



VELFAC

# CATALOGUE

## 2016

May onwards



**VELFAC®**

WINDOWS FOR LIFE



# CONTENT

## INTRODUCTION AND TEST INFORMATION

WINDOWS FOR ALL PROJECTS

PAGE 4-15

## VELFAC 200 OUTWARD OPENING

WINDOWS, CASEMENT DOORS AND SLIDING CASEMENT DOORS

PAGE 16-33

## VELFAC IN INWARD OPENING

WINDOWS AND CASEMENT DOORS

New

PAGE 34-39

## VELFAC 500 ALUMINIUM DOORS

ENTRANCE DOORS TO COMMERCIAL, PUBLIC AND LARGE RESIDENTIAL BUILDINGS

PAGE 40-46

## VELFAC WOOD/ALUMINIUM DOORS

ENTRANCE DOORS TO RESIDENTIAL AND SECONDARY ENTRANCE TO PUBLIC BUILDINGS

New

PAGE 47-54

## VELFAC PANELS

PANELS FOR ALL SYSTEMS

PAGE 55-62

## VELFAC GLAZING

VELFAC GLAZING CONCEPT

PAGE 63-68

## VELFAC COUPLINGS

COUPLINGS AND CORNER SOLUTIONS

PAGE 69-72

## INSPIRATION

REFERENCE PROJECTS

PAGE 73-89



# WINDOWS FOR ALL PROJECTS

– leading edge design and industrial experience

**Windows for all purposes.** Whatever your requirements are, we have got the solution. Whether your focus is SBD, energy efficiency, sound reduction or price optimisation, we have the right windows and we will make sure you get the best possible solution for the lowest possible costs.

**Quality.** VELFAC windows are designed to give you flexibility to create the design to suit your building, and to provide the best functionality for a lifetime. With regular maintenance, we expect our windows to last 40 years or more.

**Warranty.** VELFAC offers a market leading comprehensive warranty of 12 years on windows including glazed units.

**Wood.** Frames, mullions and transoms are made of VACUMAT or Flow-coat-treated pine with water-based acrylic paint containing anti-mould fungicide. Thickness of final paint layer, when dry, is 60-80µm. Wood is 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.

**Aluminium.** External sashes are made of aluminium extrusion alloy EN AW-6060 or EN AW-6063, Polyester powder coated to a thickness of 60-120µm and a standard gloss level of 77%, or anodised to a thickness of 20µm. The finish of the external aluminium sash is either a hard-wearing Polyester-powder coat in a wide range of RAL colours, metallic finish in RAL 9006 & 9007, or anodised silver or gold.

**Glazing beads** are grey (RAL 7035), white (RAL 9010), or black (RAL 9005).

**Configurations.** Any VELFAC frame can be divided by mullions or transoms to create the aesthetic and function you require. Sashes with different opening functions can be mounted within the same frame. Each frame can be manufactured to 3.7m in height or width, or max. 230kg. If one side of the frame is greater than 2.4m, the other must be less than 2.4m.

**Shapes.** VELFAC windows can also be created in many different shapes. As a result, you can specify a window that suits the building style and architecture, or create a feature by combining different shapes and sizes. Most shaped windows are fixed although some can be made opening.

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





# PROFESSIONAL ADVISE

## – 360 degrees consultancy

At VELFAC we are experts when it comes to windows, and we want to share this knowledge with you.

We advise you throughout the process from design to installation, so you get the best solution for any project related to design, functionality, energy and cost.

Please call us if you have any questions about the specification of windows for your project on 01223 897100.





# SUSTAINABILITY

## IN YOUR PROJECTS?

Opting for sustainable materials that can easily be re-used again is an obvious way to future-proof your project. This also limits your projects environmental impact.



The mark of  
responsible forestry  
FSC® C101947



At VELFAC, we use FSC®-certified and Danish Indoor Climate-labelled wood. In addition, our products have a long service life, which means that they should not need to be replaced for 40 to 60 years, after installation where our recommended maintenance regime is followed.



A video on [VELFAC.co.uk/csr](http://VELFAC.co.uk/csr) shows how easy it is to take apart and separate a VELFAC 200 ENERGY window into pure material parts. Up to 93% of the window's components can be reused.

**VELFAC®**  
WINDOWS FOR LIFE

93%

So much can  
be reused.  
VELFAC 200 can  
easily be  
taken apart  
and sorted.



Windows for Life



# FREEDOM OF DESIGN

## GIVES OPTIONS

### Colours & Surface finishes

Create an impression by giving your façade the look you want by using the right colour and surface treatment for your windows.

Whether the look you are aiming for is metallic, with an anodised surface, or coloured in gloss or matt finish, you can get exactly what you want.

The spacer profile in the glazed unit and internal glazing beads are available in grey, white or black.



All RAL Classic colours



Glazing beads



Internal surface finish in clear laquer or painted to a RAL Classic colour.



Anodised in silver or bronze (from pale to dark).

### Form & Shape

It is also possible to get windows with oblique or arched frames in a form and shape that would make your project simply one of a kind. We will help you with proportioning and design so you can easily bring your idea to life.





# VELFAC WINDOWS ARE DESIGNED TO LAST

Our core product, the VELFAC 200 window system, has undergone constant product development and evolution in order to satisfy clients' demands as well as the increasing regulatory demands.

We develop and continually test our products to ensure that the quality meets the applicable requirements of the industry and demands of millions of users across Europe. In many cases, we provide higher requirements than current standards require.

Our development department employs 50 dedicated employees, constantly optimising our products so that they offer a 40-60 year design life for every unit.

**Please find our  
TEST  
RESULTS  
on page 10-14**



VELFAC R&D Department develops most of our ironmongery, so they are adapted specifically for each window system. The ironmongery are regularly tested both internally and at test institutes. Here are ironmongery exposed to salty Westcoast wind and weather as part of internal test.



Window frames on a windswept hilltop. Our test department compares here the durability of different types of surface treatment.



Window façade exposed to 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/m<sup>2</sup>/minute.



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.



# VELFAC WINDOWS TRIED AND APPROVED

Millions of VELFAC 200 windows are installed across Europe and thousands of people test them every day. Despite our highly successful track record, we maintain a demanding testing programme to ensure our windows continue to satisfy all necessary regulatory standards.

This inherent durability also results in a window which is built to last - VELFAC aluminium / wood windows have been assessed by leading construction industry consultants and a 40-60 year design life is expected.

All VELFAC windows and doors undergo a number of tests at some of Europe's most recognized testing institutions in the UK, Sweden and Denmark, and continually test the products as a natural part of the product development process.

## A comprehensive test program

We test our windows and doors in a variety of areas, including:

### Forced entry (SBD)

VELFAC windows and doors are Secured by Design certified. SBD certification includes testing of burglary resistance and general performance of the window.



### Sound reduction test

We test our windows ability to reduce noise and to document the various window systems performance by different window types. Therefore, we can provide windows that meet the project's specific requirements.

### General test (AWW)

VELFAC products are tested for repeated opening and closing, and air, wind and water exposure. Moreover expose our bracket for a Cyclic Corrosion Test (CCT), where VELFAC is testing according to the highest class (CCT evaluation value 10 jf. EN/ISO 10289), which is significantly above the market requirements.

### The documentation is in place

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

**Please call us if you have any questions about the testing, or test evidence of windows for your project on 01223 897100.**



CWCT accredited. A 58m<sup>2</sup> large window screen tested for wind load. Part of the CWCT test includes an aircraft engine simulating very strong wind.



After the CCT test (CCT evaluation value 10 jf. EN/ISO 10289) all VELFAC brackets must still be without a trace of rust. The difference between a VELFAC corrosion protection (left) and corrosion protection for the industry's traditional demands are clear.



# TEST INFORMATION – GENERAL TEST

## OPERATING FORCES AND AWW TEST

**General test.** The Swedish State Test Institute has performed a comprehensive range of tests on the VELFAC 200 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 tests detailed are equivalent to BS6375-1.

### VELFAC 200 - DGU

Property	Test / Classification standard	Result and classification
Vertical load	prEN 947-1 (EN 14608) / BS EN 13115	Class 2
Static torsion	prEN 948-1 (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 <sub>w</sub> -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*	1.40
	double-glazed window - 4-16-4 with 2 low-e and argon	1.36
	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 WINDOWS TEST

**Fire windows** 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 window's resistance to fire. The test is stopped once the fire has breached the window for more than ten seconds.

VELFAC fire windows are flame retardant on the internal side for either 30 minutes or 60 minutes depending on the sash function (Integrity E). The ventilated panel has been tested for integrity and insulation (EI).

VELFAC fire windows are made to look exactly the same as the 200 System, ensuring that the sightlines remain identical.

Please notice, that fire windows and doors are only available as double glazed windows.

Property	Test / Classification standard	Result and classification
Fire resistance	BS EN 1363-1, BS EN 1363-2, BS EN 1364-1 and BS EN 1634-1 Boverket's General Advice 1993:2, edition 2. Guidelines for fire technical approvals.	Casement door - E30 Windows - E60 Ventilated fire panel - EI60

Test Institute: SP, Boraas

N.B. There may be limitations regarding function, type and size.



# 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 67.

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

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.

**Child safety.** The espagnolette with child-lock has been tested, and has passed the Scandinavian child safety test, which consists of two parts:

- In Stage 1, a group of at least 30 children are asked, individually, to attempt to open a window locked with a child-lock. They are given five minutes to complete the task. If a child fails, he/she is then shown how the lock is operated and asked to try again. 43 children took part in the VELFAC test, and less than the maximum percentage, 15%, of the children were able to open the VELFAC window.
- Stage 2 tests durability under stress: the lock and safety mechanism is required to maintain performance despite receiving repeated blows from a hammer.

Property	Test / Classification standard	Result and classification
VELFAC 200 DGU, Safety devices, CE marking <sup>(1)</sup>	BS EN 14351-1 (equivalent to BS6375-2)	Load 350N, 1 minute - Passed
VELFAC 200 ENERGY TGU, Safety devices, CE marking <sup>(2)</sup>	BS 6375-3	Passed
Espagnolette with child-lock <sup>(3)</sup>	NT CONS 018, SS 3587	As described above - Passed

Test Institute: <sup>(1)</sup>Teknologisk Institut, Aarhus, Denmark <sup>(2)</sup>BM Trada and <sup>(3)</sup>SP, Boraas, Sweden  
N.B. There may be limitations regarding function, type and size.



# CWCT ACCREDITATION TEST

## CWCT ACCREDITATION TEST

**VELFAC 200 Plus** has been designed to perform exceptionally in large areas of window walling, tall buildings - up to 20 storeys, 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 200 Plus meets the challenge.** Based on the established 200 System, VELFAC 200 Plus composite aluminium and wood windows feature new enhancements and installation details which take performance to the next level - these include:

- Additional sealing for frame corners, mullion and transom joints
- Additional sash retainers for opening lights, and sash fixings for fixed units
- Secondary weather seals
- Additional weather screen gaskets

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 Taylor Woodrow and overseen by CWCT and having worked so closely with CWCT, VELFAC 200 Plus achieved CWCT system certification on successful completion. This provides official CWCT accreditation of VELFAC 200 Plus, a greater achievement than simply gaining a successful test report from a testing house, thus ensuring specifiers an increased level of confidence in the performance of VELFAC 200 Plus within their own projects.

Please notice, that fire windows and doors are only available as double glazed windows.

Property	Test / Classification standard	Result and classification
Air permeability	BS EN 12152 / BS EN 12207	+600 Pa - Class A4
Water tightness	BS EN 12154 / BS EN 12154 Dynamic water test to ENV 13050 Hose test (AAMA 501.2)	Static water tightness: 600Pa - Class R7 Dynamic water tightness - Passed Hose test - Passed
Wind resistance	BS EN 12179 / BS EN 13116	Serviceability to $\pm 2000$ Pa - Passed Safety to $\pm 3000$ Pa - Passed
Impact	BS 8200	Passed

Test Institute: Chiltern Dynamics, Buckinghamshire



# SECURITY + 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.

The following types are third party 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 third party certified to PAS 24 for doors:

**VELFAC 231ES ENERGY**

- Wood/aluminium Security Casement Door

**VELFAC 500:**

- Aluminium Security Door

**VELFAC Ribo alu door:**

- Wood/aluminium Security Door

### Secured by Design



Official Police Security Initiative

All our relevant products are registered on the Secured by Design website, [www.securedbydesign.com](http://www.securedbydesign.com)

## WINDOW SYSTEMS

Property	Test / Classification standard	Result and classification
Secured by Design	PAS 24:	VELFAC 200 DGU - Passed VELFAC 200 ENERGY TGU - Passed

Test Institute: Chiltern Dynamics and BM Trada

N.B. There may be limitations regarding function, type and size.

## DOOR SYSTEMS

Property	Test / Classification standard	Result and classification
Secured by Design	PAS 24:	VELFAC 231ES ENERGY - Passed VELFAC 500 - Passed VELFAC Ribo Alu Door - Passed

Test Institute: Chiltern Dynamics, Buckinghamshire

N.B. There may be limitations regarding function, type and size.



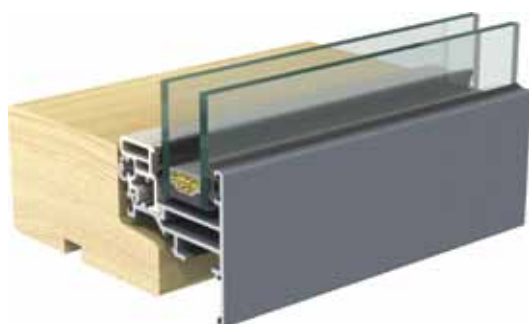
# A WINDOW SYSTEM UNDER CONSTANT EVOLUTION

**Design and industry expertise.** VELFAC windows embody both leading edge design and years of industry expertise. As a window supplier we can proudly present more than 25 years of knowledge with composite windows.

Our core product, the VELFAC 200 window system, has undergone constant product development and evolution in order to satisfy clients' demands as well as the increasing legal demands.

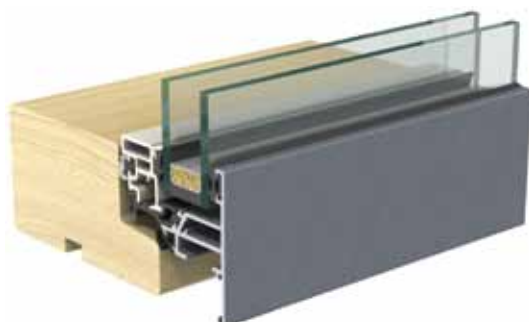
**The VELFAC 200 ENERGY system is proven expertise.** The new triple layer glazing solution combines unique insulation properties with strength and durability. And the new VELFAC 200 ENERGY profiles will maintain the clean, crisp sightlines that we are renowned for.

Being the third generation of VELFAC 200, the functionality within the new VELFAC 200 ENERGY windows are based on the same proven design as the original VELFAC 200 system launched in 1985. We know it works, we have optimized the design for 25 years, and this knowledge and experience has been used in our new enhanced system.



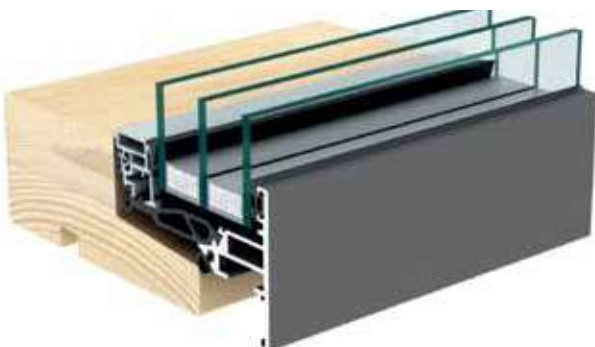
## VELFAC 200, 24mm glazing

- Material: aluminium / wood
- $U_w$ -value in 1985: 2.92
- $U_w$ -value in 2011: 1.55
- Double glazed unit
- The optimal choice for most buildings



## VELFAC 200i, 24mm glazing

- Material: aluminium with thermal break / wood
- $U_w$ -value: 1.40
- Double glazed unit
- For buildings with low-energy targets



## VELFAC 200 ENERGY, 48mm glazing

- Material: aluminium with thermal break / wood
- $U_w$ -value: 0,8
- Triple glazed unit
- For buildings with low-energy targets



FULL MODULARITY AND WINDOW WALLING



WIDE RANGE OF SHAPED WINDOWS



WEATHER-RESISTANT ALUMINIUM ON THE OUTSIDE



NATURAL WOOD ON THE INSIDE









MOTORISED WINDOWS WITH FULLY CONCEALED MOTORS



ESPAGNOLETTE HANDLE WITH ERGONOMIC DESIGN



CLEAN CRISP AND UNIFORM SIGHTLINES



MINIMALISTIC DESIGN AND FLOATING SASH



COMPREHENSIVE 12 YEARS WARRANTY



SLIM SASHES PROVIDE MAXIMUM DAYLIGHT



SECURED BY DESIGN ACCREDITED



BI-PARTING SLIDING DOOR OPENS UP TO 2.6 METRES





# VELFAC 200 / VELFAC 200 ENERGY – OVERVIEW

## CHARACTERISTICS

- Minimalistic design - stylish and sophisticated
- "Floating" sash due to set back sealing
- Sealing protected against UV radiation and weather conditions
- Uniform sightlines regardless of opening function
- Weather-resistant aluminium on the outside and natural wood on the inside
- SBD accredited and Part Q compliant
- Meets requirements of NHBC 6.9 for curtain walling
- Extensive test programme
- A market leading comprehensive warranty of 12 years on windows including glazed units
- Uw values down to 0.8
- Available as 24mm double and 48mm triple layer glazing

## SASH VARIATIONS



**VELFAC 200**  
24mm double glazed unit

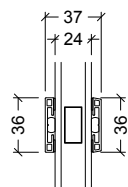


**VELFAC 200 ENERGY**  
48mm triple glazed unit

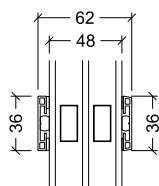
## GLAZING BARS AND WINDOWS



36mm



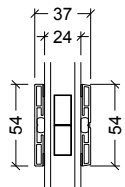
36mm energy glazing bar  
24mm glazing



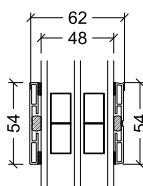
36mm energy glazing bar  
48mm glazing



54mm



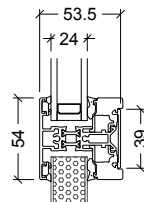
54mm energy glazing bar  
24mm glazing



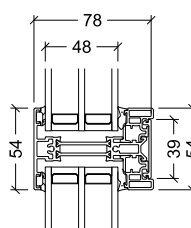
54mm energy glazing bar  
48mm glazing



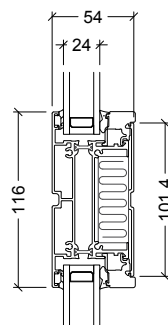
116mm



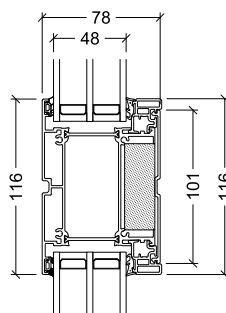
54mm glazing bar  
24mm glazing



54mm glazing bar  
48mm glazing



116mm glazing bar  
24mm glazing



116mm glazing bar  
48mm glazing



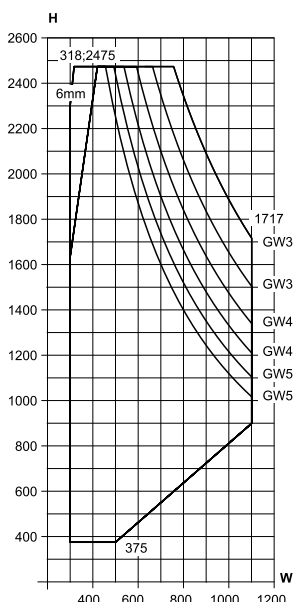
# VELFAC 200 / VELFAC 200 ENERGY – OPENING FUNCTIONS

## SIDEHUNG WINDOW (201)

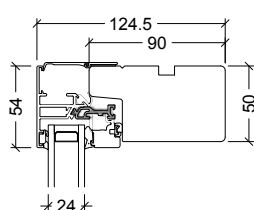
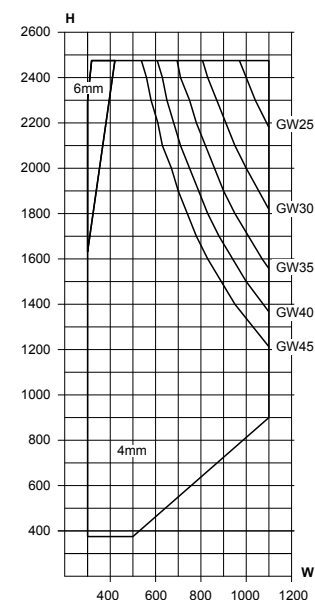


- The sash opens up to 90°
- Concealed hinges
- An adjustable friction brake allows random opening position
- The espagnolette has a built-in ventilation position

