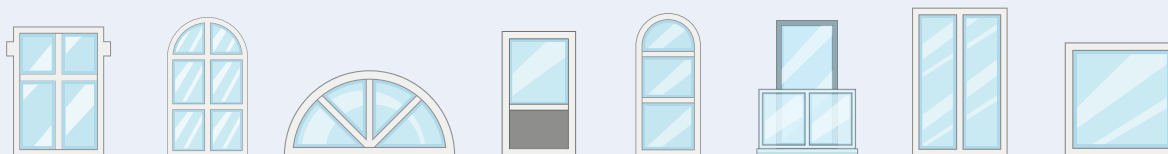


# Recommended Fixings Manual



THE  
**R**ESIDENCE  
COLLECTION

R<sub>9</sub> RESIDENCE 9<sup>®</sup>

“The Residence Collection is a unique business with unrivalled brands and my objective is to bring further technical excellence into everything that we do. Rapiertstar always provide expert technical help and fastener knowledge which ultimately benefits our trade partners”.

*Mike Hart - Technical Manager - The Residence Collection and Window Widgets*



## THE RESIDENCE COLLECTION

Residence 9 is a window and door system designed to authentically replicate 19th Century timber designs.

The traditionally elegant flush exterior and stylish decorative interior create that classic aesthetic.

A combination of design, innovation and technological advancement is how Residence 9 outperforms many other systems.

Residence 9 is an eclectic blend of traditional aesthetics and innovative design. Whatever period a property is we know Residence 9 windows and doors will look great, as the Residence Collection has copied historical design and considered conservation guidelines, which authentically replicate the traditional timber sightlines. You'll immediately notice the benefits of the thermally efficient 9 chamber design and modern glazing, whilst retaining the character of any home, traditionally transformed by Residence 9.



### The Correct Fastener

**rapierstar<sup>®</sup>** 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<sup>®</sup> 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<sup>®</sup>** 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<sup>®</sup>** 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 describing, with independent verification, that the head/thread/point maintain consistency of design. This also guarantees that the production of steel screws is 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.

### Identification of Stainless Window screws



Unique head design eliminates confusion between the grades of stainless steel used. Clear product marking on the head of **rapierstar®** window screws allows immediate identification of the grade of stainless steel from which the screws are manufactured. This ensures that specifications are adhered to.

### Austenitic Stainless Steel - 302



Because 302 grade Austenitic stainless steel is intrinsically soft, it is unsuitable for self-drilling applications. However, it 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 independently tested by UKAS accredited test bodies to beyond 3000 hours salt spray test in accordance with BS EN ISO 9227.

### Bi-Metallic




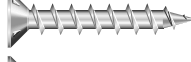


















Austenitic stainless steel fastener with a carbon steel drill tip. Suitable for reinforced applications. Combination recess with square drive giving effective 'stick-fit' onto the driver bit for ease of insertion during fabrication and common Phillips no2 recess for on-site adjustment. Often accepted by Councils and Housing Associations for use in the manufacture of windows and doors.

**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.**

## SPECIAL NOTES WITH REFERENCE TO DOOR HINGE FASTENERS




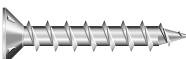

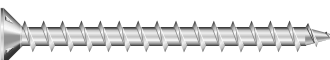









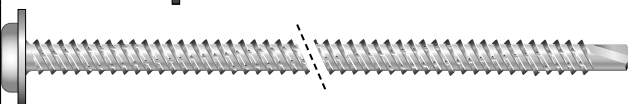





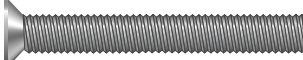
*Due to the extensive range and specification of door hinge hardware, the recommendations within this manual are intended as a guide only. It is therefore essential that you contact Rapierstar Technical Department for advice on correct fastener selection for your individual requirements.*

## Carbon Steel

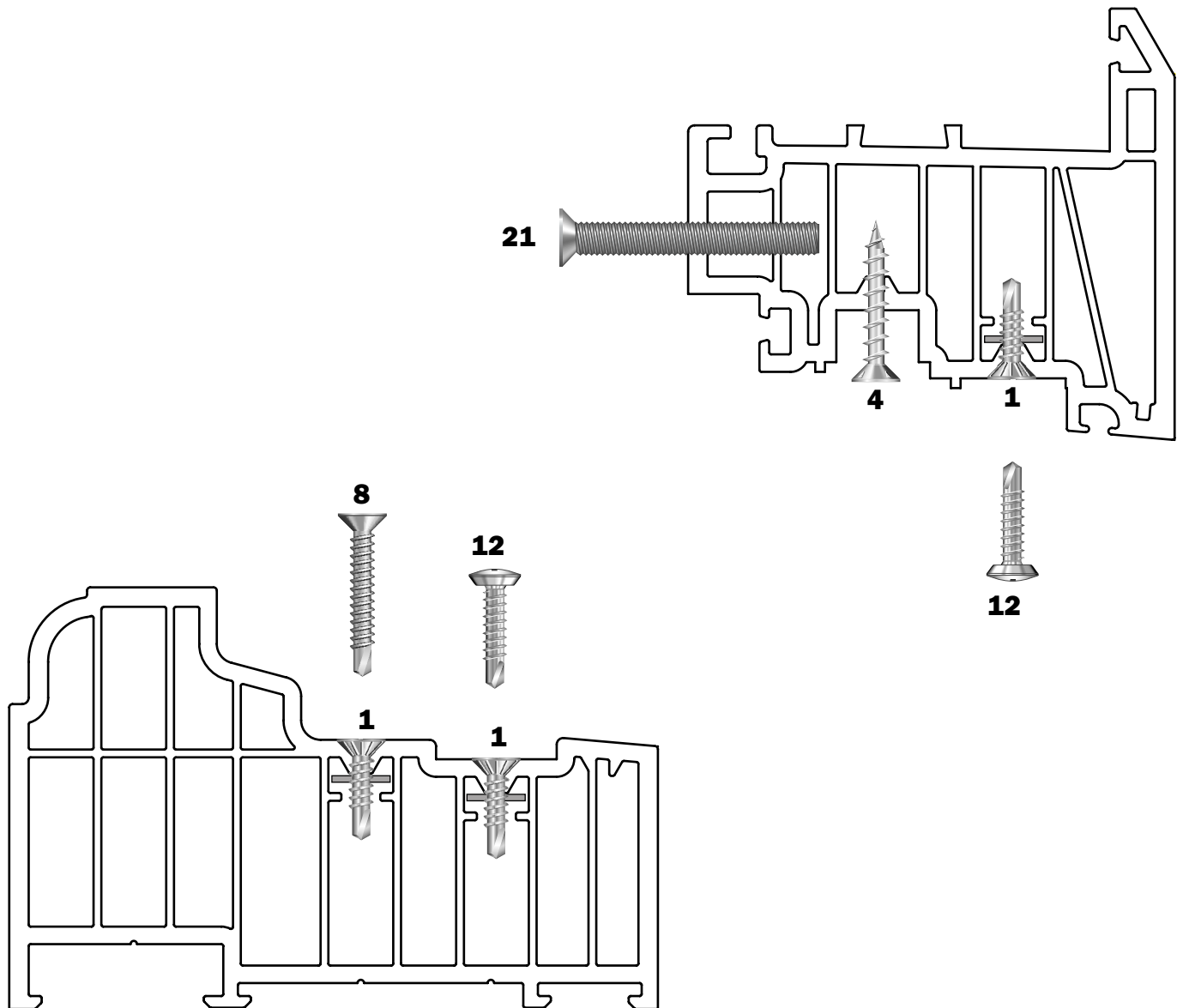
	Item	Code	Application
	<b>1</b>	RSR 3.9 x 16 Z	Reinforcement retention
	<b>2</b>	RSR 3.9 x 19 Y	Reinforcement Retention
	<b>3</b>	CFG 4.3 x 16 Z	PVC Reinforcement Retention
	<b>4</b>	CFG 4.3 x 25 Z	Hardware/Locator Block to PVCU
	<b>4a</b>	CFG 4.8 x 25 Z	Hardware to PVCU (Heavy Duty)
	<b>6</b>	CFG 4.3 x 45 Z	Coupling to Frame
	<b>7</b>	CFG 4.3 x 65 Z	Frame to Cill
	<b>8</b>	CSR 3.9 x 25 Z	Hardware to Reinforcement
	<b>8a</b>	CSR 4.8 x 25 Z	Hardware to Reinforcement
	<b>9</b>	SFG 4.3 x 16 Z	Friction Stay to Transom/Mullion
	<b>10</b>	SFG 4.3 x 20 Z	Friction Stay to Sash and Frame
	<b>11</b>	SFR 4.8 x 13 Z	Sash Add-on
	<b>12</b>	SSR 3.9 x 19 Z	Friction Stay to Reinforcement
	<b>13</b>	WSR 4.8 x 50 Z	Frame to Coupling
	<b>14</b>	WSR 4.8 x 60 Z	Frame to Corner Post
	<b>15</b>	WSR4.8 x 80 Z	Frame to Baypole
	<b>16</b>	WSR 4.8 x 95 Z	Frame to Frame
	<b>17</b>	BSR 4.2 x 65 Z	Transom to Dummy Sash
	<b>18</b>	MJS 4.8 x 65 Y	Mechanical Jointing
	<b>19</b>	MJS 4.8 x 80 Y	Mechanical Jointing
	<b>20</b>	CPP 6.0 x 80 Y	Dummy Sash to Frame
	<b>21</b>	MS M5 x 40 Z	Handle Retention








