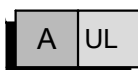


Main Index



Index..... A01 - A02

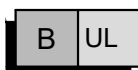


Profiles

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Crimping Details..... E03

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Sawing Tables

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[illegible]

Specification

GENERAL DESCRIPTION

The "Visotherm" window system described in this manual is suitable for domestic or commercial applications as replacement windows for existing buildings, and for installation into new buildings.

The system incorporates internally beaded vent frames suitable for cockspur and shootbolt locking.

The low line gaskets and extended polyamide thermal breaks help to provide excellent U Values and Window Energy Rating capable of achieving an 'A' Rating when used in conjunction with the correct double glazed unit. Please refer to the WER calculator for guidance.

Visotherm provides the option of mechanical joints using punch tooling on the outer frames & crimping corners on all sections.

Applications:

Windows:

- Fixed windows
- Side hung open out casements
- Top hung open out casements

PROFILE SPECIFICATION

The window frame is constructed of aluminium alloy extrusion to BS EN 755-9 and BS EN 12020, extruded to 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:-

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

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 outer frame corner joints can be made using mechanically fixed corner cleats by punching the corners using the relevant punch tooling shown in section E of this manual. Alternatively, all corners can be joined using the Visotherm crimping cleats 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.

RECOMMENDED DESIGN LIMITATIONS

WINDOWS

	Top Hung Vents	Side Hung Vents
Minimum Width:	239mm	327mm
Maximum Width:	1400mm	838mm
Minimum Height:	315mm	239mm
Maximum Height:	2500mm	1400mm
Maximum Weight:	180kg	55kg

See page B15 & B16 for hardware limitations.

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

Specification

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.

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.

The cutting sizes produce vent frames with a cavity of 17mm.

When fixing, the friction stays into both the outer and vent frame, care should be taken to ensure that holes are located on 'V' grooves in the aluminium extrusions.

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 reverse adaptor 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.

Specification

Kitemark™ Certificate

No. KM 81580

BS 4873:2016 / PAS 24:2016

**Hardware - Eco Futural Aluminium Alloy System
Casement Windows***

Hardware Reference	Hardware Supplier	Fixing Specification	Fixing Supplier
Securistyle Defender Stays Nico Friction Hinges	Smart Systems	ACET070	Smart Systems
Securistyle Vector Hinge Protectors	Smart Systems	ACET066	Smart Systems
ERA Lock ACEF951-956	Smart Systems	Espagnolette & Keeps ACET066	Smart Systems
ACET081/ACET165 Key Locking Handles	Smart Systems	ACET069	Smart Systems
Run-Up Blocks 4 off Per Sash	*		

*Glass retention as specified for the fixed windows.

Fixed Windows

Glass Retention: External: Glazing beads and Glaslok Securi-clip glazing clips
Internal: Glazing beads

Multilight Windows Comprising Opening Light(s) and / or Dummy Vent(s) or Fixed Light(s)

Hardware / Fixing Requirements Are As Specified For Opening, Dummy Vent And Fixed Window Types.

Kitemark™ Certificate

No. KM 81580

BS 4873:2016 / PAS 24:2016

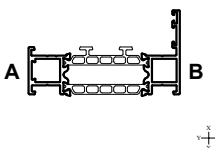
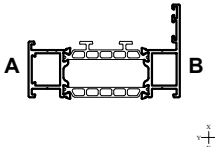
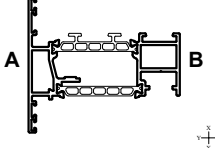
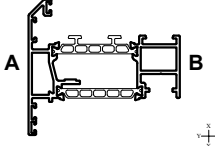
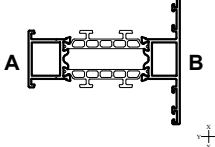
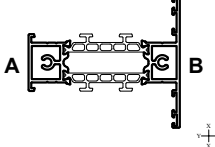
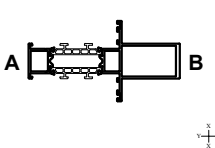
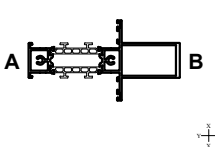
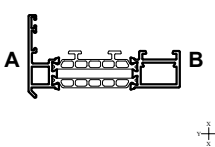
Size Limitations And Performance Characteristics Eco Futural Aluminium Alloy Window System