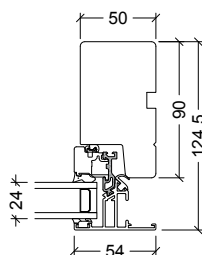
Min./max. sizes, 48mm glazing



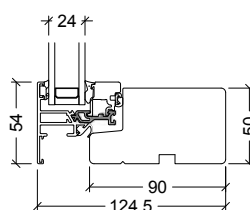
Min./max. sizes, 24mm glazing



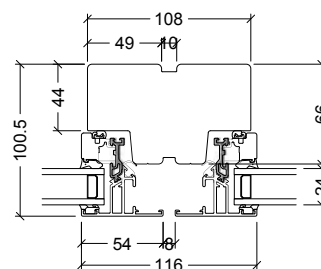
Head



Jamb



Cill



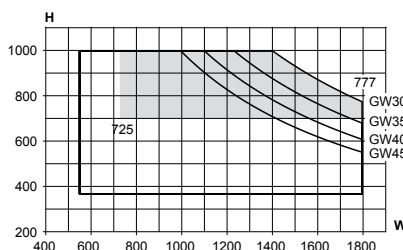
66mm mullion

## BOTTOMHUNG WINDOW (203)

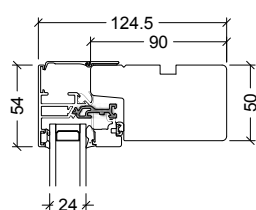
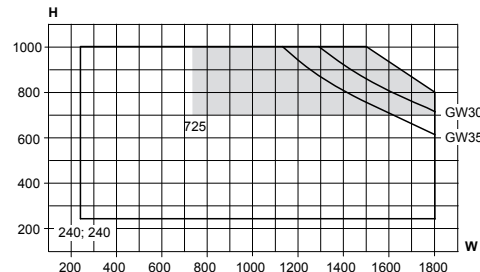


- Used for smoke ventilation (grey area)
- Supplied with electric motor for smoke ventilation

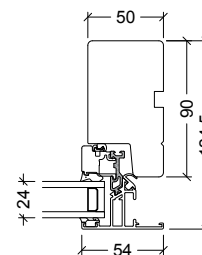
Min./max. sizes, 48mm glazing



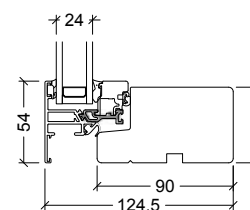
Min./max. sizes, 24mm glazing



Head



Jamb



Cill

GW = glass weight  
(see page 63)



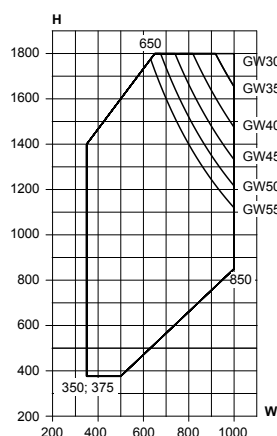
## VELFAC 200 / VELFAC 200 ENERGY – OPENING FUNCTIONS

## SIDE-GUIDED WINDOW (207)

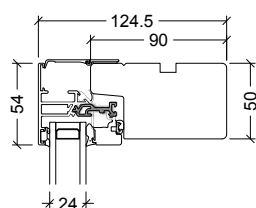
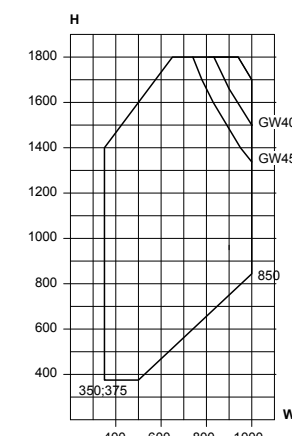


- To open, the sash moves on guide rails mounted on the head and cill
- The sash stops at approx. 90°
- When fully opened, a 15cm (minimum) gap allows cleaning from the inside
- The espagnolette has a built-in ventilation position

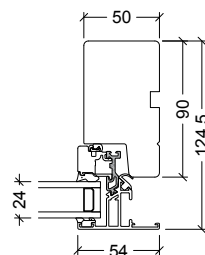
Min./max. sizes, 48mm glazing



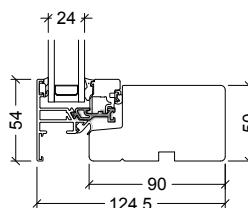
Min./max. sizes, 24mm glazing



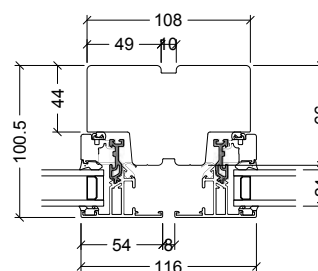
Head



Jamb



Cill



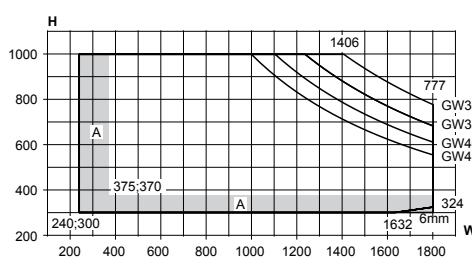
66mm mullion

## TOPHUNG WINDOW (208)

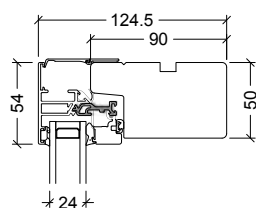
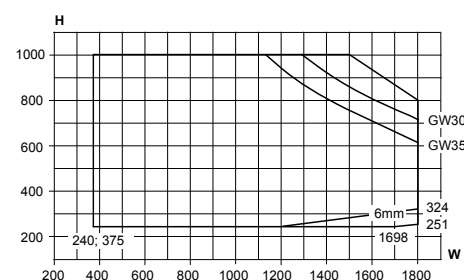


- The sash opens up to 85°
- The espagnolette has a built-in ventilation position
- Opportunity for rescue opening in low, wide windows, where the top-guided windows cannot fulfill the requirement

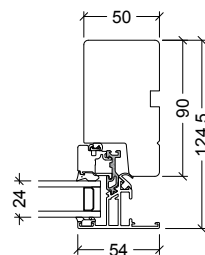
Min./max. sizes, 48mm glazing



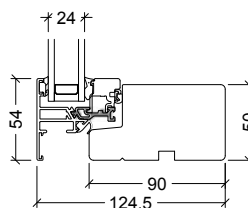
Min./max. sizes, 24mm glazing



Head



Jamb



Cill

GW = glass weight (see page 63)  
A = With circular catch handle and friction brake



# VELFAC 200 / VELFAC 200 ENERGY – OPENING FUNCTIONS

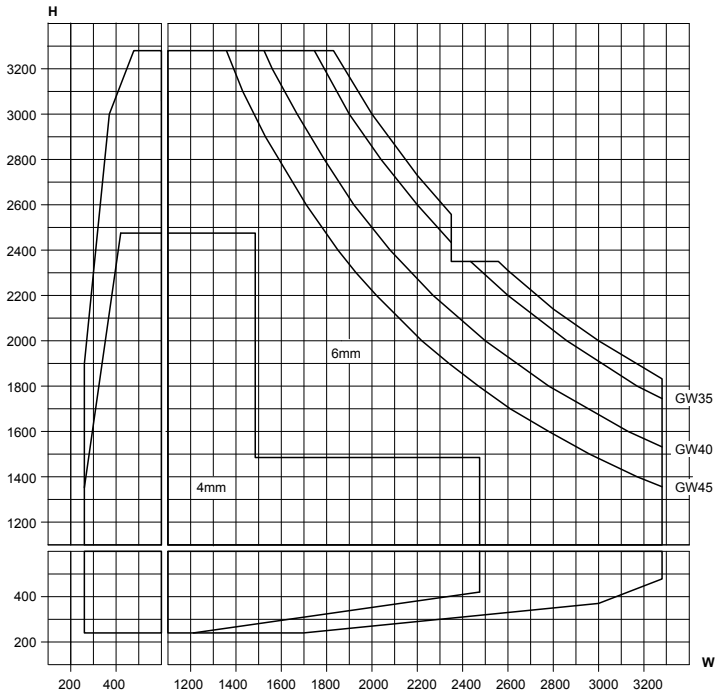
## FIXED CASEMENT (210)



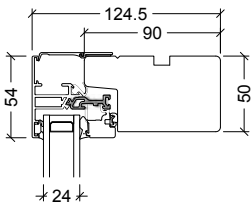
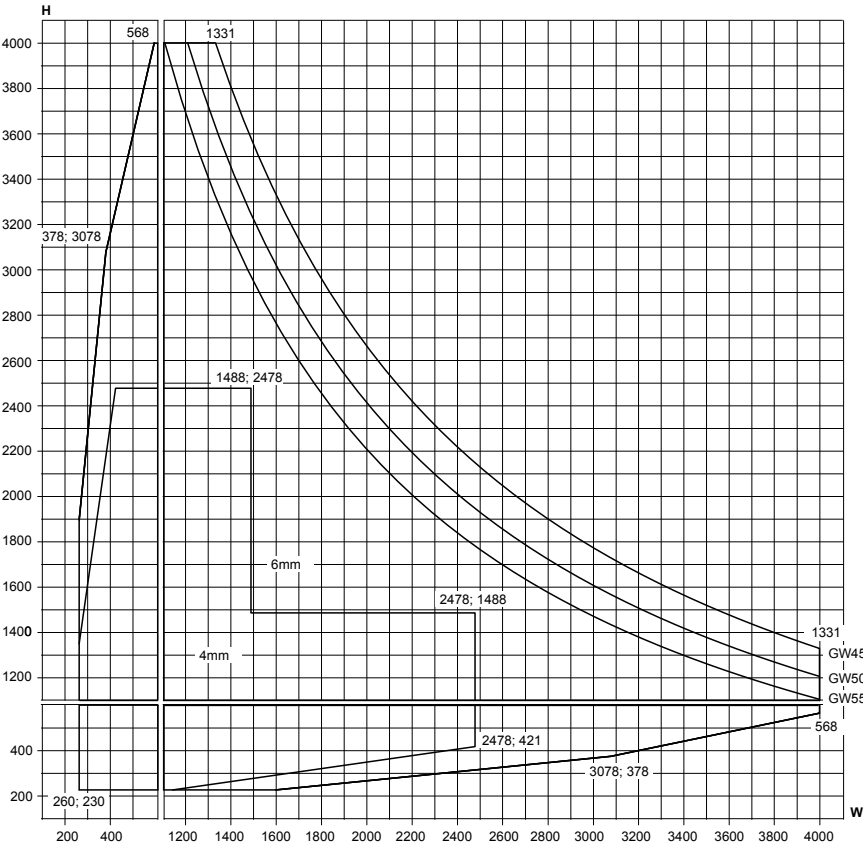
- The frame and sash are integrated
- Appears identical to all VELFAC 200 window types

GW = glass weight  
(see page 63)

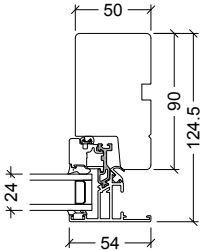
Min./max. sizes, 24mm glazing



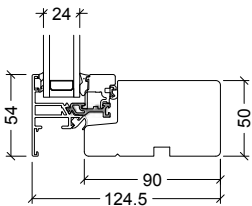
Min./max. sizes, 48mm glazing



Head



Jamb



Cill



# VELFAC 200 / VELFAC 200 ENERGY – OPENING FUNCTIONS

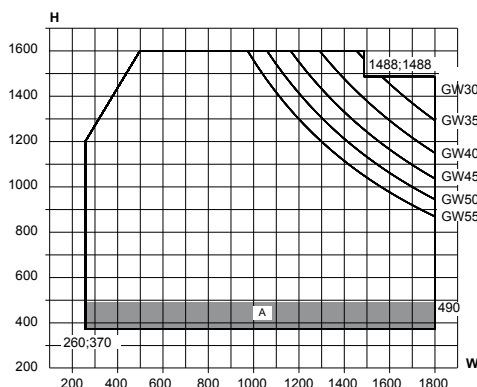
## TOP-GUIDED WINDOW (212)



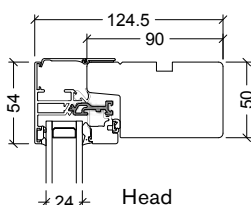
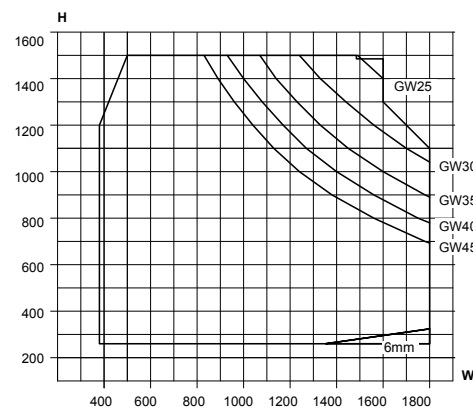
- When opened the sash provides a ventilation gap at the head
- The espagnolette has a built-in ventilation position
- The balance arms have built-in adjustable friction brakes allowing random opening position

GW = glass weight (see page 63)  
A = With circular catch handle and friction brake

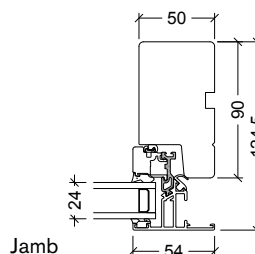
Min./max. sizes, 48mm glazing



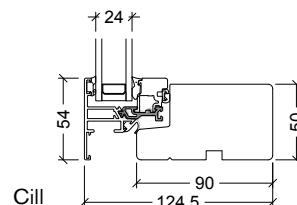
Min./max. sizes, 24mm glazing



Head



Jamb



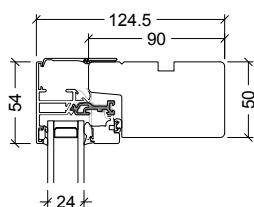
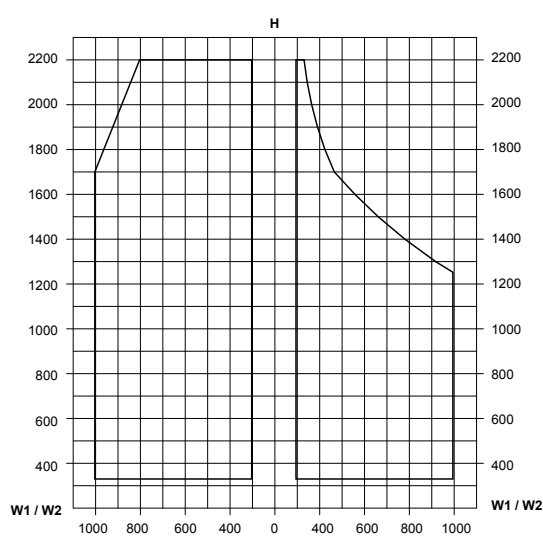
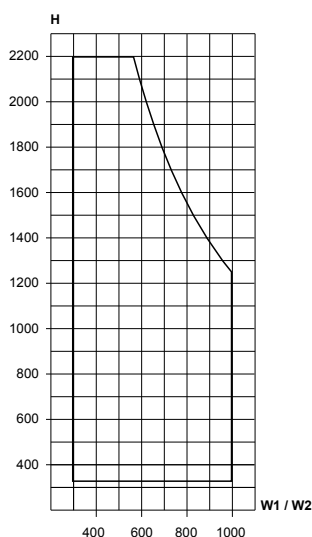
Sill

## GLASS TO GLASS CORNER WINDOW (220)

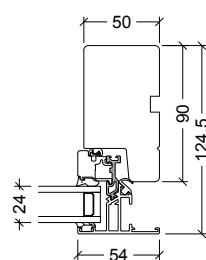


- Can be used where an external view is required without disruption from corner posts
- The window allows maximum light to enter and can be used as an architectural feature

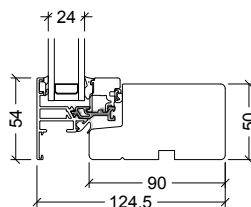
Min./max. sizes, 48mm glazing and 24mm glazing  
Symmetric Asymmetric



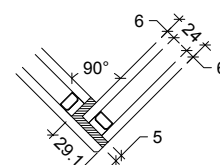
Head



Jamb



Sill



Glass to glass corner



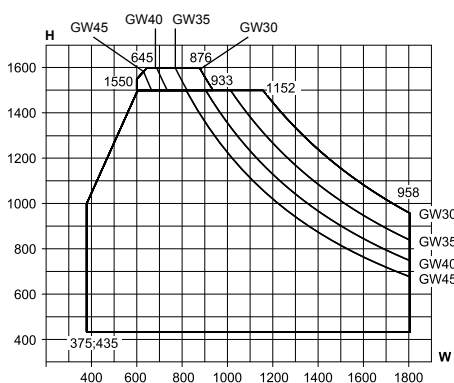
# VELFAC 200 / VELFAC 200 ENERGY – OPENING FUNCTIONS

## TOPHUNG FULLY REVERSIBLE WINDOW (229)

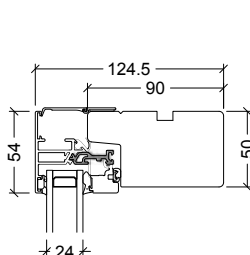
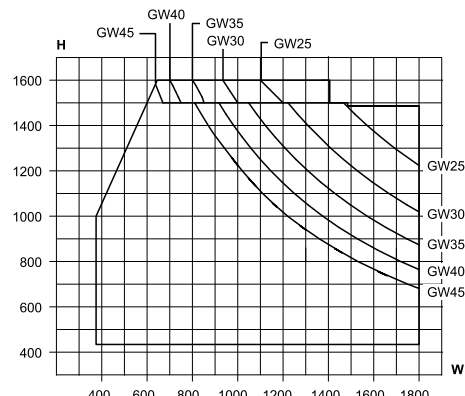


- The sash can be rotated by up to 170° to allow cleaning from the inside
- A safety restrictor is triggered when the window is opened approx. 5cm
- The window can be reversed to the cleaning position where an automatic catch keeps the window in place
- The espagnolette has a built-in ventilation position

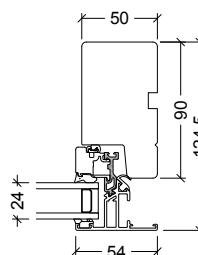
Min./max. sizes, 48mm glazing



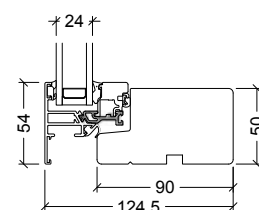
Min./max. sizes, 24mm glazing



Head



Jamb



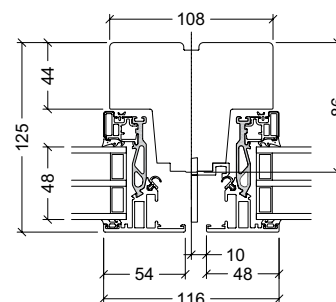
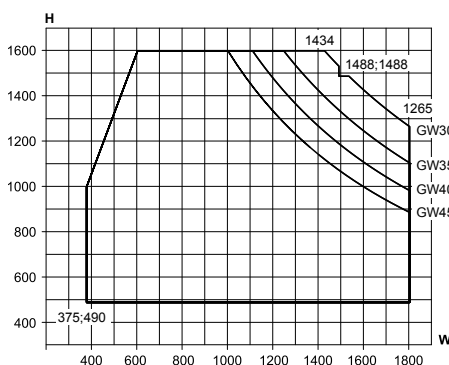
Cill

## TOPHUNG FULLY REVERSIBLE WINDOW (228)

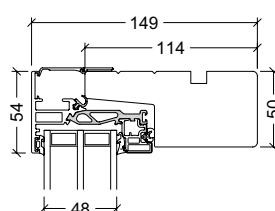


- For very large and heavy reversible windows, we can offer VELFAC 228. Please contact VELFAC for further information
- NB.: due to the rotating arms a sealing of minimum 15mm is required

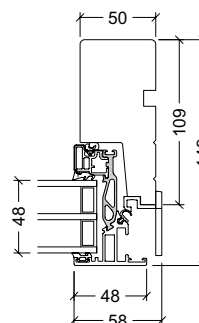
Min./max. sizes, 48mm glazing



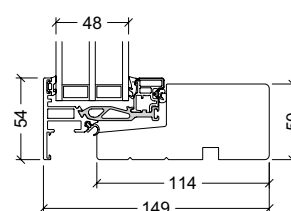
Mullion with VELFAC 200 and VELFAC 228



Head



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



Cill

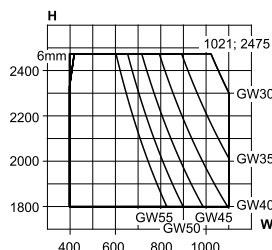


# VELFAC 200 / VELFAC 200 ENERGY – OPENING FUNCTIONS

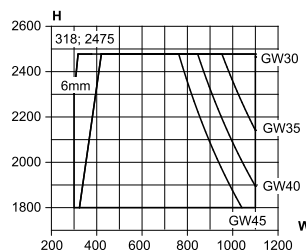
## CASEMENT DOOR, 1-LEAF (231-1)



