



### Frame

Thermally broken aluminium  
 Vertical Meeting Profile 21mm  
 Base Frame 38mm (below FFL)  
 Head Frame 50mm (hidden in building finishes)  
 Side Frame 38mm (hidden in building finishes)  
 Frame Depth approx. 60mm per track  
 Finish PPC any RAL colour

### Glass

6/8mm toughened outer / 16mm argon filled cavity  
 / 6/8mm toughened inner with low e coating  
 Available on request Low Iron Glass, Low  
 Maintenance Coatings, Solar Control Coatings, IQ  
 Heated Glass, Privacy Glass, Electro Chromic Glass,  
 Anti Reflective Glass  
 NOTE no laminated glass possible. Upgrade to  
 minimal windows 4+ if a laminated pane required.  
 Glass thickness up to 32mm

### Maximum Size

8.5m<sup>2</sup> per sliding pane  
 Maximum Height 4m  
 Maximum Weight 500kg for manual opening, panes  
 over 500kg with automation

### Locking

There are four locking options for the minimal  
 windows® sliding system:

1. manual internal locking via thrust lever handle
2. manual internal locking via removable key
3. electromagnetic locking
4. external key locking (not suitable for every  
 configuration)

### Ironmongery

Sliding Rails stainless steel  
 Sliding Wheels stainless steel, in paired carriages  
 within each sliding pane, minimum of 2 carriages,  
 additional carriage for every 100kg of weight

### Performance

Air Permeability Class 4 to EN12207  
 Water Resistance 7A to EN12208  
 Resistance to Wind Load C4/B5 to EN12210  
 Thermal Performance Uf value 3.2 W/m<sup>2</sup>K, achieves  
 approx. Uw value of 1.5 W/m<sup>2</sup>K depending on  
 configuration and glass spec.

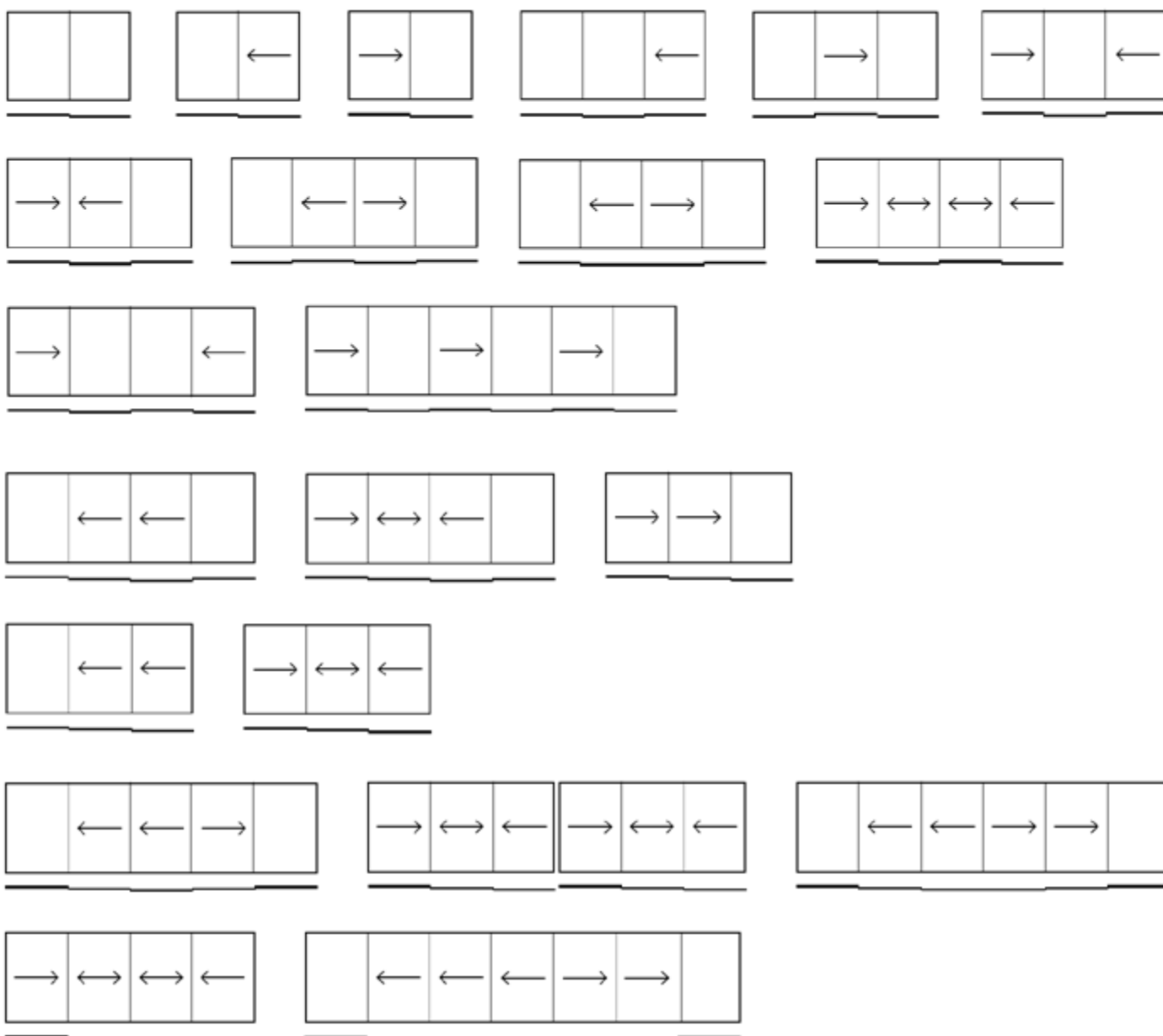
### Optional

Ventilation via slot aeration system  
 Integrated Drainage with IQ flush threshold drain

### Sliding Configurations Examples

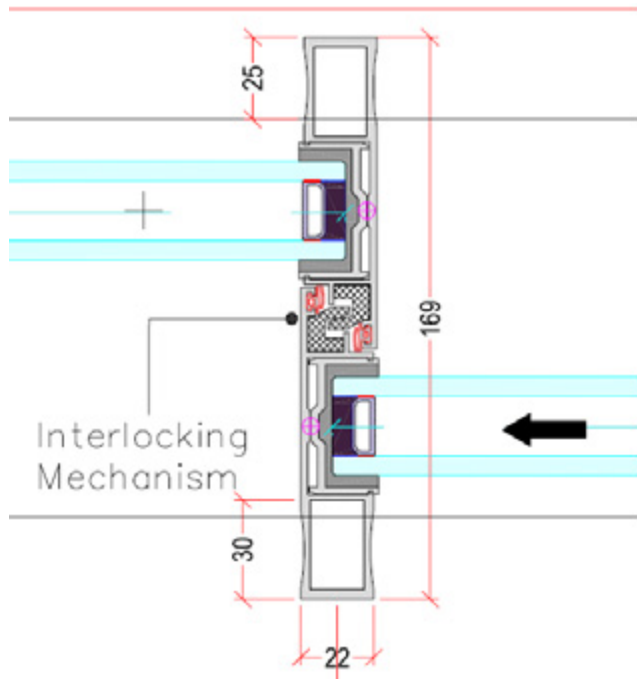
- linear sliding panes up to 4 tracks, left/right sliding
- Bi parting possible with either 21mm or 95mm meeting stile
- Opening Corners 65 to 177° opening
- Pocket Doors 1 to 4 tracks
- Juliet Balconies with integrated frameless balustrade

More sliding configurations are possible, these are just examples of some of the options:

