Recommended Fixings Manual

"Liniar are at the forefront of development of innovative window and door products. If we need advise on which fasteners to use we always turn to Rapierstar for their technical expetise and fastener knowledge".

Paul Garforth - Technical Services Director - Liniar System

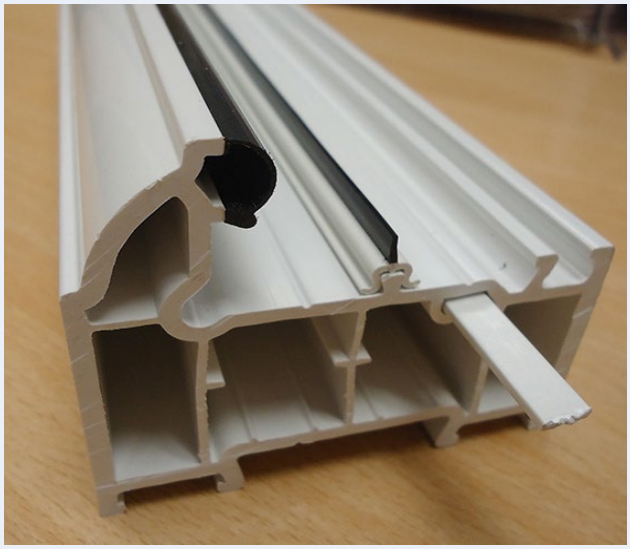
celebrating 25 years

rapierstar® gives you the edge

May 2019-REV04

In 2007 the Liniar team set about designing a brand new system – a system which would be both thermally efficient AND strong and secure.

Firstly, there were to be no thermal inserts – the multi-chambered effect was designed to be part of the profile, with both the amount of internal webs and their spacing being fine-tuned with Therm software to achieve exceptional thermal performance. This principal could only be applied to specific profiles within the system, with transoms and mullions remaining steel-reinforced using a steel box section within the central chamber – this provides the rigidity needed within the frame.



Secondly, the issue of secure fixing for hardware was addressed by incorporating a rectangular pocket directly behind areas where fixings would be used, achieving screw pull-out forces rivalling that of 1.2mm thick steel when inserted with a uPVC screw retainer.

The Liniar window system has been independently tested and verified by the British Standards Institute, meeting PAS 24 with reduced steel and BS6375; air and water leakage and wind loading for structural strength.

By making the most efficient use of materials and avoiding the need for expensive triple glazing, the overall cost of manufacturing a window has also been reduced – delivering benefits to fabricators, installers and end users.

CONTENTS

Section		Page
1	Introduction to Rapierstar StarPVCU screws	3
2	Chart of screws recommended for Liniar system	4
3	Outer Frames	6
4	Casement Sashes	13
5	Transoms/Mullions	22
6	French Doors/Windows	31
7	Bays/Couplers	35
8	Dummy Sashes	41
9	Installation	43

The Correct Fastener

rapierstar® the market-leading supplier of screws to the PVC-U window industry, with its unrivalled technical expertise, has worked together with your systems company to produce this recommended fixings manual. The following pages contain advice on the correct fastener for each application.

Star Performance

rapierstar® ***StarPVCU*** window screws have conformed with all relevant industry standards, guidelines and recommendations for some time and are intended to be used where mechanical resistance, stability and safety of use in the sense of the 'essential requirements' of Annex I of the Construction Products Regulation 305/2011 are to be fulfilled.

Surpassing Standards

rapierstar® branded product ranges have been certified by European approved 'Notified Bodies', confirming initial type testing, assessment and verification of constancy of performance.

BS EN 14351-1:2006+A1:2010, Windows and doors product standard, performance characteristics. ***rapierstar***® branded screws conform with the requirements of harmonised European standard BS EN 14351-1 and have been type tested to meet the standard of BS EN 14566:2008+A1:2009. By conforming with this standard, we are independently verifing, that the head/thread/point maintain consistency of design. This also guarantees that steel screws are produced to EU standards and that factory controls are in place during manufacture.

PAS 24:2016 Windows and doors fabricated with correct ***StarPVCU*** screws exceed PAS 24:2016 - enhanced security performance requirements for doorsets and windows in the UK.

BS EN 1670:2007 Electroplating coatings of ***rapierstar***® products comply with the provisions of ISO 2081:2008 and exceed corrosion resistance testing to BS EN 1670 grade 4 for Carbon Steel screws and BS EN 1670 grade 5 for Stainless Steel screws.

ISO 9001, is defined as the international standard that specifies requirements for a quality management system (QMS). Organizations use the standard to demonstrate the ability to consistently provide products and services that meet customer and regulatory requirements. ***rapierstar***® is an ISO 9001:2015 registered company and all our window screws are manufactured by ISO 9000 certificated companies.

Screw Tips - Best Practice

Perpendicular Insertion: Ensure that any fastener is applied at 90° to the material at all times.

Mechanical Damage: It is important to replace the screwdriver bit regularly. A worn screwdriver bit may not engage fully into the recess, causing damage to the plating of the screw with the resulting likelihood of corrosion.

Torque Setting: The use of excessive torque may lead to stripping and failure of the fastener. The torque setting on the screwdriver should be the minimum required to effect a complete fastening.

Screwdriver Speed: It is recommended by the Glass & Glazing Federation and the British Plastics Federation that driver speeds between 1500 rpm and 2000 rpm are used.

Avoid Corrosive Elements

Several factors can cause screws to rust, each of which can be accelerated depending on the situation of the application.

Silicone sealants - avoid acetic acid cured high and low modulus sealants. The vapour alone is sufficient to cause corrosion. Therefore a neutral curing sealant is recommended.

Acrylic fillers - contact with any carbon steel component will cause corrosion.

Cleaners - aggressive cleaning substances, especially those containing ammonia, chlorine etc. can reduce the effectiveness of the protective plating and should be avoided.

New-build - screws should not come into contact with wet plaster or cement, as the lime content will cause corrosion. Also, the acid wash that is often used to clean brickwork is highly corrosive and should be avoided completely. **Where any of the above conditions are likely to exist, the use of stainless steel is recommended.**

100% Stainless, 100% Solution

For coastal or heavily polluted regions of the country, when attaching stainless steel hardware, or where prolonged guarantees are being offered, we recommend that stainless steel screws should be used.

Austenitic Stainless Steel - 302

302 grade Austenitic stainless steel is ideal for use in PVC-U only applications, giving excellent corrosion resistance.

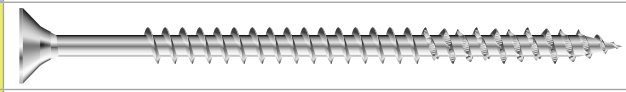
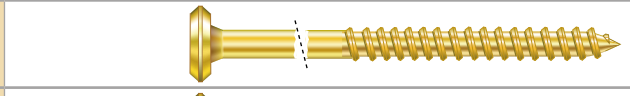
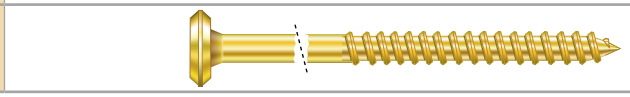
Enhanced Martensitic Stainless Steel - 410

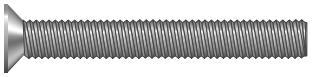
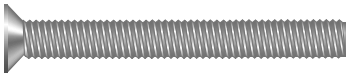
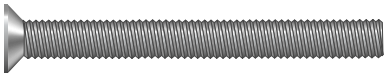
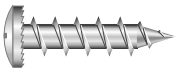
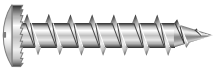
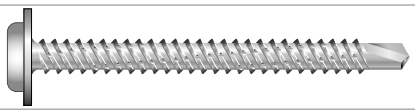
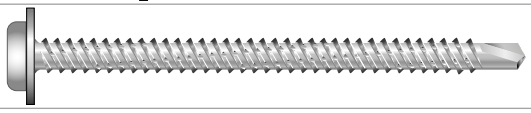
410 grade Martensitic stainless steel is a harder grade which is capable of self-drilling and tapping into steel reinforcement. Screws are tested by UKAS accredited test bodies to beyond 3000 hours salt spray test in accordance with BS EN ISO 9227.

Bi-Metallic

Austenitic stainless steel fastener with a carbon steel drill tip. Suitable for reinforced applications. Combination recess with square drive giving effective 'stick-fit' onto the driver bit for ease of insertion during fabrication and common Phillips no2 recess for on-site adjustment.

In any application where fasteners are required to be guaranteed free from hydrogen embrittlement or any other form of hydrogen induced cracking (HIC), Rapierstar always recommend that fasteners manufactured from a grade of stainless steel considered suitable for the end application be specified and used.

Item	Screw	Code	Option Code		Application
1		CFG 4.3 X 16	Z	S	Security glazing clips into PVC, interlocking wedges LM0302, Reversible Hinge to Frame, Flag Hinge into PVC, Reversible Hinge to Mullion Un-Reinforced
2		CFG 4.3 X 25	Z	S	Keep to Frame/Transom/Mullion, Reversible Hinge Protectors to Frame, Gearing, interlocking wedges LM0302, Centre Pivot Bracket, Top Gliders, end cap LM0011, Letter Plate
3		CFG 4.8 X 25	Z	S	Composite Door Hinges
4		CFG 4.3 X 30	Z	S	Door Keep Frame, T&T Keeps, T&T Face Mounted Top & Bottom Hinge, Interlocking Wedge Reversible
5		CFG 4.3 X 35	Z	S	T&T Face Mounted Hinges, Keeps (Yale)
6		CFG 4.3 X 40	Z	S	Hinge Protector Reversible Frame
7		CFG 4.3 X 45	Z	S	Overhead Vent Assembley
8		CFG 4.3 X 55	Z	S	Small Outer PVC Butt Joint Coupling
9		CPF 5.0 X 80	Z	–	Large Outer PVC Butt Joint Coupling
10		CPP 6.0 X 70	Y	–	Dummy Sashes into Frame/Transom/ Mullion
11		CSR 3.9 X 16	Z	–	Threshold Moulding to Threshold, Interlocking Wedges LM0302, Security Glazing Clips into Reinforcing, Reversible Hinge to Reinforced Mullion
12		CSR 3.9 X 25	Z	S	Threshold Moulding LM0371 & LM0372 to Reinforced Frame, Keep to Frame/ Transom/Mullion, LAN180 Retention, Interlocking wedges, Reversible Hinge Protectors to Reinforced Transom
13		CSR 3.9 X 32	Z	S	T&T Face Mounted Top & Bottom Hinge
14		CSR 3.9 X 38	Z	S	Door Keep into Reinforcement, Keep to Reinforced Mullion
15		CSR 4.8 X 32	Z	–	Flag Hinges to Frame, Rebate Butt Hinge to Frame, Floating Mullion Adaptor Attachment
16		CSR 4.8 X 45	Z	–	Flag Hinge to Door Outer Frame, Flag Hinges to Sash, floating mullion attachment
17		MJS 4.8 X 80	Y	–	Threshold LAN271 to Outer Frame Jambs, Mock Sash Horns, Mechanical Joints
18		MJS 4.8 X 95	Y	–	Mechanical Outer Frame, Midrail

Item	Screw	Code	Option Code		Application
19		MS M5 X 40	Z	S	Handle Screw Casement Sash, Flush Sash
20		MS M5 X 45	Z	S	Handle Screw T&T Sash
21		MS M5 X 50	Z	S	Handle Screw Reversible Sash
22		RSR 3.9 X 16	Z	S	Steel Reinforcement Retention, LAR011 Retention
23		SFG 4.3 X 16	Z	S	Weather Bar, Friction Stay to Small Transom/ Mullion, Aluminium Adaptor Profile to French Door Sash/ Flush Sash
24		SFG 4.3 X 25	Z	S	Friction Stays to Outer Frame/Transom/ Mullion
25		SFG 4.8 X 20	Z	S	Hinge Guards to Small Transom/Mullion
26		SFG 4.8 X 25	Z	S	Hinge Guards/Quad Guards, GT Composite Hinge Guards to Door Slab
27		SSR 3.9 X 16	Z	S	Friction Stays to Reinforced Profile, Hinge Guards
28		SSR 3.9 X 25	Z	S	GT Composite Hinge Guards to Frame, Friction Stays to Reinforced Profile
29		WSR 4.8 X 50	Z	-	Small Outer to Corner Post, Small Outer Frame to Coupler, Small Outer Frame to Bow Pole, Small Outer Frame to LSR911 Coupler
30		WSR 4.8 X 65	Z	-	Large Outer Frame to Bow Pole
31		WSR 4.8 X 70	Z	-	Large Outer Frame to Corner Post, Large Outer Frame to Coupler, Large Outer Frame to LSR911 Coupler
32		FFT 7.5 X 102	Y	-	Fixing Small Outer Frame
33		FFT 7.5 X 122	Y	-	Fixing Large Outer Frame

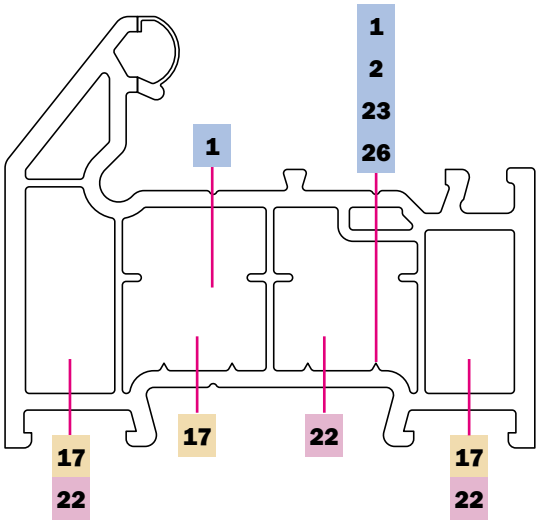
Please note that the fasteners shown in this recommended fixing manual are all based on reinforcing scetions supplied by Liniar. Pull out strengths and testing that Rapierstar has conducted will be affected if non Liniar reinforcing is used and this will affect the product warranty.