**Stainless Steel**

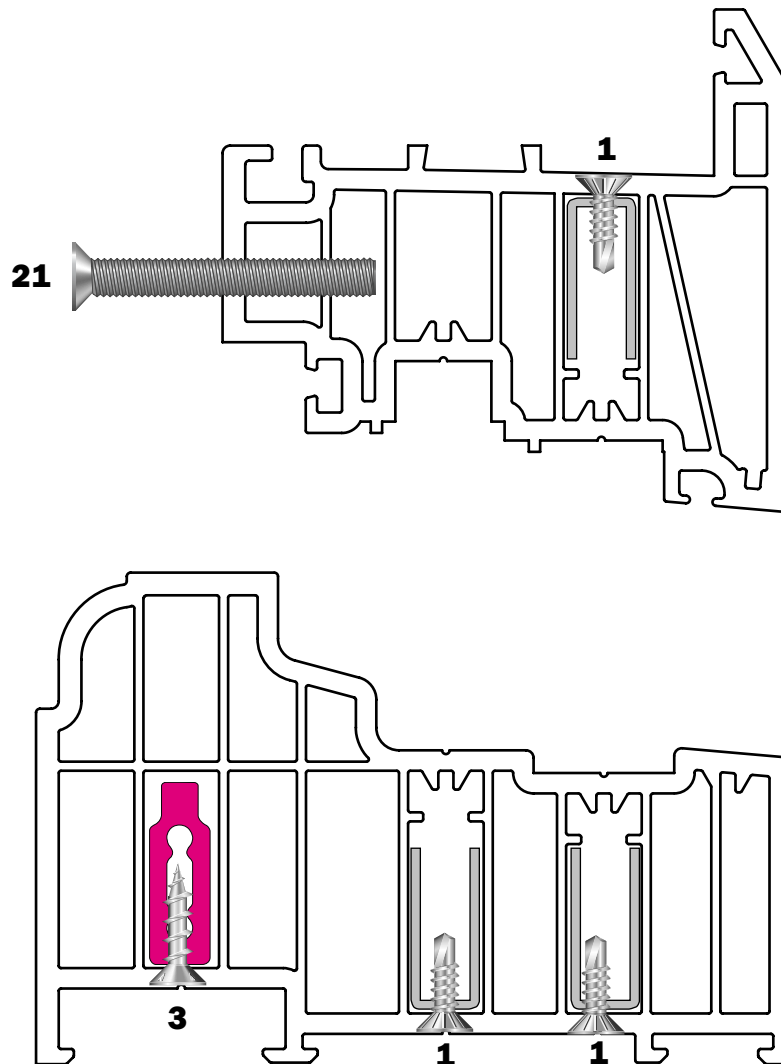
	<b>Item</b>	<b>Code</b>	<b>Application</b>
	<b>1</b>	RSR 3.9 x 16 S	Reinforcement retention
	<b>2</b>	CSR 3.9 x 19 S	Reinforcement Retention
	<b>3</b>	CFG 4.3 x 16 S	PVC Reinforcement Retention
	<b>4</b>	CFG 4.3 x 25 S	Hardware/Locator Block to PVCU
	<b>4a</b>	CFG 4.8 x 25 S	Hardware to PVCU (Heavy Duty)
	<b>6</b>	CFG 4.3 x 45 S	Coupling to Frame
	<b>7</b>	CFG 4.3 x 65 Z	Frame to Cill
	<b>8</b>	CSR 3.9 x 25 S	Hardware to Reinforcement
	<b>8a</b>	CSR 4.8 x 25 Z	Hardware to Reinforcement
	<b>9</b>	SFG 4.3 x 16 S	Friction Stay to Transom/Mullion
	<b>10</b>	SFG 4.3 x 20 S	Friction Stay to Sash and Frame
	<b>11</b>	SFR 4.8 x 13 Z	Sash Add-On
	<b>12</b>	SSR 3.9 x 19 S	Friction Stay to Reinforcement
	<b>13</b>	WSR 4.8 x 50 Z	Frame to Coupling
	<b>14</b>	WSR 4.8 x 60 Z	Frame to Corner Post
	<b>15</b>	WSR 4.8 x 80 Z	Frame to Baypole
	<b>16</b>	WSR 4.8 x 95 Z	Frame to Frame
	<b>17</b>	BSR 4.2 x 65 Z	Dummy Sash to Transom
	<b>18</b>	MJS 4.8 x 65 Y	Mechanical Jointing
	<b>19</b>	MJS 4.8 x 80 Y	Mechanical Jointing
	<b>20</b>	CPP 6.0 x 80 Y	Dummy Sash to Frame
	<b>21</b>	MS M5 x 40 Z	Handle Retention

**R002 Frame with R101 Reinforcement**  
**R003 Sash with R101 Reinforcement**

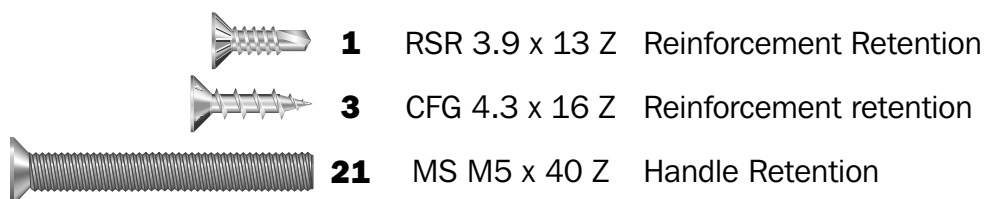


- |   |           |                |                                 |
|---|-----------|----------------|---------------------------------|
|  | <b>1</b>  | RSR 3.9 x 16 Z | Reinforcement Retention         |
|  | <b>4</b>  | CFG 4.3 x 25 Z | Espag to Sash                   |
|  | <b>8</b>  | CSR 3.9 x 25 Z | Keep to Frame                   |
|  | <b>12</b> | SSR 3.9 x 19 Z | Friction Stay to Sash and Frame |
|  | <b>21</b> | MS M5 x 40 Z   | Handle Retention                |

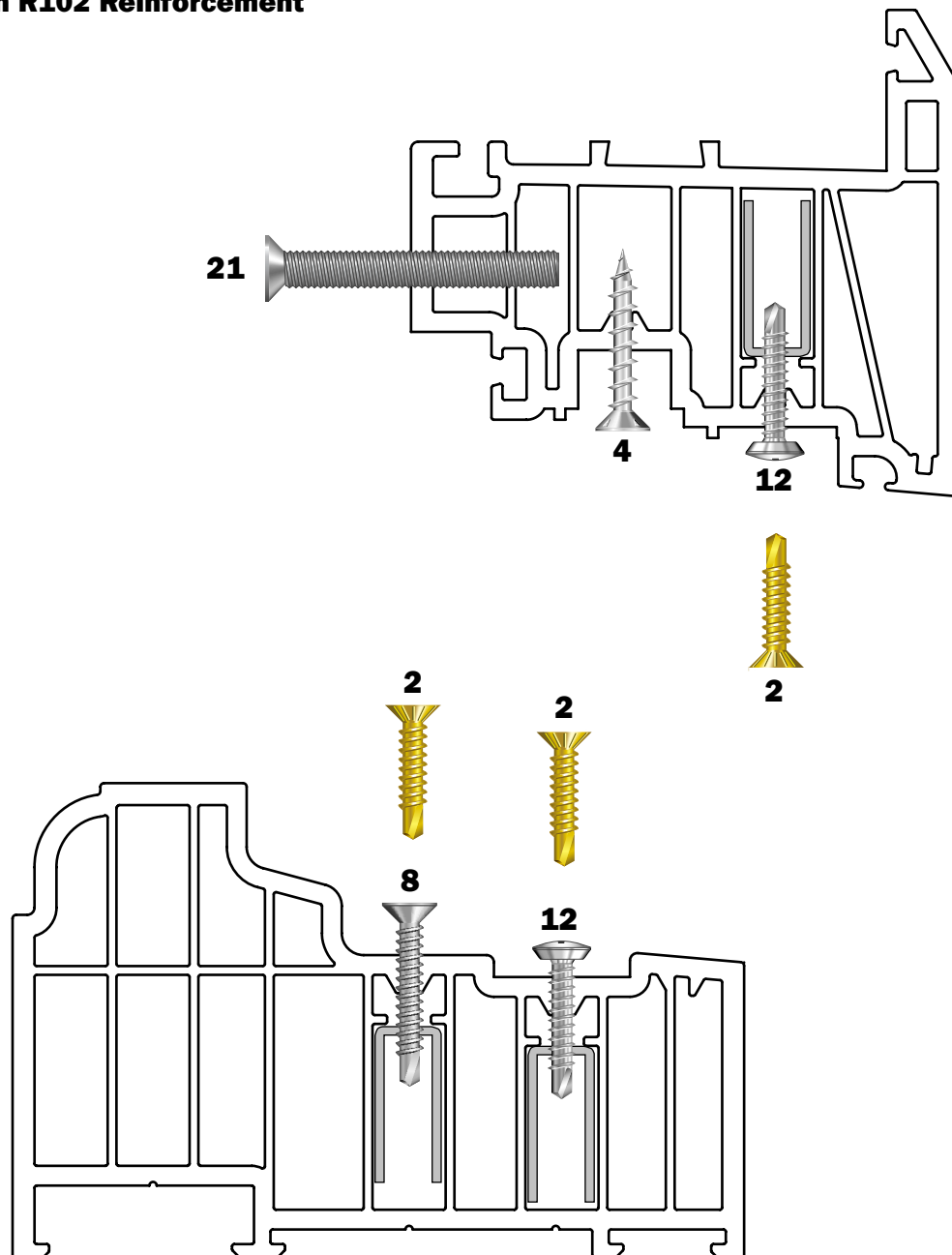
**R002 Frame with R102 Reinforcement**  
**R003 Sash with R102 Reinforcement**







Recommended for strengthening only. Refer to page 14 when fixing hardware



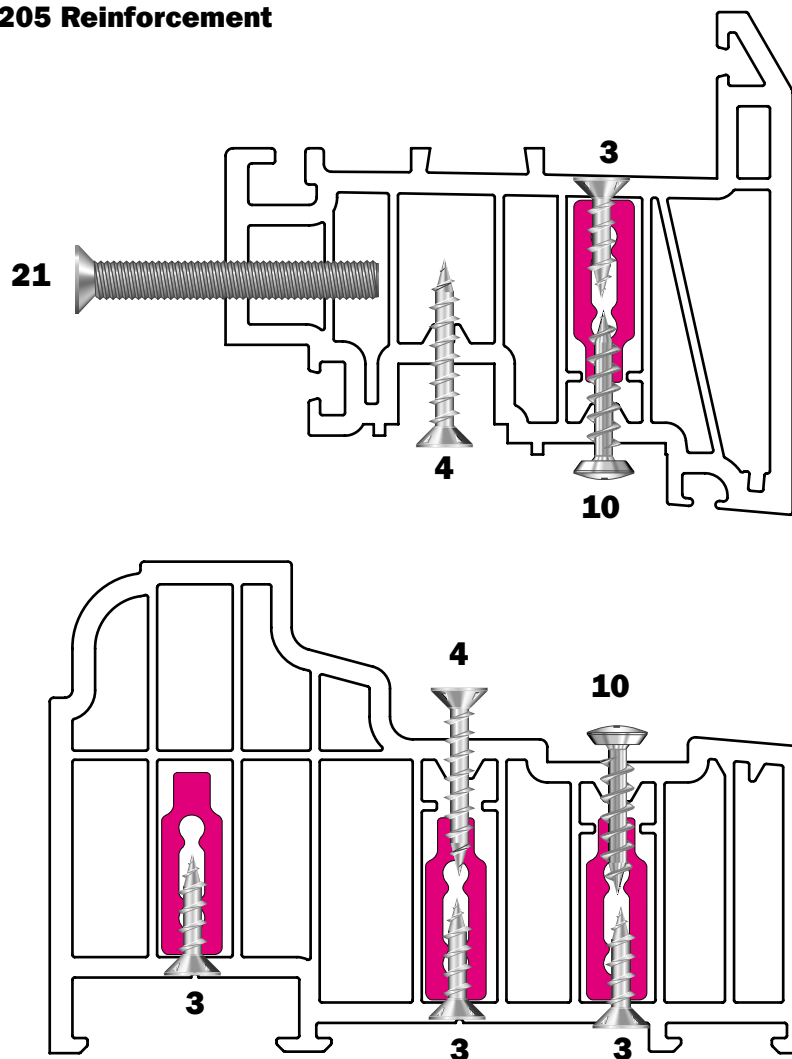
**R002 Frame with R102 Reinforcement**  
**R003 Sash with R102 Reinforcement**