Min./max. sizes, 48mm glazing

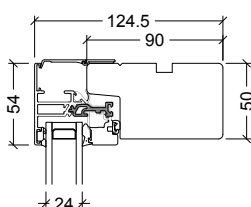


Min./max. sizes, 24mm glazing

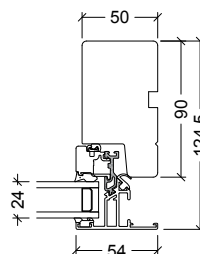


- The sash opens up to 90°
- Concealed hinges
- An adjustable friction brake allows random opening position
- Can be supplied to allow 180° opening but is then not fitted with friction arm
- The espagnolette has a built-in ventilation position
- Supplied with 15mm or 52mm threshold

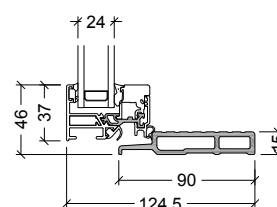
GW = glass weight  
(see page 63)



Head



Jamb

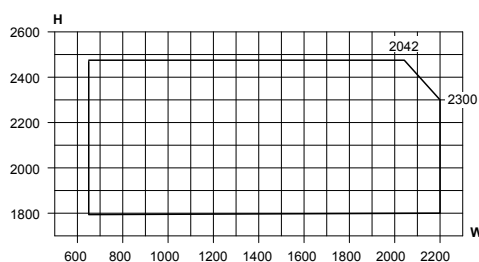


15mm threshold

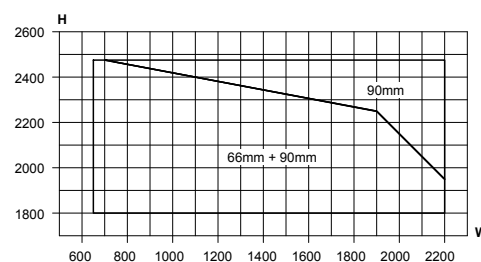
## CASEMENT DOOR, 2-LEAF (231-2)



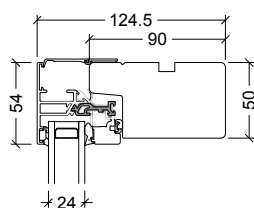
Min./max. sizes, 48mm glazing



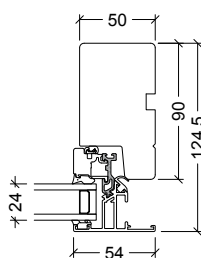
Min./max. sizes, 24mm glazing



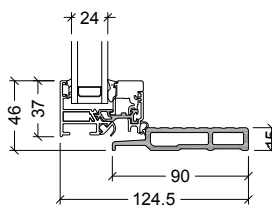
- Please refer to Casement door, 1-leaf for information
- Freeing the flushbolt in the French casement mullion allows the slave door to be opened



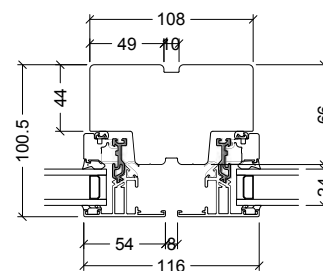
Head



Jamb



15mm threshold



66mm mullion

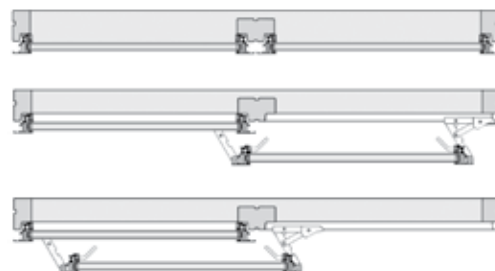


## VELFAC 200 / VELFAC 200 ENERGY – OPENING FUNCTIONS

## SLIDING CASEMENT DOOR, 1-LEAF (237-1)

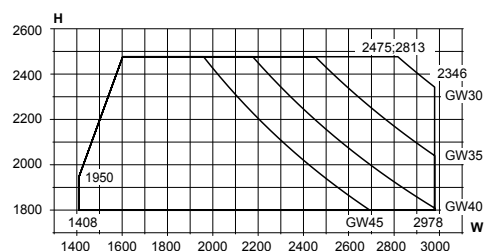


- The sliding door provides up to 1.3m free opening
- The frame profile of the door matches that of the VELFAC 200 window series
- When opened, the master door moves outwards from the frame, and then slides across the adjacent fixed sash (with 24mm glazing 96mm out, with 48mm glazing 116mm out)

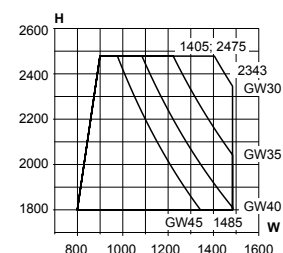


How to open the sliding casement door  
(shown here as 1-leaf)

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

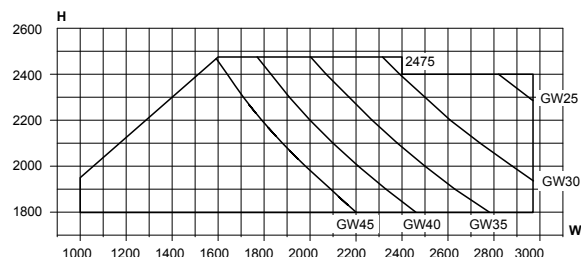


Min./max. sizes, 48mm glazing  
Opening sash



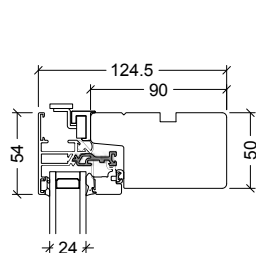
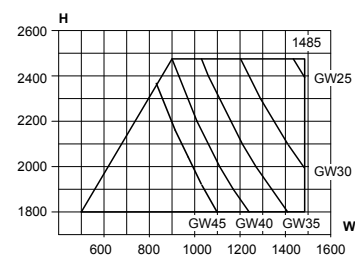
N.B. All asymmetric sashes and large symmetric sashes will be supplied separately and must be fixed on site.

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

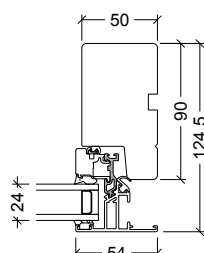


GW = glass weight  
(see page 63)

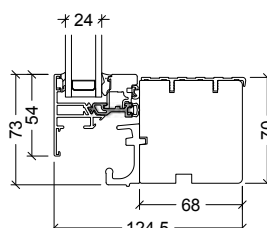
**Min./max. sizes, 24mm glazing**  
**Opening sash**



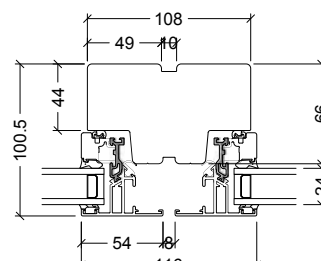
Head



Jamb



Threshold



66mm mullion



# VELFAC 200 / VELFAC 200 ENERGY – OPENING FUNCTIONS

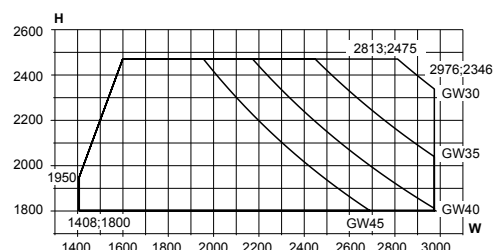
## SLIDING CASEMENT DOOR, 2-LEAF (237-2)



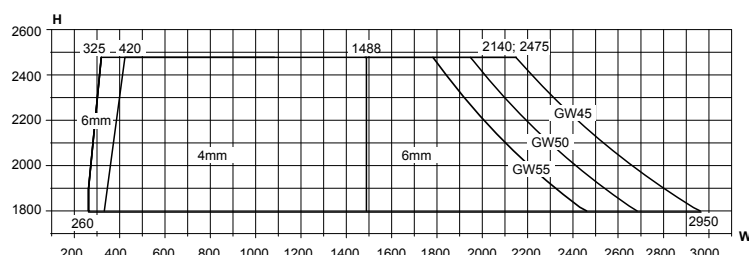
- The sliding door provides up to 2.6m free opening
- Max. width 6m for total screen including sidelights
- The frame profile of the door matches that of the VELFAC 200 window series
- When opened, the master door moves outwards from the frame, and then slides across the adjacent fixed sash (with 24mm 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 63)

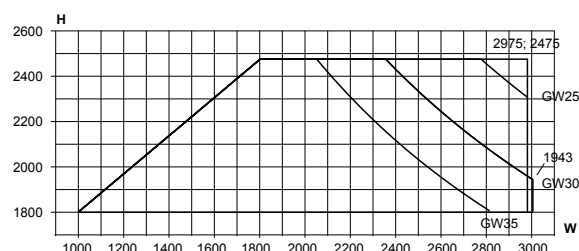
### Min./max. sizes, 48mm glazing 2 opening sashes with French casement



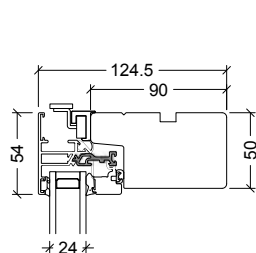
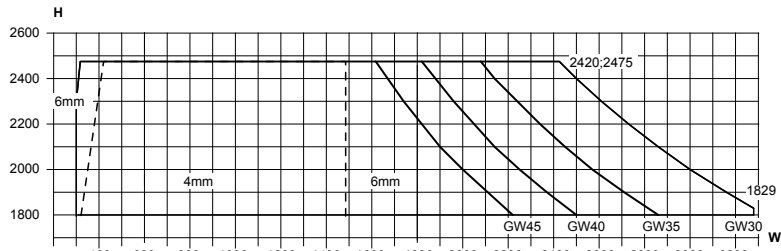
### Min./max. sizes, 48mm glazing Fixed sash for sliding door and side light



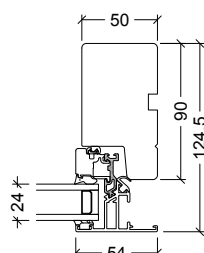
### Min./max. sizes, 24mm glazing 2 opening sashes with French casement



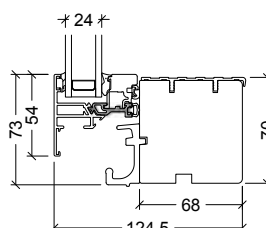
### Min./max. sizes, 24mm glazing Fixed sash for sliding door and side light



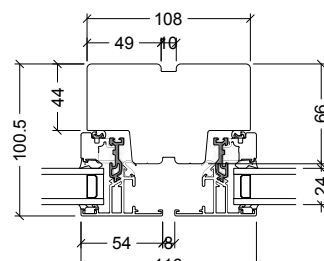
Head



Jamb



Threshold



66mm mullion



# VELFAC 200 – FIRE WINDOWS AND CASEMENT DOORS

## SASH FUNCTIONS, MIN./MAX. SIZES, CLASSIFICATION

### Sash functions and classification

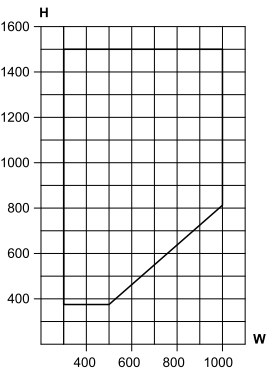
- Sidehung opening light, Class E60
- Fixed light, Class E60
- Tophung projecting light, Class E60
- Reversible opening light, Class E60
- Casement door, Class E30
- Ventilated fire panel, Class EI60

**Application.** VELFAC fire resistant windows 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.

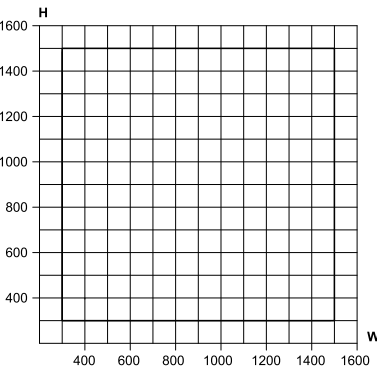
**Function.** VELFAC fire windows are flame retardant on the internal side for either 30 minutes or 60 minutes depending on the sash function (Integrity E). The ventilated panel has been tested for integrity and insulation (EI).

**Glazing.** Fire windows and doors are only available as double glazed units (always 6-14-4, glass weight 25 kg/m<sup>2</sup>).

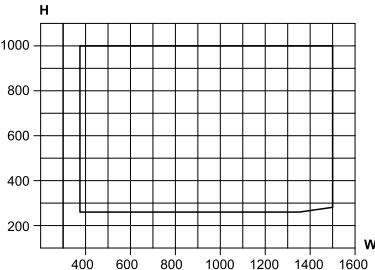
### VELFAC 251, min./max. sizes Sidehung window



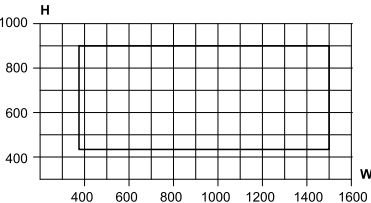
### VELFAC 250, min./max. sizes Fixed casement



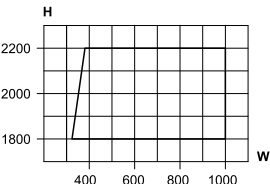
### VELFAC 272, min./max. sizes Top-guided window



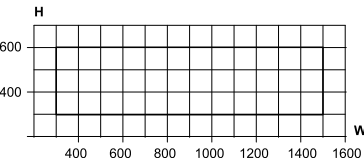
### VELFAC 279, min./max. sizes Tophung fully reversible window



### VELFAC 261, min./max. sizes Casement door



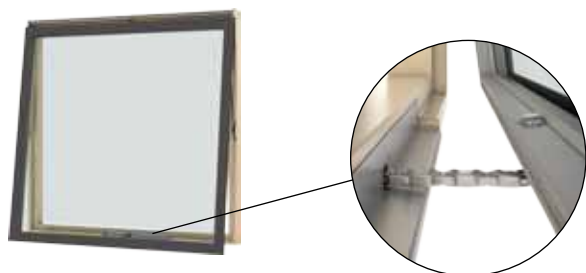
### VELFAC 200, min./max. sizes Ventilated fire panel





# VELFAC 200 – MOTORISED SMOKE VENT

## SASH FUNCTIONS, MIN./MAX. SIZES, CLASSIFICATION



### 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)
- Casement door (TGU)

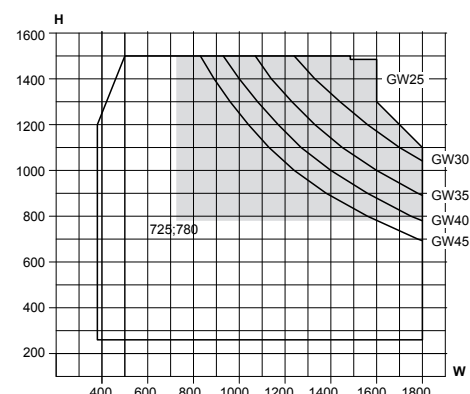
**Application.** VELFAC motorised smoke vents maintain the identical sightlines of the VELFAC 200 system, and can therefore be used in combination with other window units without affecting the uniform external façade.

**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 DGU opening functions. There will be limitations regarding max. sizes and glass weight limits for TGU opening function. Please refer to min./max. sizes under the opening function.

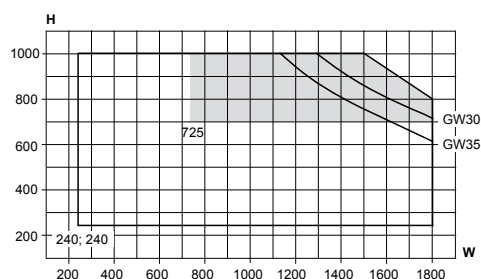
### VELFAC 212

#### Top-guided window

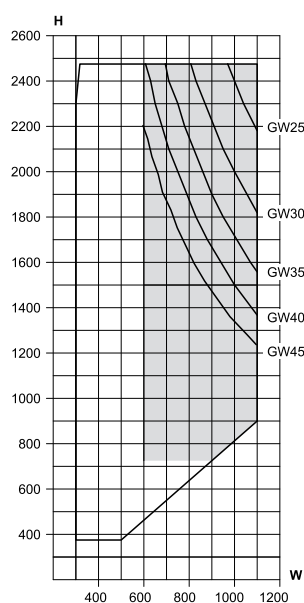


### VELFAC 203/208

#### Bottomhung/tophung window

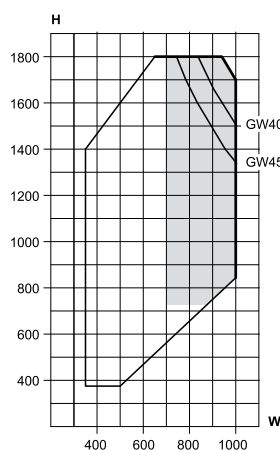


### VELFAC 201 Sidehung window



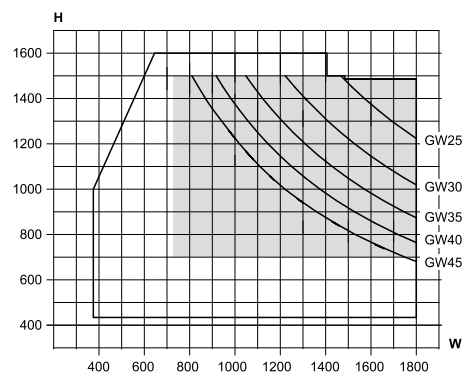
### VELFAC 207


#### Side-guided window



### VELFAC 229

#### Tophung fully reversible window

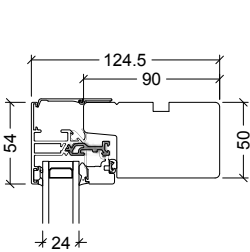


 = Min./max. sizes for smoke vent

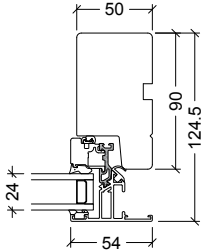


# VELFAC 200 – FRAMES, MULLIONS AND TRANSOMS

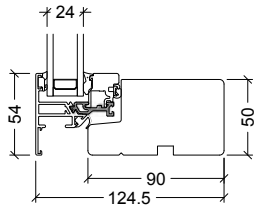
## FRAMES, 24MM GLAZING



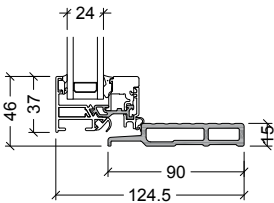
Head



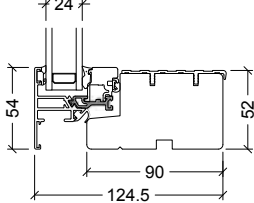
Jamb



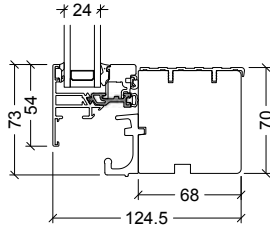
Cill



15mm threshold, casement door

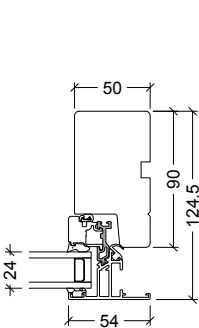


52mm threshold, casement door

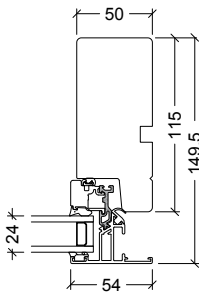


Threshold, sliding casement door

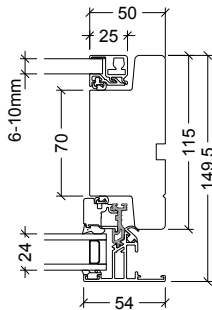
## FRAME VARIATIONS



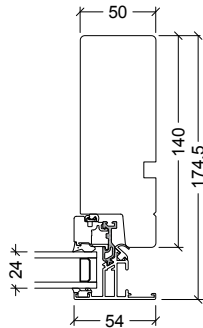
90mm frame



115mm frame

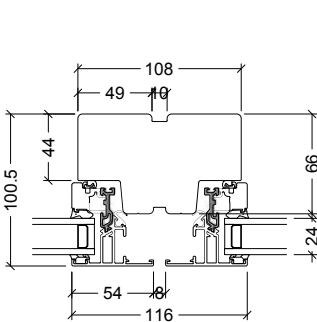


115mm frame with internal sash

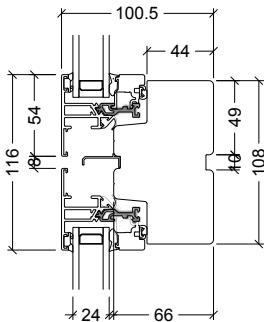


140mm frame

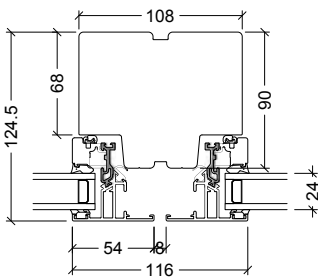
## MULLIONS AND TRANSOMS



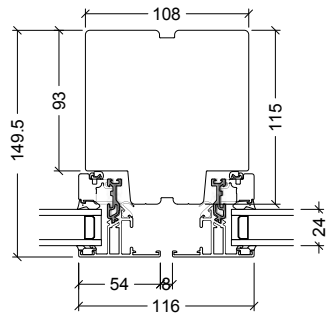
66mm mullion



66mm transom



90mm mullion (transom)

