Recommended Fixings Manual





















Profile 22 has one of the most advanced window and door systems on the market and we are constantly developing new solutions to provide our fabricators with the best possible products. Whenever we need advice on fasteners & fixings we turn to Rapierstar for their technical expertise and fastener knowledge 77.

Lawson Price - Technical Manager - Profile 22









Profile 22 is one of the most versatile and proven window and door systems on the market. Leading the market in PVC-U window and doors, Profile 22 boasts more than 40 years' experience in both new-build and refurbishment. Whatever your project, Profile 22 can provide a combination of PVC-U profile and hardware to meet your needs.

Our advanced window and door systems offer the very best in quality and performance and are available in a wide selection of colours, styles and glazing options to suit your specifications. All of our products are quality assured, ensuring that every installation provides exceptional results in design, durability, security and energy efficiency.

Profile 22 provides a unique solution to glazing that includes PVC-U profiles as well as hardware. This means you only have to discuss your requirements with one company and that makes life much easier. Our team of experts have the industry experience required to give you all the support you need, whenever you need it.

Our specification team can assist you in delivering your project in line with your client's brief, taking into consideration a range of factors, such as best value, safety, security and building aesthetics. We understand that good planning is critical to success and can therefore be involved right from the design phase to help you to choose the right products, whether it be for a refurbishment or new build.

To put it simply, Profile 22 provides the complete package, ensuring that you get the best results to meet your customer requirements.



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SPECIAL NOTES WITH REFERENCE TO DOOR HINGE FASTENERS

Due to the extensive range and specification of door hinge hardware, the recommendations within this manual are intended as a guide only. It is therefore essential that you contact Rapierstar Technical Department for advice on correct fastener selection for your individual requirements.

StarPVCU.





The Correct Fastener

rapierstar® the marketleading 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 24:2012 Windows and doors fabricated with correct **StarPVCU** screws exceed PAS 24:2012 - 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 9000, is a family of standards relating to quality management and are designed to help organisations ensure they meet the needs of customers. **rapierstar**® is an ISO 9001:2008 registered company and all our window screws are manufactured by ISO 9000 certificated companies. Full traceability is maintained so long as the screws remain in the box in which they were supplied.

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	Optio Cod		Application
1		BSR 4.2 X 65	z	_	Low threshold to end cap, End caps to QR140 low threshold
2		CFG 4.3 X 16	Z	s	RCM Retention, security glazing clips into RCM/PVC, Flag hinge into PVC
3		CFG 4.3 X 20	Z	s	Reversible gearing, cavity locking block, PAS24 support plate striker, reinforcement retention
4		CFG 4.3 X 25	Z	s	Keep to Frame (RCM, Unreinforced), Cavity Locking Block QM03, Staymate, ASD1 hinge protector, gearing to sash
5		CFG 4.3 X 30	Z	s	L2094 attachment to door sash, tilt striker plate to RCM, T&T keeps, T&T mushroom keeps, shootbolt gearing, cover plate, MACO M Spag, staymate
6		CFG 4.3 X 40	Z	-	Top & Bottom face fix T&T hinges, shootbolt keep (PVC threshold), corner hinges to sash, keeps.
7		CFG 4.3 X 45	Z	s	Comp door hinges to slab, adjustable butt hinge to frame
8		CFG 4.3 X 55	Z	_	Coupling to B102 Fully reversible outer frame (pre-drill through steel)
9		CPF 4.5 X 60	Z	s	Cill section to mullion 7839 fitted locally, Cill section to outer frame jambs, low threshold to outer frame jambs
10		CPF 5.0 X 40	Z	s	Flag hinge to outer frame (RCM)
11		CSR 3.9 X 13	Z	s	PN stop block, arm stopper (YALE)
12		CSR 3.9 X 16	Z	s	Shootbolt keep ali low threshold
13		CSR 3.9 X 19	Z	s	Security glazing clips QM23/25 low threshold connector, reversible gearing, cavity locking block, PAS24 support plate striker
14		CSR 3.9 X 25	Z	s	Keeps, Staymate, ASD 1 hinge protectors, butt hinge, FD graphite
15		CSR 3.9 X 32	Z	s	Tilt striker plate, T&T mushroom keeps, gearing, MACO M Spag
16		CSR 3.9 X 38	Z	s	Top & Bottom face fix T&T hinges, shootbolt keep, door keep
17		CSR 4.8 X 38	z	_	Flag hinges to outer frame

