

Series 546  
Bi-fold Window



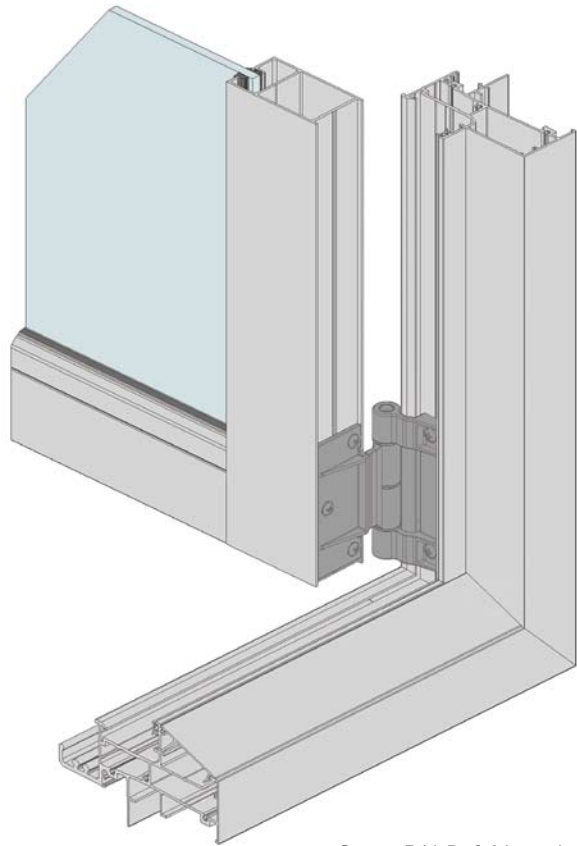
Photo courtesy of Dahlsens



# Series 546 Bi-fold Window

DATE: NOV 09  
 REPLACES: AUG 03  
 SCALE: NOT TO SCALE

## KEY FEATURES / PERFORMANCE CHARACTERISTICS



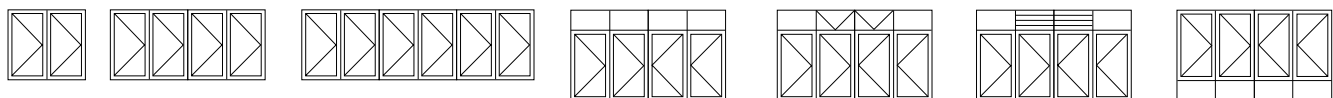
Series 546 Bi-fold window  
internal view

- The Vantage Series 546 Bi-fold window is designed to complement the Series 548 Bi-folding door system.
- The main difference between Series 546 and 548 is the narrow horizontal rails.
- Series 546 uses the same overlight transom as the bi-fold door plus there is an additional transom for lowlights.
- Bi-fold windows come in a large variety of combinations (BFW2, BFW4, BFW2+2, BFW6 and BFW4+2 or BFW2+4).
- Successfully water tested at 300Pa.
- Mitred perimeter frame for maximum weather performance.
- Custom hinges wrap around the window stile and jamb removing the need for notching and shimming. These custom components dramatically improve the appearance.
- Custom window co-extruded Santoprene seal for maximum weather performance.
- Bi-fold windows are supported on dual or quad rollers running on heavy duty dual bottom rails.

Maximum Panel Height*	1600mm
Maximum Panel Width*	900mm
Maximum Glass Thickness	≤ 20mm

\* Subject to individual site conditions and wind loads. Contact AWS Technical Support for more information, e-mail [techsupport@awsaustralia.com.au](mailto:techsupport@awsaustralia.com.au)

## TYPICAL CONFIGURATIONS



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## SOUND REDUCTION

A number of glass combinations have been tested in this bi-fold unit. Panel stiles were fitted with co-extruded Santoprene bulb seals.

Glass Description		
6.38mm Laminated glass	31dB(A)	RW32
19mm Insulating glass unit	32dB(A)	RW33

Secondary glazed sliding window will give significantly higher numbers



## WERS RATINGS

### Single Glazed

Glass Description	COOLING	HEATING	Uw	SHGCw	Tvw	Inf
5mm Clear	29%	15%	6.0	0.57	0.58	0.80
5mm Grey	40%	8%	6.0	0.42	0.32	0.80
5mm EverGreen	42%	6%	6.0	0.42	0.32	0.80
6.38mm Laminate	32%	15%	6.0	0.54	0.58	0.80
6.38mm Solace	44%	30%	4.5	0.46	0.53	0.80
6.38mm Comfort Plus	52%	23%	4.5	0.35	0.38	0.80

### Double Glazed

Glass Description	COOLING	HEATING	Uw	SHGCw	Tvw	Inf
4Clr/10Gap/4Clr	42%	35%	4.3	0.51	0.52	0.80
4Az/10Gap/4EA	60%	28%	3.8	0.28	0.40	0.80
4/10Ar/4EA	48%	41%	3.6	0.48	0.48	0.80
4Clr/10Gap/4EA	47%	39%	3.8	0.47	0.48	0.80
5Clr/8Gap/5Clr	43%	33%	4.3	0.49	0.52	0.80
5EG/8Ar/5EA	60%	29%	3.7	0.29	0.39	0.80



## 2D & 3D CAD FILES AVAILABLE

GO TO: [www.vantagealuminium.com.au](http://www.vantagealuminium.com.au) > CAD & Revit 3D Files  
CAD file: DWG or DXF VAN\_546



## MORE INFORMATION

For the latest updates regarding this product visit our website  
[www.vantagealuminium.com.au](http://www.vantagealuminium.com.au)

## HOW TO SPECIFY

### SYSTEM NAME

Vantage Series 546 Bi-fold Window

### FINISH

Powder Coat

Anodised

### COLOUR

Select from the Vantage range of approved powder coat or anodising colours

### GLASS

Specify thickness ≤ 20mm

Specify thermal performance where applicable (Uv & SHGC)

Specify acoustic performance where applicable (RW)

### HARDWARE

Refer to hardware selection guide for compatible options



## Specification Assistance

Need help specifying this product? email [techsupport@awsaustralia.com.au](mailto:techsupport@awsaustralia.com.au) and our qualified technical advisors will assist you with product selection and specification for your project.

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## SPECIFIERS CHECKLIST

If you have chosen to install an aluminium Bi-fold window you have already decided to fit an upmarket unit, but there are differences that should be considered.

FEATURE	Series 546	Opposition
<p><b>Does the bi-fold window run on bottom rollers?</b> Series 546 bottom rollers will run smoother longer. More clearance for lintel sag. Less chance of problems.</p>	YES	
<p><b>Will the Bi-fold window keep the water out - has it been tested?</b> The Vantage Series 546 Bi-fold window system has been successfully tested to keep water out. Open out window will resist up to 300Pa of water.</p>	YES	
<p><b>Are the window jambs strong enough to support the sashes?</b> The Vantage Series 546 windows are hinged off a heavy duty double tubular jamb with thickened webs where hinges are attached. If the jamb is not strong enough, nothing you can do in the future will make the window perform.</p>	YES	
<p><b>Can the frame have fixed highlights (overlights) ?</b> As the weight is carried at the sill Vantage offer a range of transom details.</p>	YES	
<p><b>Can the window panels and fixed sidelights/highlights be double glazed ?</b> The heavy duty window panels are capable of carrying 20mm insulating glass made up of 5mm glass with 10mm air gap and another sheet of 5mm glass.</p>	YES	
<p><b>High quality hardware?</b> Heavy duty custom hinges that are designed to suit the window and frame without having to fit shims etc. Centre hinge between folding window panels has built-in handle to allow easy panel closing. Quad bogey wheel carriage designed to carry the load. Folding panels locked in the closed position with heavy duty twin-bolts. We have a range of twinbolt operator options (MIRO™, ANDO™ and ICON™). MIRO™ and ANDO™ are available in a large variety of powder coat finishes, ICON™ and ANDO™ hardware also come in 316 stainless steel finish. Specially designed compression blocks at the four corner joints of the window. These take the “sloppiness” out of corner joints and make sure that the window stays rigid and square. Compare our window with others available and you will see what we mean about strength and rigidity. Co-extruded Santoprene window stop seal.</p>	YES	
<p><b>Compatible products.</b> Series 546 will couple with any of the other Vantage 102mm window or door frames using a custom coupler, for more information refer to installation section.</p>	YES	

