EN 12210	1600 Pa - Class 4C

Test Institute: Teknologisk Institut, Aarhus, Denmark.
N.B. There may be limitations regarding function, type and size.

VELFAC 200 ENERGY - TGU

Property	Test / Classification standard	Result and classification
Vertical load	BS EN 14608 / BS EN 13115	Class 3
Static torsion	BS EN 14609 / BS EN 13115	Class 3
Operating forces	BS EN 12046-1 / BS EN 13115	Class 1
	BS EN 1191 / BS EN 12400	Repeated open/close 20000 cycles - Class 3
Air permeability	BS EN 1026 / BS EN 12207	+/-600 Pa - Class 4
Water tightness	BS EN 1027 / BS EN 12208	1500 Pa - Class E1500
Wind resistance	BS EN 12211 / BS EN 12210	1600 Pa - Class 4C

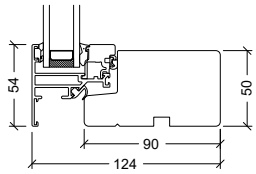
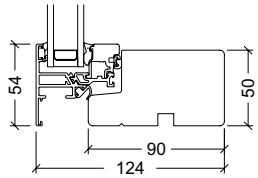
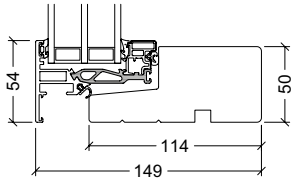
Test Institute: BM Trada
N.B. There may be limitations regarding function, type and size.

THERMAL PROPERTIES TEST + FIRE WINDOWS TEST

THERMAL PROPERTIES TEST

Thermal properties. The insulation capacity of a window is calculated using EN ISO 10077-2 and FEM Therm 5.2. Both are computer generated analyses which simulate a variety of test conditions and predict window performance within a range of thermal parameters.

The VELFAC 200 System achieves the results in the table below:

	1-leaf VELFAC 200 window - W x H: 1230 x 1480mm	U_w-value EN673
	double-glazed window - 4-16-4 with 1 low-e and argon*	1.55
	double-glazed window - 4-16-4 with 2 low-e and argon	1.47
	double-glazed window - 4-16-4 with 1 low-e and argon*	1.41
	double-glazed window - 4-16-4 with 2 low-e and argon	1.34
	triple-glazed window - 4-18-4-18-4 with 2 low-e and argon*	0.82
	triple-glazed window - 4-18-4-18-4 with 2 low-e and argon	0.79

* VELFAC standard glazing

FIRE ELEMENT TEST

Fire elements must be able to contain a fire so that exits or escape routes remain accessible for as long as possible. The fire test examines the element's resistance to fire. The test is stopped once the fire has breached the element for more than ten seconds.

VELFAC Fire elements are flame retardent on the internal side for 60 minutes and on the external side for 30 minutes. The Fire elements have been tested for integrity and insulation (EI).

Property	Test standards	Result and classification
Fire resistance	BS EN 1364-1:2015, BS EN 1363-1:2012 and BS EN 1363-2:1999 Non-loadbearing wall (glazed partition)	Either side: EI30/EW30 Interior side: EI60/EW60

Test Institute: DBI Certification A/S, Denmark

SOUND REDUCTION TEST + SAFETY FITTINGS TEST

SOUND REDUCTION TEST

Sound reduction. This test measures a window's capacity to reduce the levels of unwanted noise e.g. from heavy traffic. The noise level within most rooms of a family house should not exceed 30dB. If for example loud traffic noise amounts to 65-70dB, the building envelope must be able to reduce the noise level by 35-40dB.

VELFAC offers a variety of noise reduction solutions. Glazed units can be fitted with different types and thicknesses of glass. Please find examples of our glazing assortment for acoustic window solutions and of VELFAC 200 sound reducing windows on page 84.

Property	Test / Classification standard	Result and classification
Sound measurement	BS EN ISO 140-3 / BS EN ISO 717-1	VELFAC 200 DGU: R_w = 32 - 38dB VELFAC 200 ENERGY TGU: R_w = 33 - 43dB

Test Institute: DELTA, Aarhus and BM Trada, Buckinghamshire
N.B. There may be limitations regarding function, type and size.

SAFETY FITTINGS TEST

CE-marking requires testing of the load bearing capacity of safety devices.

All VELFAC window and door systems are CE-marked.

Property	Test / Classification standard	Result and classification
VELFAC 200 DGU, Safety devices, CE marking(1)	EN 14351-1 (equivalent to BS6375-2)	Load 350N, 1 minute - Passed
VELFAC 200 ENERGY TGU, Safety devices, CE marking(2)	BS 6375-3	Passed

Test Institute: (1)Teknologisk Institut, Aarhus, Denmark and (2) BM Trada
N.B. There may be limitations regarding function, type and size.

CWCT ACCREDITATION TEST + NHBC COMPLIANCE

VELFAC WINDOW WALLING

VELFAC 200 ENERGY has been designed to perform exceptionally in large areas of window walling, tall buildings , and in the most exposed locations - coastal sites, or high above sea level. Stunning façades can be created where opening and fixed lights have identical sightlines, and where the window wall maintains the visual appearance of all the other glazing in the project, providing a coherent aesthetic for the whole development.