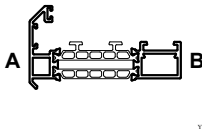
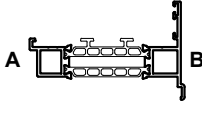
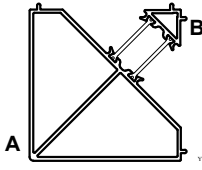
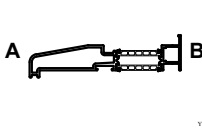
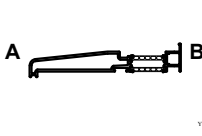
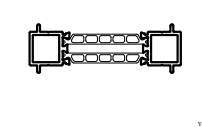
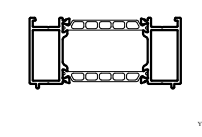
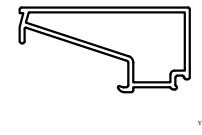
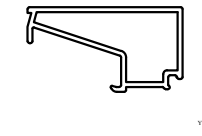
Window Type	Width (mm) - Maximum	Height (mm) - Maximum	Area (m ²) - Maximum	Friction Stays (Up To & Incl.)	Transom / Mullion Length (mm) Inc. Frame - Maximum	Air Permeability Classification	Watertightness Classification	Resistance To Wind Classification	Exposure Category As Given In Table 1 Of BS6375-1:2009
Sash Dimensions For Windows With Approved Sash Profiles									
Projecting Top Hungs	1440	2500	-	24"	-	3	8A	A5	2000
Projecting Side Hungs	840	1440	-	16"	-	4	E1050	AE2400	2000+
Overall Dimensions For Windows With Approved Outer Frame Profiles									
Fixeds	2100	2100	4.2	-	-	3	E1050	AE	2000
Overall Dimensions For Approved Outer Frames & Transom / Mullion Profiles									
Transom / Mullion	2400	2100	3.1	-	1345	4	E1050	AE	2000

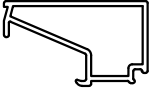
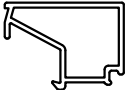
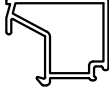
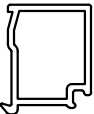
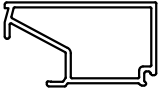
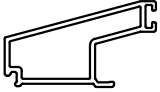
Visotherm Window U Values

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

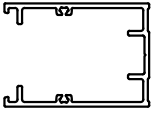
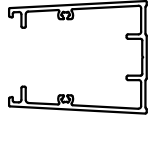
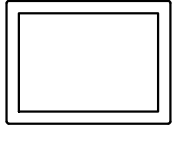
PROFILES : TECHNICAL INFORMATION

