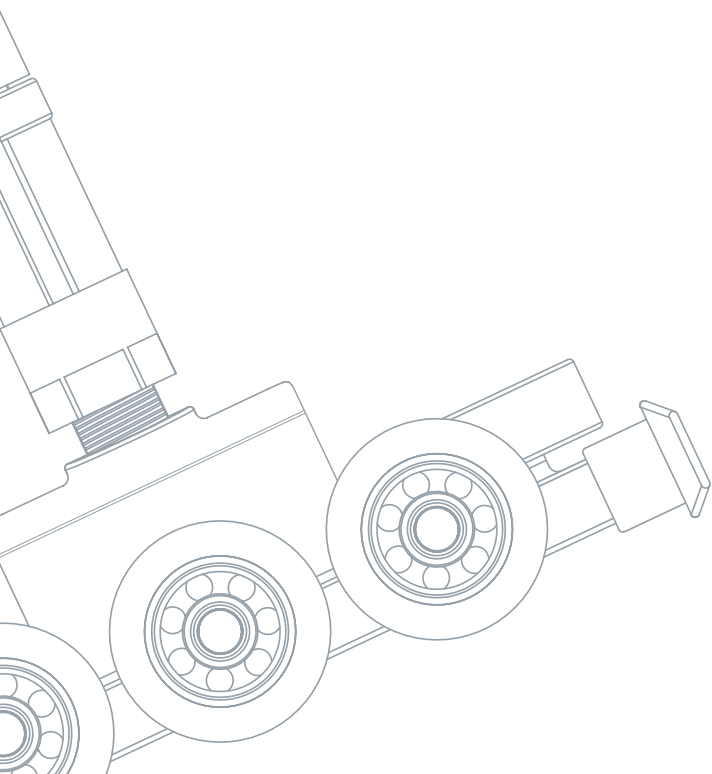


# centor®



Centor F3 Bottom-Rolling System for Folding Doors

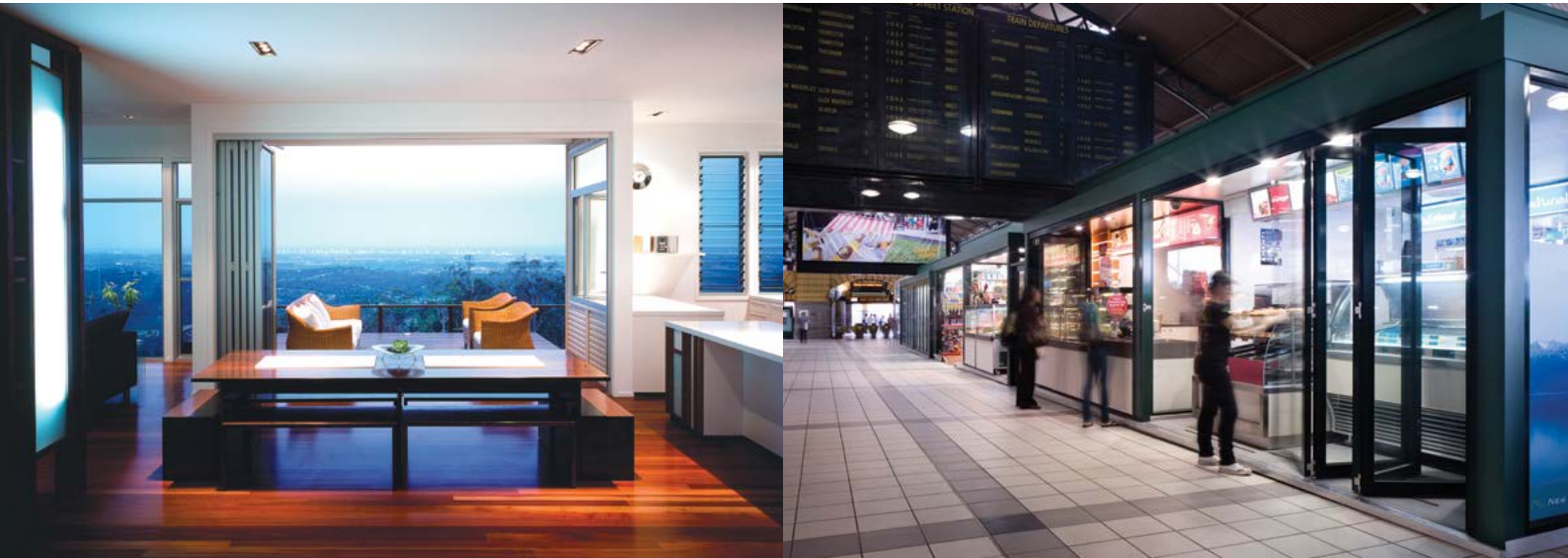


centor®

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# Centor revolutionised the way folding windows and doors move



## The Folding Revolution

Centor opened a world of opportunity in building design when they revolutionised the way folding windows and doors move.

Delivering life-long durability and fingertip operation, folding windows and doors moved by Cenor's innovative hardware are making memorable impressions in homes, offices, restaurants and commercial premises all over the world.

The window of opportunity to use Centor's innovative technology has just become a whole lot wider as the company that revolutionised folding movement brings the technology to a much wider audience.





F3 Specifications	
maximum opening width	16m
maximum panel weight	80kg each
maximum panel width	1000mm
maximum panel height	2700mm
minimum door thickness	35mm
maximum number of doors	8 each direction

### Next generation folding

The new Centor F3 bottom-rolling system for folding doors is the industry's first comprehensive bottom-rolling hardware technology, putting folding doors and windows into any existing building space without major structural changes.

Bottom-rolling systems allow the door's weight to be transferred away from the top of the opening, eliminating the need for a strong and often restricting upper beam – freeing up more design space.

Centor's ground breaking sill design ensures rollers are not affected by dirt, grit and debris, so doors always glide with fingertip ease.

The F3 offers easy installation and smooth operation, and can be adjusted vertically and laterally with just a screwdriver. The Centor F3 is a fully weather-sealed, secure, durable, and smooth-functioning system.

# bottom-rolling technology eliminates the need for strong upper beams



Centor top hung folding

Bottom-rolling eliminates the need for restricting upper beams

## Folding doors for any opening

Centor F3 allows for the cost-effective remodel or retrofit of any patio door opening. Now everyone can enjoy the benefits of folding doors, combining the pleasures of a seamless indoor/outdoor lifestyle with fingertip operation. Folding doors provide vistas, natural light, fresh air and larger living space, particularly when entertaining. Unlike sliding doors, folding doors require no fixed glass panels, recessed pockets or posts. Due to the bottom-rolling action of the hardware, F3 is perfectly suited for use in conservatories as the need for design-restricting beams is eliminated.

Centor F3 is based on simple but sophisticated technology using a range of strategically placed bearings to allow the bottom of the door to carry the weight, while remaining easy to manoeuvre. Unlike other bottom-rolling systems, Centor-controlled windows and doors glide through tracks, not rails, with movement controlled by articulated carriers, appropriately-sized wheels and side thrust bearings.

With Centor's new bottom-rolling technology, quality folding doors and windows are within reach of every existing building and every door and window manufacturer.

Suited for easy installation, the patented system installs with simple hand and power tools and requires no structural changes to the building.



### **Centor-grade performance**

Painstaking attention to detail and an unwavering commitment to quality lead to 'Centor-grade' performance. The result is security, smooth operation and comfort for the F3 end-user that matches the ease and flexibility of its modern design.