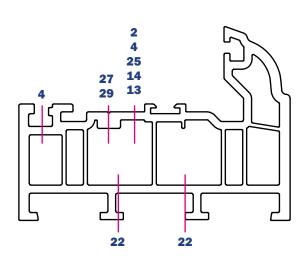




Ite	m Screw	Code	Opt Co		Application		
18		CSR 4.8 X 45	z	-	Adjustable butt hinge to frame, flag hinges		
19		EST 4.2 X 38	Z	s	Savio panic bar keeps		
20		EST 4.8 X 38	Z	s	Floating mullion to door sash (open up the PVC & plug)		
21	$\Rightarrow tittittittittittittittt$	GST 4.2 X 50	Z	s	Ali low threshold to outer frame jambs, low threshold into Fire door mullion 7840 fitted locally, Stormguard threhold		
22		MJS 4.8 X 80	Y	_	Mechanical joints		
23		MJS 4.8 X 95	Y	_	Mechanical joints		
24		MS M5 X 50	Z	s	Handle screw T&T		
25		RSR 3.9 X 16	Z	_	Reinforcament retention		
26		SFG 4.3 X 12 CS	Z	s	Savio panic bar keeps/striker plate		
27		SFG 4.3 X 16	Z	s	Friction stays outer frame, low threhold seal		
28		SFG 4.3 X 25	Z	s	Friction stays sash, comp door weather bar		
29		SSR 3.9 X 16	Z	s	Friction stays to steel reinforced outer		
30		SSR 3.9 X 25	Z	s	Friction stays to steel reinforced sash		
31		WSR 4.8 X 60	Z	-	Straight frame coupling (stagger screws)		
32		WSR 4.8 X 70	Z	-	Frames to bay pole/post		
	Colour key: Carbon Steel Zinc Stainless Steel Carbon Steel Yellow						









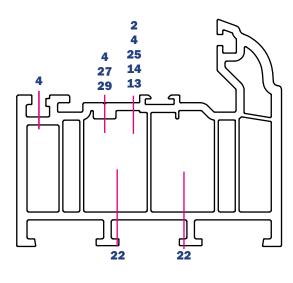


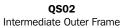
QS01Slim Outer Frame

2	Pro-	CFG 4.3 X 16	RCM Retention, security glazing clips into RCM/PVC
		OFG 4.5 X 10	Row Retention, security glazing clips into Row, PVC
4		CFG 4.3 X 25	Keep to Frame (RCM, Unreinforced), Cavity Locking Block QM03, Staymate, ASD1 hinge protector
25		RSR 3.9 X 16	Steel Reinforcement Retention
27		SFG 4.3 X 16	Friction Stay to Frame (RCM,Unreinforced)
14		CSR 3.9 X 25	Keeps, Staymate, ASD 1 hinge protectors
29		SSR 3.9 X 16	Friction stays to steel reinforced frame
22		MJS 4.8 X 80	Mechanical joints
13		CSR 3.9 X 19	Security glazing clips









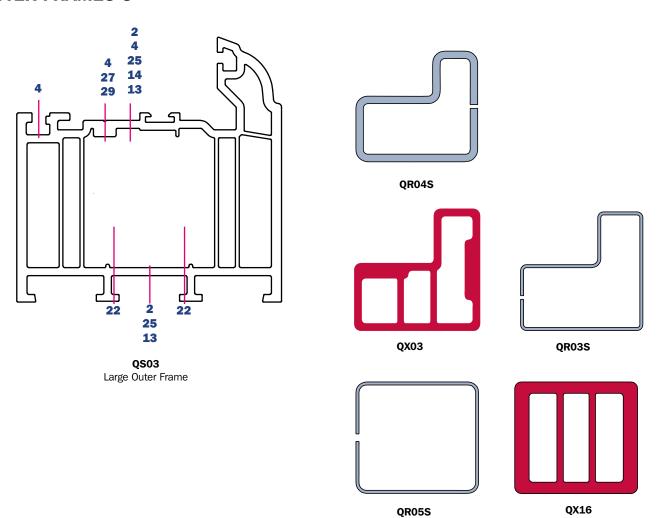


QR02S

2	CFG 4.3 X 16	RCM Retention, security glazing clips into RCM/PVC
4	CFG 4.3 X 25	Keep to Frame (RCM, Unreinforced), Cavity Locking Block QM03, Staymate, ASD1 hinge protector
25	RSR 3.9 X 16	Steel Reinforcement Retention
27	SFG 4.3 X 16	Friction Stay to Frame (RCM,Unreinforced)
14	CSR 3.9 X 25	Keeps, Staymate, ASD 1 hinge protectors
29	SSR 3.9 X 16	Friction stays to steel reinforced frame
22	MJS 4.8 X 80	Mechanical joints
13	CSR 3.9 X 19	Security glazing clips





