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Updates

DATE	PAGE	DESCRIPTION
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Specification

GENERAL DESCRIPTION

RECOMMENDED DESIGN LIMITATIONS

Windows

Top Hung Vents:

Maximum Width: 1400 mm
Minimum Width: 400 mm
Maximum Height: 1400 mm
Minimum Height: 400 mm
Maximum Weight: 50 kg

Side Hung Vents:

Maximum Width: 700 mm
Minimum Width: 400 mm
Maximum Height: 1400 mm
Minimum Height: 400 mm
Maximum Weight: 30 kg

PROFILE SPECIFICATION

The window frames are constructed of aluminium alloy extrusion to BS EN 755-9 and BS EN 12020, extruded from 6063 T6 alloy. The internal and external extrusions are separated with a polyamide thermal break.

The external aluminium alloy extrusion is pre-treated and finished either:-

Anodised to BS 3987: 1987, grade AA25 to a natural self colour.

- a) Anodised to BS 3987 : 1987, grade AA25 to a natural colour.
- b) Polyester powder organic coating to BS 6496. Dual colour is available.

Specification

Kitemark™ Certificate

No. KM 81580

Size Limitations and Performance Characteristics

Alitherm 500 Aluminium Alloy Window System

Window Type	Width (mm) Maximum	Height (mm) Maximum	Weight (kg) Maximum	Area (M ²) Maximum	Hinges	Transom/Mullion Length (mm) inc frame - Maximum	Air Permeability classification	Water tightness classification	Resistance to Wind classification	Exposure category as given in Table 1 of BS 6375-1:2009
Sash dimensions for windows with approved sash profiles:										
Top hung Internally beaded	1400	1400	50	-	ACET552	-	2	E900	AE2400	2000+
Side hung Internally beaded	700	1400	30	-	ACET552	-	4	E1050	AE2400	2000+
Dummy Sash Internally Beaded	1400	1400	-	-	-	1400	4	E1050	AE2400	2000+

*Transom/mullion subject to
lxx/lyy requirements

- See hardware for minimum sizes
- Use four hinges for top hung over 1200mm wide

Alitherm 500 Operational Performance (BS6375-2:2009)

Alitherm 500 has passed the operational & strength requirements of BS6375-2

Alitherm 500 Window Security (PAS24)

Top hung & side hung sashes have been successfully tested to PAS24:2016. Please contact our Technical Department (T:01934 876100) for further information.

Alitherm 500 Window U Values

Please refer to the Smart Systems' Document L White Paper or contact the Technical Department.

For advise on window sizes outside of the recommended design limitations, please contact the Technical Department at Smart Systems Ltd Tel: 01934 876100

Specification

GENERAL MANUFACTURING

Outer and vent frames are made by cutting the frame profiles with accurate 45° mitred ends using Tungsten Carbide Tipped Saw Blades, operating at approximately 3000 rpm.

The corners are joined using the Alitherm 500 crimping tools to form a cold forged corner joint (made by deforming small slugs of metal into the groove of the corner cleat).

The ends of transoms and mullions are profiled to fit the frame and fixed using self-tapping screws with a small joint sealant.

On polyester powder coated finishes, great care should be taken to avoid getting gap sealer on visible surfaces and should be removed as soon as possible with a clean cloth.

Care should be exercised when using products not supplied by Smart Systems Ltd as no responsibility can be accepted.

WINDOW DRAINAGE

As with all dry glazed systems, it is recommended that the window system is adequately drained and ventilated. Refer to drainage details in manual, if in doubt ask The Technical Department.

In order to get maximum performance and weather resistance it is recommended that drips are used over all vents.

OUTER FRAME MANUFACTURING INFORMATION

The outer frame members are cut with 45° mitred ends to the overall size required, measured to the longest point of the metal.

Prior to corner crimping the centre line position of any transoms or mullions should be marked on the outer frame members. Where the transom/mullion runs right through, it should be marked out on both jambs or head and cill members in pairs to ensure accurate alignment of the sections.

Using the marked centre line, Drill the transom/mullion fixing holes using a 5mm dia. drill bit.

Corners are formed by coating the cut faces to be joined with a suitable small gap sealer. Into the mitred corner insert the cleat glue and the required corner cleats and, where required, the aluminium corner chevrons. The two mitred ends are then brought together and crimped. The small gap sealer ensures a permanent joint and guards against the ingress of moisture and joint movement. After crimping the corner joint, special care should be taken to ensure any excess sealer is removed from painted surfaces.

Transoms or mullions are cut with square ends to the sizes calculated on the cutting formula sheets. The ends are then profiled to allow them to fit into the outer frame. Special tooling is available on request to profile the end of transom/mullion.

Prior to fixing of transoms and mullions smear the cut ends with a suitable small gap sealer. After fixing, special care should be taken to ensure any excess is cleared from painted surfaces.

Specification

VENT

Corners are formed by coating the cut faces to be joined with a suitable gap sealer. In the mitred corner insert the cleat glue and the required corner cleats and chevrons. The mitred ends are then brought together and crimped. The small gap sealer ensures a permanent joint and guards against the ingress of moisture and joint movement. Care should be taken to ensure any excess sealer is removed from the surfaces.

When fixing, the hinges, the fixing plates must be inserted into the outer frame and sash prior to assembly.

INTERNALLY BEADED ADAPTOR FRAME

The internally beaded adaptor frame members are cut with 45° mitred ends to the overall size required, measured to the longest point of metal. Care should be taken when measuring and cutting the frame members as only nominal clearance is required when the assembled frame is fixed in the outer frame.

Corners are formed by coating the cut faces to be joined with a suitable small gap sealer. Into the mitred corner insert the cleat glue and a corner cleat and the required corner chevrons. The small gap sealer ensures a permanent joint and guards against the ingress of moisture and joint movements. Care should be taken to ensure any excess sealer is removed from painted surfaces.

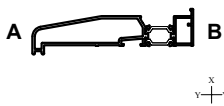
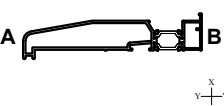
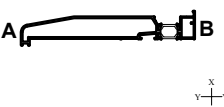
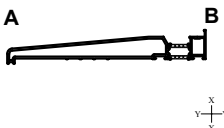
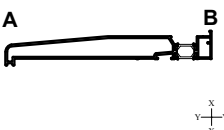
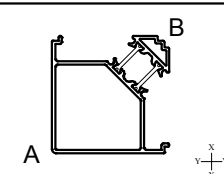
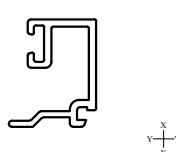
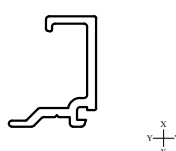
GLAZING

All beads are cut to suit the glazing aperture on the fully assembled window for glazing either at factory or on site as required.

INTERNALLY BEADED GLAZING

Glazing beads are fitted to openings by cutting the horizontal beads square to head and cill of each vent and fixed light area. Vertical beads are cut square at both ends. Insert bottom beads and two setting blocks to ensure glass will be centralized in vertical dimension of opening (glazing blocks must be full width of cavity to fully support glass or sealed unit), then insert top bead followed by side beads. Finish glazing by insertion of internal gaskets all round.

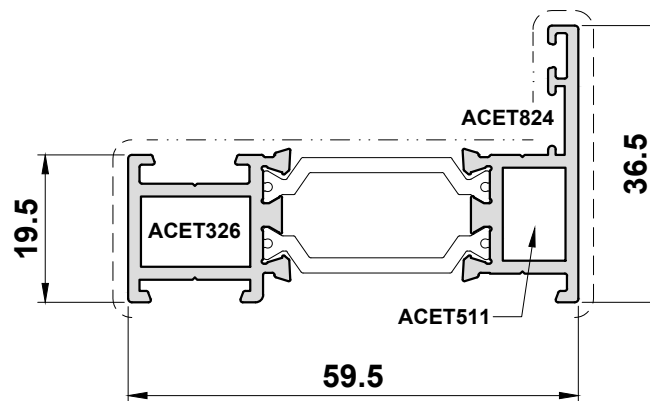
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ETC521		A09	319	66	10.9 — 3.4	2.85 — 1.57	6.5	1	✓	✓	✓	✓	✓
ETC531		A10	306	74	16.68 — 4.59	2.89 — 1.17	6.5	1	✓	✓	✓	✓	✓
ETC553		A15	201.6	53.7	12.06 — 4.05	1.67 — 1.39	6.5	1	✓	✓	✓	✓	✓
ETC557		A15	197.4	54.6	17.47 — 4.31	1.50 — 1.45	6.5	1	✓	✓	✓	✓	✓
ETC572		A11	82	39	- — -	- — -	6.5	1	✓	✓	✓	✓	
ETC580		A11	70.4	52	- — -	- — -	4	1	✓	✓	✓	✓	
ETC582		A11	65.3	27	- — -	- — -	4	1	✓	✓	✓	✓	
ETC451		A12	304	109	32.44 ----- 7.29	3.46 ----- 2.79	6.5	1	✓	✓	✓	✓	✓
								GOZ = Gold W = White Z = Black		MF = Mill Finish SA = Silver Anodised KL = Basic Colour HP = Special Colour M = Dual Colour			

Number	Picture	Page	Perim. mm	Mec. mm	lx(cm4) wx(cm3)	ly(cm4) wy(cm3)	Length	Pack pr.	MF	SA	KL	HP	M
ETC452		A12	414	197	122.46 ----- 18.03	6.01 ----- 3.34	6.5	1	✓	✓	✓	✓	✓
ETC457		A12	444	212	163.27 ----- 21.60	6.79 ----- 3.73	6.5	1	✓	✓	✓	✓	✓
ETC458		A13	524	252	313.62 ----- 32.63	8.87 ----- 4.79	6.5	1	✓	✓	✓	✓	✓
ETC477		A14	782	404	1591.6 ----- 105.33	26.84 ----- 12.84	5	1	✓	✓	✓	✓	✓
ETC479		A13	594	287	501.64 ----- 44.04	9.72 ----- 5.34	6.5	1	✓	✓	✓	✓	✓
ETC655		A15	570	340	18.16 ----- 5.97	10.65 ----- 5.01	6.5	1	✓	✓	✓	✓	✓
W20168		A11	110	26	- ----- -	- ----- -	5	1	✓	✓	✓	✓	
W20170		A11	83	25	- ----- -	- ----- -	5	1	✓	✓	✓	✓	
						A = Outside B = Inside		GOZ = Gold W = White Z = Black		MF = Mill Finish SA = Silver Anodised KL = Basic Colour HP = Special Colour M = Dual Colour			

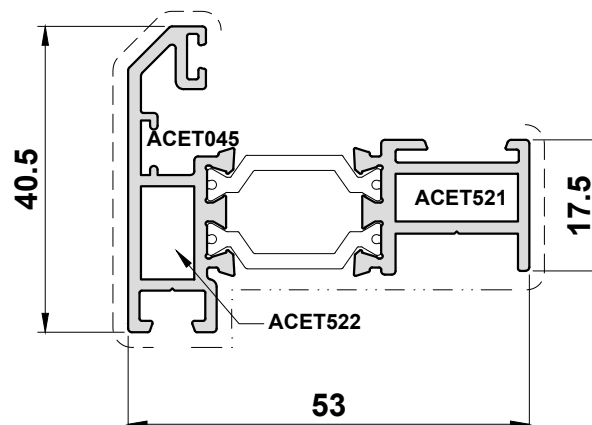
Primary Visible Side

Secondary Visible Side

**ETC511
Outer Frame**



**ETC521
Flush Sash**

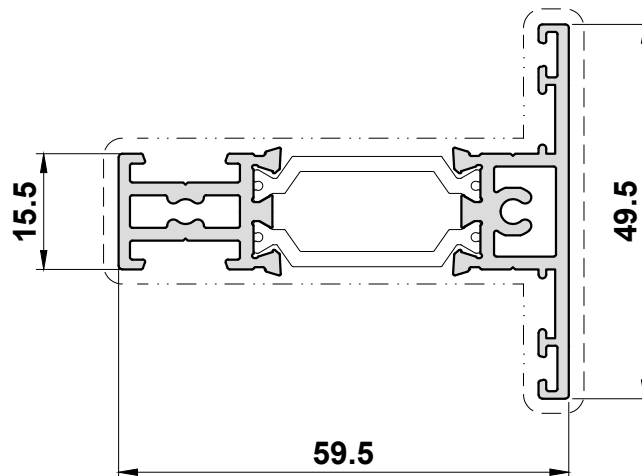


Scale 1:1

Primary Visible Side

Secondary Visible Side

ETC531
Transom / Mullion

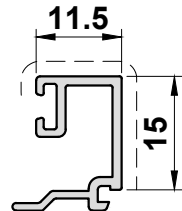
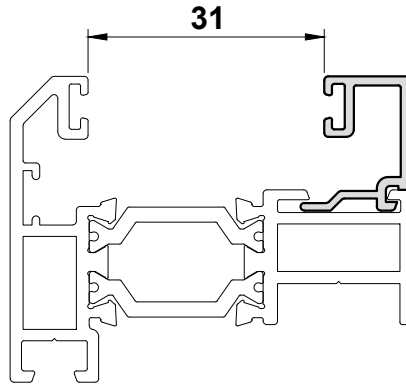


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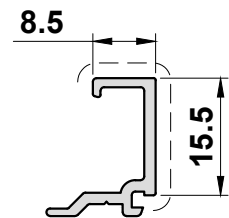
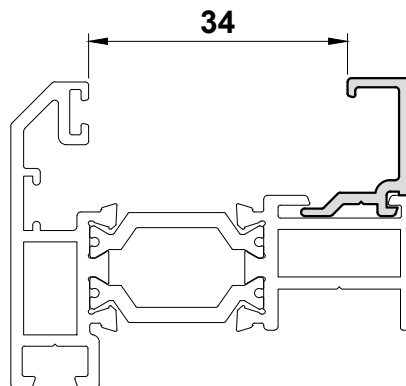
Primary Visible Side

Secondary Visible Side

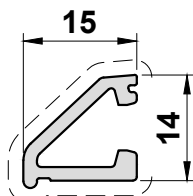
W20168
24mm Glazing Bead



W20170
28mm Glazing Bead

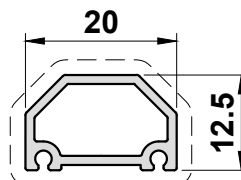


ETC572
Weather Drip



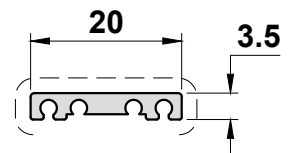
End Caps: ACET572
Rivets: ACVL061

ETC580
Astragal Bar



Tape: ACET569

ETC582
Astragal Bar

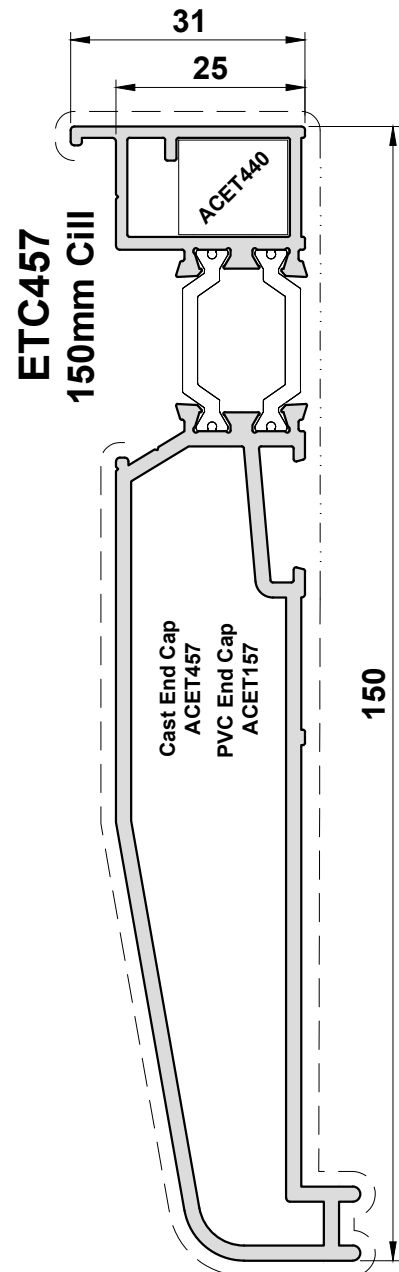
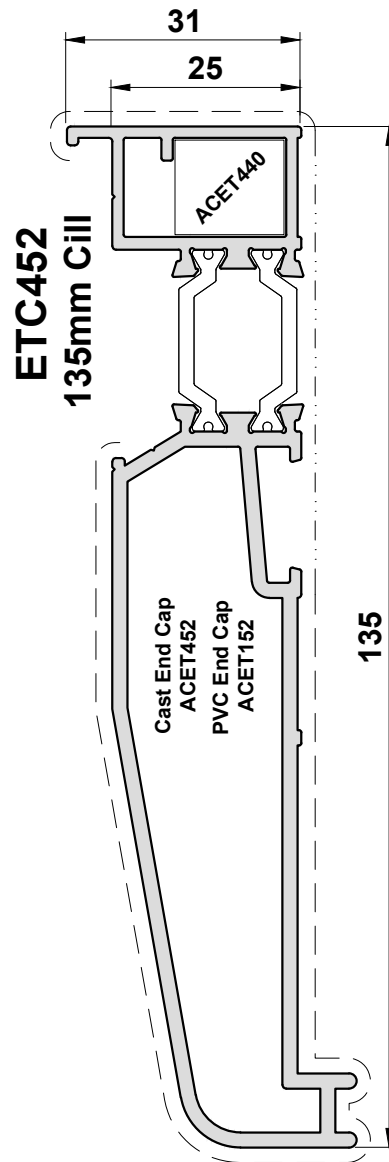
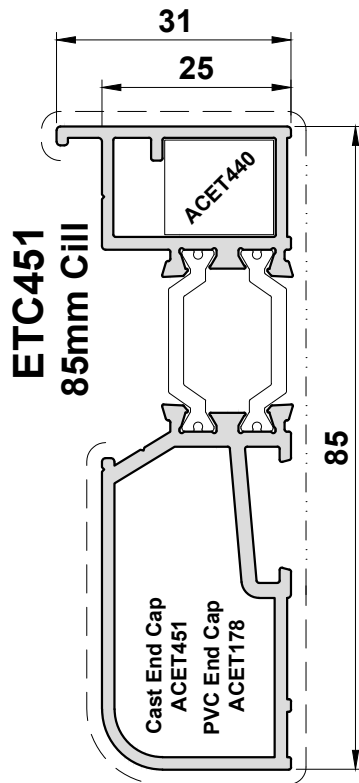


Tape: ACET569

Scale 1:1

Primary Visible Side

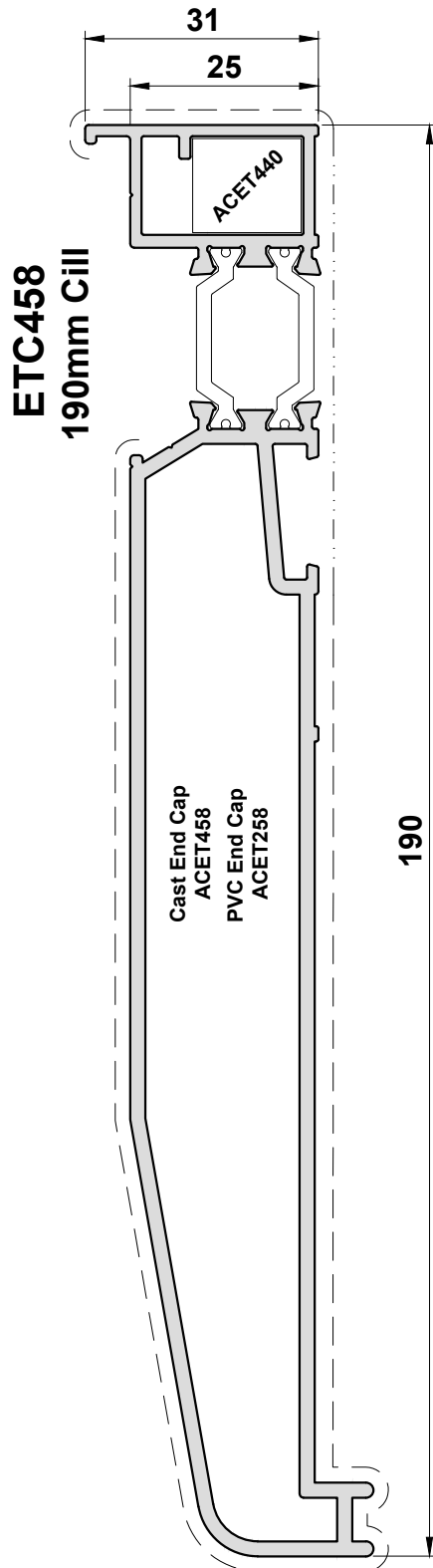
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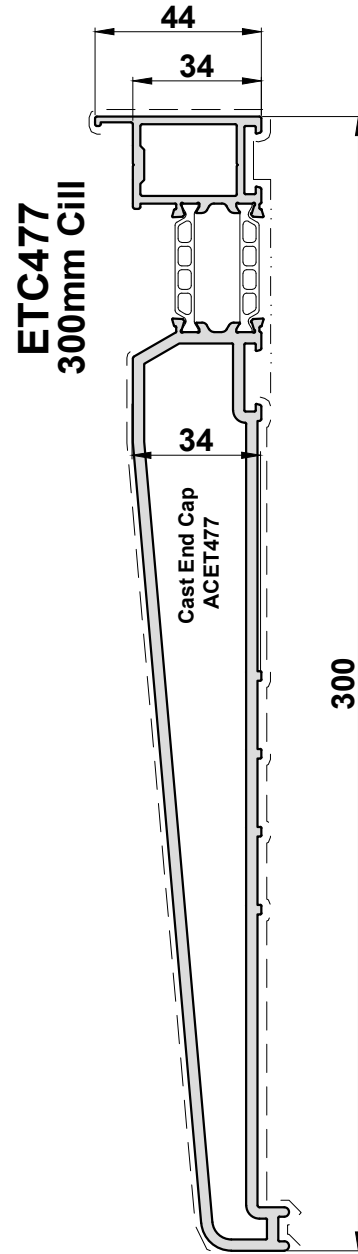
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Primary Visible Side

Secondary Visible Side



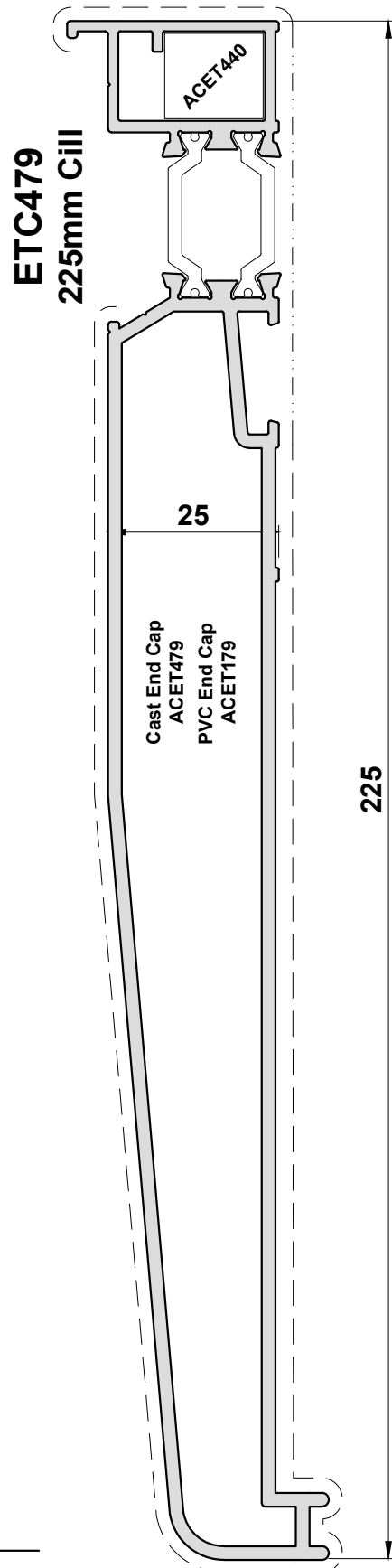
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Scale 1:2

Primary Visible Side

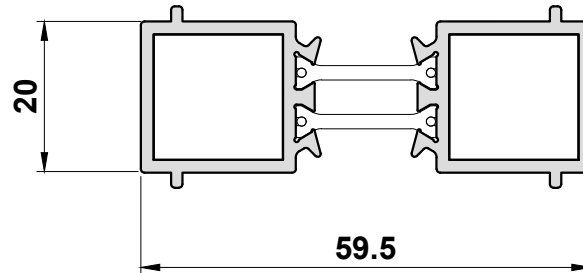
Secondary Visible Side



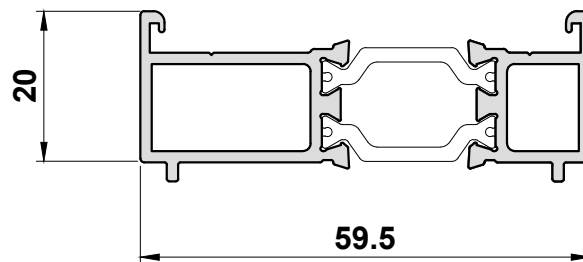
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Primary Visible Side

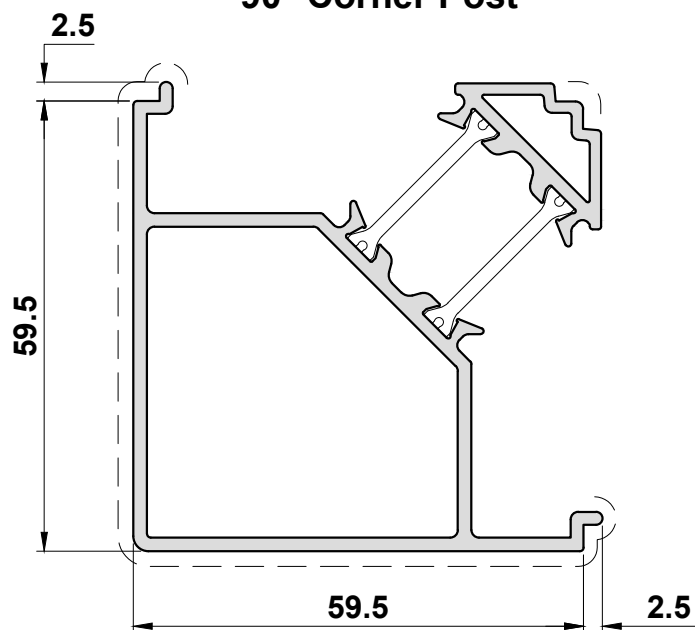
ETC553
20mm Frame Coupler



ETC557
20mm Frame Extension



ETC655
90° Corner Post



Primary Visible Side

Section B

Accessories

Photos & Drawings

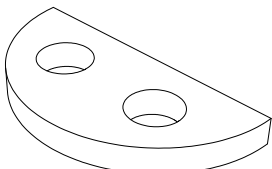
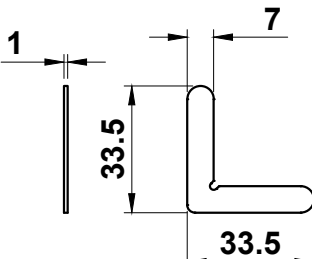
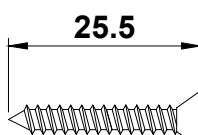
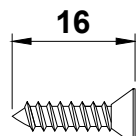
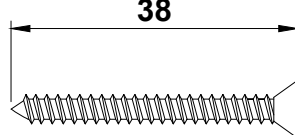
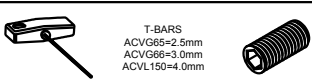
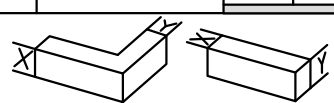
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					SA	
					KL	
					HP	
					BSC	
					SMC	
					PC	
					W	
Z						
	ACET045 S/S Chevron	100	pack	ETC5250	MF	
					SA	
					KL	
					HP	
					BSC	
					SMC	
					PC	
					W	
Z						
	ACET060 No. 7 x 25 S/S Self Tapping CSK Screw	100	pack		MF	
					SA	
					KL	
					HP	
					BSC	
					SMC	
					PC	
					W	
Z						
	ACET064 No. 8 x 16 S/S Self Tapping CSK Screw	100	pack		MF	
					SA	
					KL	
					HP	
					BSC	
					SMC	
					PC	
					W	
Z						
	ACET066 No. 7 x 38 S/S Self Tapping CSK Screw	100	pack		MF	
					SA	
					KL	
					HP	
					BSC	
					SMC	
					PC	
					W	
Z						
	MF = Mill Finish SA = Silver Anodised KL = Basic Colour HP = Special Colour BSC = Brushed Satin Chrome SMC = Smokey Chrome PC = Polished Chrome					
	W = White Z = Black					
						

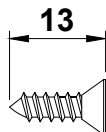
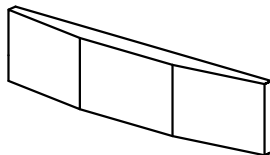
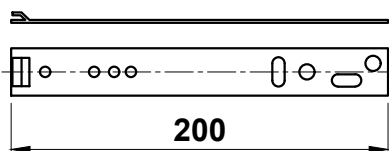
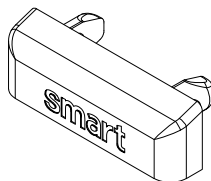
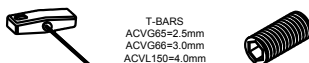
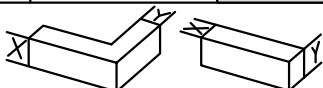
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					SA	
					KL	
					HP	
					BSC	
					SMC	
					PC	
					W	
					Z	
	ACET080 Cockspur Handle	1	each	ACET083	MF	
					SA	✓
					KL	
					HP	
					BSC	
					SMC	
					PC	
					W	✓
					Z	✓
	ACET083 3mm Wedge	100	pack	ACET080	MF	
					SA	
					KL	
					HP	
					BSC	
					SMC	
					PC	
					W	✓
					Z	✓
	ACET130 Galvanised Steel Fixing Strap 200mm x 25mm x 1.5mm	100	pack	ETC511	MF	
					SA	
					KL	
					HP	
					BSC	
					SMC	
					PC	
					W	
					Z	
	ACET131 PVC Drainage Cap	100	pack		MF	
					SA	
					KL	
					HP	
					BSC	
					SMC	
					PC	
					W	✓
					Z	✓
 T-BARS ACVG65=2.5mm ACVG66=3.0mm ACVL150=4.0mm  Screw (Grub)	MF = Mill Finish SA = Silver Anodised KL = Basic Colour HP = Special Colour BSC = Brushed Satin Chrome SMC = Smokey Chrome PC = Polished Chrome W = White Z = Black					