### **Rain and Wind**

Centor hardware was used in the first tracked folding door system to be certified under Australian Standard AS2047, which specifies the weather performance required of external windows and sliding doors. Doors installed with Centor E3 and E4 folding systems have also been certified to stringent Miami-Dade County hurricane standards, the toughest testing anywhere in the world. With similar technology built into F3, impressive water performance ratings are achievable from both outward and inward opening doors. Driving rain and howling gales can be shut out completely.

### **Air Infiltration**

The F3 system achieves its superior rain and wind resistance in part from the way it allows the folding doors to close snugly against weather seals. In the same way, doors using F3 effectively resist air infiltration to a level up to 50 times better than a sliding door.

All individual F3 components have been extensively laboratory tested, ensuring years of trouble-free use from hardware which ages with grace.

### **Cyclic Testing**

F3 has undergone Centor's minimum requirement of cyclic testing to a grueling 50,000 cycles without failure at maximum configuration, however many individual components are rated to over 100,000 cycles.

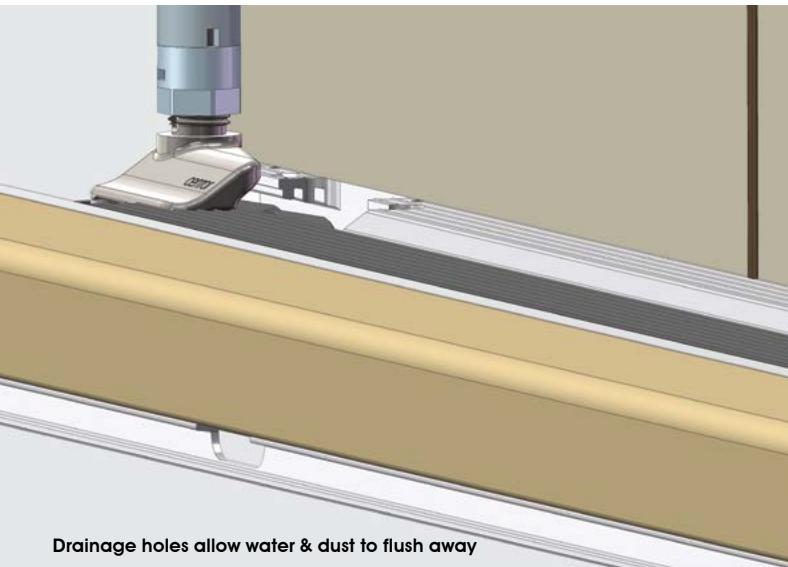
### **Corrosion Testing**

Stainless steel, PVD brass, anodised aluminium and engineering grade plastics are used throughout the F3 system with all materials carefully selected to maximise performance in any environment. Centor conducts corrosion testing in a salt spray chamber, fixing hardware to various substrates to ensure that F3 will perform admirably even in the most exposed applications.

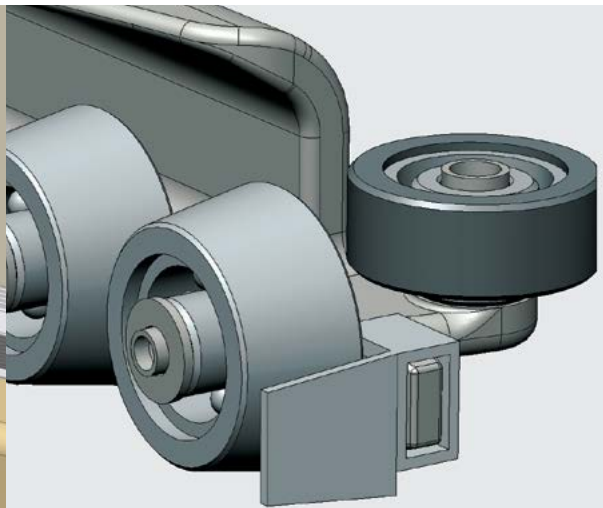
### **Finite Element Analysis**

Finite Element Analysis (FEA) is a computerised simulation technique where products are exposed to virtual operating environments and accurate predictions made in terms of load and deflection. Centor undertakes FEA in the design process to ensure the best balance of performance, cost and materials in every system.

fully adjustable to  
compensate for less than  
perfect openings



Drainage holes allow water & dust to flush away



Guards work like a snow plough to remove debris

### F3 up close

Even a casual glance at the F3 system gives a strong impression of Centor's commitment to quality, but it's only upon closer inspection that the attention to detail really becomes apparent. Packed with standard features and with an abundance of options to choose from, Centor F3 looks even better up close.

### Materials and finishes

F3 carriers, guides, pivots and hinges are available in brushed stainless steel, PVD brass or PVD black finish over stainless steel. Head tracks and sills are produced in extruded aluminium with the option of satin natural or satin bronze anodised finishes.

### Panel size and materials

Centor's innovative hinge system enables uniform width door panels to be used, regardless of the door configuration, ensuring maximum efficiency in door manufacture. Easily installed hardware can be teamed with door panels in timber, aluminium or fibreglass.

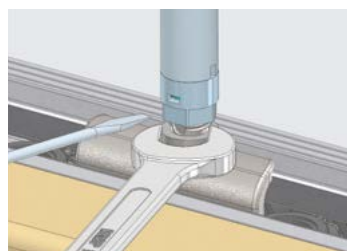
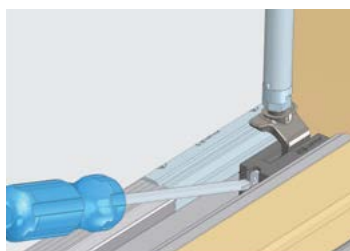
### Adjustment

F3 folding doors can be adjusted both vertically and horizontally. Once door heights are set and locked, the mechanism will not self adjust or loosen over time, meaning doors will not drop. Further adjustments can be made at any time with a screwdriver and spanner.

### Design features

Openings fitted with Centor-controlled folding windows and doors include protective features not available with other systems. These include:

- the original Centor weather-sealed technology
- sill covers to avoid dirt collecting in the tracks
- guards which work like a snow plough to remove any debris
- drainage holes to flush away water and dust





### **F3 assurance**

Delivering life-long durability and fingertip operation, the F3's breakthrough technology and comprehensive features solve the many challenges previously associated with bottom-rolling hardware systems.

### **Slimmer frame construction**

F3's concealed design allows door manufacturers to reduce the size of framing components, reducing material costs and environmental impact.

The slimmer frames fit unobtrusively beneath glazed panels and are dimensionally compatible with most structural and window systems.

### **Unparalleled security**

Frames and doors using F3 hardware have an inherently secure layout. This is supplemented by robust high grade stainless steel hardware and purpose made locking systems that have been subjected to impact and forced entry tests. In accessible edge mpunted hinges, irremovable adjustment pins and sturdy wall pivots complete a system specifically designed to keep your building safe.

### **Specifying F3**

For detailed component selection, including calculating size and number of door panels, door manufacturers can use Doorcalc, Centor's free specification and ordering software. Doorcalc is available from [www.centor.eu](http://www.centor.eu)

Architects and designers can simply specify 'Centor F3' and leave detailed component selection to the builder, joiner or fabricator.