# Series 546 Bi-fold Window

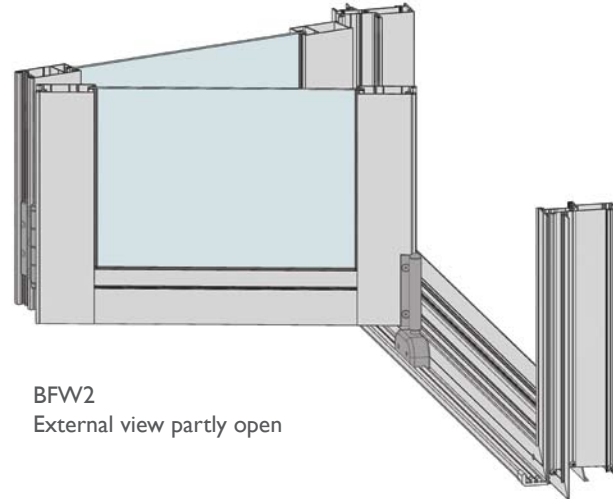
DATE: NOV 09  
REPLACES: AUG 03  
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## DESIGN FEATURES

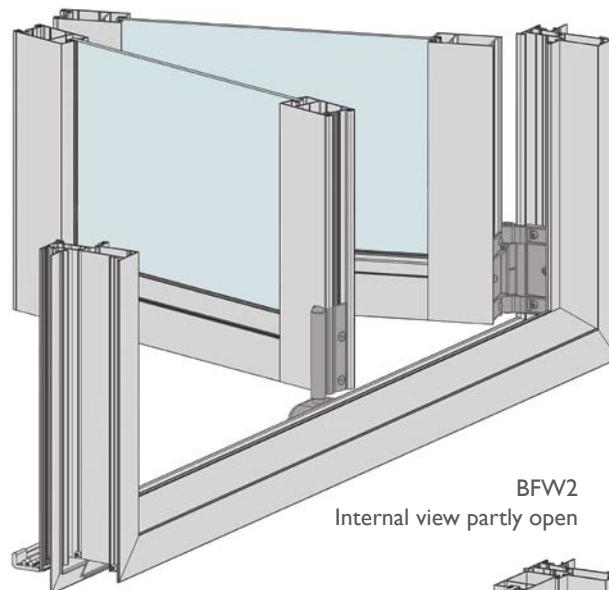
1. The Vantage Series 546 is designed to complement the Series 548 Bi-folding door system.
2. The main difference between Series 546 and 548 is the narrow horizontal rails.
3. Series 546 uses the same overlight transom as the bi-fold door plus there is an additional transom for lowlights.
4. Bi-fold windows come in a large variety of combinations (BFW2, BFW4, BFW2+2, BFW6 and BFW4+2 or BFW2+4).
5. Successfully water tested at 300Pa.
6. Mitred perimeter frame for maximum weather performance.
7. Custom injection moulded flush bolt keepers and guides remove the need for expensive and unsightly shims and aluminium angles etc.
8. Custom hinges wrap around the window stile and jamb removing the need for notching and shimming. These custom components dramatically improve the appearance.
9. Custom window co-extruded Santoprene seal for maximum weather performance.
10. Bi-fold windows are supported on dual or quad rollers running on heavy duty dual bottom rails.
11. Bi-fold panels can be secured with manual finger operated flush bolts, ANDO™, ICON™ and MIRO™ operated bolt activator or key locking bolt (features illustrated later).
12. Fixed highlights/lowlights can also be fitted over or under bi-fold panels.
13. Both window panels and fixed sidelights, lowlights or highlights can be double glazed with 20mm insulating glass units.

### Safety Note:

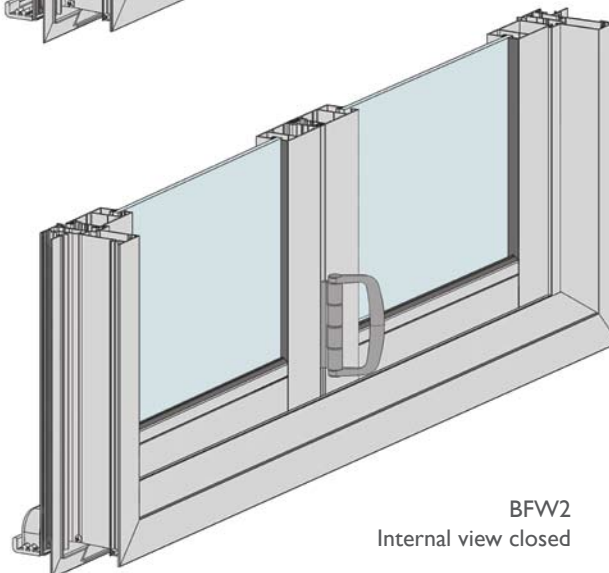
On lowlight transom windows in elevated installations treat the lowlight as a balustrade. When the sashes are open there is a large clear opening.



BFW2  
External view partly open



BFW2  
Internal view partly open



BFW2  
Internal view closed



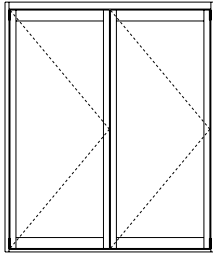
Most of the features on this product can be seen in full colour on our web site:  
[www.vantagealuminium.com.au](http://www.vantagealuminium.com.au)

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## TYPICAL CONFIGURATIONS

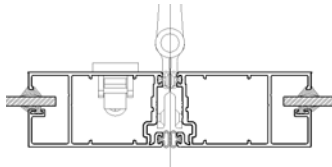
Width > 1123mm <= 1894mm



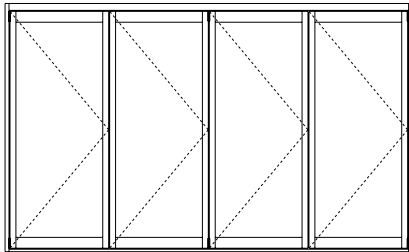
type. **BFW2**

Both window panels fold to the left or right.

**51019 with 51019**  
meeting stiles  
 $I_{xx} = 247 \times 10^3 \text{mm}^4$



Width > 2139mm <= 3677mm



type. **BFW4**

All four panels open to one side  
Internal operation only

**S** = Serviceability limit state (deflection = L/150).  
**U** = Ultimate strength limit state (factored yield strength = 104 MPa).

These tables have been calculated using nominal section properties. A typical assembly has been tested as per the requirements of AS2047,

Ultimate strength rating has been limited to 4500 Pa.