Colour Key:

Option Code - Material Finish		Carbon Steel Zinc		Stainless Steel		Carbon Steel Yellow

Fastener Type		Drill Point		Gimlet Point		Machine Screw
		Multi-Purpose Screw		AB Point		Miscellaneous

OUTER FRAMES 1



LCW011 Chamferred Outer Frame

LSW011 Sculptured Outer Frame

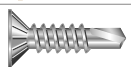
LSR011

LAR011

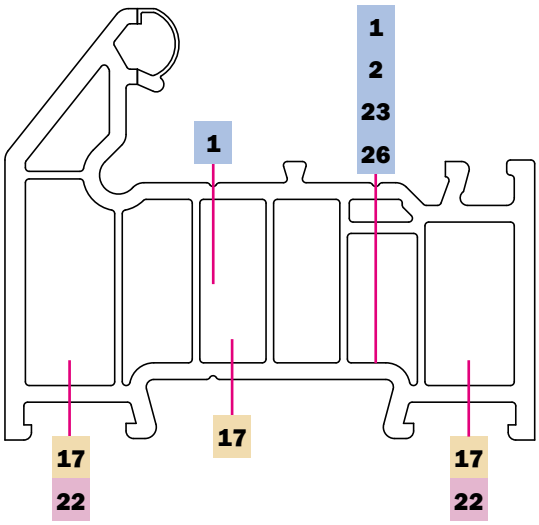
LAN101
Screw retaining strip

Note: LAN101 must be used where hardware is attached to outer frames and sash profiles as per the Liniar Technical Manual

Please note that the fasteners shown in this recommended fixing manual are all based on reinforcing scetions supplied by Liniar. Pull out strengths and testing that Rapierstar has conducted will be affected if non Liniar reinforcing is used and this will affect the product warranty.

1		CFG 4.3 X 16	Security glazing clips into PVC, interlocking wedges LM0302
2		CFG 4.3 X 25	Keep to Frame, end cap LMO011
17		MJS 4.8 X 80	Mechanical joints, Mechanical Outer
22		RSR 3.9 X 16	Steel Reinforcement Retention, LAR011 Retention
23		SFG 4.3 X 16	Friction Stay to Frame
26		SFG 4.8 X 25	Hinge Guards

OUTER FRAMES 2

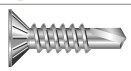


LCW012 Chamferred Energy Plus Outer Frame

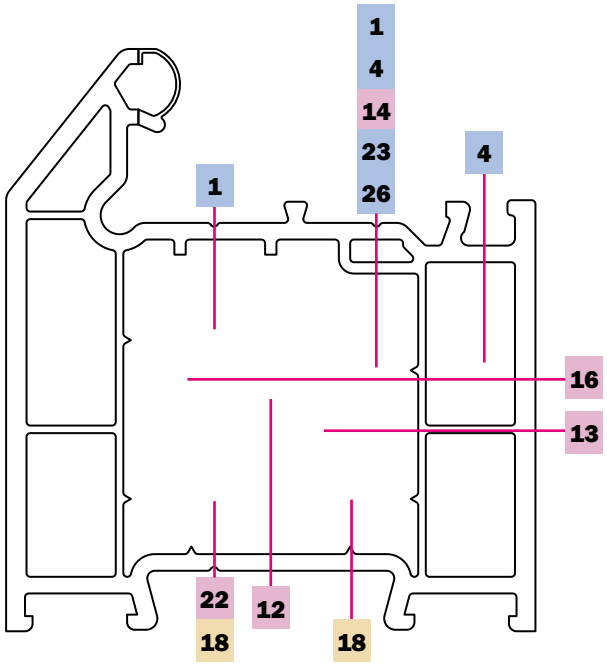
LSW012 Sculptured Energy Plus Outer Frame

LAR011

LAN101
Screw retaining strip

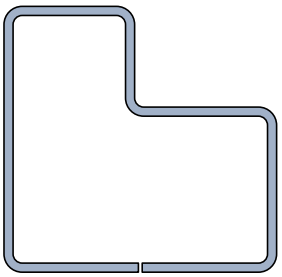
1		CFG 4.3 X 16	Security glazing clips into PVC, interlocking wedges LM0302
2		CFG 4.3 X 25	Keep to Frame, end cap LM0011
17		MJS 4.8 X 80	Mechanical joints, Mechanical Outer
22		RSR 3.9 X 16	Steel Reinforcement Retention, LAR011 Retention
23		SFG 4.3 X 16	Friction Stay to Frame
26		SFG 4.8 X 25	Hinge Guards

OUTER FRAMES 3



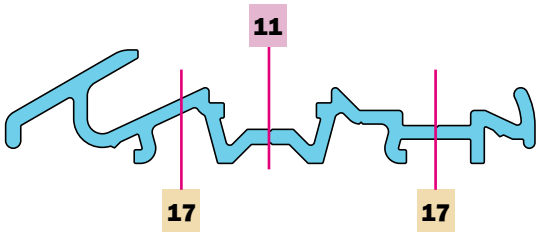
LCW016 Chamferred Outer Frame

LSW016 Sculptured Energy Plus Outer Frame

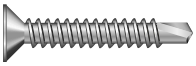
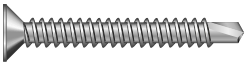
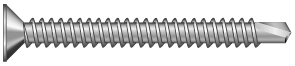
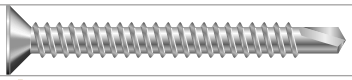


LSR016

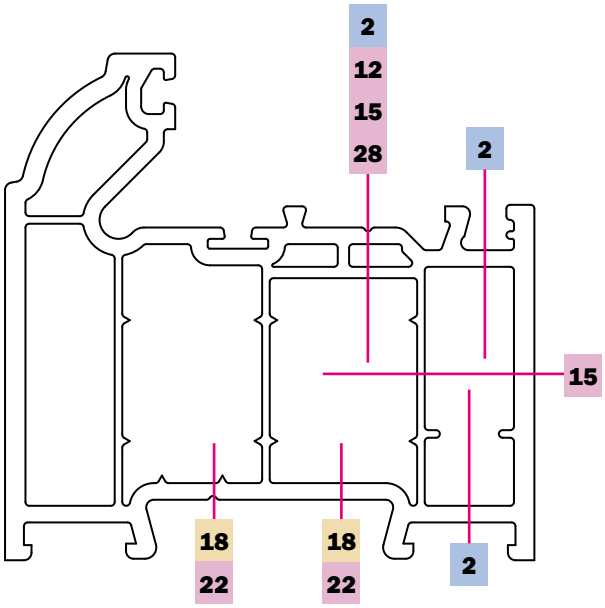
LAN101
Screw retaining strip



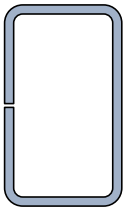
LAN271

1		CFG 4.3 X 16	Security glazing clips into PVC, interlocking wedges LM0302
4		CFG 4.3 X 30	Casment Keep, Door Keep Frame, T&T Keeps, T&T Face Mounted Top & Bottom Hinge
11		CSR 3.9 X 16	Threshold Moulding to Threshold
12		CSR 3.9 X 25	Threshold Moulding LM0371 & LM0372 to Reinforced Frame
13		CSR 3.9 X 32	T&T Face Mounted Top & Bottom Hinge
14		CSR 3.9 X 38	Door Keep into Reinforcement
16		CSR 4.8 X 45	Flag Hinge to Door Outer Frame
17		MJS 4.8 X 80	Threshold LAN271 to Outer Frame Jambs
18		MJS 4.8 X 95	Mechanical joints
22		RSR 3.9 X 16	Steel Reinforcement Retention
23		SFG 4.3 X 16	Friction Stays to Outer Frame
26		SFG 4.8 X 25	Hinge Guards

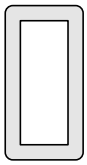
OUTER FRAMES 4



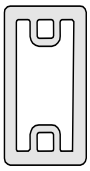
LSW018 Sculptured 44mm Composite Door Outer Frame



LSR018

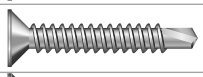
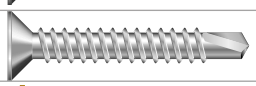
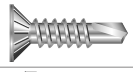


LAN180

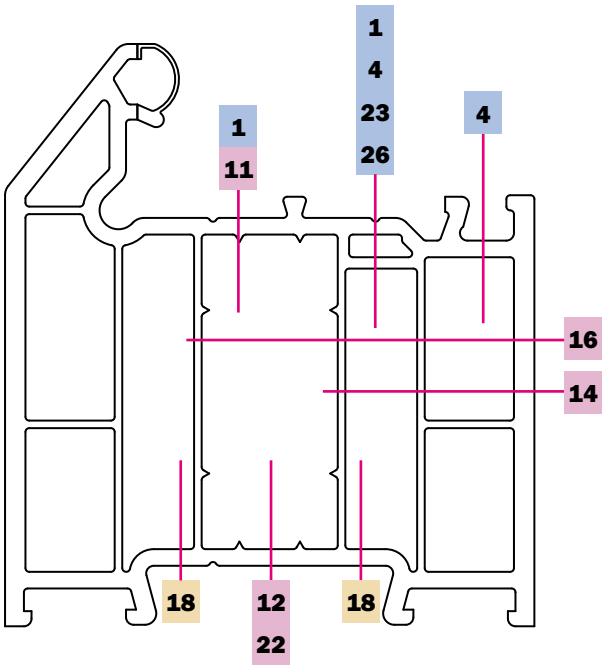


LAN118

Composite Hinge Guards to door slab use SFG 4.8 X 25 for the door plate

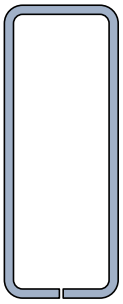
2		CFG 4.3 X 25	Keep to Frame, LAN180 & LAN118 retention
12		CSR 3.9 X 25	Keep to Frame
15		CSR 4.8 X 32	Flag Hinges to Frame, Rebate Butt Hinge to Frame
18		MJS 4.8 X 95	Mechanical joints, Mechanical Outer
22		RSR 3.9 X 16	Steel Reinforcement Retention
26		SFG 4.8 X 25	Composite Hinge Guards to Door Slab (not annotated)
28		SSR 3.9 X 25	Composite Hinge Guards to Frame

OUTER FRAMES 5

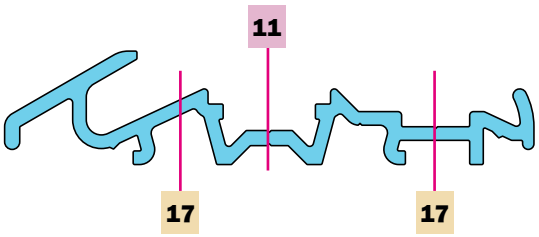


LCW017 Chamferred Energy Plus Outer Frame

LSW017 Sculptured Energy Plus Outer Frame



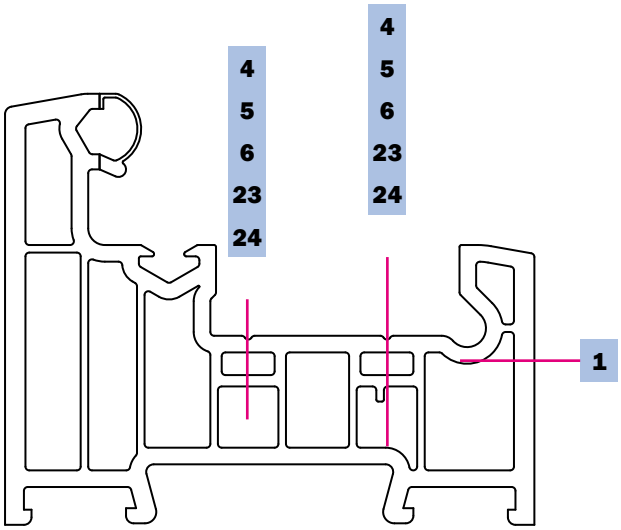
LSR017



LAN271

1	CFG 4.3 X 16	Security glazing clips into PVC, interlocking wedges LM0302
4	CFG 4.3 X 30	Casment Keep, Door Keep Frame, T&T Keeps, T&T Face Mounted Top & Bottom Hinge
11	CSR 3.9 X 16	Threshold Moulding to Threshold, Interlocking Wedges LM0302
12	CSR 3.9 X 25	Threshold Moulding LM0371 & LM0372 to Reinforced Frame
14	CSR 3.9 X 38	T&T Face Mounted Top & Bottom Hinge
16	CSR 4.8 X 45	Flag Hinge to Door Outer Frame
17	MJS 4.8 X 80	Threshold LAN271 to Outer Frame Jambs
18	MJS 4.8 X 95	Mechanical joints
22	RSR 3.9 X 16	Steel Reinforcement Retention
23	SFG 4.3 X 16	Friction Stays to Frame
26	SFG 4.8 X 25	Hinge Guards

OUTER FRAMES 6

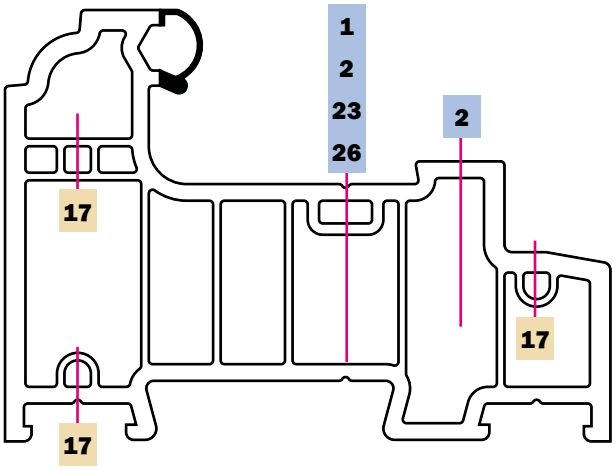


LRW012 Reversible window Outer Frame

LAN101
Screw retaining strip

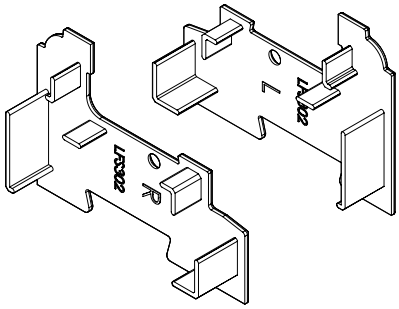
1		CFG 4.3 X 16	Head drip LRW212 to Frame
4		CFG 4.3 X 30	Keeps to Frame, Top Security Striker to Frame
5		CFG 4.3 X 35	Keeps to Frame (Yale)
6		CFG 4.3 X 40	Hinge Protector to Frame, Keeps to Frame
23		SFG 4.3 X 16	Reversible Hinge to Frame
24		SFG 4.3 X 25	Reversible Hinge to Frame