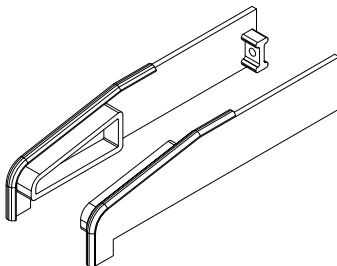
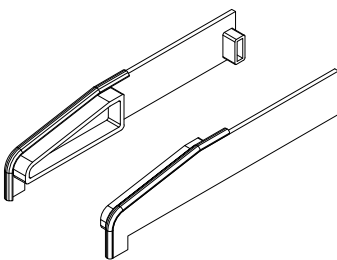
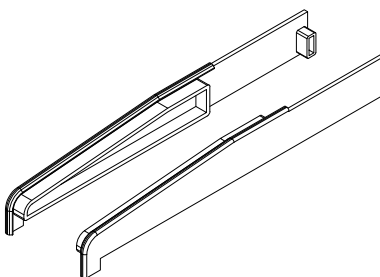
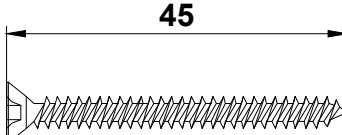
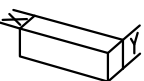
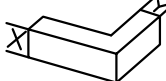
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					SA ☐
					KL ☐
					HP ☐
					BSC ☐
					SMC ☐
					PC ☐
					W ☐
					Z ☐
	ACET157 PVC Cill End Caps	10	pair	ETC457	MF ☒
					SA ☐
					KL ☐
					HP ☐
					BSC ☐
					SMC ☐
					PC ☐
					W ☐
					Z ☐
	ACET165 Offset Locking Espag Handle	1	each	Shootbolt Locking	MF ☒
					SA ☐
					KL ☐
					HP ☐
					BSC ☐
					SMC ☐
					PC ☐
					W ☐
					Z ☐
	ACET179 PVC End Cap	10	pair	ETC479	MF ☒
					SA ☐
					KL ☐
					HP ☐
					BSC ☐
					SMC ☐
					PC ☐
					W ☐
					Z ☐
	ACET190 Polyamide Screw	1000	pack		MF ☐
					SA ☐
					KL ☐
					HP ☐
					BSC ☐
					SMC ☐
					PC ☐
					W ☐
					Z ☐
 T-BARS ACVG65=2.5mm ACVG66=3.0mm ACVL150=4.0mm  Screw (Grub)	MF = Mill Finish SA = Silver Anodised KL = Basic Colour HP = Special Colour BSC = Brushed Satin Chrome SMC = Smokey Chrome PC = Polished Chrome W = White Z = Black				

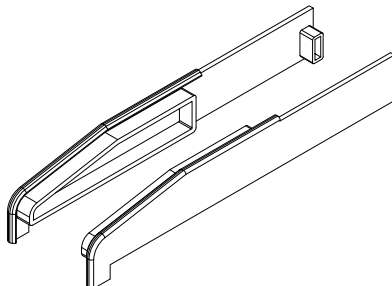
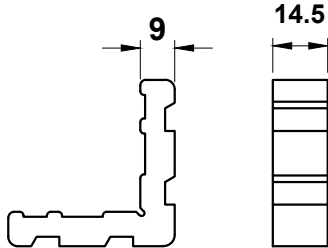
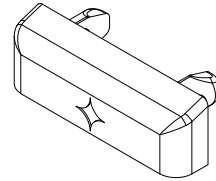
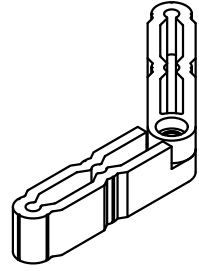
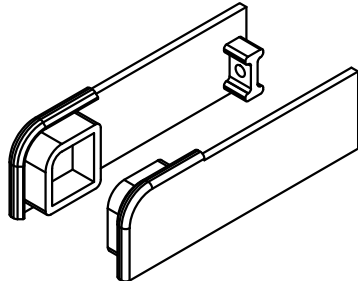
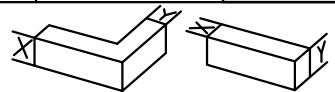
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	ACET258 PVC End Cap	10	pair	ETC458	MF ☒		
					SA ☐		
					KL ☐		
					HP ☐		
					BSC ☐		
					SMC ☐		
					PC ☐		
					W ☐		
					Z ☐		
	ACET326 Crimping Cleat	24	pack	ETC511	MF ☒		
					SA ☐		
					KL ☐		
					HP ☐		
					BSC ☐		
					SMC ☐		
					PC ☐		
					W ☐		
					Z ☐		
	ACET431 Colour Match Drainage Cover Cap	8	pack		MF ☐		
					SA ☐		
					KL ☒		
					HP ☒		
					BSC ☐		
					SMC ☐		
					PC ☐		
					W ☒		
					Z ☒		
	ACET440 Variable Cill Angle Bracket	10	Each	ETC451 ETC452 ETC457 ETC458 ETC477 ETC479	MF ☐		
					SA ☐		
					KL ☐		
					HP ☐		
					BSC ☐		
					SMC ☐		
					PC ☐		
					W ☐		
					Z ☐		
	ACET451 Cast End Caps (Pair)	10	pack	ETC451	MF ☒		
					SA ☐		
					KL ☒		
					HP ☒		
					BSC ☐		
					SMC ☐		
					PC ☐		
					W ☒		
					Z ☒		
 T-BARS ACVG65=2.5mm ACVG66=3.0mm ACVL150=4.0mm  Screw (Grub)	MF = Mill Finish SA = Silver Anodised KL = Basic Colour HP = Special Colour BSC = Brushed Satin Chrome SMC = Smokey Chrome PC = Polished Chrome		W = White Z = Black				

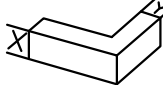
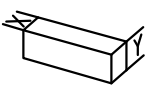
Image	Part Code	Pack	Unit	Application	Colour	
	ACET452 Cast End Caps (Pair)	10	pack	ETC152	MF	✓
					SA	
					KL	✓
					HP	✓
					BSC	
					SMC	
					PC	
					W	✓
					Z	✓
	ACET457 Cast End Caps (Pair)	10	pack	ETC457	MF	✓
					SA	
					KL	✓
					HP	✓
					BSC	
					SMC	
					PC	
					W	✓
					Z	✓
	ACET458 Cast End Caps (Pair)	10	pack	ETC458	MF	✓
					SA	
					KL	✓
					HP	✓
					BSC	
					SMC	
					PC	
					W	✓
					Z	✓
	ACET460 Inline Espag Handle with 9mm Spindle	1	Each	ACET501 ACET502 ACET503 ACET504 ACET505	MF	
					SA	
					KL	✓
					HP	✓
					BSC	✓
					SMC	✓
					PC	✓
					W	✓
					Z	✓
	ACET465 L/R Cranked Espag Handle with 9mm Spindle	1	Each	ACET501 ACET502 ACET503 ACET504 ACET505	MF	
					SA	
					KL	✓
					HP	✓
					BSC	✓
					SMC	✓
					PC	✓
					W	✓
					Z	✓
 	MF = Mill Finish SA = Silver Anodised KL = Basic Colour HP = Special Colour BSC = Brushed Satin Chrome SMC = Smokey Chrome PC = Polished Chrome		W = White Z = Black		 	

Image	Part Code	Pack	Unit	Application	Colour
	ACET477 Cast End Caps (Pair)	10	pack	ETC477	MF ☒
					SA ☐
					KL ☒
					HP ☒
					BSC ☐
					SMC ☐
					PC ☐
					W ☒
					Z ☒
	ACET479 Cast End Caps (Pair)	10	pack	ETC479	MF ☒
					SA ☐
					KL ☒
					HP ☒
					BSC ☐
					SMC ☐
					PC ☐
					W ☒
					Z ☒
	ACET490 4.3 x 16mm CSK Polyamide Screw	1000	pack		MF ☐
					SA ☐
					KL ☐
					HP ☐
					BSC ☐
					SMC ☐
					PC ☐
					W ☐
					Z ☐
	ACET511 Crimping Cleat	24	pack	ETC511	MF ☐
					SA ☐
					KL ☐
					HP ☐
					BSC ☐
					SMC ☐
					PC ☐
					W ☐
					Z ☐
	ACET521 Crimping Cleat	24	pack	ETC521	MF ☐
					SA ☐
					KL ☐
					HP ☐
					BSC ☐
					SMC ☐
					PC ☐
					W ☐
					Z ☐
	MF = Mill Finish SA = Silver Anodised KL = Basic Colour HP = Special Colour BSC = Brushed Satin Chrome SMC = Smokey Chrome PC = Polished Chrome		W = White Z = Black		

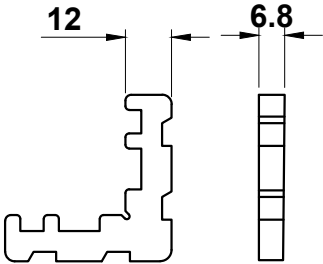
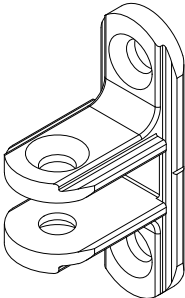
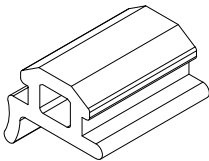
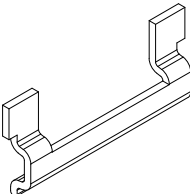
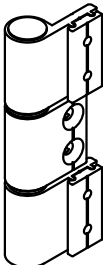
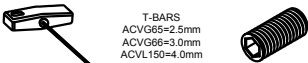
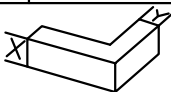
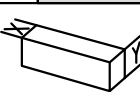
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	ACET522 Crimping Cleat	24	pack	ETC521	MF	
					SA	
					KL	
					HP	
					BSC	
					SMC	
					PC	
					W	
					Z	
	ACET531 Transom Fixing Bracket	24	pack	ETC531	MF	✓
					SA	
					KL	
					HP	
					BSC	
					SMC	
					PC	
					W	
					Z	
	ACET532 External Weather Seal	100	m		MF	
					SA	
					KL	
					HP	
					BSC	
					SMC	
					PC	
					W	
					Z	✓
	ACET533 Anti-Twist Clip For ETC531	100	pack	ETC531	MF	
					SA	
					KL	
					HP	
					BSC	
					SMC	
					PC	
					W	
					Z	
	ACET550 Flush Window Hinge	1	each		MF	✓
					SA	
					KL	✓
					HP	✓
					BSC	
					SMC	
					PC	
					W	✓
					Z	✓
 T-BARS ACVG65=2.5mm ACVG66=3.0mm ACVL150=4.0mm  Screw (Grub)	MF = Mill Finish SA = Silver Anodised KL = Basic Colour HP = Special Colour BSC = Brushed Satin Chrome SMC = Smokey Chrome PC = Polished Chrome W = White Z = Black	 				

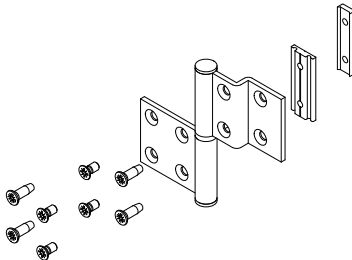
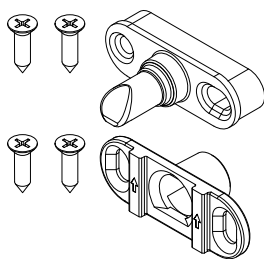
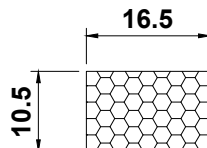
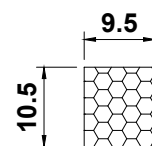
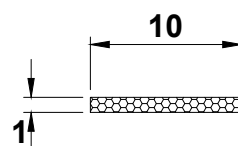
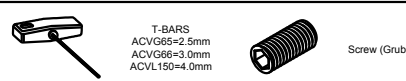
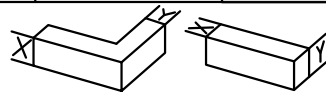
Image	Part Code	Pack	Unit	Application	Colour
	ACET552 L/R Stainless Steel Flush Window Hinge	1	each		MF
					SA
					KL
					HP
					BSC
					SMC
					PC
					W
					Z
	ACET553 Hinge Protection Bolt	1	each		MF
					SA
					KL
					HP
					BSC
					SMC
					PC
					W
					Z
	ACET555 1250mm Foam Insert	1	each	ETC511 ETC530	MF
					SA
					KL
					HP
					BSC
					SMC
					PC
					W
					Z
	ACET556 1250mm Foam Insert	1	each	ETC521	MF
					SA
					KL
					HP
					BSC
					SMC
					PC
					W
					Z
	ACET569 10 x 1 Astragal Bar Tape	50	m	ETC580 ETC582	MF
					SA
					KL
					HP
					BSC
					SMC
					PC
					W
					Z
 T-BARS ACVG65=2.5mm ACVG66=3.0mm ACVL150=4.0mm Screw (Grub)	MF = Mill Finish SA = Silver Anodised KL = Basic Colour HP = Special Colour BSC = Brushed Satin Chrome SMC = Smokey Chrome PC = Polished Chrome W = White Z = Black				

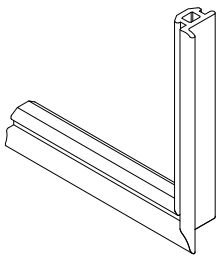
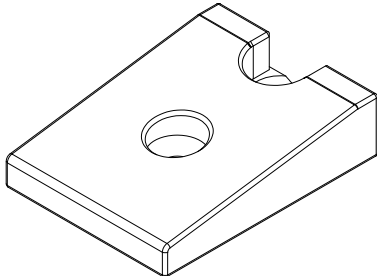
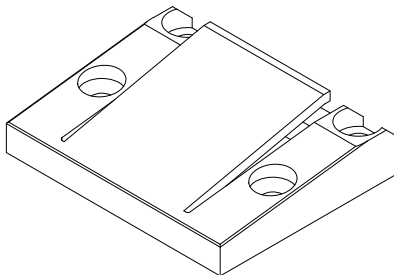
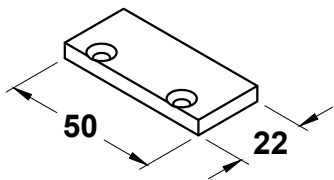
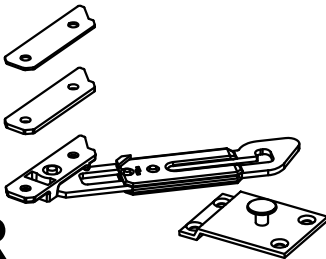
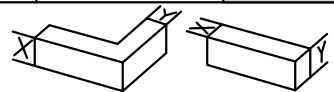
Image	Part Code	Pack	Unit	Application	Colour	
	ACET575 Corner Moulding to suit ACET532	40	pack	ETC521 ACET532	MF	
					SA	
					KL	
					HP	
					BSC	
					SMC	
					PC	
					W	
					Z	✓
	ACET580 Run Up Block	100	pack		MF	
					SA	
					KL	
					HP	
					BSC	
					SMC	
					PC	
					W	✓
					Z	✓
	ACET582 Dummy Sash Clip	100	pack		MF	
					SA	
					KL	
					HP	
					BSC	
					SMC	
					PC	
					W	
					Z	
	ACET583 Dummy Sash Fixing Plate Required for PAS24:2016	8	pack		MF	
					SA	
					KL	
					HP	
					BSC	
					SMC	
					PC	
					W	
					Z	
	ACET585 L/R Hold Open Key Releasable Restrictor Arm	1	each		MF	
					SA	
					KL	
					HP	
					BSC	
					SMC	
					PC	
					W	
					Z	
	MF = Mill Finish SA = Silver Anodised KL = Basic Colour HP = Special Colour BSC = Brushed Satin Chrome SMC = Smokey Chrome PC = Polished Chrome	W = White Z = Black				

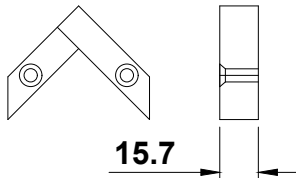
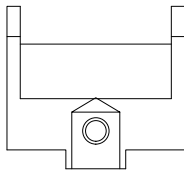
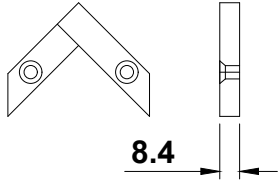
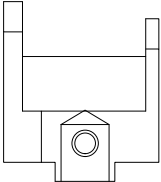
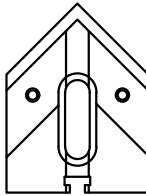
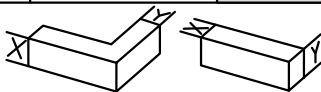
Image	Part Code	Pack	Unit	Application	Colour	
	ACET595 15.5mm Vee Block Packer	1	each	ETC511	MF	✓
					SA	
					KL	
					HP	
					BSC	
					SMC	
					PC	
					W	
					Z	
	ACET596 Punches	1	pair	ETC511	MF	
					SA	
					KL	
					HP	
					BSC	
					SMC	
					PC	
					W	
					Z	
	ACET597 8.4mm Vee Block Packer	1	each	ETC511	MF	
					SA	
					KL	
					HP	
					BSC	
					SMC	
					PC	
					W	
					Z	
	ACET598 Punches	1	pair	ETC521	MF	
					SA	
					KL	
					HP	
					BSC	
					SMC	
					PC	
					W	
					Z	
	ACET599 Vee Block	1	each	ETC521	MF	
					SA	
					KL	
					HP	
					BSC	
					SMC	
					PC	
					W	
					Z	
 T-BARS ACVG65=2.5mm ACVG66=3.0mm ACVL150=4.0mm	 Screw (Grub)	MF = Mill Finish SA = Silver Anodised KL = Basic Colour HP = Special Colour BSC = Brushed Satin Chrome SMC = Smokey Chrome PC = Polished Chrome	W = White Z = Black			

Image	Part Code	Pack	Unit	Application	Colour	
	ACET824 S/S Chevron	100	pack	ETC511	MF	
					SA	
					KL	
					HP	
					BSC	
					SMC	
					PC	
					W	
					Z	
	ACET842 3mm Low Line External Gasket	200	m		MF	
					SA	
					KL	
					HP	
					BSC	
					SMC	
					PC	
					W	
					Z	✓
	ACET843 2mm Low Line External Gasket	200	m		MF	
					SA	
					KL	
					HP	
					BSC	
					SMC	
					PC	
					W	
					Z	✓
	ACGSL045 Drainage Cover Cap	100	pack	ETC521	MF	
					SA	
					KL	
					HP	
					BSC	
					SMC	
					PC	
					W	
					Z	✓
	ACIM062 NO.10 x 1 1/4 S/S S/T CSK Screw	100	pack	ETC583	MF	
					SA	
					KL	
					HP	
					BSC	
					SMC	
					PC	
					W	
					Z	
 T-BARS ACVG65=2.5mm ACVG68=3.0mm ACVL150=4.0mm Screw (Grub)	MF = Mill Finish SA = Silver Anodised KL = Basic Colour HP = Special Colour BSC = Brushed Satin Chrome SMC = Smokey Chrome PC = Polished Chrome	W = White Z = Black				

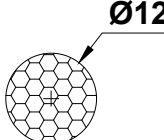
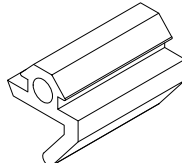
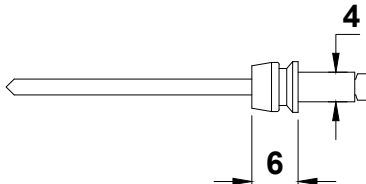
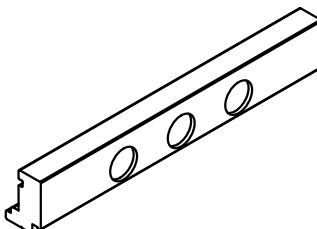
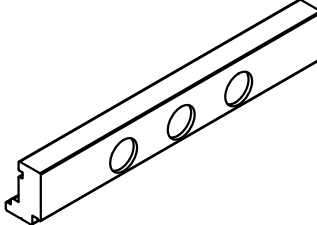
Image	Part Code	Pack	Unit	Application	Colour	
	ACVG561 Foam Insert (To go between glazing & sash)	100	m	ETC521	MF	
					SA	
					KL	
					HP	
					BSC	
					SMC	
					PC	
					W	
					Z	
	ACVL032 Gasket	200	m		MF	
					SA	
					KL	
					HP	
					BSC	
					SMC	
					PC	
					W	
					Z	✓
	ACVL061 Rivet For VL72	100	pack		MF	
					SA	
					KL	
					HP	
					BSC	
					SMC	
					PC	
					W	
					Z	
	ACW20028 Handle Fixing Block for use with W20168 bead only	1	each	W20168	MF	✓
					SA	
					KL	✓
					HP	✓
					BSC	
					SMC	
					PC	
					W	✓
					Z	✓
	ACW20029 Handle Fixing Block for use with W20170 bead only	1	each	W20170	MF	✓
					SA	
					KL	✓
					HP	✓
					BSC	
					SMC	
					PC	
					W	✓
					Z	✓
 T-BARS ACVG65=2.5mm ACVG66=3.0mm ACVL150=4.0mm	 Screw (Grub)	MF = Mill Finish SA = Silver Anodised KL = Basic Colour HP = Special Colour BSC = Brushed Satin Chrome SMC = Smokey Chrome PC = Polished Chrome		W = White Z = Black		

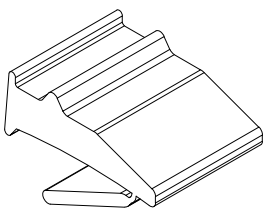
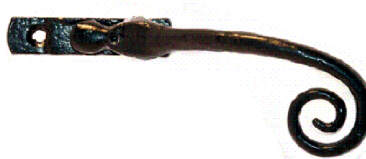
Image	Part Code	Pack	Unit	Application	Colour	
	ACW20038 4-3mm Tear-away Low-line EPDM Wedge Gasket Black Only	50	m		MF	
					SA	
					KL	
					HP	
					BSC	
					SMC	
					PC	
					W	
					Z	✓
						ACW20100 L/R Monkey Tail Espag Handle Black or Pewter
SA						
KL						
HP						
BSC						
SMC						
PC						
W						
Z						
	ACW20101 L/R Bulb End Espag Handle Black or Pewter	1	each	ACW20105 ACW20106 ACW20107		
					SA	
					KL	
					HP	
					BSC	
					SMC	
					PC	
					W	
					Z	
						ACW20102 8" Monkey Tail Peg Stay Black or Pewter
SA						
KL						
HP						
BSC						
SMC						
PC						
W						
Z						
	ACW20103 10" Monkey Tail Peg Stay Black or Pewter	1	each	ACW20100		
					SA	
					KL	
					HP	
					BSC	
					SMC	
					PC	
					W	
					Z	
					 T-BARS ACVG65=2.5mm ACVG65=3.0mm ACVL150=4.0mm	 Screw (Grub)

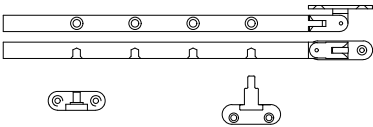
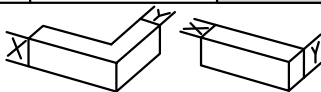
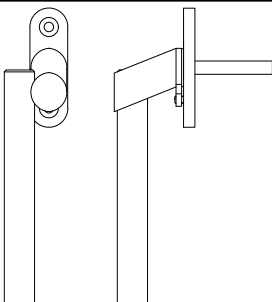
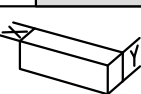
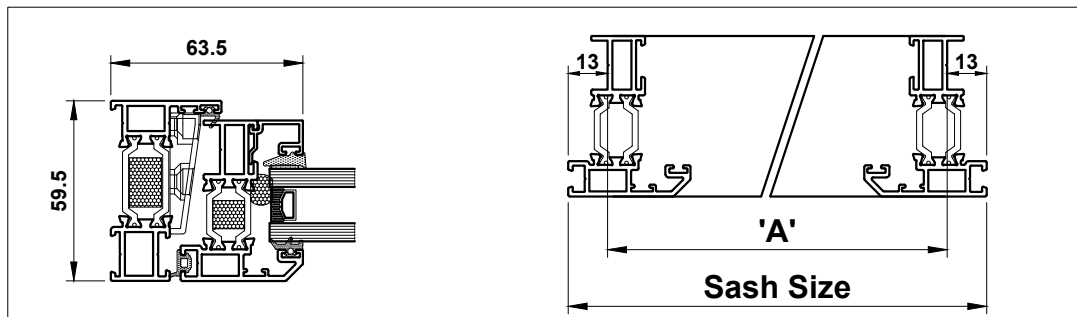
Image	Part Code	Pack	Unit	Application	Colour	
	ACW20104 12" Monkey Tail Peg Stay Black or Pewter	1	each	ACW20100	MF	
					SA	
					KL	
					HP	
					BSC	
					SMC	
					PC	
					W	
					Z	
	ACW20105 8" Bulb End Peg Stay Black or Pewter	1	each	ACW20101	MF	
					SA	
					KL	
					HP	
					BSC	
					SMC	
					PC	
					W	
					Z	
	ACW20106 10" Bulb End Peg Stay Black or Pewter	1	each	ACW20101	MF	
					SA	
					KL	
					HP	
					BSC	
					SMC	
					PC	
					W	
					Z	
	ACW20107 12" Bulb End Peg Stay Black or Pewter	1	each	ACW20101	MF	
					SA	
					KL	
					HP	
					BSC	
					SMC	
					PC	
					W	
					Z	
	ACW20108 296mm Stainless Steel Peg Stay	1	each	SMHA010	MF	
					SA	
					KL	
					HP	
					BSC	
					SMC	
					PC	
					W	
					Z	
 T-BARS ACVG65=2.5mm ACVG66=3.0mm ACVL150=4.0mm	 Screw (Grub)	MF = Mill Finish SA = Silver Anodised KL = Basic Colour HP = Special Colour BSC = Brushed Satin Chrome SMC = Smokey Chrome PC = Polished Chrome	W = White Z = Black			

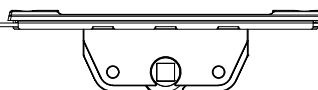
Image	Part Code	Pack	Unit	Application	Colour	
R 	ACW20165 L/R	1	each	ACET501 ACET502 ACET503 ACET504 ACET505	MF	
	Art Deco Espag Handle				SA	
					KL	
					HP	
					BSC	
					SMC	
					PC	
					W	
					Z	
L 	SMHA010 L/R	1	each	ACET501 ACET502 ACET503 ACET504 ACET505	MF	
	Stainless Steel Espag Handle				SA	
					KL	
					HP	
					BSC	
					SMC	
					PC	
					W	
					Z	
					MF	
					SA	
					KL	
					HP	
					BSC	
					SMC	
					PC	
					W	
					Z	
					MF	
					SA	
					KL	
					HP	
					BSC	
					SMC	
					PC	
					W	
					Z	
 T-BARS ACVG65=2.5mm ACVG66=3.0mm ACVL150=4.0mm  Screw (Grub)	MF = Mill Finish SA = Silver Anodised KL = Basic Colour HP = Special Colour BSC = Brushed Satin Chrome SMC = Smokey Chrome PC = Polished Chrome	W = White Z = Black	 			



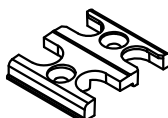
Part Code	Rod Length (mm)	Number of Keeps	Sash Rebate Size ('A')	
			Minimum	Maximum
ACET501L	335	2	340	505
ACET501R				
ACET502L	500	2	506	755
ACET502R				
ACET503L	750	2	756	1005
ACET503R				
ACET504L	1000	4	1006	1255
ACET504R				
ACET505L	1250	4	1256	1400
ACET505R				

Note: To Suit Handles: ACW20100
ACW20101
ACW20165
SMHA010

Cam Locking Direction



Cam Locking Direction



Keep



T-BARS
ACVG65=2.5mm
ACVG66=3.0mm
ACVL150=4.0mm



Screw (Grub)

MF = Mill Finish
SA = Silver Anodised
KL = Basic Colour
HP = Special Colour
BSC = Brushed Satin Chrome
SMC = Smokey Chrome
PC = Polished Chrome

W = White
Z = Black

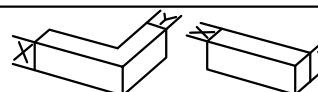


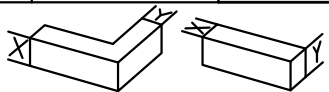
Image	Part Code	Pack	Unit	Application	Colour	
	ACMX09700 Alu. Polish	1	each		MF ☒	
					SA ☐	
					KL ☐	
					HP ☐	
					M ☐	
					GOZ ☐	
					W ☐	
					Z ☐	
					PC ☐	
	ACMX09761 Maxi Gloss	1	each		MF ☐	
					SA ☐	
					KL ☐	
					HP ☐	
					M ☐	
					GOZ ☐	
					W ☐	
					Z ☐	
					PC ☐	
	ACMX09762 Alu. Bright	1	each		MF ☐	
					SA ☐	
					KL ☐	
					HP ☐	
					M ☐	
					GOZ ☐	
					W ☐	
					Z ☐	
					PC ☐	
	ACMX09763 Teflon Spray	1	each		MF ☐	
					SA ☐	
					KL ☐	
					HP ☐	
					M ☐	
					GOZ ☐	
					W ☐	
					Z ☐	
					PC ☐	
	ACMX09764 Maxi Clean	1	each		MF ☐	
					SA ☐	
					KL ☐	
					HP ☐	
					M ☐	
					GOZ ☐	
					W ☐	
					Z ☐	
					PC ☐	
 T-BARS ACVG65=2.5mm ACVG68=3.0mm ACVL150=4.0mm	 Screw (Grub)	MF = Mill Finish SA = Silver Anodised KL = Basic Colour HP = Special Colour		M = Dual Colour GOZ = Gold W = White Z = Black		

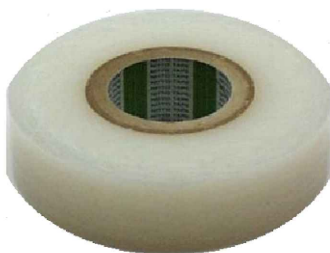
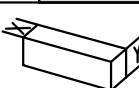
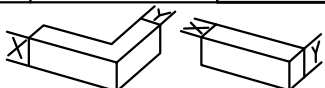
Image	Part Code	Pack	Unit	Application	Colour
	ACMX09765 Alu. Cleaner	1	each		MF
					SA
					KL
					HP
					M
					GOZ
					W
					Z
					PC
	ACMX09770 Roll & Wrap 100mm	1	each		MF
					SA
					KL
					HP
					M
					GOZ
					W
					Z
					PC
	ACMX09775 Grip Handwrap	1	each		MF
					SA
					KL
					HP
					M
					GOZ
					W
					Z
					PC
	ACMX09801 Protective Tape 50mm	1	each		MF
					SA
					KL
					HP
					M
					GOZ
					W
					Z
					PC
	ACMX09802 Protective Tape 70mm	1	each		MF
					SA
					KL
					HP
					M
					GOZ
					W
					Z
					PC
 T-BARS ACVG65=2.5mm ACVG66=3.0mm ACVL150=4.0mm	 Screw (Grub)	MF = Mill Finish SA = Silver Anodised KL = Basic Colour HP = Special Colour		M = Dual Colour GOZ = Gold W = White Z = Black	 