- |   |           |                |                                 |
|---|-----------|----------------|---------------------------------|
|  | <b>2</b>  | RSR 3.9 x 19Y  | Reinforcement Retention         |
|  | <b>8</b>  | CSR 3.9 x 25 Z | Espag to Sash. Keep to Frame    |
|  | <b>12</b> | SSR 3.9 x 19 Z | Friction Stay to Sash and Frame |
|  | <b>21</b> | MS M5 x 40 Z   | Handle Retention                |

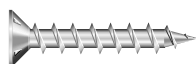
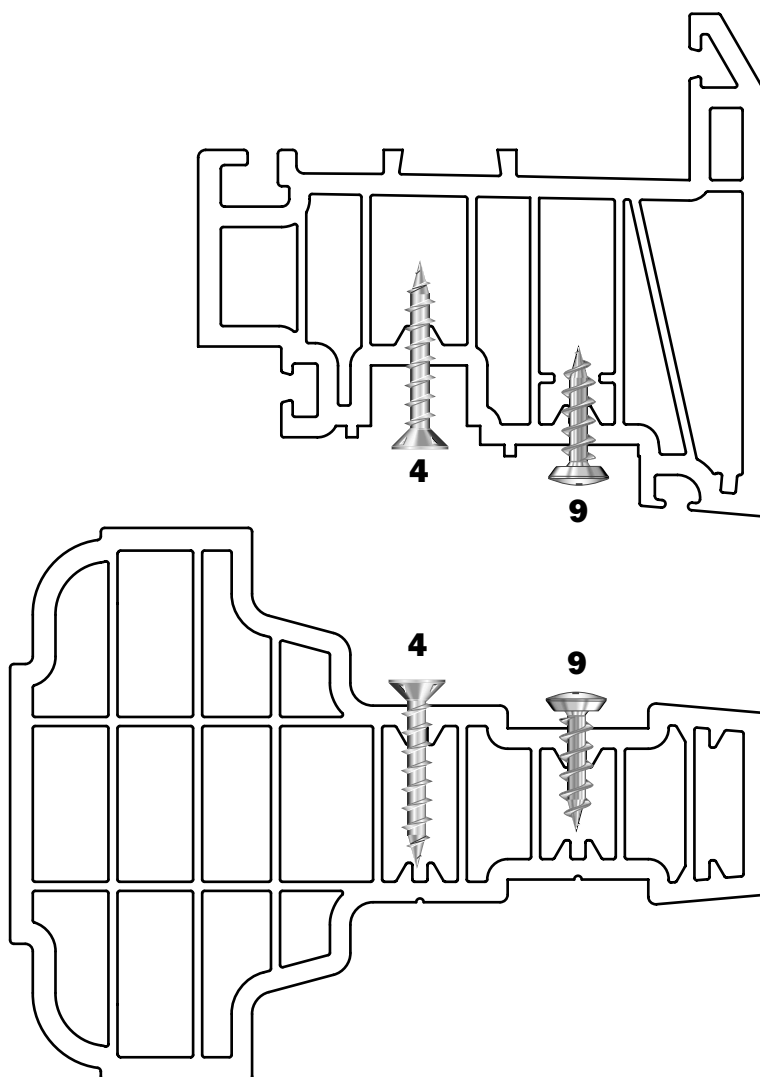


**R002 Frame with R205 Reinforcement**  
**R003 Sash with R205 Reinforcement**



- |   |           |                |                                 |
|---|-----------|----------------|---------------------------------|
|  | <b>3</b>  | CFG 4.3 x 16 Z | PVC Reinforcement Retention     |
|  | <b>4</b>  | CFG 4.3 x 25 Z | Espag to Sash. Keep to Frame    |
|  | <b>10</b> | SFG 4.3 x 20 Z | Friction Stay to Sash and Frame |
|  | <b>21</b> | MS M5 x 40 Z   | Handle Retention                |