OUTER FRAMES 7

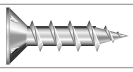


LFS011 Resurgence Outer Frame

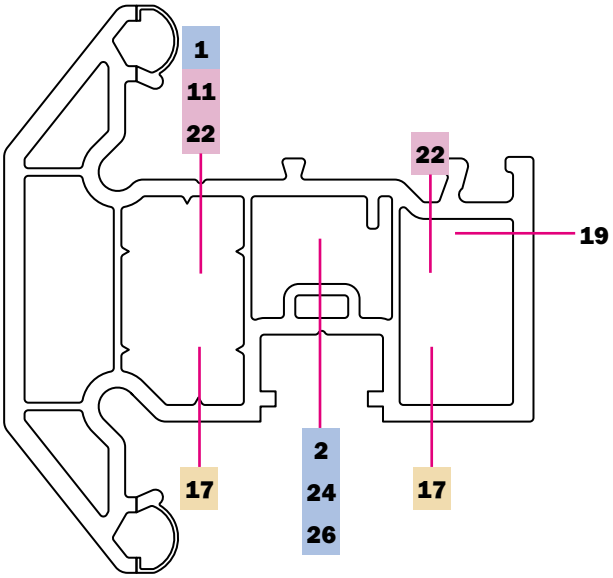
LFS302 End Caps



LAN101
Screw retaining strip

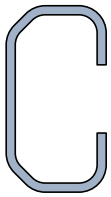
1		CFG 4.3 X 16	Interlocking wedges LM0302
2		CFG 4.3 X 25	Keep to Frame, end cap for mechanically jointed outer frame LFS302
17		MJS 4.8 X 80	Mechanical joints, Mechanical Outer
23		SFG 4.3 X 16	Friction Stay to Frame
26		SFG 4.8 X 25	Hinge Guards

CASEMENT SASHES 1

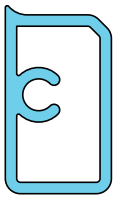


LCW031 Chamferred Sash

LSW031 Sculptured Sash

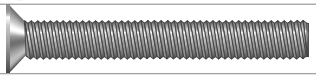
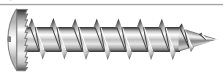


LSR031

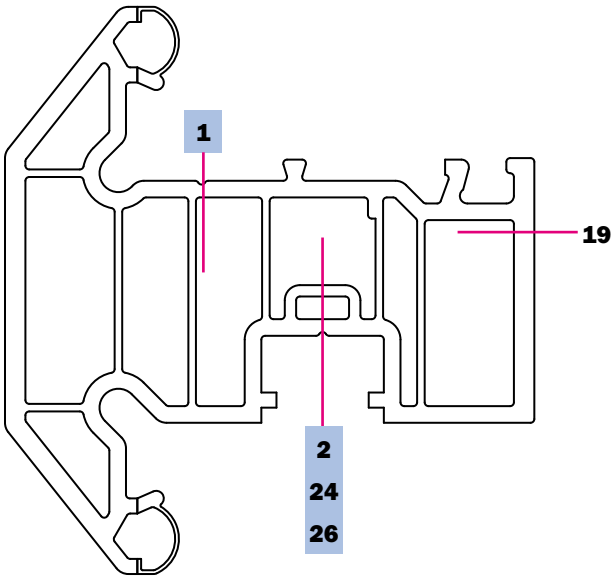


LAR031

LAN101
Screw retaining strip

1		CFG 4.3 X 16	Security glazing clips into PVC only required with scribed beads
2		CFG 4.3 X 25	Gearing, interlocking wedges LM0302
11		CSR 3.9 X 16	Security Glazing Clips into Reinforcing
17		MJS 4.8 X 80	Mock Sash Horns
19		MS M5 X 40	Handle Screw
22		RSR 3.9 X 16	Steel Reinforcement Retention
24		SFG 4.3 X 25	Friction Stays
26		SFG 4.8 X 25	Hinge Guards

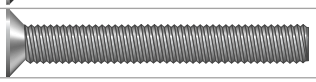
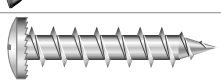
CASEMENT SASHES 2



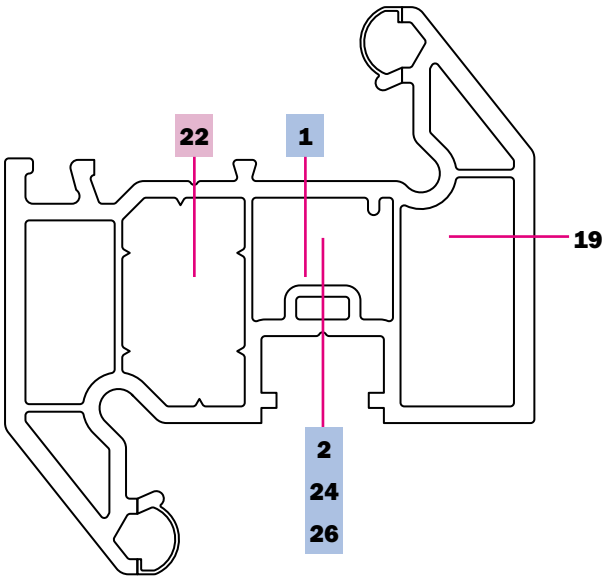
LAN101
Screw retaining strip

LCW033 Energy Plus Chamferred Sash

LSW033 Energy Plus Sculptured Sash

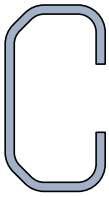
1		CFG 4.3 X 16	Security glazing clips into PVC only required with scribed beads
2		CFG 4.3 X 25	Gearing, interlocking wedges LM0302
19		MS M5 X 40	Handle Screw
24		SFG 4.3 X 25	Friction Stays
26		SFG 4.8 X 25	Hinge Guards

CASEMENT SASHES 3



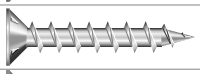
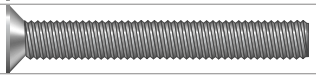
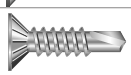
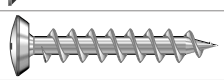
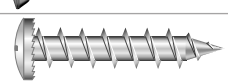
LCW032 Chamferred Ext Glazed Sash

LSW032 Sculptured Ext Glazed Sash

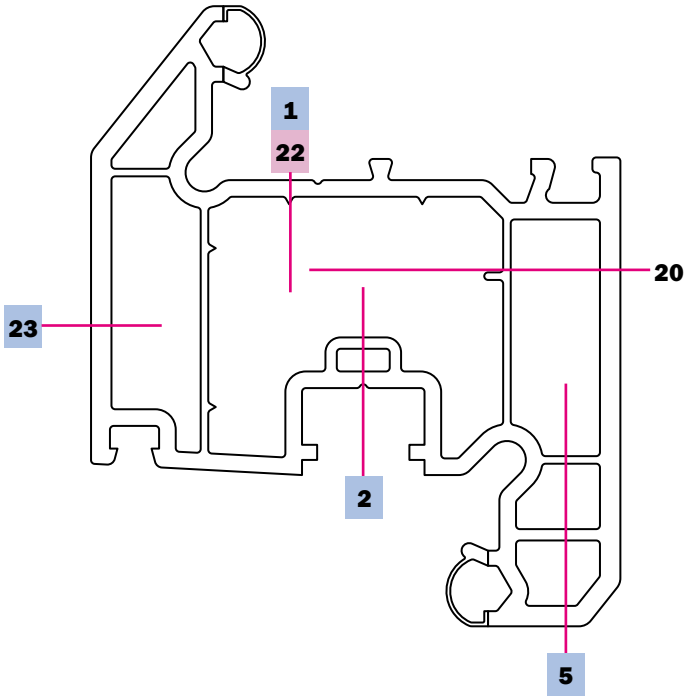


LSR031

LAN101
Screw retaining strip

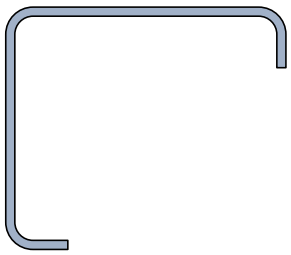
1		CFG 4.3 X 16	Security glazing clips into PVC
2		CFG 4.3 X 25	Gearing, interlocking wedges LM0302
19		MS M5 X 40	Handle Screw
22		RSR 3.9 X 16	Steel Reinforcement Retention
24		SFG 4.3 X 25	Friction Stays
26		SFG 4.8 X 25	Hinge Guards

SASHES 4



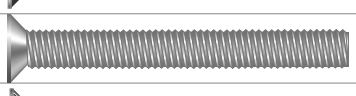
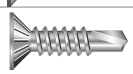
LCW035 Chamferred T&T Sash

LSW035 Sculptured T&T Sash

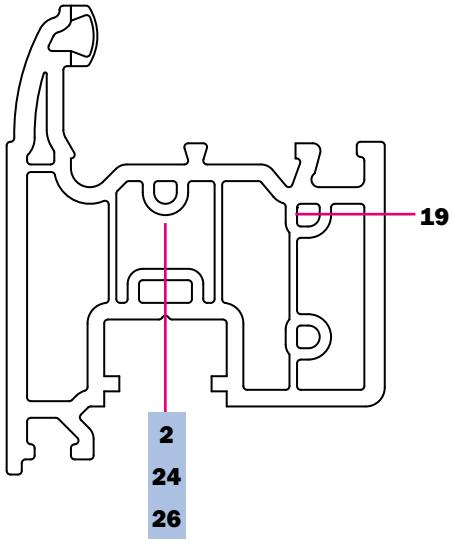


LSR035

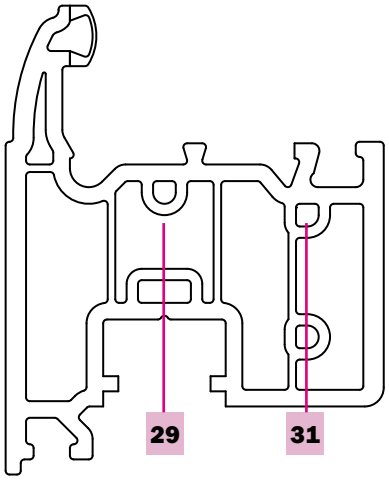
LAN101
Screw retaining strip

1		CFG 4.3 X 16	Security glazing clips into PVC
2		CFG 4.3 X 25	Gearing
5		CFG 4.3 X 35	Face mounted T&T Hinges
20		MS M5 X 45	Handle Screw
22		RSR 3.9 X 16	Steel Reinforcement Retention
23		SFG 4.3 X 16	Weather Bar

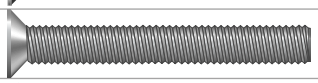
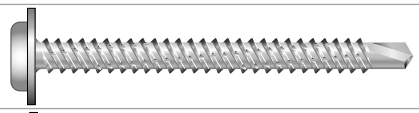
SASHES 5



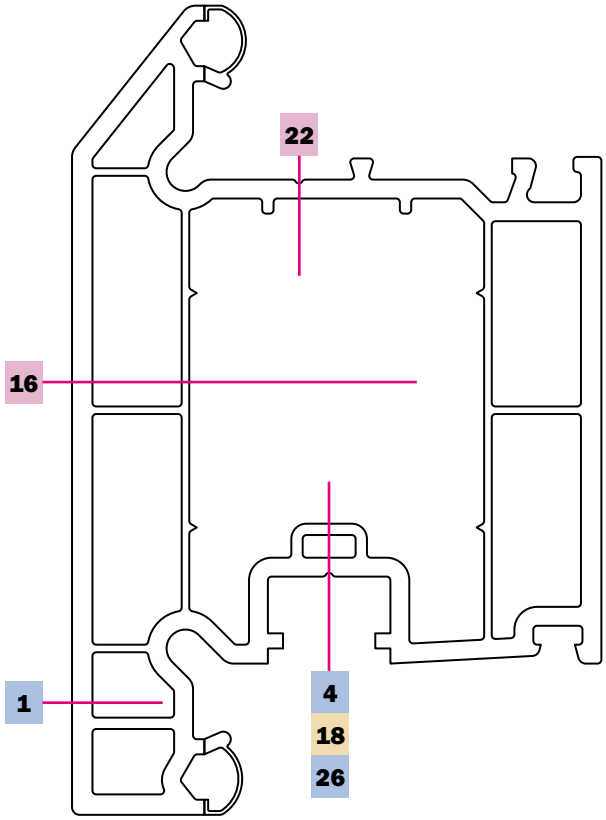
LSW030 Sculptured Glazed Flush Sash



LAN101
Screw retaining strip

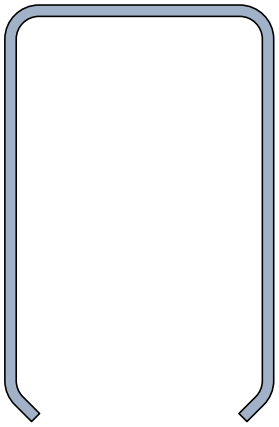
2		CFG 4.3 X 25	Gearing, interlocking wedges LM0302
19		MS M5 X 40	Handle Screw
24		SFG 4.3 X 25	Friction Stays
26		SFG 4.8 X 25	Hinge Guards
29		WSR 4.8 X 50	Mechanical Corner Joints
31		WSR 4.8 X 70	Mechanical Corner Joints

SASHES 6



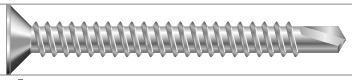
SLCW036 Chamferred Door Sash Open Out

LSW036 Sculptured Door Sash Open Out

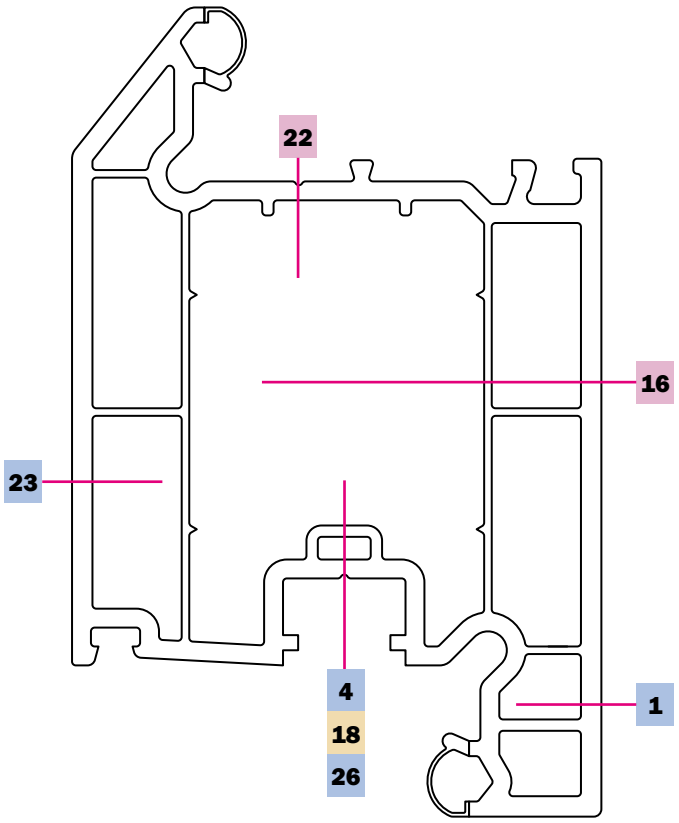


LSR036 & LSR036P

LAN101
Screw retaining strip

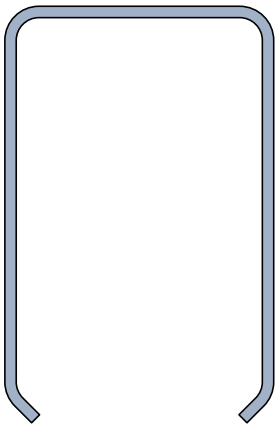
1		CFG 4.3 X 16	Flag Hinge into PVC
4		CFG 4.3 X 30	Gearing, Letter Box if Surface Mounted
16		CSR 4.8 X 45	Flag Hinges to Sash
18		MJS 4.8 X 95	Mechanical Midrail
22		RSR 3.9 X 16	Reinforcing Retention
26		SFG 4.8 X 25	Hinge Guard