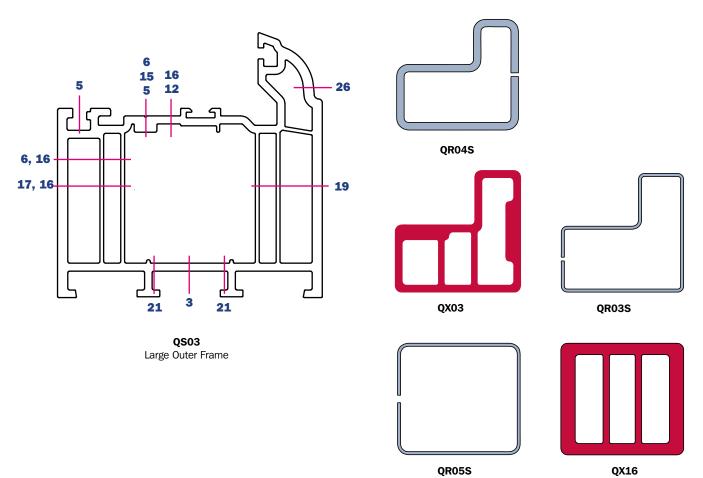


CFG 4.3 X 16	RCM Retention, security glazing clips into RCM/PVC
CFG 4.3 X 25	Keep to Frame (RCM/PVC), Cavity Locking Block QM03, Staymate, ASD1 hinge protector, door keep (RCM/PVC)
RSR 3.9 X 16	Steel Reinforcement Retention
SFG 4.3 X 16	Friction Stay to Frame (RCM/PVC)
CSR 3.9 X 25	Keeps, Staymate, ASD 1 hinge protectors
SSR 3.9 X 16	Friction stays to steel reinforced frame
MJS 4.8 X 80	Mechanical joints
CSR 3.9 X 19	Security glazing clips, QM23/25 low threshold connector into steel reinforcement
	CFG 4.3 X 25 RSR 3.9 X 16 SFG 4.3 X 16 CSR 3.9 X 25 SSR 3.9 X 16 MJS 4.8 X 80





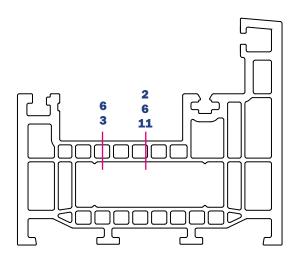
OUTER FRAMES 3 (CONTINUED)



6		CFG 4.3 X 40	Top & Bottom face fix T&T hinges, shootbolt keep (PVC threshold)
16		CSR 3.9 X 38	Top & Bottom face fix T&T hinges, shootbolt keep, door keep
15		CSR 3.9 X 32	Tilt striker plate, T&T mushroom keeps
5		CFG 4.3 X 30	Tilt striker plate to RCM, T&T keeps, T&T mushroom keeps
12		CSR 3.9 X 16	Shootbolt keep ali low threshold
3		CFG 4.3 X 20	QM23/25 low threshold connector to outer frame jambs
21	**************************************	GST 4.2 X 50	Ali low threshold to outer frame jambs
17		CSR 4.8 X 38	Flag hinges to outer frame (Steel)
10		CPF 5.0 X 40	Flag hinge to outer frame (RCM)
19		EST 4.2 X 38	Savio striker plate
26		SFG 4.3 X 12 CS	Savio striker plate









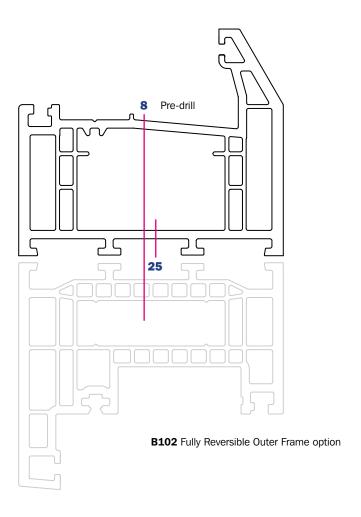
B102 Fully Reversible Outer Frame

3		CFG 4.3 X 20	Reversible gearing, cavity locking block, PAS24 support plate striker
6		CFG 4.3 X 40	Keeps
2		CFG 4.3 X 16	Reinforcement retention (RCM),
11	WILLIAM	CSR 3.9 X 13	PN stop block, arm stopper (YALE)





B02 Glazed Outer Outer Frame



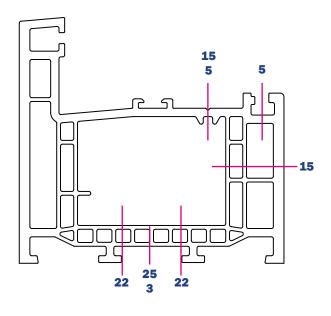


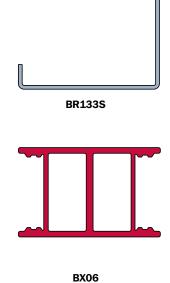
BR06S

25	RSR 3.9 X 16	Reinforcement retention
8	CFG 4.3 X 55	Coupling to B102 Fully reversible outer frame (pre-drill through steel)







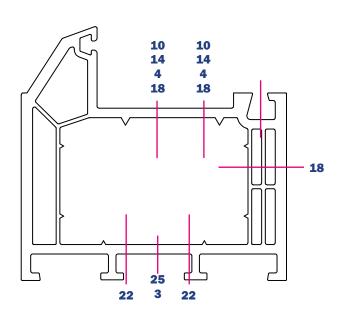


B131 Flush T&T Outer Frame

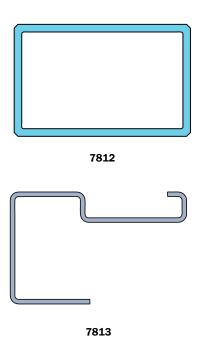
5		CFG 4.3 X 30	Keeps to outer frame, striker plates, concealed hinge fixings
15		CSR 3.9 X 32	Keeps to outer frame, striker plates, concealed hinge fixings, face fix hinges
25	EUGE	RSR 3.9 X 16	Reinforcement retention
3		CFG 4.3 X 20	Reinforcement retention
22		MJS 4.8 X 80	Mechanical jointing