## R003 Sash with R001 Transom/Mullion

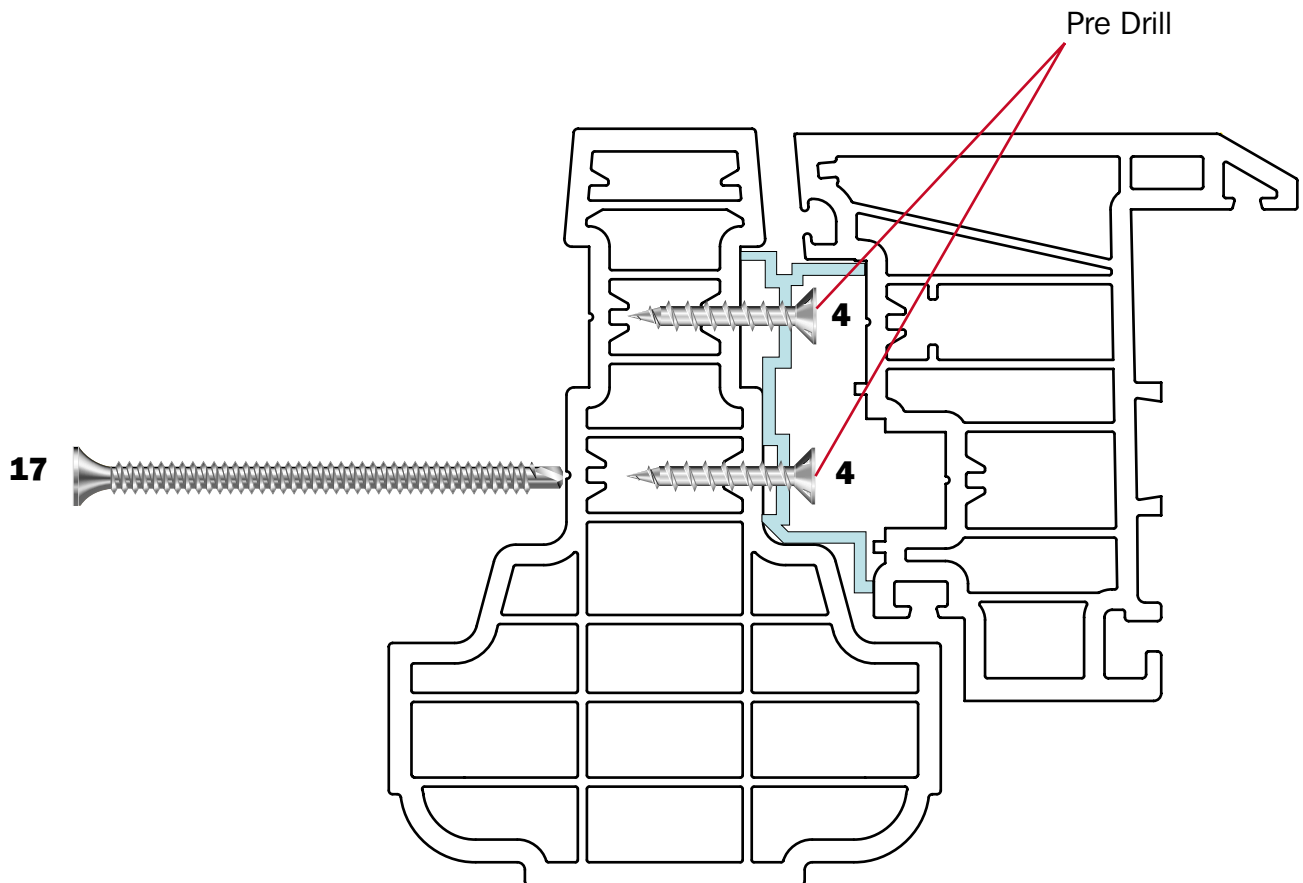


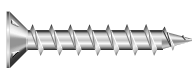

**4** CFG 4.3 x 25 Z Espag to Sash. Keep to Transom



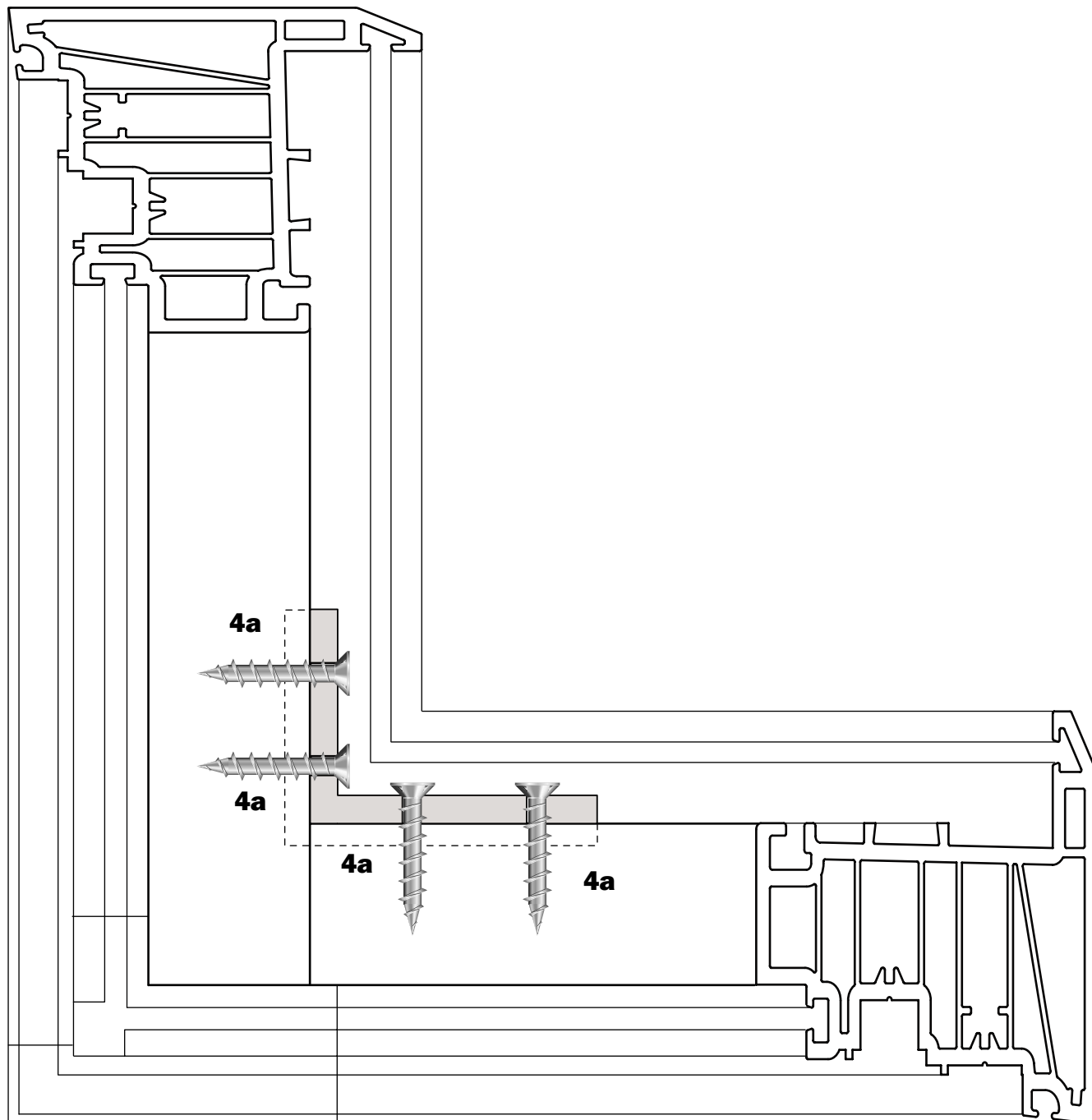
**9** SFG 4.3 x 16 Z Friction Stay to Transom and Mullion

**R001 Floating Mullion and R003 Sash with R114 Spacer**



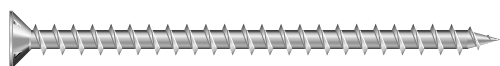
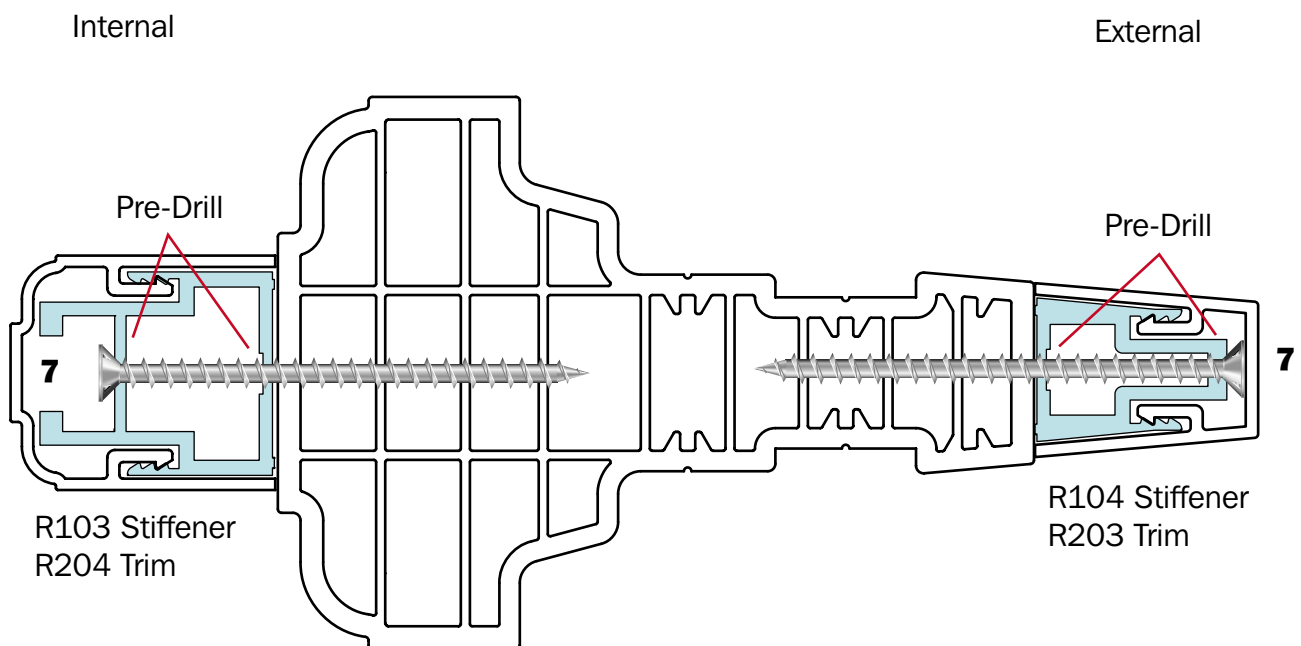
- |   |           |                |                                |
|---|-----------|----------------|--------------------------------|
|  | <b>4</b>  | CFG 4.3 x 25 Z | R114 Spacer to Transom/Mullion |
|  | <b>17</b> | BSR 4.2 x 65 Z | Transom/Mullion to Dummy Sash  |

## Sash Block Fixing



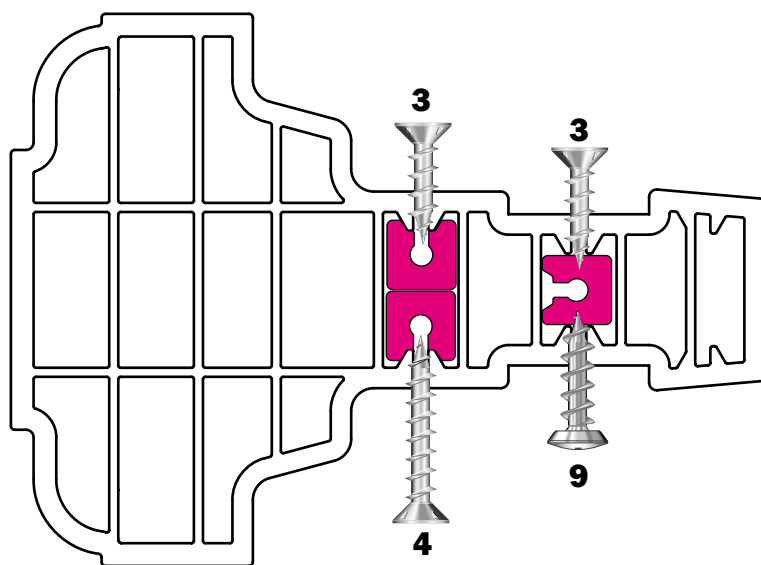
**4a** CFG 4.8 x 25 Z Sash Block to Sash



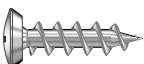
**R001 Mullion**  
**R103 Internal Aluminium Stiffener with R204 Trim**  
**R104 External Aluminium Stiffener with R203 Trim**



**7** CFG 4.3 x 65 Z Stiffeners to Transom

## R001 Mullion with R208 Reinforcement

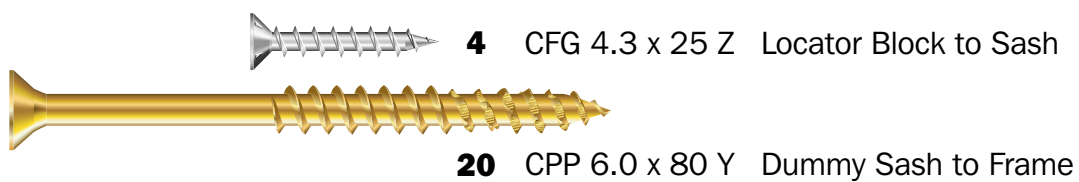
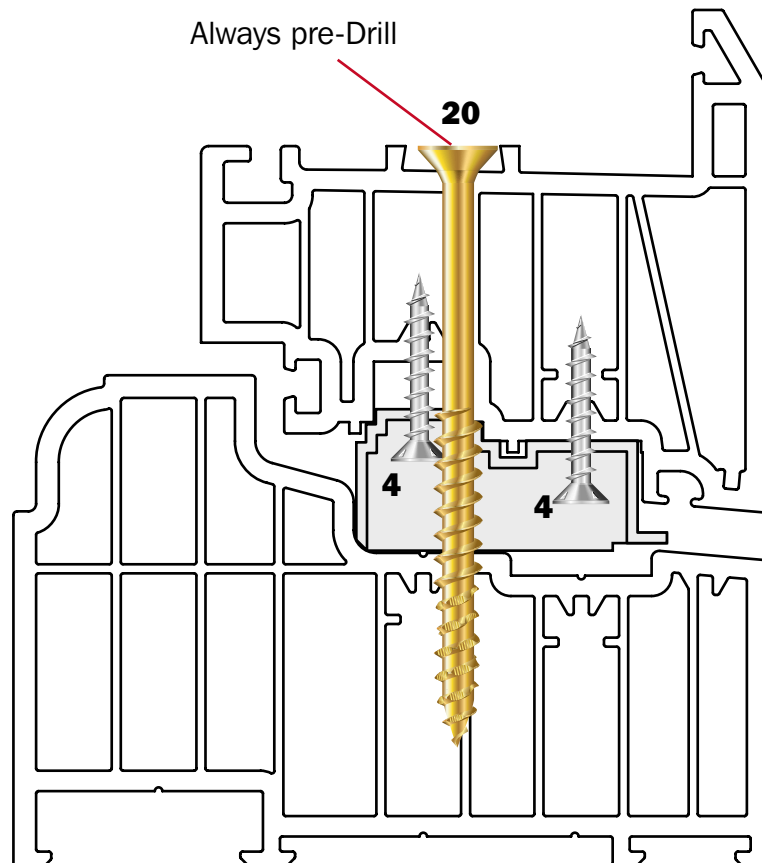


- |   |          |                |                             |
|---|----------|----------------|-----------------------------|
|  | <b>3</b> | CFG 4.3 x 16 Z | PVC Reinforcement Retention |
|  | <b>4</b> | CFG 4.3 x 25 Z | Keep to Mullion             |
|  | <b>9</b> | SFG 4.3 x 16 Z | Friction Stay to Mullion    |