SASHES 7



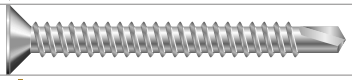
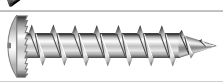
SLCW037 Chamferred Door Sash Open In

LSW037 Sculptured Door Sash Open In

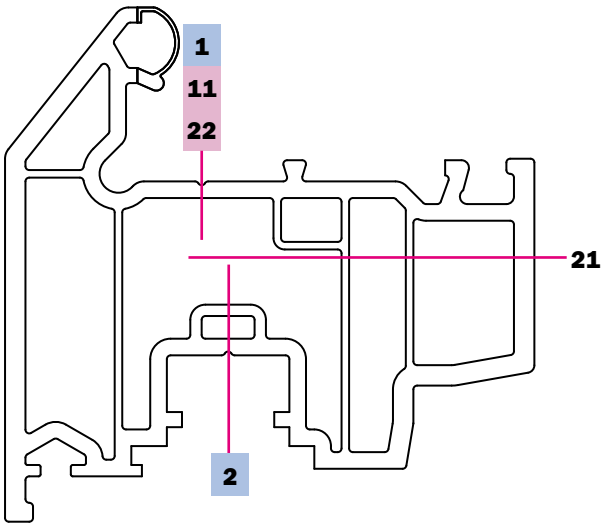


LSR036 & LSR036P

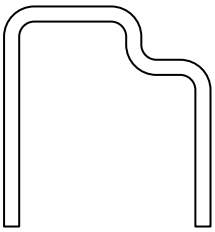
LAN101
Screw retaining strip

1		CFG 4.3 X 16	Flag Hinge into PVC
4		CFG 4.3 X 30	Gearing, Letter Box if Surface Mounted
16		CSR 4.8 X 45	Flag Hinges to Sash
18		MJS 4.8 X 95	Mechanical Midrail
22		RSR 3.9 X 16	Reinforcing Retention
23		SFG 4.3 X 16	Weather Bar
26		SFG 4.8 X 25	Hinge Guard

SASHES 8

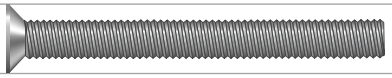


LRW033 Fully Reversible Sash

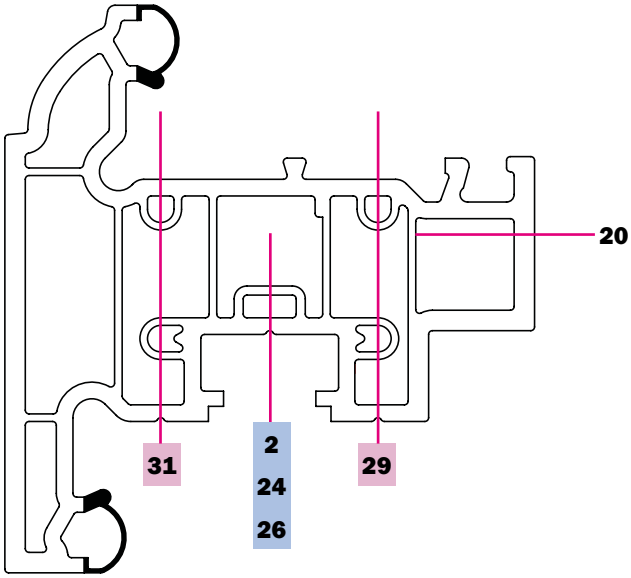


LRW133

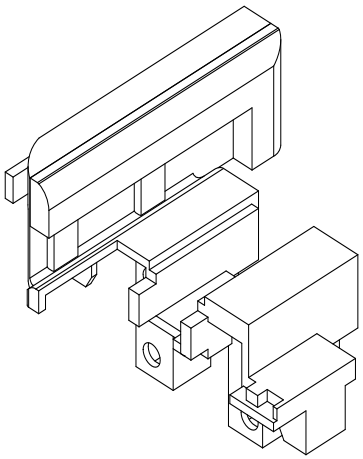
LAN101
Screw retaining strip

1		CFG 4.3 X 16	Security Glazing Clips into PVC (scribed beads only), Weather Bar to Sash
2		CFG 4.3 X 25	Gearing, Centre Pivot Bracket, Top Gliders, Hinge Protector, Sash Centralising Guides
11		CSR 3.9 X 16	Security Glazing Clips into Steel (scribed beads only)
21		MS M5 X 50	Handle Screw
22		RSR 3.9 X 16	Steel Reinforcement Retention

SASHES 9

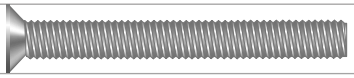
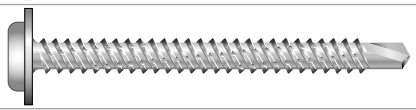
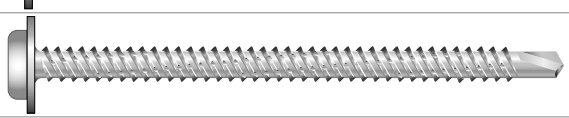


LFS031 Resurgence Flush Sash

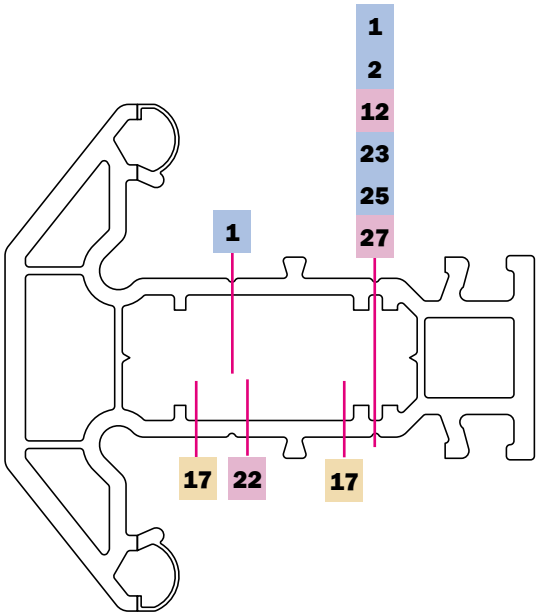


LFS301

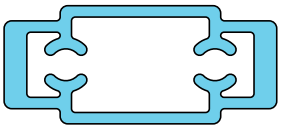
LAN101
Screw retaining strip

2		CFG 4.3 X 25	Gearing, Interlocking Wedges LMO302
20		MS M5 X 45	Handle Screw
24		SFG 4.3 X 25	Friction Stays
26		SFG 4.8 X 25	Hinge Protectors
29		WSR 4.8 X 50	Mechanical Joint Assembley
31		WSR 4.8 X 70	Mechanical Joint Assembley

TRANSOMS/MULLIONS 1



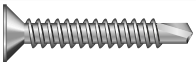
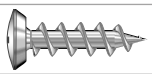
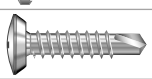
LSR021



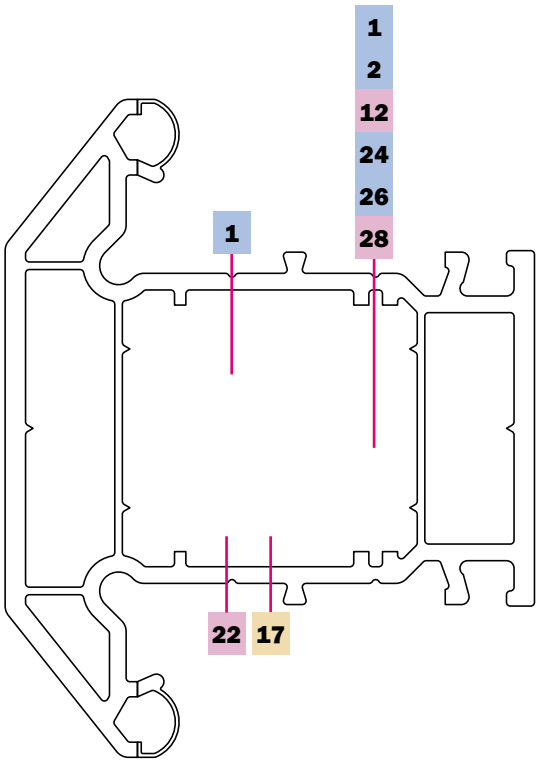
LAR021

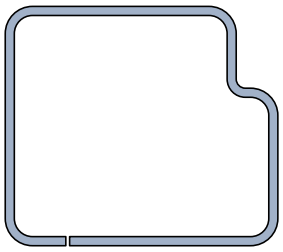
LCW021 Chamferred Transom/Mullion

LSW021 Sculptured Transom/Mullion

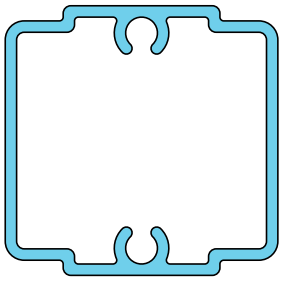
1		CFG 4.3 X 16	Security glazing clips into PVC, interlocking wedges LM0302
2		CFG 4.3 X 25	Keep to Transom/Mullion
12		CSR 3.9 X 25	Keep to Reinforced Transom/Mullion
17		MJS 4.8 X 80	Mechanical joints
22		RSR 3.9 X 16	Steel Reinforcement Retention
23		SFG 4.3 X 16	Friction Stay to Transom/Mullion
25		SFG 4.8 X 20	Hinge Guards
27		SSR 3.9 X 16	Friction Stays to Reinforced Profile, Hinge Guards

TRANSOMS/MULLIONS 2





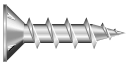
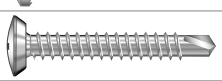
LSR026



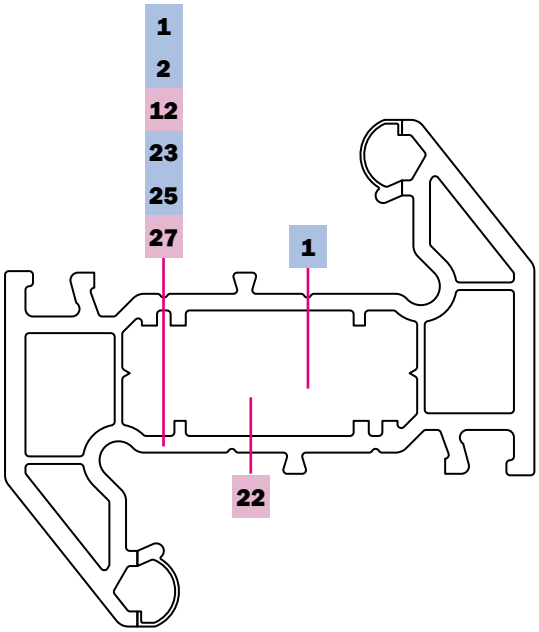
LAR026

LCW026 Chamferred Intermediate Transom/Mullion

LSW026 Sculptured Intermediate Transom/Mullion

1		CFG 4.3 X 16	Security glazing clips into PVC, interlocking wedges LM0302
2		CFG 4.3 X 25	Keep to Transom/Mullion
12		CSR 3.9 X 25	Keep to Reinforced Transom/Mullion
17		MJS 4.8 X 80	Mechanical joints
22		RSR 3.9 X 16	Steel Reinforcement Retention
24		SFG 4.3 X 25	Friction Stay to Transom/Mullion
26		SFG 4.8 X 25	Hinge Guards
28		SSR 3.9 X 25	Friction Stays to Reinforced Profile, Hinge Guards

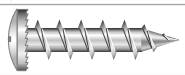
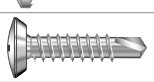
TRANSOMS/MULLIONS 3



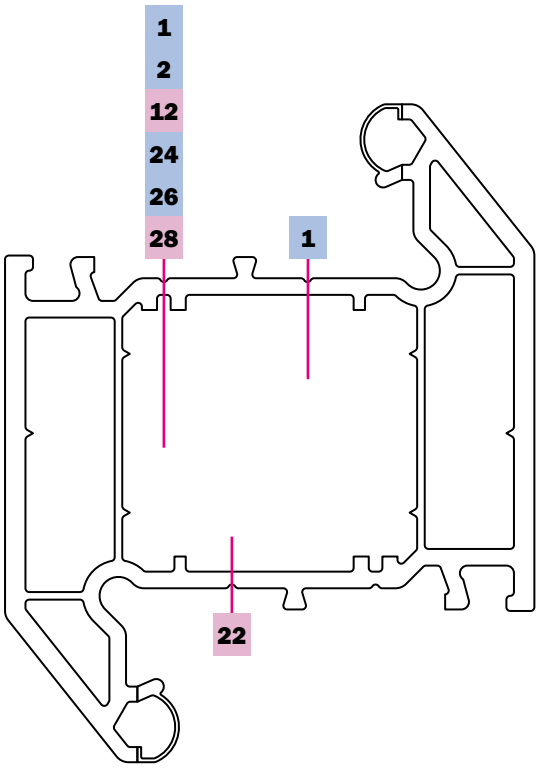
LSR021

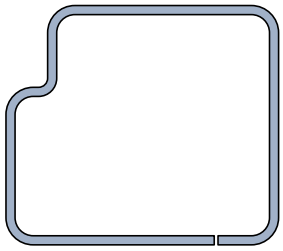
LCW022 Chamferred Transom/Mullion

LSW022 Sculptured Transom/Mullion

1		CFG 4.3 X 16	Security glazing clips into PVC, interlocking wedges LM0302
2		CFG 4.3 X 25	Keep to Transom/Mullion
12		CSR 3.9 X 25	Keep to Reinforced Transom/Mullion
22		RSR 3.9 X 16	Steel Reinforcement Retention
23		SFG 4.3 X 16	Friction Stay to Transom/Mullion
25		SFG 4.8 X 20	Hinge Guards
27		SSR 3.9 X 16	Friction Stays to Reinforced Profile, Hinge Guards