2200 Serviceability ratings were restricted by the maximum water resistance (300Pa) achieved on this product.

Frame Height mm	Panel Width mm	Meeting Stiles	
		S	U
1500	500	2200	4500
1500	600	2200	4500
1500	700	2200	4500
1500	800	2200	4500
1500	900	2200	4500
1600	500	2200	4500
1600	600	2200	4500
1600	700	2200	4500
1600	800	2200	4500
1600	900	2200	4500
1700	500	2200	4500
1700	600	2200	4500
1700	700	2200	4500
1700	800	2200	4500
1700	900	2200	4500

Wind Ratings (Pa) Meeting stiles.

This ratings table applies to all configurations but may be limited by the transom rating on windows that have highlights and/or lowlights.

### Limitations

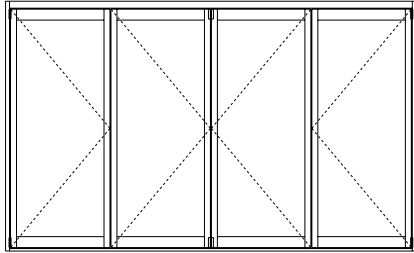
- Maximum panel weight 45 kg per panel
- Maximum panel width 900mm
- Maximum panel height 1600mm
- Hinge quantity 2. hinges height less than or equal to 1400mm.  
3. hinges height is greater than 1400mm.

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## TYPICAL CONFIGURATIONS

Width > 2151mm <= 3691mm



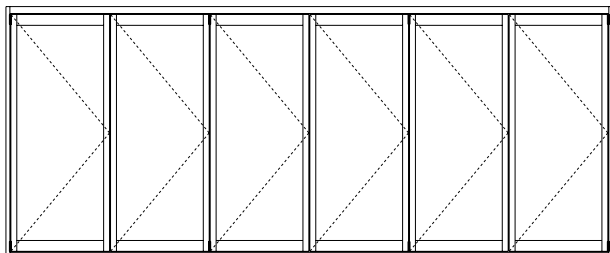
### Note:

This configuration (BFW2+2) is the most popular.

### type. **BFW2+2**

Two window panels fold to the left and two panels to the right.

Width > 3155mm <= 5450mm



### type. **BFW6**

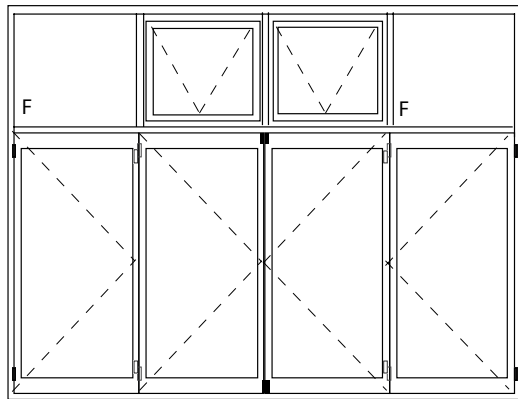
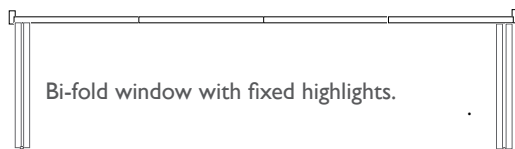
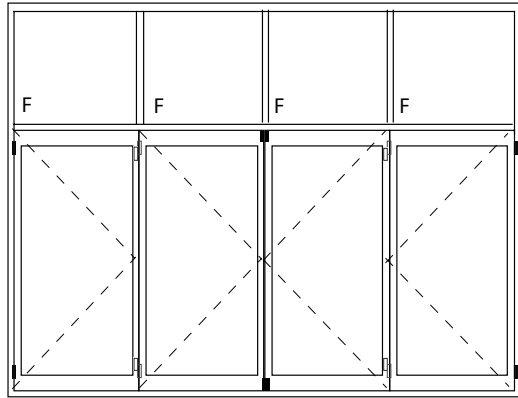
All window panels fold to the left.

Another option would be  
type. **BFW2+4** or **BFW4+2**  
Two panels one way and four the other

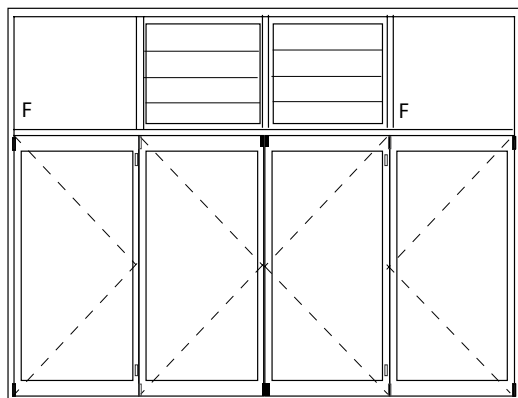
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## TRANSOM STRENGTH



Bi-fold window with fixed and awning highlights.



**S** = Serviceability limit state (deflection = L/150).  
**U** = Ultimate strength limit state (factored yield strength = 104 MPa).

These tables have been calculated using nominal section properties.  
Ultimate strength rating has been limited to 4500 Pa.

2200 Serviceability ratings were restricted by the maximum water resistance (300Pa) achieved on this product.

Cross section detail through transom occurs later in these notes.

Frame Width mm	Heights		Transom 51040 Ratings (Pa)	
	Bifold mm	Highlight mm	S	U
2100	1500	600	2200	4500
2600	1500	600	2200	3341
3100	1500	600	1504	2256
3600	1500	600	1087	1630
4000	1500	600	868	1302
2100	1600	600	2200	4500
2600	1600	600	2158	3237
3100	1600	600	1450	2175
3600	1600	600	1045	1567
4000	1600	600	833	1250
2100	1700	600	2200	4500
2600	1700	600	2097	3146
3100	1700	600	1402	2103
3600	1700	600	102007	1511
4000	1700	600	802	1203

Wind Ratings (Pa) Transom 51040.

### Limitations

- Maximum panel weight 45 kg per panel
- Maximum panel width 900mm
- Maximum panel height 1600mm
- Hinge quantity
  - 2. hinges height less than or equal to 1400mm.
  - 3. hinges height is greater than 1400mm.

The above transom window ratings may be limited by the panel meeting stile ratings, refer previous table.

Windows with tall highlights may also be limited by the fixed muntin rating.

Bi-fold window with fixed and adjustable glass louvre highlights.

### Configuration Note:

Type BFW2+2 has been illustrated but any of the other window types within the size limitations could also be used.

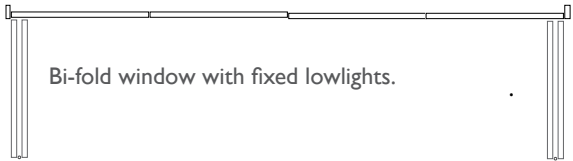
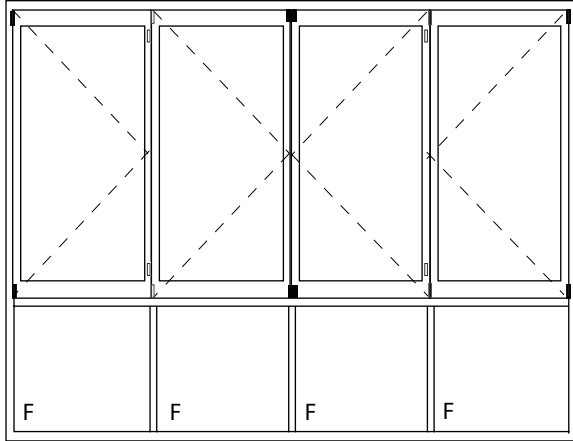
Likewise highlights could be one or more opening windows or pure fixed lights as shown above.