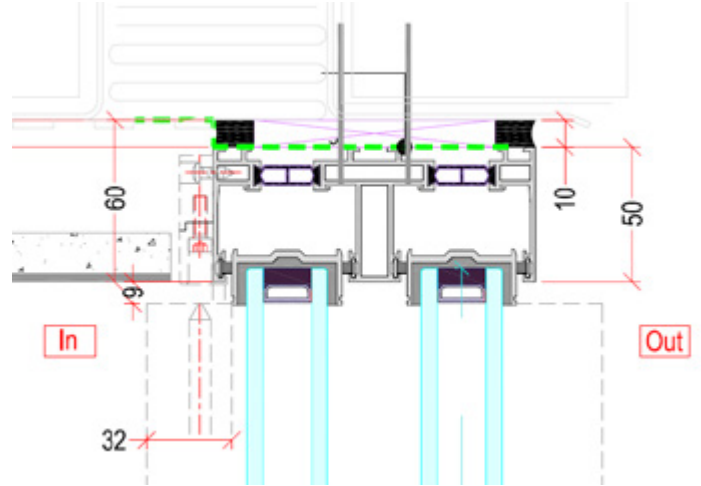


## Typical Details

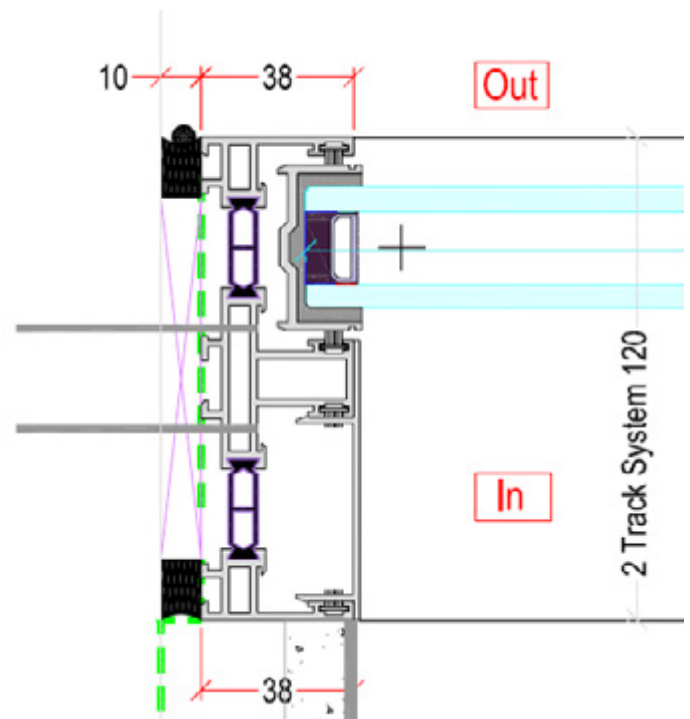
Horizontal Section of Coupling



Vertical Section of Head Frame, two track



Horizontal Section of Side Frame, two track



## Track Depths

One Track	60mm
Two Tracks	120mm
Three Tracks	185mm
Four Tracks	250mm

We recommend a maximum of 4 tracks. If more tracks are required please speak to a member of the IQ team.

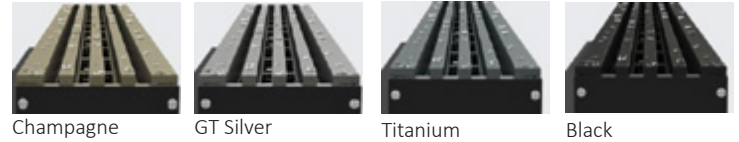
**Base Details**

IQ have designed a bespoke two part Neoprene base and drainage solution, highly suitable for the high wet weather environment of the UK. The top layer of Neoprene is not penetrated therefore ensuring the weather seal of the base installation.

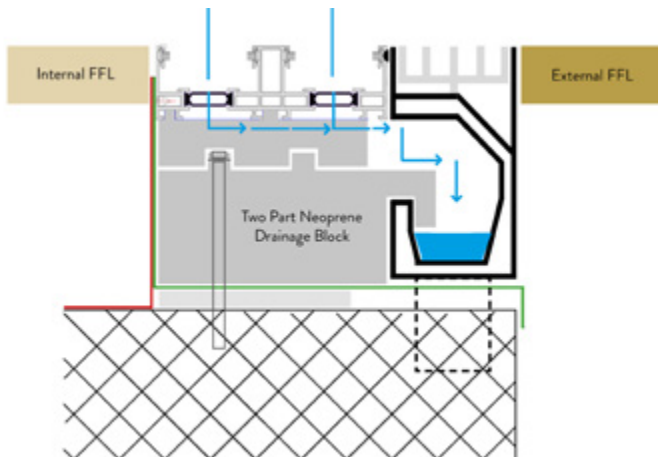
**EPDM's** IQ provide and install a double skin EPDM with the base detail. Internal EPDM's are installed by others.

**Base Depth** 125mm with IQ Flush Threshold Drain, 80mm with Drainage by Others.

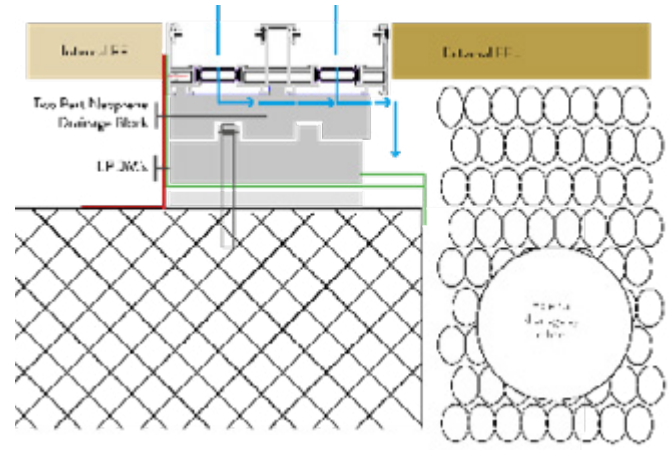
**Drain Top Colour Options** Our integrated drainage channel can take up to 120 litres of water per minute for high levels of water egress.



Flush Base detail with the IQ Flush Threshold Drain

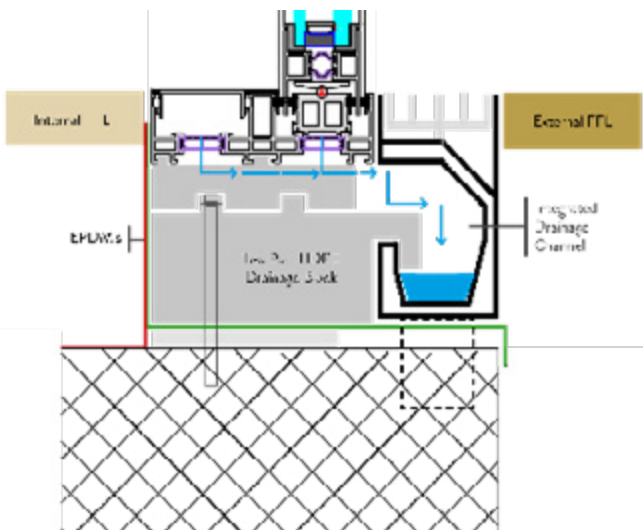


Flush Base detail with external drainage by others (French Drain example)

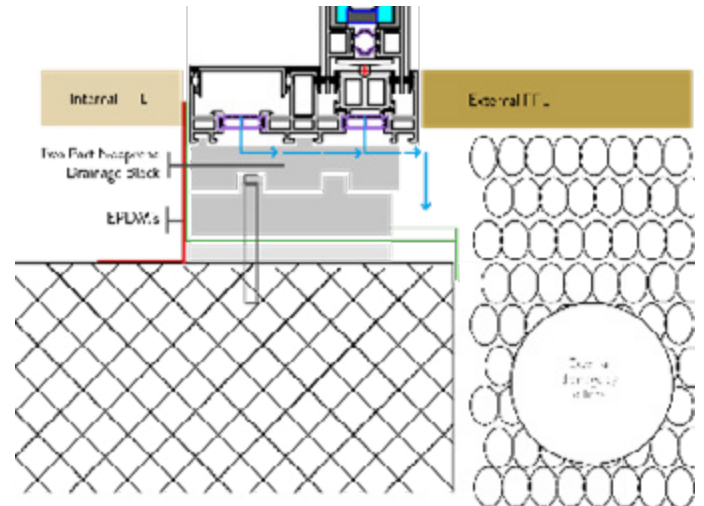


**NEW** Freeway Base Completely flat finish across base. Visible 37mm frame above FFL.

Freeway Base detail with the IQ Flush Threshold Drain



Freeway Base detail with external drainage by others (French Drain example)