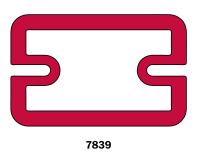






78004 Composite Door Outer Frame



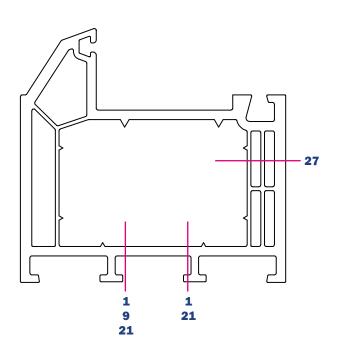


25	THE STATE OF THE S	RSR 3.9 X 16	Reinforcement retention, fire door fixing cleat (7840)
2		CFG 4.3 X 16	Reinforcement retention
10		CSR 3.9 X 38	Keeps
14		CSR 3.9 X 25	Butt hinge, Trojan butt hinge, fire door (external graphite strips)
4		CFG 4.3 X 25	Butt hinge (RCM)
18		CSR 4.8 X 45	Adjustable butt hinge to frame
3		CFG 4.3 X 20	Low threshold connectors to outer frame
22		MJS 4.8 x 80	Mechanical jointing

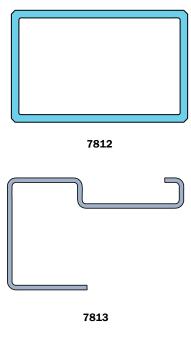


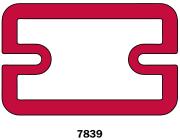


OUTER FRAMES 7 (CONTINUED)





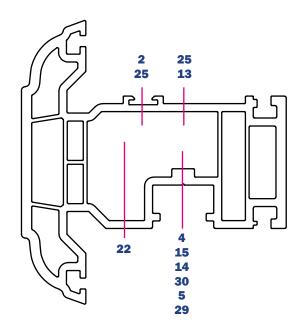




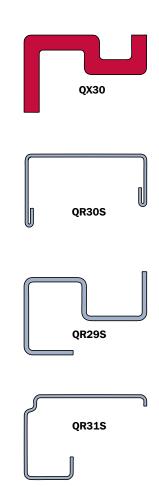
1	BSR 4.2 X 65	Low threshold to end cap
9	CPF 4.5 X 60	Cill section to outer frame jambs, low threshold to outer frame jambs
21	GST 4.2 X 50 S	Low threshold into Fire door outer frame jambs
28	SFG 4.3 X 25 S	Weather bar to comp door sash
7	CFG 4.3 X 45	Comp door hinges to slab, adjustable butt hinge to frame







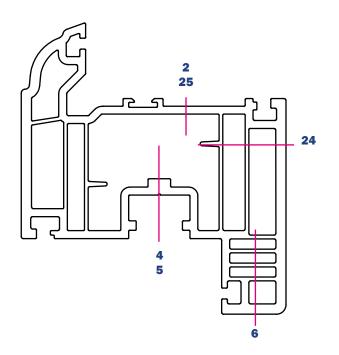




2		CFG 4.3 X 16	RCM Retention, security glazing clips into RCM/PVC
4		CFG 4.3 X 25	Gearing to sash
25	THERE .	RSR 3.9 X 16	Steel Reinforcement Retention
15		CSR 3.9 X 32	Gearing to sash, MACO M Spag
14		CSR 3.9 X 25	Staymate, ASD 1 hinge protectors
30		SSR 3.9 X 25	Friction stays to steel reinforced sash
22		MJS 4.8 X 80	Mechanical joints
13		CSR 3.9 X 19	Security glazing clips into steel
5		CFG 4.3 X 30	Shootbolt gearing, cover plate, MACO M Spag, staymate







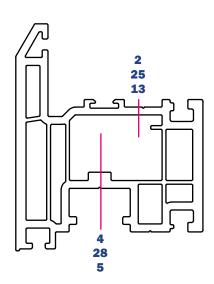


QS33 T&T Sash

2		CFG 4.3 X 16	Reinforcement retention
4		CFG 4.3 X 25	Gearing to sash
25	THE PARTY OF THE P	RSR 3.9 X 16	Reinforcement retention
6		CFG 4.3 X 40	Corner hinges to sash
5		CFG 4.3 x 30	Anti-lift blocks
24		MS M5 X 50	T&T Handle screws







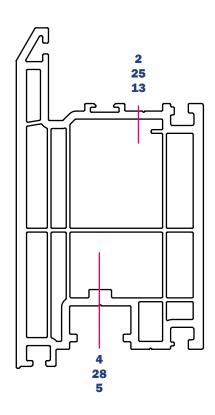


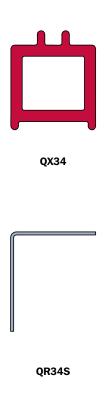
QC32 Flush Casement Sash

2	CFG 4.3 X 16	Reinforcement retention, Security glazing clips
4	CFG 4.3 X 25	Gearing to sash, end caps for flush sash mechanical joint
25	RSR 3.9 X 16	Reinforcement retention
28	SFG 4.3 X 25 S	Friction stays
13	CSR 3.9 X 19	Security glazing clips
5	CFG 4.3 X 30	Staymate / ASD 1 hinge protectors
21	GST 4.2 X 50	Flush sash mechanical joint assembly