Image	Part Code	Pack	Unit	Application	Colour	
	ACMX09803 Protective Tape 100mm	1	each		MF	
					SA	
					KL	
					HP	
					M	
					GOZ	
					W	
					Z	
					PC	
	ACMX09830 Rubber Sealant	1	each		MF	
					SA	
					KL	
					HP	
					M	
					GOZ	
					W	
					Z	
					PC	
	ACSIL04 Sealing Glue Order with suffix of KL colour (eg.ACSIL04KL005) or BL=Black/WP=White/ CL=Clear	1	each		MF	
					SA	
					KL	✓
					HP	
					M	
					GOZ	
					W	✓
					Z	✓
					PC	
	ACSIL08 Silicon Gun	1	each		MF	
					SA	
					KL	
					HP	
					M	
					GOZ	
					W	
					Z	
					PC	
	ACSIL013 Glue for Mitre	1	each		MF	
					SA	
					KL	
					HP	
					M	
					GOZ	
					W	
					Z	
					PC	
 T-BARS ACVG65=2.5mm ACVG66=3.0mm ACVL150=4.0mm	 Screw (Grub)	MF = Mill Finish SA = Silver Anodised KL = Basic Colour HP = Special Colour		M = Dual Colour GOZ = Gold W = White Z = Black		

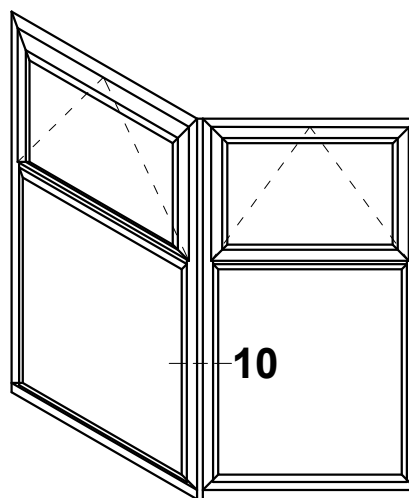
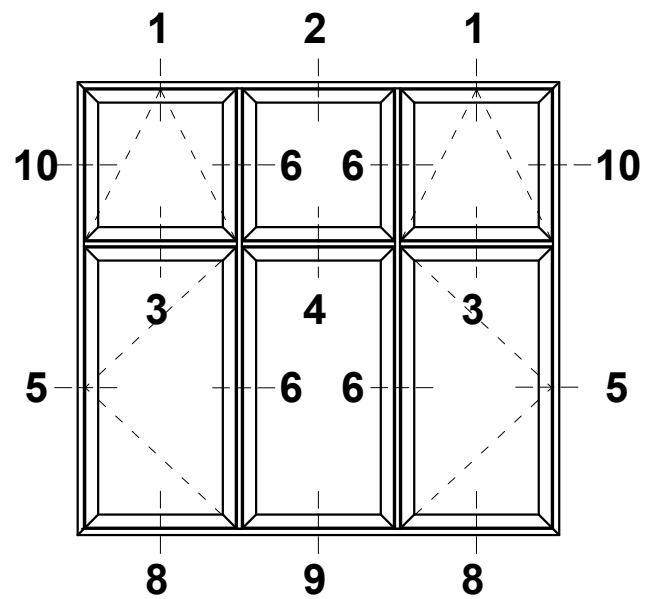
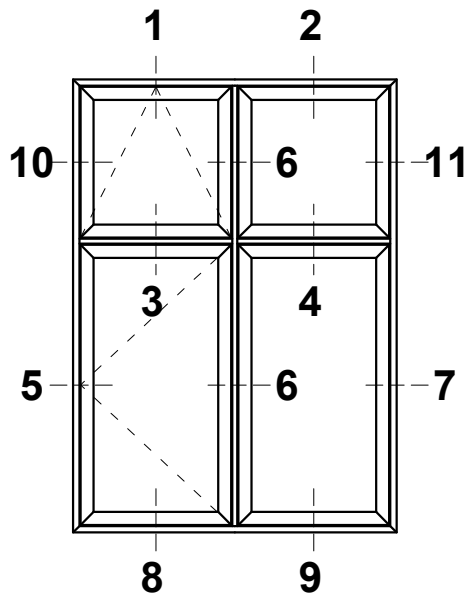
Image	Part Code	Pack	Unit	Application	Colour
	ACSIL014 Anti-Corrosion Coating	1	each		MF ☒
					SA ☐
					KL ☐
					HP ☐
					M ☐
					GOZ ☐
					W ☐
					Z ☐
					PC ☐
					MF ☐
					SA ☐
					KL ☐
					HP ☐
					M ☐
					GOZ ☐
					W ☐
					Z ☐
					PC ☐
					MF ☐
					SA ☐
					KL ☐
					HP ☐
					M ☐
					GOZ ☐
					W ☐
					Z ☐
					PC ☐
					MF ☐
					SA ☐
					KL ☐
					HP ☐
					M ☐
					GOZ ☐
					W ☐
					Z ☐
					PC ☐
 T-BARS ACVG65=2.5mm ACVG66=3.0mm ACVL150=4.0mm  Screw (Grub)	MF = Mill Finish SA = Silver Anodised KL = Basic Colour HP = Special Colour	M = Dual Colour GOZ = Gold W = White Z = Black			

Section C

Sections

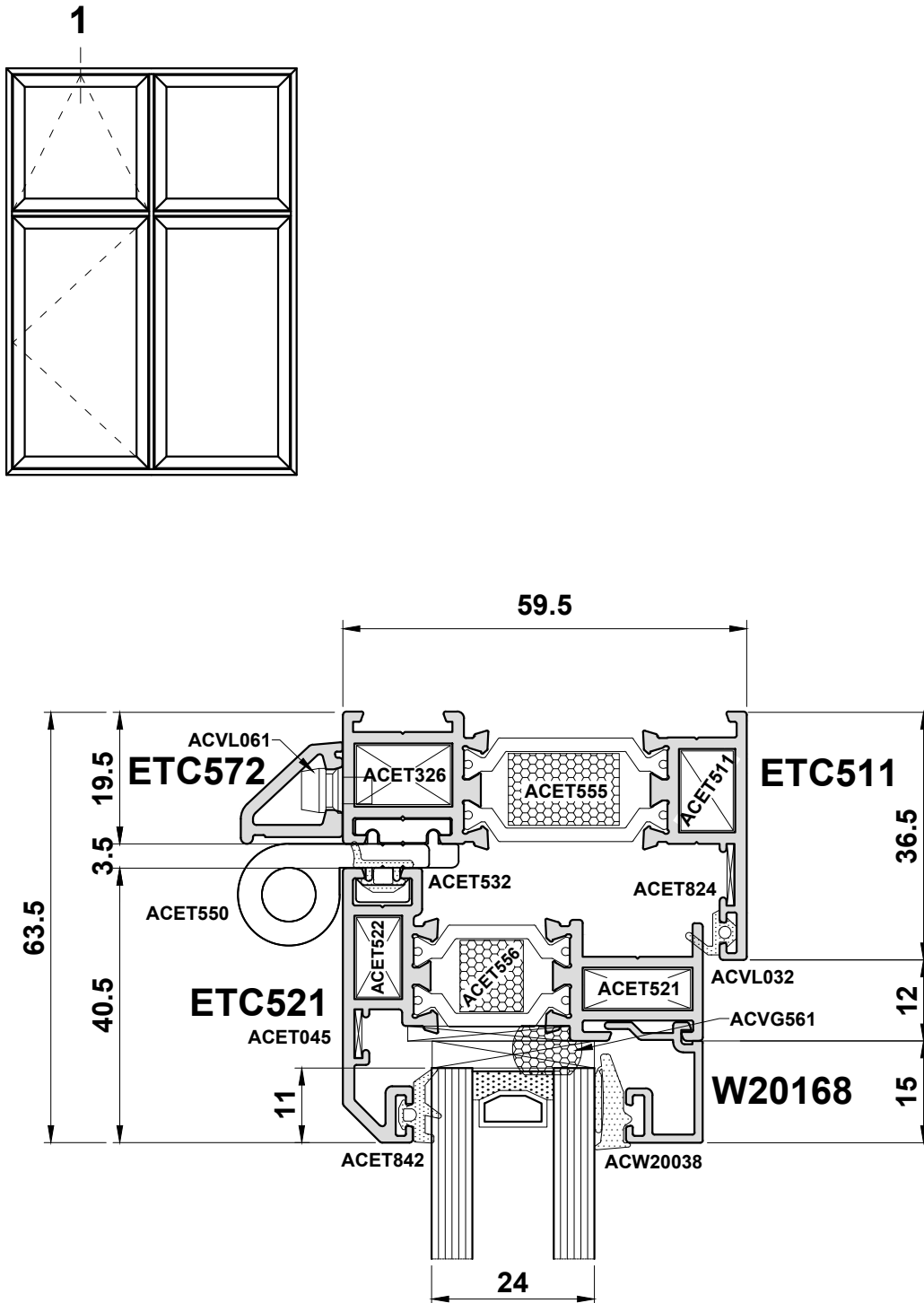
Scale Elevations

Detail



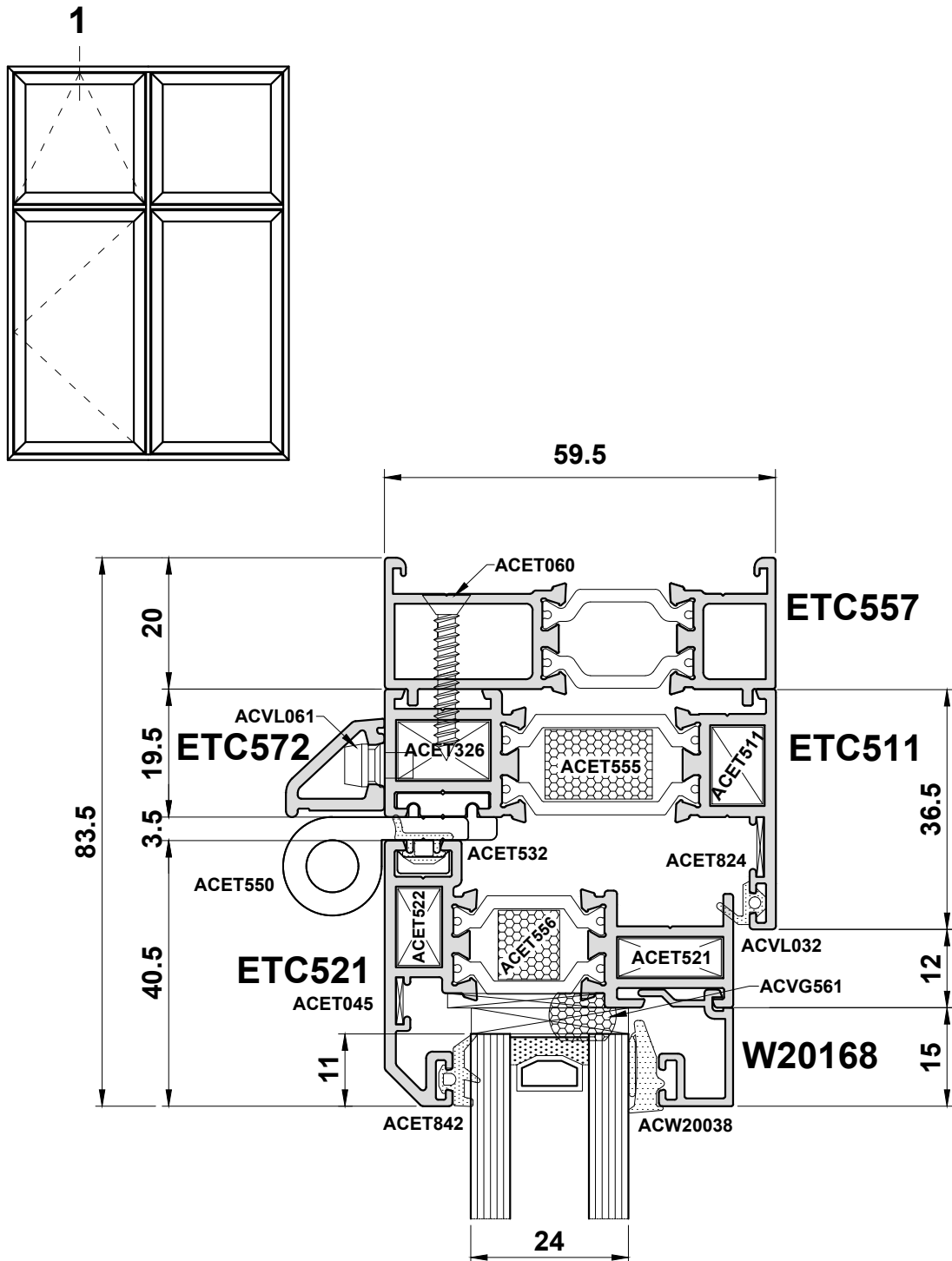
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Detail 1a



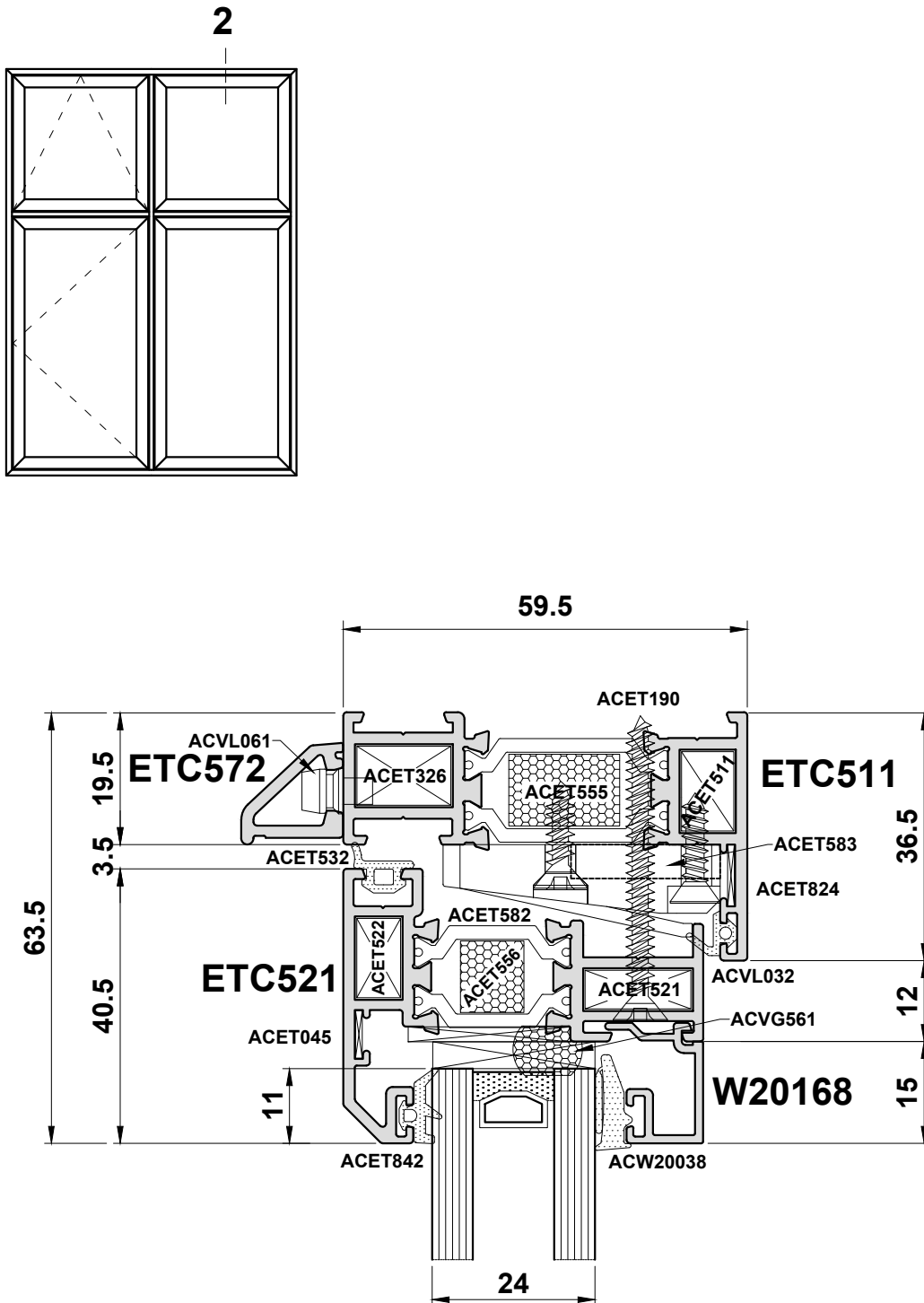
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Detail 1b



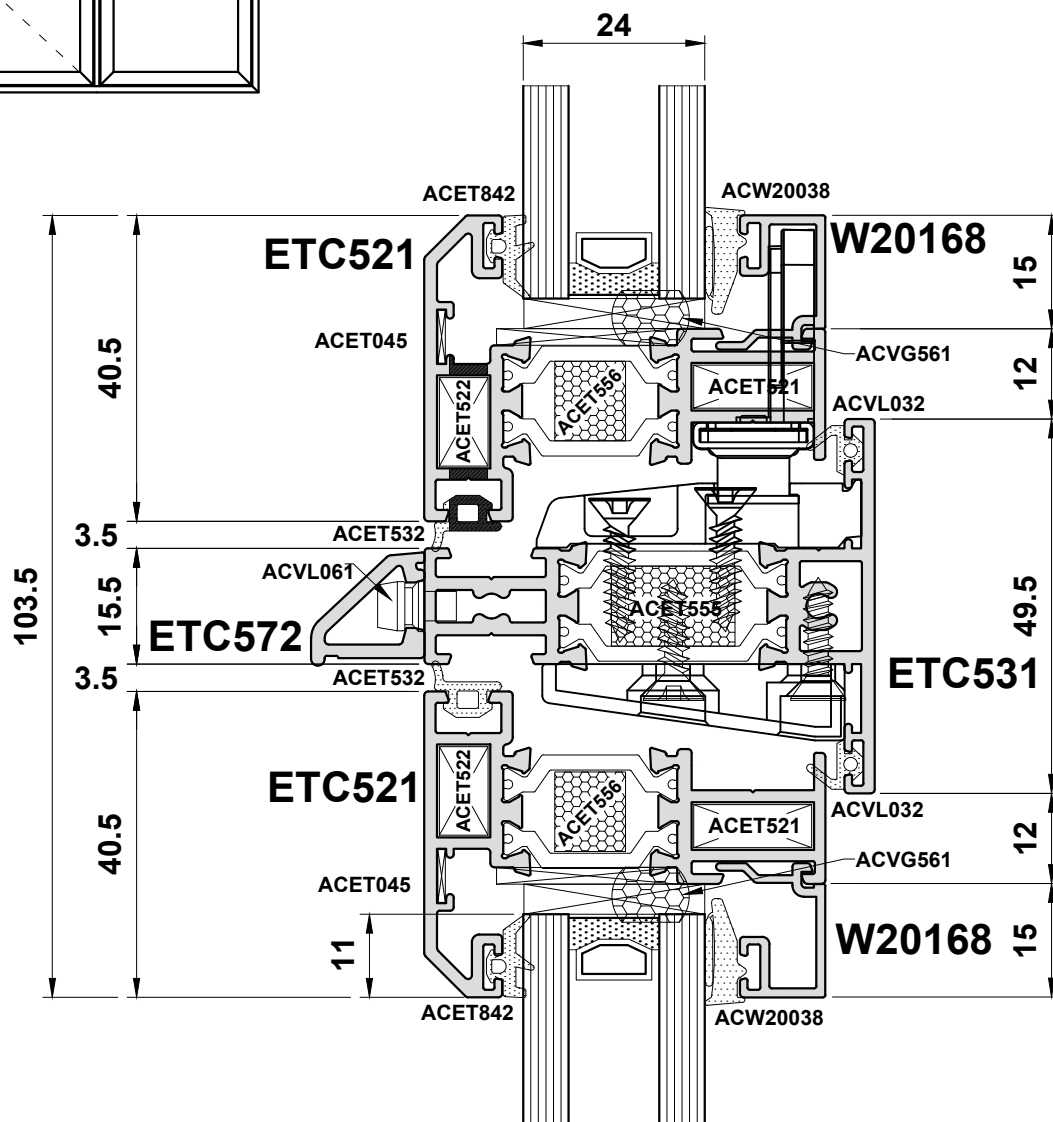
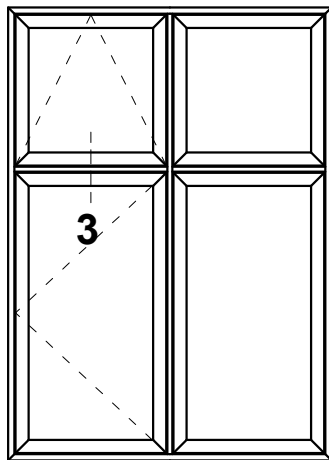
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Detail 2



Do Not Scale From This Drawing

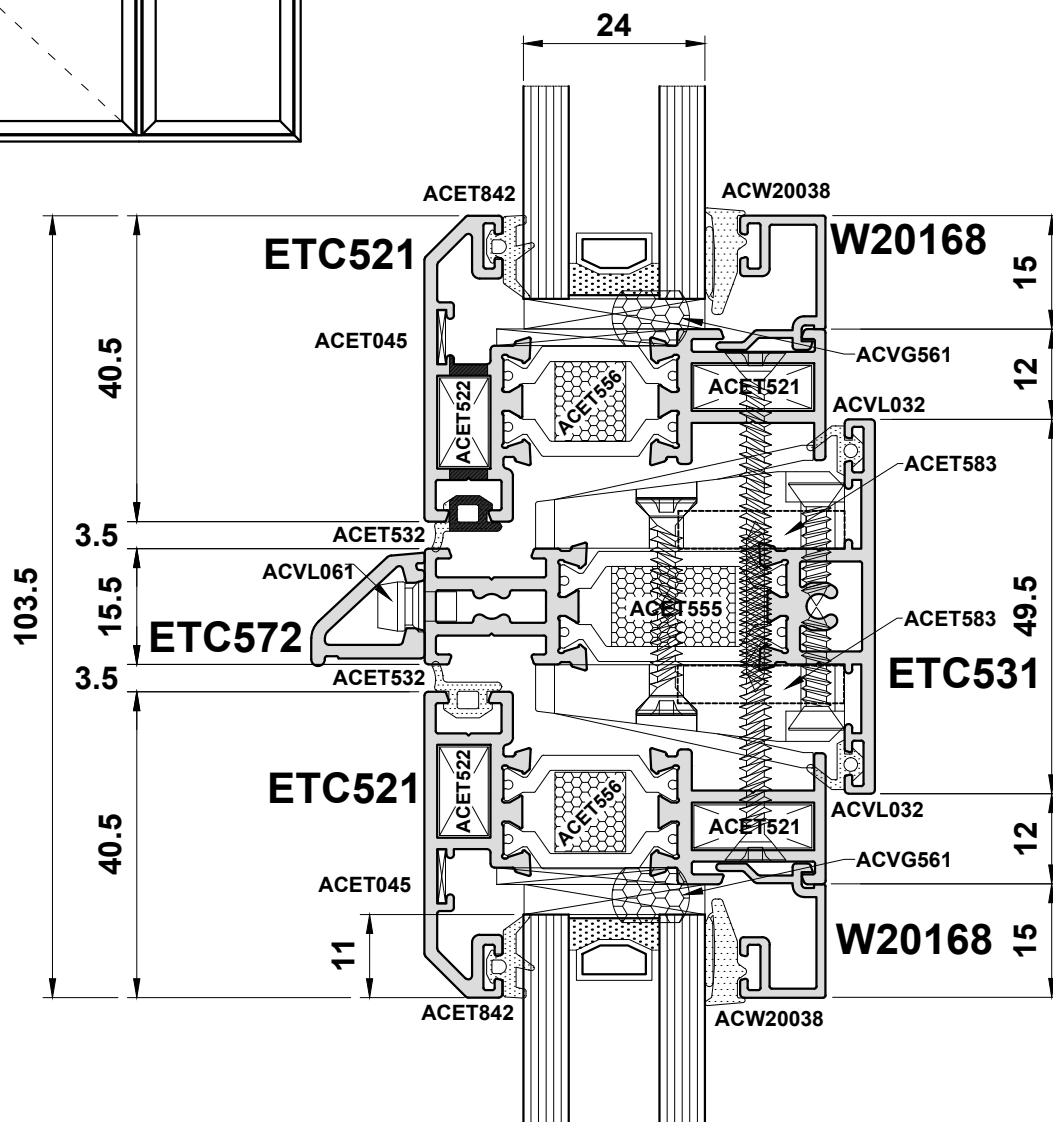
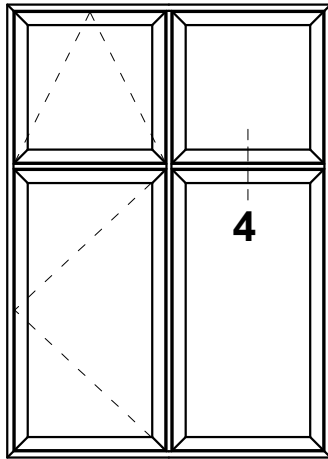
Detail 3



Note: Transoms will drain through the join to the outerframe.

Do Not Scale From This Drawing

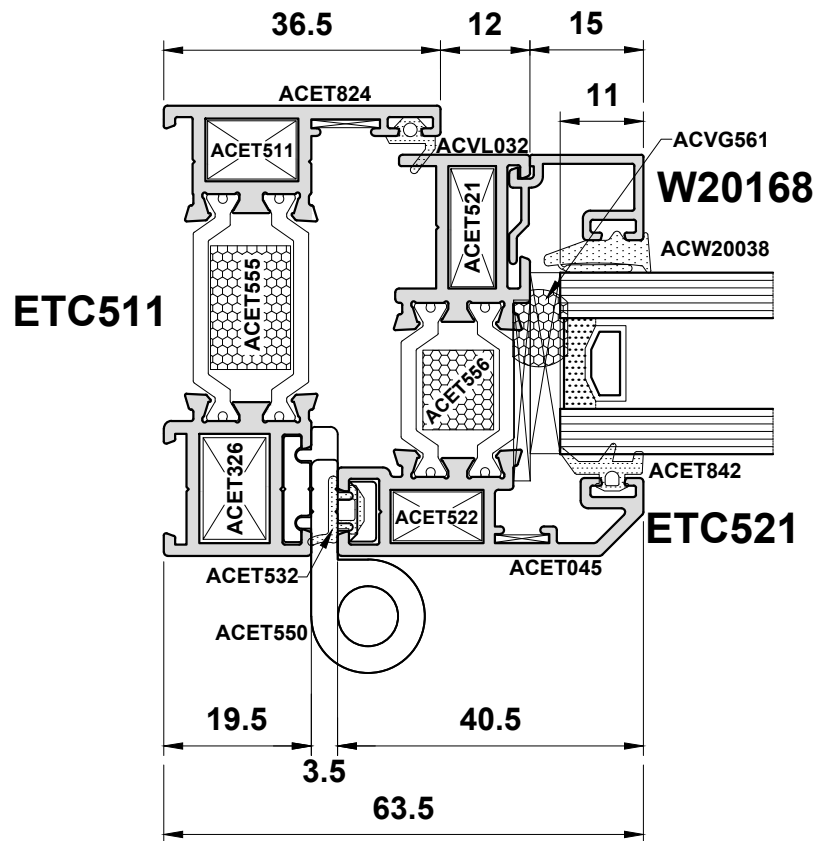
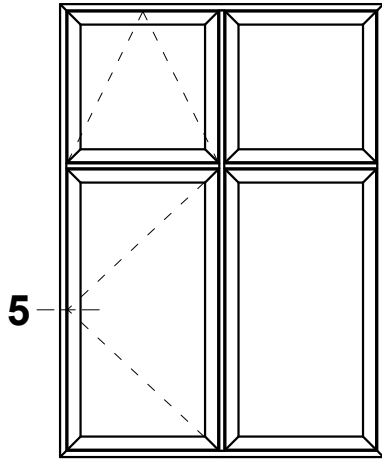
Detail 4



Note: Transoms will drain through the join to the outerframe.