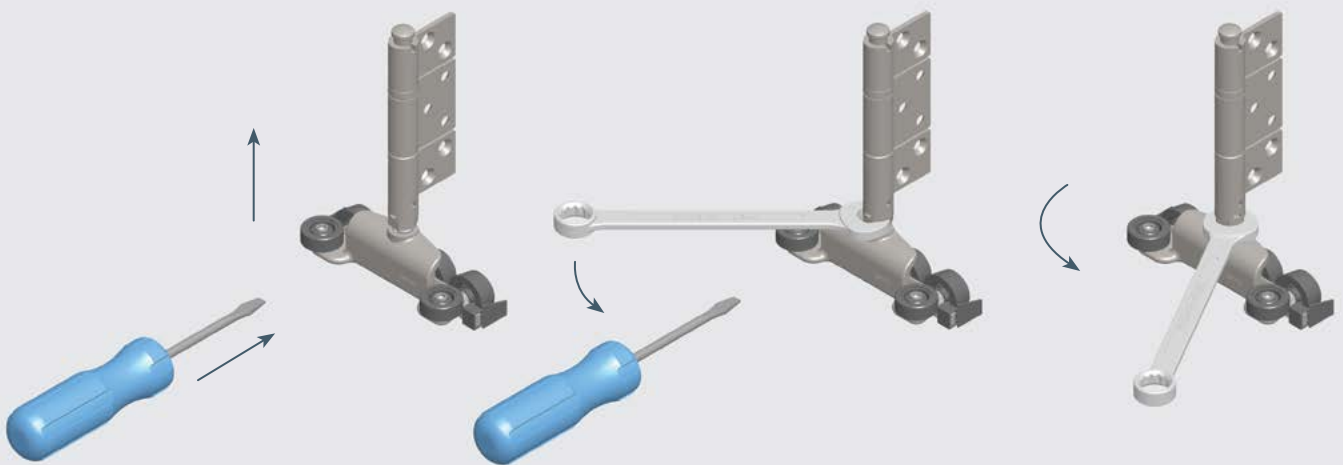
### **Warranty**

The Centor F3 bottom-rolling system for folding doors and windows comes with a 10-year limited warranty, but rigorous testing and high quality materials and design mean doors and windows can continue to open and close as new, long past their 10-year warranty.





install with simple  
hand and power tools  
into any opening



Surelock 4™ vertical adjustment

#### Install with ease

Doorsets using Centor F3 can be installed with simple hand and power tools into any opening. This makes F3 suitable for installation by DIYers for renovation and retrofit projects.

#### No structural adjustments

The F3 bottom-rolling system transfers the door weight to its strategically placed bearings. For this reason, no structural adjustments need to be made to overhead beams.

#### Face-fixed hinges

With the F3, there is no need to machine stiles to install hinges as they are face fixed onto the edge of the door panel.

#### Machined tracks and channels

Centor F3 is a complete system, that comes with pre-machined tracks and channels. The head and sill are ready-to-install, with no extra machining required.

#### Lateral adjustment

Centor F3 pivots allow for simple lateral adjustment using just a screwdriver. Fine-tuning can be performed at any time to allow for building settlement to ensure fluid lifetime door operation.

Lateral adjustment is important for folding doors in wide openings as there can be greater variances with multiple doors. Even slight inaccuracies in alignment can significantly affect the movement of folding doors. Independent lateral adjustment resolves these issues. This adjustment also ensures correct positioning for locks and latches.

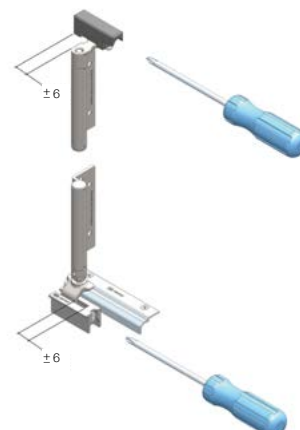
#### Vertical adjustment

All Centor systems allow for 10mm of vertical adjustment of doors. Coupled with Centor's patented Surelock 4™ mechanism, means fast and simple vertical adjustment of doors. Once door heights are adjusted and the Surelock is set, the mechanism will not self adjust or loosen over time, so doors will not drop and latches and locks can always stay aligned. Adjustments can be made at any time with just a screwdriver.

Using Surelock 4™ is simple

- 1 Insert a small flat blade screwdriver into slot and lift the slider.
- 2 With the slider lifted start the adjustment using a 14mm spanner on the adjustment nut.
- 3 Turn the adjustment nut a full revolution until it automatically locks back in place.
- 4 Repeat if necessary (maximum adjustment +/- 4mm)