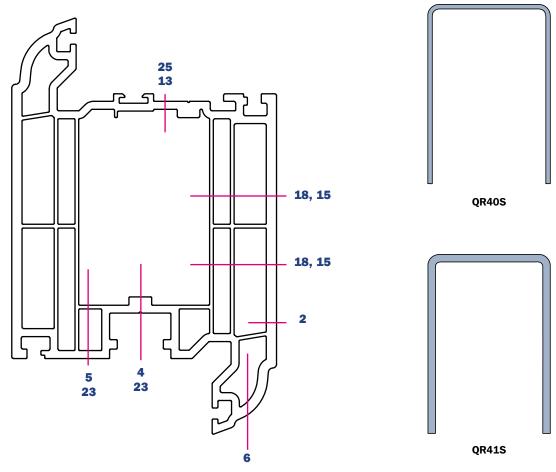


QC34 Deep Bottom Rail

2	CFG 4.3 X 16	Reinforcement retention, Security glazing clips
4	CFG 4.3 X 25	Gearing to sash
25	RSR 3.9 X 16	Reinforcement retention
28	SFG 4.3 X 25 S	Friction stays
13	CSR 3.9 X 19	Security glazing clips
5	CFG 4.3 X 30	Staymate / ASD 1 hinge protectors





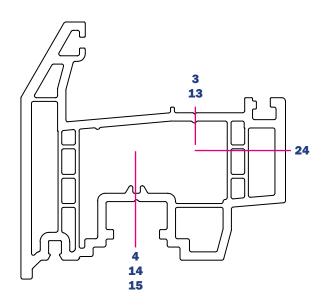


QC40 Z Door Sash (Open In) + QC41 T Door Sash (open Out)

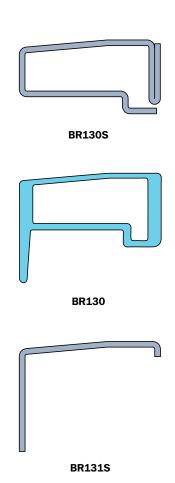
4		CFG 4.3 X 25	Door lock to sash, hinge protectors
25	FEFERE	RSR 3.9 X 16	Reinforcement retention
18		CSR 4.8 X 45	Flag hinges
13		CSR 3.9 X 19	Security glazing clips
5		CFG 4.3 X 30	Infill bar L2094
23		MJS 4.8 X 95	Mechanical jointing
15		CSR 3.9 X 32	Savio panic door gearing to sash
6		CFG 4.3 X 40	Flag hinges to sash rebate leg
2		CFG 4.3 X 16	Flag hinge into PVC







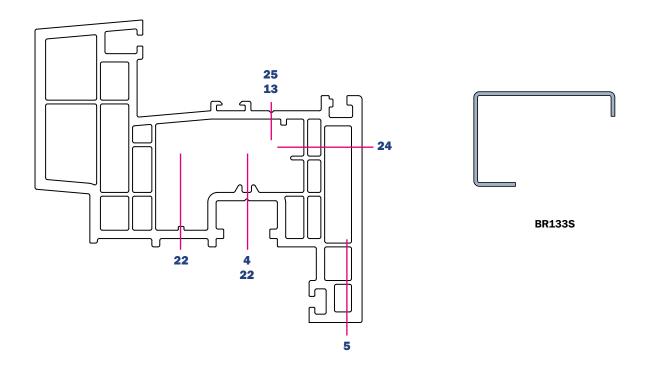




4	CFG 4.3 X 25	Gearing to sash, centre bracket,
3	RSR 3.9 X 16	Reinforcement retention
14	CSR 3.9 X 25	Gearing to sash
5	CFG 4.3 X 30	Top glider (BR131S), riser block to sash, cavity locking blocks (BR131S)
15	CSR 3.9 X 32	Top glider (BR130/BR130S), riser block to sash, YALE sash casting packer, cavity locking blocks (BR130/BR130S)
24	MS M5 X 50	Handle screw
13	CSR 3.9 X 19	Security glazing clip





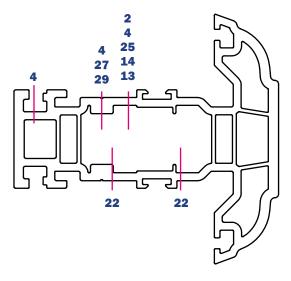


B133 Flush T&T Sash

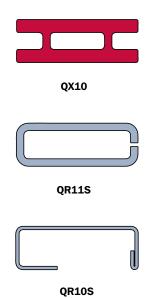
4		CFG 4.3 X 25	Gearing to sash, rebated hinges, concealed hinges
25	THE PARTY OF THE P	RSR 3.9 X 16	Reinforcement retention
5		CFG 4.3 X 30	Face fixed hinges
13		CSR 3.9 X 19	Security glazing clips
24		MS M5 X 50	Handle screw
22		MJS 4.8 X 80	Mechanical jointing dummy transom