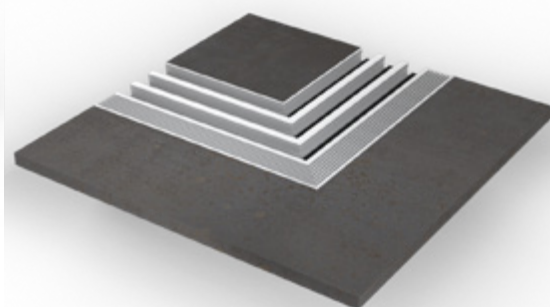
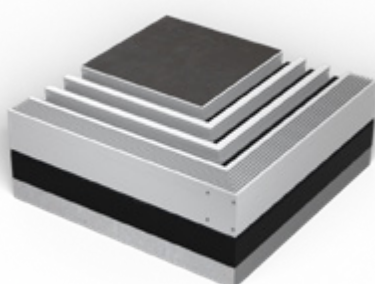
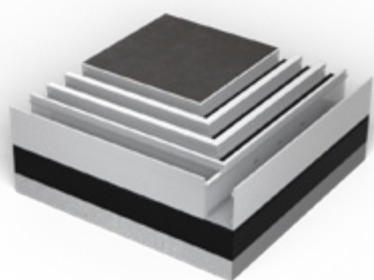
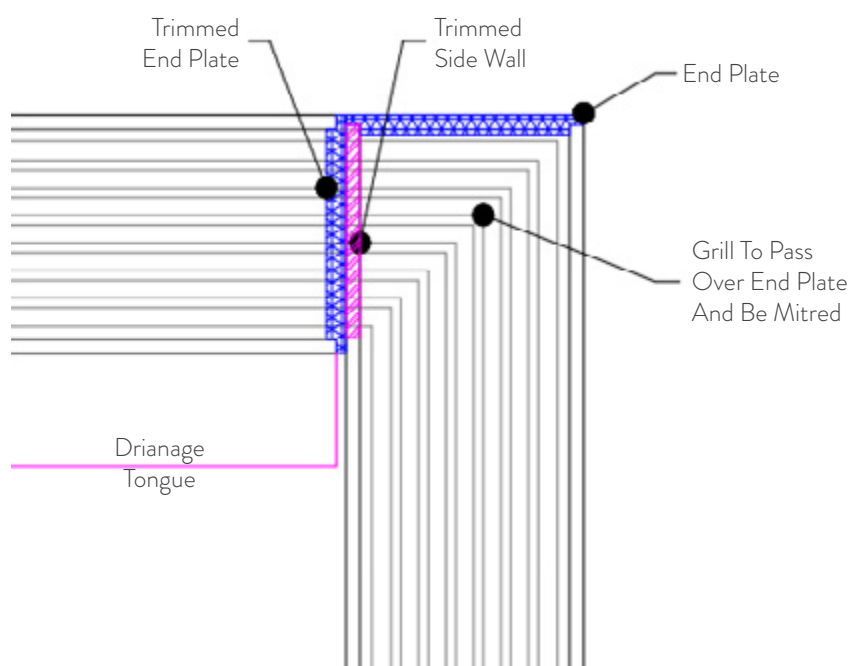


## Extended Drainage

This new and innovative draining system from IQ allows different height drainage profiles to be connected and allows water to flow seamlessly to a drainage point.

If the water needs to drain out to a point located far from the minimal window system, this new drainage system can be used alongside the walls of a building or in front of structural glass walls to guide the water to an adequate point.

The profile attached to the edge of the minimal windows drainage profile and is an ideal solution for projects where the drain needs to be extended around walls or along a patio.



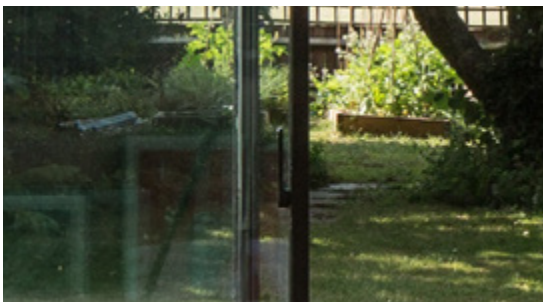
## Handles + Locking

Lock Type 1- manual thrust lever locking

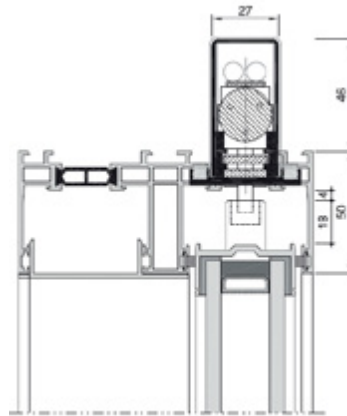
Lock Type 4- manual internal key locking



Image examples of the locking

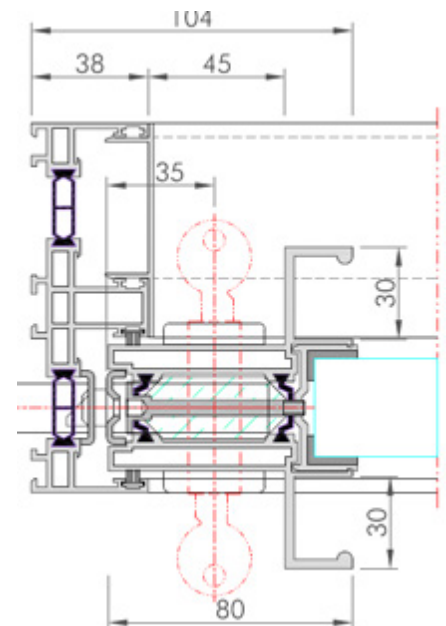


Electromagnetic Locking



- Options:
- manual with switch
  - manual with remote
  - glass break sensor
  - closure monitor
  - automated

External Key Locking



Locking Style Sightline 45mm  
Key Lock accessible from both inside and outside.  
Multipoint Cylinder Lock EN 1303 Certified  
Only suitable for linear sliding configurations i.e. not opening corner or biparting.