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UL010		A13	320	75	36.76 — 8.32	3.92 — 2.56	6.5	1	✓	✓	✓	✓	✓
UL011		A13	336	83	40.04 — 9.12	5.52 — 3.15	6.5	1	✓	✓	✓	✓	✓
UL020		A14	463	114	49.58 — 10.64	10.61 — 3.03	6.5	1	✓	✓	✓	✓	✓
UL023		A14	486	117	50.33 — 10.64	12.49 — 3.53	6.5	1	✓	✓	✓	✓	✓
UL030		A15	381	108	42.83 — 8.89	8.2 — 2.38	6.5	1	✓	✓	✓	✓	✓
UL031		A15	381	108	48.34 — 10.26	8.22 — 2.38	6.5	1	✓	✓	✓	✓	✓
UL032		A16	480	207	117.87 — 16.13	12.39 — 3.59	6.5	1	✓	✓	✓	✓	✓
UL033		A16	480	207	129.25 — 18.36	12.41 — 3.6	6.5	1	✓	✓	✓	✓	✓
UL040		A17	292	50	33.0 — 7.53	2.88 — 1.77	6.5	1	✓	✓	✓	✓	✓
								A = Outside B = Inside		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
UL043		A17	315	54	33.97 — 7.53	3.82 — 2.18	6.5	1	✓	✓	✓	✓	✓
UL045		A17	345	87	31.78 — 6.49	3.59 — 1.58	6.5	1	✓	✓	✓	✓	✓
UL048		A18	428	161	67.01 — 14.96	67.01 — 17.59	6.5	1	✓	✓	✓	✓	✓
UL050		A24	423	184	168.01 — 21.16	6.22 — 3.42	6.5	1	✓	✓	✓	✓	✓
UL051		A24	503	224	330.03 — 32.58	8.14 — 4.55	6.5	1	✓	✓	✓	✓	✓
UL055		A18	224	37	26.65 — 6.66	1.29 — 1.13	6.5	1	✓	✓	✓	✓	✓
UL056		A23	300	71	38.49 — 9.62	5.74 — 3.15	6.5	1	✓	✓	✓	✓	✓
UL063		A19	143	64	- — -	- — -	6.5	1	✓	✓	✓	✓	
UL064		A19	136	60	- — -	- — -	6.5	1	✓	✓	✓	✓	
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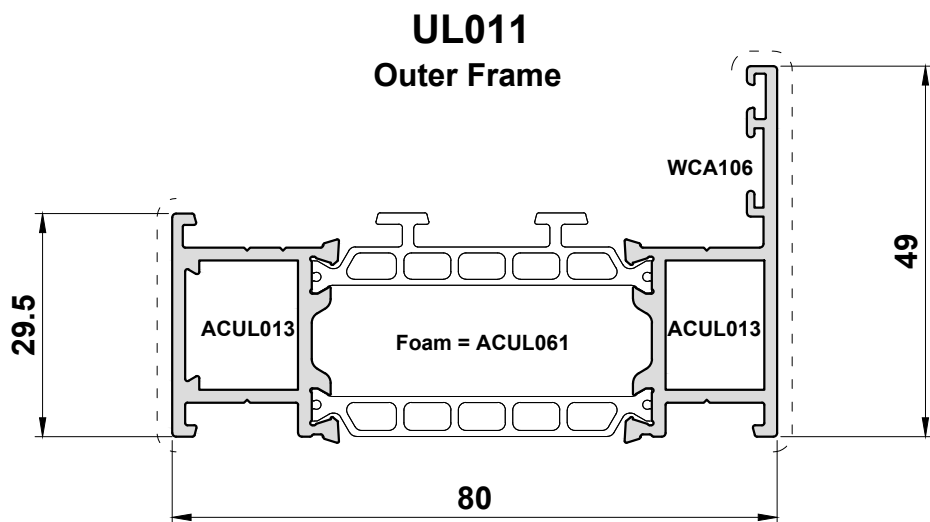
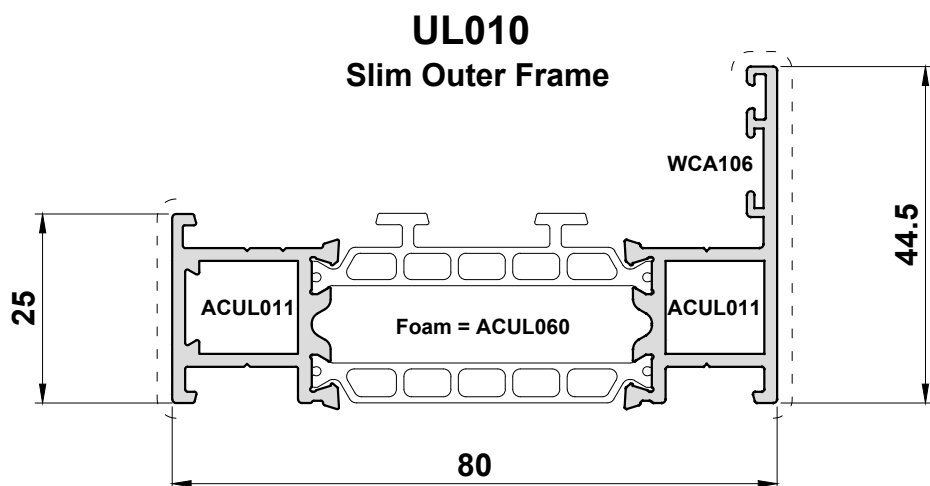
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UL066		A19	118	51	- - -	- - -	6.5	1	✓	✓	✓	✓	
UL067		A20 & A21	111	46	- - -	- - -	6.5	1	✓	✓	✓	✓	
UL068		A20 & A21	102	41	- - -	- - -	6.5	1	✓	✓	✓	✓	
UL069		A22	87	37	- - -	- - -	6.5	1	✓	✓	✓	✓	
UL074		A22	137	59	- - -	- - -	6.5	1	✓	✓	✓	✓	
UL075		A23	134	51	- - -	- - -	6.5	1	✓	✓	✓	✓	
UL076		A22	124	51	- - -	- - -	6.5	1	✓	✓	✓	✓	
UL077		A23	122	45	- - -	- - -	6.5	1	✓	✓	✓	✓	
								A = Outside B = Inside		MF = Mill Finish SA = Silver Anodised KL = Basic Colour HP = Special Colour M = Dual Colour			