TRANSOMS/MULLIONS 4

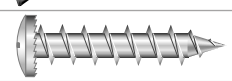
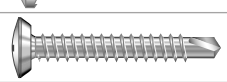




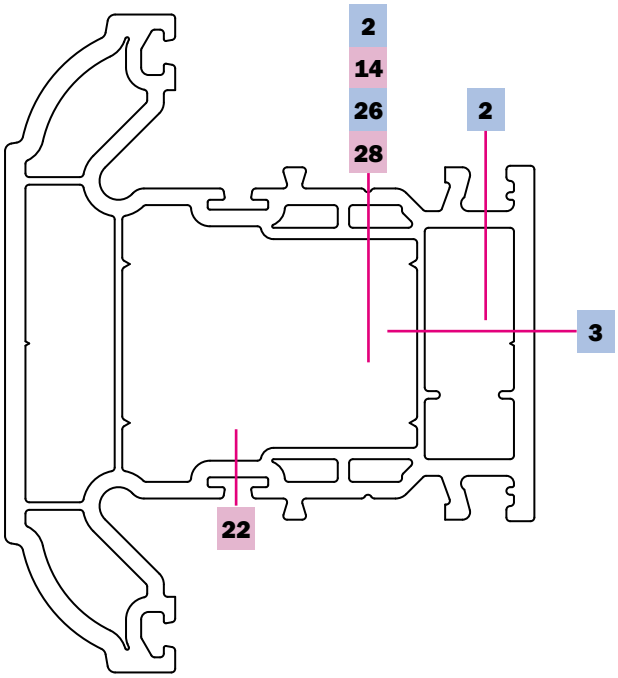
LSR026

LCW027 Chamferred Transom/Mullion

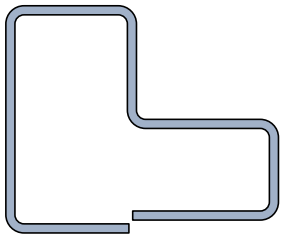
LSW027 Sculptured Transom/Mullion

1		CFG 4.3 X 16	Security glazing clips into PVC, interlocking wedges LM0302
2		CFG 4.3 X 25	Keep to Transom/Mullion
12		CSR 3.9 X 25	Keep to Reinforced Transom/Mullion
22		RSR 3.9 X 16	Steel Reinforcement Retention
24		SFG 4.3 X 25	Friction Stay to Transom/Mullion
26		SFG 4.8 X 25	Hinge Guards
28		SSR 3.9 X 25	Friction Stays to Reinforced Profile, Hinge Guards

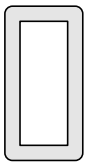
TRANSOMS/MULLIONS 5



LSW028 Sculptured Composite Door Transom/Mullion



LSR028

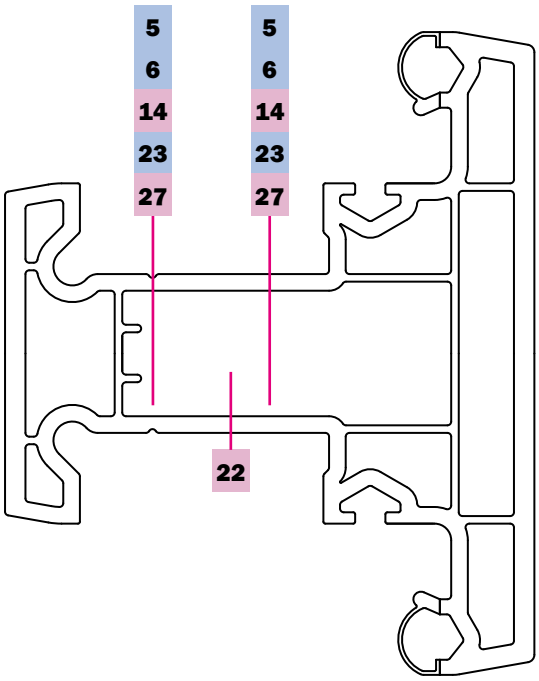


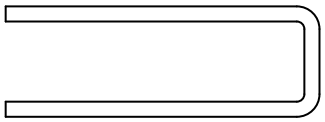
LAN180

Composite Hinge Guards to door slab use SFG 4.8 X 25 for the door plate

2		CFG 4.3 X 25	Keep to Mullion
3		CFG 4.8 X 25	Composite Door Hinge
14		CSR 3.9 X 38	Keep to Reinforced Mullion
22		RSR 3.9 X 16	Steel Reinforcement Retention
26		SFG 4.8 X 25	Composite Hinge Guards in Door Slab
28		SSR 3.9 X 25	Composite Hinge Guards

TRANSOMS/MULLIONS 6



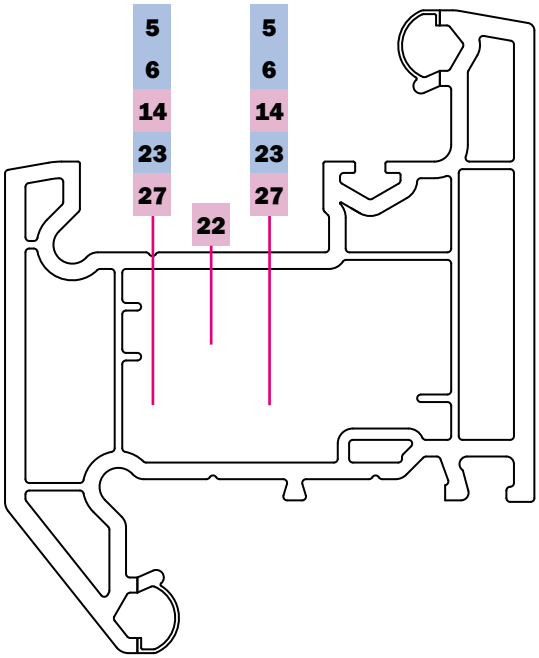


LRW122

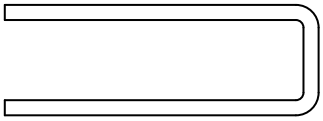
LRW021 Fully Reversible Transom/Mullion

5		CFG 4.3 X 35	Keeps to Transom, Interlocking Wedges
6		CFG 4.3 X 40	Hinge Protectors to Frame
14		CSR 3.9 X 38	Keeps to Reinforced Transom
22		RSR 3.9 X 16	Steel Reinforcement Retention
23		SFG 4.3 X 16	Reversible Hinge to Transom
27		SSR 3.9 X 16	Reversible Hinge to Reinforced Transom

TRANSOM/MULLION 7



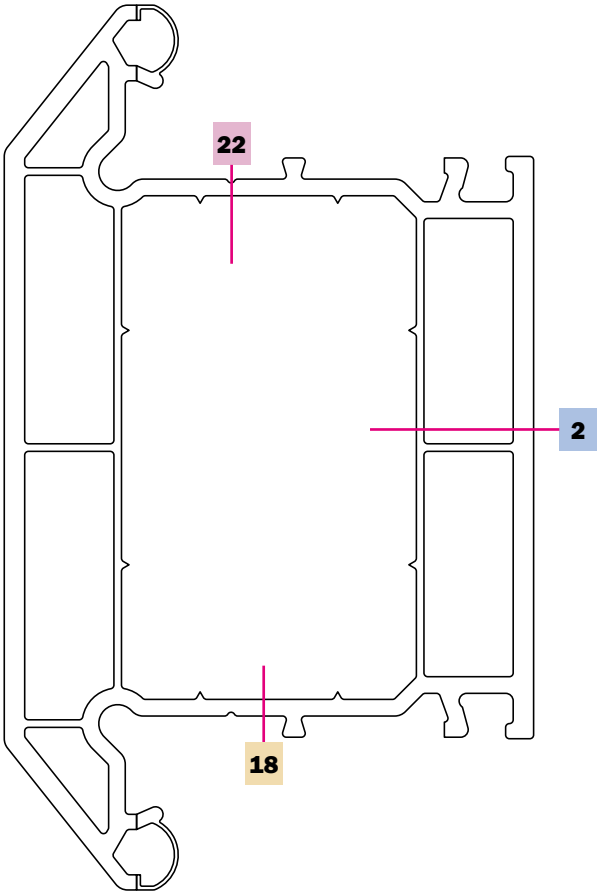
LRW022 Fully Reversible Transom/Mullion

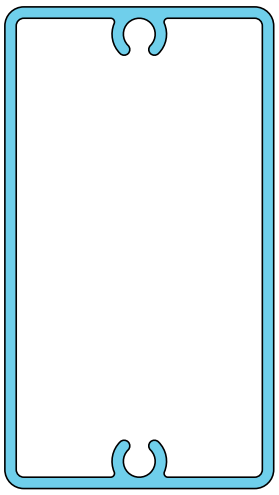


LRW122

5		CFG 4.3 X 35	Keeps to Transom, Interlocking Wedges
6		CFG 4.3 X 40	Hinge Protectors to Frame
14		CSR 3.9 X 38	Keeps to Reinforced Transom
22		RSR 3.9 X 16	Steel Reinforcement Retention
23		SFG 4.3 X 16	Reversible Hinge to Transom
27		SSR 3.9 X 16	Reversible Hinge to Reinforced Transom

TRANSOM/MULLION 8





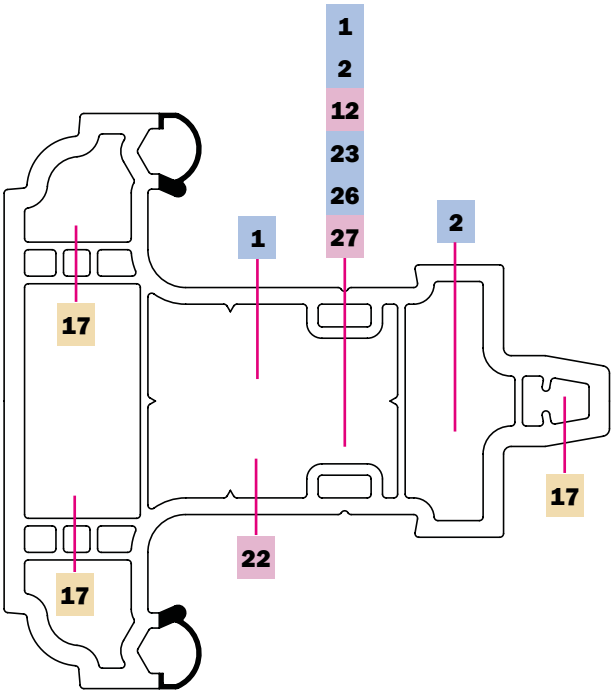
LAR029

LCW029 Chamferred Transom/Mullion

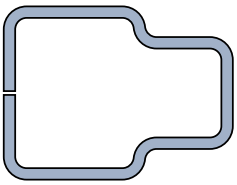
LSW029 Sculptured Transom/Mullion

2		CFG 4.3 X 25	Letter Plate to Mid-Rail Where Applicable
18		MJS 4.8 X 95	Mechanical Joints
22		RSR 3.9 X 16	Steel Reinforcement Retention

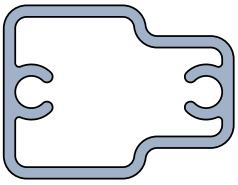
TRANSOM/MULLION 9



LFS021 Resurgence Transom/Mullion

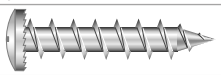


LFS121

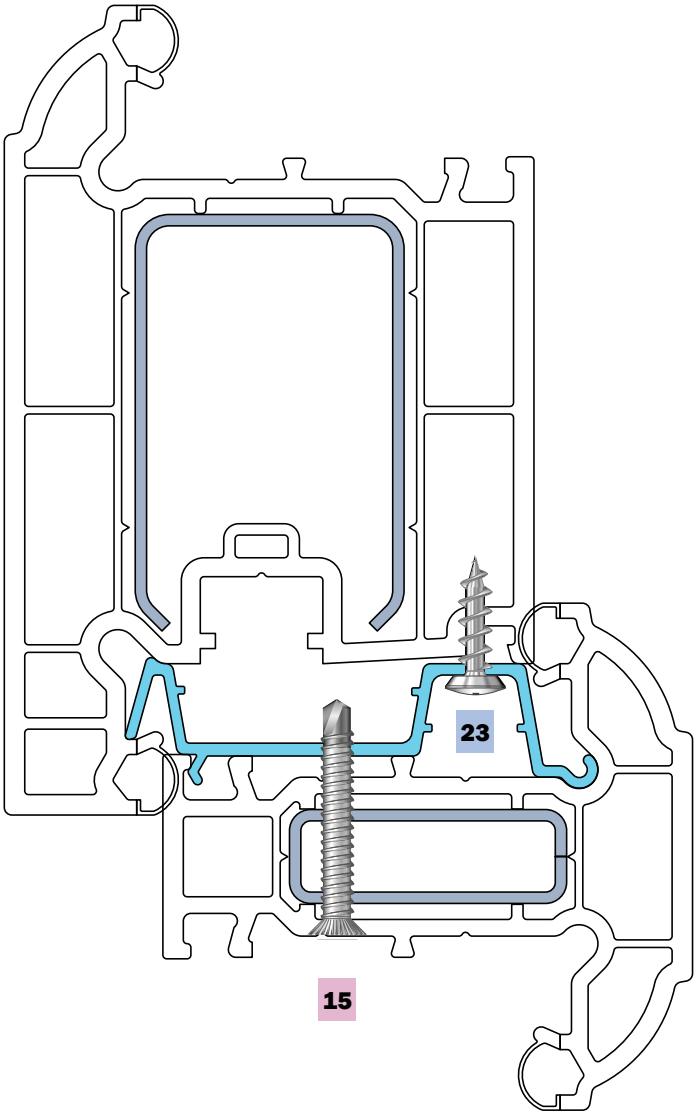


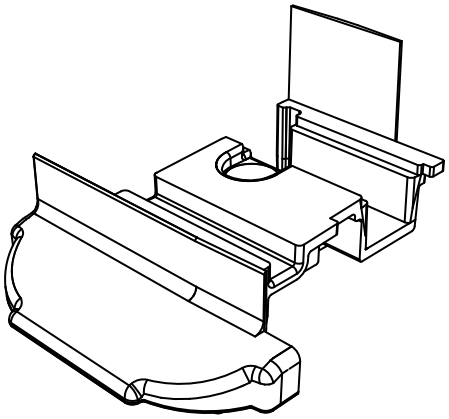
LFS212

LAN101
Screw retaining strip

1		CFG 4.3 X 16	Interlocking wedges LM0302
2		CFG 4.3 X 25	Keep to Transom/Mullion
12		CSR 3.9 X 25	Keep to Reinforced Transom/Mullion
17		MJS 4.8 X 80	Mechanical joints
22		RSR 3.9 X 16	Steel Reinforcement Retention
23		SFG 4.3 X 16	Friction Stay to Transom/Mullion
26		SFG 4.8 X 25	Hinge Guards
27		SSR 3.9 X 16	Friction Stays to Reinforced Profile, Hinge Guards