VELFAC Window Walling meets the challenge. Based on the established VELFAC 200 ENERGY System in combination with a special installation system, VELFAC Window Walling features new enhancements and installation details which take performance to the next level.

These enhancements also contribute to the system's excellent U-values - far better than usually achieved by a conventional aluminium curtain wall system.

A real achievement. VELFAC and CWCT worked together to develop a test rig and testing sequence to ensure the system would perform. The test procedure was undertaken by Wintech and overseen by CWCT and having worked so closely with CWCT, VELFAC Window Walling achieved CWCT system certification on successful completion. This provides official CWCT accreditation of VELFAC Window Walling, a greater achievement than simply gaining a successful test report from a testing house, thus ensuring specifiers have an increased level of confidence in the performance of VELFAC Window Walling within their own projects.

Property	Test / Classification standard	Test result	Classification
Air permeability	BS EN 12152:2002 / BS EN 12153:2000	+600/-100 Pa	Class A4
Water tightness	BS EN 12154:2000 / BS EN 12155:2000 Hose test	Static water tightness: 600Pa Passed	Class R7
Wind resistance	BS EN 12179:2000 / BS EN 13116:2001	Serviceability to ± 1800 Pa Safety to ± 2700 Pa	Passed Passed
Impact	BS 8200		Passed
Panels	CWCT TN76, part K compliance		Passed

Test Institute: Wintech, Telford

NHBC COMPLIANCE

VELFAC is one of the very few (if not the only) composite manufacturers with CWCT test results that can satisfy Chapter 6.9 of the NHBC Standards (drained and ventilated cavity with secondary seal). This is particularly relevant to any area of glazing which passes over floor slabs which has to demonstrate CWCT-specific levels of weatherability performance.

VELFAC and CWCT have worked closely together over many years to develop testing rigs and testing sequences designed to push the VELFAC product range to its limits, thereby generating impressive performance data which meets NHBC Chapter 6.9 Standards, a rare achievement for a window manufacturer.

This means that the VELFAC system can withstand even those climatic conditions defined by NHBC as 'very severe' in terms of air, wind and water resistance.

SECURITY TEST - SBD AND PART Q

SECURED BY DESIGN TEST

Secured by Design certification includes testing of burglary resistance and general performance of the window.

The testing of capabilities concerning burglary is aimed at replicating how a thief would work and includes:

- A 'burglar's tool kit' is used by a professional expert to try and force entry. One set of tools can be used for 3 minutes. The overall time limit is 15 minutes.
- An attempt is made to remove the glass pane externally - as VELFAC 200 windows are internally glazed, with an integral glazing bead, external removal is impossible.
- A mechanical loading test is made using parallel and perpendicular loads to gain entry. The test should simulate attempted forced entry by using crowbars. Before the mechanical loading is performed an identical window is attempted forced open with 2 crowbars to see if further weak points should be tested.

Secured by Design

SBD

Official Police Security Initiative

All our relevant products are registered on the Secured by Design website: www.securedbydesign.com

The following types are third party SBD certified to PAS 24 **for windows:**

VELFAC 200 DGU:
- sidehung window
- fixed casement
- top-guided window

VELFAC 200 ENERGY TGU:
- sidehung window
- fixed casement
- top-guided window

The following types are, with enchanced security fittings, third party SBD certified to PAS 24 **for doors:**

VELFAC 200 ENERGY
- VELFAC 200 ENERGY Security Casement Door
- VELFAC 200 ENERGY Security Sliding Casement Door

VELFAC Aluminium doors:
- Aluminium Security Glazed Doors

VELFAC Ribo alu doors:
- Wood/aluminium Security Glazed Entrance Door
- Wood/aluminium Security Flush Entrance Door
- Wood/aluminium Security Patio Door
- Wood/aluminium Security Sliding Door

Property	Test / Classification standard	Result and classification
Secured by Design	PAS 24, Annex C (window systems)	VELFAC 200 DGU - Passed VELFAC 200 ENERGY TGU - Passed
Secured by Design	PAS 24, Annex B (door systems)	VELFAC 200 ENERGY Security Casement Door - Passed VELFAC 200 ENERGY Security Sliding Casement Door - Passed VELFAC Aluminium Security Doors - Passed VELFAC Ribo Alu Security Doors - Passed

Test Institutes: Chiltern Dynamics, BM Trada, EXOVA
N.B. There may be limitations regarding function, type and size.

PART Q COMPLIANCE

VELFAC has a broad assortment of Part Q compliant windows and doors.
Please refer to VELFAC.co.uk for the entire list.

Secured by Design

Official Police Security Initiative

Enhanced Security Door

The mark of responsible forestry

FSC® C101947

Please ask for our FSC®-certified products.

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CB21 6DR

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Howes Lane
Bicester,
OX26 2UA

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VELFAC®

WINDOWS FOR LIFE

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