PROFILES : TECHNICAL INFORMATION

Number	Picture	Page	Perim. mm	Mec. mm	lx(cm4) wx(cm3)	ly(cm4) wy(cm3)	Length	Pack pr.	MF	SA	KL	HP	M
UN500		A25	137.3	-	- — -	- — -	6.5	1	✓	✓	✓	✓	
UN501		A25	135.9	45	- — -	- — -	6.5	1	✓	✓	✓	✓	
UN510		A25	374.5	113	12.2 — 3.8	9.5 — 4.8	6.5	1	✓	✓	✓	✓	
UN511		A25	394.4	113.1	12.9 — 4.0	11.6 — 5.1	6.5	1	✓	✓	✓	✓	
UTL080		A25	139.2	139.2	8.2 — 4.1	5.1 — 3.4	6.5	1	✓				
								A = Outside B = Inside		MF = Mill Finish SA = Silver Anodised KL = Basic Colour HP = Special Colour M = Dual Colour			

Primary Visible Side

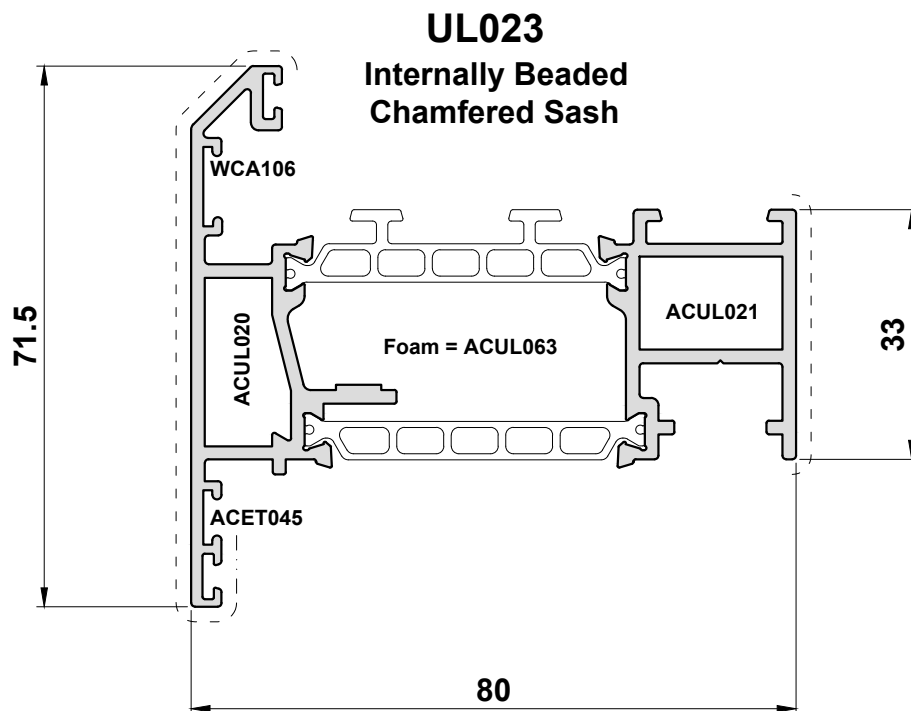
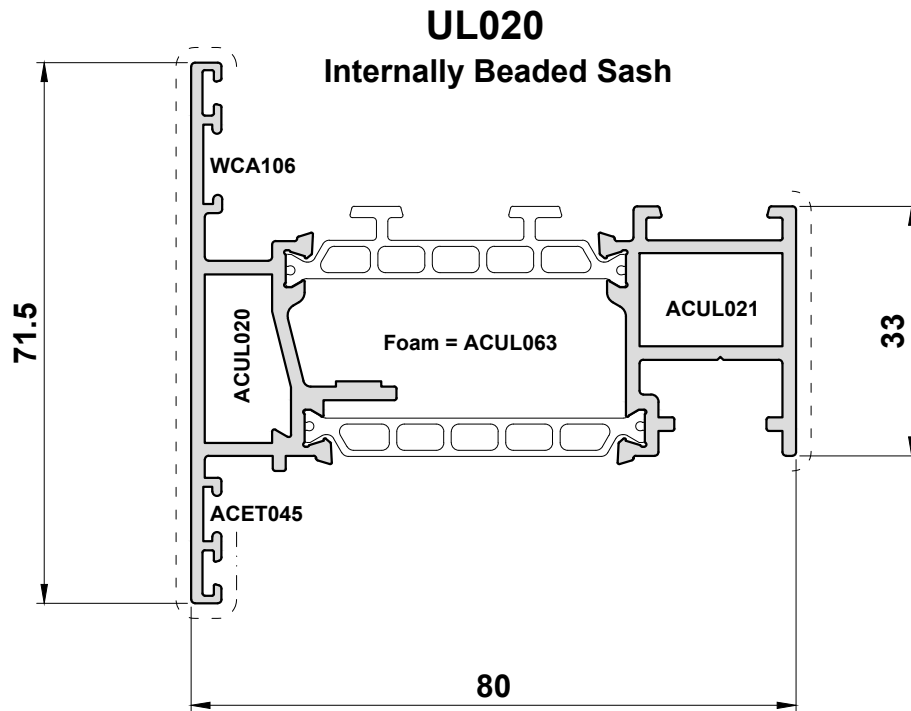
Secondary Visible Side