FRENCH DOOR MEETING STYLE





15

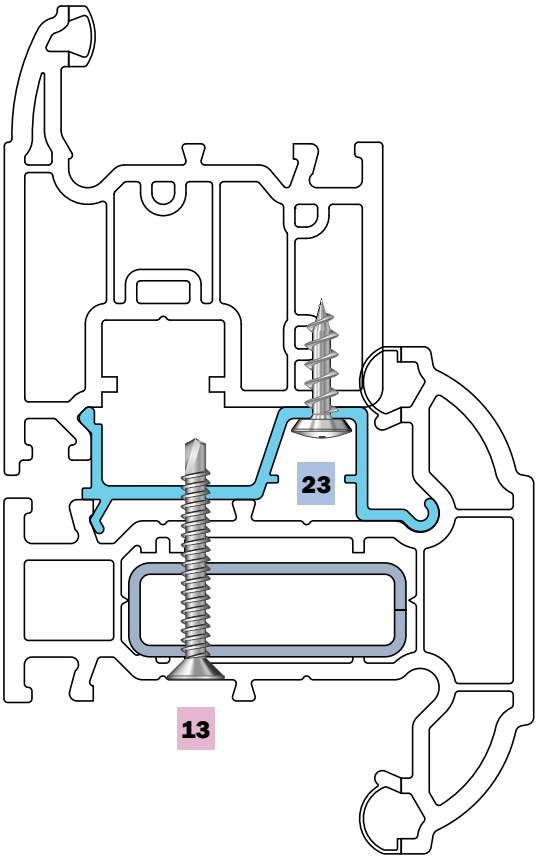
End cap is screwed onto the end of the floating mullion with CSR 4.8 X 32

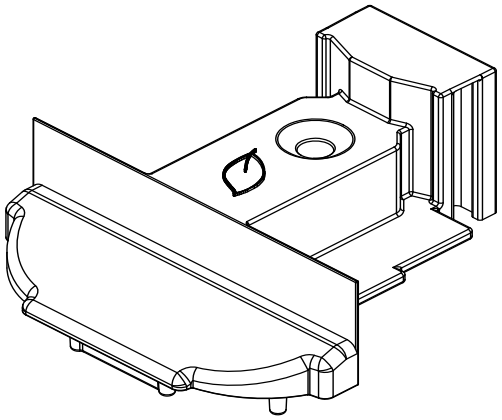
Pre-drill the aluminium adaptor with 5mm drill bit at 300mm centres. Then fit the aluminium adaptor profile to the door sash using SFG 4.3 x 16 screws.

Pre-drill the floating mullion with a 5mm drill bit before fixing to adaptor using WSR 4.8 X 50 screws. Take care not to position these screws where the door keep may interfere.

15		CSR 4.8 X 32	End Cap to Floating Mullion in to LAR021, Floating Mullion to Aluminium Adaptor
23		SFG 4.3 X 16	Aluminium Adaptor Profile to Door Sash

FLUSH CASEMENT FRENCH WINDOW MEETING STYLE





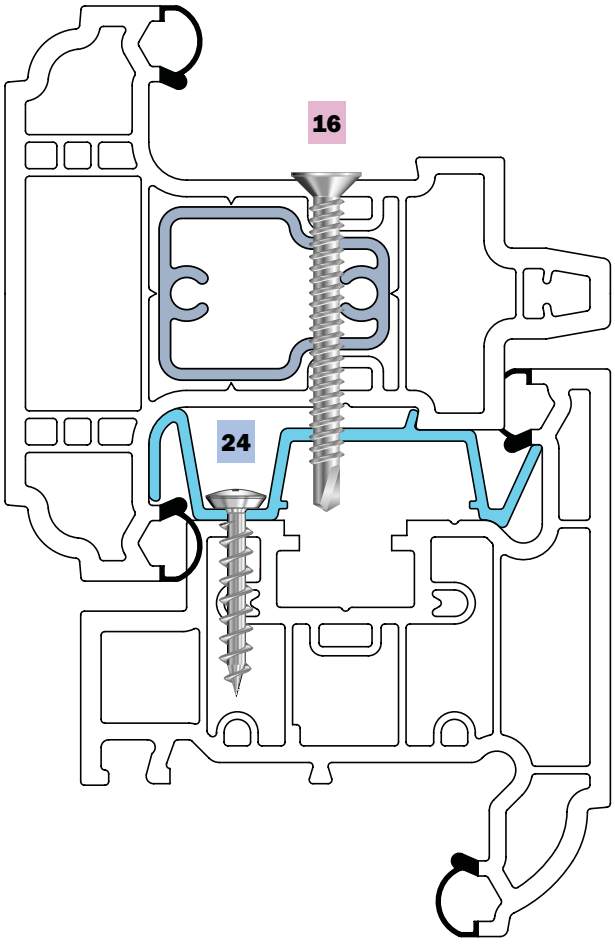
15
End cap is screwed onto the end of the floating mullion with CSR 4.8 X 32

Pre-drill the aluminium adaptor with 5mm drill bit at 300mm centres. Then fit the aluminium adaptor profile to the flush sash using SFG 4.3 x 16 screws.

Pre-drill the floating mullion with a 5mm drill bit before fixing to adaptor using WSR 4.8 X 50 screws. Take care not to position these screws where the keeps may interfere.

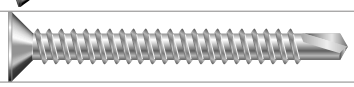
13		CSR 3.9 X 32	Floating Mullion to Aluminium Adaptor Profile
15		CSR 4.8 X 32	End Cap to Floating Mullion in to LAR021
23		SFG 4.3 X 16	Aluminium Adaptor Profile to 50mm Flush Sash

RESURGENCE FLUSH CASEMENT FRENCH WINDOW MEETING STYLE

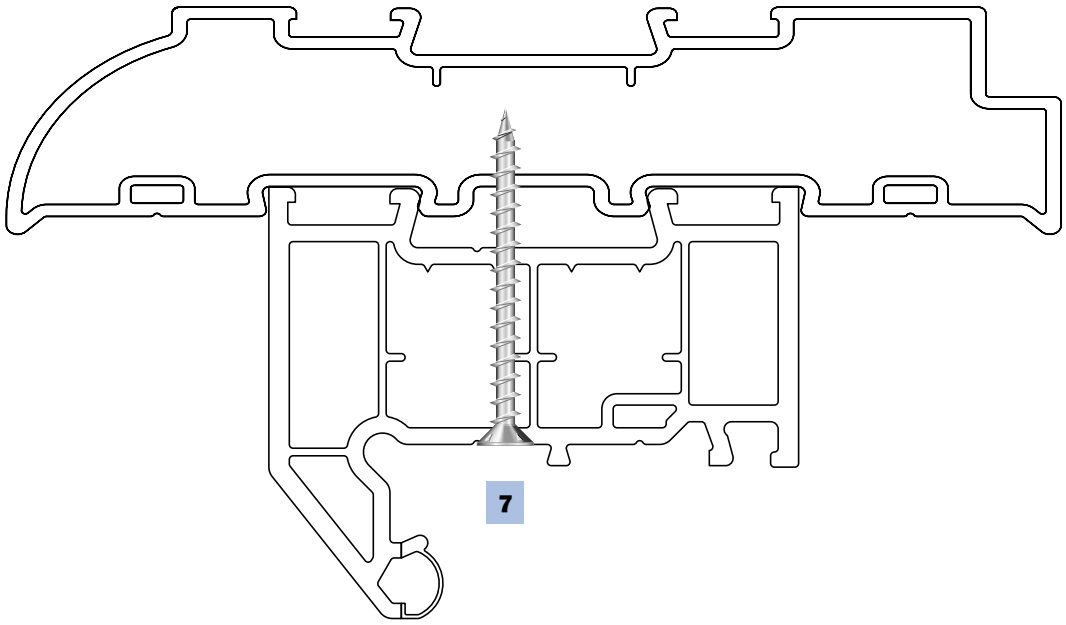


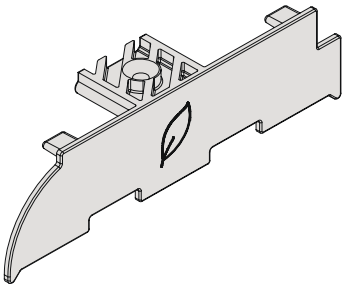
Pre-drill the aluminium adaptor with 5mm drill bit at 300mm centres. Then fit the aluminium adaptor profile to the flush sash using SFG 4.3 x 25 screws.

Pre-drill the floating mullion with a 5mm drill bit before fixing to adaptor using WSR 4.8 X 50 screws. Take care not to position these screws where the keeps may interfere.

15		CSR 4.8 X 32	End Cap to Floating Mullion
24		SFG 4.3 X 25	Aluminium Adaptor Profile to Flush Sash
16		CSR 4.8 X 45	Floating Mullion to Aluminium Adaptor Profile

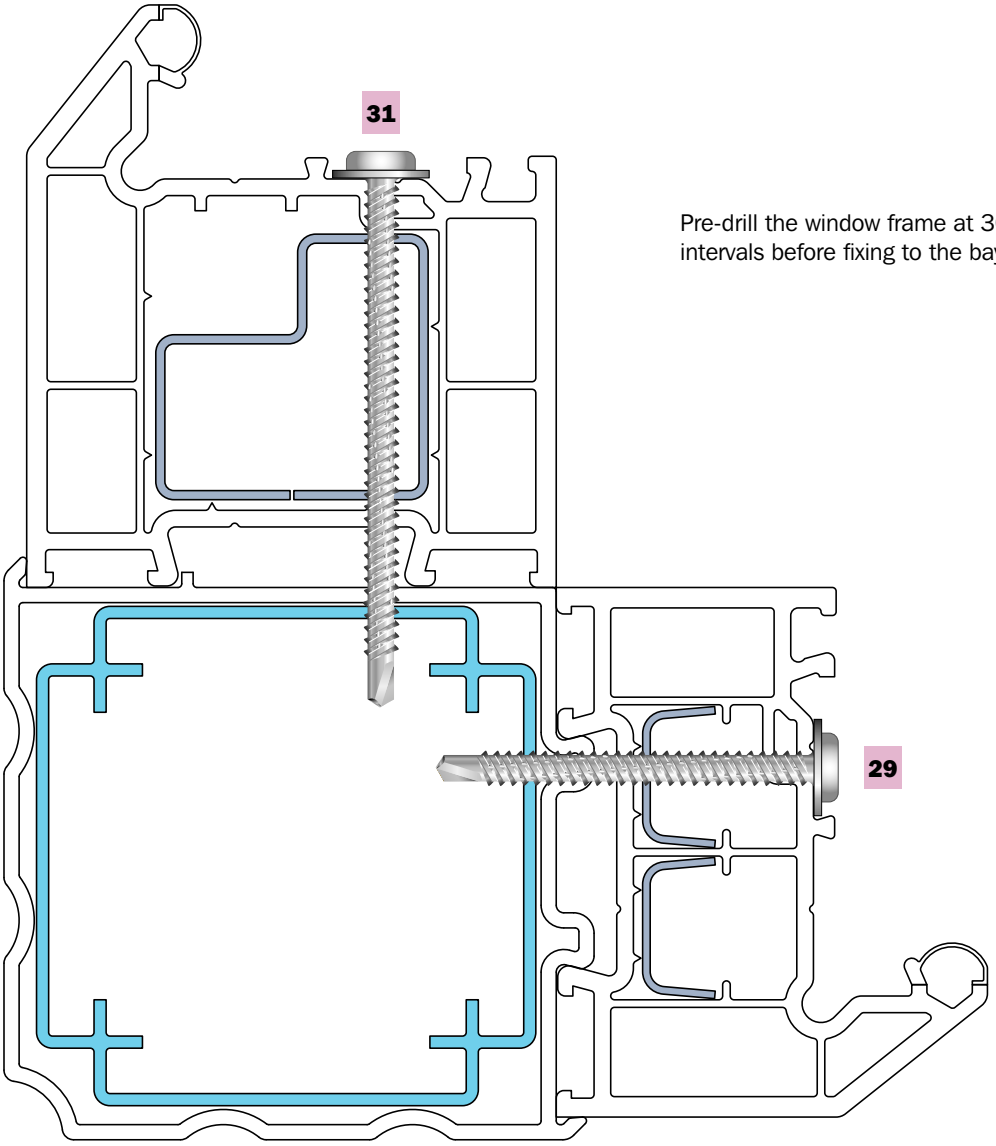
ANCILLARIES



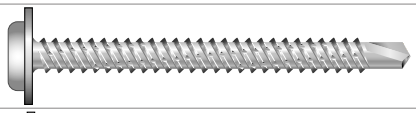


1		CFG 4.3 X 16	Overhead vent end cap
7		CFG 4.3 X 45	Overhead vent to outer frame

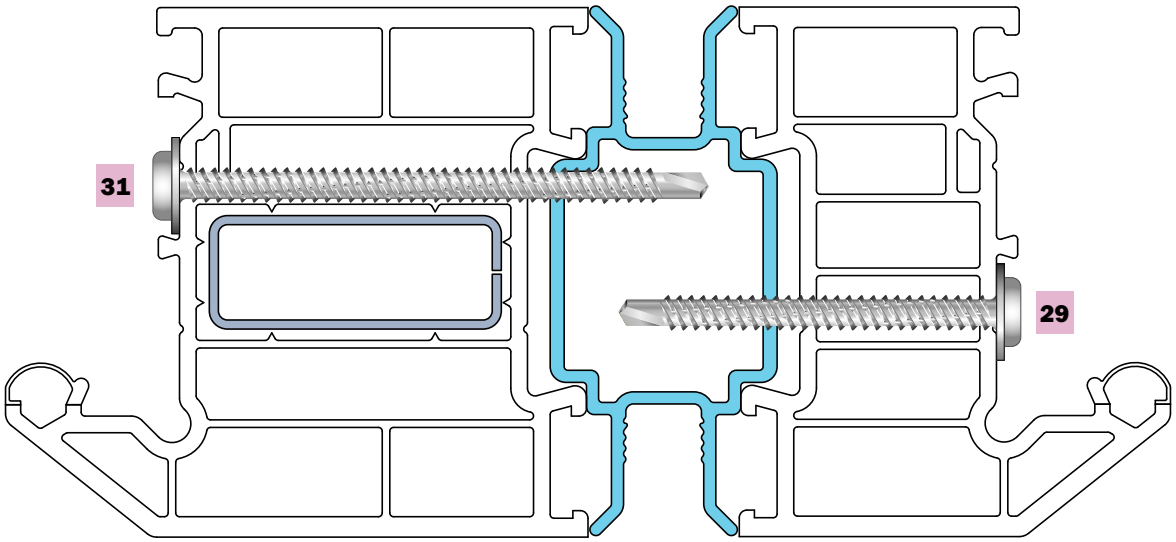
BAYS & COUPLERS



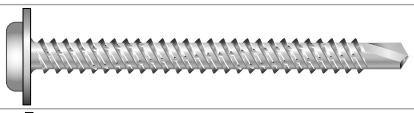
Pre-drill the window frame at 300mm intervals before fixing to the bay post