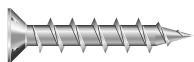
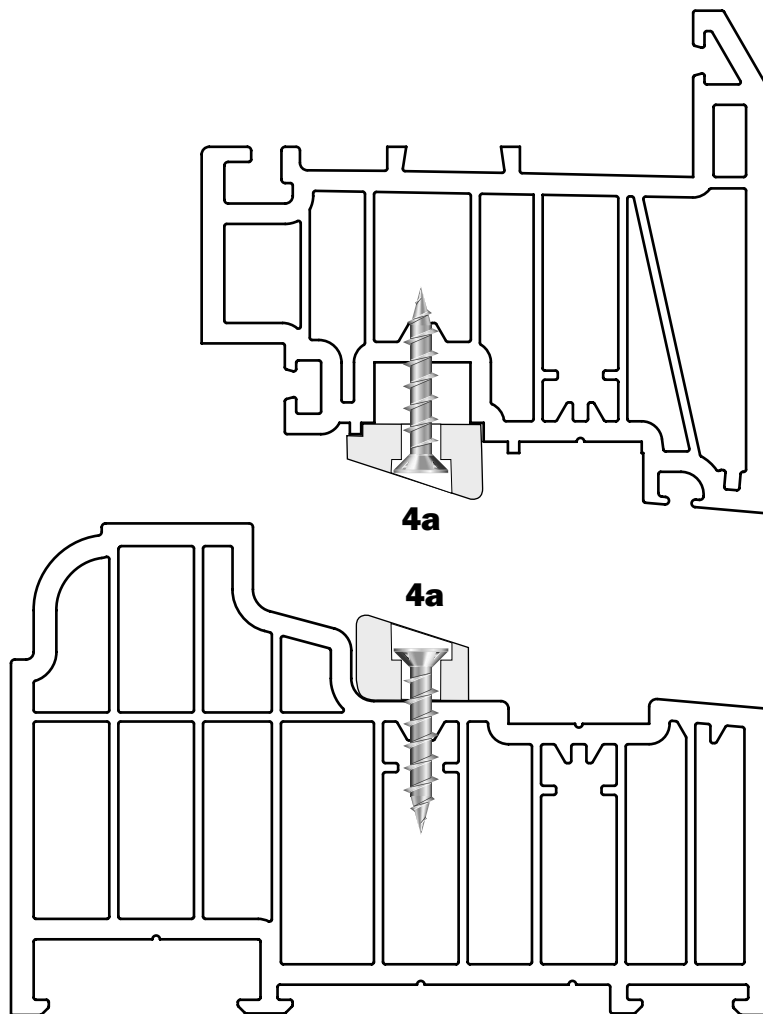


**R002 Frame and R003 Sash  
with R307 Dummy Sash Locator Block**

28mm & 44mm Sealed Units

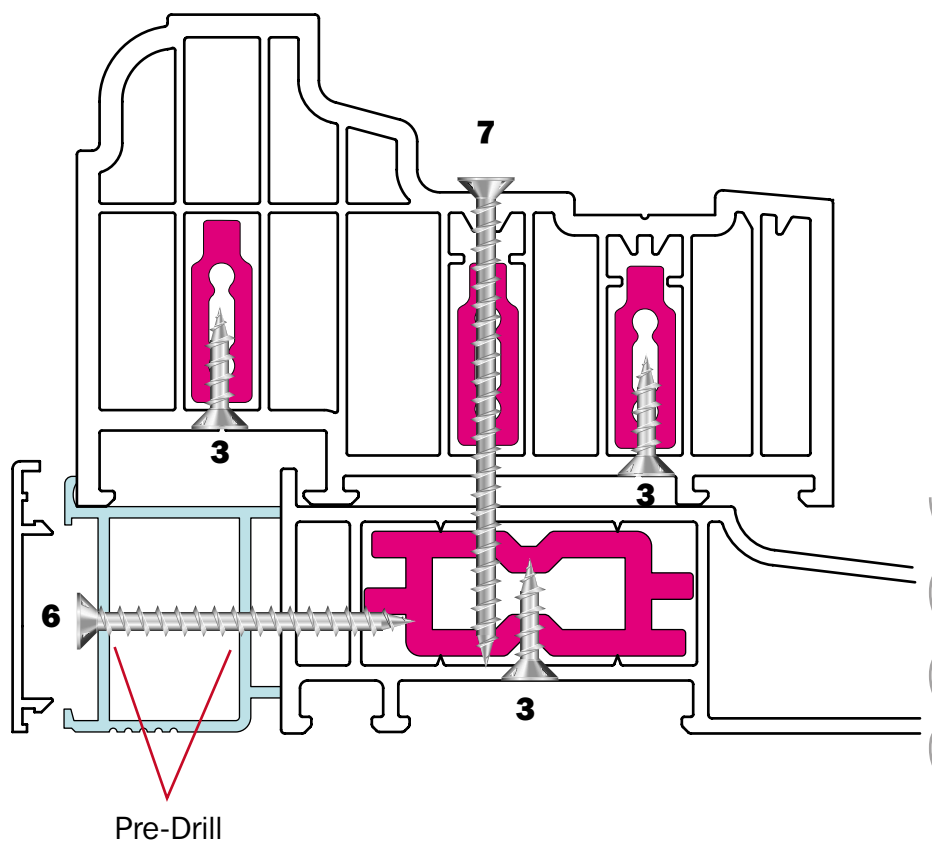





## R002 Frame and R003 Sash with R308 Run-Up Blocks (pair)



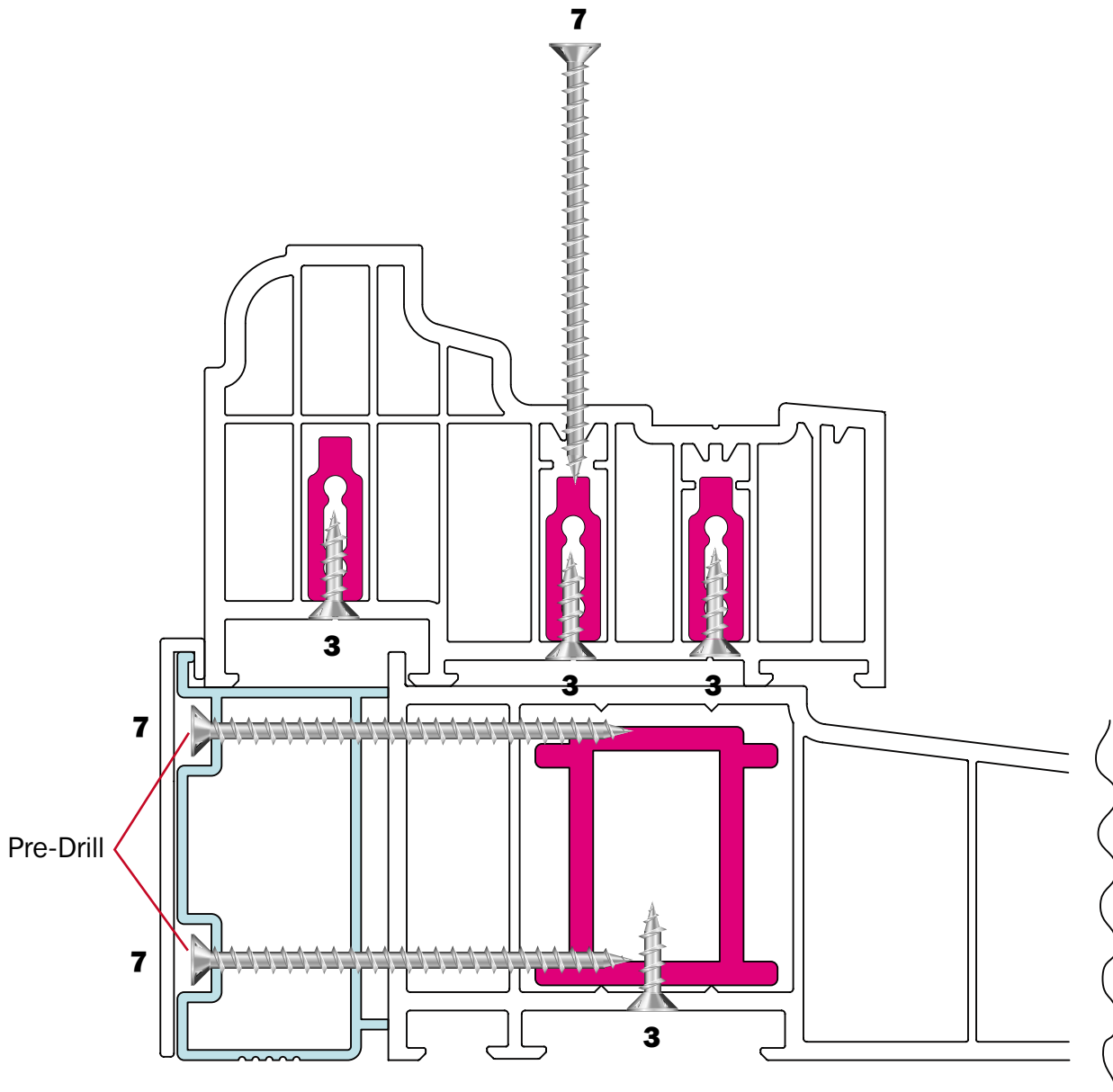
**4a** CFG 4.8 x 25 Z Run-up Block & Locking Wedge to Sash and Frame