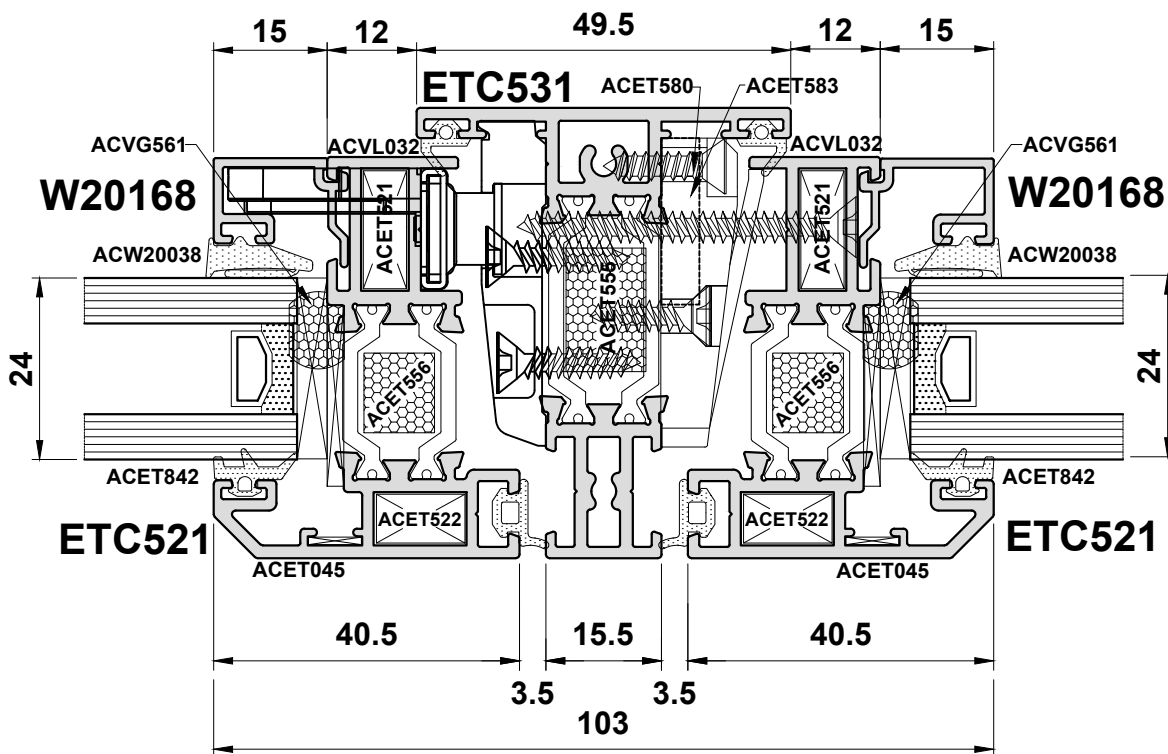
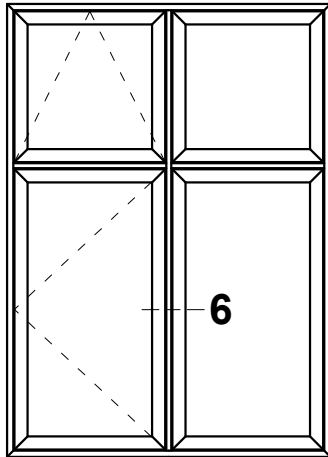
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Detail 5



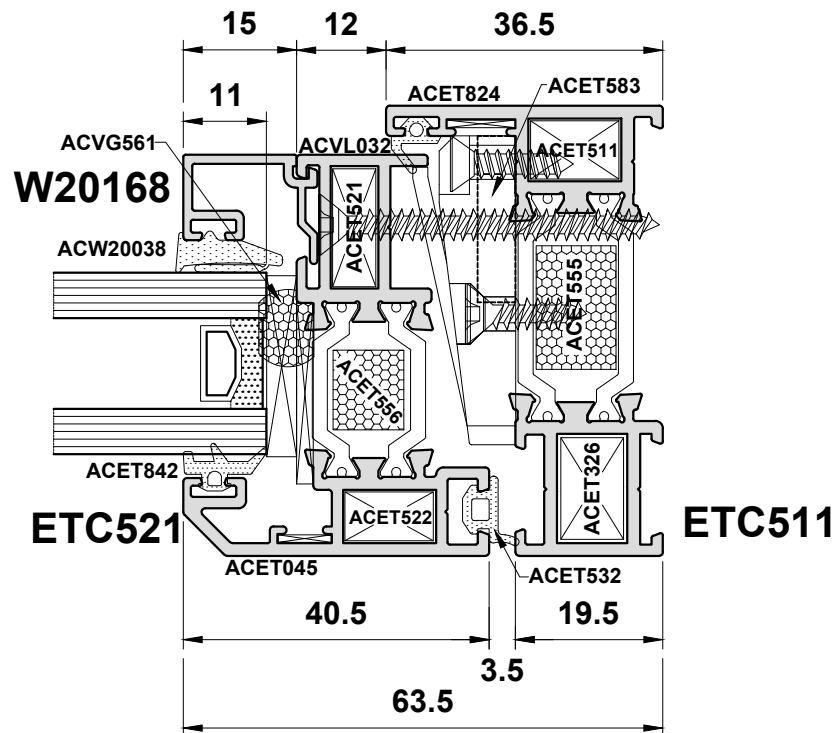
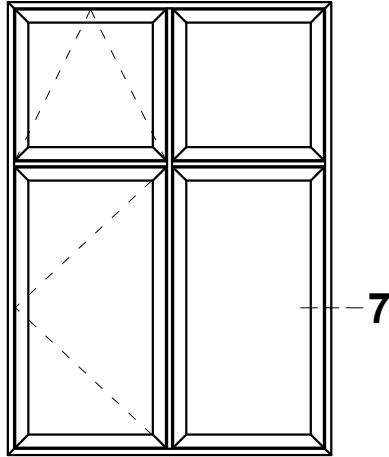
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Detail 6



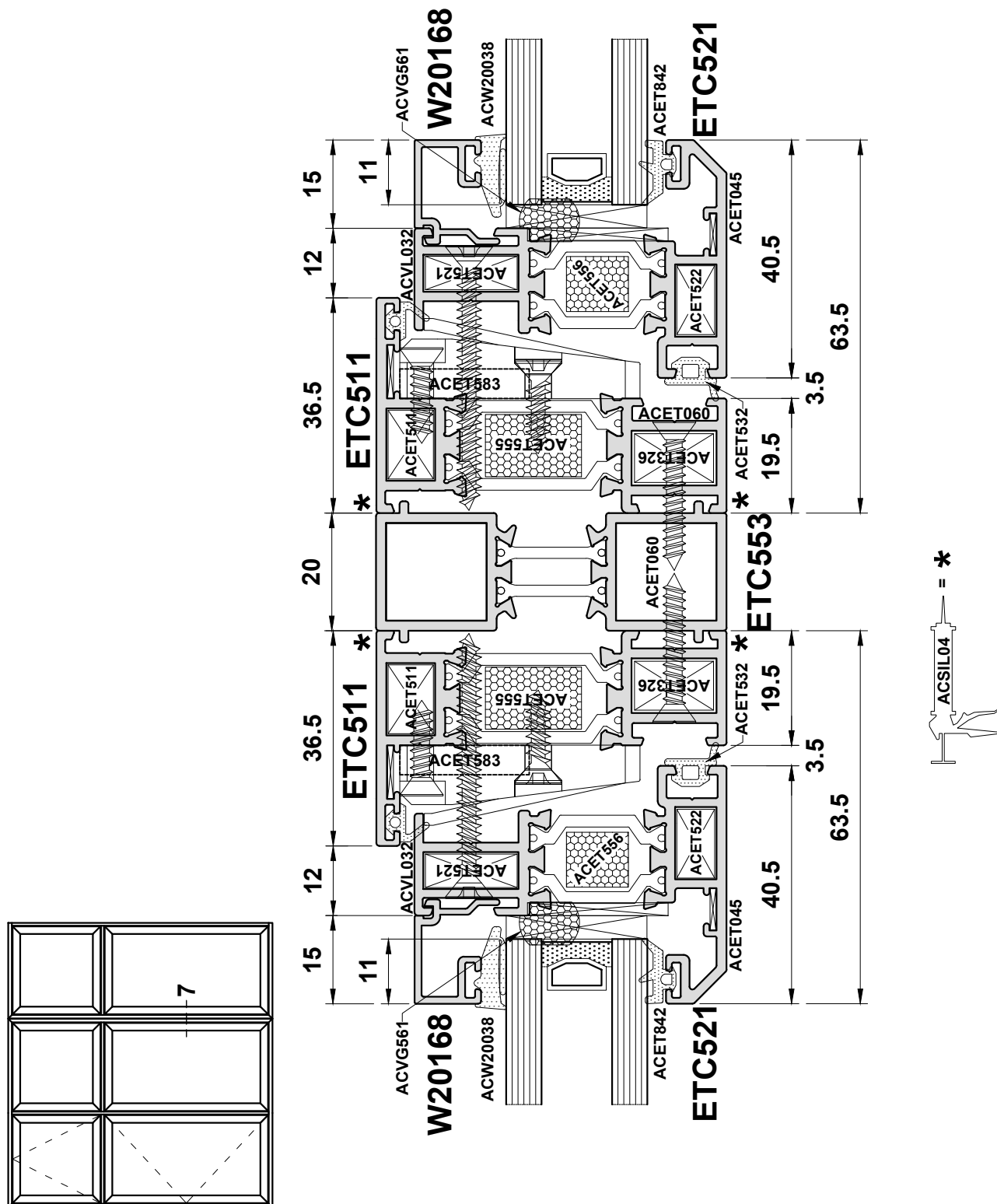
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Detail 7



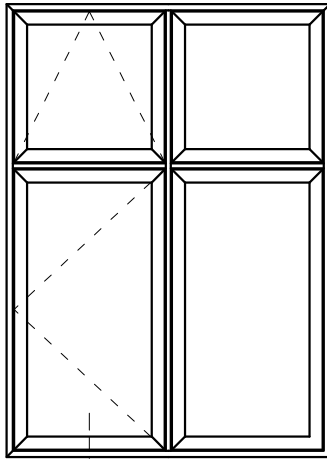
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Detail 7a

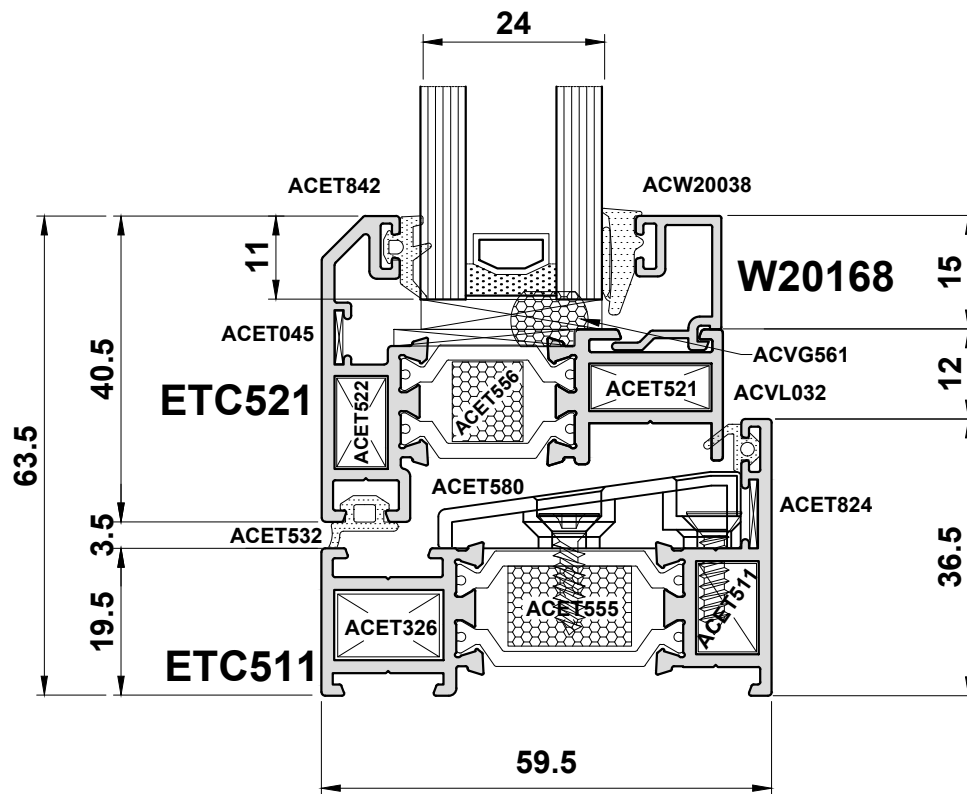


Do Not Scale From This Drawing

Detail 8A

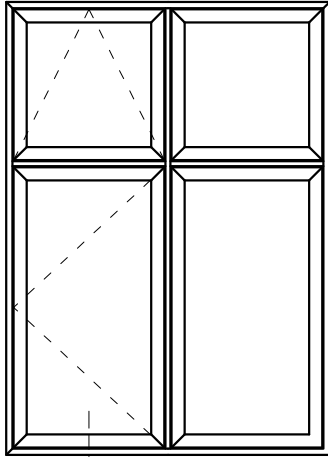


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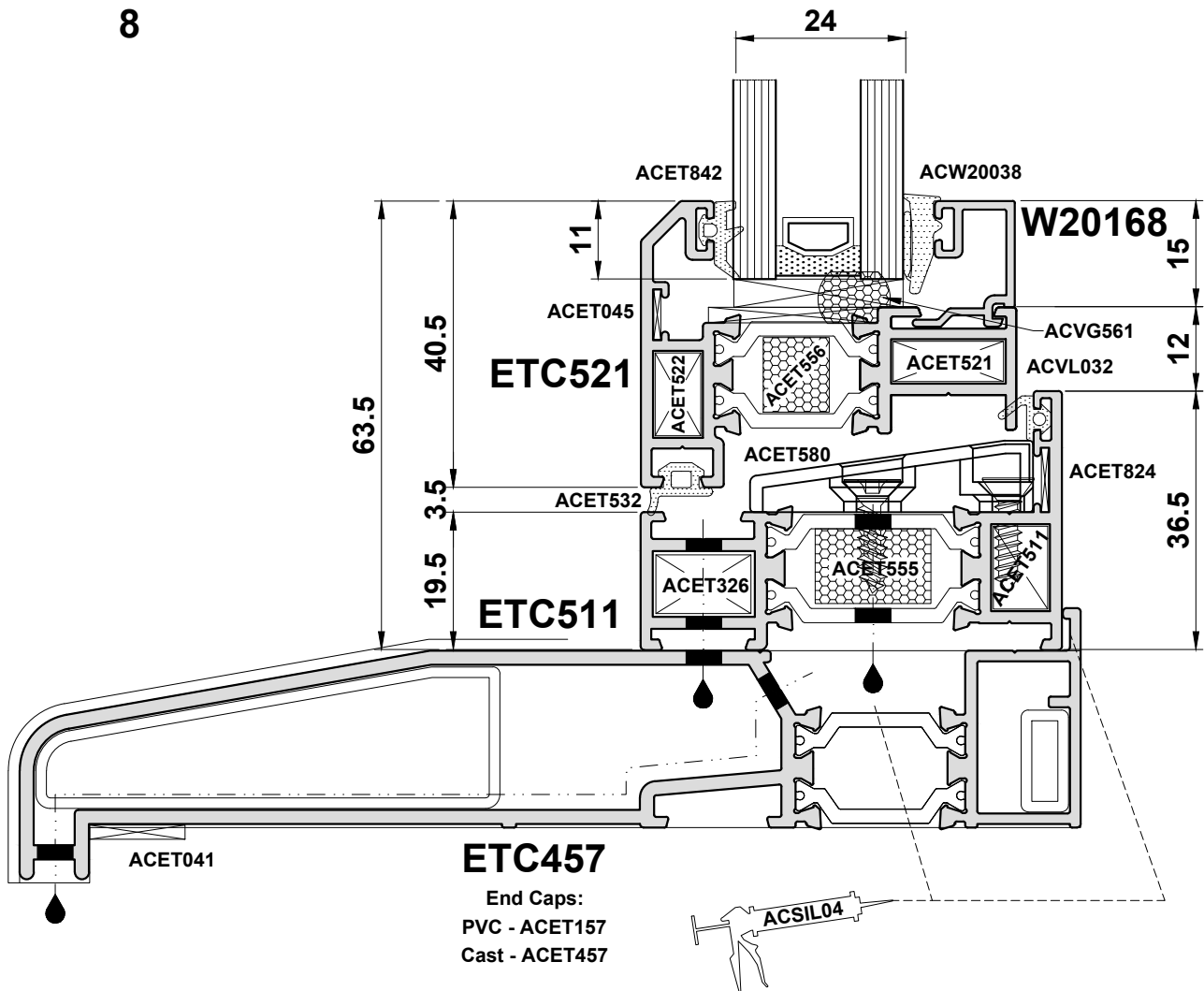


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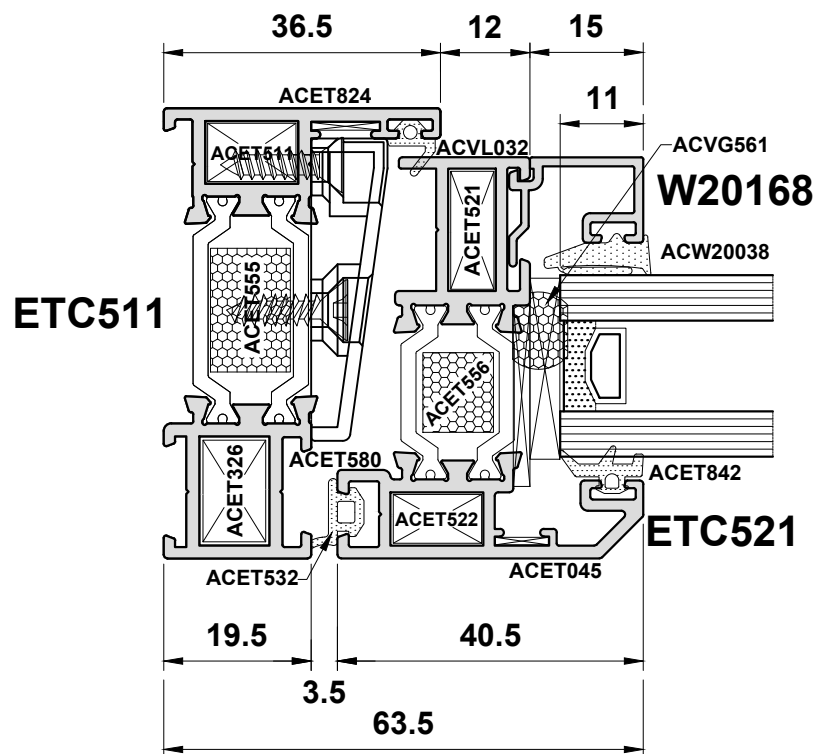
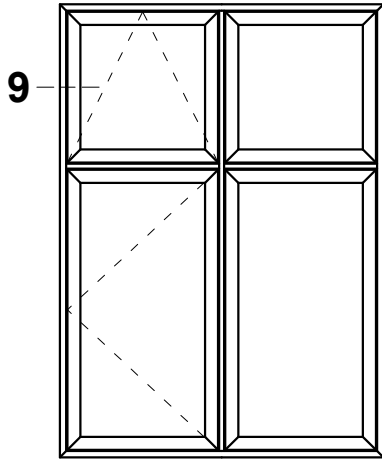
Detail 8B



8

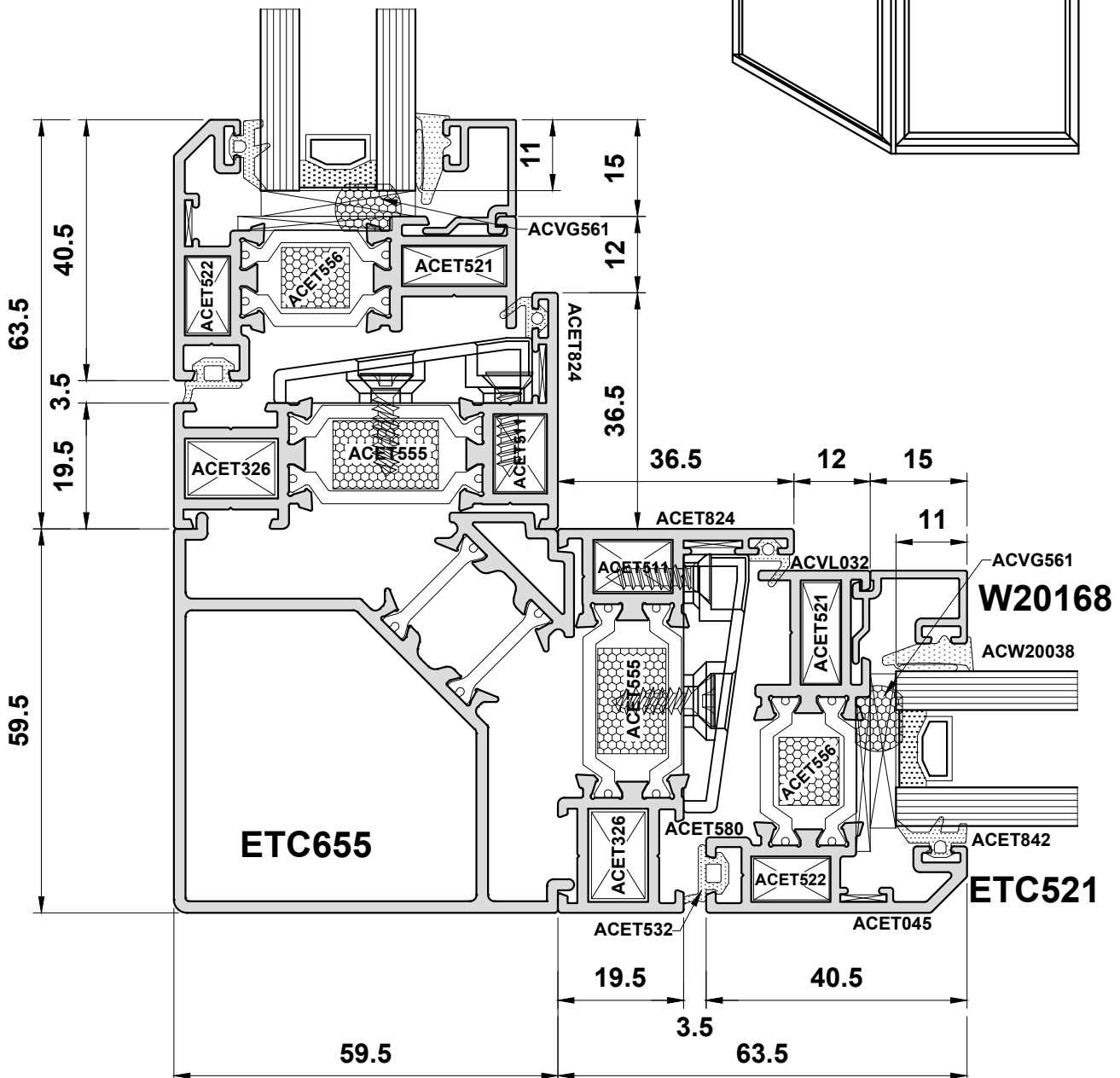
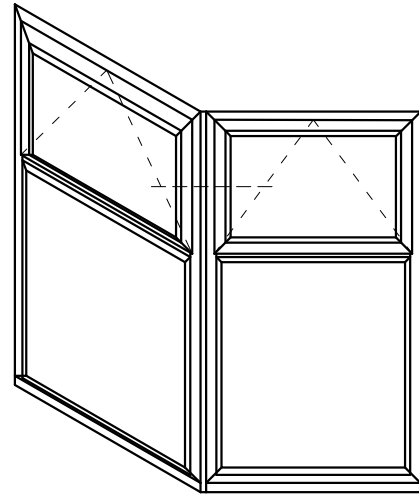


Detail 9



Do Not Scale From This Drawing

Detail 10



Do Not Scale From This Drawing

Section D

Statics

**For Wind Loading Limitations, Please Contact
The Technical Department - T: 01934 876 100**

Section E

Construction Drawings

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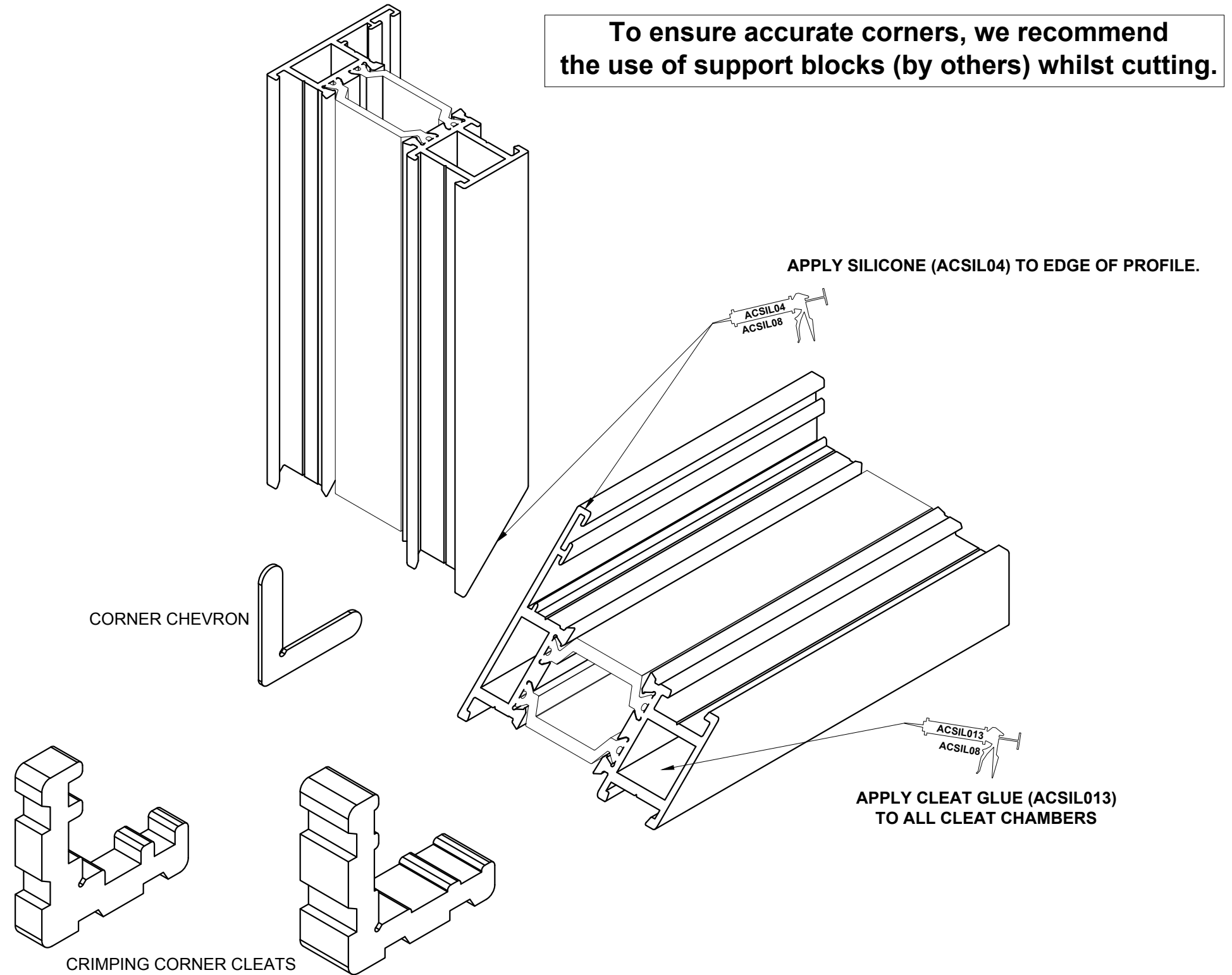
IF IN DOUBT ASK!

Typical Corner Detail

Notes

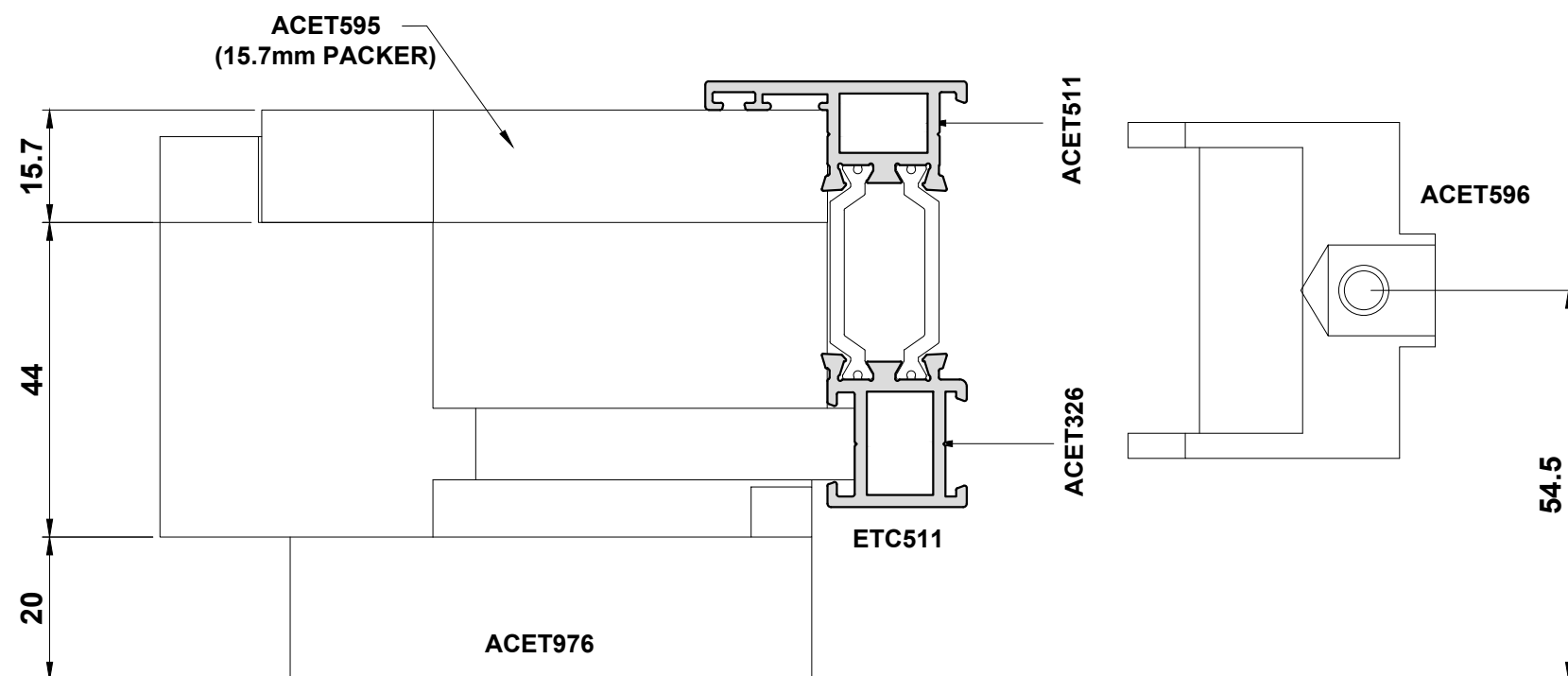
1. Degrease mitre sections
2. Cover mitred faces with ACSIL04
3. Apply ACSIL013 to cleat chambers
4. Apply ACSIL04 to any fractures formed by crimping to make watertight

KL Colour	Sealant Part Number
Black	ACSIL04BL
White	ACSIL04WP
Clear	ACSIL04CL
KL001	ACSIL04KL001
KL002	ACSIL04KL002
KL003	ACSIL04KL003
KL004	ACSIL04KL004
KL005	ACSIL04KL005
KL006	ACSIL04KL006
KL007	ACSIL04KL007
KL010	ACSIL04KL010
KL011	ACSIL04KL011
KL012	ACSIL04KL012
KL013	ACSIL04KL013