29		WSR 4.8 X 50	Small Outer Frame to Corner Post
31		WSR 4.8 X 70	Large Outer Frame to Corner Post

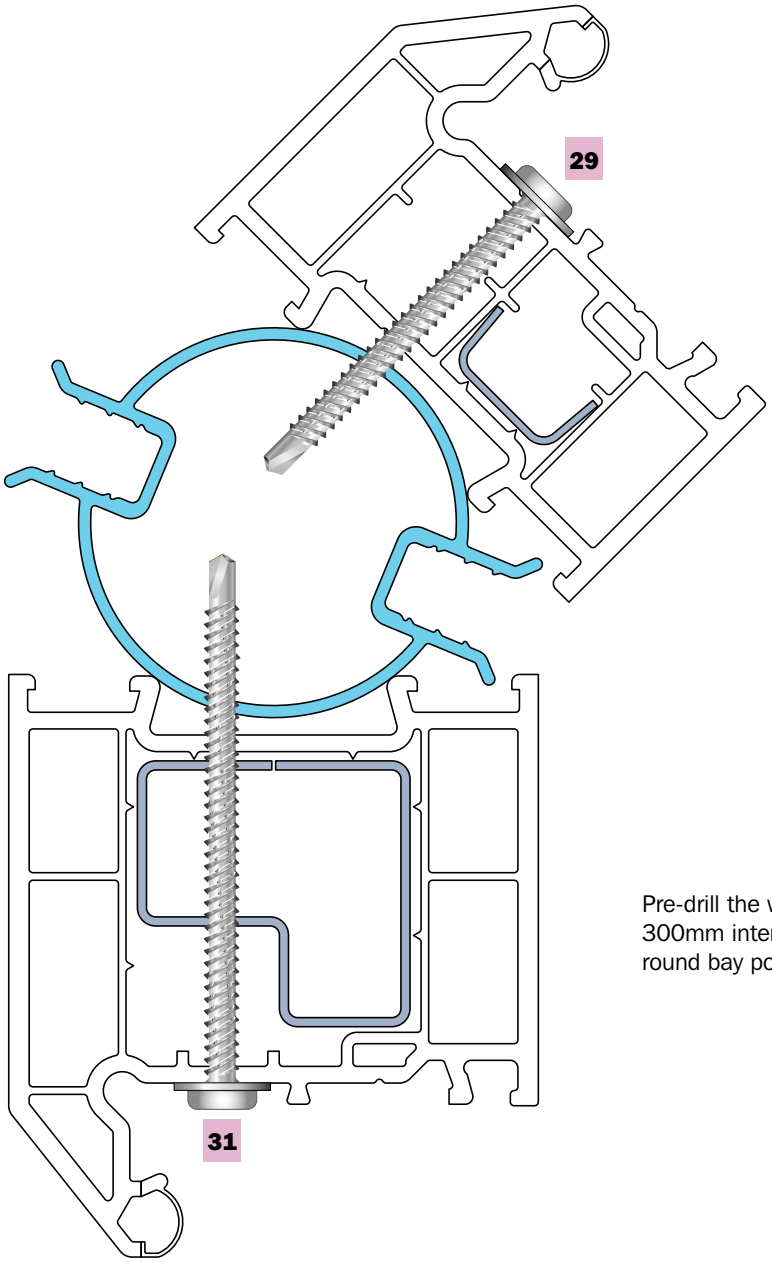
BAYS & COUPLERS



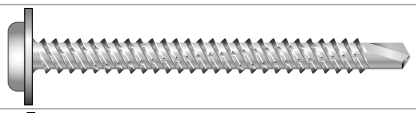
Pre-drill the window frame at 300mm intervals before fixing to the butt joint

29		WSR 4.8 X 50	Small Outer Frame to Coupler
31		WSR 4.8 X 70	Large Outer Frame to Coupler

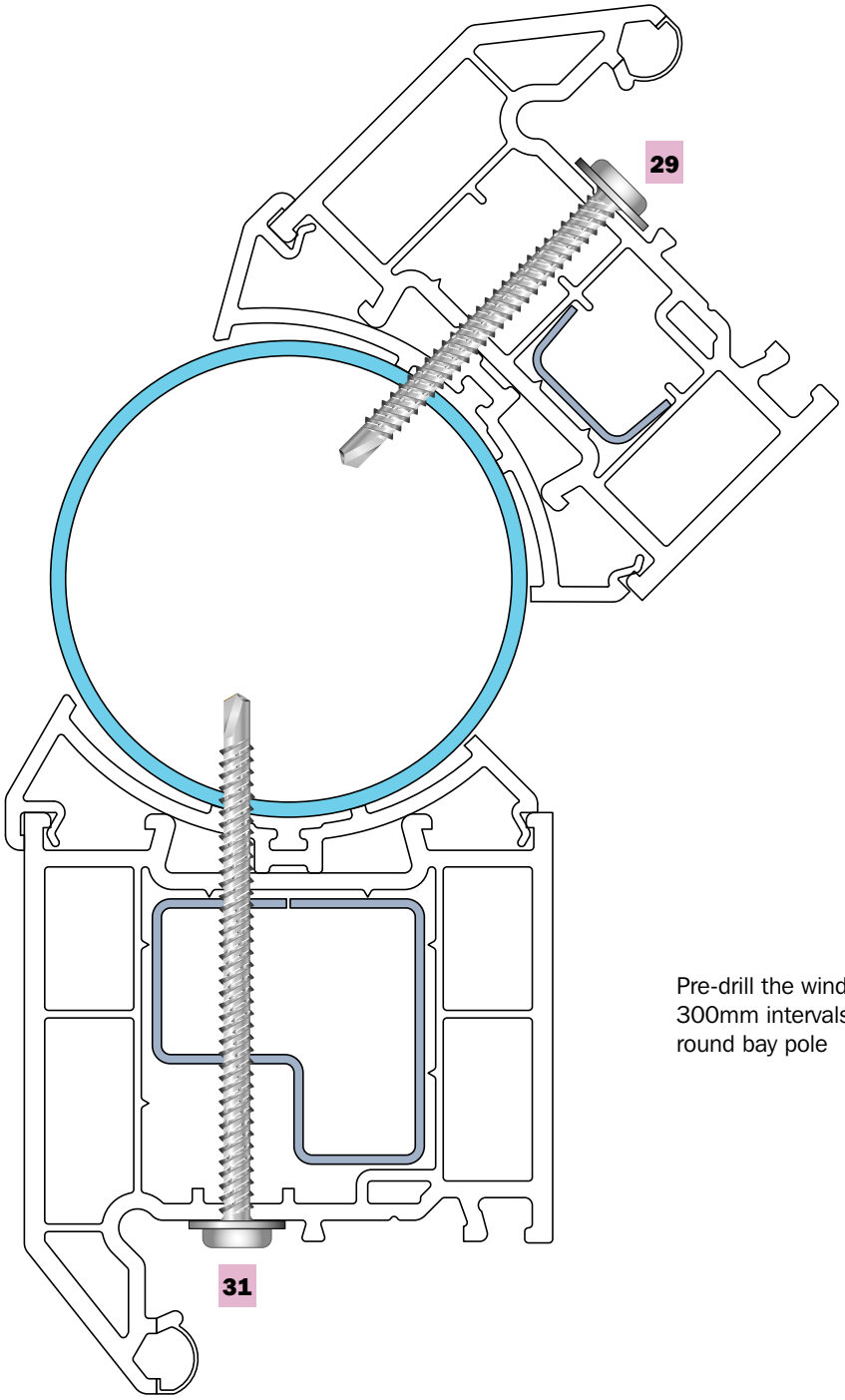
BAYS & COUPLERS



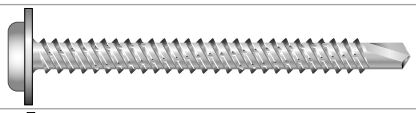
Pre-drill the window frame at 300mm intervals before fixing to the round bay pole

29		WSR 4.8 X 50	Small Outer Frame to Corner Pole
31		WSR 4.8 X 70	Large Outer Frame to Corner Pole

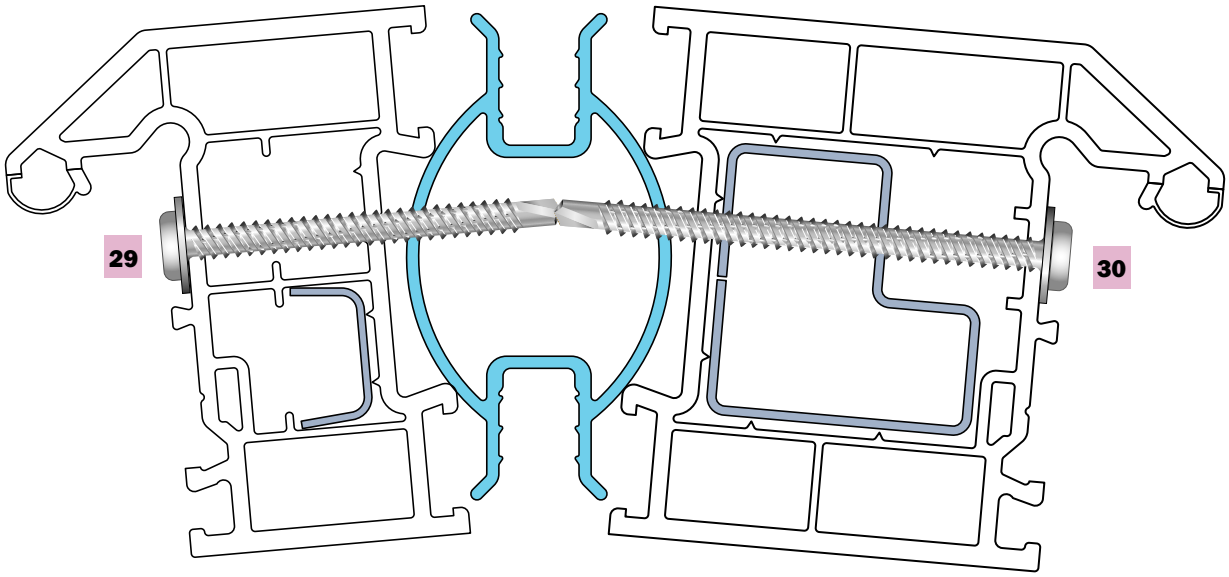
BAYS & COUPLERS



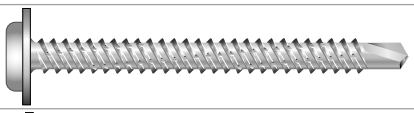
Pre-drill the window frame at 300mm intervals before fixing to the round bay pole

29		WSR 4.8 X 50	Small Outer Frame to Corner Pole
31		WSR 4.8 X 70	Large Outer Frame to Corner Pole

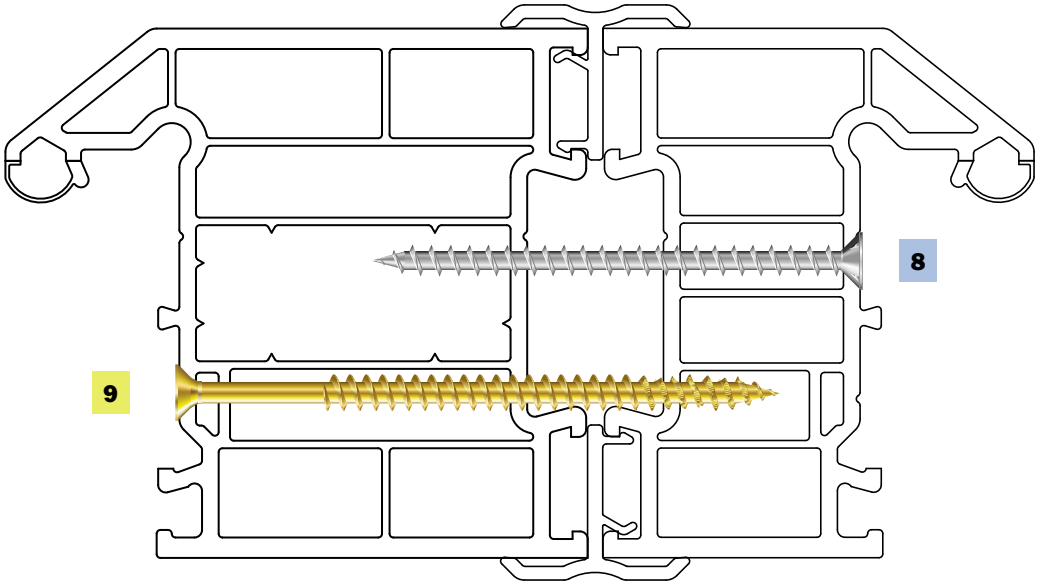
BAYS & COUPLERS

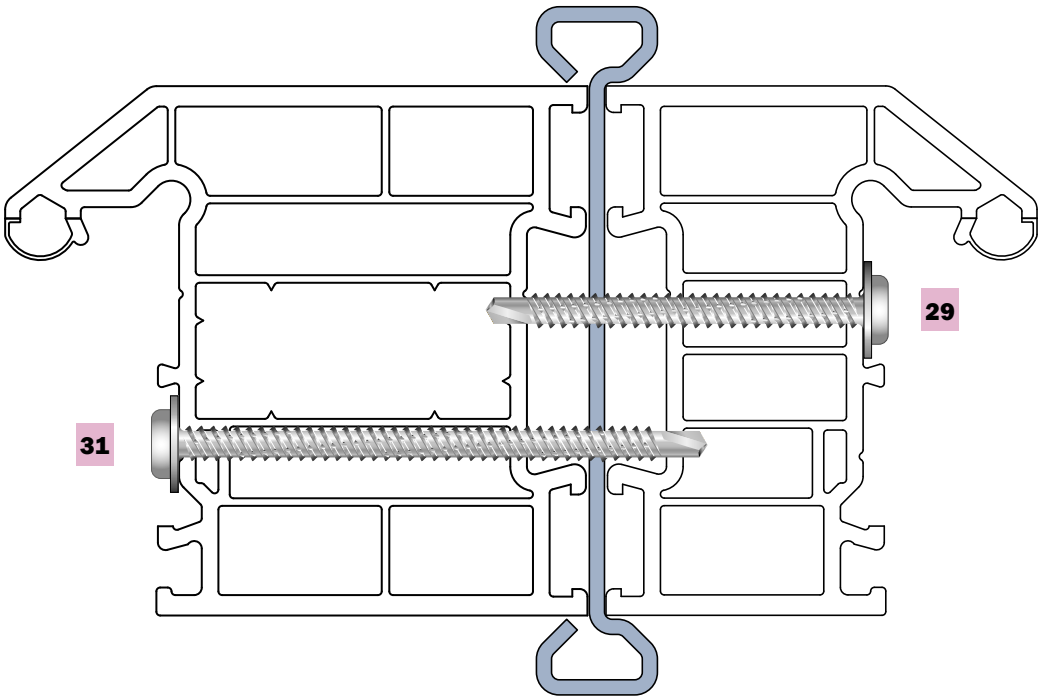


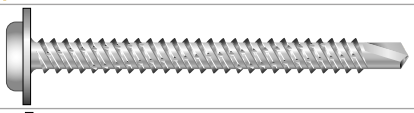
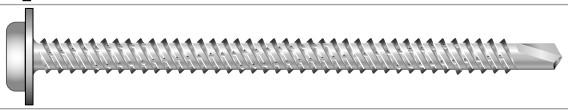
Please Note
Stagger screws to avoid tips clashing