Every full rotation = 1.25mm height adjustment

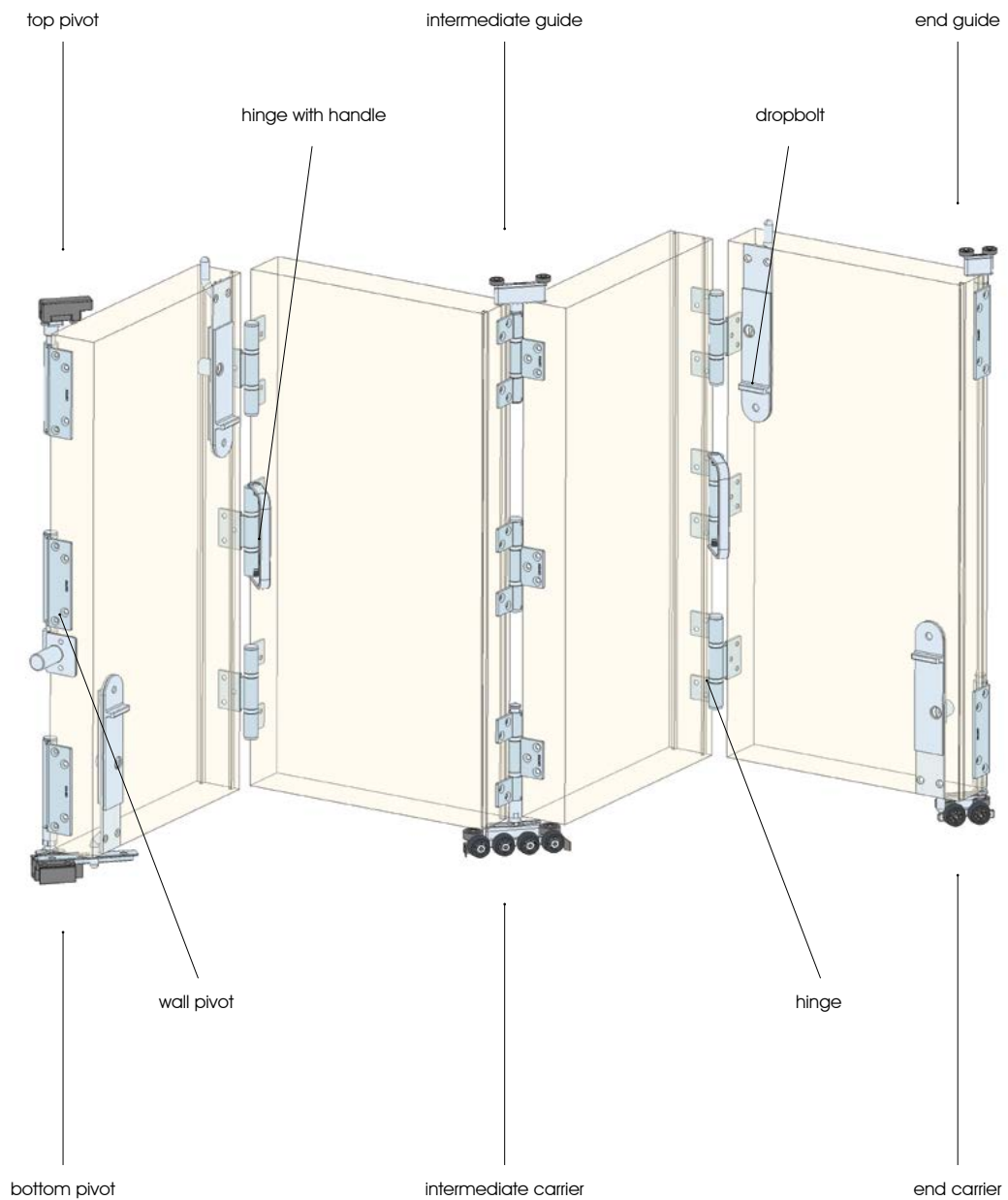


Lateral adjustment

## F3 product details

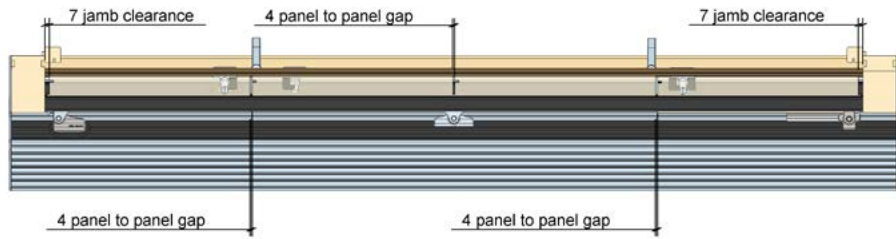
Downloadable DXF, DWG and PDF files ready for use in your own documentation are a convenient resource for architects and specifiers wishing to use Centor systems.

F3 DXF, DWG or PDF files can be downloaded from [www.centor.eu](http://www.centor.eu)