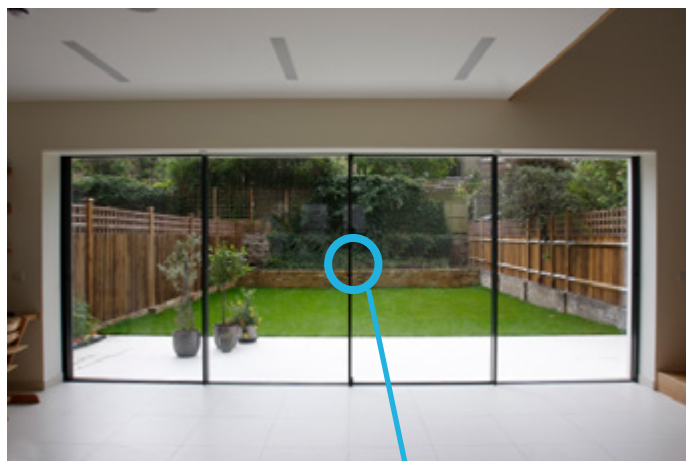
## Options for Biparting Sliders

### Locking Options

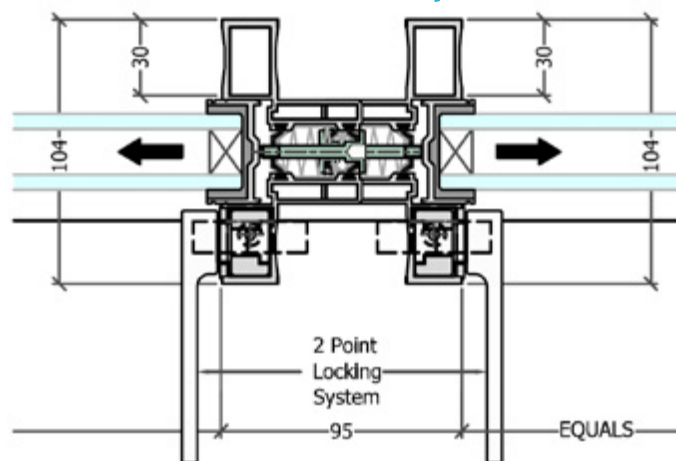
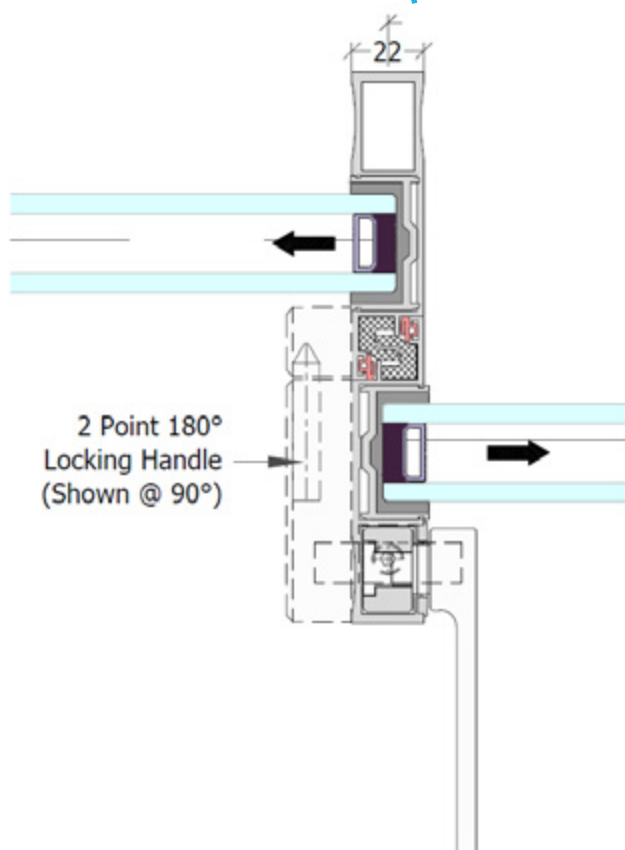
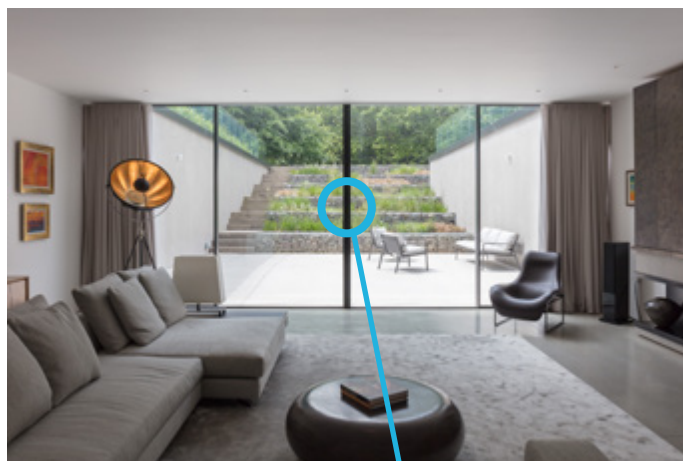
Type 1 or 4 manual lock (internally accessible only / Electromagnetic lock

### Sightline Options

Biparting with 21mm coupling



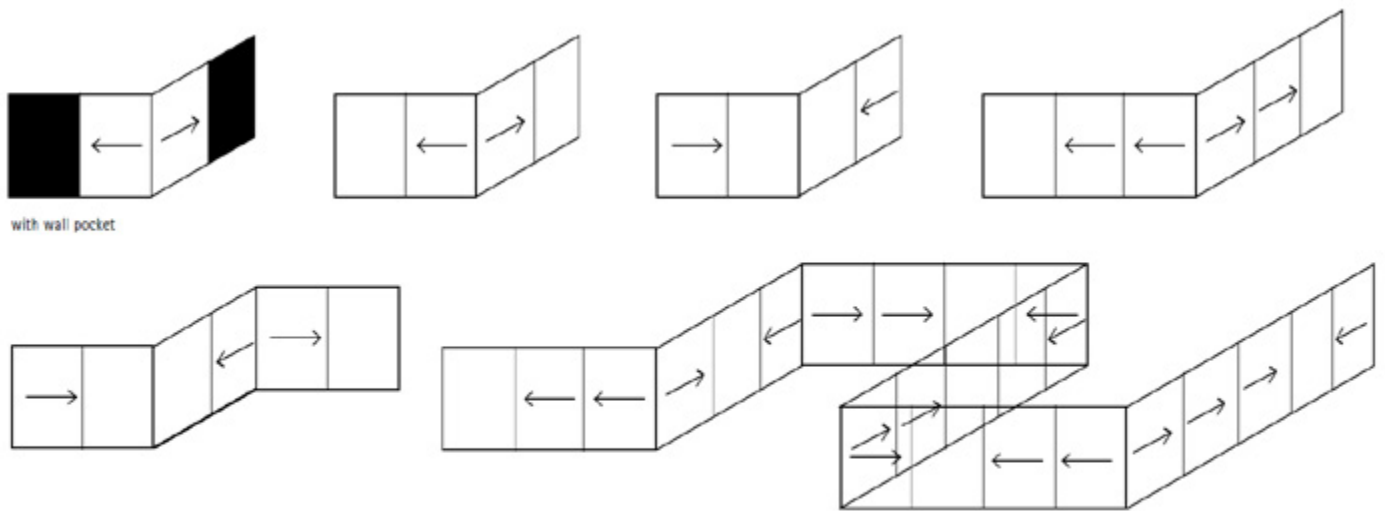
Biparting with 95mm coupling



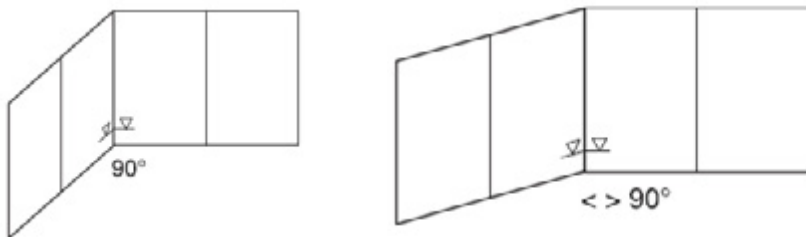
If bi-parting sliding doors are to be sliding into pockets, then the 95mm coupling will be required. This is due to the head and base locking box required for the 21mm interlock- these elements would interfere with the panes entry into the pocket.

## Opening Corners

Opening Corners 65 to 177° opening  
Example Configurations

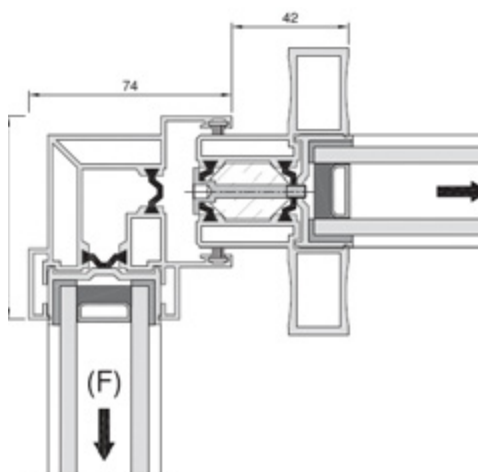


Fixed Corners (frameless or framed)