29		WSR 4.8 X 50	Small Outer Frame to Bow Pole
30		WSR 4.8 X 65	Large Outer Frame to Bow Pole

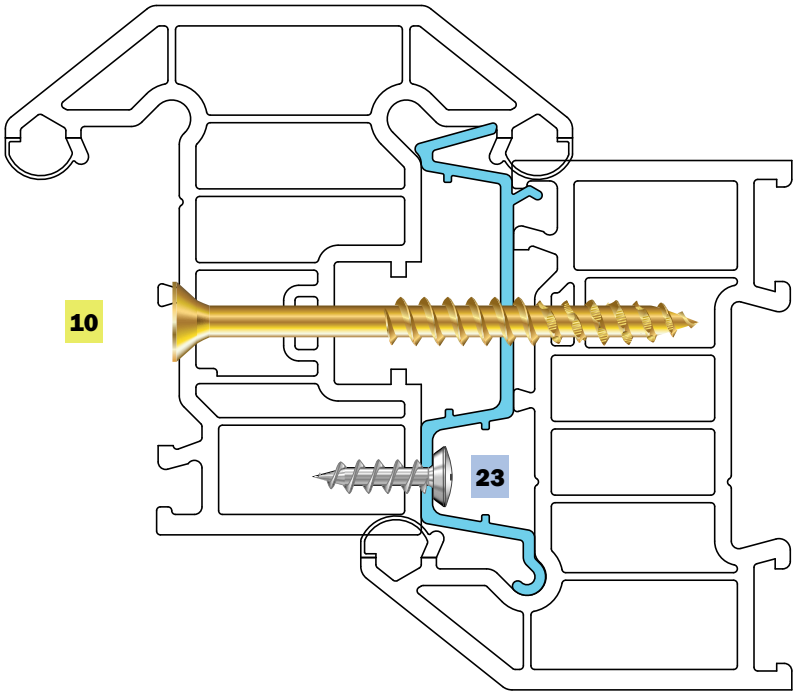
BAYS & COUPLERS





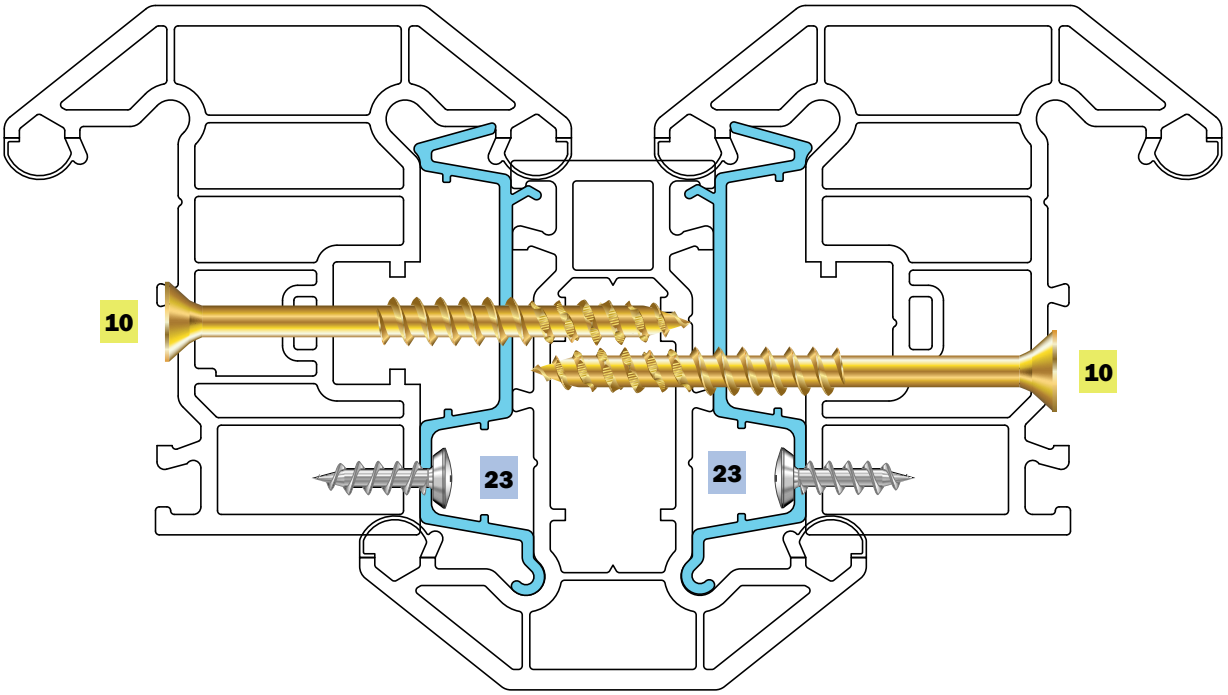
8		CFG 4.3 X 55	Small Outer PVC Butt Joint
9		CPF 5.0 X 80	Large Outer PVC Butt Joint
29		WSR 4.8 X 50	Small Outer Frame to LSR911 Coupler
31		WSR 4.8 X 70	Large Outer Frame to LSR911 Coupler

DUMMY SASHES



10		CPP 6.0 X 70	Dummy Sash to Outer Frame
23		SFG 4.3 X 16	Adaptor Profile to Sash

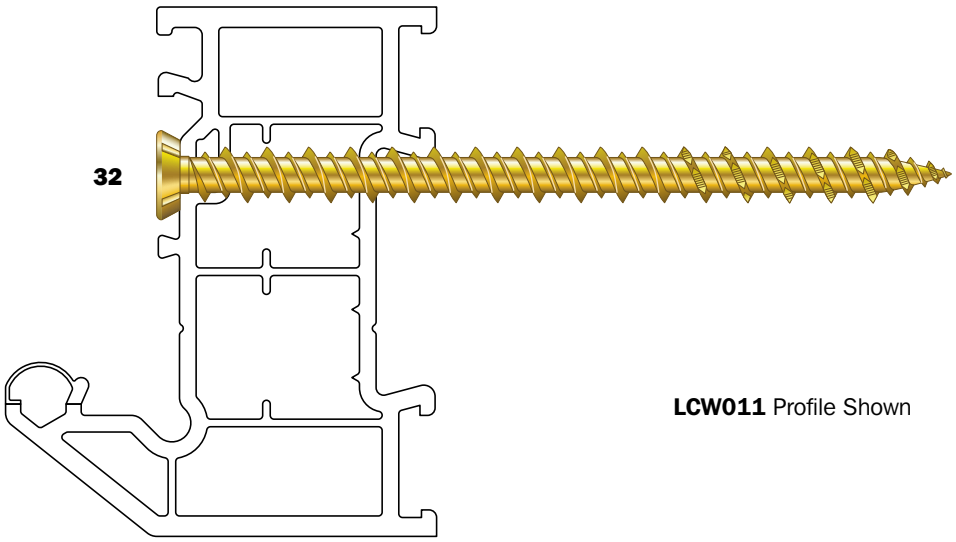
DUMMY SASHES



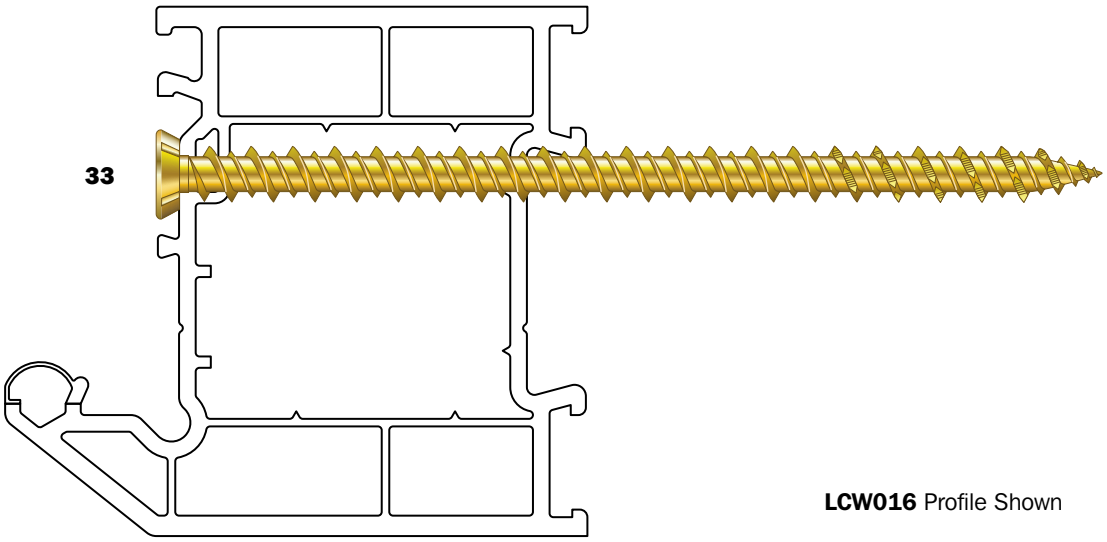
Please Note
Stagger screws to avoid tips clashing
Pre-drill the sash and adaptor profile with a 6mm drill before fixing

10		CPP 6.0 X 70	Dummy Sash to Outer Frame
23		SFG 4.3 X 16	Adaptor profile to sash

INSTALLATION



LCW011 Profile Shown

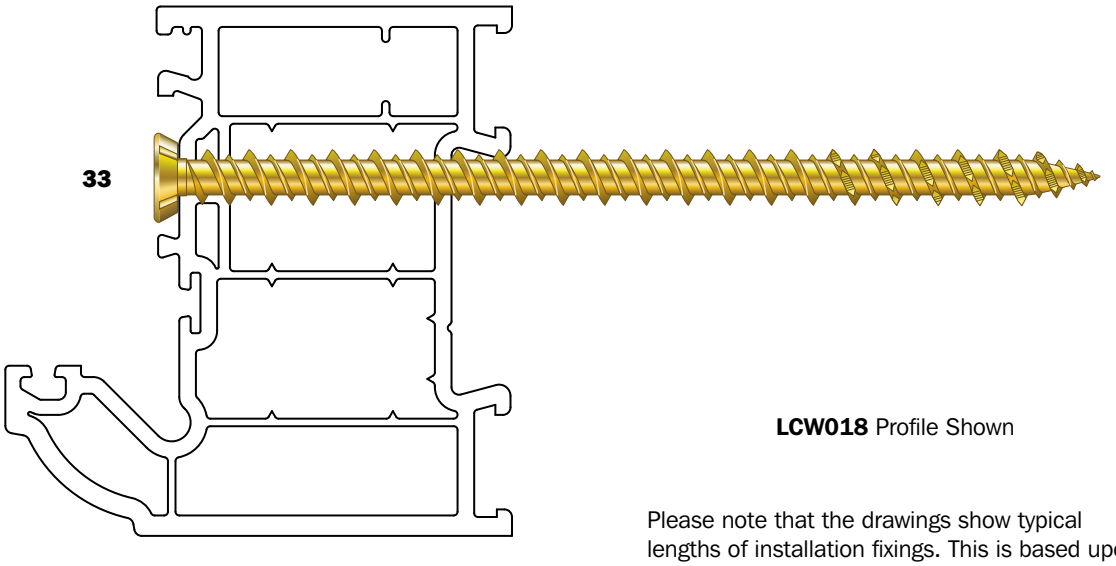


LCW016 Profile Shown

Please note that the drawings show typical lengths of installation fixings. This is based upon a 5mm gap around the perimeter of the frame.

32		FFT 7.5 X 102	Fixing Small Outer Frame
33		FFT 7.5 X 122	Fixing Large Outer Frame
	Screws are not to scale in this table		

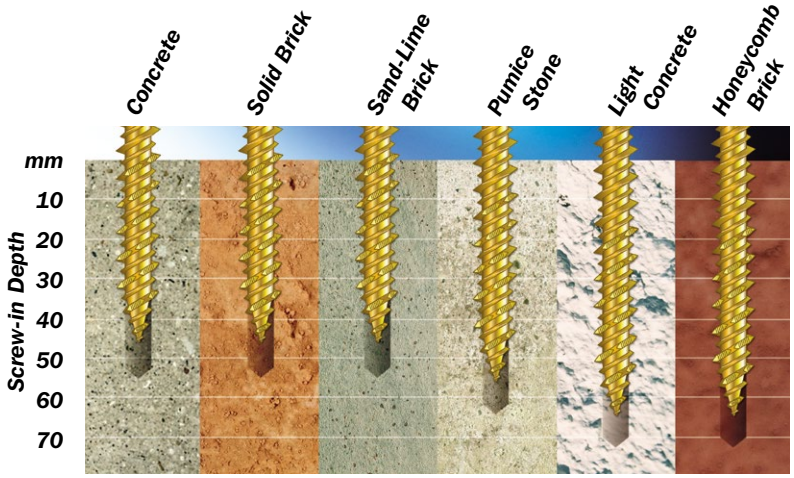
INSTALLATION



LCW018 Profile Shown

Please note that the drawings show typical lengths of installation fixings. This is based upon a 5mm gap around the perimeter of the frame.

Suggested minimum screw-in depths for plugless frame fixings in example substrates



It is recommended that any user establish the nature and condition of any substrate prior to useage and always apply a suitable safety factor

33		FFT 7.5 X 122	Fixing Large Outer Frame
	Screws are not to scale in this table		

NOTES

NOTES

NOTES

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