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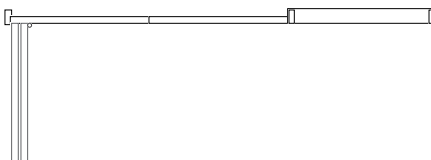
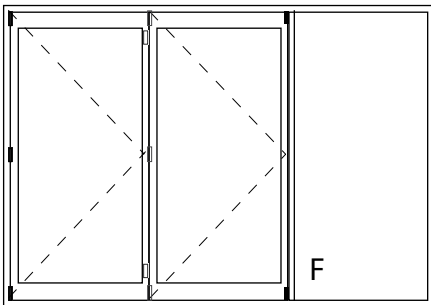
DATE: NOV 09  
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## TRANSOM STRENGTH



### Configuration Note:

Type BFW2+2 has been illustrated but any of the other window types within the size limitations could also be used.



**S** = Serviceability limit state (deflection = L/150).  
**U** = Ultimate strength limit state (factored yield strength = 104 MPa).

These tables have been calculated using nominal section properties.  
Ultimate strength rating has been limited to 4500 Pa.

2200 Serviceability ratings were restricted by the maximum water resistance (300Pa) achieved on this product.

Cross section detail through transom occurs later in these notes.

Frame Width mm	Heights		Transom 51047 Ratings (Pa)	
	Bifold mm	Lowlite mm	S	U
2100	1500	600	2200	4213
2600	1500	600	1702	2553
3100	1500	600	1149	1723
3600	1500	600	830	1245
2100	1600	600	2200	4120
2600	1600	600	1648	2472
3100	1600	600	1108	1661
3600	1600	600	798	1197
2100	1700	600	2200	4048
2600	1700	600	1602	2403
2600	1700	600	1602	2403
3100	1700	600	120071	1606
3600	1700	600	769	1154

Wind Ratings (Pa) Transom 51047.

### Limitations

- Maximum panel weight 20 kg per panel
- Maximum panel width 750mm
- Maximum panel height 1700mm
- Hinge quantity 2. hinges height less than or equal to 1400mm.  
3. hinges height is greater than 1400mm.

The above transom window ratings may be limited by the panel meeting stile ratings, refer previous table.

The width of lowlight transom windows has been limited to 3100mm, 750mm maximum panel width and 20kg maximum panel weight because of the torsional twist load that will be exerted on the transom when the panels are being opened and closed.

Bi-fold window with fixed sidelight/s.

### Configuration Note:

Type BFW2 has been illustrated but any of the other window types within the size limitations could also be used.

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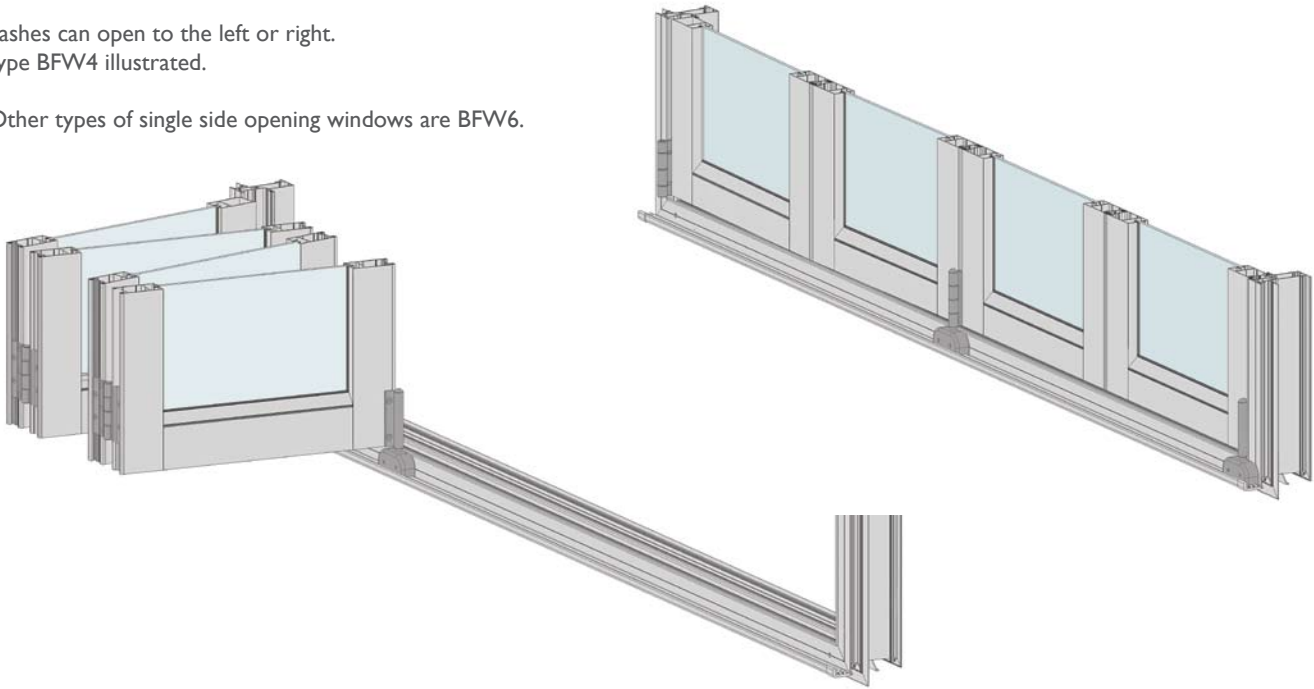
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## FOUR PANEL BIFOLD WINDOW

### Typical bi-fold window opening to one side

Sashes can open to the left or right.  
type BFW4 illustrated.

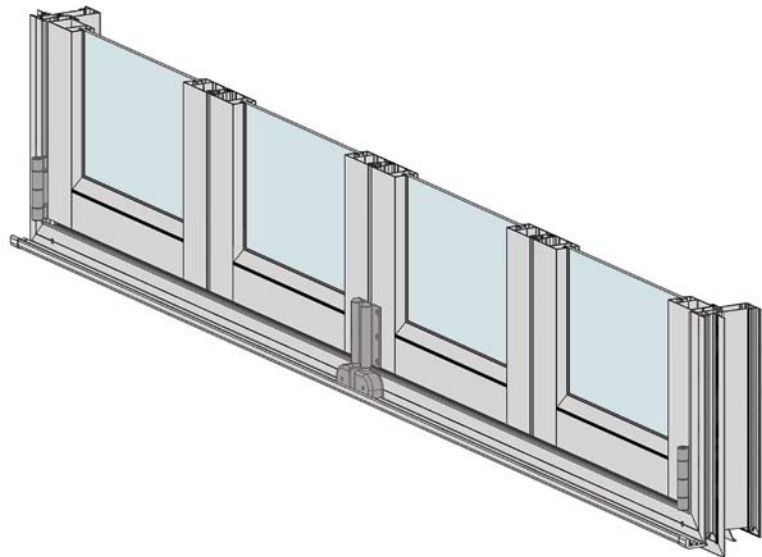
Other types of single side opening windows are BFW6.



### Typical bi-fold window (bi-parting sashes)

This example shows how the folding sashes can bi-part.

Other types of bi-parting bi-fold windows are BFW4+2  
and BFW2+4.