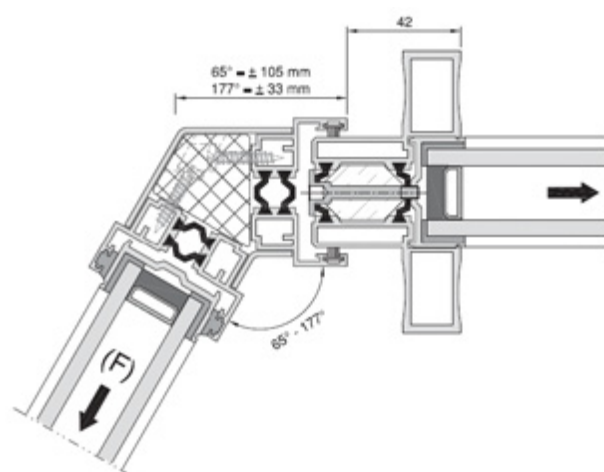


## Framing Sections

90° opening corner



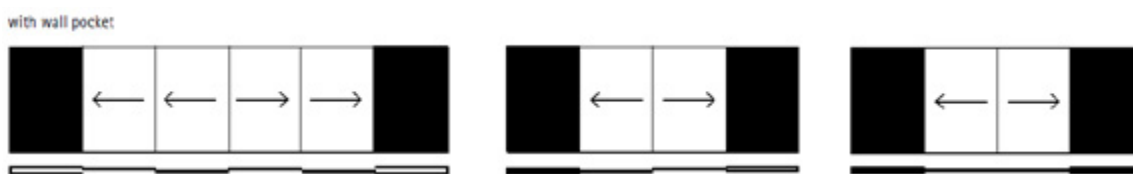
65 to 177° opening corner





## Pocket Sliding Doors

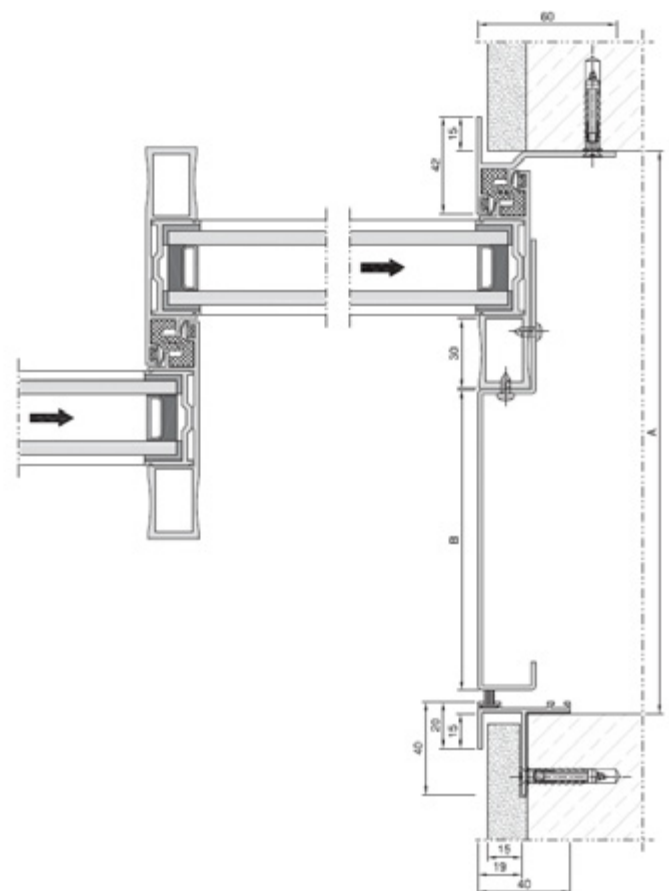
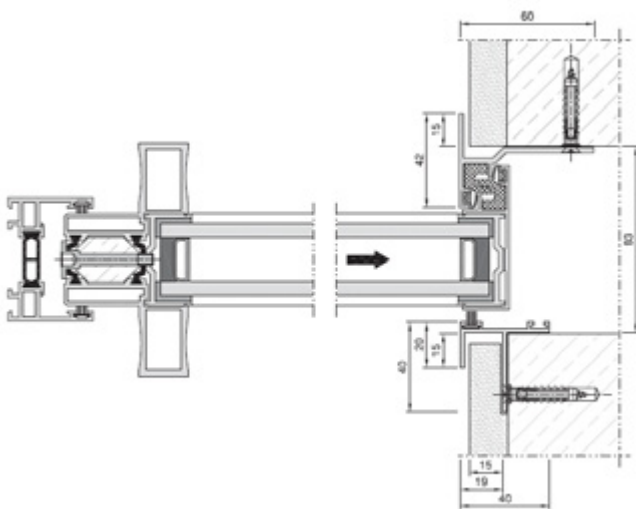
Tracks 1 to 4 tracks  
Example Configurations



## Framing Sections

single pane pocket door

multi pane pocket door



### Maximum Sizes

Sliding Panes Max Area each sliding unit has a maximum area of 8.5m<sup>2</sup>

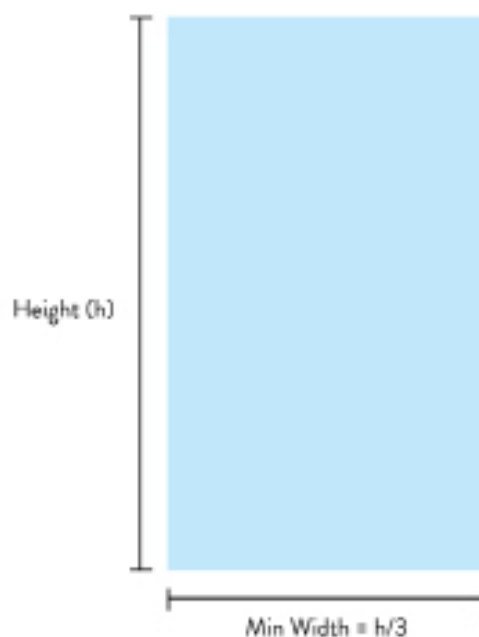
Fixed Panes Max Area each fixed unit has a maximum area of 18m<sup>2</sup>

Height the system has a maximum tested height of 4m. Taller installations may be possible on request.

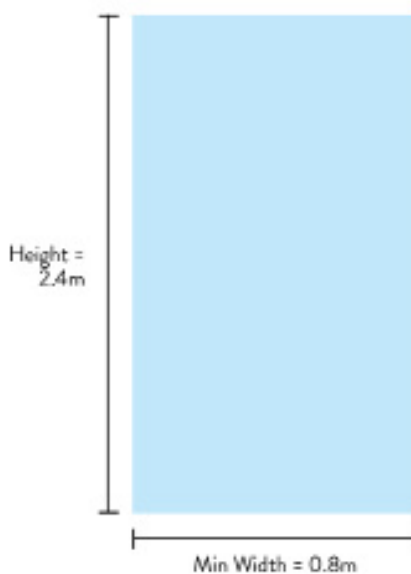
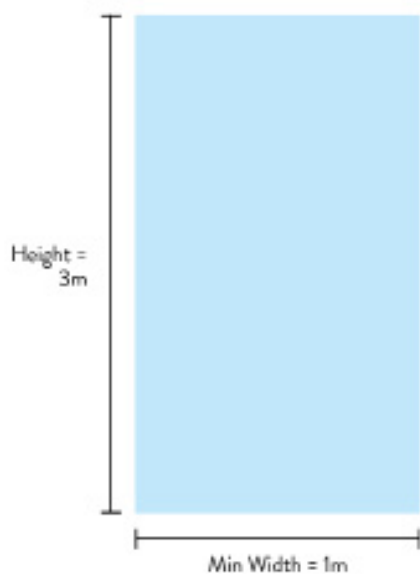
Width the maximum width per sliding pane will depend on the height, there is no restriction outside the maximum area, weight and height.

Weight each sliding pane cannot exceed 500kg. Heavier doors will require automation.

Height to Width Ratio the width of a sliding door cannot be less than a third of the height.



For example:



## Integrated Glazing Bars

To create a timeless glazing design you can specify minimal windows® with an integrated glazing bar design. These aluminium glazing bars are applied to the surface of the glass with a dummy spacer bar behind to create an authentic glazing bar design.



**Maximum Glass Size** 1300mm wide x 2440mm tall per glass unit

**Glazing Bar Size** 25mm

**Glazing Bar Design** Bespoke, made to order

**Glazing Bar Colour** to match surrounding frames, alternative colour available on request

## Special Adaptations

### Multi Corner Sliders

It is also possible to create corner opening sliders that slide past each other. This can be useful for projects with limited space, courtyards or awkward access spaces.