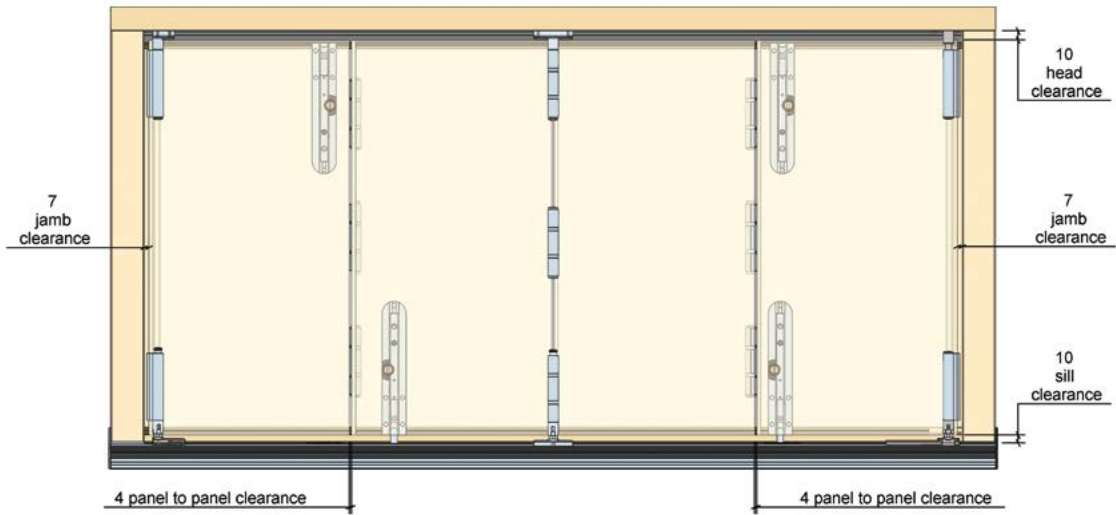


F3-200

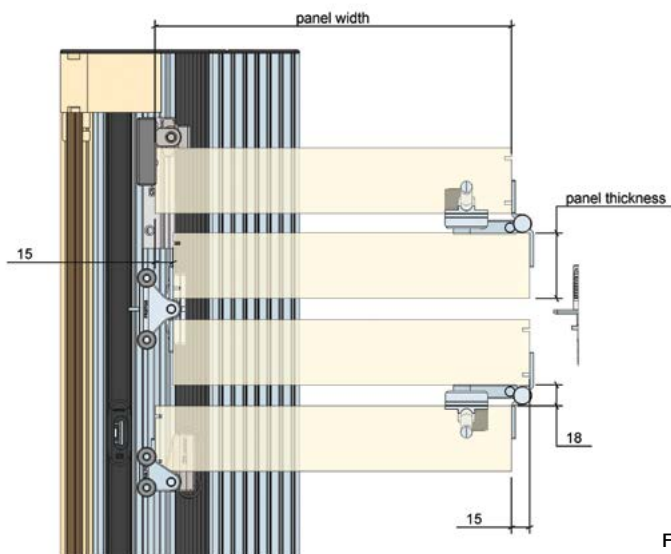
Architectural detail



F3-201

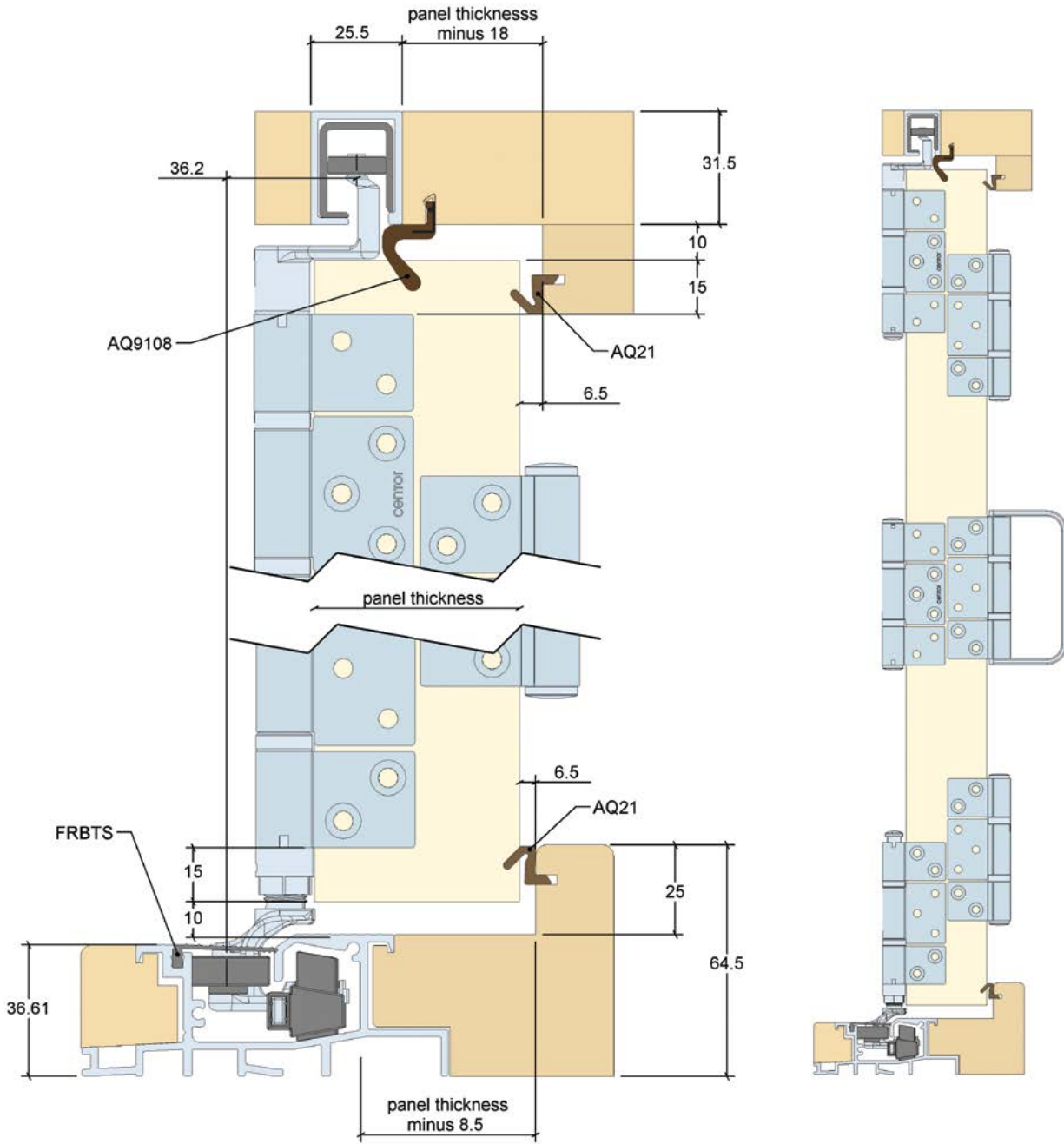


F3-202



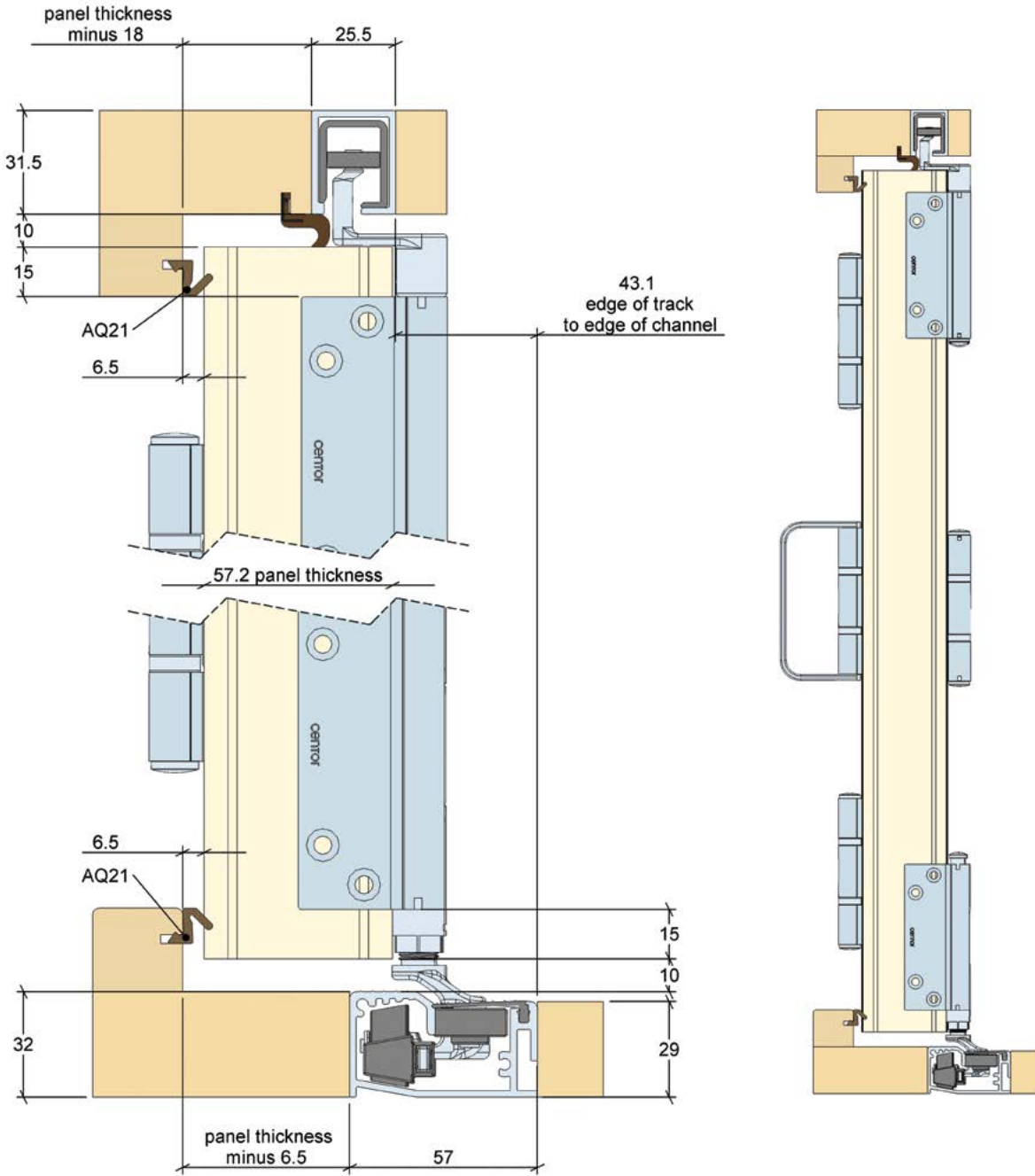
F3-203

Architectural detail / Simple sill



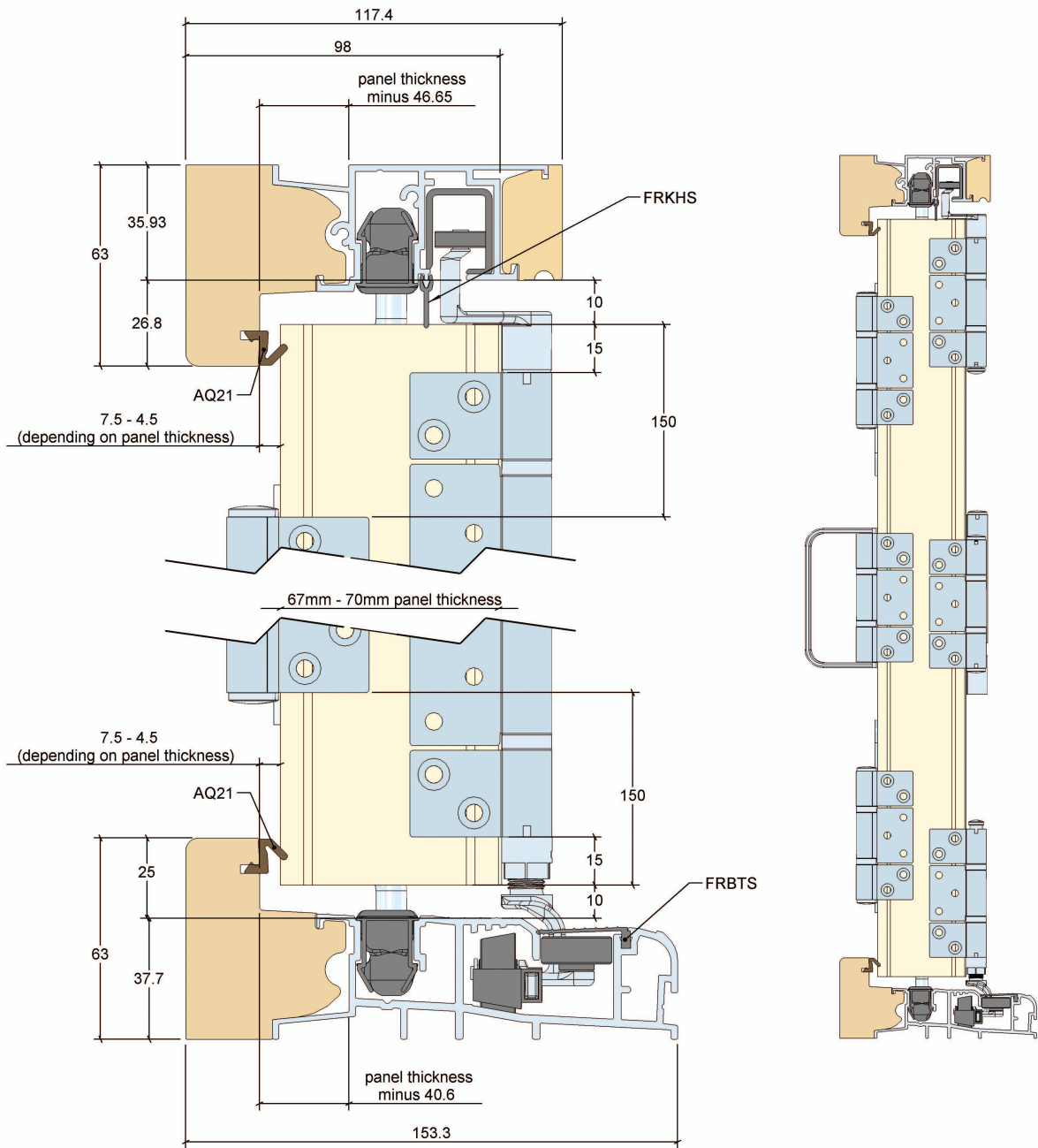
F3-206

Architectural detail / Basic sill



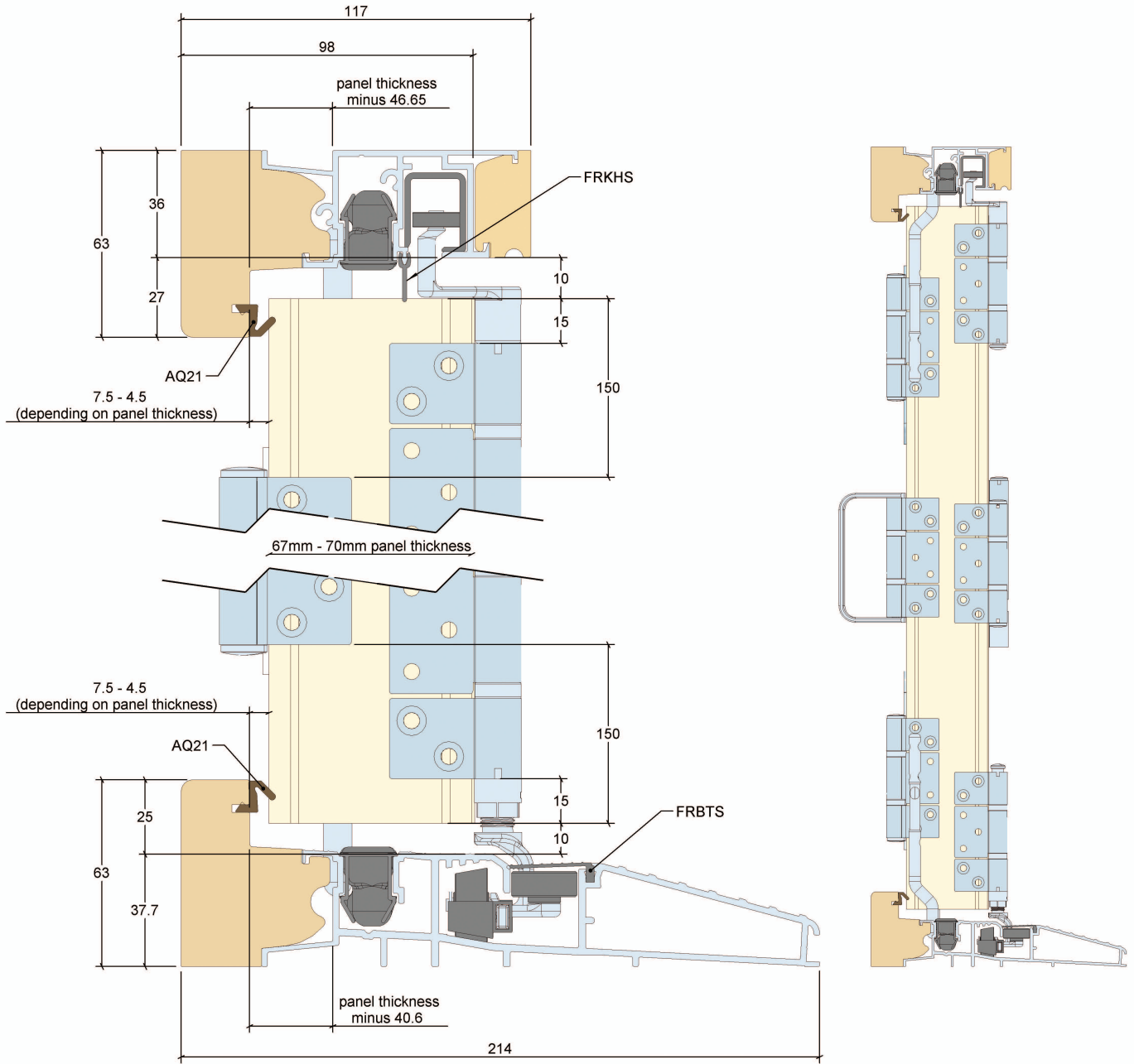
F3-217

Architectural detail / Compact sill



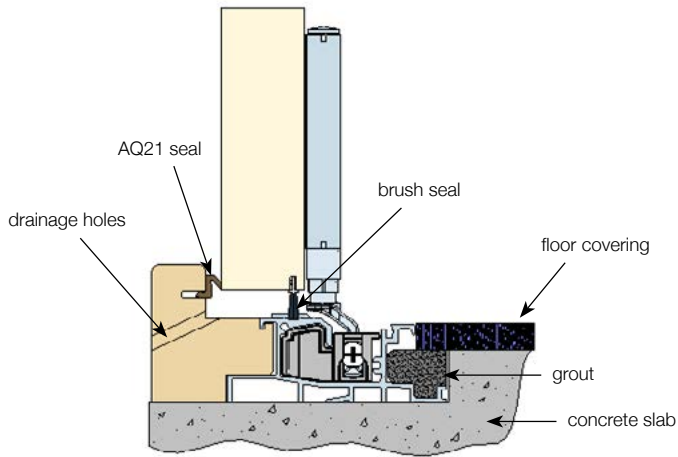
F3-209

Architectural detail / Easy access sill

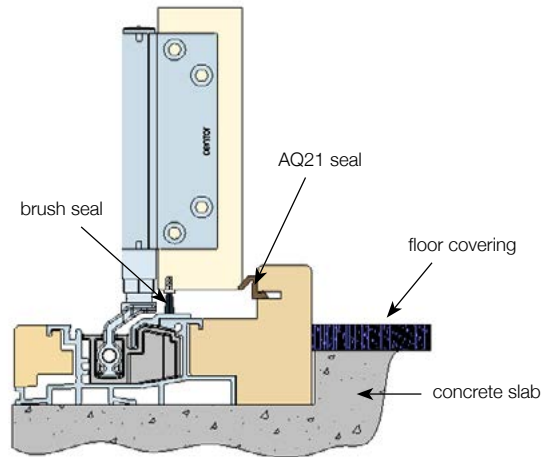


F3-205

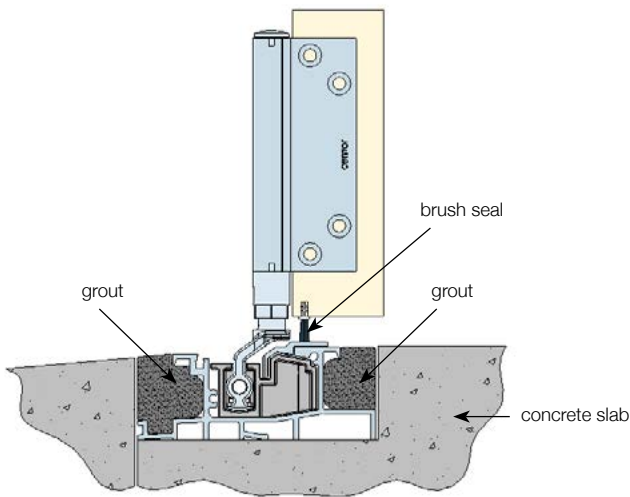
Architectural detail / Common sill layouts