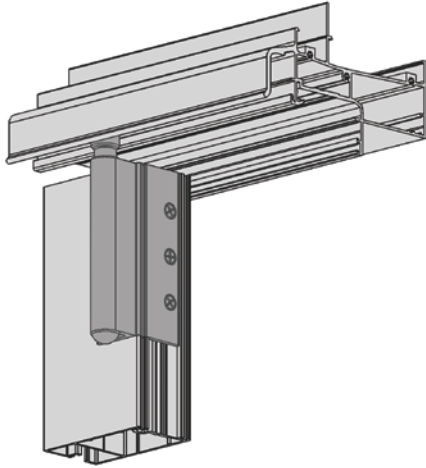


See this bi-fold window open and  
close in full colour on our web site:  
[www.vantagealuminium.com.au](http://www.vantagealuminium.com.au)

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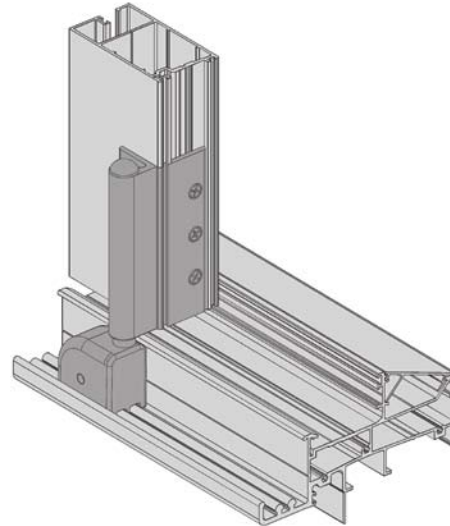
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## HARDWARE MAKES THE DIFFERENCE



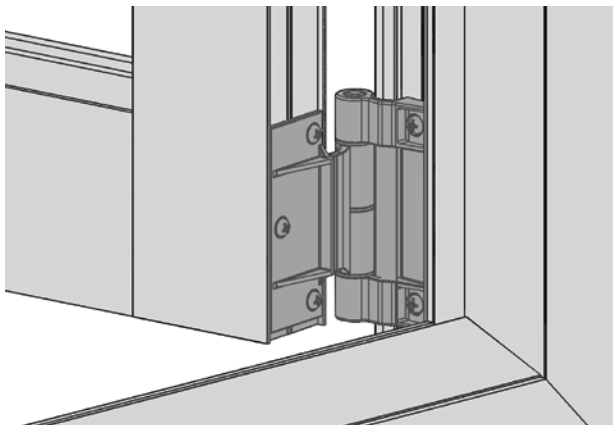
### Heavy duty overhead roller guide

Available in: Black, Pearl white, AWS Silver, Special paint  
This head guide is retained in the guide channel in the head/transom.  
Guide body secured to door stile with stainless steel screws.



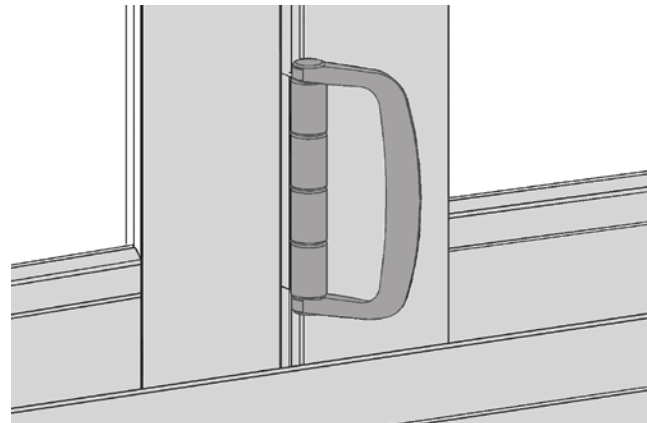
### Heavy duty double bogey sill roller

Available in: Black, Pearl white, AWS Silver, Special paint  
The sill rollers are designed to support heavy window panels (up to 45kg). As the Vantage bi-fold windows can be double glazed the panels will get heavy.  
Bottom rollers are more forgiving than top rollers in that we can cope with up to 6mm of lintel movement without a problem.  
In coastal applications we also offer rollers with 316 Stainless Steel housing to reduce the risk of corrosion.



### Jamb Hinge

Designed to allow window panels to open 90°.  
Hinge frame leaf fixed through reinforced portions of frame with 10# countersunk stainless steel self tapping screws.  
The hinge leaves nest into the frame and stile removing the need for unsightly shims, maximise strength and to ensure that the gap between frame and stile are maintained.  
Available in: Black, Pearl white, AWS Silver and Special paint



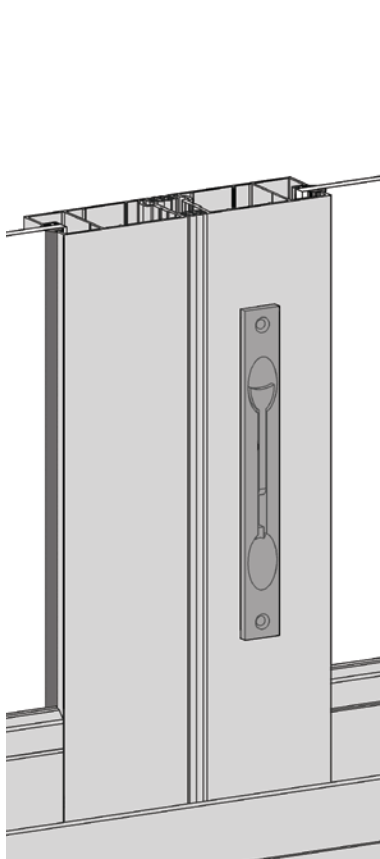
### Handle Hinge

This hinge with inbuilt pull handle is located centrally between projecting, folding window stiles to enable these stiles to be pulled back to the frame (closed position).  
The hinge leaves nest into the stiles removing the need for unsightly shims and to ensure that the gap between frame and stile is maintained.  
The pull handle folds back flush with the panels when not in use.

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## HARDWARE MAKES THE DIFFERENCE