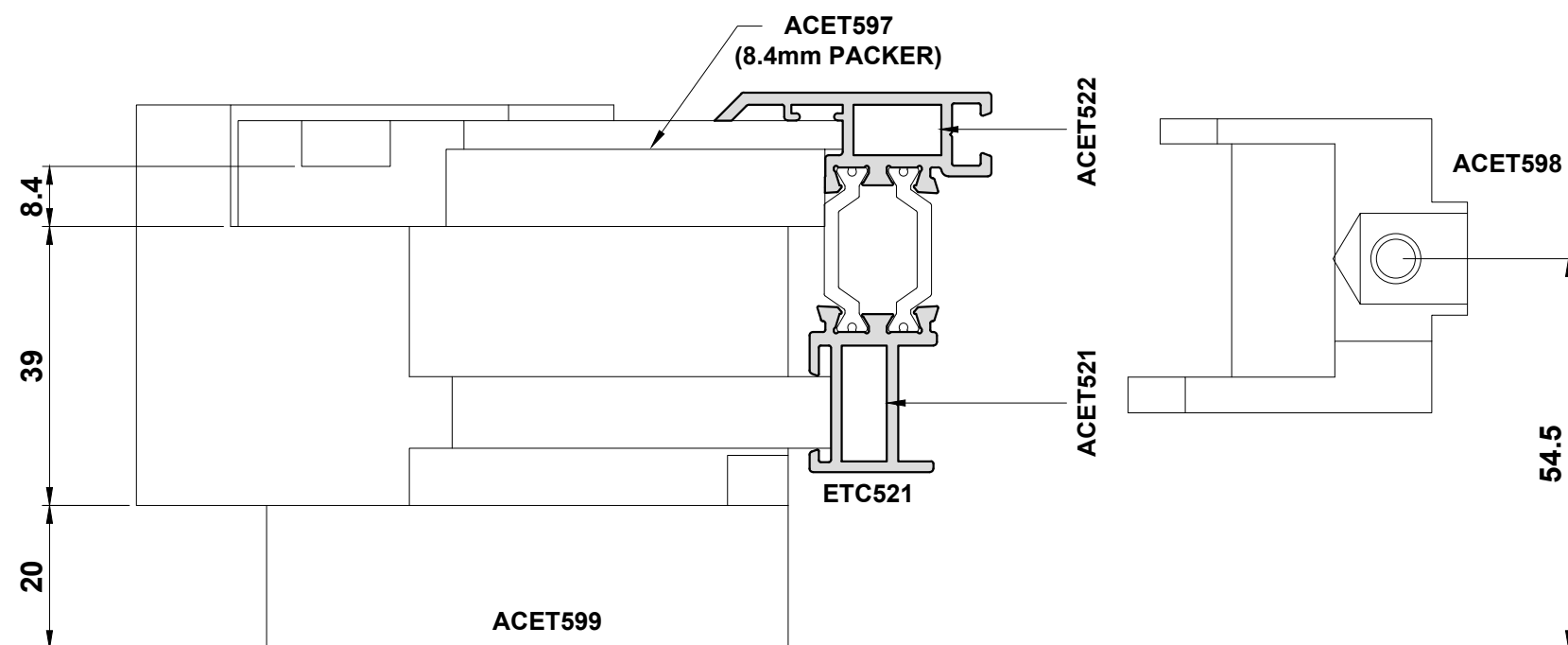


Do Not Scale From This Drawing

Corner Assembly - Crimping Cleats

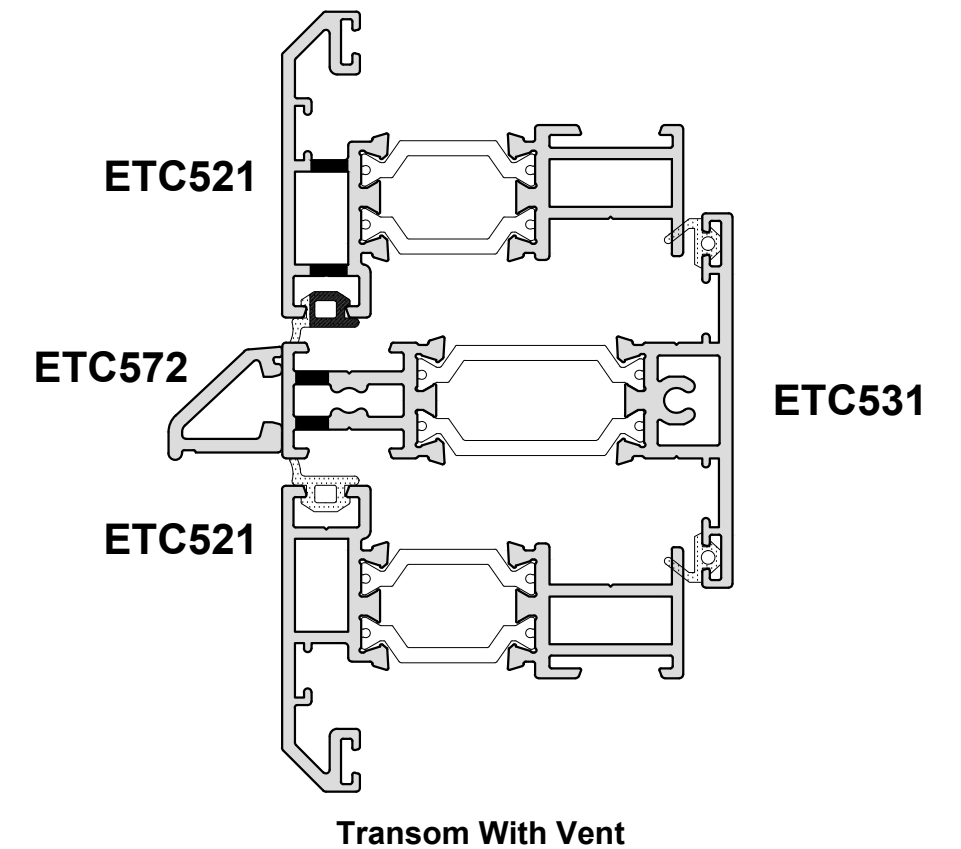
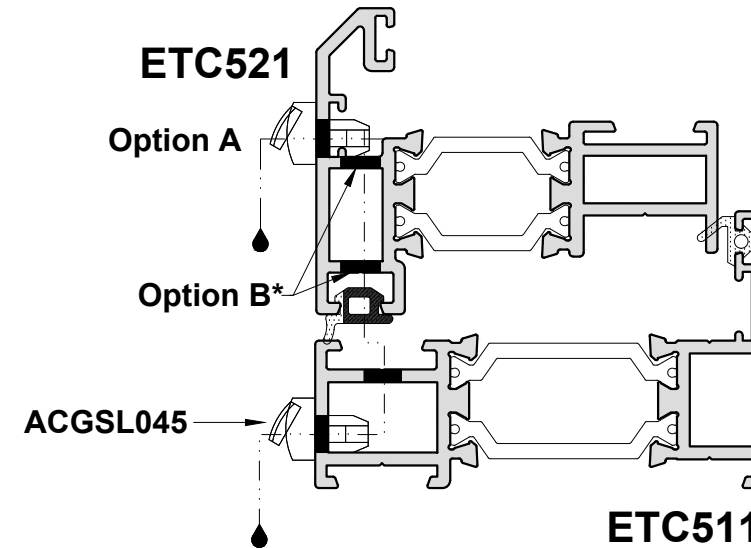
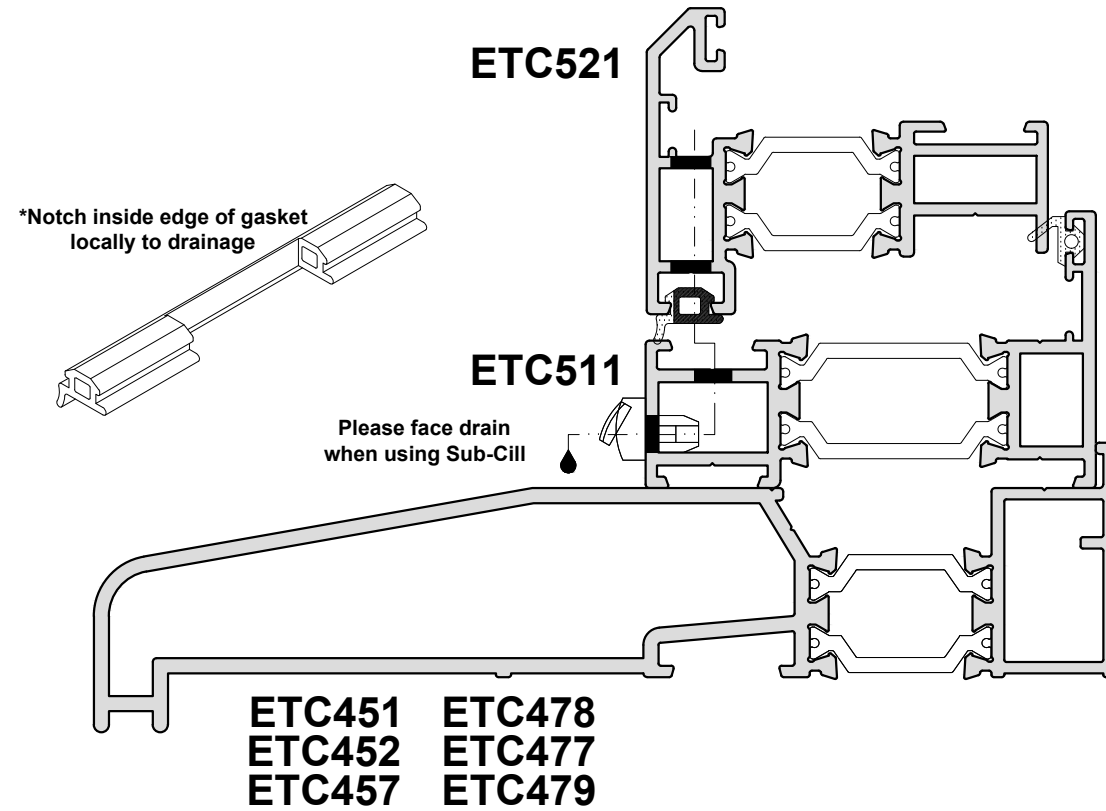
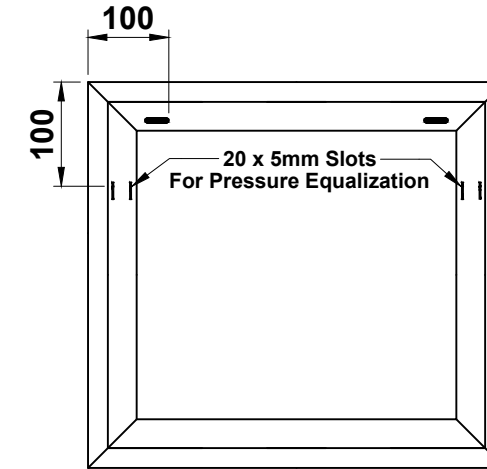
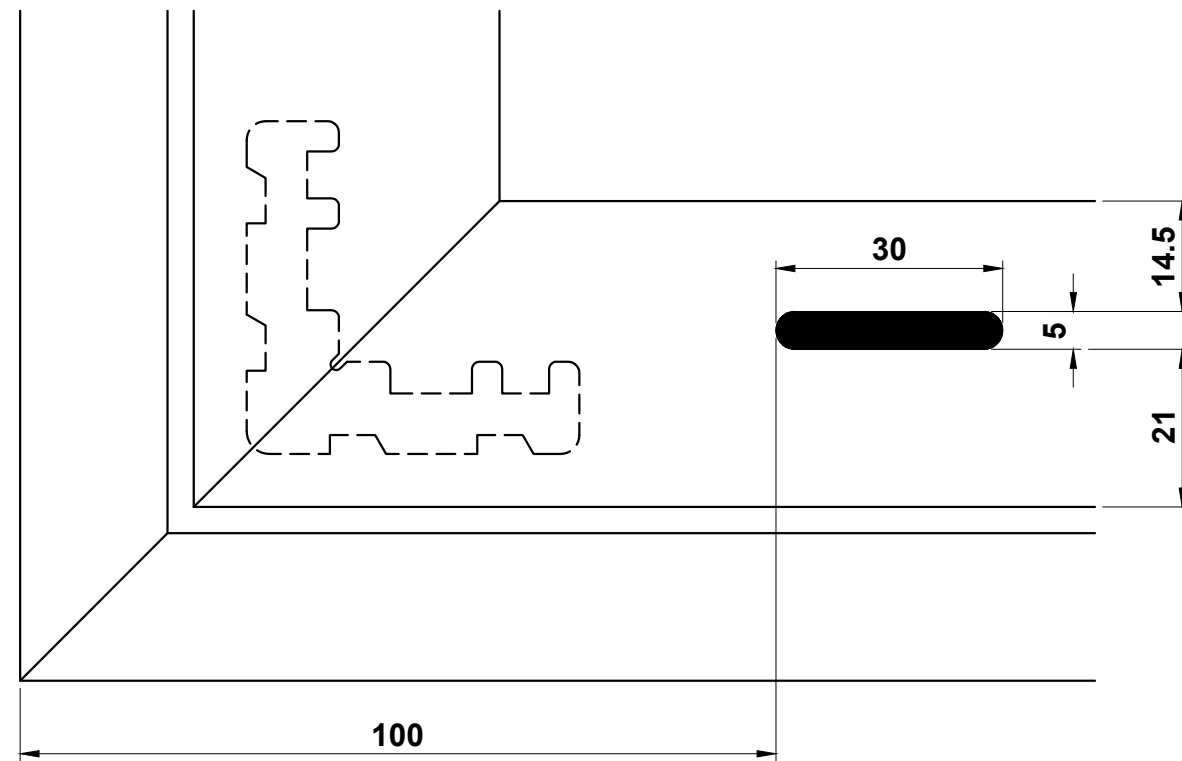


Manual Crimper = WUT024HSZA



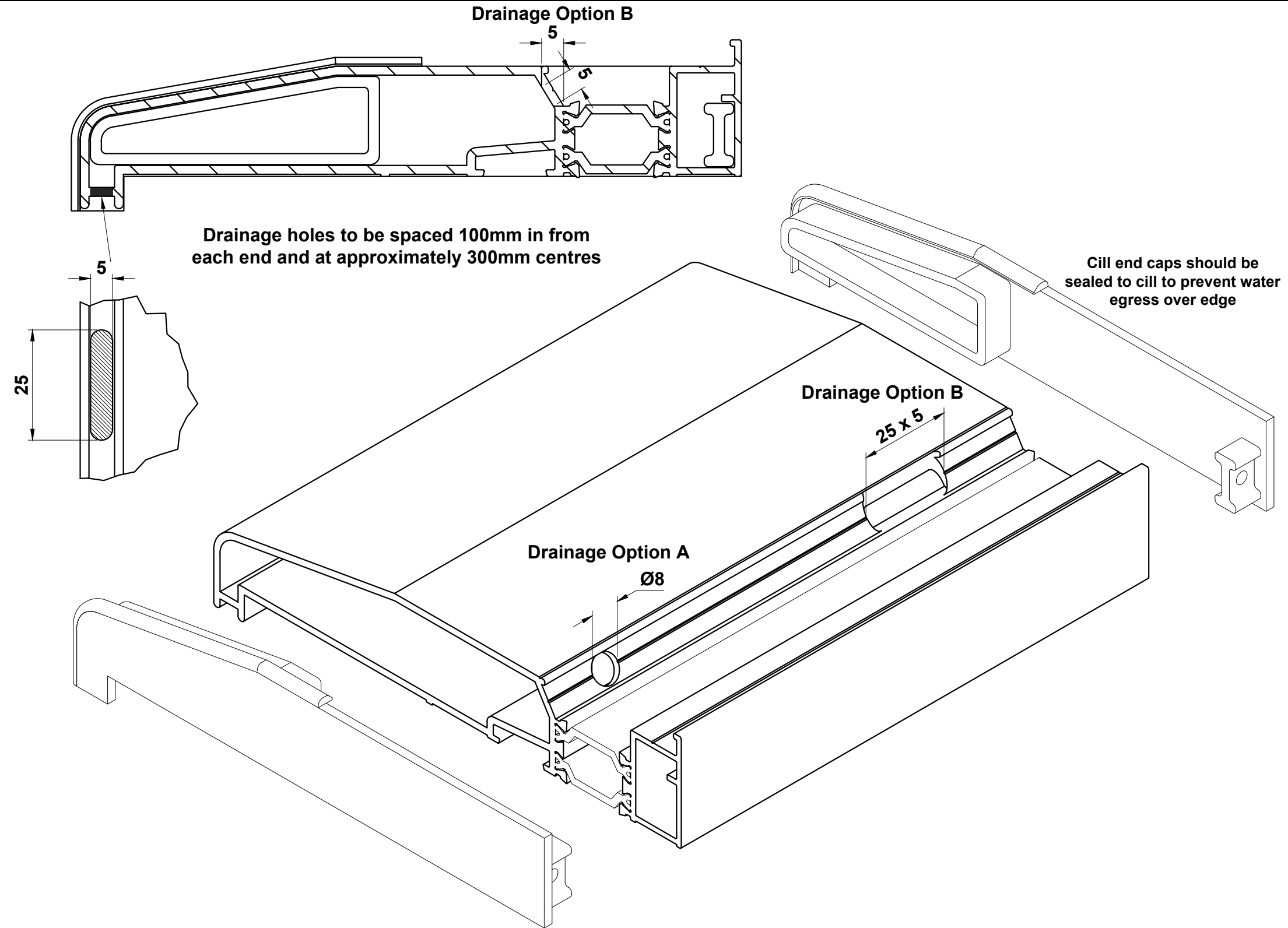
Do Not Scale From This Drawing

Window Drainage



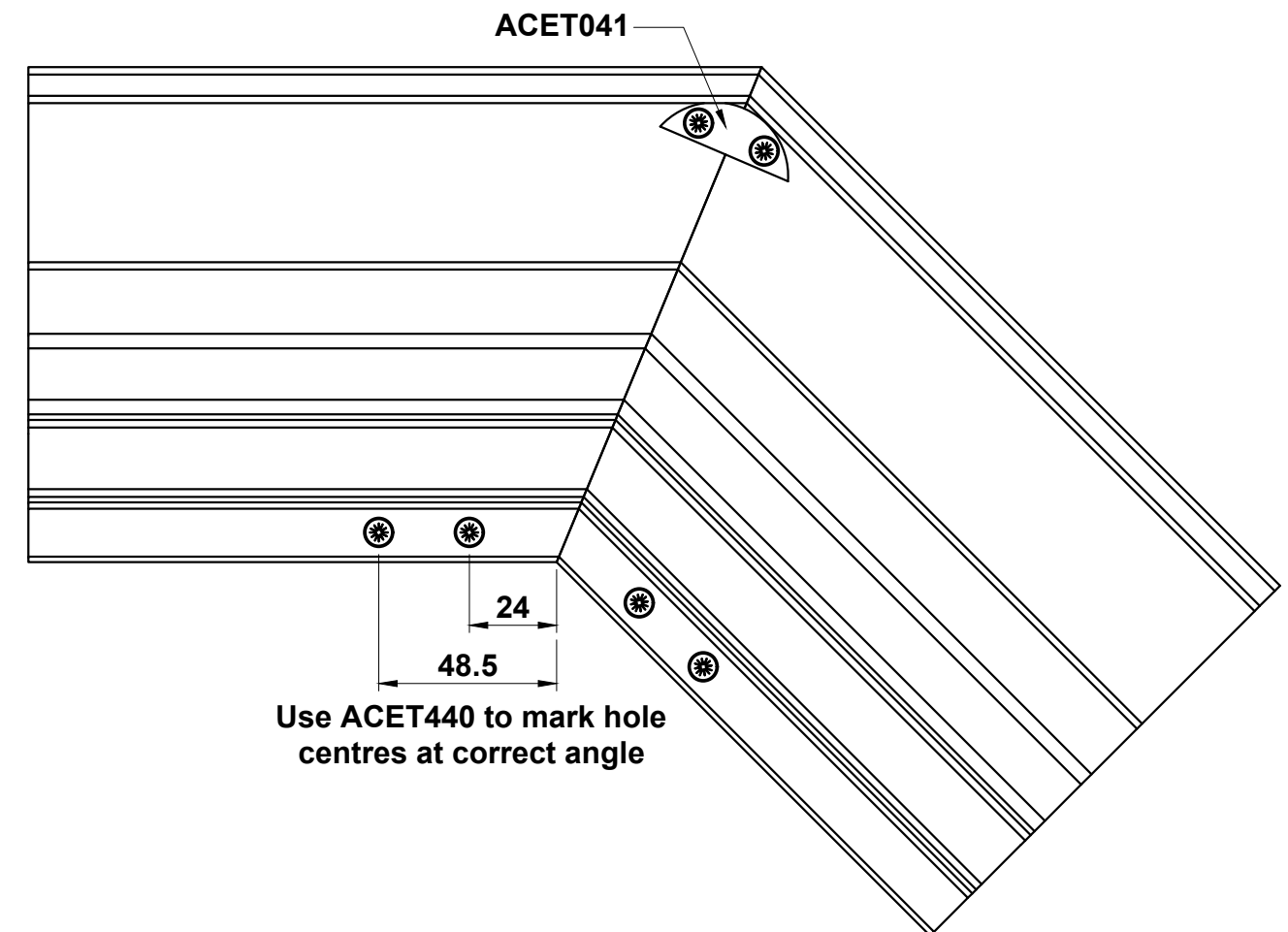
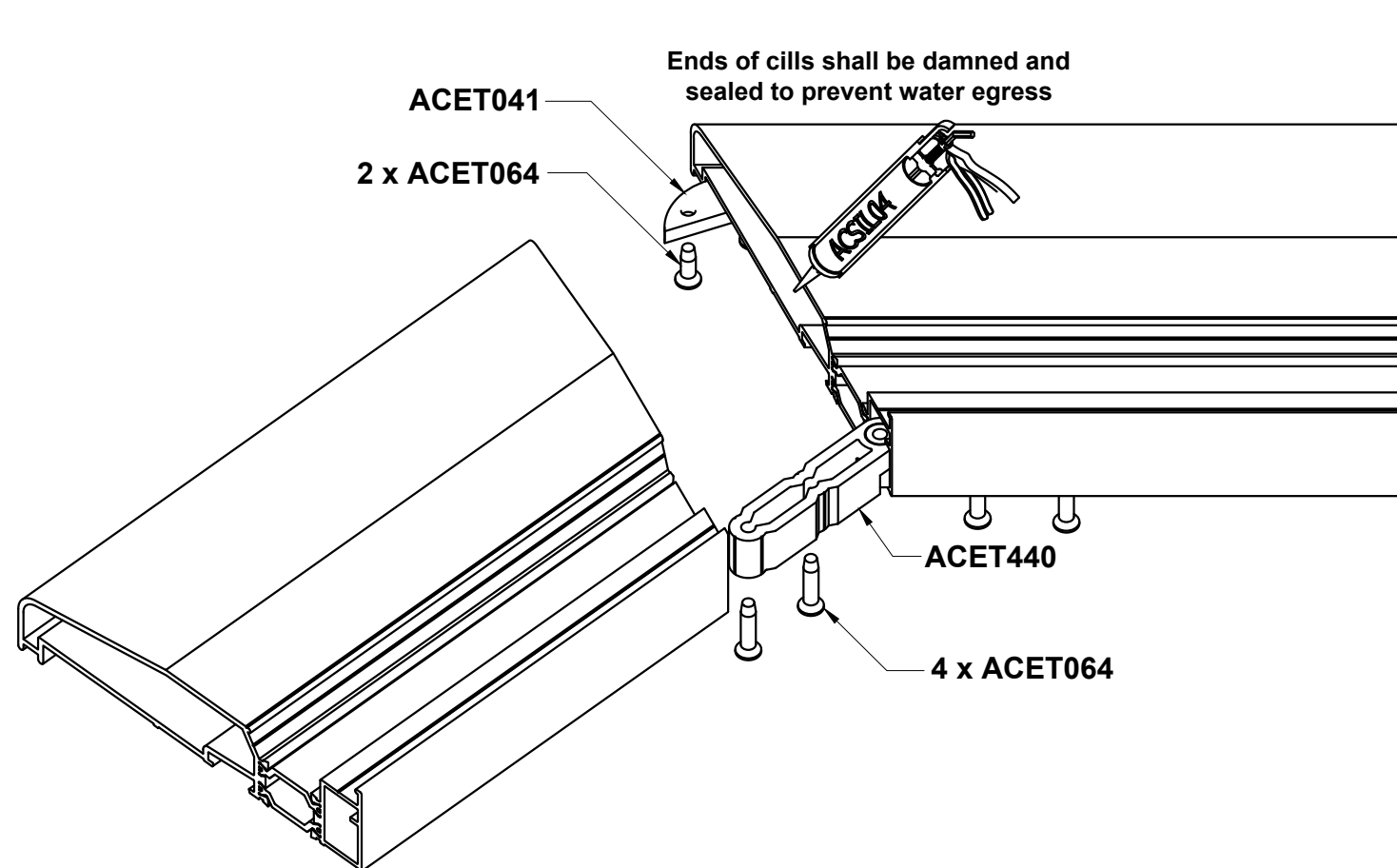
Do Not Scale From This Drawing