Scale 1:1

Primary Visible Side

Secondary Visible Side

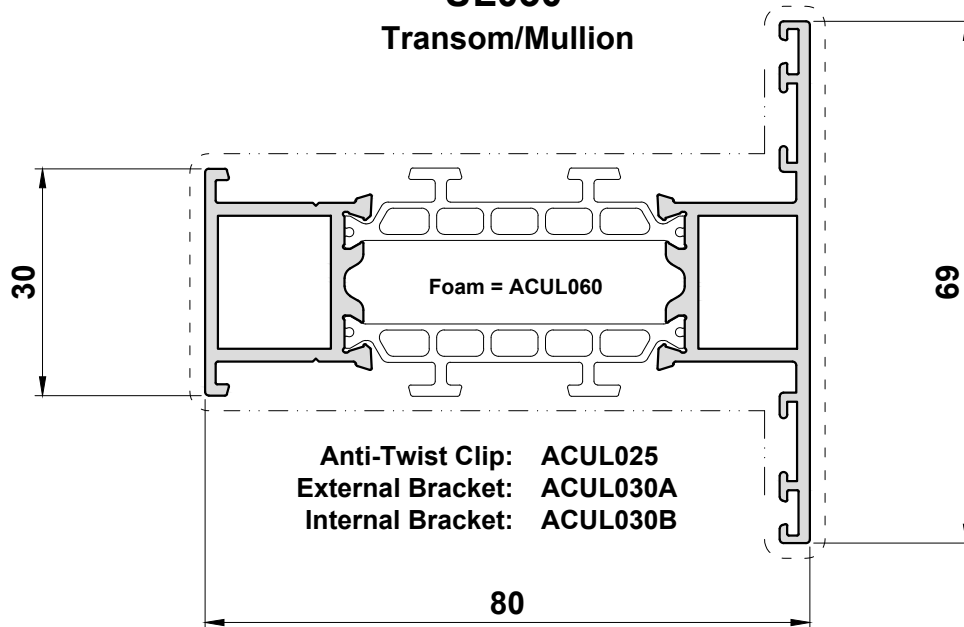


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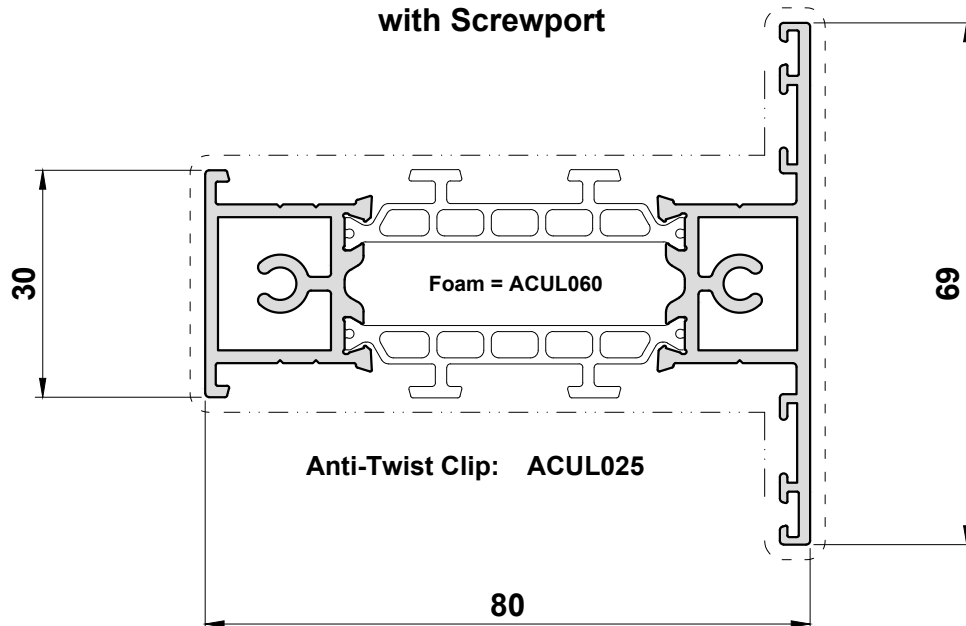
Primary Visible Side