QS10 T Transom/Mullion + QS11 Z Transom/Mullion



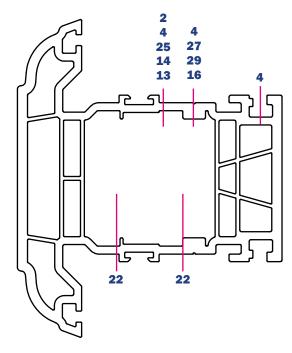


QR10 Used with QS10 only

	K		
2		CFG 4.3 X 16	RCM Retention, security glazing clips into RCM/PVC
4		CFG 4.3 X 25	Keeps (RCM, Unreinforced), Cavity Locking Block QM03, Staymate, ASD1 hinge protector
25		RSR 3.9 X 16	Steel Reinforcement Retention, mechanical cruciforms
27		SFG 4.3 X 16	Friction Stays (RCM,Unreinforced)
14		CSR 3.9 X 25	Keeps, Staymate, ASD 1 hinge protectors
29		SSR 3.9 X 16	Friction stays to steel reinforced sash
22		MJS 4.8 X 80	Mechanical joints
13		CSR 3.9 X 19	Security glazing clips

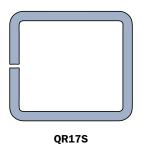


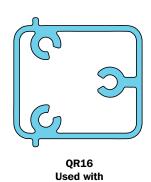




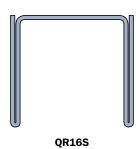




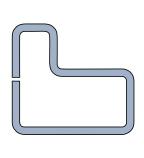




QS16 only





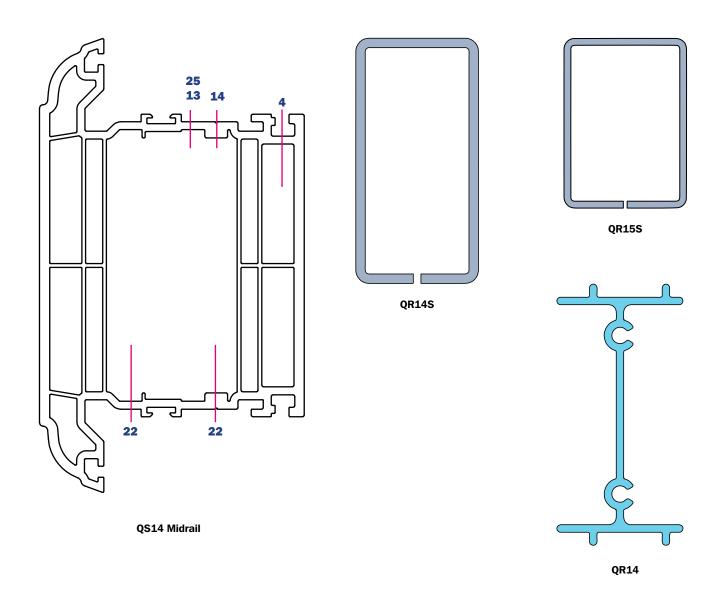


QR04S

2 CFG 4.3 X 16 RCM Retention, security glazing clips into RCM/PVC Keeps (RCM, Unreinforced), Cavity Locking Block QM03, 4 CFG 4.3 X 25 Staymate, ASD1 hinge protector RSR 3.9 X 16 Steel Reinforcement Retention, mechanical cruciforms 25 SFG 4.3 X 16 27 Friction Stays (RCM, Unreinforced) 14 CSR 3.9 X 25 Keeps, Staymate, ASD 1 hinge protectors SSR 3.9 X 16 29 Friction stays to steel reinforced sash 22 MJS 4.8 X 80 Mechanical joints Security glazing clips CSR 3.9 X 19 **13 16** CSR 3.9 X 38 Door keeps



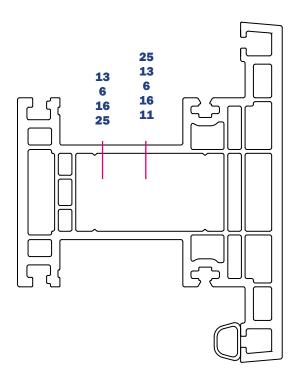


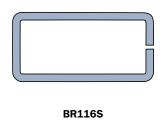


4		CFG 4.3 X 25	Keeps into PVC
25	ERRER	RSR 3.9 X 16	Steel Reinforcement Retention, mechanical cruciforms
14		CSR 3.9 X 25	Keeps
22		MJS 4.8 X 80	Mechanical joints (open up the PVC/reinforcing & plug)
13		CSR 3.9 X 19	Security glazing clips







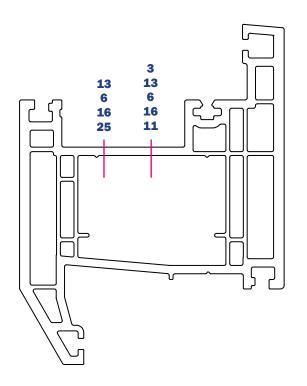


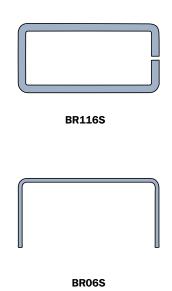
B116 Reversible T Transom/Mullion

3	CFG 4.3 X 20	Reversible gearing, cavity locking block, PAS24 support plate striker
6	CFG 4.3 X 40	Keeps
25	RSR 3.9 X 16	Reinforcement retention (RCM),
11	CSR 3.9 X 13	PN stop block, arm stopper (YALE)
13	CSR 3.9 X 19	Reversible gearing, cavity locking block, PAS24 support plate striker
16	CSR 3.9 X 38	Keeps