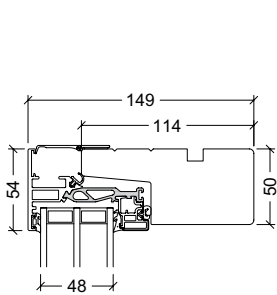


115mm mullion (transom)

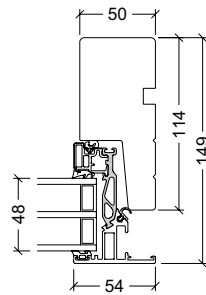


# VELFAC 200 ENERGY – FRAMES, MULLIONS AND TRANSOMS

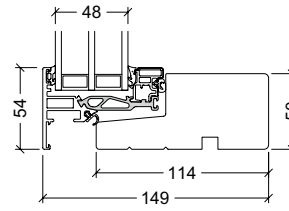
## FRAMES, 48MM GLAZING



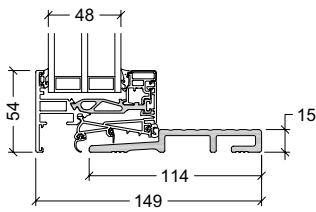
Head



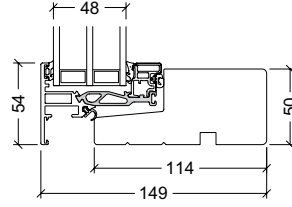
Jamb



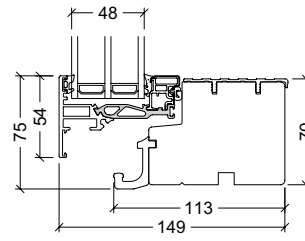
Cill



15mm threshold, casement door

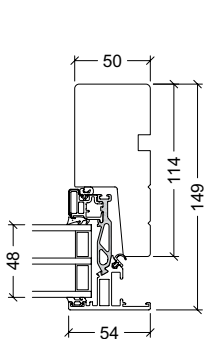


52mm threshold, casement door

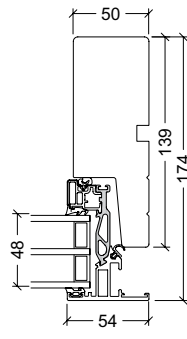


Threshold, sliding casement door

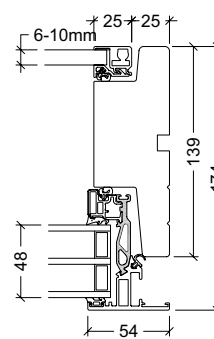
## FRAME VARIATIONS



114mm frame



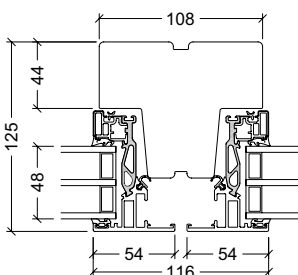
139mm frame



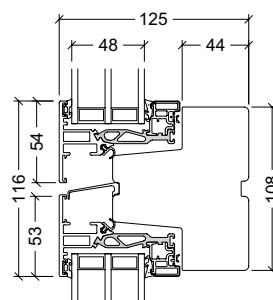
139mm frame with internal sash

## MULLIONS AND TRANSOMS

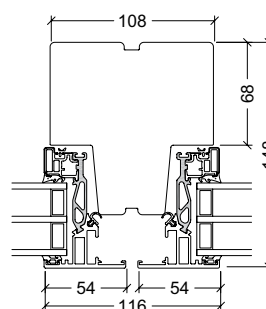
## MULLION AND TRANSOM VARIATIONS



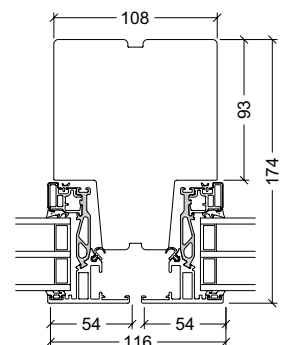
90mm mullion



90mm transom



114mm transom (mullion)



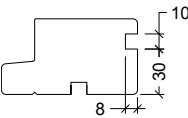
139mm transom (mullion)



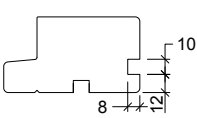
# VELFAC 200 / VELFAC 200 ENERGY – FRAME OPTIONS

## VELFAC 200 - GROOVES, REBATES AND PACKERS

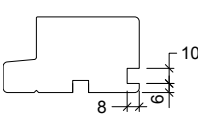
Please note that the grooves, rebates and packers are shown in 90mm, but are also available with 115mm and 140mm frames.



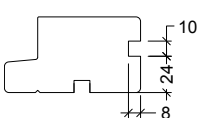
Groove type 1



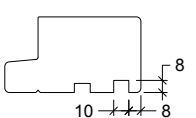
Groove type 2



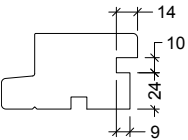
Groove type 3



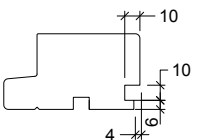
Groove type 4



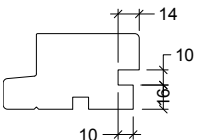
Groove type 40



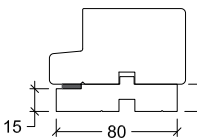
Cill groove type 5



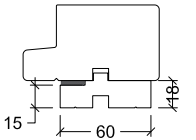
Cill groove type 6



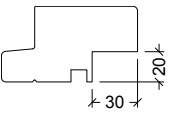
Cill groove type 26



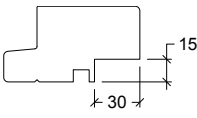
Packer type 100-885



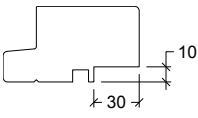
Packer type 100-886  
Also available for sliding casement doors



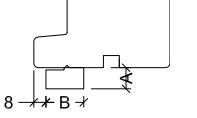
Rebate type 11



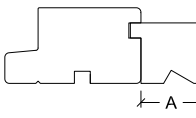
Rebate type 12



Rebate type 13



Packer type 50



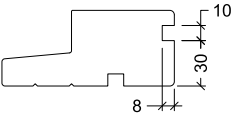
Packer type 01

50-800	A = 14	B = 25
50-801	A = 20	B = 35

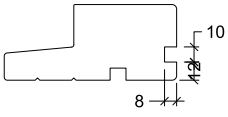
1	A = 40
2	A = 60

## VELFAC 200 ENERGY - GROOVES, REBATES AND PACKERS

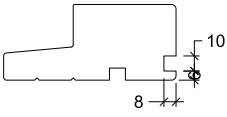
Please note that the grooves, rebates and packers are shown in 114mm, but are also available with 139mm frame.



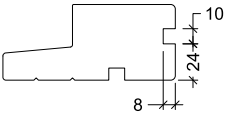
Groove type 1



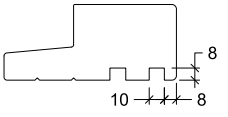
Groove type 2



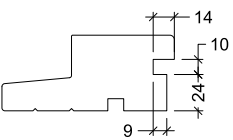
Groove type 3



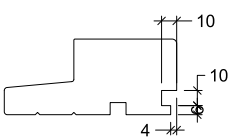
Groove type 4



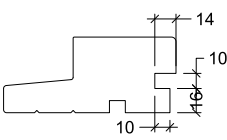
Groove type 40



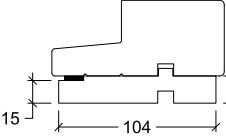
Cill groove type 5



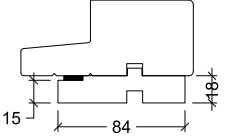
Cill groove type 6



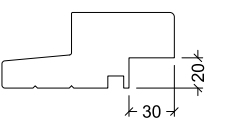
Cill groove type 26



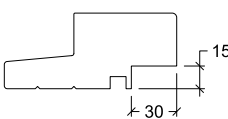
Packer type 300-128



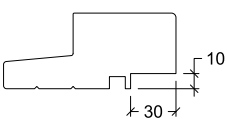
Packer type 300-130  
Also available for sliding casement doors



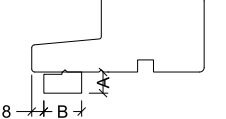
Rebate type 11



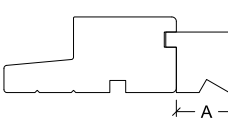
Rebate type 12



Rebate type 13



Packer type 50



Packer type 01

50-800	A = 14	B = 25
50-801	A = 20	B = 35

1	A = 40
2	A = 60



# 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.



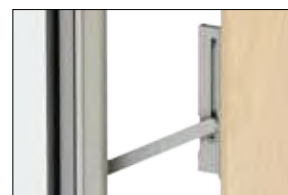
**External handle** for VELFAC 231 and 237. Supplied separately.



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



**Standard restrictor.** Not available for VELFAC 237.



**Lockable restrictor.** Not available for VELFAC 237.



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



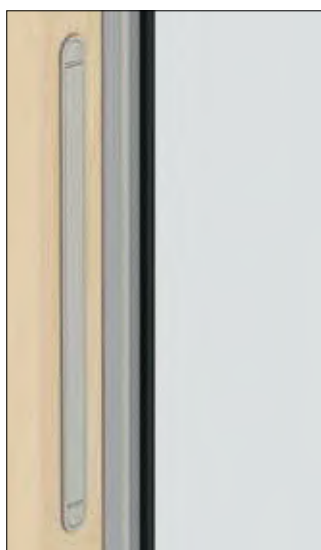
**VELFAC maxi-handle.** For all espagnolettes. The warm and non-slip surface makes life easier for disabled. Supplied separately.



**Friction brake.** Standard in VELFAC 201, 207, 212, 229 and 231. Not possible with 180° hinge.



**180° hinge for VELFAC 231.** Not available with friction brake. Will influence the glass weight restrictions of the casement door.



**Click vent.** Anodized surface finish. Fully concealed. Free ventilation opening in elements with 24mm glazing: 4000mm<sup>2</sup>. Free ventilation opening in elements with 48mm glazing: 3000mm<sup>2</sup>.



**Electric opener for remote operation.** For VELFAC 201, 203, 207, 212 and 229. Can be computer controlled for fully naturally ventilated projects. Fully concealed in the frame. Three chain lengths offering 60mm, 210mm and 440mm clear opening.



**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  $D_{n,e,w}$  40 dB.



# VELFAC IN – OVERVIEW

## CHARACTERISTICS

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



Inward opening system with tilt function

## SASH VARIATIONS



48mm triple glazed opening unit



48mm triple glazed fixed unit





# VELFAC IN

INWARD OPENING WINDOWS AND CASEMENT DOORS





# VELFAC IN – OPENING FUNCTIONS

## SIDEHUNG WINDOW - VELFAC IN 02



### Min./max. sizes, 1-leaf

	Min.	Max. 1	Max. 2	Max. 3
Element width (W)	500	1300	1000	900
Element height (H)	510	1700	2200	2400

### Min./max. sizes, 2-leaf rebated

	Min.	Max. 1	Max. 2
Element width (W)	1000	1600	2000
Element height (H)	600	2200	1800

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

## TURN AND TILT WINDOW - VELFAC IN 05



### Min./max. sizes, 1-leaf

	Min.	Max. 1	Max. 2	Max. 3
Element width (W)	500	1300	1000	900
Element height (H)	510	1700	2200	2400

### Min./max. sizes, 2-leaf rebated

	Min.	Max. 1	Max. 2
Element width (W)	1000	1600	2000
Element height (H)	600	2200	1800

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

## BOTTOMHUNG WINDOW - VELFAC IN 06



### Min./max. sizes

	Min.	Max. 1	Max. 2
Element width (W)	500	1300	1000
Element height (H)	510	1700	2200

- Ideal for basement windows
- The window has a tilt function for ventilation



# VELFAC IN – OPENING FUNCTIONS

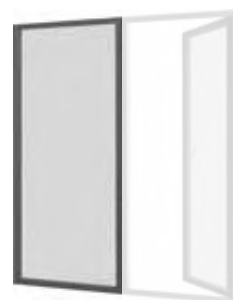
## FIXED CASEMENT - VELFAC IN 10



### Min./max. sizes

	Min.	Max.
Element width (W)	275	1300
Element height (H)	275	2200

- Only as fixed casement
- Because the fixed casement has a single frame profile, it has the benefit of slim sidelines
- Can be incorporated above, below and beside a VELFAC In window
- Can be incorporated beside or above a VELFAC In 135 casement door (see photo)



## TURN AND TILT CASEMENT DOOR - VELFAC IN 135



### Min./max. sizes, 1-leaf

	Min.	Max. 1	Max. 2
Element width (W)	500	1000	900
Element height (H)	1800	2200	2400

### Min./max. sizes, 2-leaf rebated

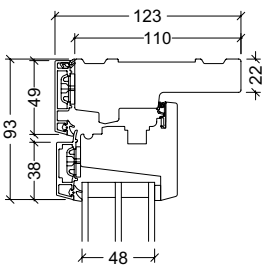
	Min.	Max. 1
Element width (W)	1000	2000
Element height (H)	1800	2200

- Ideal for French balconies in multi-storey buildings
- Designed to allow safe cleaning of the door
- Inward opening up to 90°
- Has a tilt function
- The threshold is supplied in mahogany for additional durability

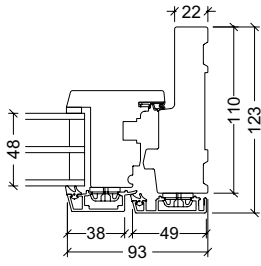


# VELFAC IN – FRAMES, MULLIONS AND GLAZING BARS

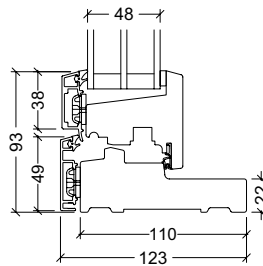
## FRAMES



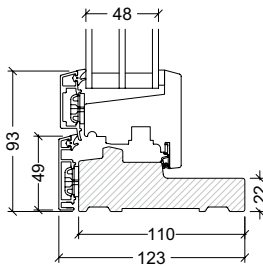
Head



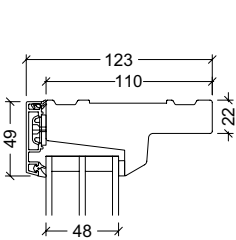
Jamb



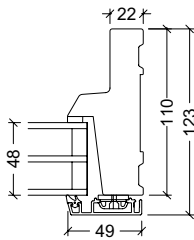
Cill



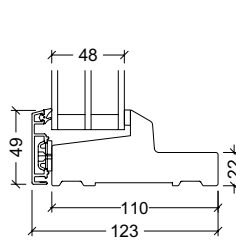
Threshold, casement door, mahogany



Head, fixed

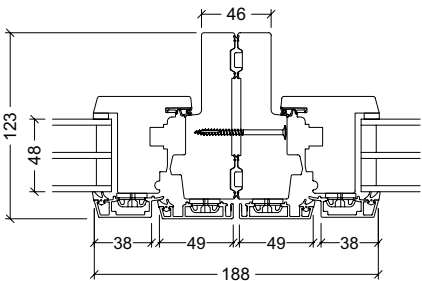


Jamb, fixed

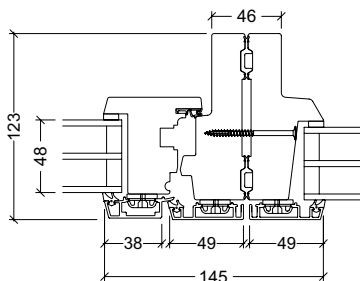


Cill, fixed

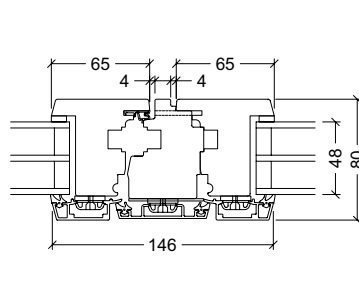
## MULLIONS



Mullion, opening sashes

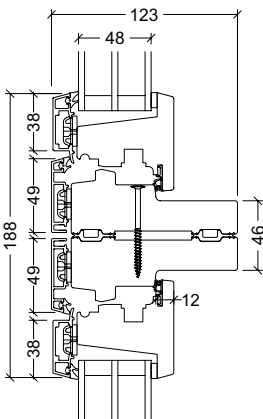


Combination mullion

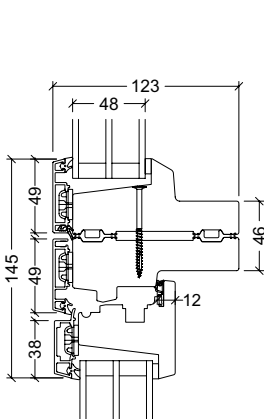


Mullion with French casement

## TRANSOMS

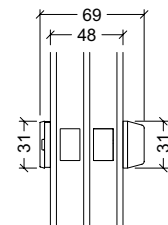


Transom, opening sashes

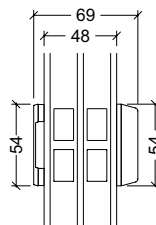


Combination transom

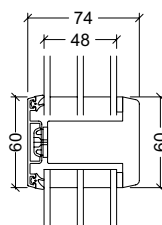
## GLAZING BARS AND GLAZING



31mm energy glazing bar



54mm energy glazing bar

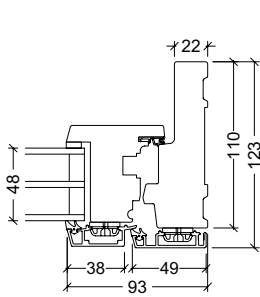


60mm glazing bar

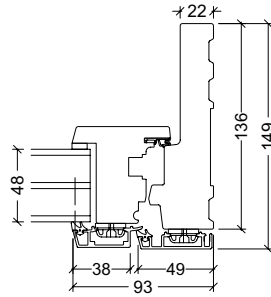


# VELFAC IN – FRAMES AND MULLIONS + ACCESSORIES

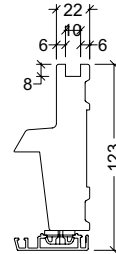
## FRAME VARIATIONS



123mm frame

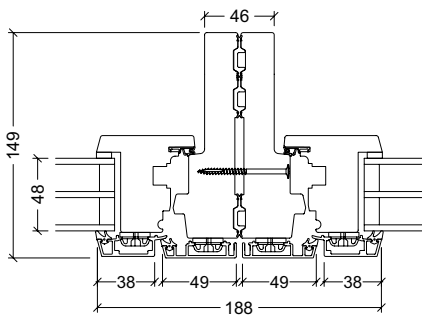


149mm frame

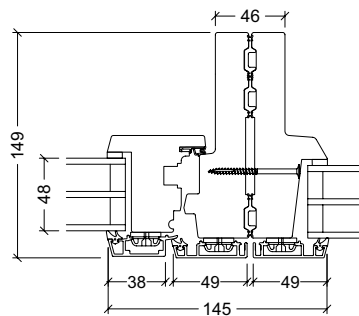


10mm groove shown in fixed casement detail

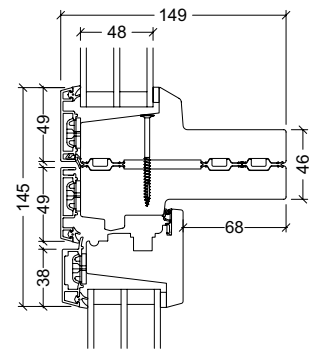
## MULLIONS AND TRANSOMS VARIATIONS



Mullion



Combination mullion



Combination transom

## ESPAGNOLETTES AND ACCESSORIES



**Aluminum-handle.** Natural anodised aluminum surface finish.



**Aluminum-handle with child-lock.** Natural anodised aluminum surface finish.



**Aluminum-handle with lock.** Natural anodised aluminum surface finish.



**Click vent.** Anodised surface finish. The ventilation outside is fully concealed with a cover section. Free ventilation opening 3000mm<sup>2</sup>.