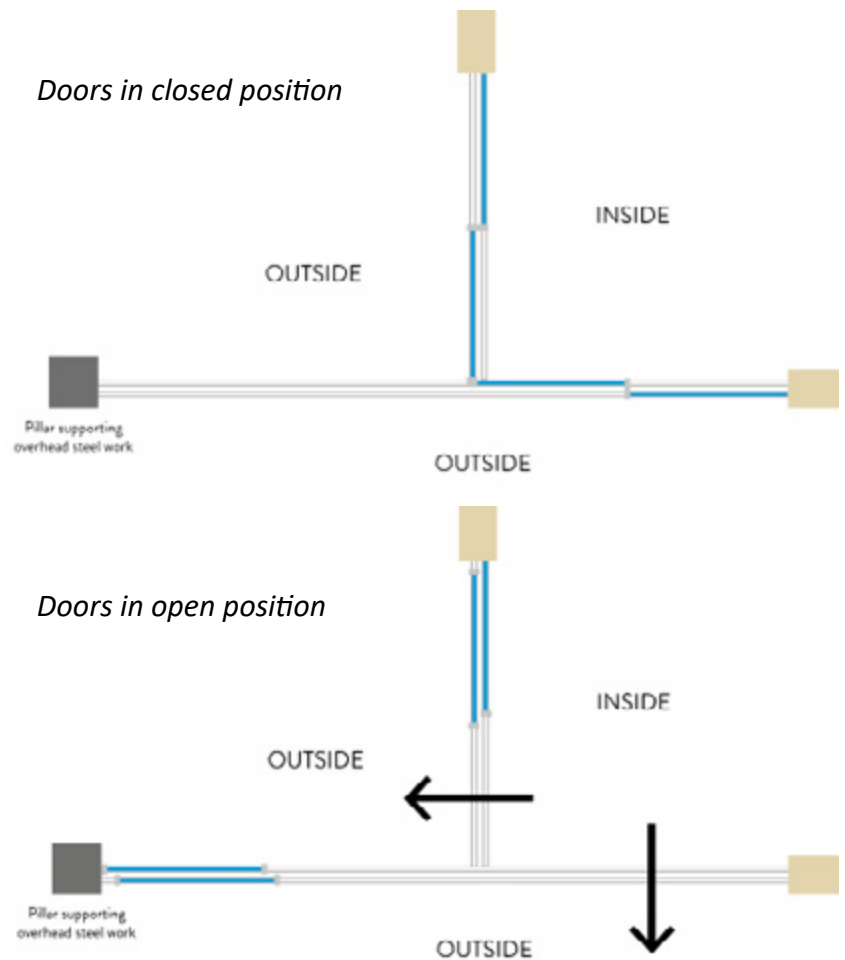
### Installed at an Angle

The minimal windows® can be installed at an angle to suit building structures. Please consult IQ Glass for more details.



### Shaped Sliders

The minimal windows® sliding panes can be created with shaped edges or corners. Please consult IQ Glass for more information.



### Other Adaptations

minimal windows® is the worlds premium sliding door system and is able to be adapted to architects requirements.

IQ Glass UK are Europe's largest installers of slim framed sliding doors and have extensive experience in adapting the system to your project specification. If you have an adaptation requirement for minimal windows that you haven't seen shown here please do contact IQ Glass who will be able to advise if it is possible.

## Automation

Automation is not required for the minimal windows® system, however it is always available as an option. We recommend automation when the sliding panes exceed 500kg each.

### MOT 800

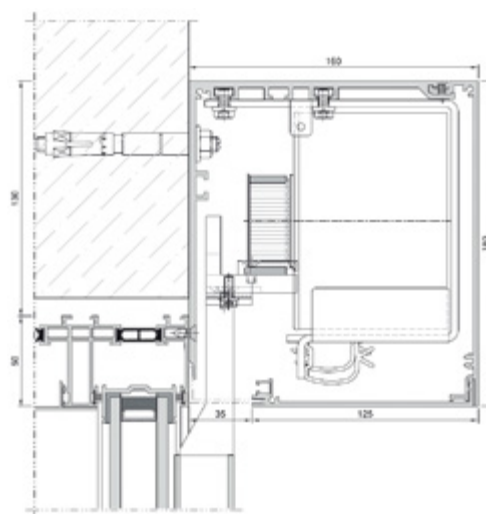
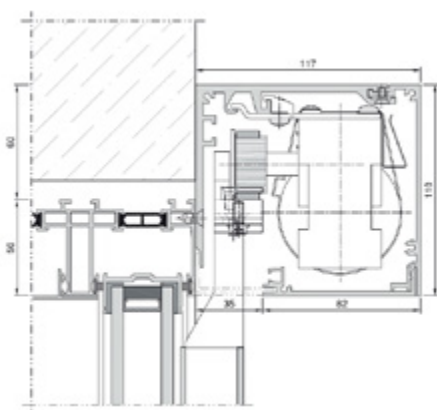
For sliding panes weighing a combined weight up to 800kg. For internal use only.

Mains Connection	1 x 230 V AC, 50-60 Hz, 10A
Power Consumption	max. 190W
Drive Protection Class	IP 22
Ambient Temperature	-15°C to +50°C
Approval	CE
Dimensions	117mm x 110mm
Number of Sliding Panes	max 3 (more may be possible on request)
Leaf Weights	up to 800kg
Overall Weight	max. 800kg
Sliding Length	up to 8000mm
Opening Speed	8 - 30 cm/s
Closing Speed	8 - 30 cm/s
Max Force on Timing Belt	175 N

### MOT 2000

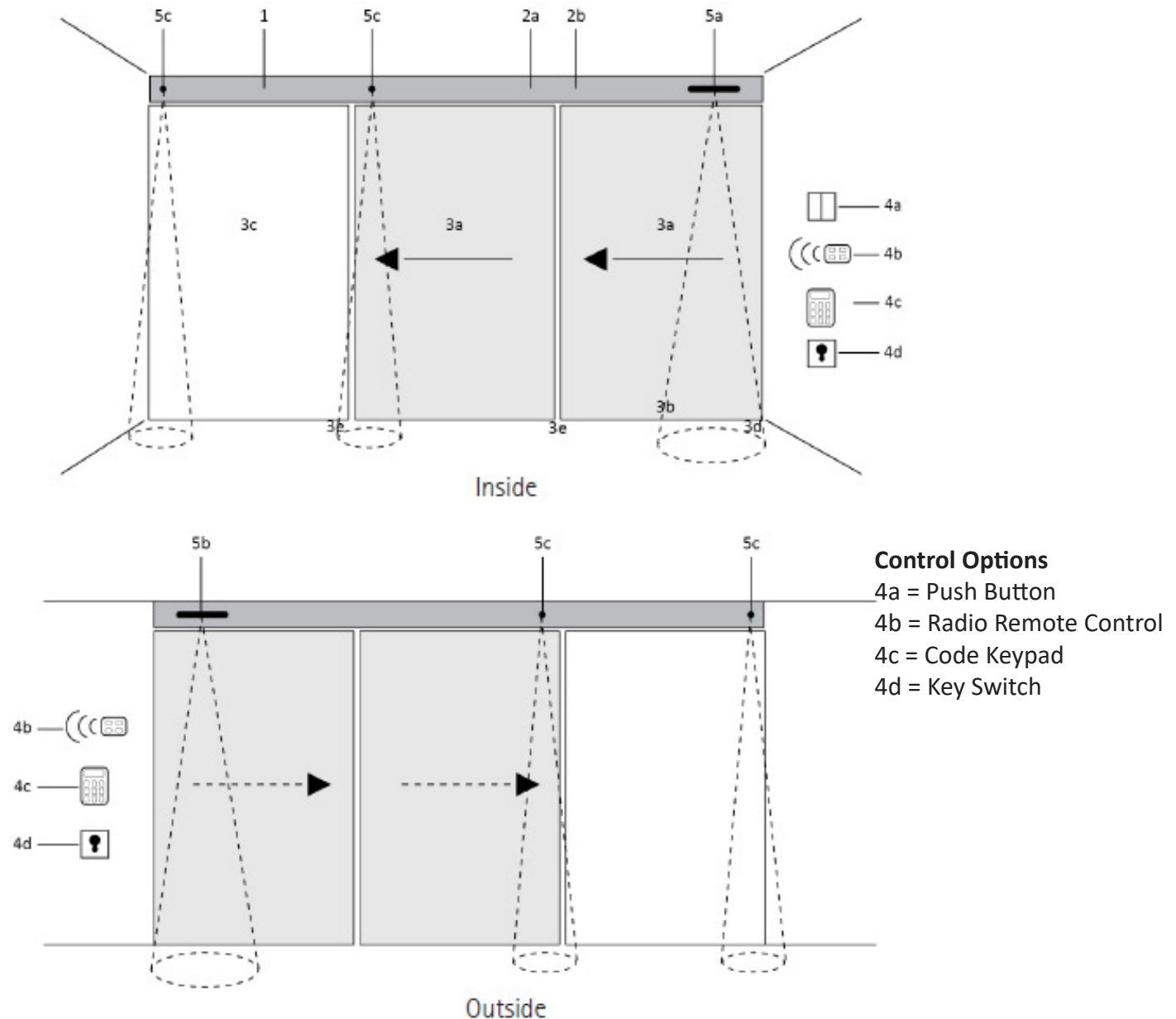
For sliding panes weighing a combined weight up to 2000kg. Available in an internal (IP22) or external (IP65) version.