**R002 Frame  
Cill with R106 Aluminium Cill Infill  
and R209 PVC Cill Reinforcement**



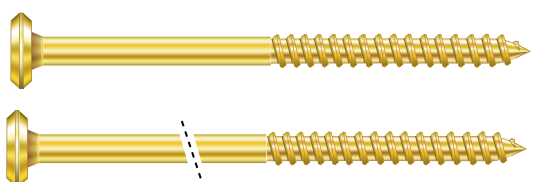
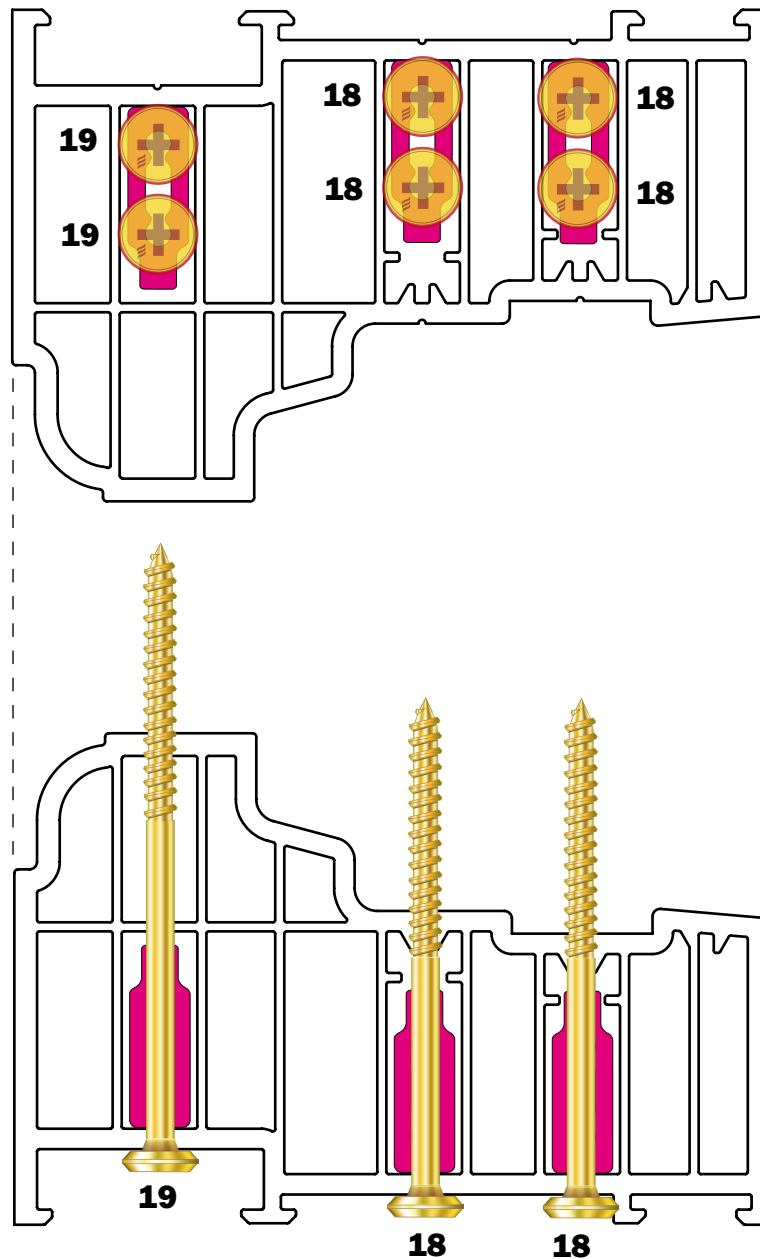
	<b>3</b>	CFG 4.3 x 16 Z	PVC Reinforcement Retention
	<b>6</b>	CFG 4.3 x 45 Z	R106 Infill to Cill
	<b>7</b>	CFG 4.3 x 65 Z	Frame to Cill

## R002 Frame with R205 Reinforcement Radlington Cill with Aluminium Cill Infill and PVC Cill Reinforcement



	<b>3</b>	CFG 4.3 x 16 Z	PVC Reinforcement Retention
	<b>7</b>	CFG 4.3 x 65 Z	Infill to Cill, Frame to Cill

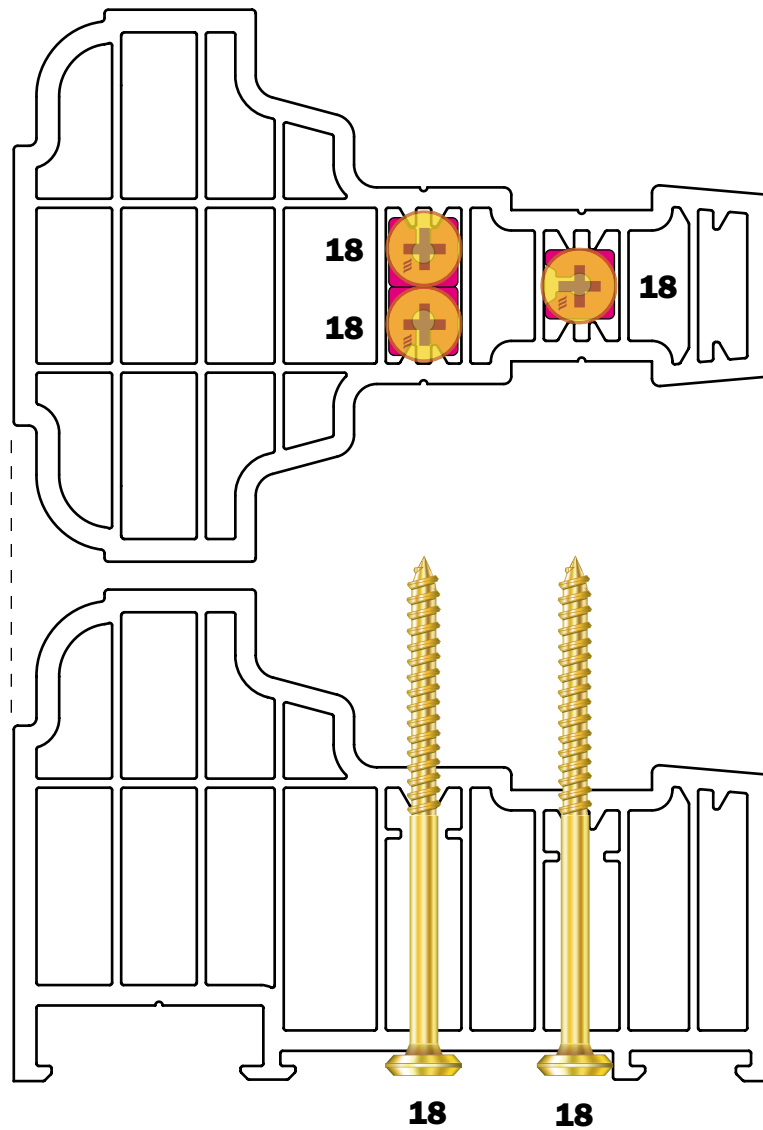
**Mechanical Jointing - Frame to Frame with R205 Reinforcement**



**18** MJS 4.8 x 65 Y Mechanical Jointing

**19** MJS 4.8 x 80 Y Mechanical Jointing

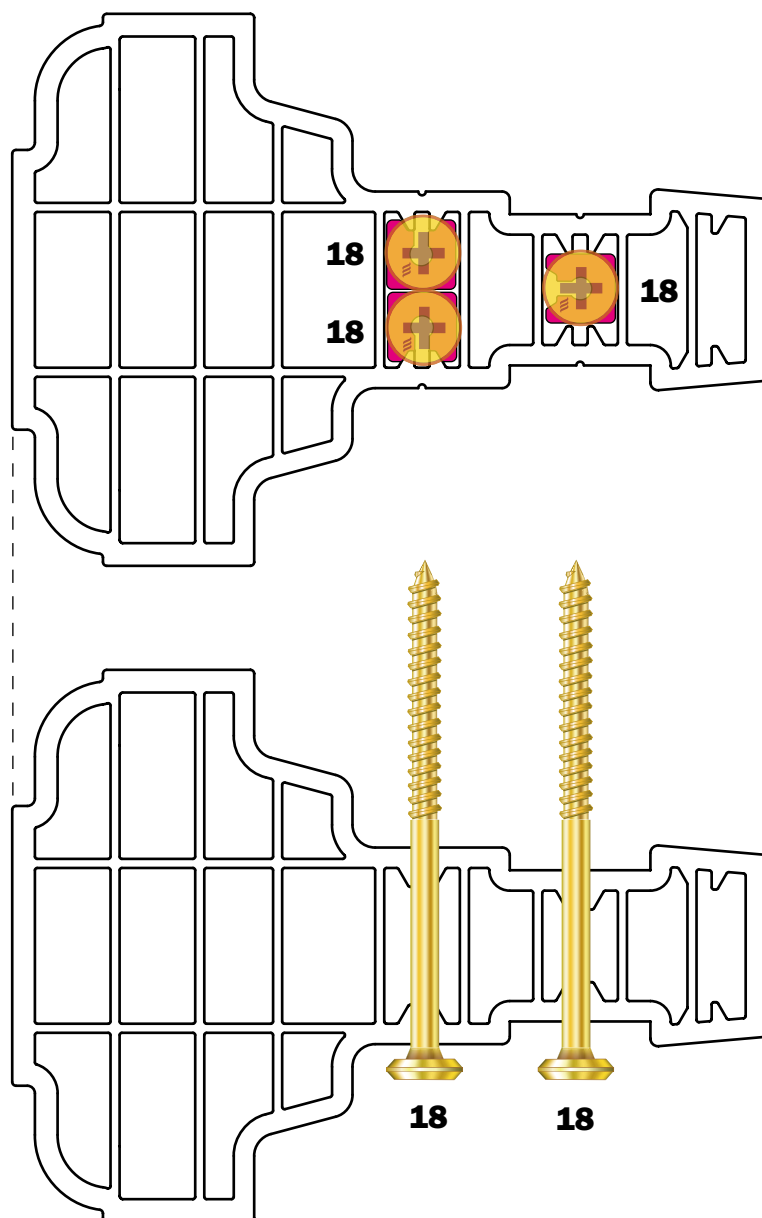
## Mechanical Jointing - Frame to Mullion with R208 Reinforcement