1-LEAF DOOR WITH ANTI-FINGER TRAP HINGES IN A VELFAC 200 WINDOW FAÇADE



BEAUTIFUL SURFACE FINISH. BARREL HINGES WITH OR WITHOUT SECURITY BOLT



1-LEAF VELFAC 500 DOOR WITH LOUVRE PANEL IN DOOR AND IN VELFAC 200 FIXED TOP LIGHT



1-LEAF DOOR WITH BARREL HINGES AND VELFAC 200 FIXED SIDE / TOP LIGHT



2-LEAF DOOR WITH CRANKED PULL HANDLE AND GLAZING BARS IN A VELFAC 200 WINDOW FAÇADE



2-LEAF ESCAPE DOOR WITH PANIC BAR AND DOOR CLOSER IN A VELFAC 200 WINDOW FAÇADE







# VELFAC 500 – ALUMINIUM DOORS

MAIN ENTRANCE DOORS FOR COMMERCIAL BUILDINGS





# VELFAC 500 – OPENING FUNCTIONS

## ALUMINIUM GLAZED ENTRANCE DOOR

- Designed for installation where reliability, stability and strength of the door are vital.
- Made of aluminium profiles and can be divided by one or more glazing bars with the resulting apertures glazed or panelled
- Can be installed as either outward or inward opening
- Available as single or double leaf
- Available with 24mm double or 36mm triple layer glazing
- VELFAC 500 doors can be coupled with VELFAC 200 windows to create glazed entrance screens for receptions or atria
- Other fittings than detailed are available



**N.B. The VELFAC 500 System only sold with an order for VELFAC 200.**

## OPENING FUNCTIONS



### Standard fittings

- Deadlock and latch
- Lever handles
- Europrofile cylinder - keyed external, thumbturn internal
- Door closer with hold-open arm, natural anodised
- Slimline barrel hinges, natural anodised
- Flushbolt for slave leaf

### Entrance door (door 1)

- Typical situations include the main entrance to small commercial or public buildings, or a side entrance to larger facilities.



### Standard fittings

- Deadlock with hook bolt
- 300mm cranked pull handles, stainless steel
- Europrofile cylinder - keyed external, thumbturn internal
- Door closer with
- Slimline barrel hinges, natural anodised
- Flushbolt for slave leaf

### Main entrance door (door 2)

- Typical situations include the main entrance to a commercial or public building.



# VELFAC 500 – OPENING FUNCTIONS

## OPENING FUNCTIONS



### Standard fittings

- Electric strike
- Deadlock and latch
- 300mm cranked pull handle external
- Lever handle internal
- Europrofile cylinder - keyed external, thumbturn internal
- Slimline barrel hinges, natural anodised
- Door closer with hold-open arm
- Flushbolt for slave leaf

### Remote access door with electric strike (door 3)

- A remote controlled door designed for installation where restricted access is necessary.
- When activated by the remote access device (not supplied), a portion of the strike retracts allowing the door open.
- The strike plate can be retained in an open position for daytime use by operating a small catch. The door can also be locked when not in use by turning the cylinder to engage the deadbolt.
- Typical situations include restricted entrances to commercial or residential buildings.



### Standard fittings

- Electromagnetic shear lock
- 300mm cranked pull handles, stainless steel
- Slimline barrel hinges, natural anodised
- Door closer with hold-open arm, natural anodised
- Flushbolt for slave leaf

### Remote access door with electric lock (door 4)

- A remote controlled door designed for installation where restricted access is necessary.
- The electric lock is designed for use in high traffic, main entrance doors where there is a need for controlled access.
- When the door is closed and energised, a strong magnetic force is generated which pulls the door leaf to the frame.
- When activated by the remote access device (not supplied), the power supply is interrupted and the door leaf is released.
- Typical entrances to commercial or residential buildings.



### Standard fittings

- Panic deadlock and latch
- Panic bar internal
- Europrofile cylinder - keyed external, thumbturn internal
- Slimline barrel hinges, natural anodised

### Escape door (door 5)

- An outward opening escape door designed for installation where emergency escape is necessary.
- Typical situations include emergency exits from commercial, public or large residential buildings.



### Standard fittings

- Security 5 point lock
- Lever handle
- Europrofile cylinder - keyed external and internal
- Security rosette
- Slimline barrel hinges with security bolt, natural anodised
- Flushbolt for slave leaf

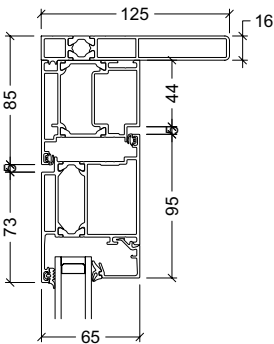
### Security door (door 6)

- An entrance door with additional security features designed to provide increased protection from intruders. The door is PAS24 tested.
- Standard fittings must be used with the Security door, there are no additional options.
- Supplied with 94mm glazing bars, if any.
- Typical situations main or side entrances to residential buildings.

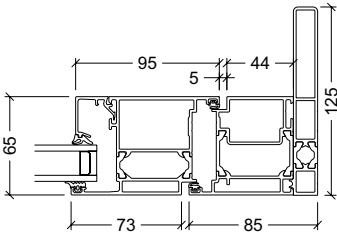


# VELFAC 500 – FRAMES

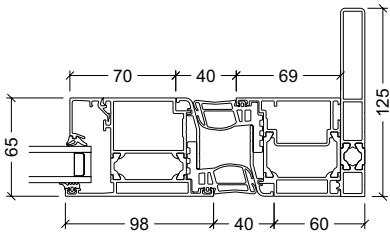
## INWARD OPENING DOORS



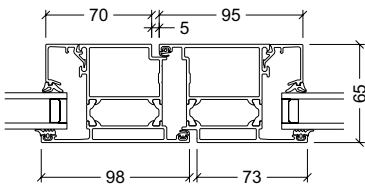
Head



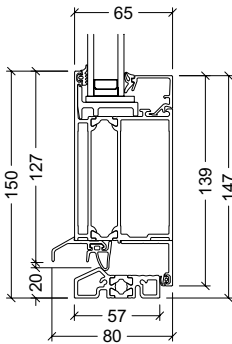
Jamb



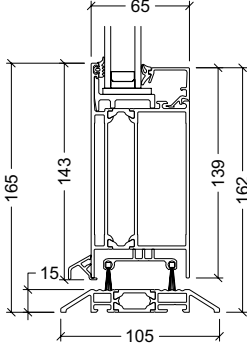
Jamb with finger protection



Rebated meeting style

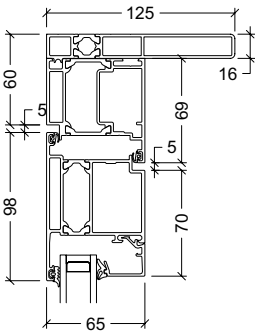


Threshold with thermal break, 20mm

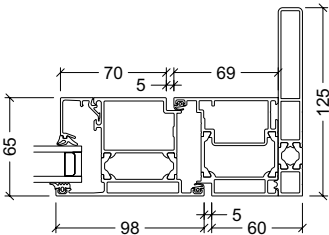


Threshold with thermal break, aluminium 15mm

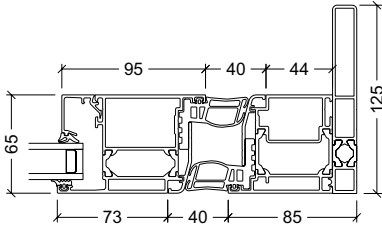
## OUTWARD OPENING DOORS



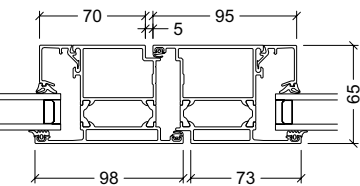
Head



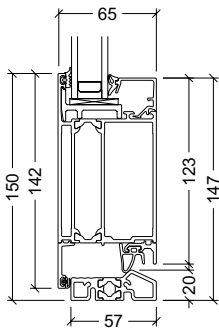
Jamb



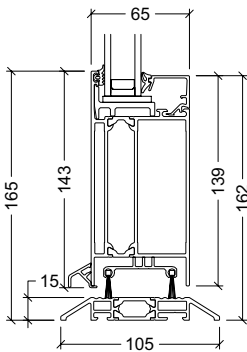
Jamb with finger protection



Rebated meeting style



Threshold with thermal break, 20mm

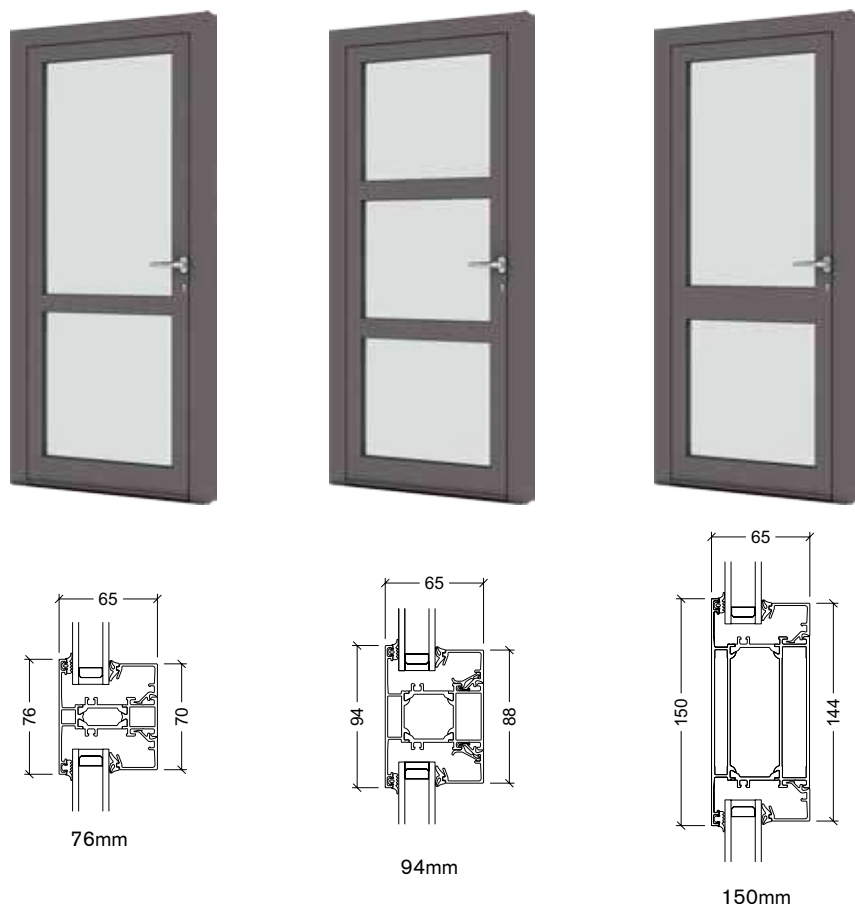


Threshold with thermal break, aluminium 15mm

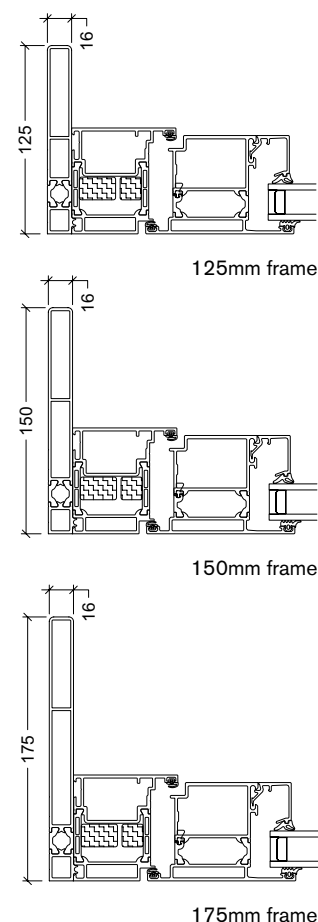


# VELFAC 500 – GLAZING BARS + MIN. / MAX.-SIZES

## GLAZING BARS



## FRAME DEPTHS



## MIN./MAX. SIZES

### Inward opening doors

Element width* (W)	Min.	Max.
1-leaf	980	1430
2-leaf symmetric (cutting/standing)	1385 (705/680)	2685 (1355/1330)
2-leaf asymmetric (cutting/standing)	1085 (705/380)	2685 (1355/1330)
Element height* (H)	Min.	Max.
	1914	2614

\*Including frame and threshold.

### Outward opening doors

Element width* (W)	Min.	Max.
1-leaf	930	1380
2-leaf symmetric (cutting/standing)	1335 (655/680)	2635 (1305/1330)
2-leaf asymmetric (cutting/standing)	1035 (655/380)	2635 (1305/1330)
Element height* (H)	Min.	Max.
	1873	2573

\*Including frame and threshold.

### Inward opening security door

Element width* (W)	Min.	Max.
1-leaf	980	1100
2-leaf symmetric (cutting/standing)	1385 (705/680)	2200 (1100/1100)
2-leaf asymmetric (cutting/standing)	1085 (705/380)	2200 (1100/1100)
Element height* (H)	Min.	Max.
	1905	2200

\*Including frame and threshold.

### Outward opening security door

Element width* (W)	Min.	Max.
1-leaf	930	1100
2-leaf symmetric (cutting/standing)	1335 (655/680)	2200 (1100/1100)
2-leaf asymmetric (cutting/standing)	1035 (655/380)	2200 (1100/1100)
Element height* (H)	Min.	Max.
	1873	2200

\*Including frame and threshold.



# VELFAC 500 – ACCESSORIES

## HANDLES AND ACCESSORIES



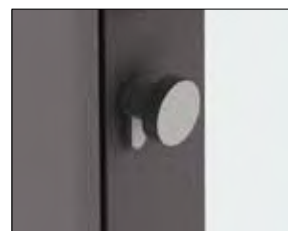
**Lever handle.** Natural anodised surface finish.



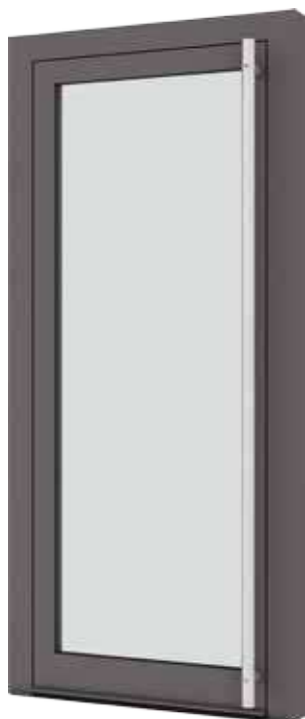
**Stainless steel handle.** Polished surface finish.



**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.



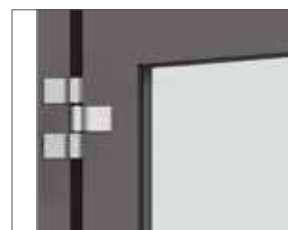
**300mm circular pull handle** in stainless steel. Semigloss brushed surface finish.



**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 150mm glazing bar only. Natural anodised surface finish.



**Door closer for inward opening doors.** Silver painted surface finish.



**Door closer for outward opening doors.** Silver painted surface finish.





# VELFAC WOOD/ALUMINIUM DOORS

MAIN ENTRANCE DOORS FOR DOMESTIC BUILDINGS AND SECONDARY  
ENTRANCE DOORS IN PUBLIC AND COMMERCIAL BUILDINGS



Photographer: Adam Mørk



INWARD OPENING FLUSH ENTRANCE DOOR WITH  
SMOOTH FINISH AND GLAZING



INWARD OPENING GLAZED ENTRANCE DOOR



INWARD OPENING GROOVED FLUSH ENTRANCE  
DOOR AND VELFAC 200 FIXED SIDELIGHT



OUTWARD OPENING GLAZED ENTRANCE DOOR  
WITH VELFAC 200 FIXED SIDE/TOP LIGHT



INWARD OPENING GROOVED FLUSH ENTRANCE  
DOOR AND VELFAC 200 FIXED SIDE/TOP LIGHT



OUTWARD OPENING GLAZED ENTRANCE DOOR  
WITH GLAZING BARS AND A VELFAC 200 WINDOW





# VELFAC WOOD / ALU DOORS – OVERVIEW

## CHARACTERISTICS

- Main entrance doors for residential buildings
- Secondary entrance doors in public buildings and office blocks
- Can be installed as either outward or inward opening
- Available as single or double leaf
- 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. Can be divided by glazing bars with the resulting apertures 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 for receptions or atria



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

## GLAZING BARS FOR GLAZED ENTRANCE DOORS



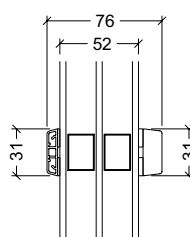
31mm

68mm

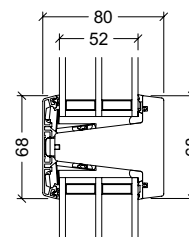


68mm

68mm



31mm energy glazing bar, 3 layer glazing

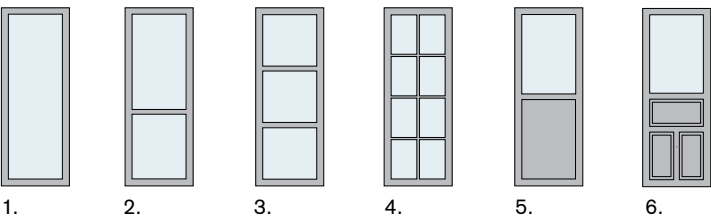


68mm glazing bar, 3 layer glazing

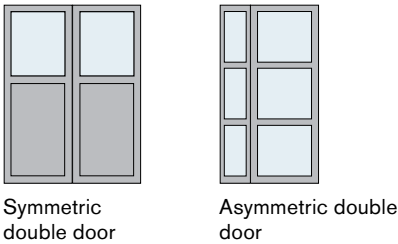


# VELFAC WOOD / ALU DOORS – DESIGN + ACCESSORIES

## EXAMPLES OF STANDARD GLAZED DOORS AND GLAZING BAR CONFIGURATIONS

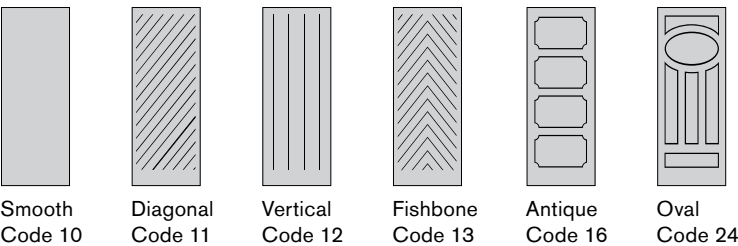


Examples of 2-leaved glazed doors

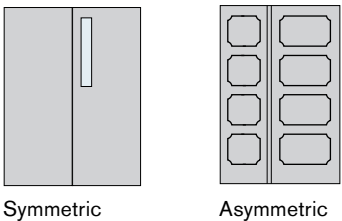


## STANDARD FLUSH DOOR DESIGNS AND WINDOW TYPES

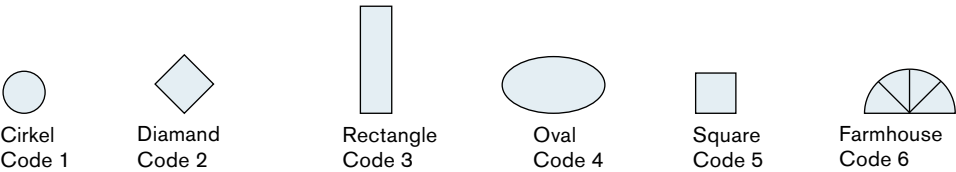
Standard flush door designs



Examples of 2-leaved flush doors



Standard flush door window types



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

## HANDLE AND ACCESSORIES



**Lever handle and cylinder.** 6-formed cylinder in stainless steel.



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



**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.



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

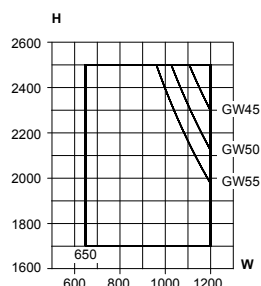


# VELFAC WOOD / ALU DOORS – OPENING FUNCTIONS

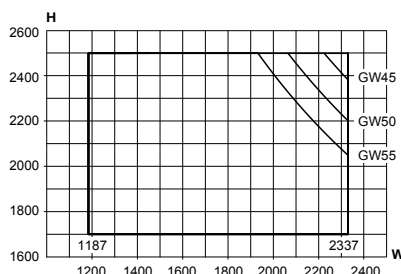
## GLAZED ENTRANCE DOORS - TYPE 41/42



Min./max.-sizes, 1-leaf



Min./max.-sizes, 2-leaf

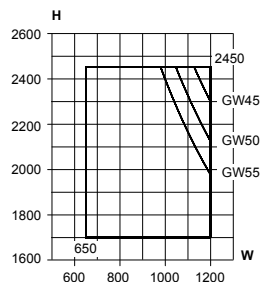


- Comprises timber sections with glazed aluminium profiles
- Can be divided by glazing bars with the resulting apertures glazed or panelled
- Inward (42) or outward opening (41)
- 3 closing points. Can be supplied with single closing point
- Lock box for oval cylinder
- 18mm (41) / 22.5mm (42) threshold

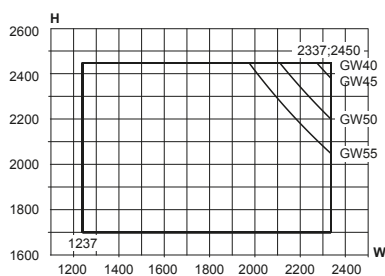
## FLUSH ENTRANCE DOORS - TYPE 43/44



Min./max.-sizes, 1-leaf



Min./max.-sizes, 2-leaf



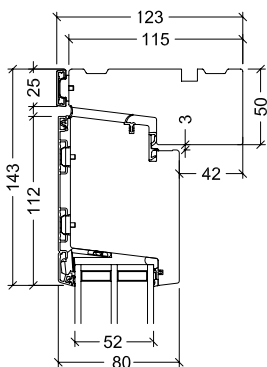
- Comprises timber sections with external aluminium profiles to the outer frame only
- The smooth or grooved external finish (the internal finish is smooth) is available in several designs and incorporates a range of glass apertures
- Inward (44) or outward opening (43)
- With kick-plate internally and externally
- 3 closing points. Can be supplied with single closing point
- Lock box for oval cylinder
- 18mm (43) / 22.5mm (44) threshold