Mains Connection	1 x 230 V AC or 1 x 115 V AC, 50-60 Hz, 10A
Power Consumption	max. 310 W    max. 350 W
Drive Protection Class	IP 22            IP 65
Ambient Temperature	-15°C to +50°C
Approval	CE
Dimensions	160 x 180mm    180 x 195mm
Number of Sliding Panes	max 3 (more may be possible on request)
Leaf Weights	up to 1000kg
Overall Weight	max. 2000kg
Sliding Length	up to 10,000mm
Opening Speed	8 - 30 cm/s
Closing Speed	8 - 30 cm/s
Max Force on Timing Belt	320 N



## Automation

### Sensors and Controls



- 1 = Drive** (casing, motor unit, control system and locking with mechanical emergency opening)  
**2 = Drive Accessories** (a = emergency power supply via battery unit, b = radio receiver I/O module)  
**3 = Door Leaves** (a = sliding leaves with main closing edge (3d) and secondary closing edge (3e), b = bottom guide for sliding leaves, c = fixed leaves, d = main closing edge, e = secondary closing edge)  
**5 = Safety Sensors** (a = presence sensor include, securing of the main closing edge, b = presence sensors outside, securing of the main closing edge, c = presence sensors securing the secondary closing edge).

## Control Equipment

### Control Options for Automation

- 4a = Push Button
- 4b = Radio Remote Control (smart system)
- 4c = Code Keypad
- 4d = Key Switch

### minimal windows® smart system

- Can be used to control and operate;
  - Automated Sliding Doors
  - Electromagnetic Locks
  - Glass Breakage Sensors
  - Automated Blinds

The smart system can also be designed to control other automated elements of a room such as venting windows, skylights, lighting and more.

*Example Remote Control*



## WLAN

### Bluetooth

#### Remote Control



**Handheld Transmitter**  
Decentralised Location

At the touch of a button  
Up to 6 channels



**KELLER-App (smartphone or tablet)**  
Decentralised Location

With status feedback  
Clear layout  
East-to-use interface



**Domotic-App (smartphone or tablet)**  
Centralised Location

Integrated user management  
Pre-programmed weather station available  
Calendar function  
can be extended to control other elements of the building (ie auto venting rooflights etc)

## Slot Aeration

### PURPOSE

Where ventilation is required to rooms with our minimal windows sliding glass doors, our popular slot aeration system can be used. To increase ventilation in rooms with Minimal windows our Slot Aeration system works by allowing the Minimal window to be locked into 3 separate minimal open positions. In summer this will help to let in fresh, cool air, and in winter it is particularly useful to combat condensation formed by cooking and other general activity.

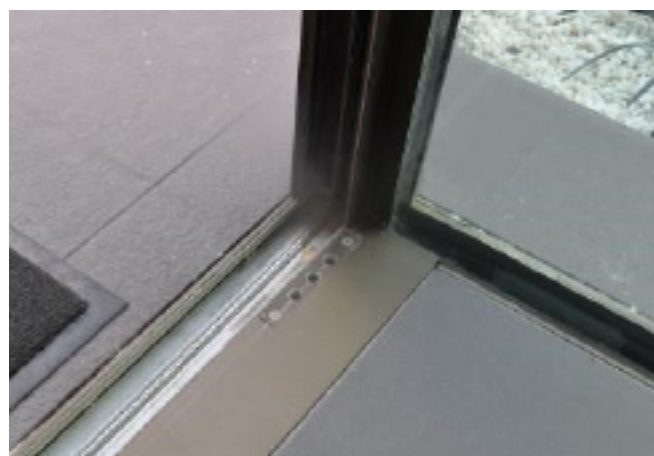
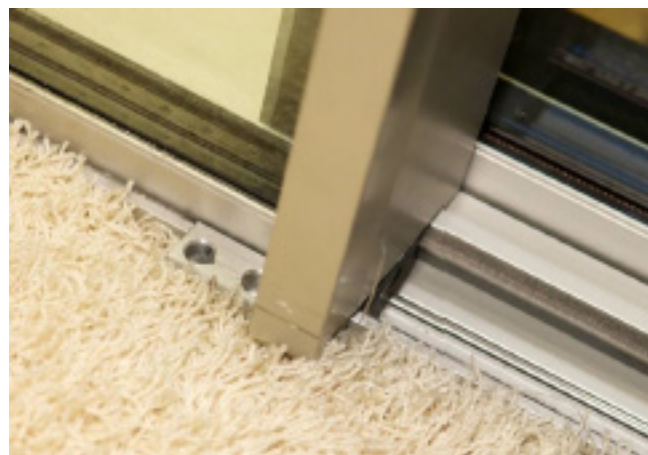
### OPERATION

When you turn the handle into the locked position on a minimal window, two vertical shoot bolts protrude from the 21mm vertical profile and enter into their respective recesses in the top and bottom of the structure. Our Slot Aeration system works by providing two additional recesses for these shoot bolts to enter within the floor and ceiling, allowing for varied locking positions with either a 20mm or 40mm ventilation gap. The Slot Aerator can act as a purge ventilator, allowing high concentrations of stagnant air to be removed from the room. It is necessary for every habitable room to have ventilation, except where sufficient extraction provisions exist.

### APPEARANCE

As the aluminium floor and ceiling fittings only span 55mm x 18mm and are installed directly into the floor and ceiling, it is a very unobtrusive addition to the minimal window system and therefore will not interfere with the overall aesthetic of your living areas. This simple yet intelligent design means that no additional handles or ironmongery are required as they would be with traditional windows (latches, etc).

### Image Examples





## Heated Glass in minimal windows®

### Configuration Options

Heated Glass is possible to install into a two track minimal windows slider using a wiring loom system within the head profile.

2 Track System = one sliding, one fixed, heated glass in both panes.

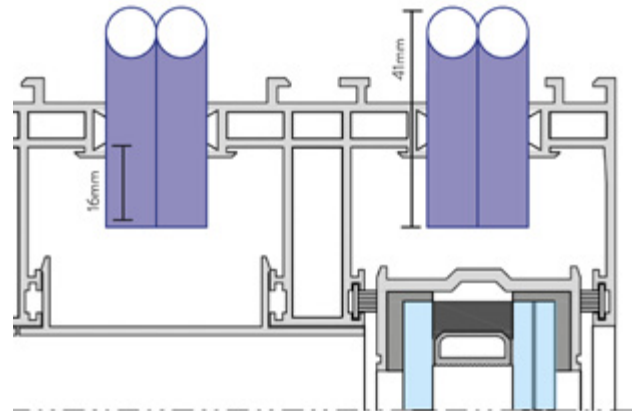
3 Track System = heated glass in only the fixed pane and adjacent sliding pane (leading pane non-heated).

### Typical Head Detail

Please note that this may differ from project to project depending on the project specific information.

For more information see the Heated Glass technical data sheet.

*Typical Head Detail for Heated Glass in minimal windows*



## minimal windows® in Swimming Pool Environment

### Laminated Glass

It is best practice to use laminated glass when any glazing is going to be installed within 2m of a swimming pool. This is to protect the pool filtration system in the event of glass breakage.

### minimal windows 4+ for Laminated Glass

If you would like to use laminated glass within the minimal windows system we must use our minimal windows® 4+ system. This system can hold a thicker glass unit which allows us to incorporate the required laminated pane within the glass specification.

[View the minimal windows® 4+](#)

### Frame Finishes

When any glazing is going to be installed within a pool environment we pre-anodise the frames and then coat the frames with a marine grade PPC in the RAL colour of your choice. This provides a high quality and robust frame finish well suited to a harsher pool environment.