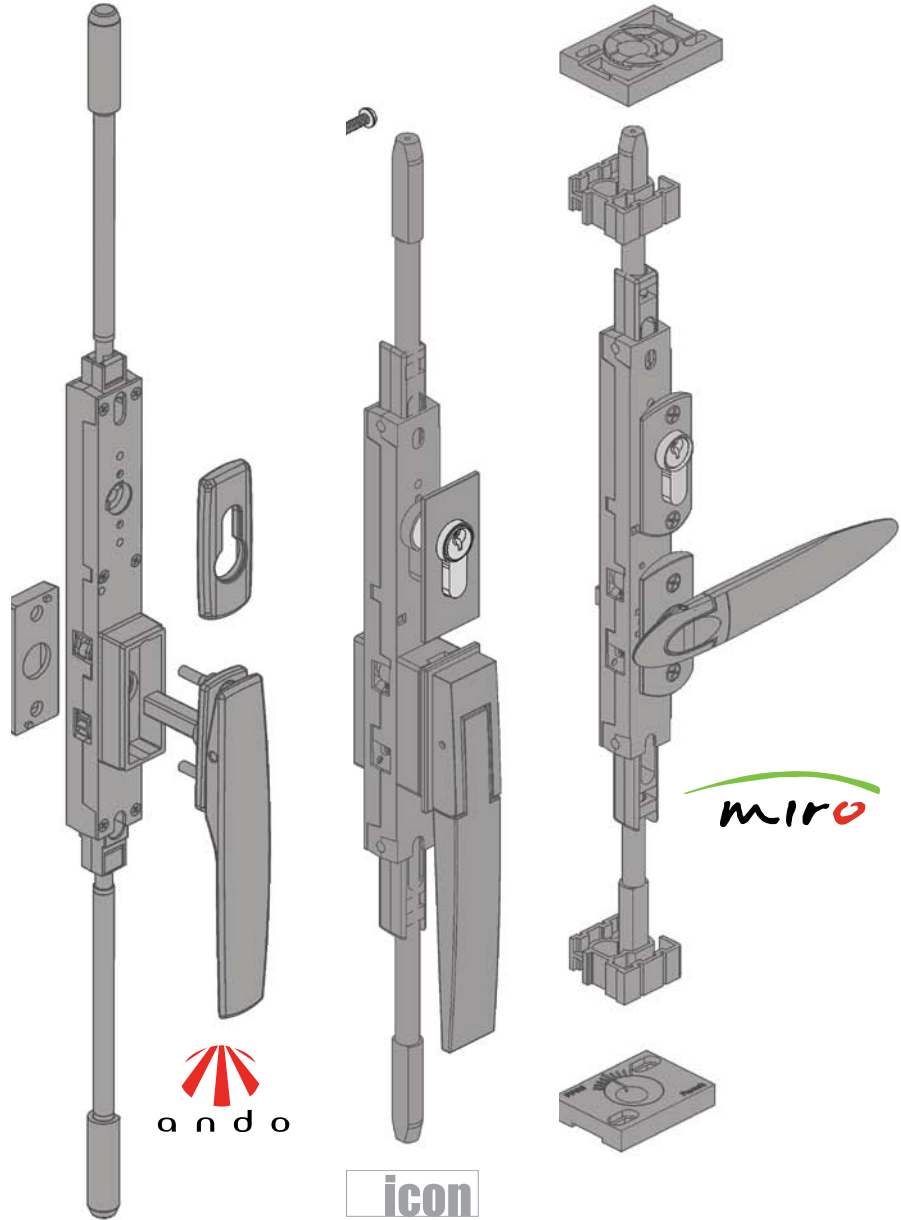
### Finger operated flushbolts

Available in: Black, Pearl white, AWS Silver, Special paint

Bi-fold windows can be fitted with finger operated bolts.

Bolts throw into custom nylon keeper.

Alternative MIRO™, ANDO™ & ICON™ lever operated bolts or Key locking MIRO™, ANDO™, ICON™ lever activator.



### Custom key locking activators

Three alternative handle designs ANDO™, ICON™ & MIRO

Available in: Black, Pearl white, AWS Silver, Special paint. ANDO™ also available in 316 Stainless Steel. ICON™ available in 316 Stainless Steel only.

These custom lever operated bolt systems activates both top and bottom bolt by turning the handle 90°.

Bolt can be key locked in the closed position.

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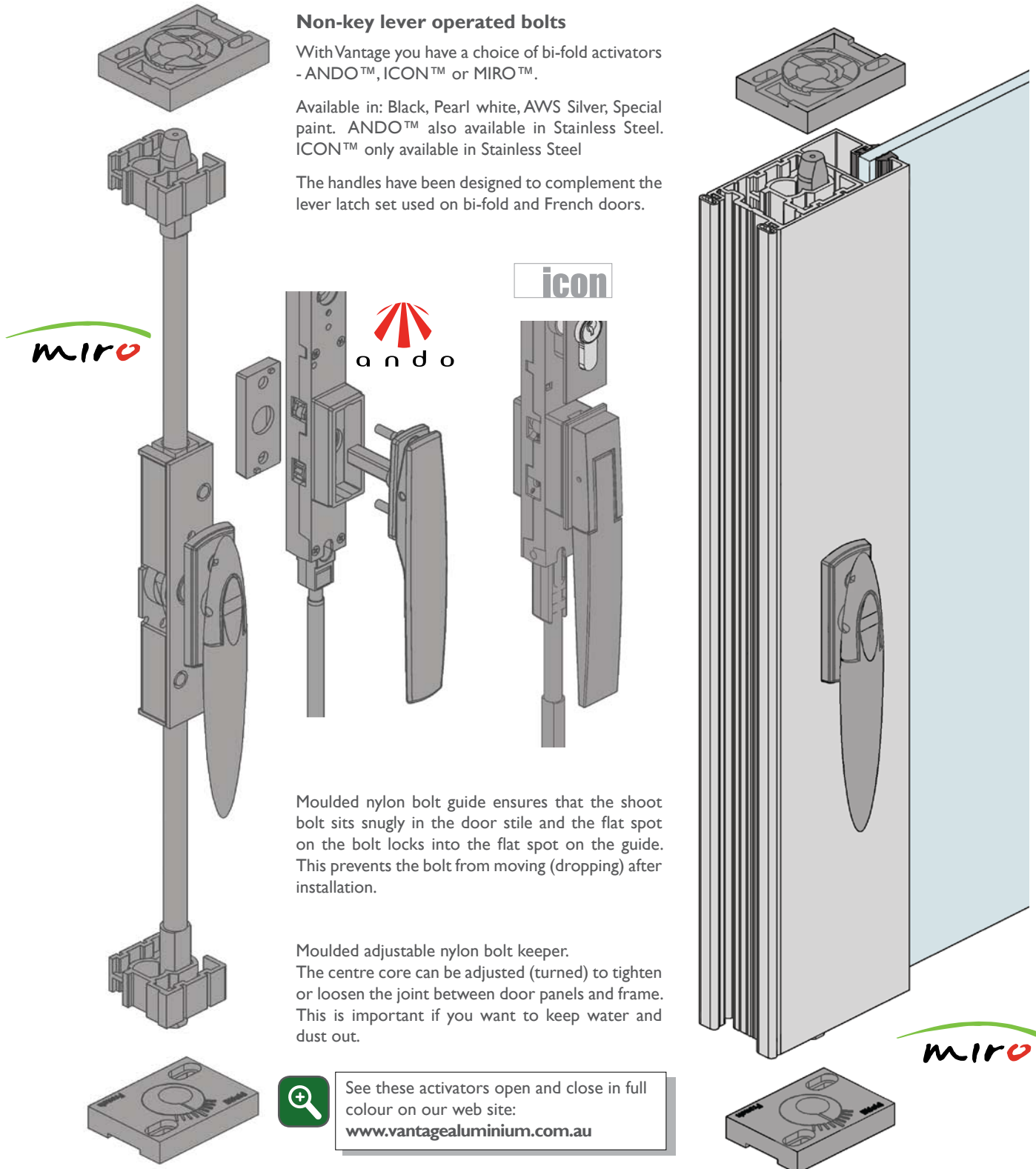
## HARDWARE MAKES THE DIFFERENCE

### Non-key lever operated bolts

With Vantage you have a choice of bi-fold activators - ANDO™, ICON™ or MIRO™.

Available in: Black, Pearl white, AWS Silver, Special paint. ANDO™ also available in Stainless Steel. ICON™ only available in Stainless Steel

The handles have been designed to complement the lever latch set used on bi-fold and French doors.