GW = glas weight  
(see page 63)

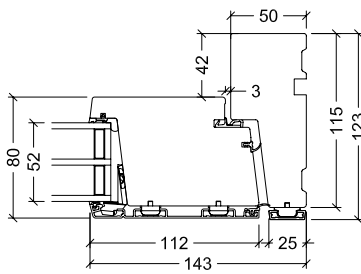


# VELFAC WOOD / ALU DOORS – FRAMES AND MULLIONS

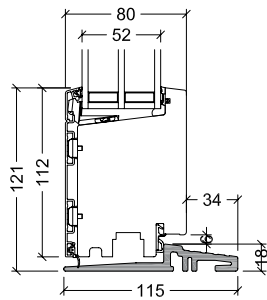
## GLAZED ENTRANCE DOOR - OUTWARD OPENING



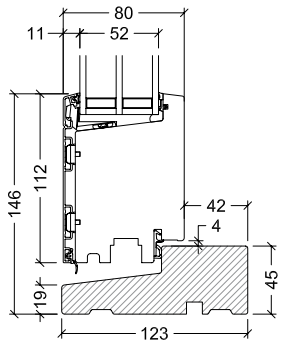
Head



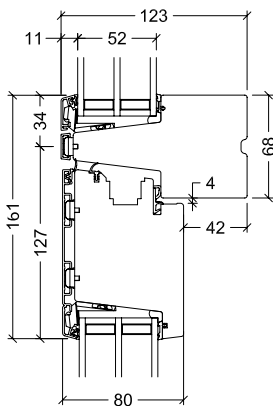
Jamb



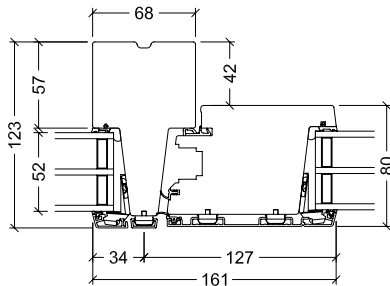
18mm HELO® threshold  
22.5mm with 140mm frame



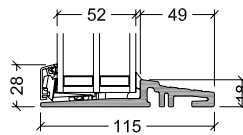
45mm threshold, hard wood



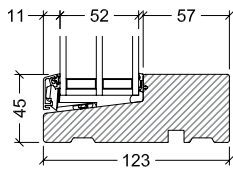
Transom, fixed sidelight



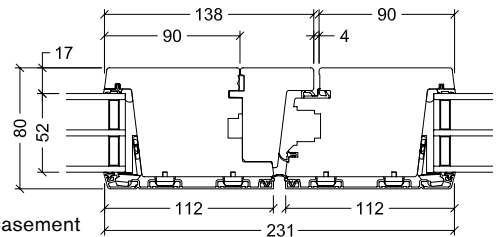
Mullion, fixed sidelight



Cill, fixed sidelight

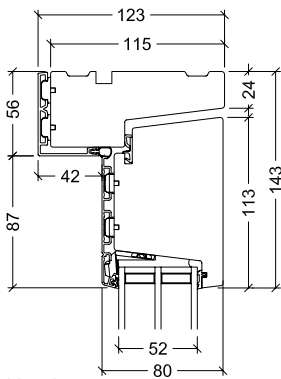


Cill, fixed sidelight

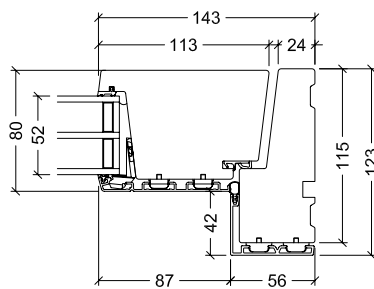


Mullion, French casement

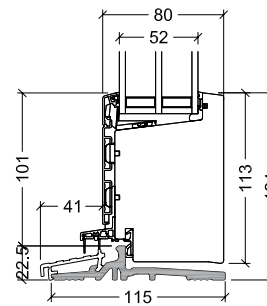
## GLAZED ENTRANCE DOOR - INWARD OPENING



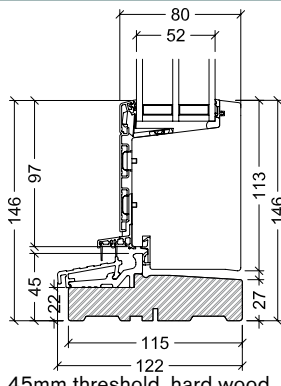
Head



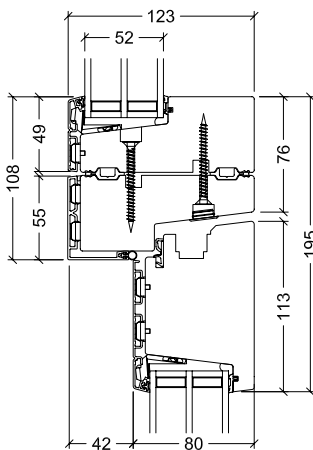
Jamb



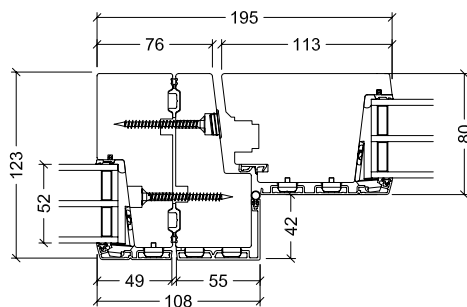
22.5mm HELO® threshold



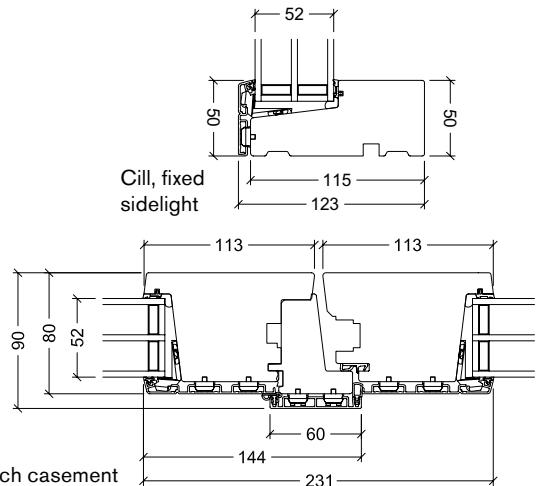
45mm threshold, hard wood



Transom, fixed sidelight



Mullion, fixed sidelight



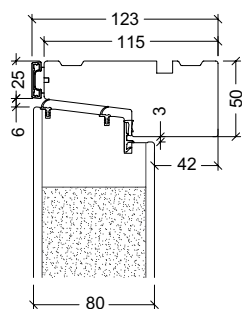
Mullion, French casement

Cill, fixed  
sidelight

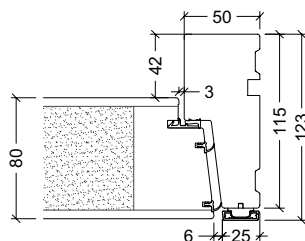


# VELFAC WOOD / ALU DOORS – FRAMES AND MULLIONS

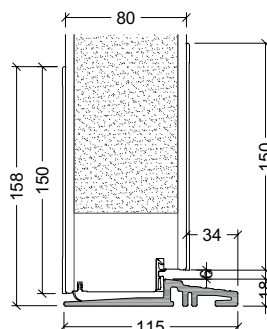
## FLUSH ENTRANCE DOOR - OUTWARD OPENING



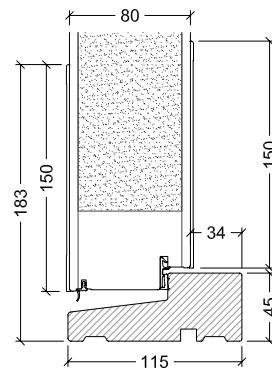
Head



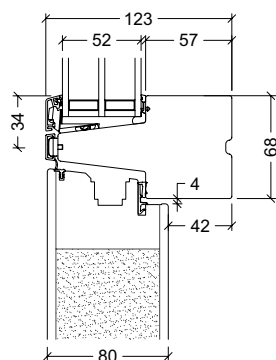
Jamb



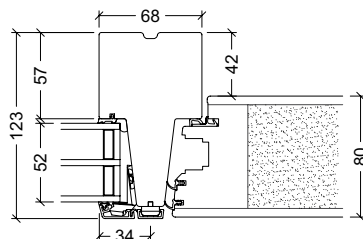
18mm HELO® threshold  
22.5mm with 140mm frame



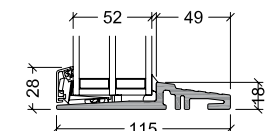
45mm threshold, hard wood



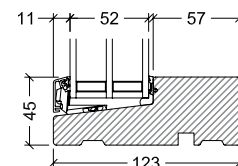
Transom, fixed sidelight



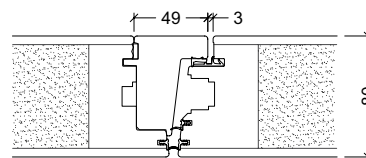
Mullion, fixed sidelight



Cill, fixed sidelight

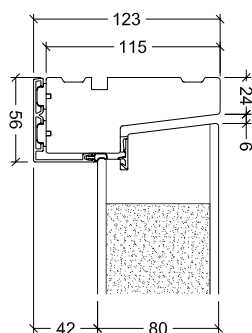


Cill, fixed sidelight

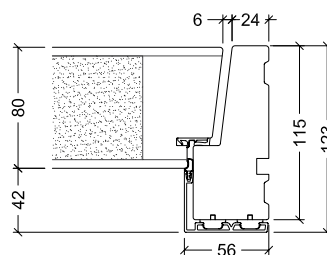


Mullion, French casement

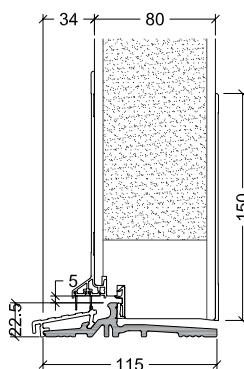
## FLUSH ENTRANCE DOOR - INWARD OPENING



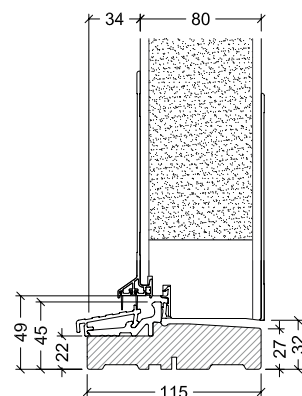
Head



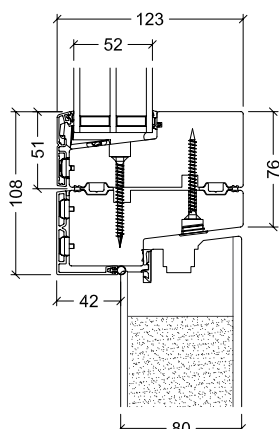
Jamb



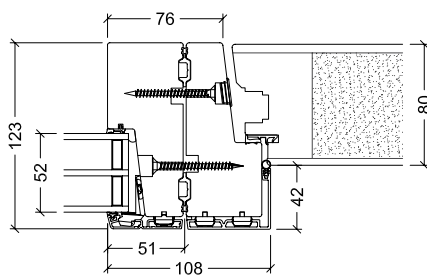
22,5mm HELO® threshold



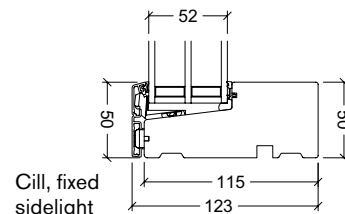
45mm threshold, hard wood



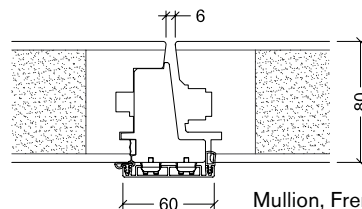
Transom, fixed sidelight



Mullion, fixed sidelight



Cill, fixed  
sidelight

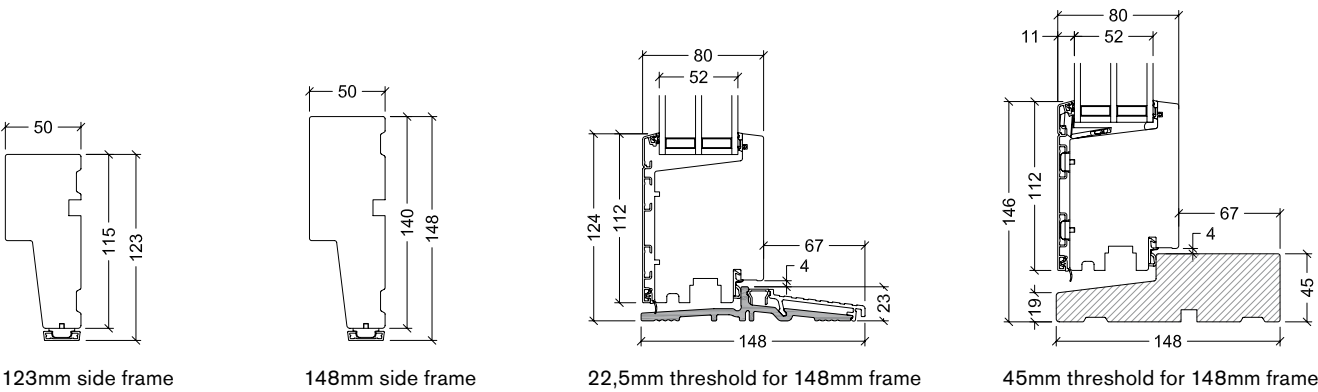


Mullion, French casement

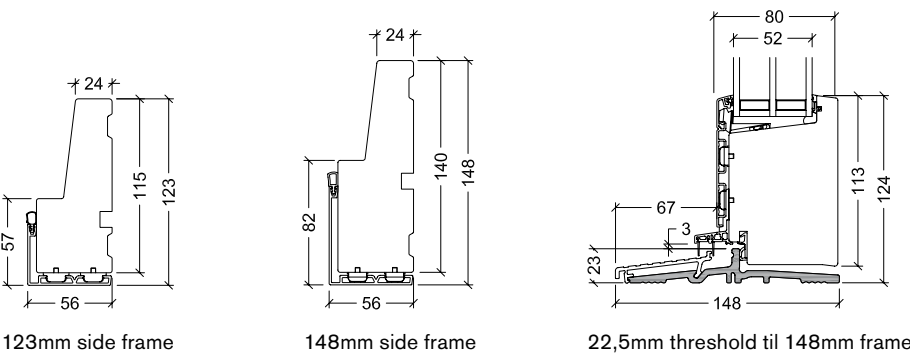


# VELFAC WOOD / ALU DOORS – FRAME OPTIONS

## FRAME VARIATIONS - OUTWARD OPENING

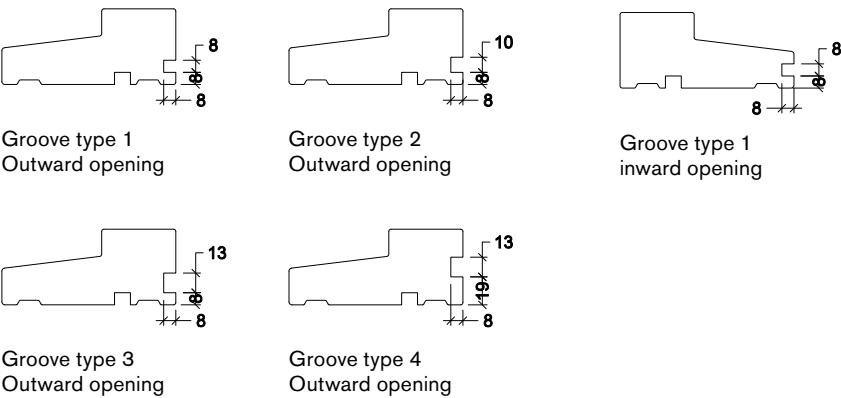


## FRAME VARIATIONS - INWARD OPENING



## GROOVES

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





# VELFAC PANELS

VELFAC 200 FACADE WITH NON-VENTILATED CEDAR PANEL, VENTILATED ENAMELED PANELS AND VELFAC 500 DOORS



VELFAC 200 FACADE WITH VENTILATED 'LOOK-ALIKE' PANELS



VELFAC 200 WINDOWS WITH LOUVRE PANELS



FAÇADE WITH VELFAC 200 WINDOWS AND VELFAC 280 RAINSCREEN PANELS





## VELFAC 200 + VELFAC 500 PANEL ELEMENTS

## TYPES OF PANELS PER SYSTEM

PANEL ELEMENT	WINDOW- / DOOR SYSTEM						PANEL BOARDS			
	VELFAC 200	VELFAC 500	Aluminium	Laminated board	Enamel glass	Shadow-box	Cedar	Rockpanel	Louvre panel	Backboard
Ventilated panel	x		x	x	x	x				x
Sandwich panel	x	x	x	x						
Non-ventilated panel	x						x	x		x
Louvre panel	x	x							x	x
Rainscreen with frame	x		x							x
Rainscreen without frame	x		x							
Façade panel	x		x	x	x			x		

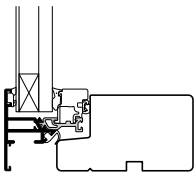
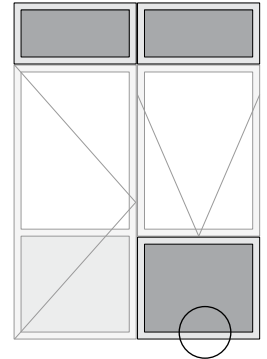
## MATERIALS FOR VELFAC 200 AND VELFAC 500 PANELS

Board information	Materials	Colours	Thickness of board	Weight
<b>Alumium plate</b>	Powder coated or anodised aluminum. N.B. Medium resistance to kicks or ball dents, etc	Same colour and finish range as VELFAC window sashes.	Sandwich: 1.5mm Ventilated: 2mm Rainscreen: 2mm Façade panel: 3mm	1.5mm: 4 kg/m <sup>2</sup> 2mm: 5.4 kg/m <sup>2</sup> 3mm: 8.1 kg/m <sup>2</sup>
<b>Laminated board</b>	A compact resin laminated board, specially designed for external use. Resistant to most common chemicals, kicks, ball dents and vandalism. Does not melt in fire.	K1040 (NCS S 0502-G50Y) F7927 (NCS S 2500-N) F7912 (NCS S 6502-B)	Sandwich: 2mm Ventilated: 6mm Façade panel: 6mm	2mm: 2.8 kg/m <sup>2</sup> 6mm: 8.4 kg/m <sup>2</sup>
<b>Enamel glass</b>	Toughened glass with hard-fired painted reverse.	RAL 7011 RAL 9005 RAL 7016 RAL 9016 RAL 7035 RAL 9018	Ventilated: 6mm Façade panel: 6mm	6mm: 15 kg/m <sup>2</sup>
<b>Shadow-box (Look-alike)</b>	A double glazed unit with 6mm clear glass externally and 6mm enamel glass internally.	RAL 7011 RAL 9005 RAL 7016 RAL 9016 RAL 7035 RAL 9018	Shadowbox: 24mm	25 kg/m <sup>2</sup>
<b>Cedar</b>	A diffusion open, composite timber board faced with cedar slats and no visible fixings.	Untreated Western Redwood Cedar	Non-ventilated: 24mm	15 kg/m <sup>2</sup>
<b>Rockpanel</b>	A diffusion open façade panel consisting of compressed water resistant Rockwool.	RAL 1013 RAL 7022 RAL 1015 RAL 7030 RAL 3004 RAL 7031 RAL 5011 RAL 7035 RAL 6009 RAL 8028 RAL 7004 RAL 9001 RAL 7016 RAL 9005 RAL 7021 RAL 9010	Non-ventilated: 8mm Façade panel: 8mm	1.05 kg/m <sup>2</sup>
<b>Louvre panel</b>	Aluminium. 30mm between the blades. Insect screen included.	Natural anodised or powder coated in a wide selection of RAL colours		12 kg/m <sup>2</sup>

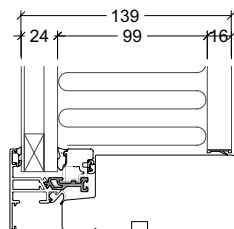


# VELFAC 200 VENTILATED PANEL

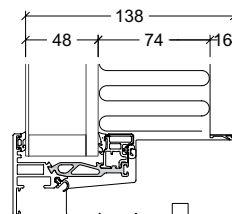
## DETAILS, MIN./MAX.-SIZES AND UPANEL-VALUES



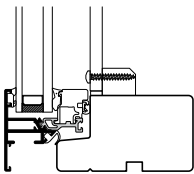
VELFAC 200  
Ventilated panel  
without backboard



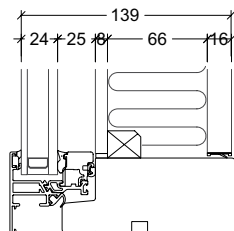
VELFAC 200  
Ventilated panel with back-  
board