Cill Drainage



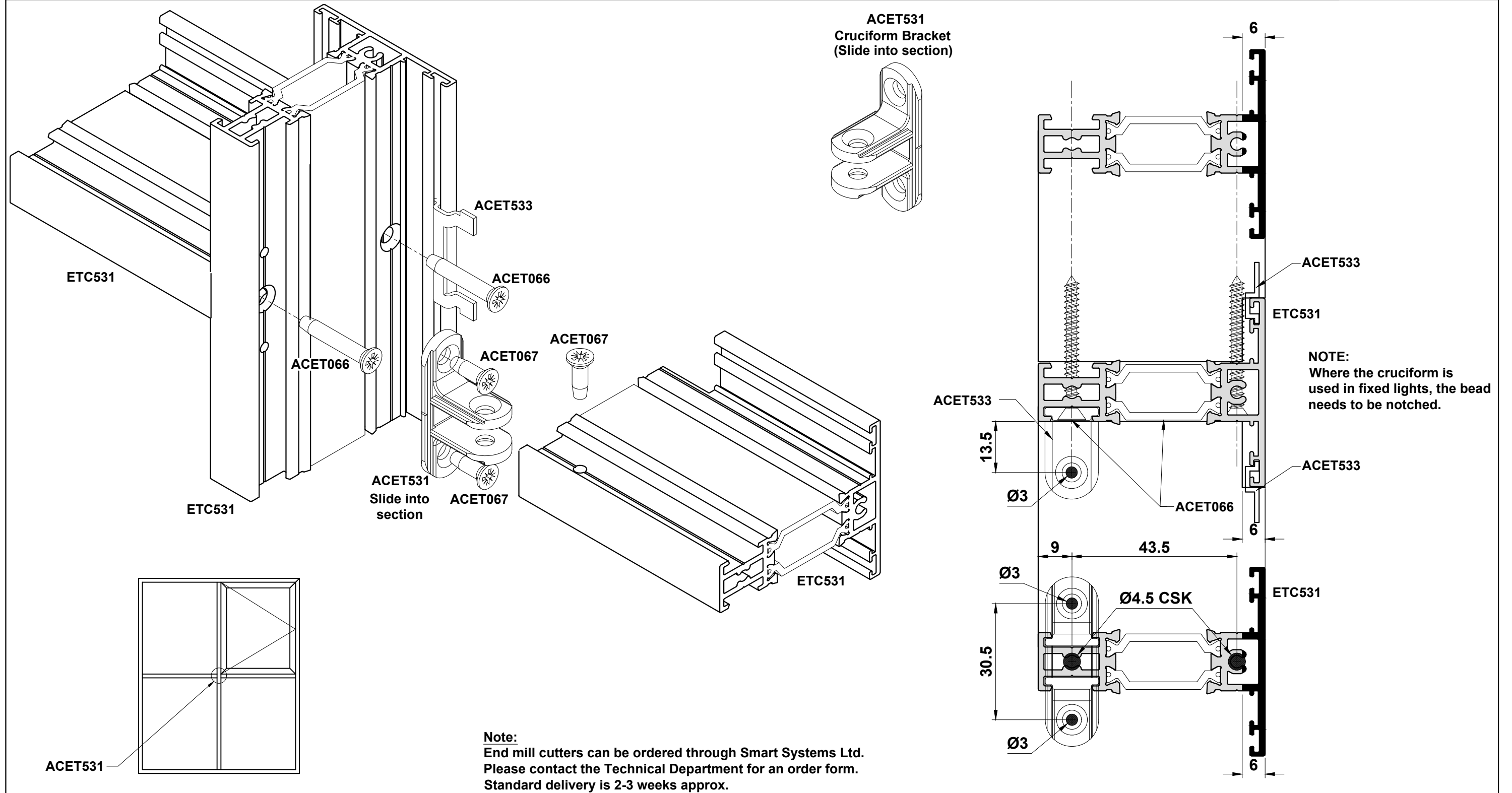
Do Not Scale From This Drawing

Angled Sub Cill



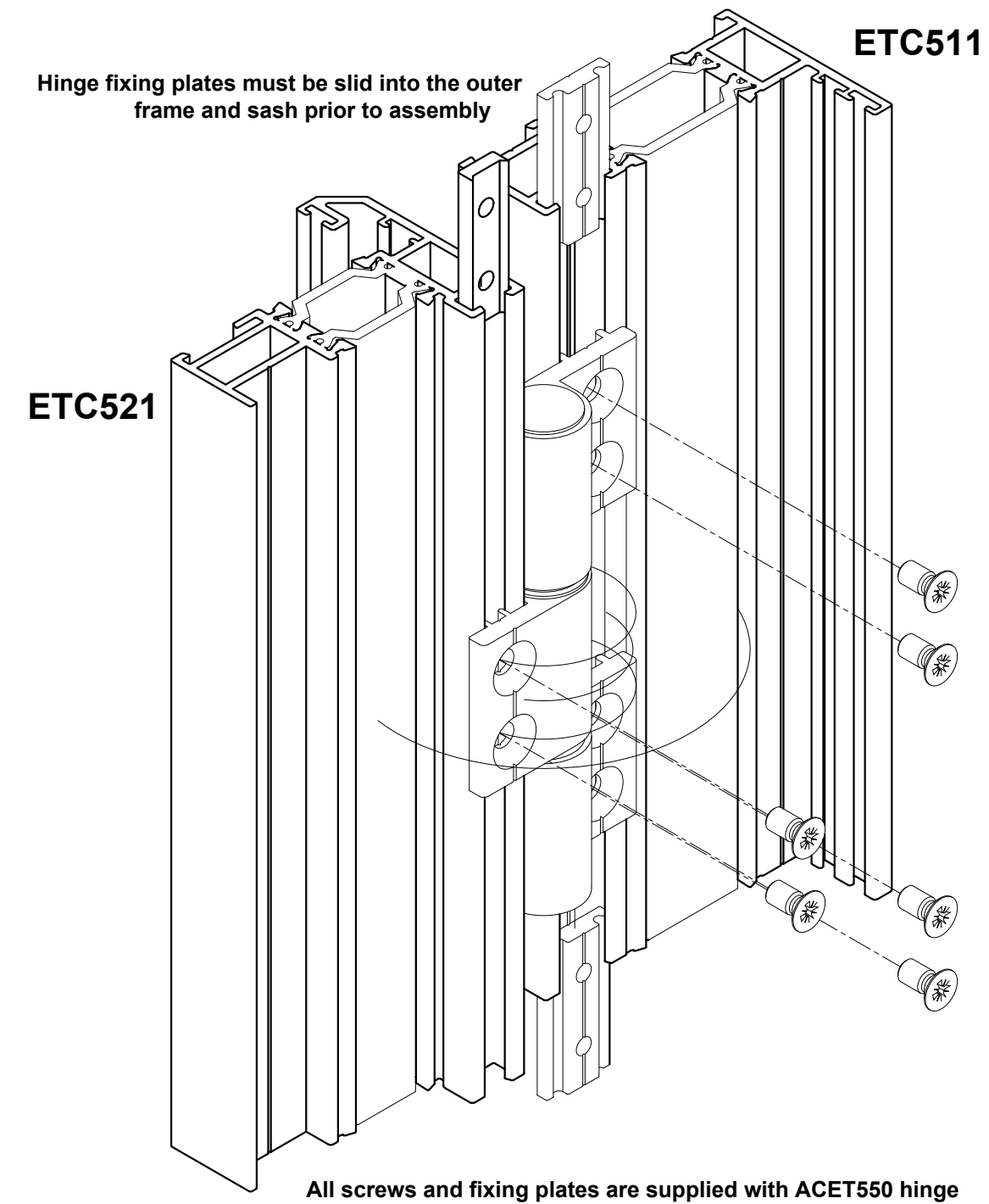
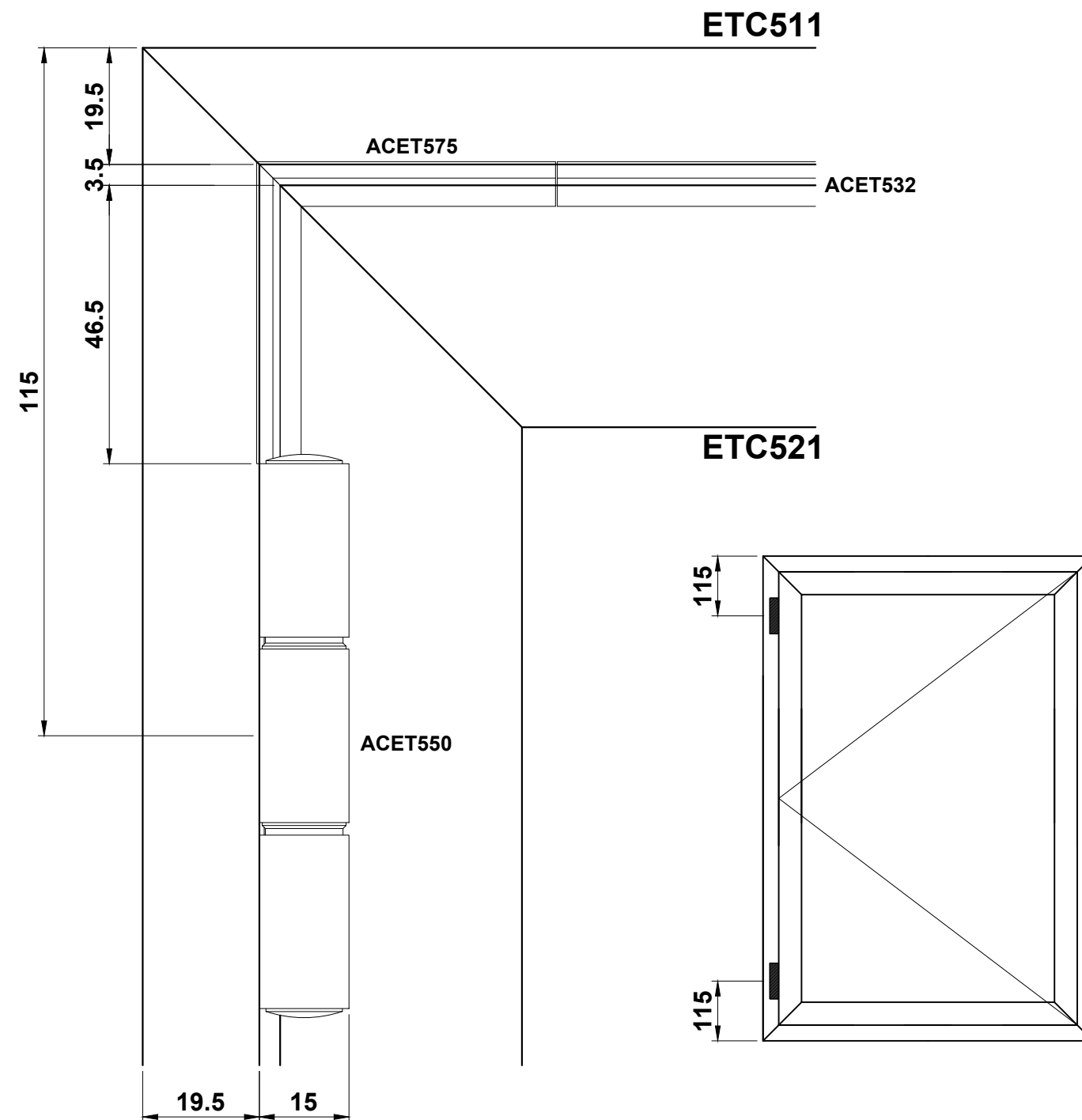
Do Not Scale From This Drawing

Transom/Mullion Preparation



Do Not Scale From This Drawing

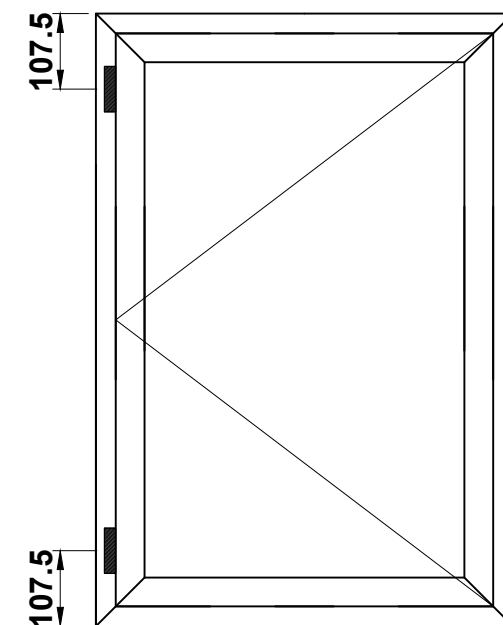
ACET550 Hinge Fitting & Position



ACET552 Hinge Fitting & Position

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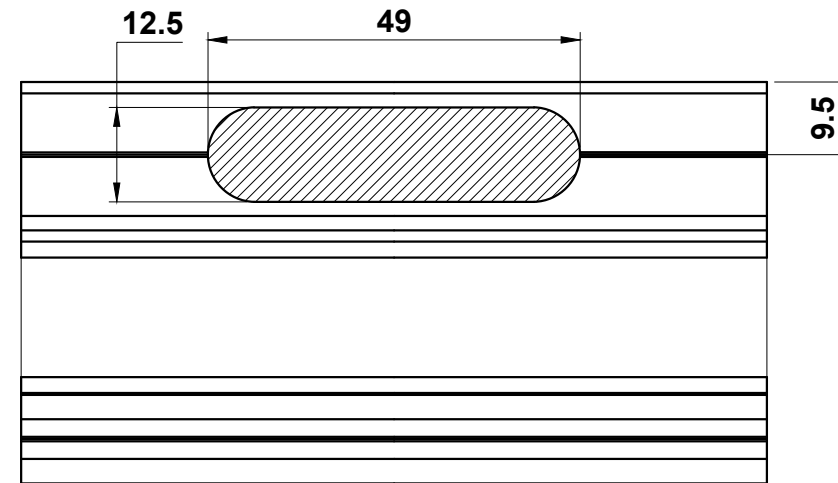
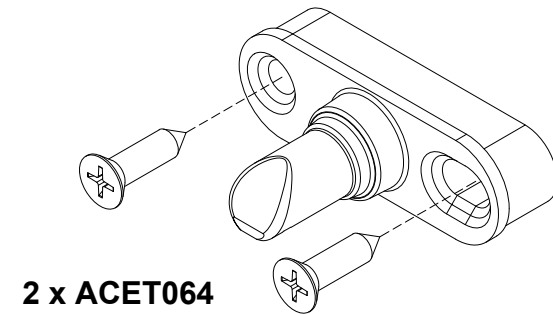
16 10

ACET575

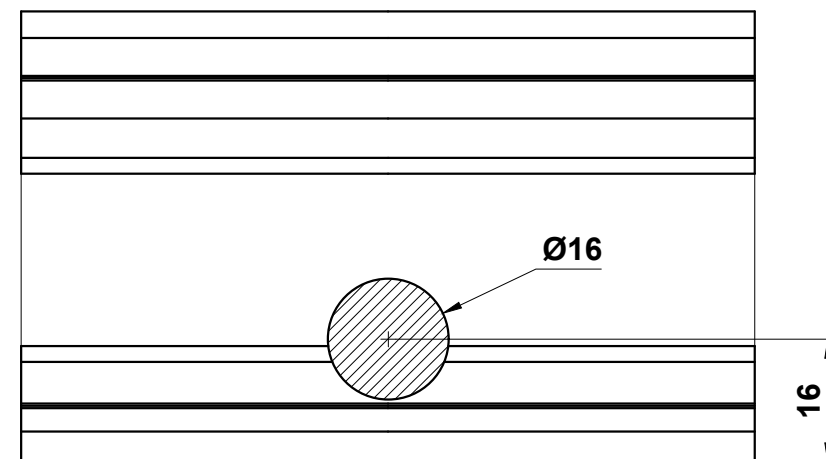
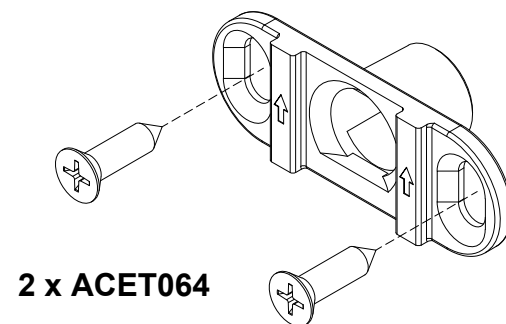
ACET53

ACET553 Hinge Protection Bolt Preparation & Position

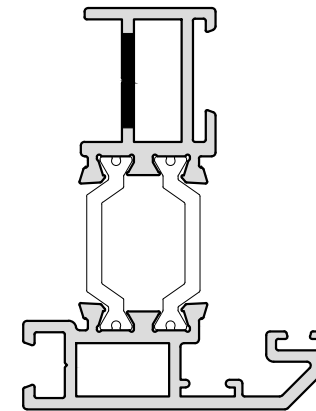
ACET553
Fitted to Sash



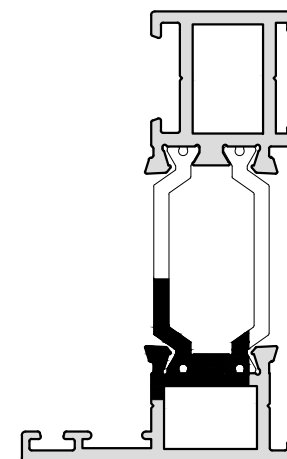
ACET553
Fitted to Outerframe



ETC521

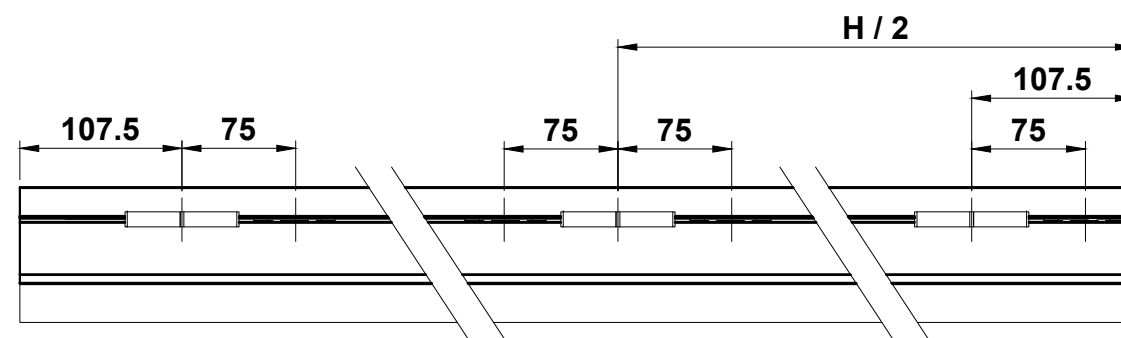
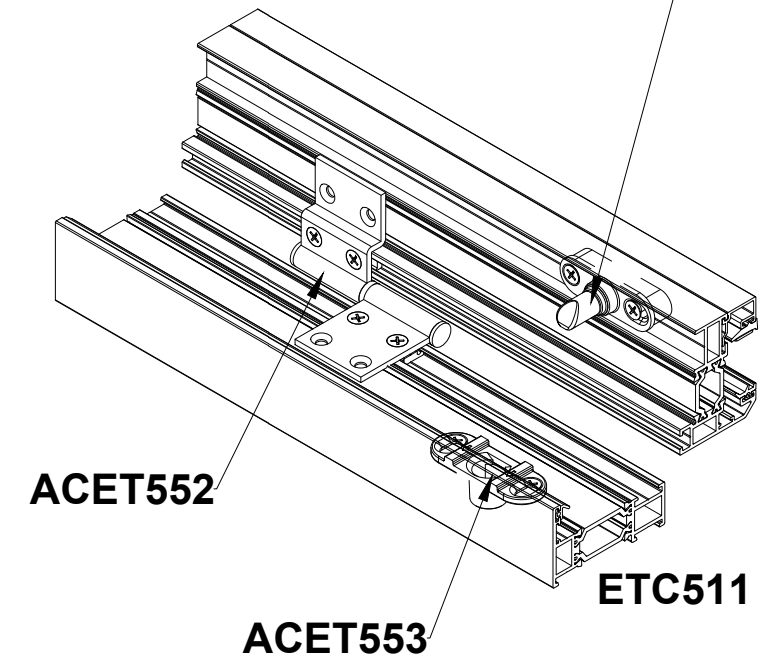


ETC511



ETC521

ACET553



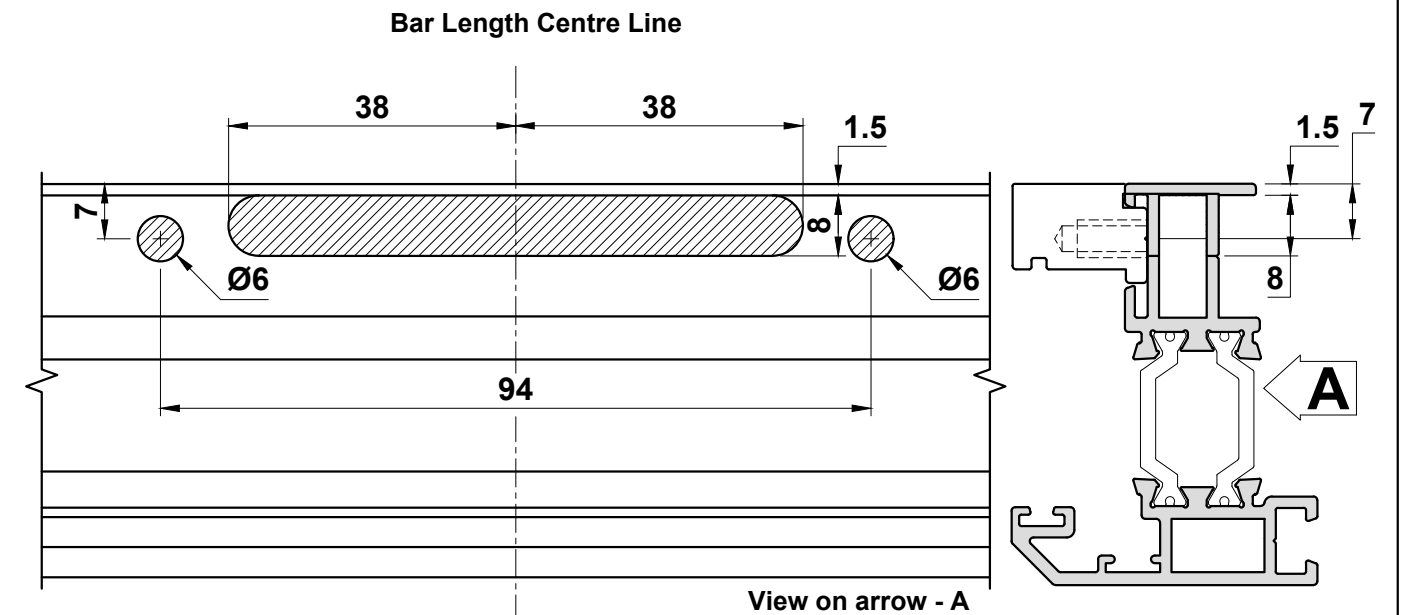
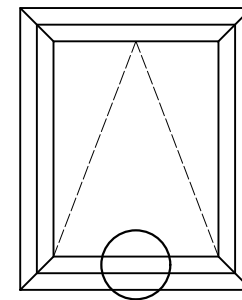
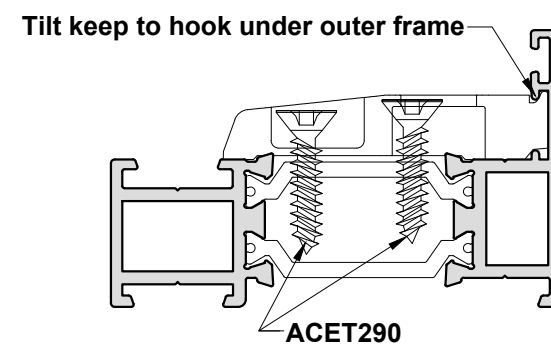
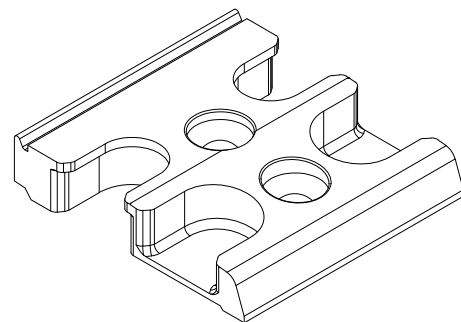
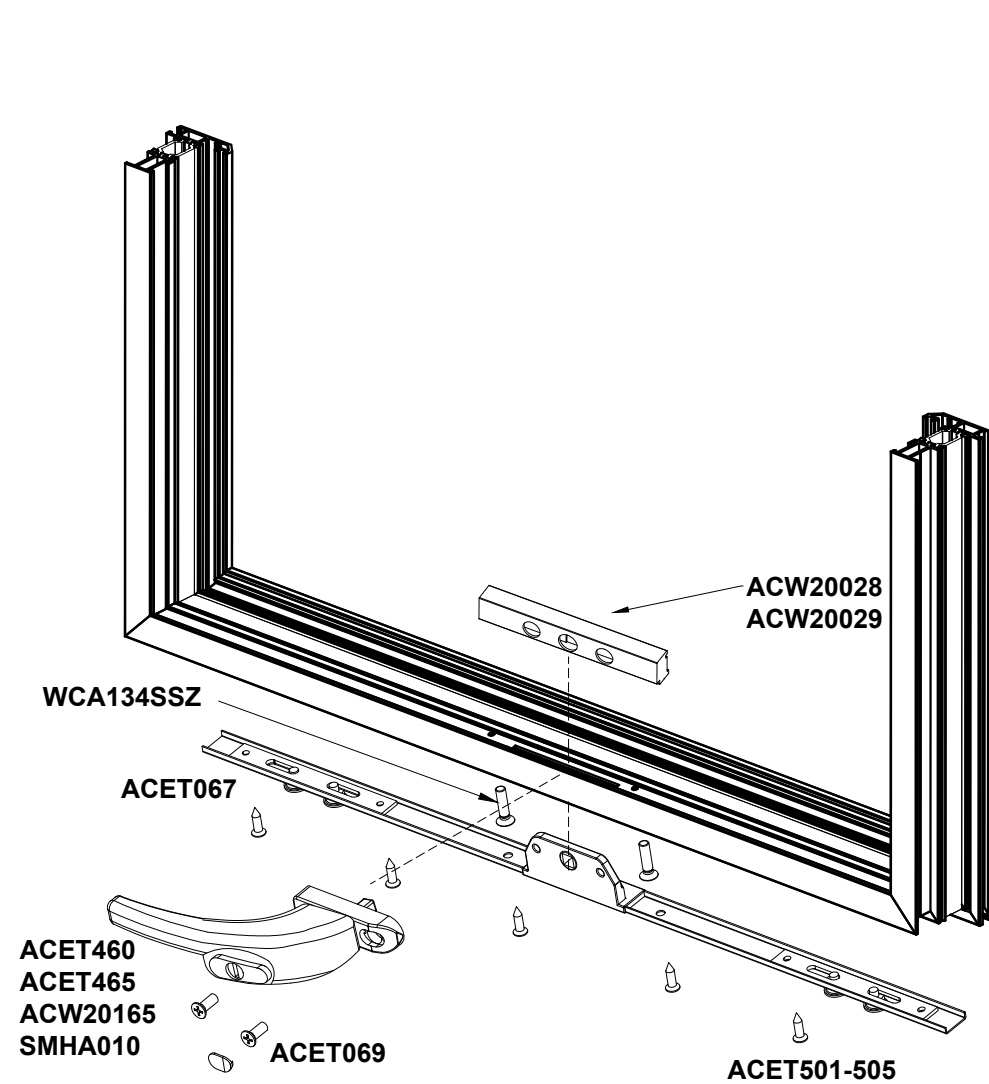
ACET553 Positions

Top Bolt - 75mm Below Top Hinge
Middle Bolt (if required) - 75mm Above or 75mm Below Middle Hinge
Bottom Bolt - 75mm Below Bottom Hinge

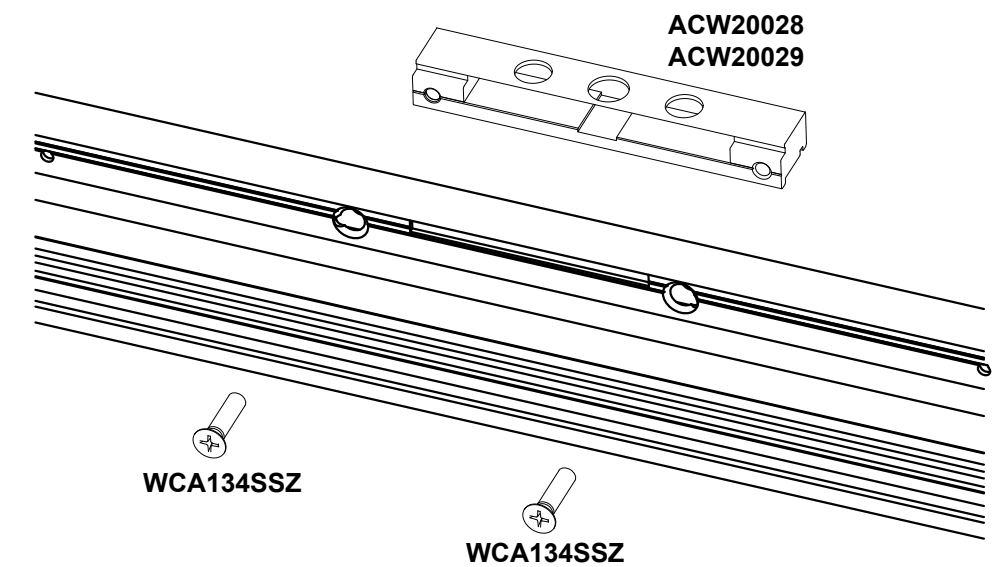
ACET553 not required for PAS24:2016

Do Not Scale From This Drawing

Espag Locking Details Using ACW20028 & ACW20029



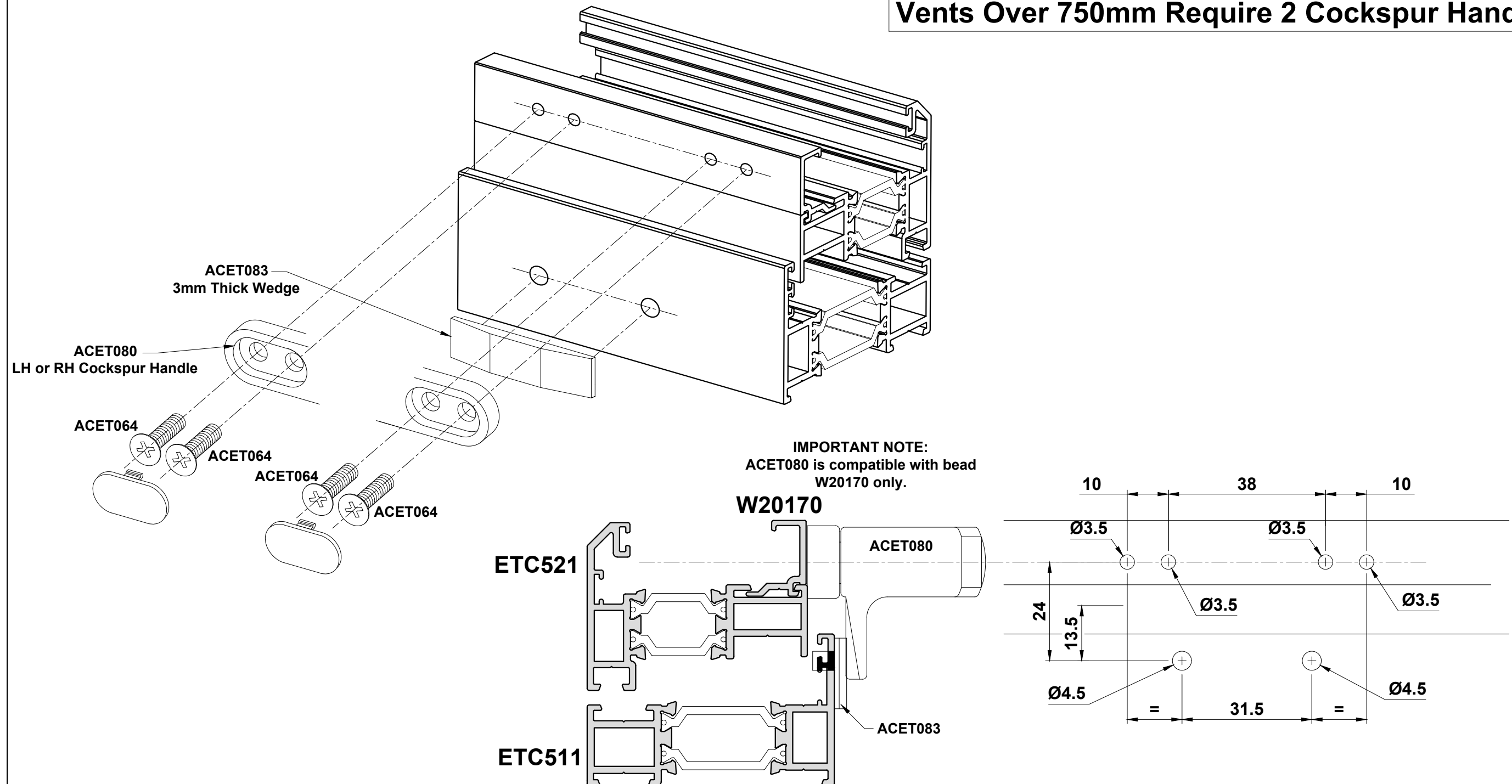
Espagnolette Fixing Block Assembly



Do Not Scale From This Drawing

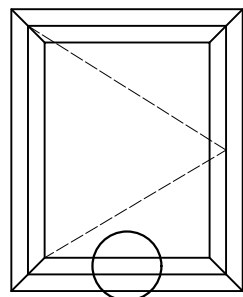
Cockspur Handle Preparation

Vents Over 750mm Require 2 Cockspur Handles



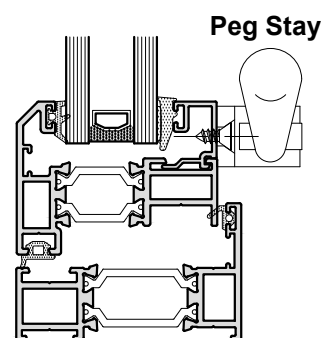
Do Not Scale From This Drawing

ACW20102-ACW20107 Peg Stay Fixing Details

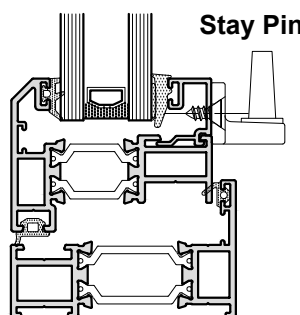


**Monkey Tail
Peg Stay**
ACW20102 = 8 inch
ACW20103 = 10 inch
ACW20104 = 12 inch

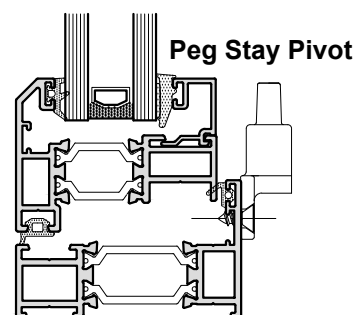
**Bulb End
Peg Stay**
ACW20105 = 8 inch
ACW20106 = 10 inch
ACW20107 = 12 inch



Peg Stay

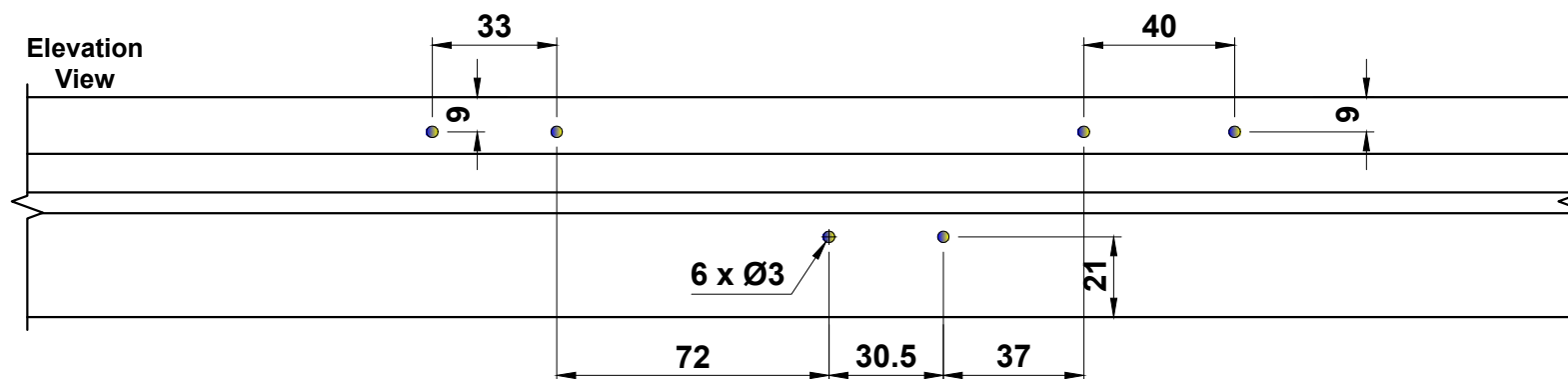


Stay Pin



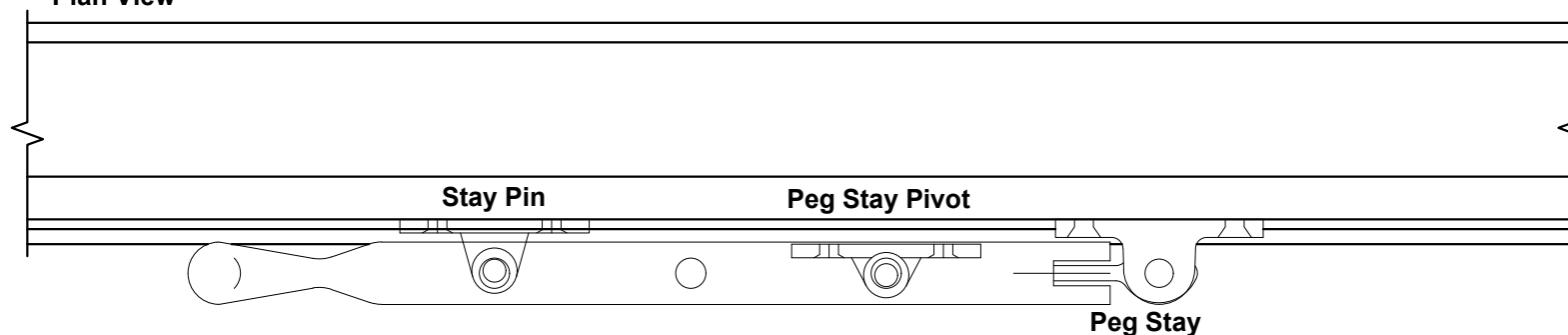
Peg Stay Pivot

Typical layout for 10" peg stay

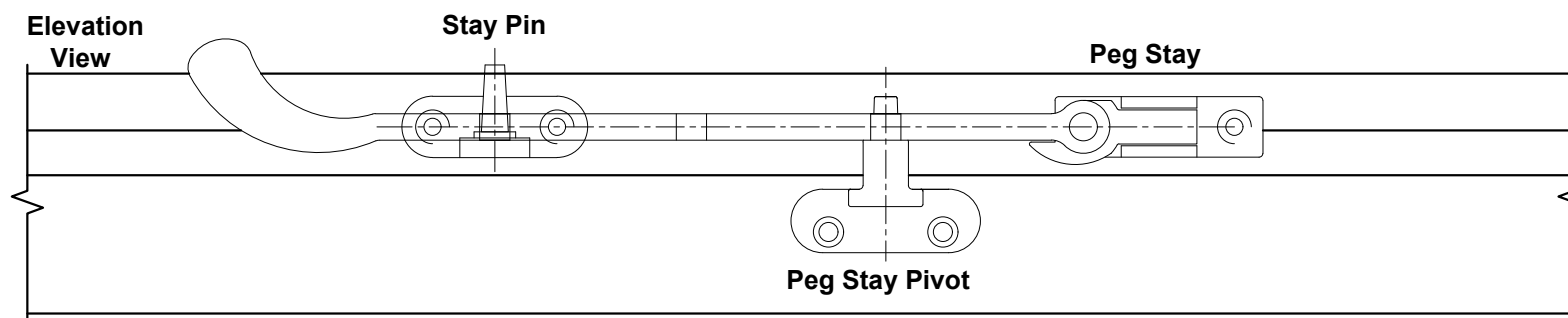


Please use the above dimensions for guidance only.
As each peg stay is hand made, the dimensions will vary slightly.