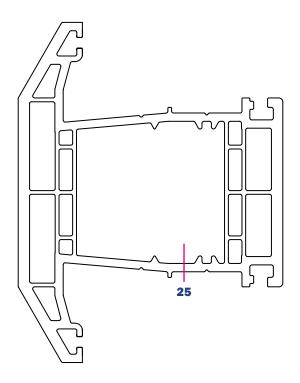


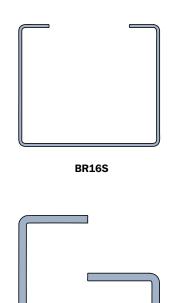
B117 Reversible Z Transom/Mullion

3		CFG 4.3 X 20	Reversible gearing, cavity locking block, PAS24 support plate striker
6		CFG 4.3 X 40	Keeps
25	THE PARTY OF THE P	RSR 3.9 X 16	Reinforcement retention (RCM),
11		CSR 3.9 X 13	PN stop block, arm stopper (YALE)
13		CSR 3.9 X 19	Reversible gearing, cavity locking block, PAS24 support plate striker
16		CSR 3.9 X 38	Keeps









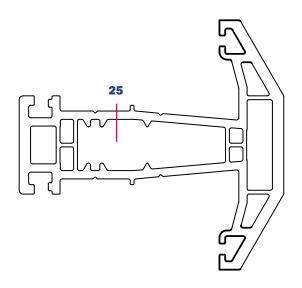
BR17S

B16 Glazed T Transom/Mullion B17 Glazed Z Transom











B10 Dummy Transom

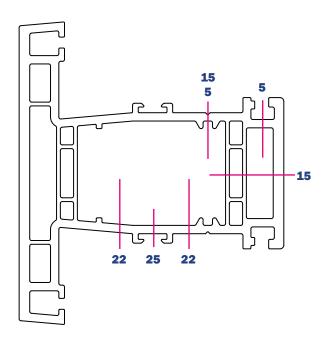


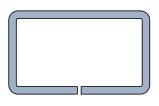
RSR 3.9 X 16

Reinforcement retention

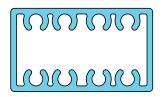








BR132S



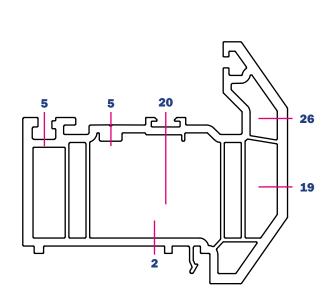
BR132

B132 Transom/Mullion

5		CFG 4.3 X 30	Keeps, striker plates, concealed hinge fixings
15		CSR 3.9 X 32	Keeps, striker plates, concealed hinge fixings, face fix hinges
25	HHH	RSR 3.9 X 16	Reinforcement retention
22		MJS 4.8 X 80	Mechanical jointing

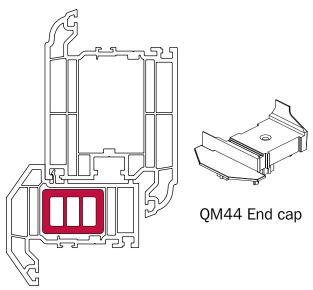






QC44

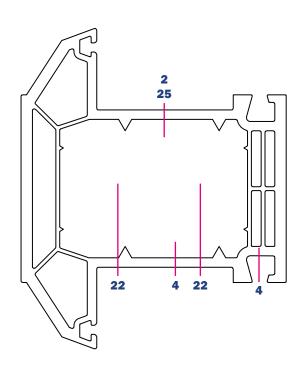
QC44 Floating Mullion



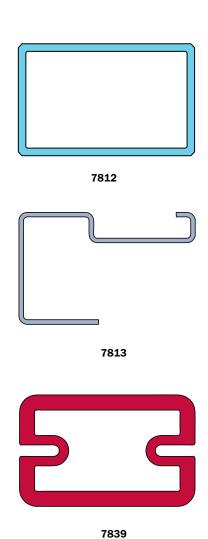
2	CFG 4.3 X 16	Reinforcement retention (RCM)
5	CFG 4.3 X 30	Door keeps, finger boltss
20	EST 4.8 X 38	Floating mullion to door sash (open up the PVC & plug)
19	EST 4.2 X 38	Savio keeps
26	SFG 4.3 X 12 CS	Savio keeps