Secondary Visible Side

UL030
Transom/Mullion



UL031
Transom/Mullion
with Screwport



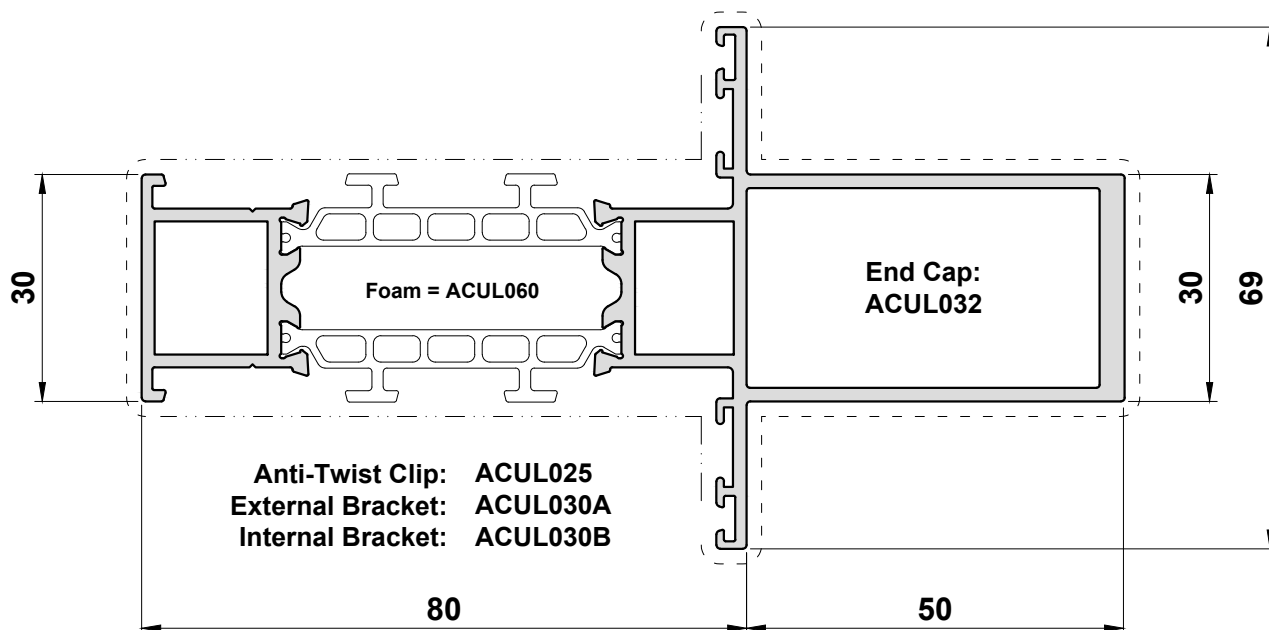
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Primary Visible Side