Plan View

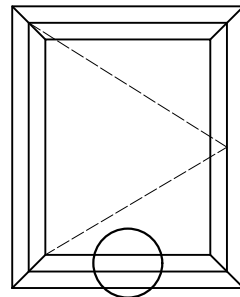


Elevation View

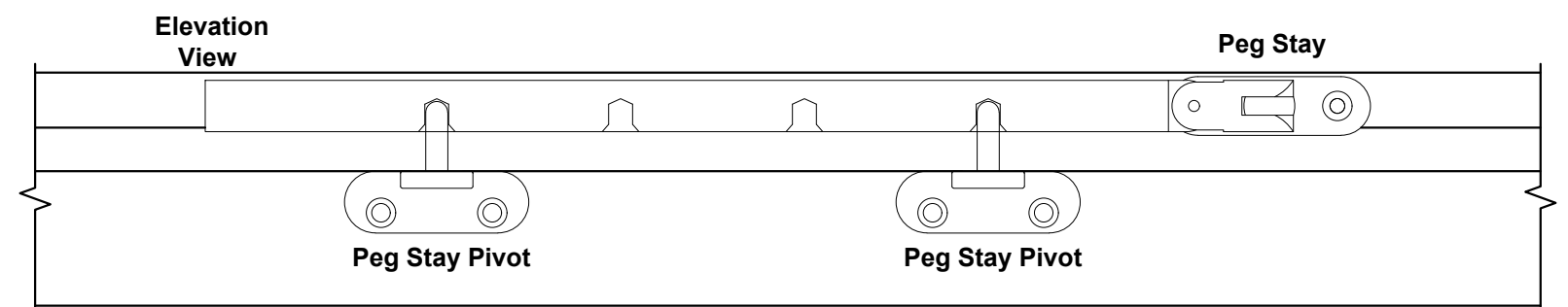
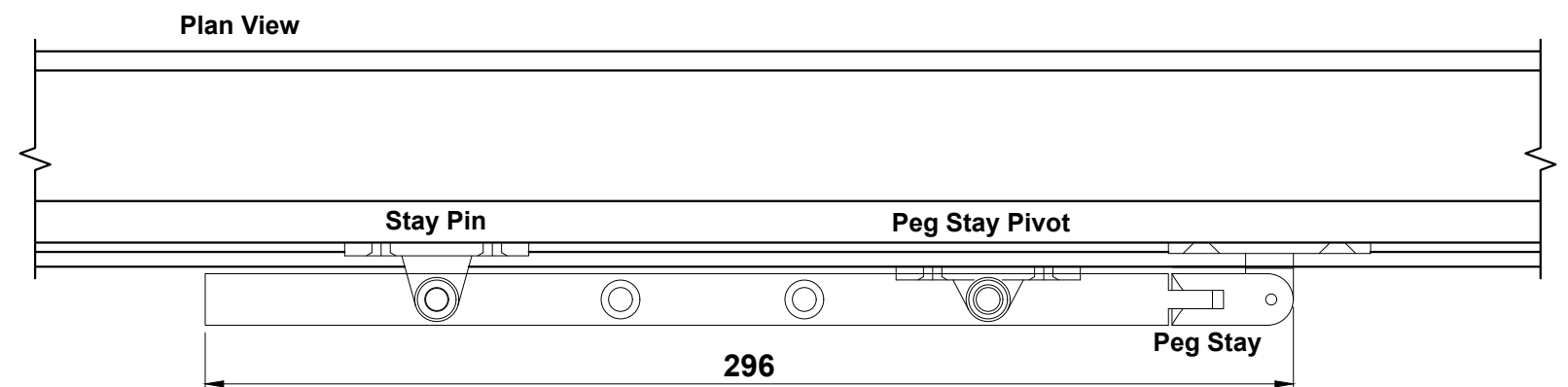
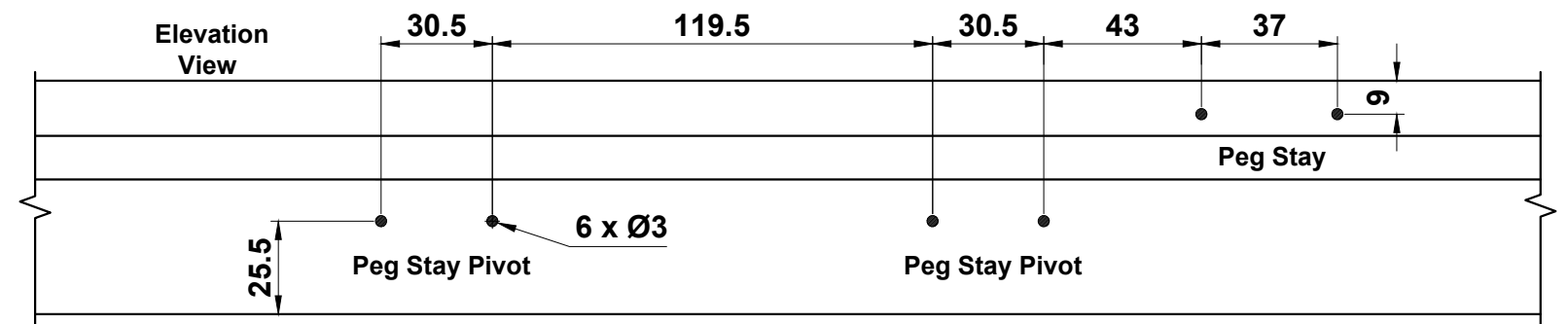
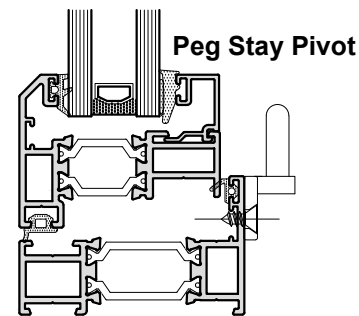
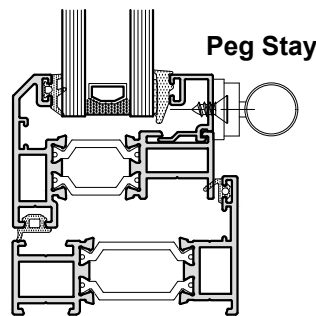


Do Not Scale From This Drawing

ACW20108 Peg Stay Fixing Details

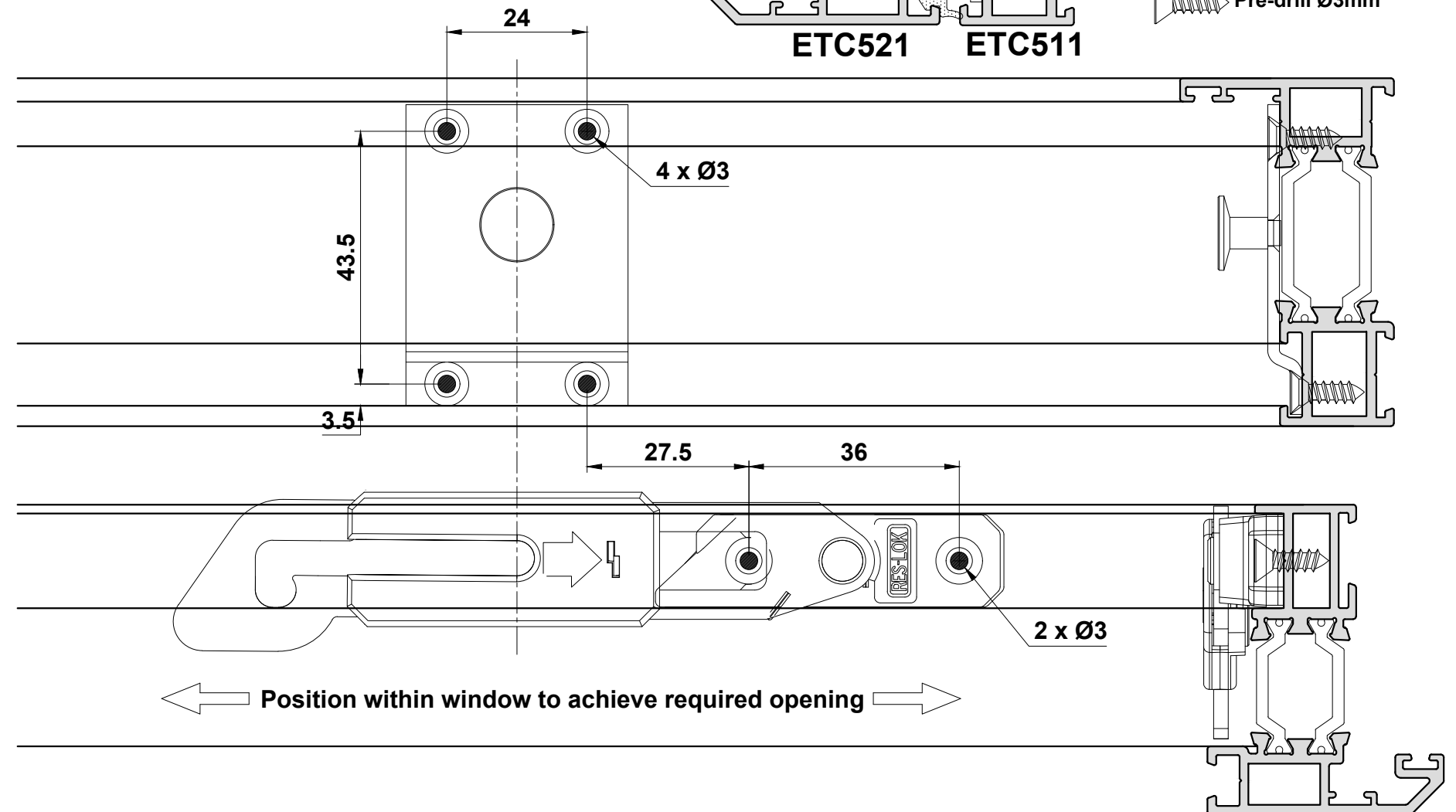
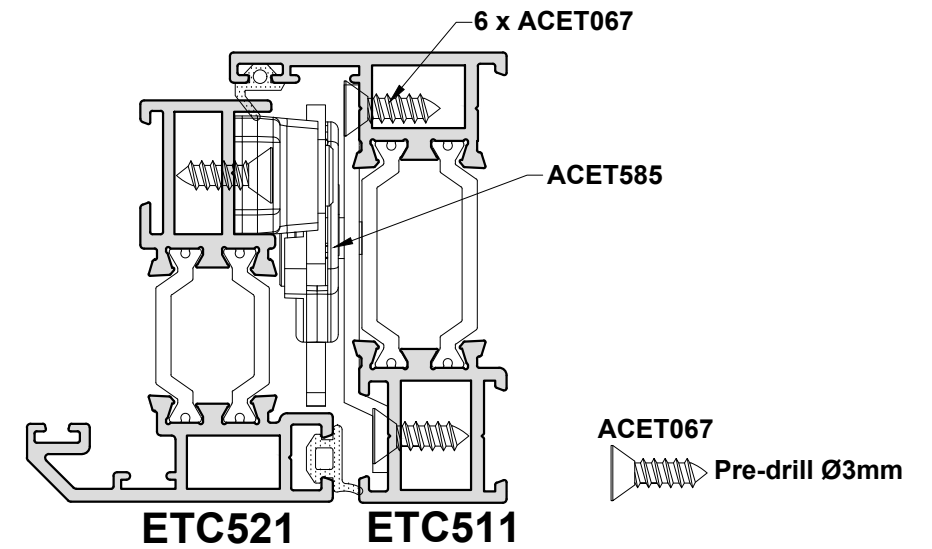
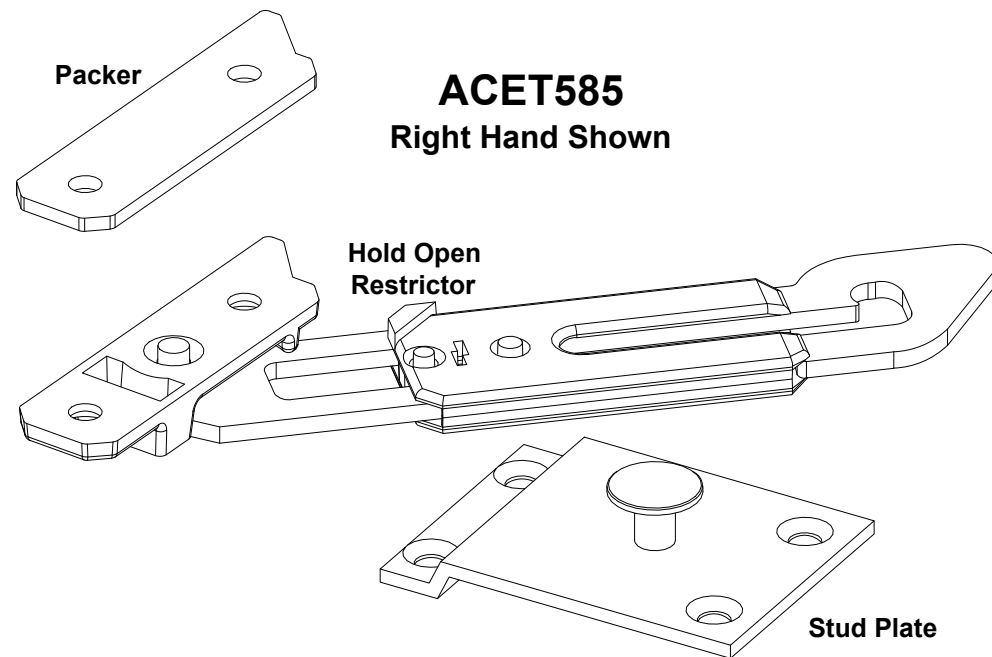
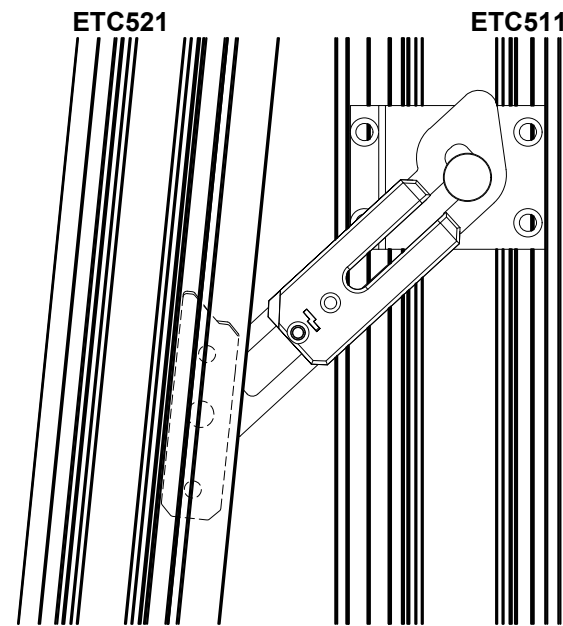


ACW20108



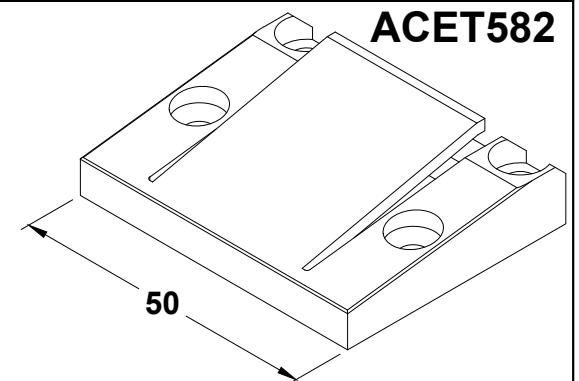
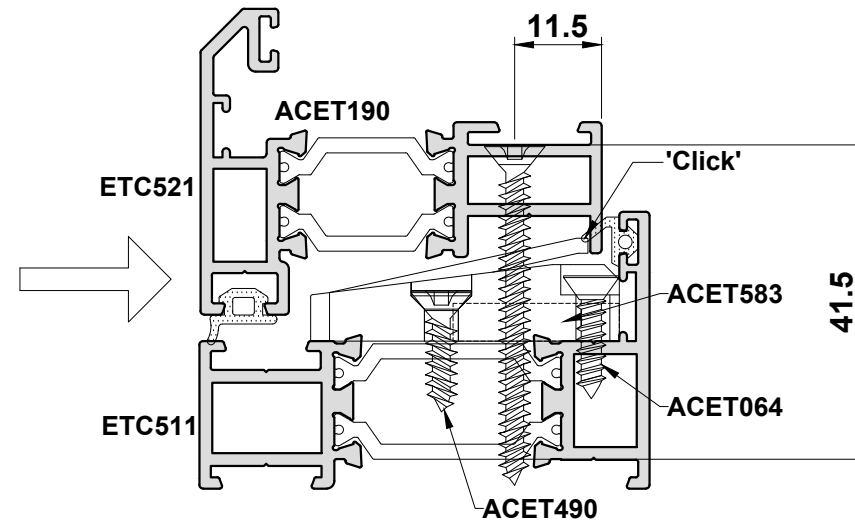
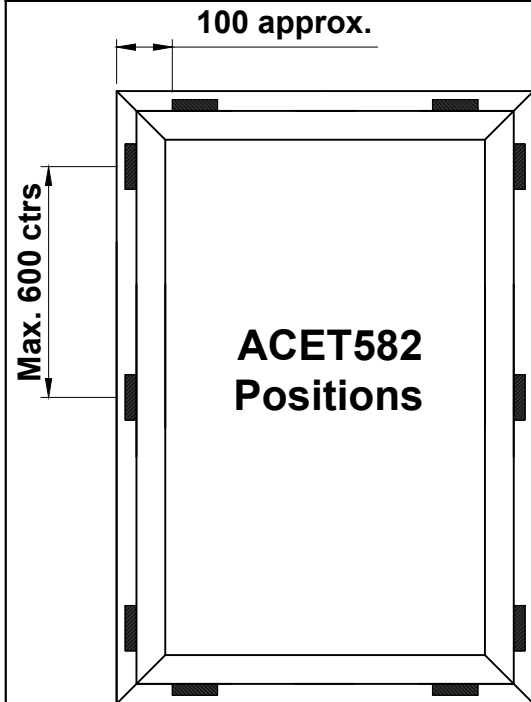
Do Not Scale From This Drawing

ACET585 Hold Open Restrictor

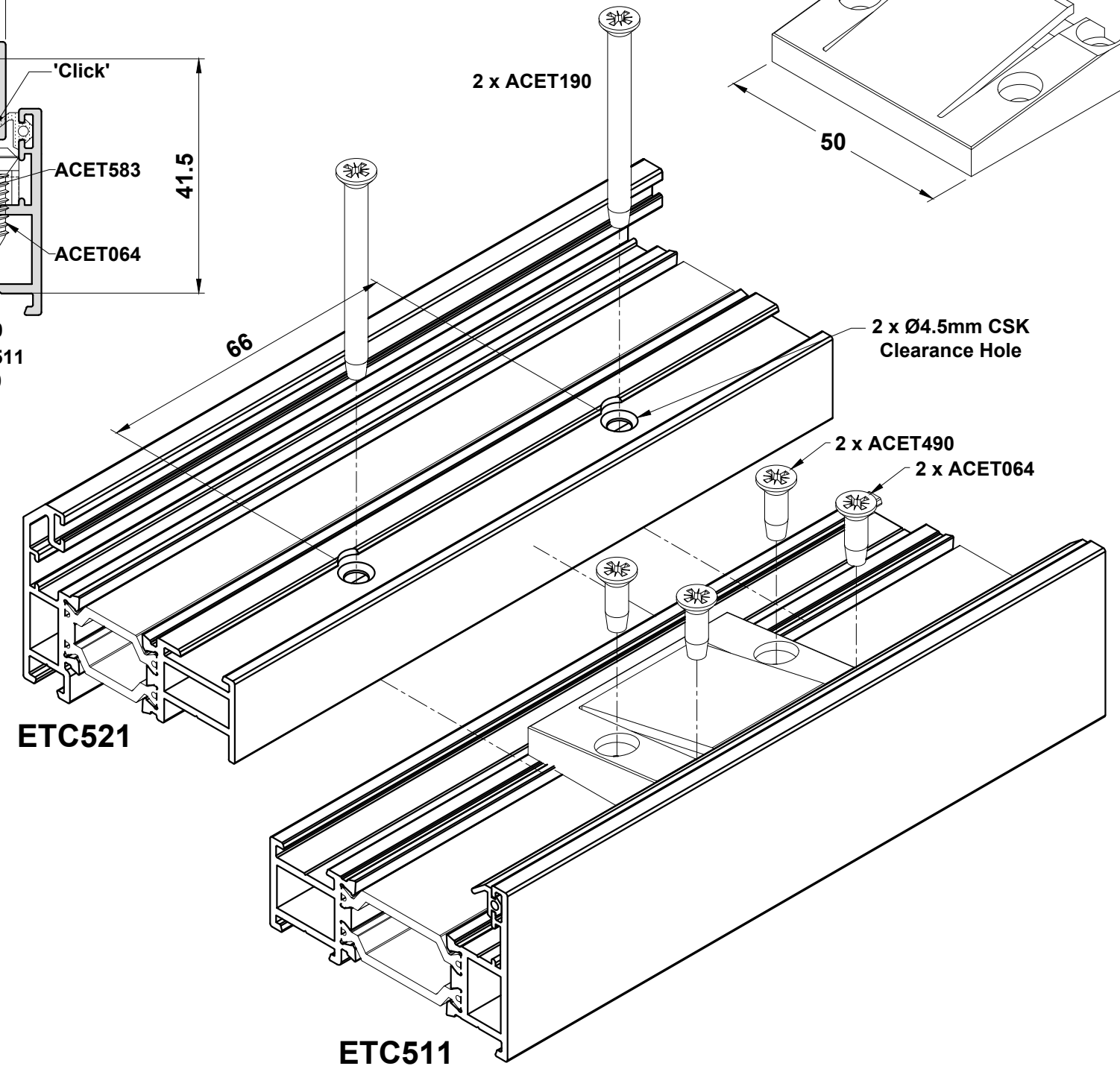
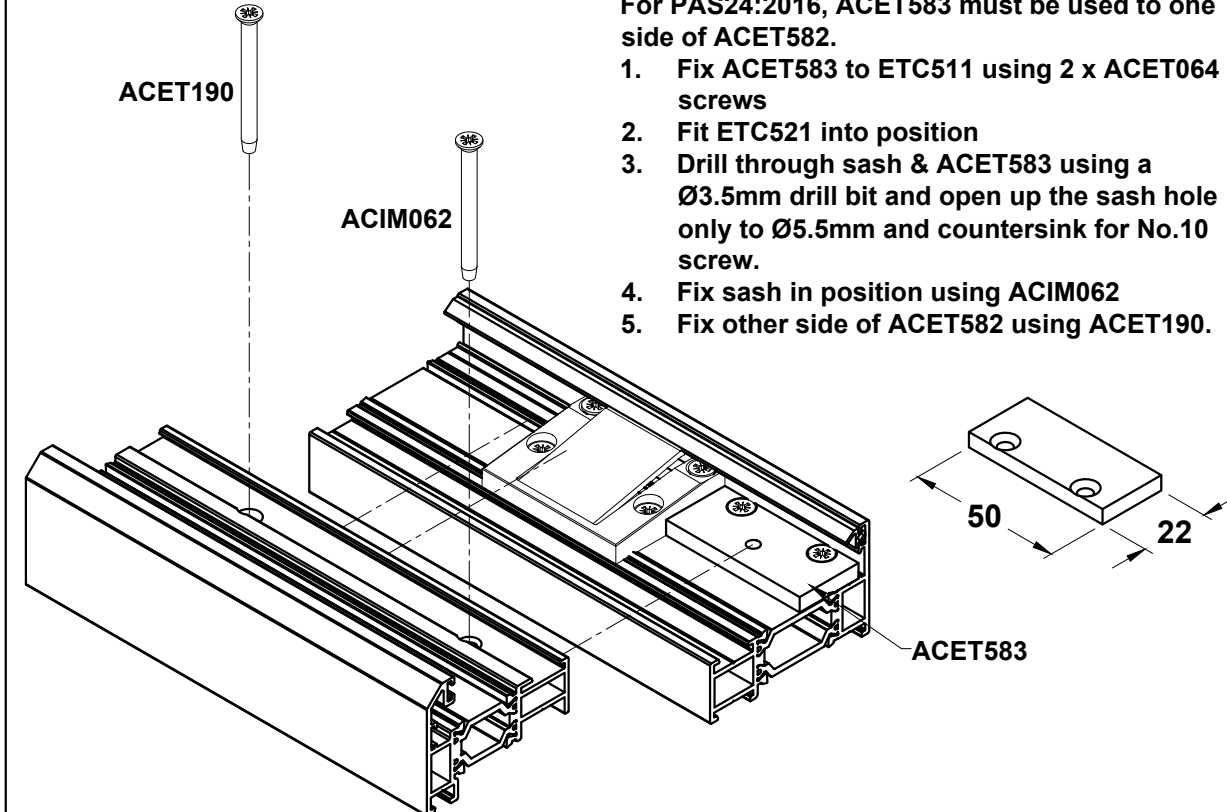