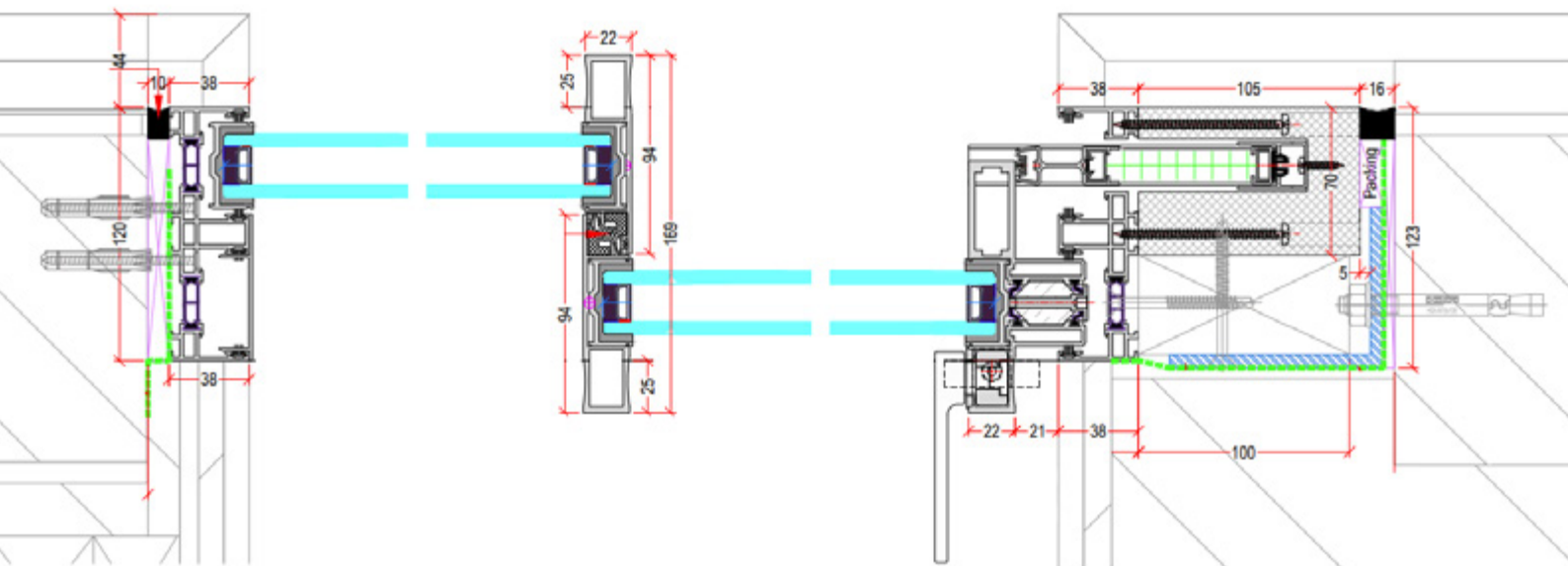


## Integrated Insect Screen

minimal windows® offers system-integrated, tailor-made insect screens to which allow ventilation whilst providing protection. The screens are bespoke and are manufactured to suit the requirements of the project.

Slimline sliding clamping frames with a low mounting depth are used. The almost-invisible screen is made of high-quality fabric which provides a practically unhindered view outdoors.

The insect screen colour can be matched to the colour of the frame. Attaching to the handle of a sliding pane, the screen glides open effortlessly to cover the open aperture.



This screen is weatherproof and is a discrete option for those wanting to maximise ventilation whilst keeping interior and exterior spaces separate.

See minimal windows® at the showroom

A large purpose built minimal windows® installation is available to view at the IQ Glass UK showroom in Amersham.

The sliding door installation is installed outside in a purpose built example dwelling so that all details can be realised fully in a built environment.

Our minimal windows® example is installed outside and is subjected to real UK weather conditions throughout its lifetime. This gives architects, specifiers and their clients a true indication of how the system operates over time.

Variations of the minimal windows® system on show are:

- 90° opening corner
- Single track pocket door
- Three Pane Slider
- Two Pane Slider
- Type 1 Lock
- Type 4 Lock
- minimal windows® as a window
- Vitra Pivot

If you would like to make an appointment to view the minimal windows® please get in touch with your sales representative at IQ.



[Click here to view videos of our showroom](#)



## How to Specify a minimal window® from IQ Glass

The minimal windows® system is exclusive to IQ Glass in the UK. The aluminium window and door system is the first choice for architects and designers all over the UK looking for slim frame design with modern performance values. If you would like to specify a minimal window® on your project just speak to the team at IQ who would be happy to assist.

### Speak to the team at IQ

The team at IQ are the experts in our product range. If you are considering using a minimal window® product on your project speak to the team at IQ who will be able to advise you on the best solution for your intended design, ensure that all specification criteria are met and advise the feasibility to areas of the installation you may not have considered.

### Get a Quotation

We advise our customers to get a quotation for their intended minimal window® installations from IQ. This allows us all to ensure that the preferred product and design is within budget. If it is not we can help you adjust the specification to reach all performance, design and budgetary requirements.

### Add us to your NBS Specification

To assist you in specification we have created individual NBS Specification sheets for the minimal window® product. These, easy to navigate, documents contain all the vital information needed for specification. They are available for you to complete on your own, alternatively ask your sales representative at IQ to complete this on your behalf.

### Place the Order

When ready you (or your client or the builder) can then place the order for your minimal window® with us. A full in-house handover will take place and your project will be passed to the contracts and design team. Once your project deposit is placed we will then undertake full design drawings for the installation and any other additional glazing works. Please allow at least 20 working days for the design process.

The project will be appointed a dedicated contracts manager who will oversee the installation process. The estimated lead time for a minimal window® is 10 to 12 weeks depending on system and material chosen. This may be longer for specialist installations. This will be confirmed on order.

### Where can I see the minimal windows® product before order?

We have several minimal window® configurations available to view at our showroom in Amersham. These aluminium windows and doors have been installed in a purpose built structure, exposed to the environment and used on a day to day basis. This will enable you to see just how well the minimal window® system withstands the wet British climate and how smoothly they operate over time.

If you or your clients would like to see the minimal windows® products in person just contact us and arrange an appointment at the showroom.

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## Downloads and Other Useful Information

### The minimal windows® product page

Here you can

- Read the product specification information
- Download relevant technical documents (such as NBS Specifications and Standard Details)
- Download the minimal windows® Premium Brochure
- Read associated technical articles
- Click through to see UK case studies that include minimal windows®
- See associated or complementary products to form a full glazing package

[Click here for the minimal windows® product page](#)

### minimal windows® Case Studies

Here you can

- See images of completed projects by IQ that include minimal windows®
- Investigate what additional glazing products were used in conjunction with minimal windows®
- See a range of architectural projects that used minimal windows®

[Click here for the minimal windows® Case Studies](#)

### The minimal windows® Premium Brochure

Here you can

- See all the technical information shown here in a more graphical format
- See more project examples of minimal windows®
- Useful to showcase the product to the end client

[Click here for the minimal windows® Premium Brochure](#)

### The IQ Sliding Doors eBook

Here you can

- Compare minimal windows® to other sliding door systems
- Investigate alternative sliding doors available from IQ
- Compare the cost of minimal windows® to other sliding doors from IQ

[Click here for the Sliding Doors eBook](#)

## Other Options

### For Larger Sliding Panes / Triple Glazing / Laminated Glass

The minimal windows® 4+

Max Sliding Size 12m<sup>2</sup>, 4.5m tall (taller available on request)

Glass Spec Triple Glazing, glass thickness 50-56mm

Sightline 26mm

[View the minimal windows® 4+](#)



### For Vertical Sliders

The minimal Vertical Sash Window

Max Pane Size 12m<sup>2</sup> / 8.5m<sup>2</sup>

Glass Spec triple / double glazing

Sightline 26/21mm

Operation counterweighted / electric motors

[View the minimal Vertical Sash](#)



### For Pivot Doors

The minimal windows Pivot Door

Max Pane Size 3m tall, 1.8m wide

Glass Spec double glazing

[View the minimal Pivot Door](#)