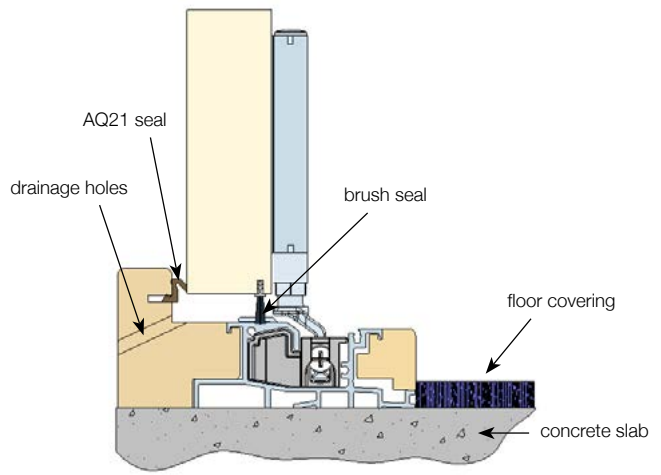
**Inward opening on rebated slab**



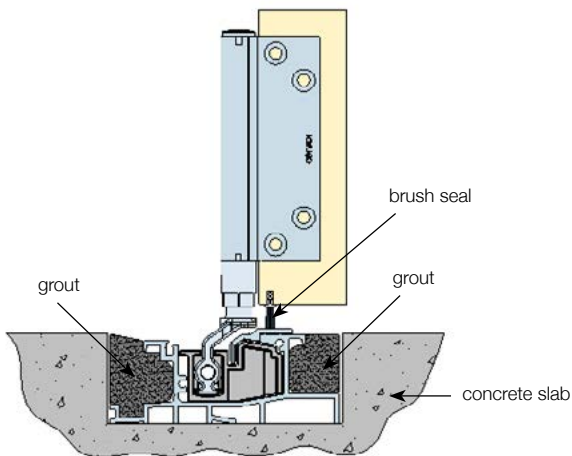
**Outward opening on rebated slab**



**Garage application**



**Inward opening on flush slab**



**Flush sill**



## Common panel layouts With dropbolts

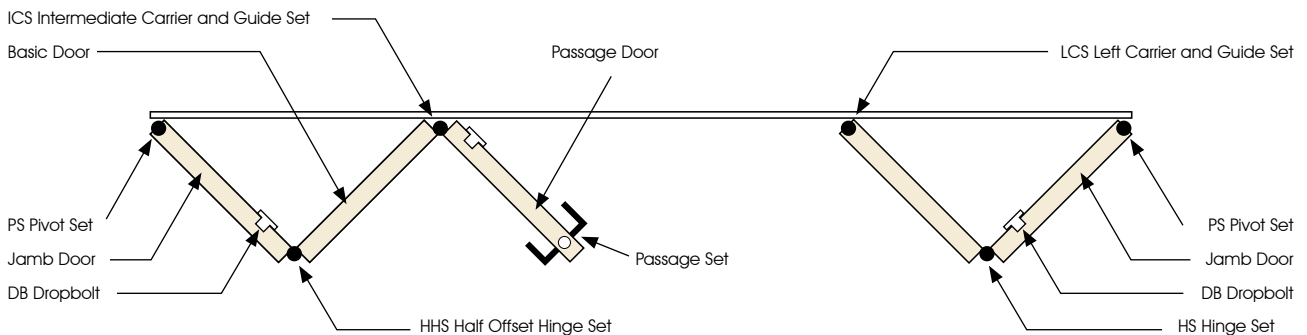
HARDWARE LEGEND	
<b>PS</b> pivot set	<b>HHS</b> half offset hinge set
<b>WPS</b> wall pivot set	<b>HS</b> hinge set (flat)
<b>ICS</b> intermediate carrier set	<b>EH</b> external handle
<b>LCS</b> left carrier set	<b>DB</b> dropbolt
<b>RCS</b> right carrier set	

LEGEND	
Dropbolts top and bottom	

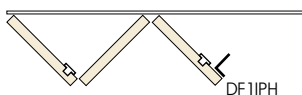
Note > Wall Pivot Set recommended for doors over 1500mm high and required for doors over 2250mm.

FLOATING DOOR PAIRS	
	<p>Per pair of doors</p> <ul style="list-style-type: none"> <li>1 x left carrier set</li> <li>1 x right carrier set</li> <li>1 x hinge set</li> <li>2 x dropbolt</li> </ul>

## HARDWARE APPLICATION (3L2R)



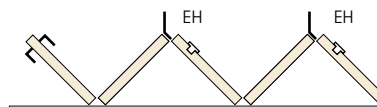
## OUTWARD APPLICATION EXTERIOR HANDLE OPTION



Use one exterior handle on exit door (outward system) where passage set / lock not required. Use dropbolts top and bottom to lock door from the inside only.

Note> Exit door not accessible from exterior in this application.