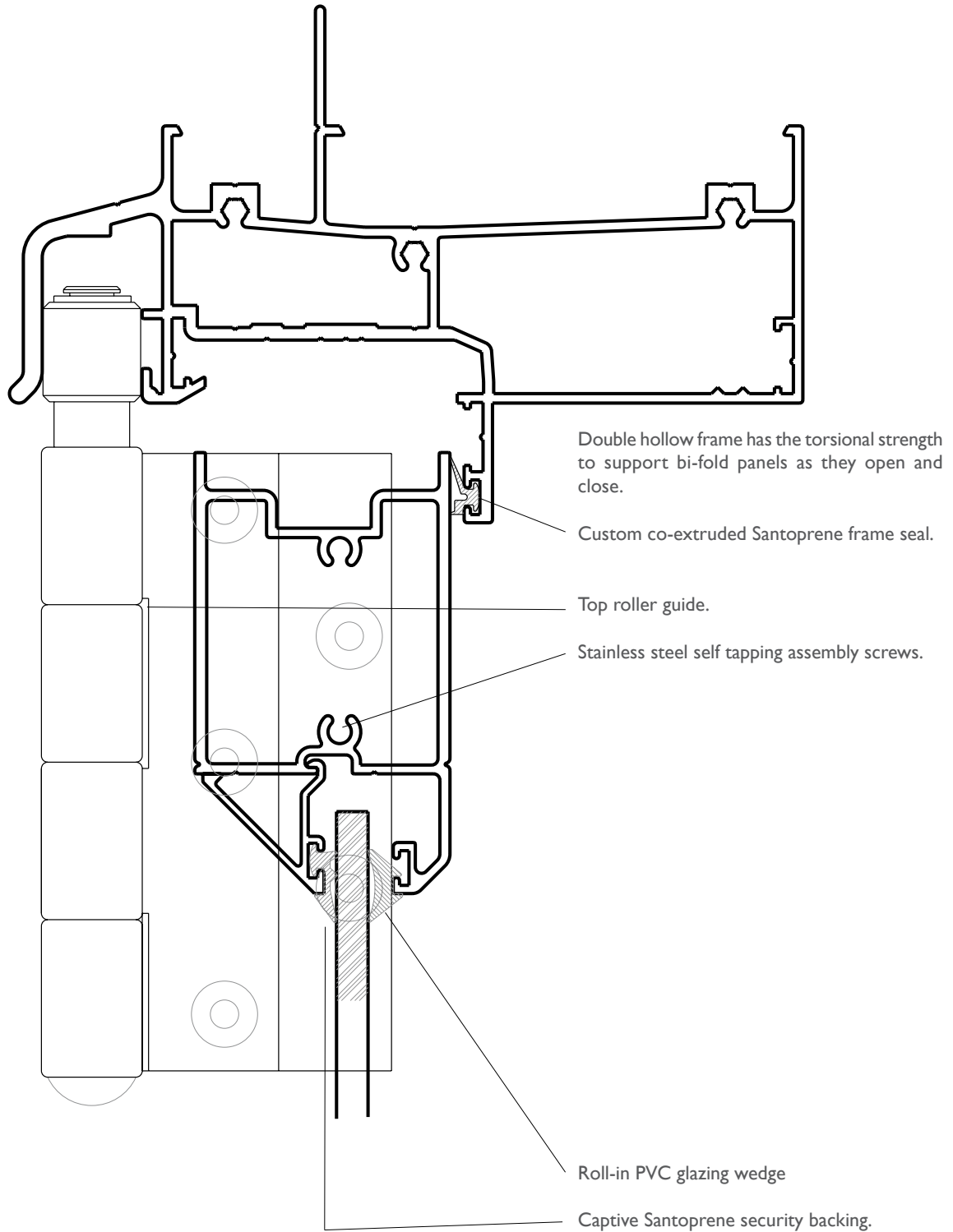


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VERTICAL SECTION THROUGH STANDARD HEAD