**18** MJS 4.8 x 65 Y Mechanical Jointing

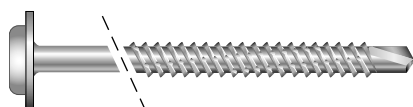
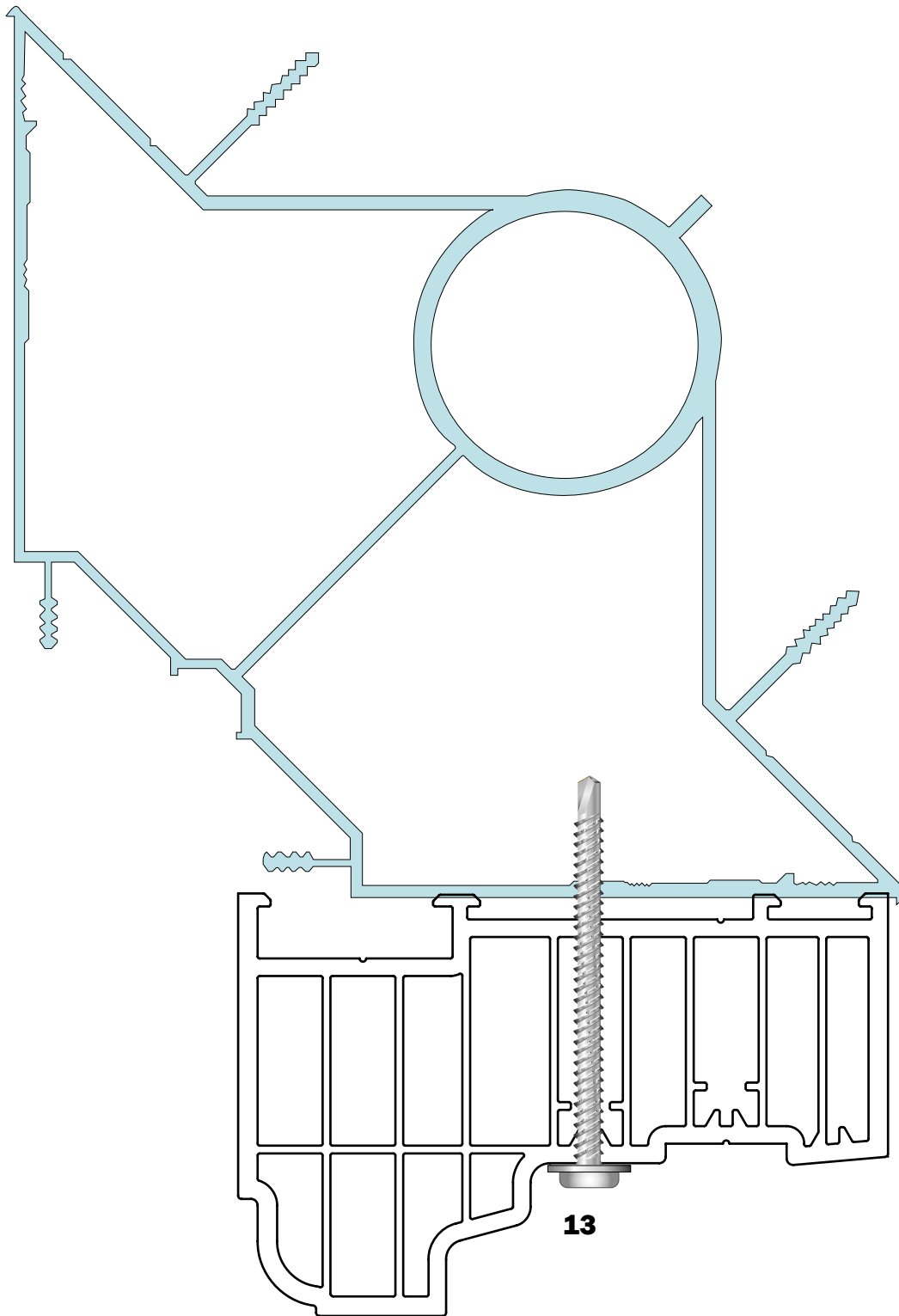


**Mechanical Jointing - Mullion to Mullion with R208 Reinforcement**



**18** MJS 4.8 x 65 Y Mechanical Jointing

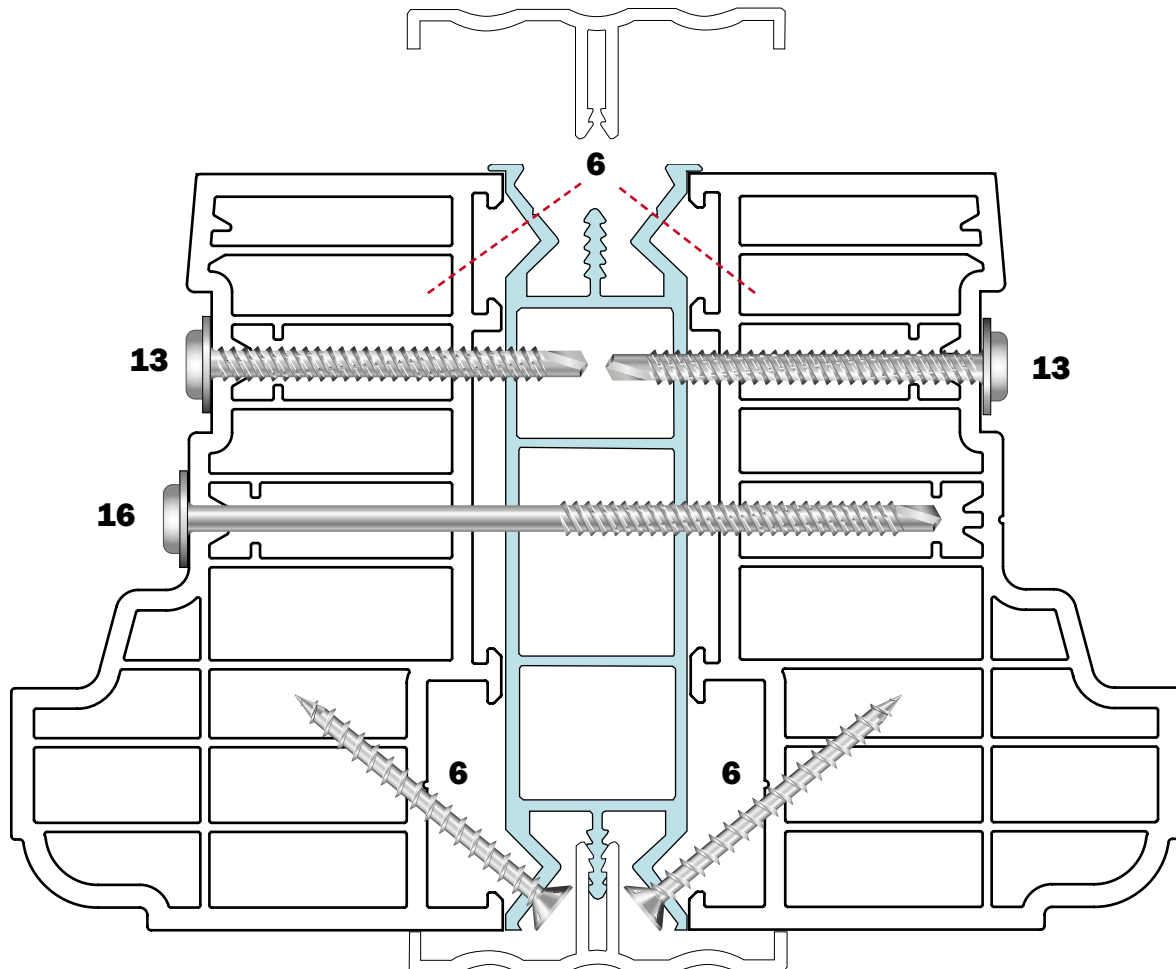
## R108 90 degree Cornerpost with R002 Frame



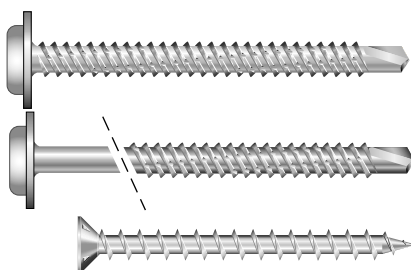
**13**

WSR 4.8 x 60 Z Frame to Cornerpost

**R002 Frame with R107 Coupler and PILDT Decorative Trim**



In-Line Coupling Assembly 24mm needs WSR 4.8 x 50mm  
 In-Line Coupling Assembly 10mm needs WSR 4.8 x 80mm  
 In-Line Coupling Assembly 132mm needs WSR 4.8 x 80mm

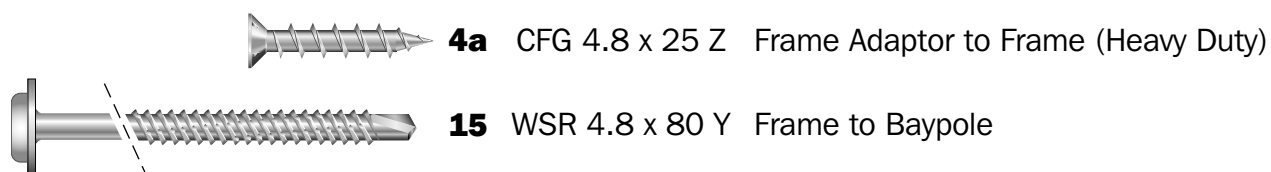
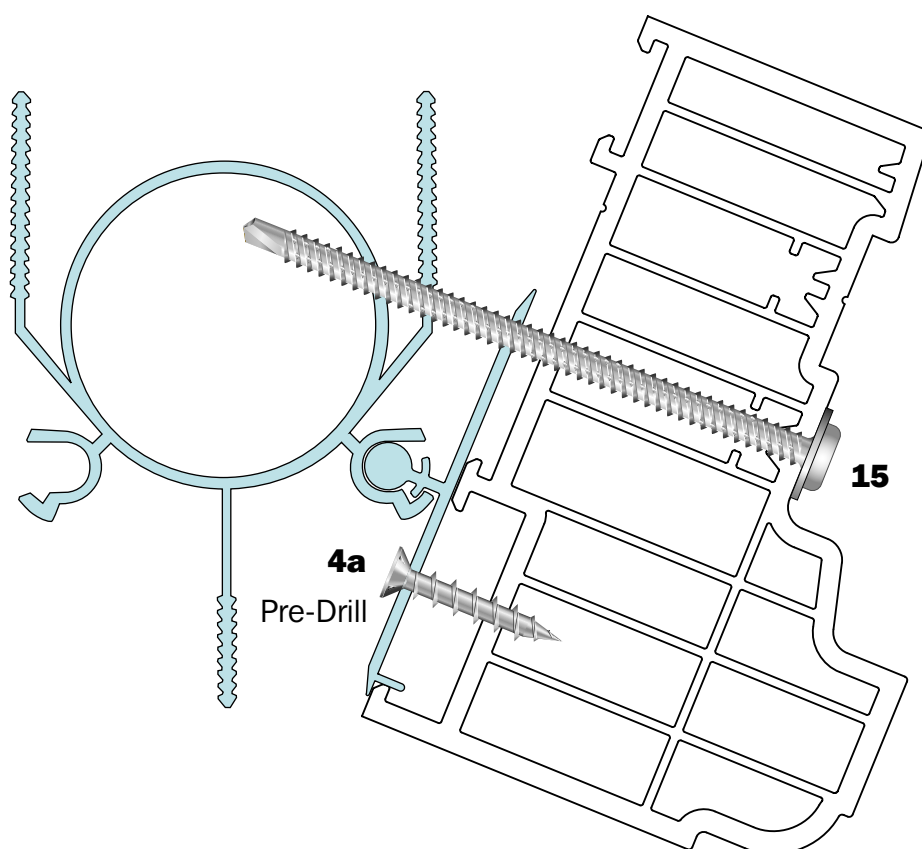