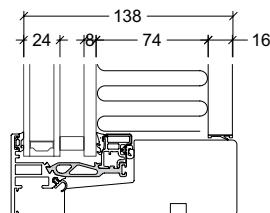
VELFAC 200 ENERGY  
Ventilated panel with back-  
board



VELFAC 200  
Shadow-box without  
backboard



VELFAC 200  
Shadow-box with  
backboard



VELFAC 200 ENERGY  
Shadow-box with  
backboard

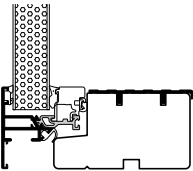
HxW og WxH measured in mm	Max. for panel element with backboard VELFAC 200 / 200 ENERGY
Enamel glass	2500 × 1340
Aluminium plate	2500 × 1340
Laminated plate	2500 × 1340
Shadow-box	2500 × 1340

Panel with insulation ( $\lambda=0.037$ ) and backboard	$U_{\text{panel}}$ -value (centre value in $W/m^2K$ )			
	VELFAC 200		VELFAC 200 ENERGY	
Element depth	124mm	149mm	149mm	174mm
Enamel glass (24mm)	0.40	0.32		
Enamel glass (48mm)			0.40	0.31
Aluminium plate	0.40	0.32	0.40	0.31
Laminated plate	0.40	0.32	0.39	0.31
Shadow-box	0.51	0.38	0.37	0.30

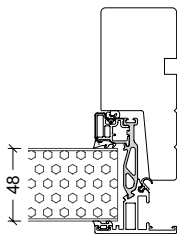


# VELFAC 200 + VELFAC 500 SANDWICH PANELS

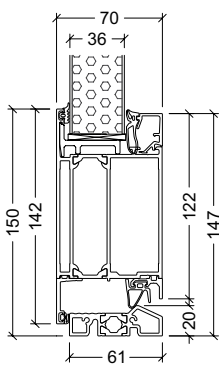
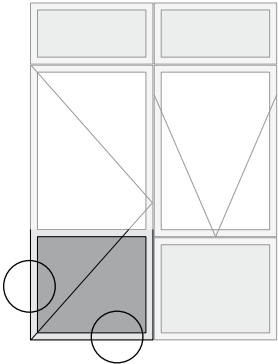
## DETAILS, MIN./MAX.-SIZES AND UPANEL-VALUES



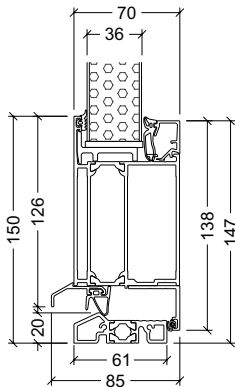
VELFAC 200  
Sandwich panel



VELFAC 200 ENERGY  
Sandwich panel



VELFAC 541  
Sandwich panel



VELFAC 542  
Sandwich panel

HxW og WxH measured in mm	Max. for panel element VELFAC 200 / 200 ENERGY	Max. for panel plate VELFAC 500
Aluminum plate	1500 x 3000	1500 x 3000
Laminated plate	1290 x 3050	1290 x 3050

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 <sub>panel</sub> -value (centre value in W/m²K)		
	VELFAC 200 / 200 ENERGY		VELFAC 500
Glazing	24mm	48mm	36mm
Aluminium plate	0.99	0.52	0.67
Laminated plate	1.02	0.52	



# VELFAC 200 NON-VENTILATED PANEL

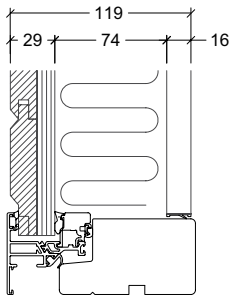
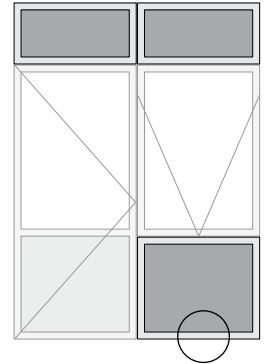
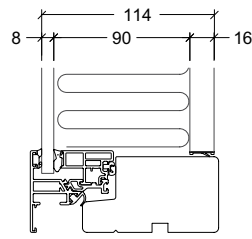
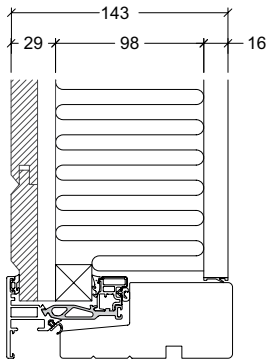
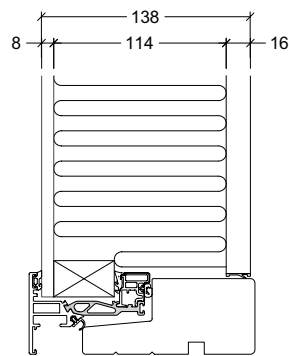
## DETAILS, MIN./MAX.-SIZES AND UPANEL-VALUES



VELFAC 200 with cedar



VELFAC 200 with rockpanel

VELFAC 200  
Non-ventilated panel  
with CedarVELFAC 200  
Non-ventilated rockpanelVELFAC 200 ENERGY  
Non-ventilated panel  
with CedarVELFAC 200 ENERGY  
Non-ventilated rockpanel

HxW and WxH measured in mm	Max. for panel element with backboard
	VELFAC 200 / 200 ENERGY
Cedar (WxH only)	2500 × 1340
Rockpanel	1275 × 3125

Panel with insulation ( $\lambda=0.037$ ) and backboard	$U_{\text{panel}}$ -value (centre value in $W/m^2K$ )			
	VELFAC 200		VELFAC 200 ENERGY	
Element depth	124mm	149mm	149mm	174mm
Cedar panel	0.34	0.28	0.31	0.25
Rockpanel	0.35	0.29	0.29	0.24

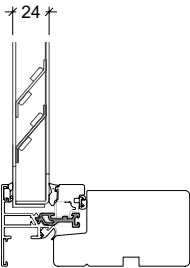


# VELFAC 200 + VELFAC 500 LOUVRE PANELS

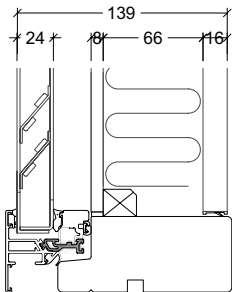
## DETAILS, MIN./MAX.-SIZES AND UPANEL-VALUES



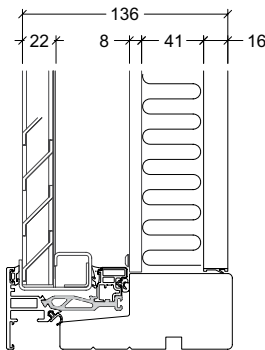
VELFAC 200 with louvre panel



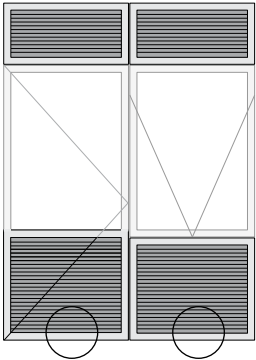
VELFAC 200 louvre panel with fly mesh only



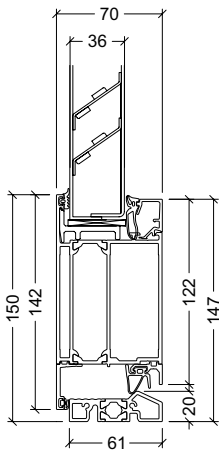
VELFAC 200 louvre panel with intermediate board and backboard



VELFAC 200 ENERGY louvre panel with intermediate board and backboard



VELFAC 500 with louvre panel



Louvre panel with fly mesh only

U <sub>panel</sub> -value (centre value in W/m <sup>2</sup> K)				
	VELFAC 200		VELFAC 200 ENERGY	
Element depth	124mm	149mm	139mm	174mm
Panel with insulation (λ=0.037) and backboard	0.63	0.44	0.68	0.47

HxW and WxH measured in mm	Max. for panel element		Max. for panel plate	
	VELFAC 200		VELFAC 500	
Louvre panel with:	WxH	HxW	WxH	HxW
fly mesh only	2000 x 1255	3000 x 830	2400 x 1322	1922 x 1322
intermediate board	2000 x 1255 1360 x 1360	1825 x 1360 3000 x 830		
intermediate board and backboard	2000 x 1255 1320 x 1320	1900 x 1320 2590 x 964		

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

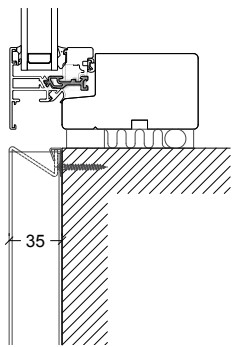
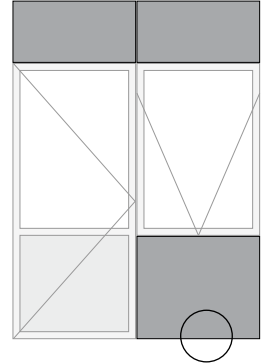


# VELFAC 280 RAINSCREEN PANELS

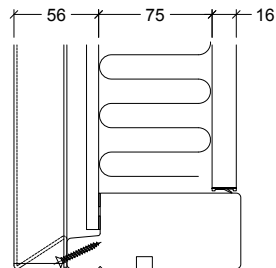
## DETAILS, MIN./MAX.-SIZES AND $U_{\text{PANEL}}$ -VALUES



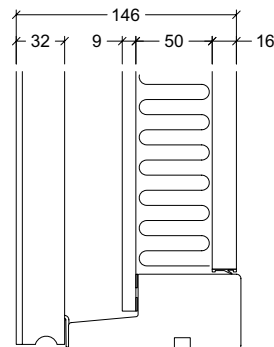
VELFAC 280 Rainscreen panel with frame



VELFAC 280 rainscreen supplied separately for installation on building site



VELFAC 280 rainscreen mounted on frame from factory



VELFAC 280 ENERGY rainscreen mounted on frame from factory

HxW and WxH measured in mm	Max. for VELFAC 280 / 280 ENERGY	
	Alu.-plate in RAL-colour	Alu.-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	

$U_{\text{panel}}$ -value (centre value in W/m <sup>2</sup> K)				
	VELFAC 200		VELFAC 200 ENERGY	
Element depth	124mm	149mm	139mm	174mm
Rainscreen with frame, insulation ( $\lambda=0.037$ ) and backboard	0.47	0.36	0.54	0.39

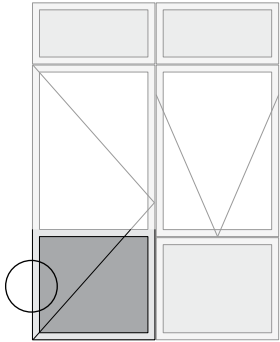
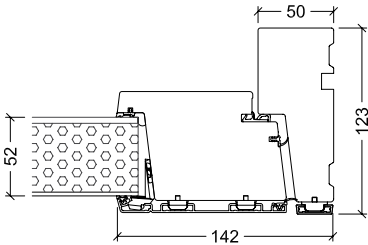


# VELFAC RIBO DOOR SANDWICH PANELS

## MATERIALS FOR VELFAC RIBO PANELS

Board information	Materials	Colours	Thichness of board	Weight
Aluminium plate + Aluminium plate	Powder coated or anodised aluminium. N.B. Medium resistance to kicks or ball dents, etc.	Same colour and finish range as VELFAC Ribo alu sashes.	Sandwich: 1.5+1.5mm 32mm rude 52mm rude	9.2 kg/m <sup>2</sup> 10.0 kg/m <sup>2</sup>
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 rude 52mm rude	8.9 kg/m <sup>2</sup> 9.5 kg/m <sup>2</sup>

## DETAILS, MIN./MAX.-SIZES AND U<sub>PANEL</sub>-VALUES



VELFAC Ribo alu Sandwich panel

HxW and WxH measured in mm	Max. area	Max. for panel element
Aluminium plate + Aluminium plate	(1.5m <sup>2</sup> )	2500 × 1600
Aluminium plate + HDF plate	(1.5m <sup>2</sup> )	2500 × 1600

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

Sandwich panels	U <sub>panel</sub> -value (centre value in W/m <sup>2</sup> K)	
Glazing bead	32mm	52mm
Aluminium plate + Aluminium plate	0.73	0.45
Aluminium plate + HDF plate	1.02	0.64



# VELFAC GLAZING

## VELFAC GLAZING FOR EVERY NEED

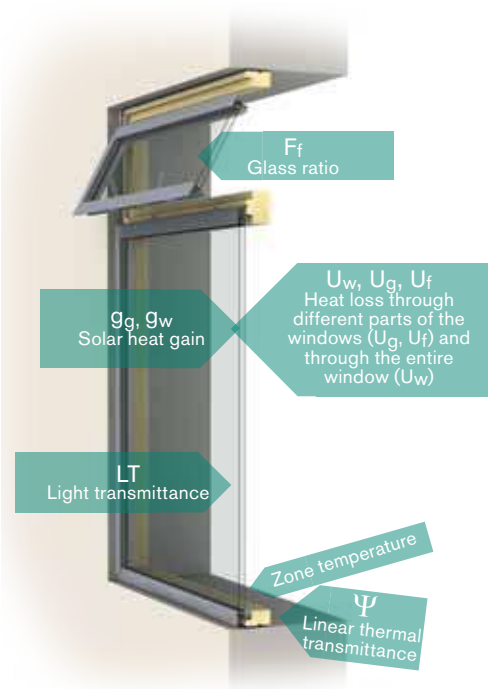
VELFAC windows are supplied with low-energy glazing as standard, but a wealth of additional options are also available. All windows within the VELFAC Glazing concept are produced according to the EN 1279 compliant.

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 starting 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 therefore not measured.

Glazing	Calculation of glass weight (GW)		
4-16-4	$= (4+4) \times 2.5 \text{ kg}$	$= 20 \text{ kg/m}^2$	$= \text{GW } 20$
6-14-4	$= (6+4) \times 2.5 \text{ kg}$	$= 25 \text{ kg/m}^2$	$= \text{GW } 25$
3/0.38/3-14-4	$= (6.38+4) \times 2.5 \text{ kg}$	$= 26 \text{ kg/m}^2$	$= \text{GW } 26$
6-12-6	$= (6+6) \times 2.5 \text{ kg}$	$= 30 \text{ kg/m}^2$	$= \text{GW } 30$
4-18-4-18-4	$= (4+4+4) \times 2.5 \text{ kg}$	$= 30 \text{ kg/m}^2$	$= \text{GW } 30$
8-8-4/0.38/4	$= (8+8) \times 2.5 \text{ kg}$	$= 40 \text{ kg/m}^2$	$= \text{GW } 40$
4/0.76/4-16-6-14-4/0.38/4	$= (8+6+8) \times 2.5 \text{ kg}$	$= 55 \text{ kg/m}^2$	$= \text{GW } 55$



# 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 environment by reducing draught, and can help to reduce heating costs.



### VELFAC 200 and VELFAC 200 ENERGY

Construction	Type of glass	U-value BS/EN673	g-value BS/EN410	LT-value BS/EN410
4-16-4 argon	Energy / Energy North	1.03	0.45	0.70
4-16-4 argon*	Clear / Energy	1.13	0.65	0.82
4-16-4 argon	Clear Low iron / Energy South	1.26	0.76	0.82
4-18-4-18-4 argon	Energy / Clear / Energy North	0.50	0.43	0.64
4-18-4-18-4 argon*	Energy / Clear / Energy	0.53	0.53	0.74
4-18-4-18-4 argon	Energy South/Clear/Energy South	0.62	0.62	0.73

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

\* Standard in all VELFAC 200 and 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 two types of solar control glazing, both consisting of glass with coating:

- VELFAC SUN25 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 environment.
- VELFAC SUN35 is a little darker in colour than SUN25, and therefore offers greater protection against unwanted solar gain. Although the coating remains very transparent, the colours of the external view will be slightly affected.



The amount of sunlight can also be limited by windows with 2 x energy coating.

## VELFAC 200 and VELFAC 200 ENERGY

Construction	Type of glass	U-value BS/EN673	g-value BS/EN410	LT-value BS/EN410
6-14-4 argon	Sun 25 / Clear	1.15	0.41	0.69
6-14-4 argon	Sun 35 / Clear	1.07	0.28	0.52
6-18-4-16-4 argon	Sun 25 / Clear / Energy	0.55	0.38	0.63
6-18-4-16-4 argon	Sun 35 / 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.

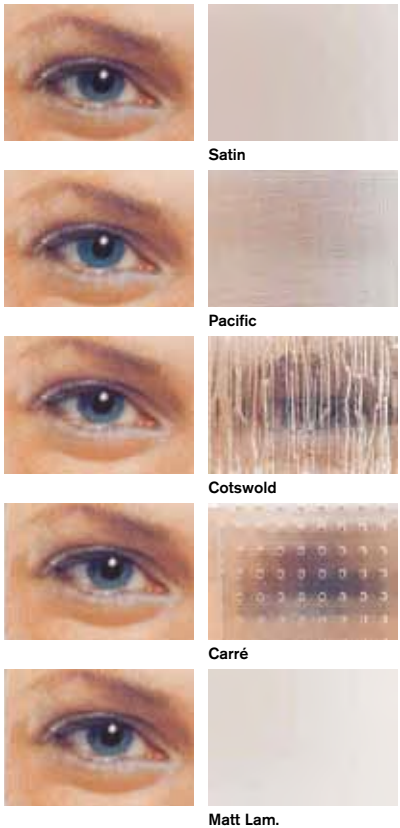


# VELFAC DÉCOR + VELFAC FAÇADE

## 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, Carré or Matt Lam - glass laminated with a matt foil to give a sand-blasted appearance. Matt laminated glass also reduces the risk of injury should the glass break.

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.



## 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, VELFAC 200 ENERGY

Construction	Type of glass
6mm enamel glazing	RAL 7011, 7016, 7035, 9005, 9016, 9018
6-12-6 shadow-box	RAL 7011, 7016, 7035, 9005, 9016, 9018



# 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 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  $D_{n,e,w}$  40dB.



### VELFAC 200 and VELFAC 200 ENERGY

Construction	Type of glass	U-value BS/EN673	g-value BS/EN410	LT-value BS/EN410	R <sub>w</sub>	R <sub>w</sub> + C	R <sub>w</sub> + C <sub>tr</sub>
4-16-4 argon*	Clear / Energy	1.13	0.65	0.82	32	-1	-5
6-14-4 argon	Clear / Energy	1.15	0.63	0.81	35	-1	-4
4/0.76/4-12-4 argon	Sound Safety / Energy	1.27	0.56	0.79	38	-2	-5
4-18-4-18-4 argon*	Energy / Clear / Energy	0.53	0.53	0.74	33	-2	-6
4-18-4-16-6 argon	Energy / Clear / Energy	0.55	0.53	0.74	36	-1	-5
4-16-4-16-4/0.76/4 argon	Energy / Clear / Sound Safety Energy	0.58	0.51	0.71	37	-0	-5
6-12-4-18-4/0.76/4 argon	Energy Safety / Clear / Sound Safety Energy	0.61	0.50	0.70	41	-2	-7
4/0.76/4-12-4-15-4/0.76/4	Sound Safety Energy/Clear/Sound Safety Energy	0.65	0.45	0.68	43	-1	-4

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

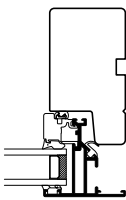
\*Standard in all VELFAC 200 og VELFAC 200 ENERGY windows.

The table shows noise reduction (R<sub>w</sub>) values for a VELFAC 200 system window measuring (W x H) = 1230mm x 1480mm.

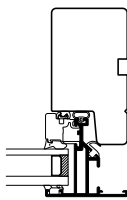


# VELFAC SOUND + VELFAC FIRE

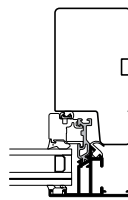
## VELFAC SOUND - NOISE REDUCTION



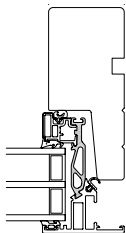
Glazing: 4-16-4  
Rw = 32 dB  
Rw + C = 31 dB  
Rw + Ctr = 27 dB



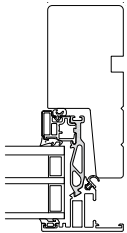
Glazing: 6-14-4  
Rw = 35 dB  
Rw + C = 34 dB  
Rw + Ctr = 31 dB



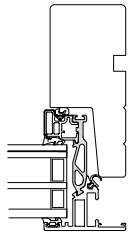
Glazing: 4/0.76/4-12-4  
Rw = 38 dB  
Rw + C = 36 dB  
Rw + Ctr = 33 dB



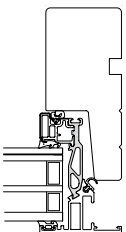
Glazing:  
4-18-4-18-4  
Rw = 33 dB  
Rw + C = 31 dB  
Rw + Ctr = 27 dB



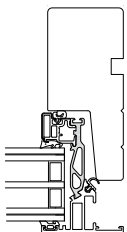
Glazing:  
4-18-4-16-6  
Rw = 36 dB  
Rw + C = 35 dB  
Rw + Ctr = 31 dB



Glazing:  
4-16-4-16-4-0.76/4  
Rw = 37 dB  
Rw + C = 37 dB  
Rw + Ctr = 32 dB



Glazing:  
6-12-4-18-4-0.76/4  
Rw = 41 dB  
Rw + C = 39 dB  
Rw + Ctr = 34 dB



Glazing:  
4/0.76/4-12-4-15-4-0.76/4  
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 window looks exactly the same as a VELFAC 200 System window.