Do Not Scale From This Drawing

Dummy Sash Installation



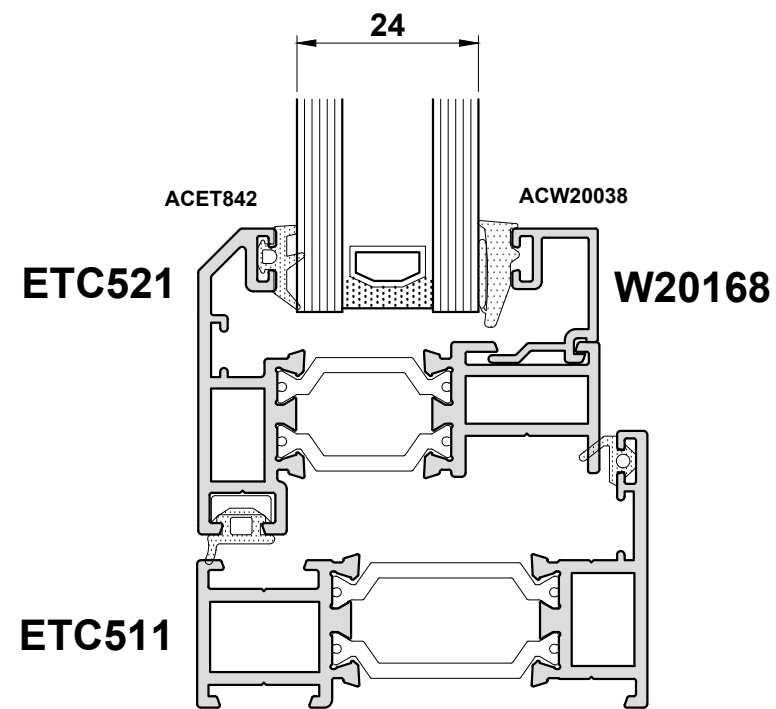
PAS24:2016 Detail



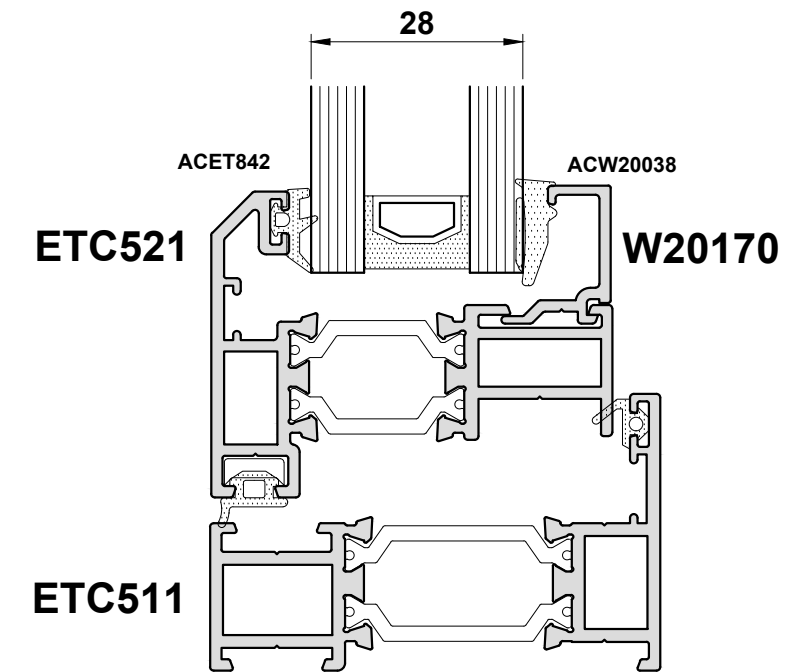
Do Not Scale From This Drawing

Glazing Details

24mm Glazing Internally Glazed



28mm Glazing Internally Glazed

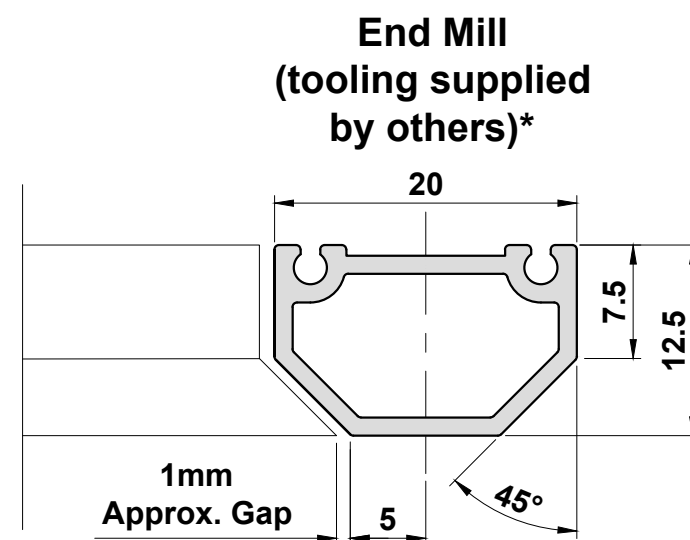
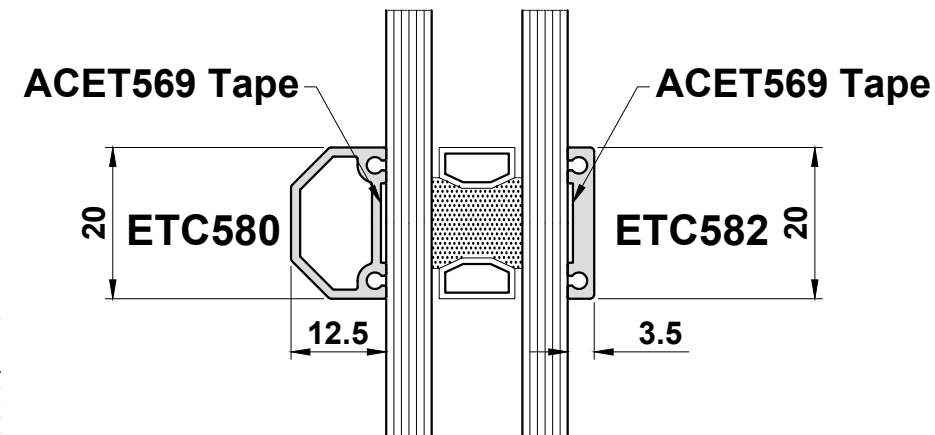
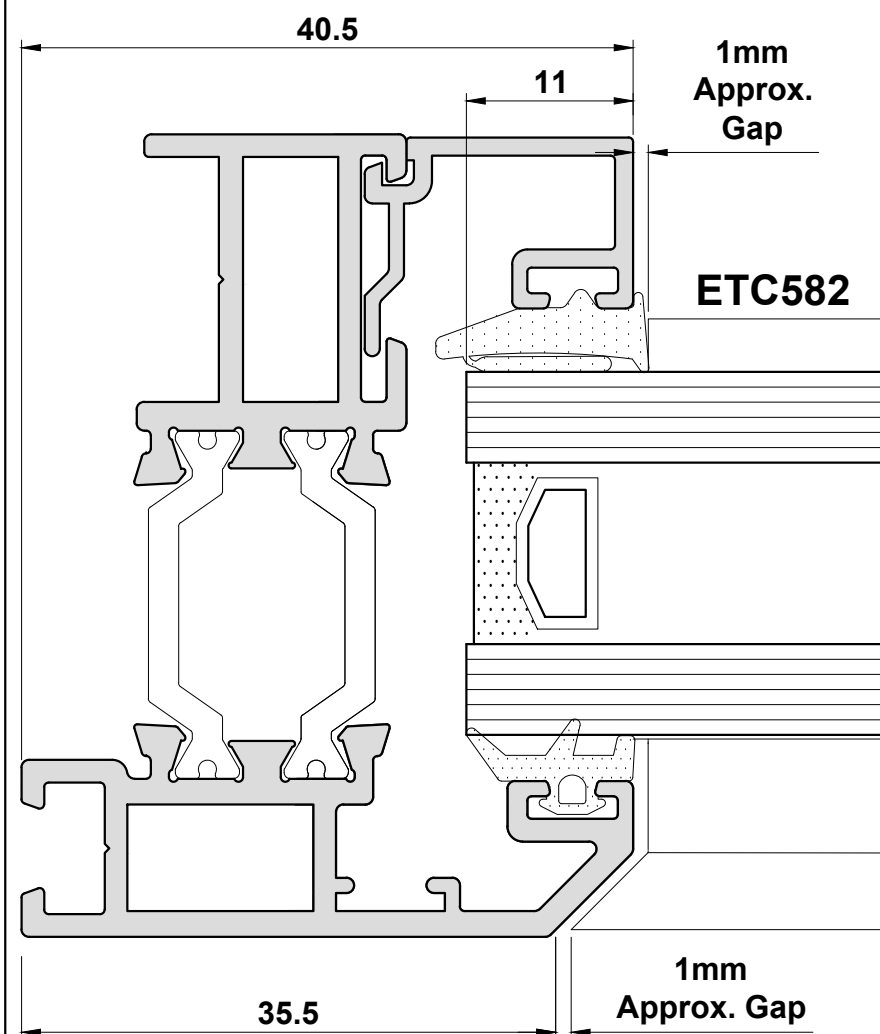


Do Not Scale From This Drawing

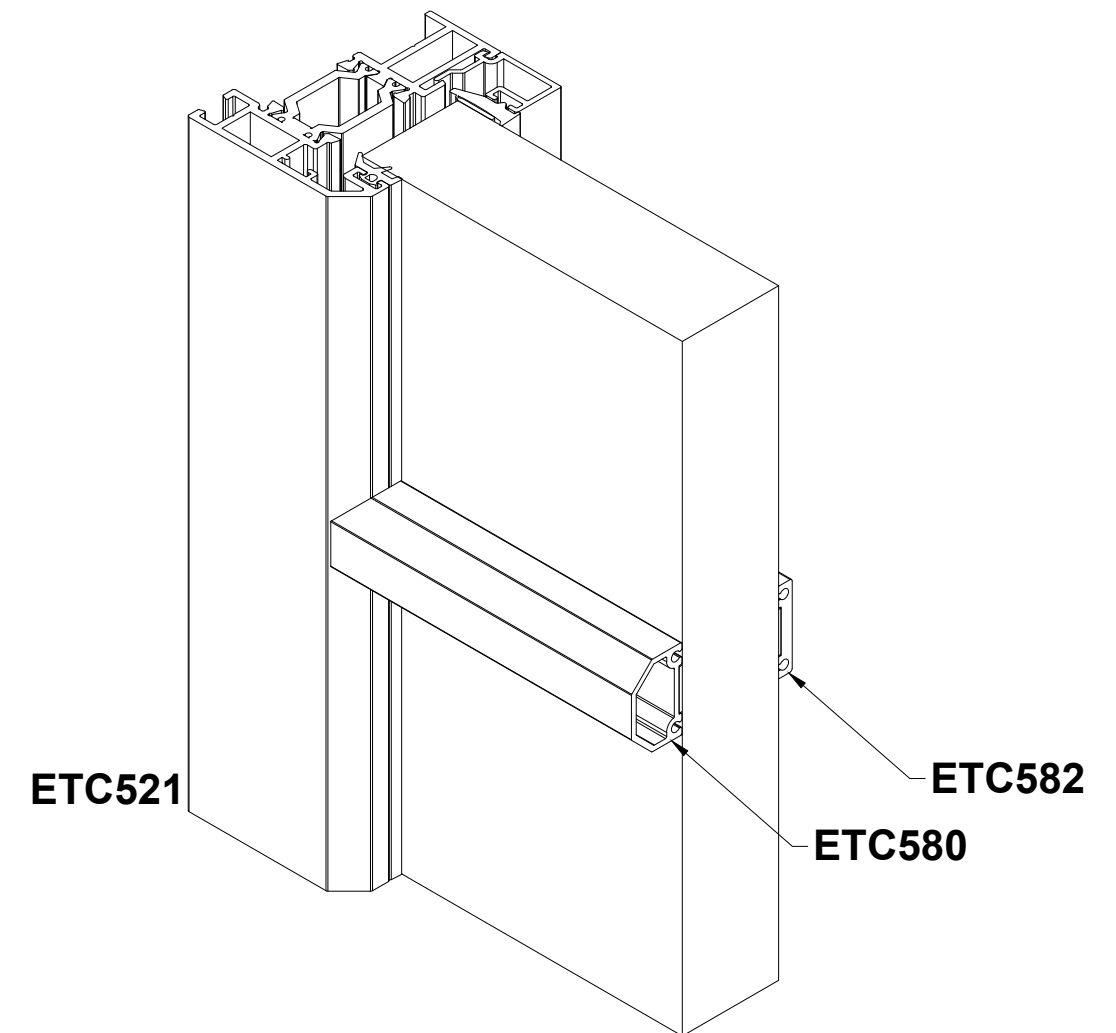
Astragal Bar Detail

Application Guide:

1. Cut the bars allowing approximately 1mm gap each side to allow for expansion
3. Ensure the surfaces are clean and dry
4. Clean the surfaces with a clean cloth & suitable solvents like alcohol or ethers
5. Apply ACET569 tape to the bars and then apply to the glass using sufficient firm pressure to ensure an adequate bond.



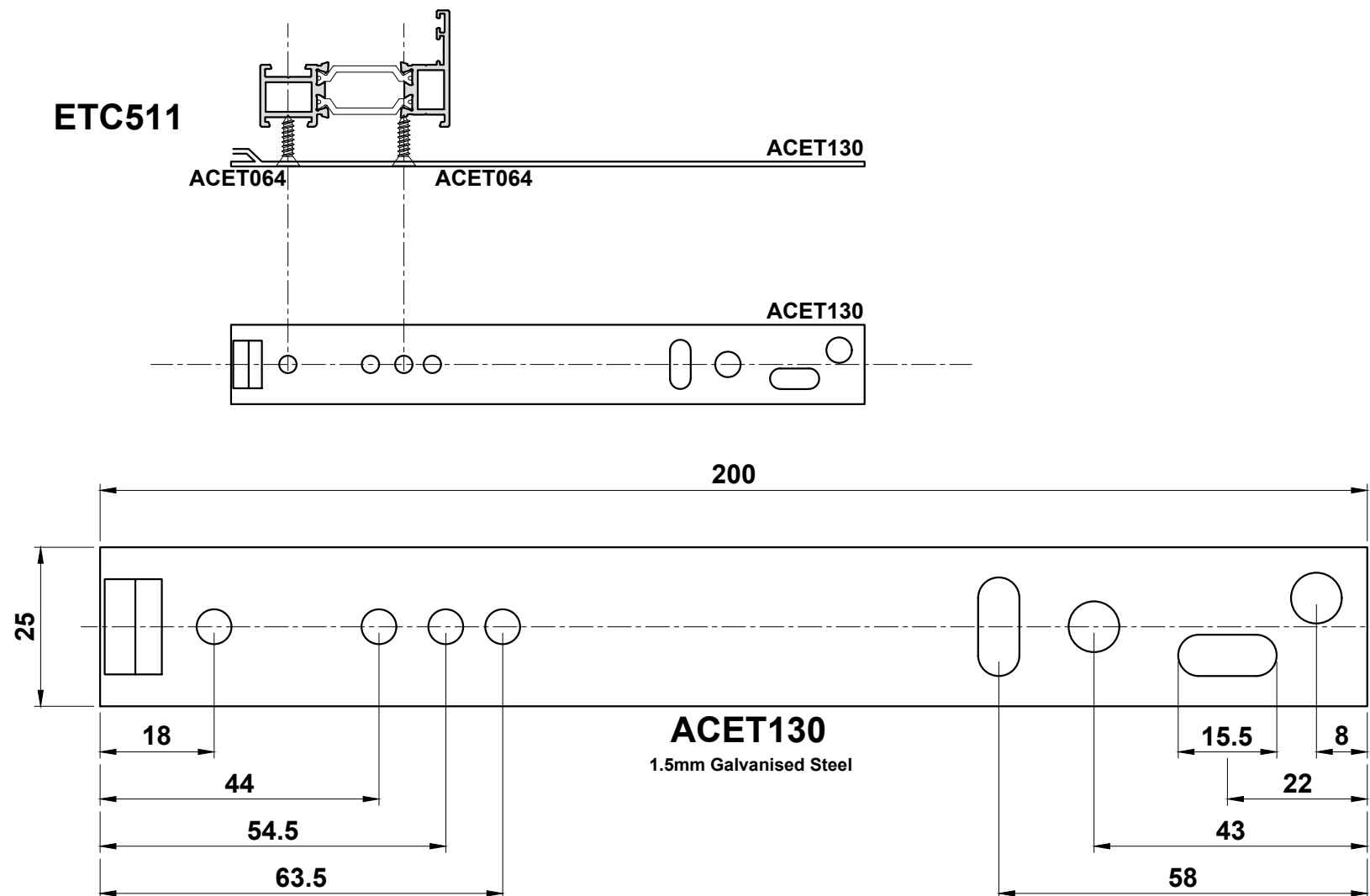
ETC580



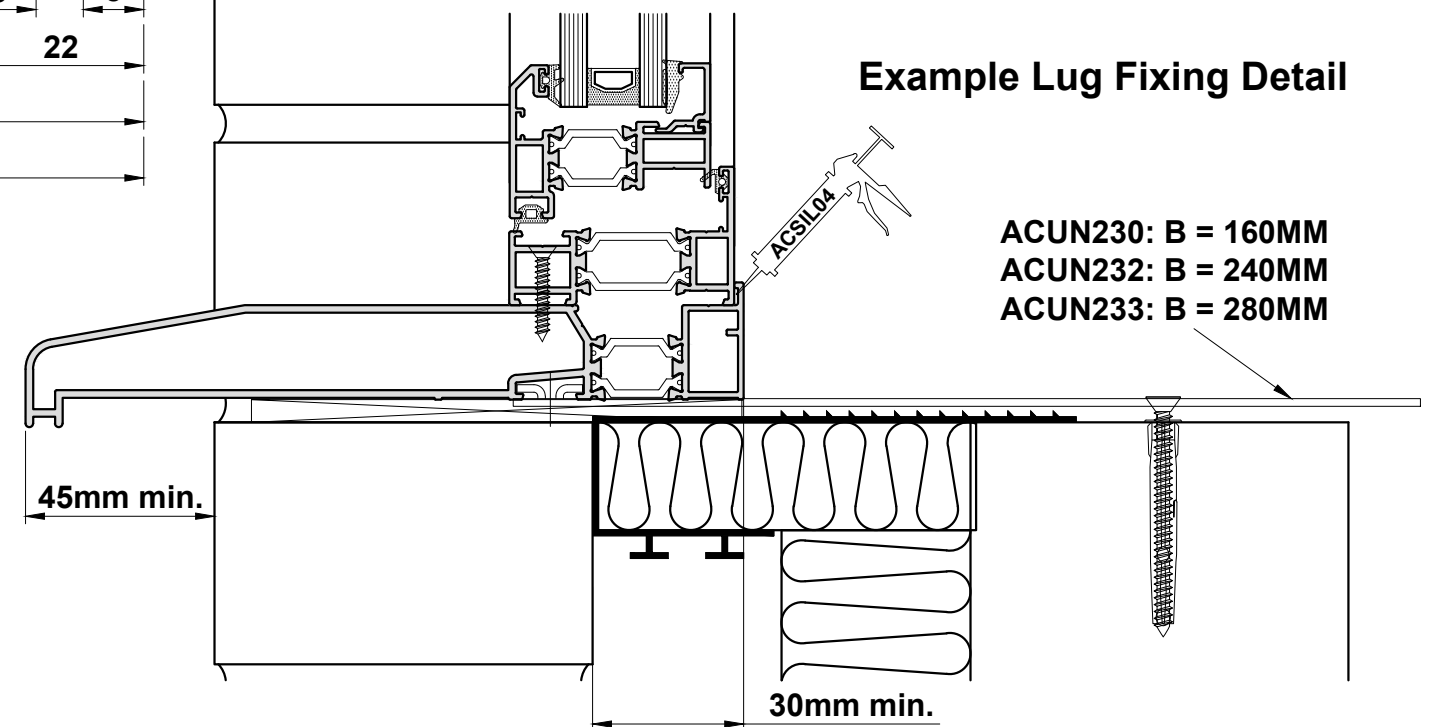
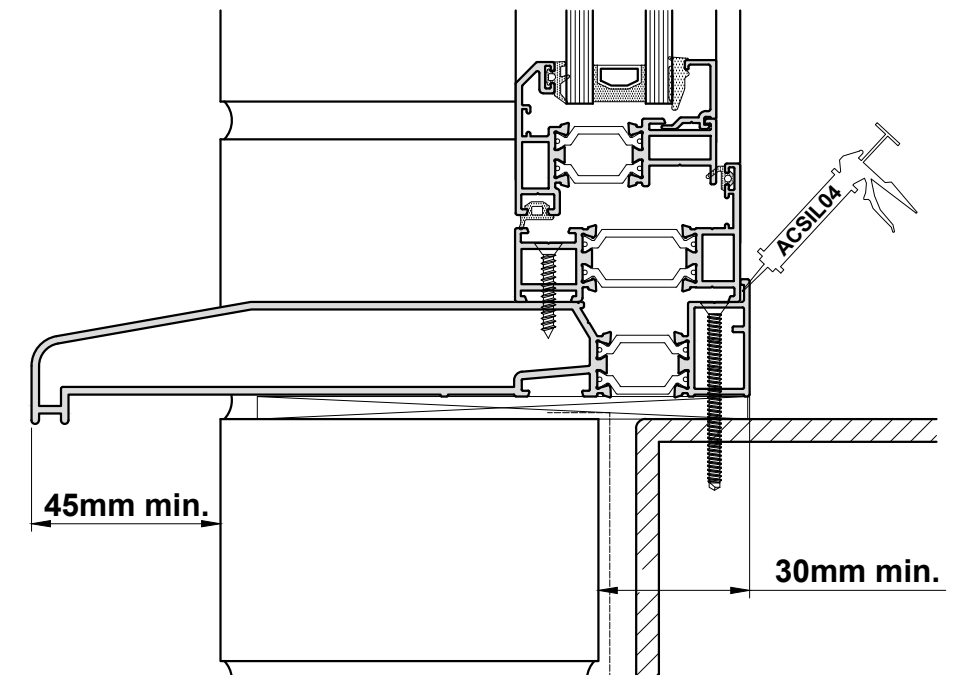
***Note:** End Mill cutters can be ordered through Smart Systems Ltd. Please contact the technical department for an order form. Standard delivery is 2-3 weeks approx.

Do Not Scale From This Drawing

ETC511



NOTE:
Fixing straps should be spaced a minimum of 150mm in from each end & at a maximum of 300mm apart.



Do Not Scale From This Drawing

Section F

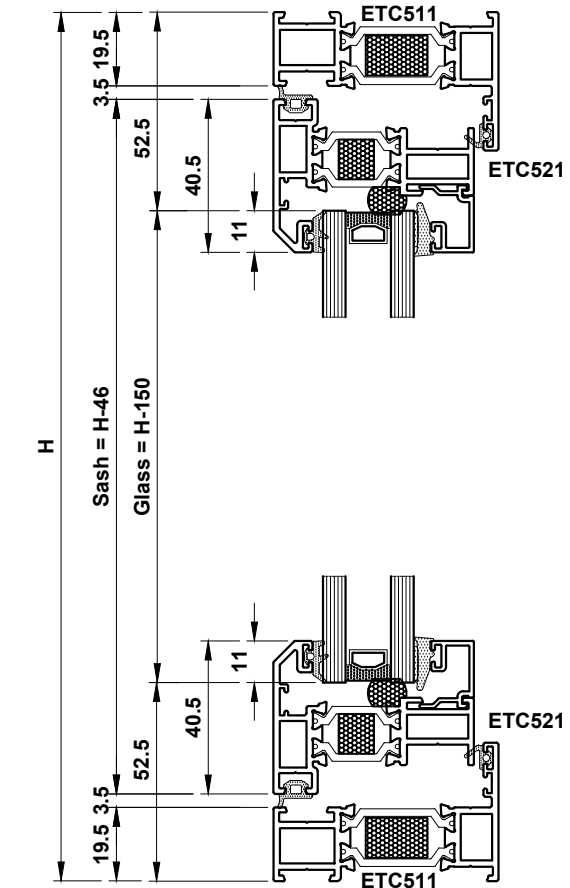
Sawing Tables

Open Out - Cutting Information

Section F

Cutting Information

PART DESCRIPTIONS		TYPICAL STYLES						
OUTER FRAME	HEAD & CILL	W	W	W	W	W	W	W
	JAMBS	H	H	H	H	H	H	H
	TRANSOM(S)		W - 39	W - 39		OF to $\mathcal{C}M$ - 27.5		
	MULLION(S)				H - 39	H - 39	H - 39	
VENT (1)	HORIZONTAL COMPONENTS	W - 46	W - 46	W - 46	OF to $\mathcal{C}M$ - 34.5	OF to $\mathcal{C}M$ - 34.5	OF to $\mathcal{C}M$ - 34.5	W - 46
	VERTICAL COMPONENTS	H - 46	OF to $\mathcal{C}T$ - 34.5	$\mathcal{C}T$ to $\mathcal{C}T$ - 22.5	H - 46	H - 46	H - 46	H - 46
VENT (2)	HORIZONTAL COMPONENTS		W - 46			OF to $\mathcal{C}M$ - 34.5	$\mathcal{C}M$ to $\mathcal{C}M$ - 22.5	
	VERTICAL COMPONENTS		OF to $\mathcal{C}T$ - 34.5			OF to $\mathcal{C}T$ - 34.5	H - 46	
VENT (1)	GLASS WIDTH	W - 105	W - 105	W - 105	OF to $\mathcal{C}M$ - 93.5	OF to $\mathcal{C}M$ - 93.5	OF to $\mathcal{C}M$ - 93.5	W - 105
	GLASS HEIGHT	H - 105	OF to $\mathcal{C}T$ - 93.5	$\mathcal{C}T$ to $\mathcal{C}T$ - 81.5	H - 105	H - 105	H - 105	H - 105
VENT (2)	GLASS WIDTH		W - 105	W - 105		OF to $\mathcal{C}M$ - 93.5	LM to $\mathcal{C}M$ - 81	
	GLASS HEIGHT		OF to $\mathcal{C}T$ - 93.5	OF to $\mathcal{C}T$ - 93.5		OF to $\mathcal{C}T$ - 93.5	H - 105	



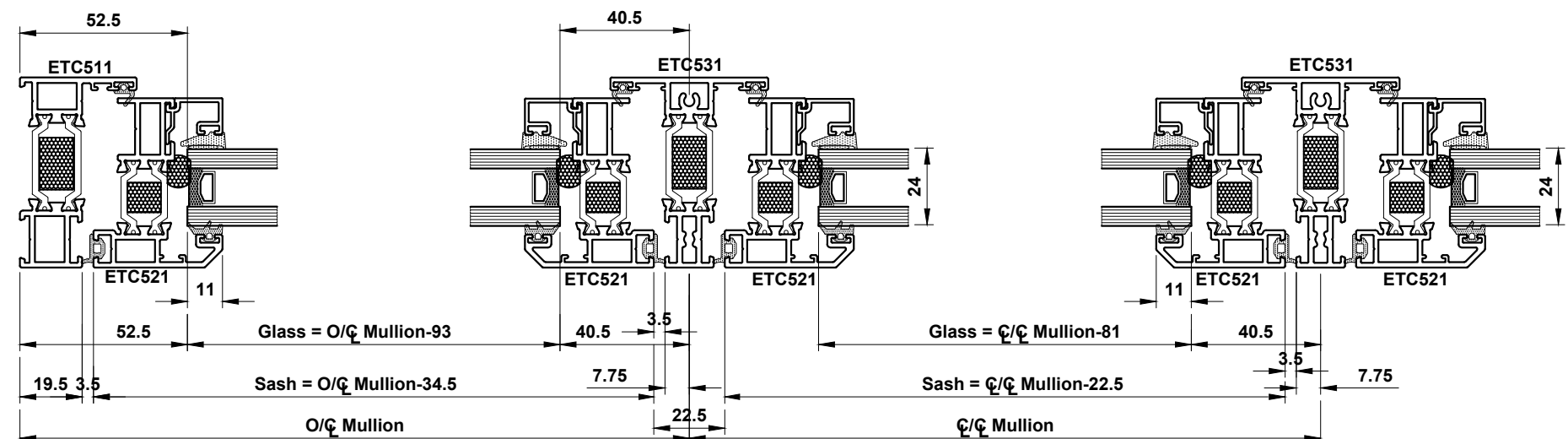
Please Note: Dummy Vent must be used for Fixed Light applications (see Page E17)

LEGEND:

W = Overall window outer frame width - outside
H = Overall window outer frame height - outside
 $\mathcal{C}$ = Centre line of transom/mullion
O/F = Extreme edge of outer frame

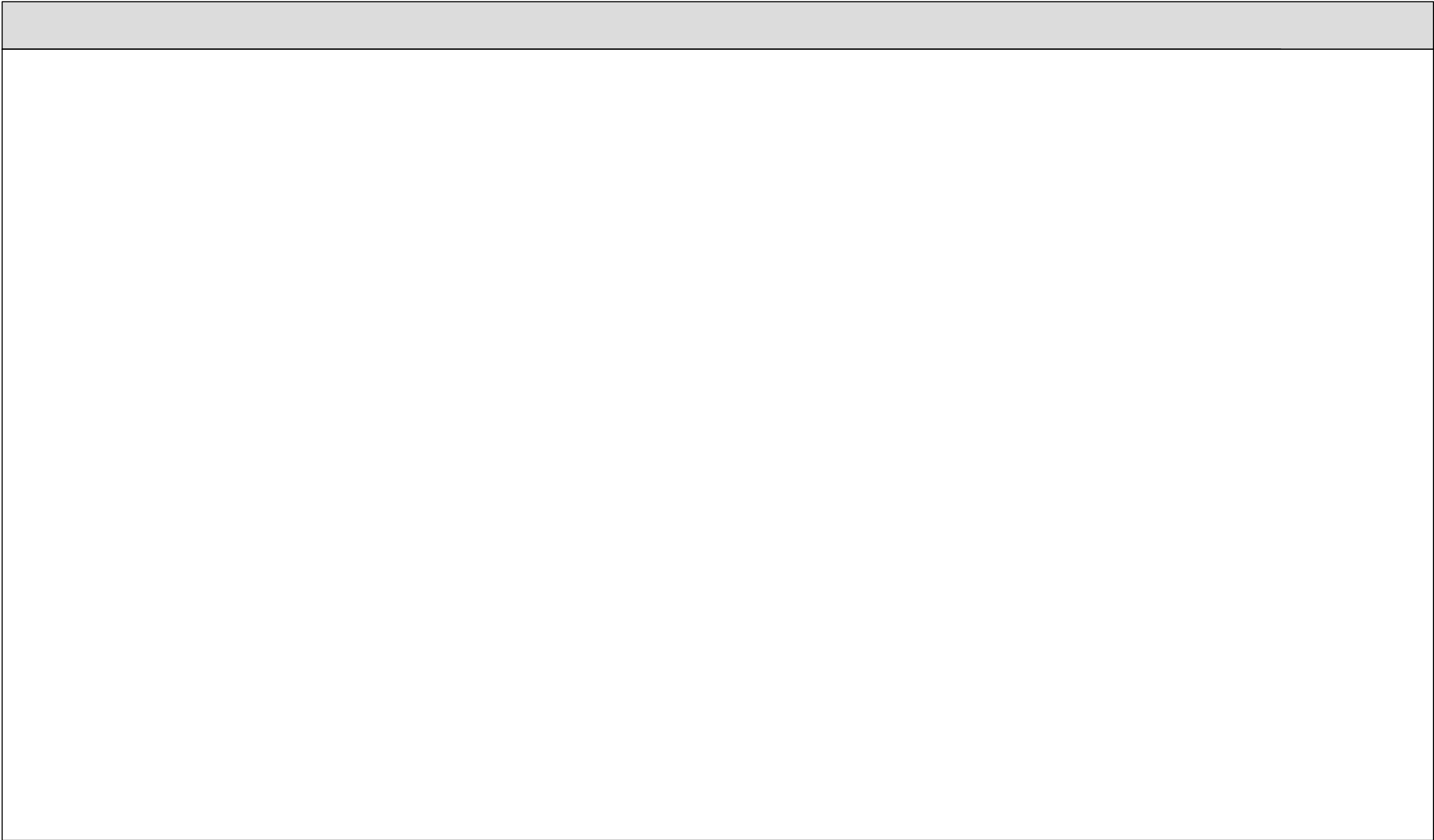
Sections:

Outerframe: ETC511
Sash: ETC521
Transom/Mullion: ETC531



Do Not Scale From This Drawing

SAWING TABLES : OPEN OUT



Do Not Scale From This Drawing