**13** WSR 4.8 x 50 Z Frame to Coupling

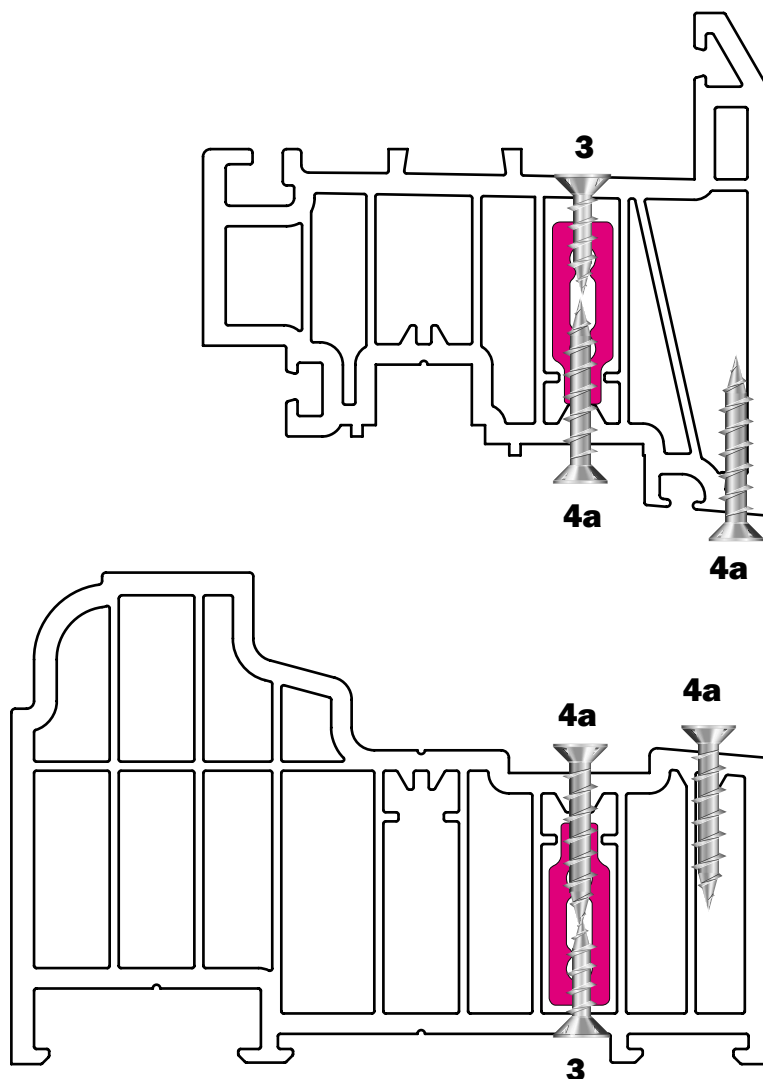
**16** WSR 4.8 x 95 Z Frame to Frame



**6** CFG 4.3 x 45 Z Coupling to Frame (concealed fixing)

## R002 Frame with 482028 Variable Angle Frame Adaptor and R109 Variable Baypole

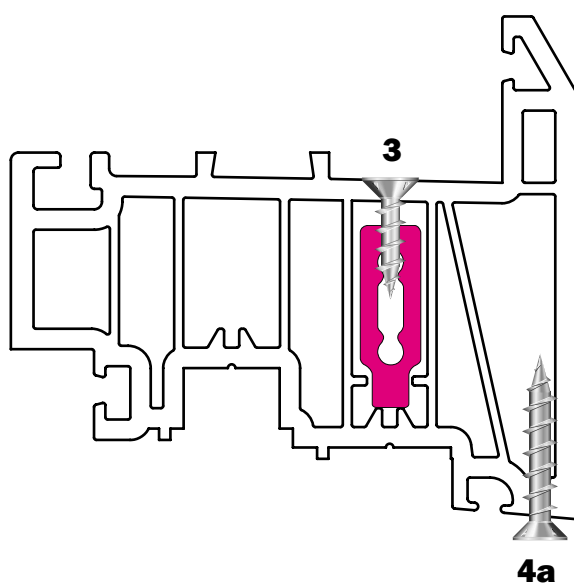




**Butt Hinge Location with R205 PVC Reinforcement**



-  **3** CFG 4.3 x 16 Z Reinforcement Retention
-  **4a** CFG 4.8 x 25 Z Butt Hinge to Sash and Frame (Heavy Duty)

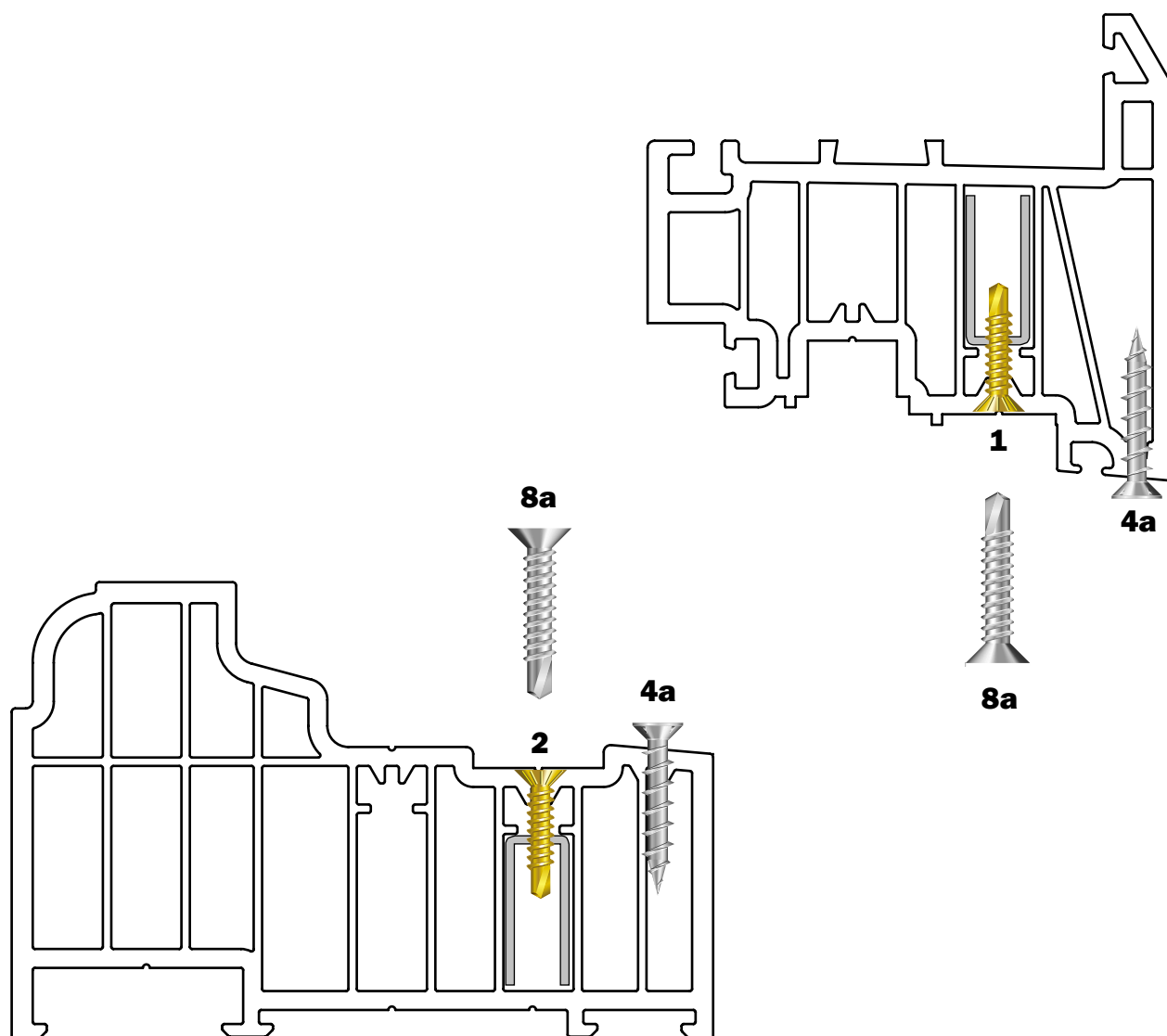
## Dummy Butt Hinge with R205 PVC Reinforcement



- |   |           |                |   |
|---|-----------|----------------|---|
|  | <b>3</b>  | CFG 4.3 x 16 Z | Reinforcement Retention                   |
|  | <b>4a</b> | CFG 4.8 x 25 Z | Butt Hinge to Sash and Frame (Heavy Duty) |



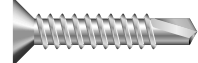
**Butt Hinge Location with R102 Steel Reinforcement**



**2** RSR 3.9 x 19 Y Reinforcement Retention

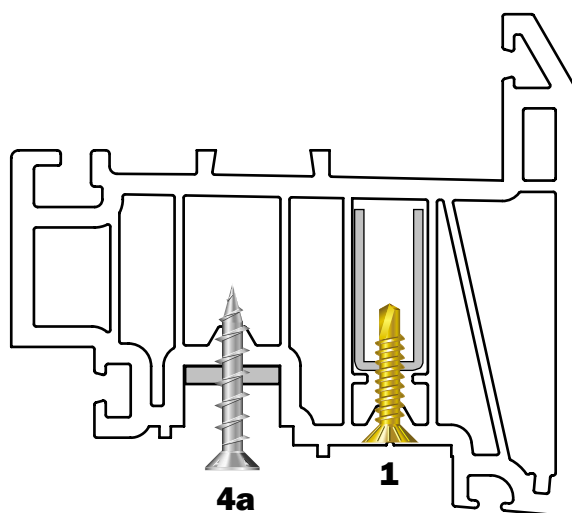




**4a** CFG 4.8 x 25 Z Butt Hinge to unreinforced Sash and Frame (Heavy Duty)



**8a** CSR 4.8 x 25 Z Butt Hinge to reinforced Sash and Frame (Heavy Duty)

## Door Sash Bracket Location



- |   |           |                |  |
|---|-----------|----------------|--|
|  | <b>2</b>  | RSR 3.9 x 19 Y | Reinforcement Retention                |
|  | <b>4a</b> | CFG 4.8 x 25 Z | Door Sash Bracket to Sash (Heavy Duty) |



Notes

Lined area for notes.

## Notes



**Tel: 01260 223311 Fax: 01260 223399**  
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