Head detail  
Single glazed

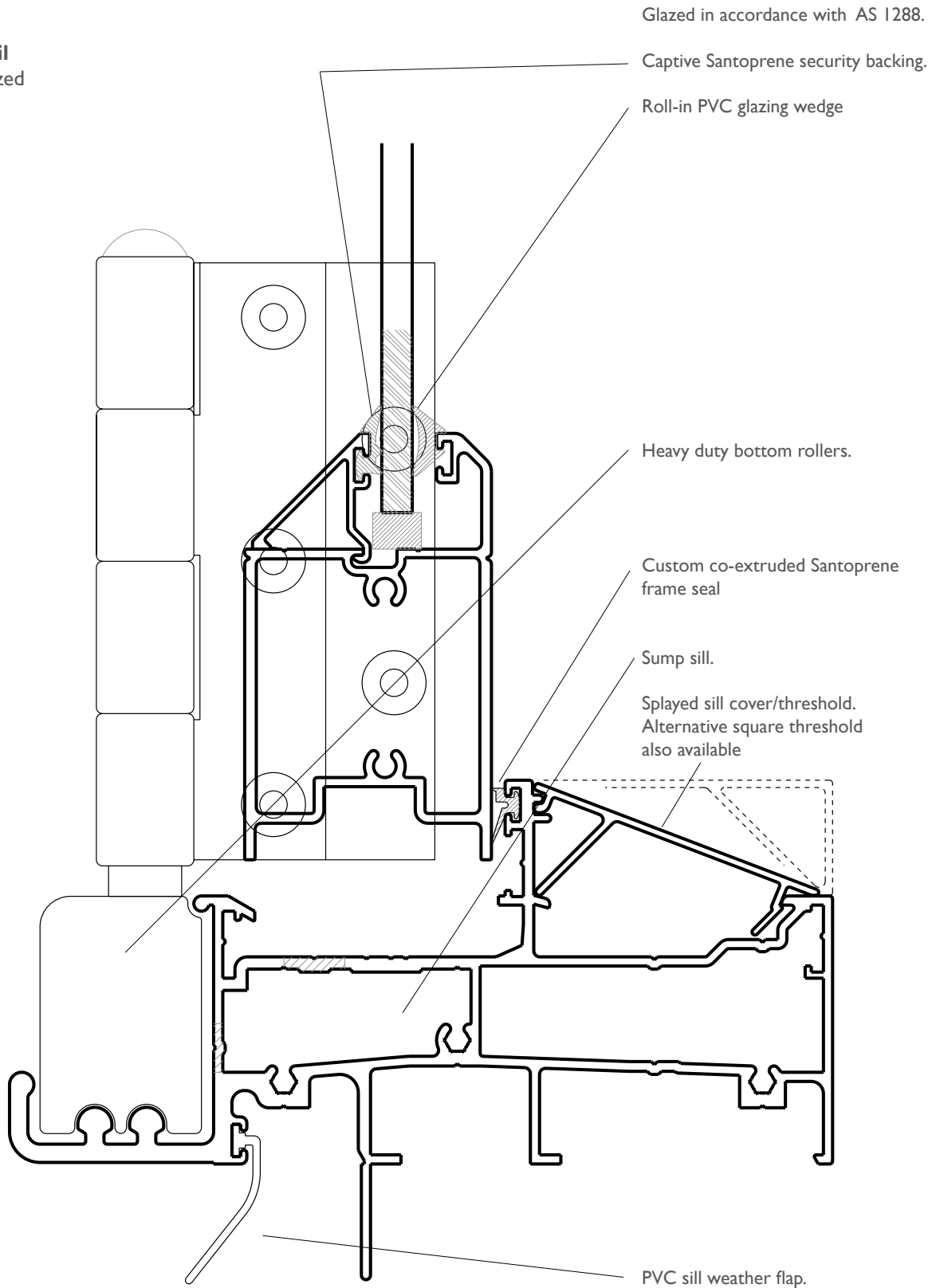


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## VERTICAL SECTION THROUGH STANDARD SILL - SINGLE GLAZED

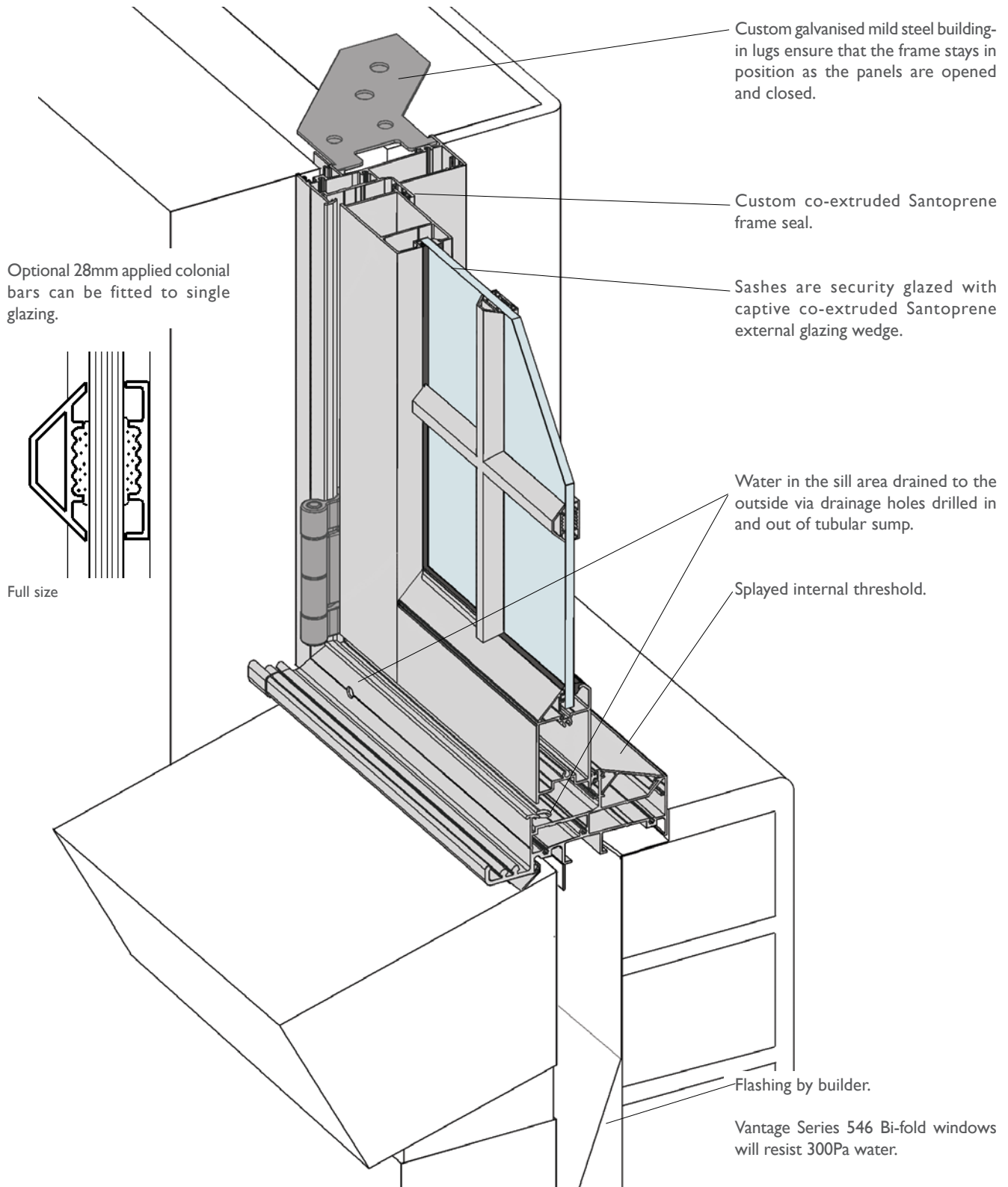
**Sill detail**  
Single glazed



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## OPTIONAL COLONIAL BARS & STANDARD BUILDING-IN-LUG

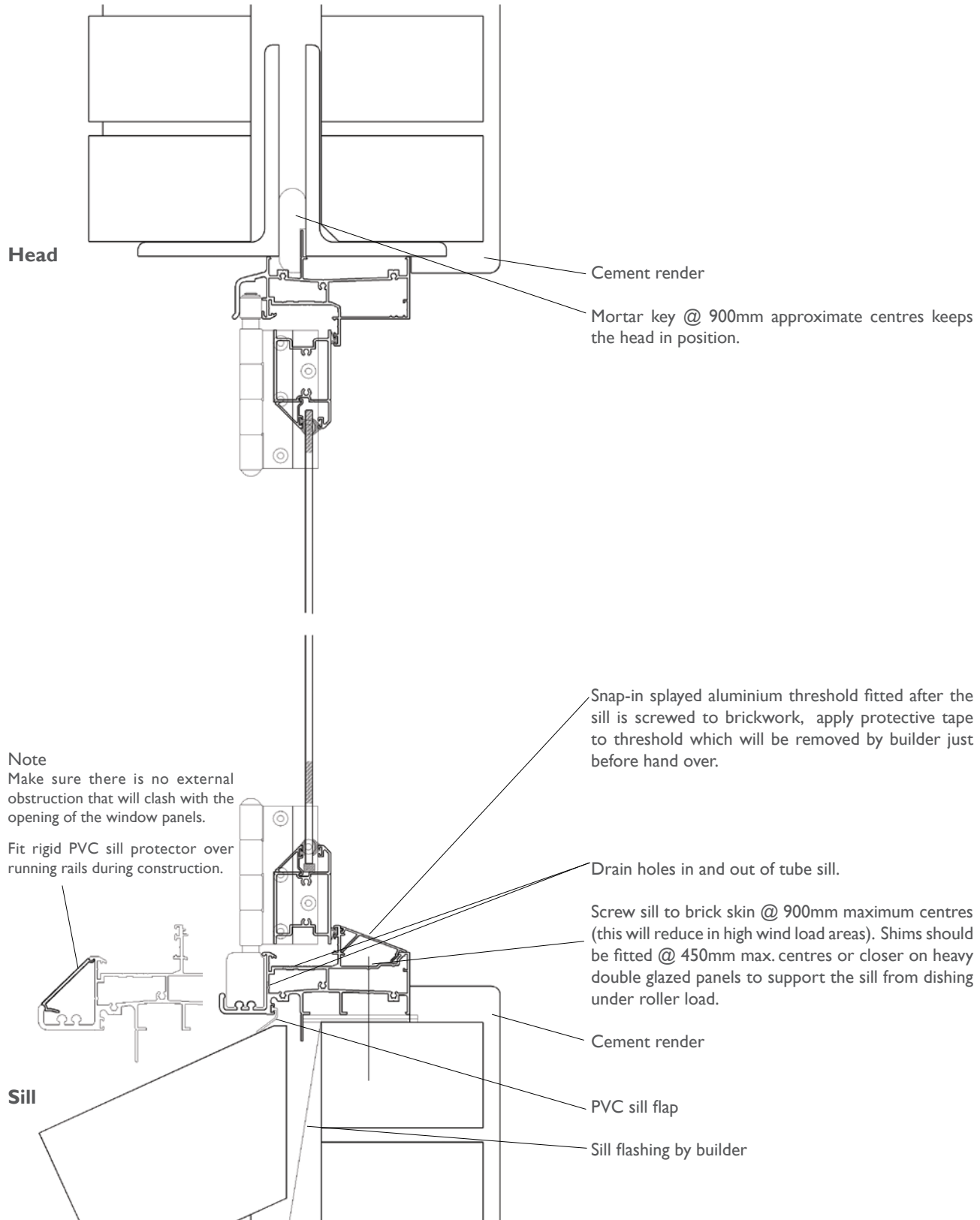




# Series 546 Bi-fold Window

DATE: NOV 09  
 REPLACES: AUG 03  
 SCALE: NOT TO SCALE

## VERTICAL SECTION THROUGH CAVITY BRICK



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Series 546  
Bi-fold Window

DATE: NOV 09  
REPLACES: AUG 03  
SCALE: NOT TO SCALE

VERTICAL SECTION THROUGH BRICK VENEER