VELFAC FIRE glass meets national and European standards. VELFAC FIRE glass has been integrity tested according to BS EN standards 1363-1/2, 1364-1 and 1634-1.

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



### VELFAC 200

Construction	Type of glass	U <sub>g</sub> BS/EN673
6-14-4	VELFAC Fire / Energy	1.49

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

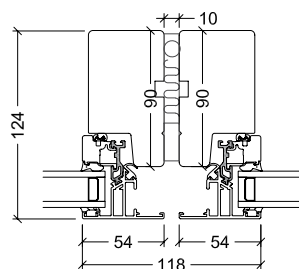


# VELFAC COUPLING DETAILS

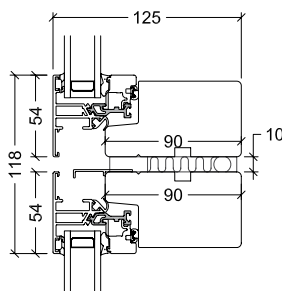
## VELFAC 200 WITH OTHER SYSTEMS

For further information, please refer to our Installation Guide.

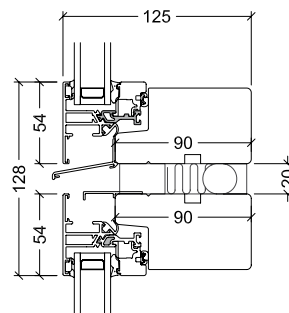
Please note that all horizontal couplings between VELFAC 200 and VELFAC In or VELFAC Ribo must be fitted with a coupling profile.



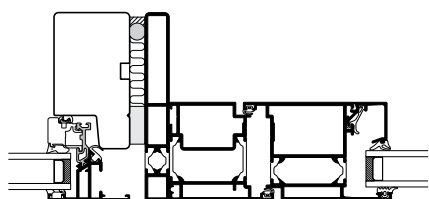
VELFAC 200 - VELFAC 200  
Horizontal coupling



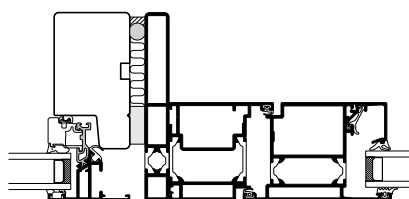
VELFAC 200 - VELFAC 200  
Vertical coupling



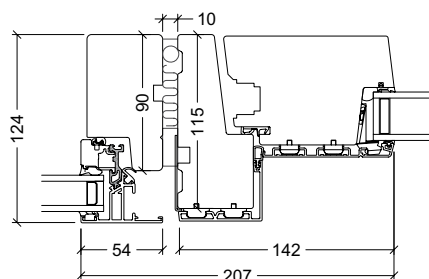
VELFAC 200 - VELFAC 200  
Vertical coupling with drip  
flashing. Drip flashing is required  
for every 3 m min.



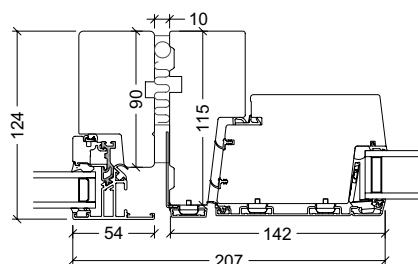
VELFAC 200 - VELFAC 500  
Inward opening door



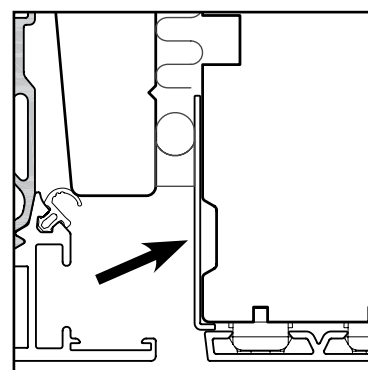
VELFAC 200 - VELFAC 500  
Outward opening door



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



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



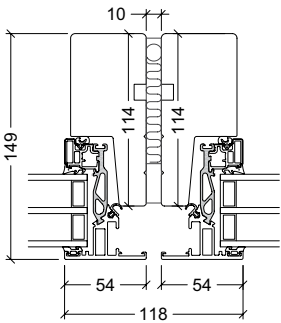
**Coupling profile.** All horizontal couplings  
between VELFAC 200 and VELFAC  
Ribo or VELFAC In must be fitted with a  
coupling profile.



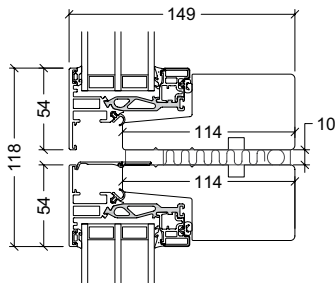
# VELFAC 200 ENERGY COUPLING DETAILS

## VELFAC 200 ENERGY WITH OTHER SYSTEMS

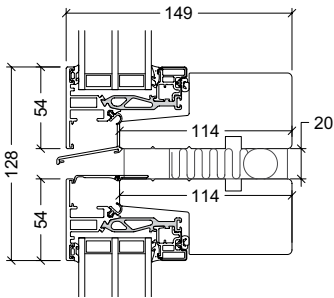
For further information, please refer to our Installation Guide.  
Please note that all horizontal couplings between VELFAC 200 and VELFAC In or VELFAC Ribo must be fitted with a coupling profile.



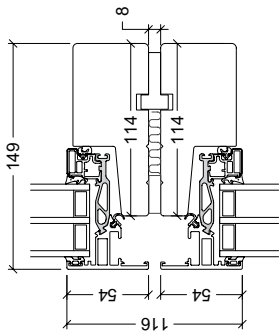
VELFAC 200 ENERGY - VELFAC 200 ENERGY  
Horizontal coupling with compriband



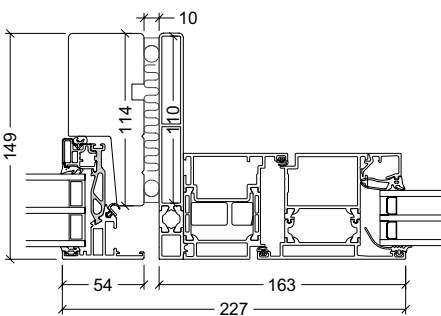
VELFAC 200 ENERGY - VELFAC 200 ENERGY  
Vertical coupling



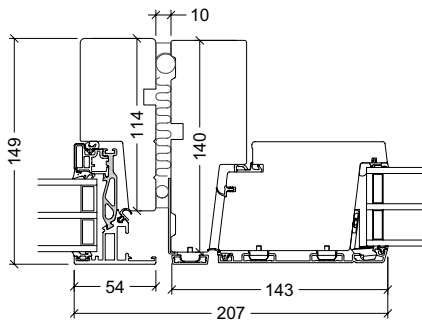
VELFAC 200 ENERGY - VELFAC 200 ENERGY  
Vertical coupling with drip flashing. Drip flashing is required for every 3 m min.



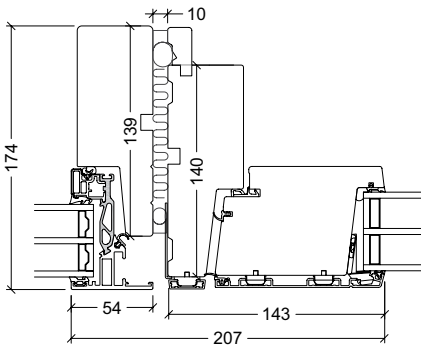
VELFAC 200 ENERGY - VELFAC 200 ENERGY  
Vertical coupling with coupling profile



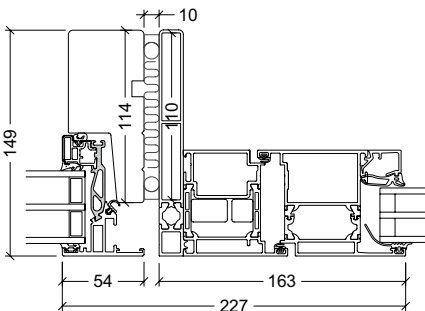
VELFAC 200 ENERGY - VELFAC 500  
Outward opening door



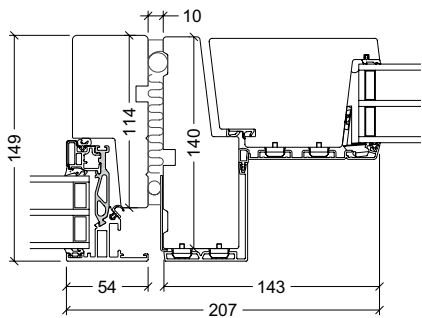
VELFAC 200 ENERGY - VELFAC Ribo  
Outward opening door  
Must be fitted with a coupling profile.



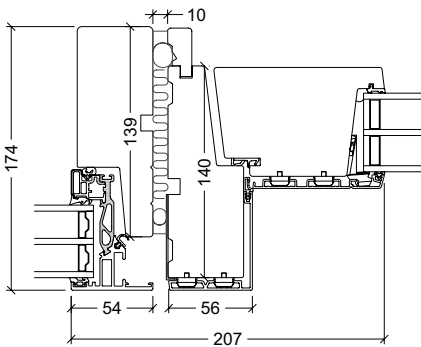
VELFAC 200 ENERGY - VELFAC Ribo  
Outward opening door  
Must be fitted with a coupling profile.



VELFAC 200 ENERGY - VELFAC 500  
Inward opening door



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

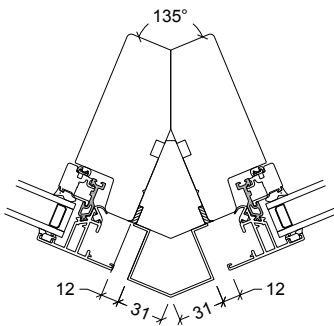


VELFAC 200 ENERGY - VELFAC Ribo  
Inward opening door  
Must be fitted with a coupling profile.

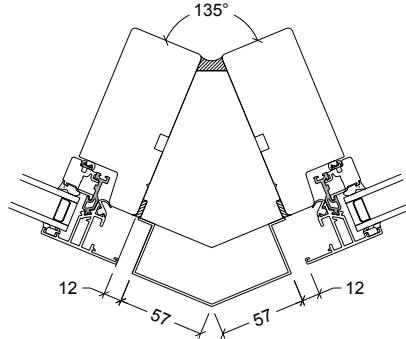


# VELFAC CORNER SOLUTIONS

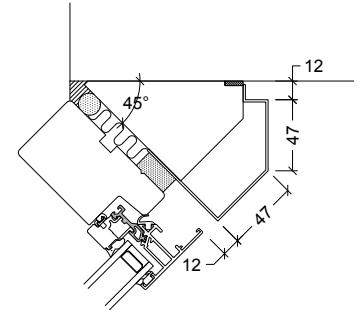
## VELFAC 200 - EXTERNAL CORNER SOLUTIONS



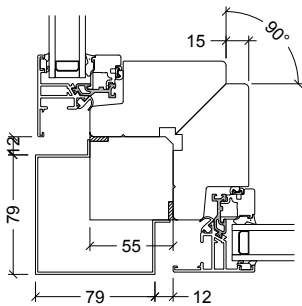
45° corner post, type A2202  
45° aluminium pressing, type A1202



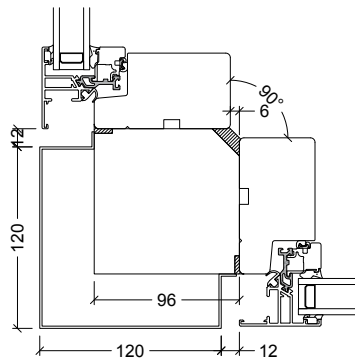
45° corner post, type A2201  
45° aluminium pressing, type A1201



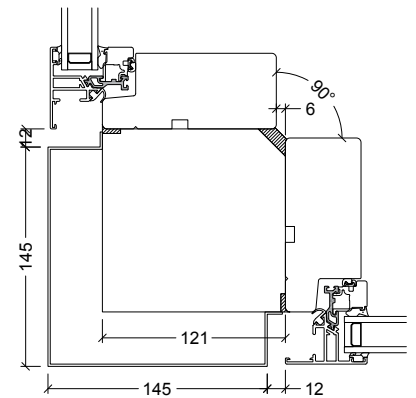
45° corner post, type A2214  
45° aluminium pressing, type A1205



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

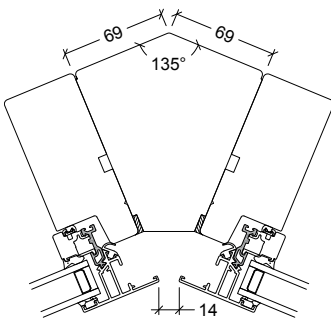


90° corner post, type A2000  
90° aluminium pressing, type A1000

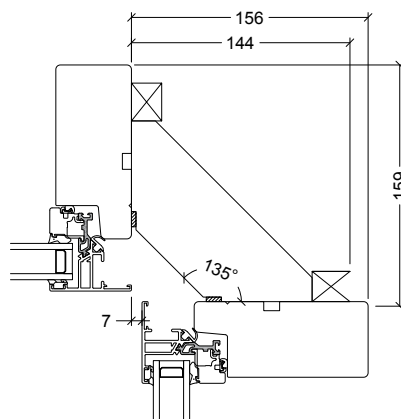


90° corner post, type A2016  
90° aluminium pressing, type A1004

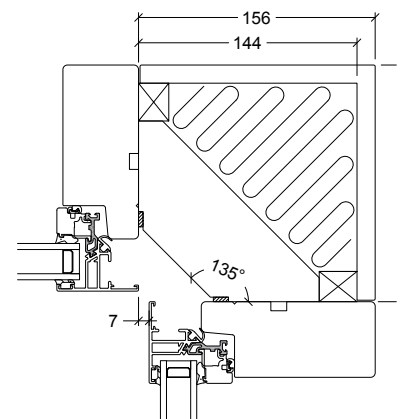
## VELFAC 200 - INTERNAL CORNER SOLUTIONS



45° corner post, type A2211



90° corner post without backboard,  
type A2008

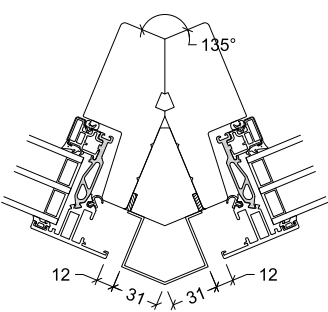


90° corner post with backboard,  
type A2014

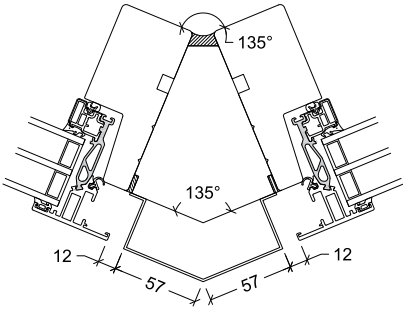


# VELFAC 200 ENERGY CORNER SOLUTIONS

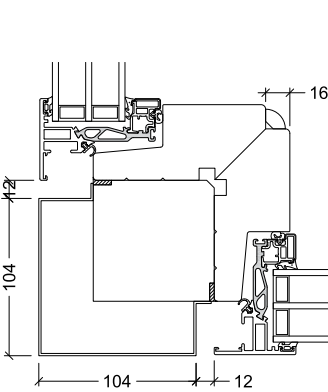
## VELFAC 200 ENERGY - EXTERNAL CORNER SOLUTIONS



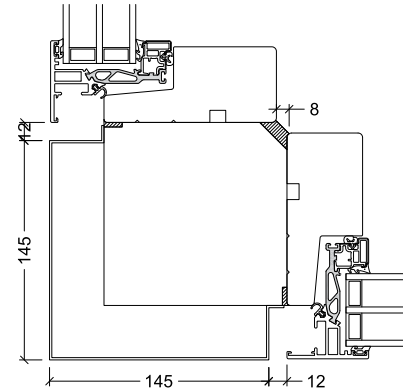
45° corner post, type A2202  
45° aluminium pressing, type A1202



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

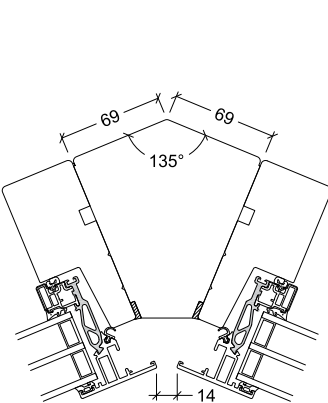


90° corner post, type A2002  
90° aluminium pressing, type A1002

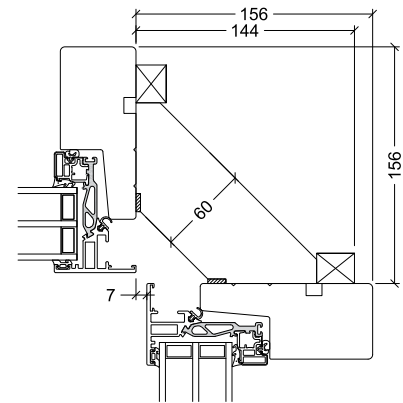


90° corner post, type A2016  
90° aluminium pressing, type A1004

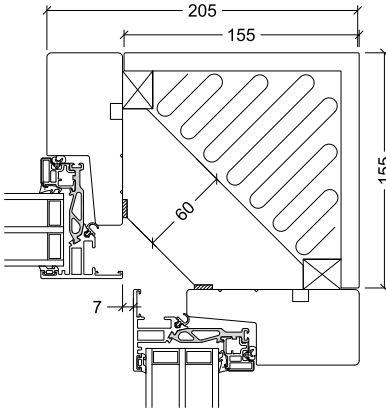
## VELFAC 200 ENERGY - INTERNAL CORNER SOLUTIONS



45° corner post, type A2211



90° corner post without backboard, type A2008



90° corner post with backboard, type A2014



# REFERENCE PROJETS

**Project name:** Greenfield Place, London

**Architect:** Latis Homes

**Project type:** Residential eco-homes

**Developer:** Latis Homes





# REFERENCE PROJETS

**Project name:** Greentrees Junior School, Salisbury

**Architect:** Kendall Kingscott

**Project type:** Education

**Main Contractor:** Balfour Beatty Construction





**Project name:** Spens Avenue, Cambridge  
**Architect:** DPA Architects Ltd.

**Project type:** Residential  
**Developer:** Dean + Dean Construction





# REFERENCE PROJETS

**Project name:** Lime Grove, Ashford  
**Architect:** Lee Evans Architecture

**Project type:** Residential  
**Developer:** Kingston Homes





**Project name:** Cardinal Pole School, London  
**Architect:** Jestico + Whiles

**Project type:** Education  
**Main Contractor:** Balfour Beatty Construction





# REFERENCE PROJETS

**Project name:** Crome Court, UEA, Norwich  
**Architect:** LSI Architects

**Project type:** Student accommodation  
**Main Contractor:** Kier





**Project name:** Holyrood South, Edinburgh  
**Architect:** Richard Murphy Architects

**Project type:** Student accommodation  
**Main Contractor:** Balfour Beatty Construction





# REFERENCE PROJETS

**Project name:** Ashmount Primary School  
**Architect:** Penoyre & Prasad

**Project type:** Education  
**Main Contractor:** Willmott Dixon





**Project name:** Poplar Primary School, London  
**Architect:** Pelling Ltd

**Project type:** Education  
**Main Contractor:** Mansell





# REFERENCE PROJETS

**Project name:** Eden st. Backway, Cambridge  
**Architect:** DPA Architects Ltd.

**Project type:** Residential  
**Main Contractor:** Dean + Dean Construction





**Project name:** Nottingham One  
**Architect:** Levitate

**Project type:** Residential  
**Main Contractor:** Southreef Properties





# REFERENCE PROJETS

**Project name:** Acre Lane, Brixton  
**Architect:** BPTW Architects

**Project type:** Residential  
**Main Contractor:** ISG Jackson





**Project name:** St Michael's Pre-Prep School, Otford  
**Architect:** Lee Evans Partnership

**Project type:** Education  
**Main Contractor:** W.W. Martin





# REFERENCE PROJETS

**Project name:** Brandon Street, London  
**Architect:** Metaphorm Architecture & Design

**Project type:** Residential  
**Main Contractor:** Durkan





**Project name:** Greyhound Development, Sydenham  
**Architect:** Alan Camp Architects

**Project type:** Residential  
**Main Contractor:** Purelake New Homes





# REFERENCE PROJETS

**Project name:** Heriot Watt University, Edinburgh  
**Architect:** RMJM Scotland

**Project type:** Student Accommodation  
**Main Contractor:** Morgan Sindall





**Project name:** Ruchill Primary School, Glasgow  
**Architect:** Anderson Bell & Christie Architects

**Project type:** Education  
**Main Contractor:** City Building (Glasgow) LLP







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