## INWARD APPLICATION EXTERIOR HANDLE OPTION



Use one exterior handle on each pair of doors (inward system) to pull open and close doors

## Common panel layouts

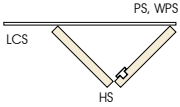
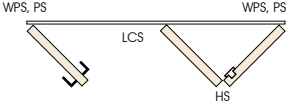
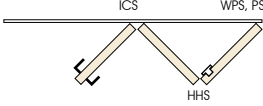
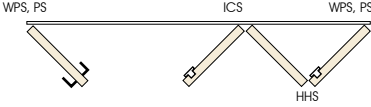
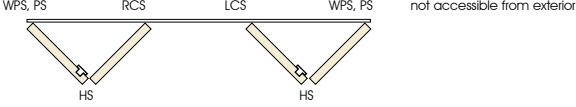
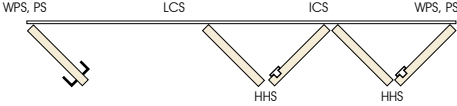
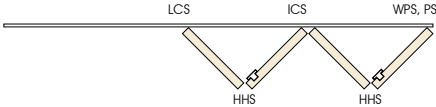

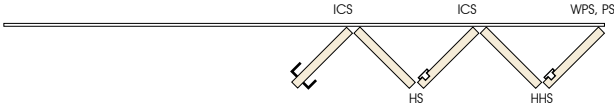
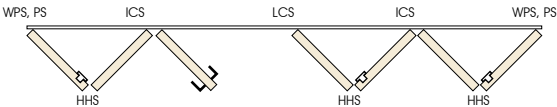
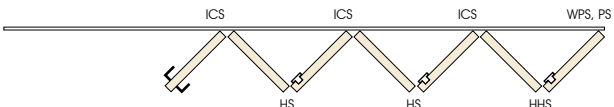
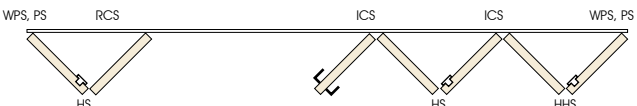
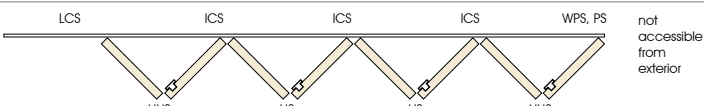
Any panel combination up to 8 in each direction is possible

CODE	OPENING CONFIGURATION	HARDWARE
2L		1 x pivot set 1 x wall pivot set* 1 x right carrier set 1 x hinge set 2 x dropbolt or 1 x twinpoint lock
2L1R		2 x pivot set 2 x wall pivot set* 1 x right carrier set 1 x hinge set 2 x dropbolt or 1 x twinpoint lock
3L		1 x pivot set 1 x wall pivot set* 1 x intermediate carrier set 1 x half offset hinge set 2 x dropbolt or 1 x twinpoint lock
3L1R		2 x pivot set 2 x wall pivot set* 1 x intermediate carrier set 1 x half offset hinge set 4 x dropbolt
4L		1 x pivot set 1 x wall pivot set* 1 x intermediate carrier set 1 x right carrier set 2 x half offset hinge set 4 x dropbolt or 2 x twinpoint lock
4L1R		2 x pivot set 2 x wall pivot set* 1 x intermediate carrier set 1 x right carrier set 2 x half offset hinge set 4 x dropbolt or 2 x twinpoint lock
3L2R		2 x pivot set 2 x wall pivot set* 1 x intermediate carrier set 1 x left carrier set 1 x hinge set 1 x half offset hinge set 4 x dropbolt or 2 x twinpoint lock
5L		1 x pivot set 1 x wall pivot set* 2 x intermediate carrier set 1 x hinge set 1 x half offset hinge set 4 x dropbolt or 2 x twinpoint lock
3L3R		2 x pivot set 2 x wall pivot set* 2 x intermediate carrier set 2 x half offset hinge set 6 x dropbolt
7L		1 x pivot set 1 x wall pivot set* 3 x intermediate carrier set 2 x hinge set 1 x half offset hinge set 6 x dropbolt or 3 x twinpoint lock
4L3R		2 x pivot set 2 x wall pivot set* 2 x intermediate carrier set 1 x right carrier set 3 x half offset hinge set 6 x dropbolt or 3 x twinpoint lock
5L2R		2 x pivot set 2 x wall pivot set* 2 x intermediate carrier set 1 x left carrier set 2 x hinge set 1 x half offset hinge set 6 x dropbolt or 3 x twinpoint lock
5L3R		2 x pivot set 2 x wall pivot set* 3 x intermediate carrier set 1 x hinge set 2 x half offset hinge set 8 x dropbolt

\*Wall Pivot Set recommended for doors over 4' 11" (1500mm) high and required for doors over 7' 4" (2250mm)

## Common panel layouts

Any panel combination up to 8 in each direction is possible

CODE	OPENING CONFIGURATION	HARDWARE
2R	 not accessible from exterior	1 x pivot set 1 x wall pivot set* 1 x left carrier set 1 x hinge set 2 x dropbolt or 1 x twinpoint lock
1L2R		2 x pivot set 2 x wall pivot set* 1 x left carrier set 1 x hinge set 2 x dropbolt or 1 x twinpoint lock
3R		1 x pivot set 1 x wall pivot set* 1 x intermediate carrier set 1 x half offset hinge set 2 x dropbolt or 1 x twinpoint lock
1L3R		2 x pivot set 2 x wall pivot set* 1 x intermediate carrier set 1 x half offset hinge set 4 x dropbolt
2L2R	 not accessible from exterior	2 x pivot set 2 x wall pivot set* 1 x right carrier set 1 x left carrier set 2 x hinge set 4 x dropbolt or 2 x twinpoint lock
1L4R		2 x pivot set 2 x wall pivot set* 1 x intermediate carrier set 1 x left carrier set 2 x half offset hinge set 4 x dropbolt or 2 x twinpoint lock
4R	 not accessible from exterior	1 x pivot set 1 x wall pivot set* 1 x intermediate carrier set 1 x left carrier set 2 x half offset hinge set 4 x dropbolt or 2 x twinpoint lock
2L3R		2 x pivot set 2 x wall pivot set* 1 x intermediate carrier set 1 x right carrier set 1 x hinge set 1 x half offset hinge set 4 x dropbolt or 2 x twinpoint lock
5R		1 x pivot set 1 x wall pivot set* 2 x intermediate carrier set 1 x hinge set 1 x half offset hinge set 4 x dropbolt or 2 x twinpoint lock
3L4R		2 x pivot set 2 x wall pivot set* 2 x intermediate carrier set 1 x left carrier set 3 x half offset hinge set 6 x dropbolt or 3 x twinpoint lock
7R		1 x pivot set 1 x wall pivot set* 3 x intermediate carrier set 2 x hinge set 1 x half offset hinge set 6 x dropbolt or 3 x twinpoint lock
2L5R		2 x pivot set 2 x wall pivot set* 2 x intermediate carrier set 1 x right carrier set 2 x hinge set 1 x half offset hinge set 6 x dropbolt or 3 x twinpoint lock
8R	 not accessible from exterior	1 x pivot set 1 x wall pivot set* 3 x intermediate carrier set 1 x left carrier set 2 x hinge set 2 x half offset hinge set 8 x dropbolt or 4 x twinpoint lock

\*Wall Pivot Set recommended for doors over 4' 11" (1500mm) high and required for doors over 7' 4" (2250mm)

While every effort has been made to ensure the accuracy of the information in this publication, Centor assume no responsibility for errors or omissions or any consequences of reliance solely on this publication. Centor reserves the right to change product specifications.



**Centor Europe Ltd**

Unit 6, Elmdon Trading Estate  
Bickenhill Lane  
Birmingham  
B37 7HE  
United Kingdom  
t +44 (0) 121 701 2500  
f +44 (0) 121 782 9507  
mail.uk@centor.com  
www.centor.com

centor®