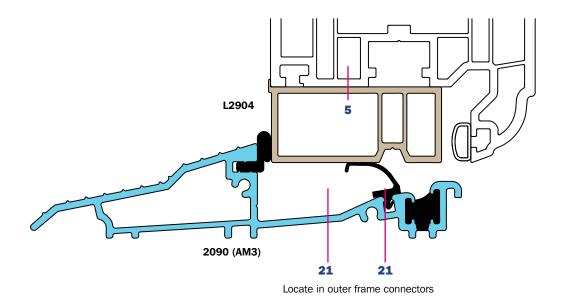
7802 Transom

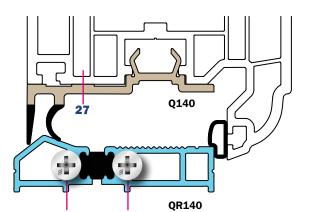


9		CPF 4.5 X 60	Cill section to mullion 7839 fitted locally
21		GST 4.2 X 50	Low threshold into Fire door mullion 7840 fitted locally
25	THE PARTY OF THE P	RSR 3.9 X 16	Reinforcement retention
22		MJS 4.8 X 80	Mechanical joints
4		CFG 4.3 X 25	Keeps
2		CFG 4.3 X 16	Reinforcement retention





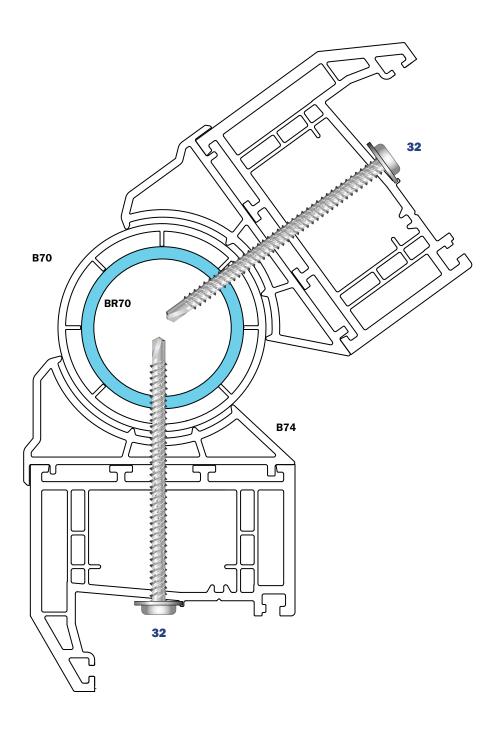


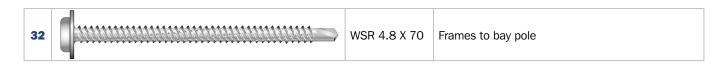


5		CFG 4.3 X 30	L2094 attachment to door sash
21	**************************************	GST 4.2 X 50 S	Stormguard threshold to outer frame jambs
27		SFG 4.3 X 16	Fitting Q140 to underside of door sash
1		BSR 4.2 X 65	End caps to QR140 low threshold



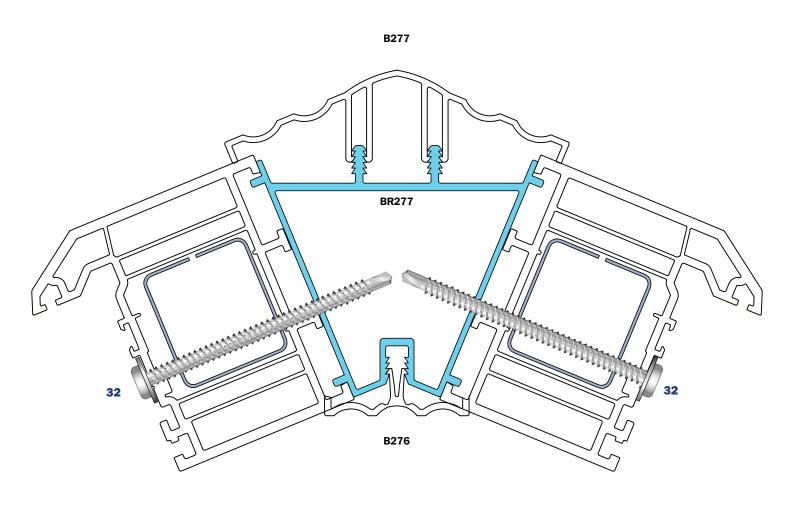


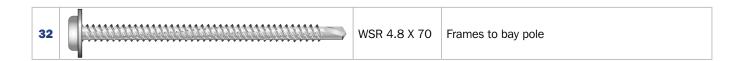






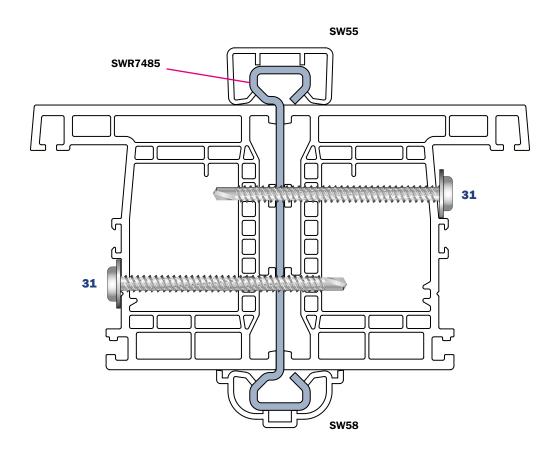
















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