Secondary Visible Side

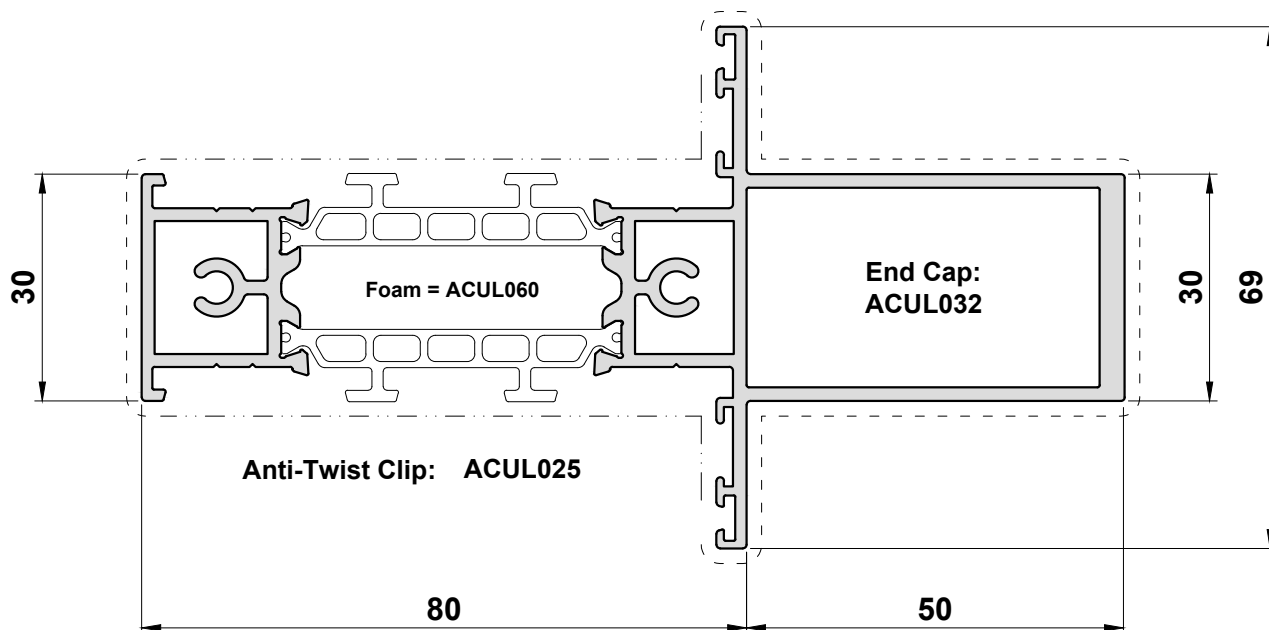
UL032

Reinforced Transom/Mullion



UL033

Reinforced Transom/Mullion with Screwport



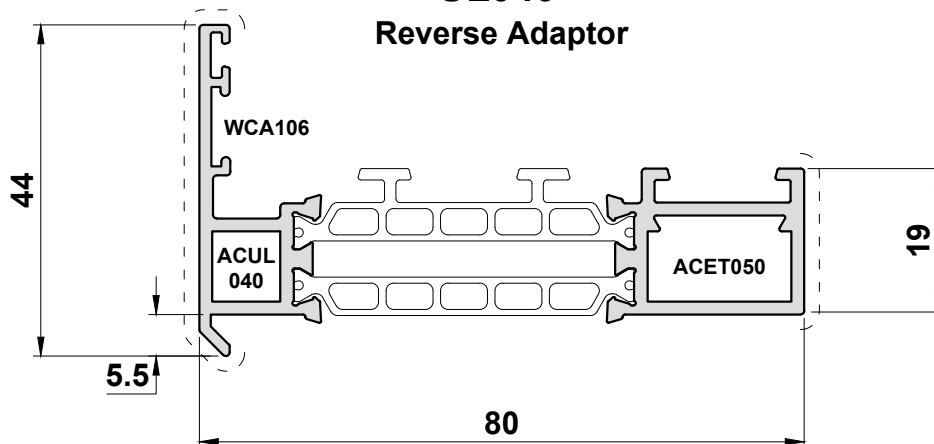
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Primary Visible Side

Secondary Visible Side

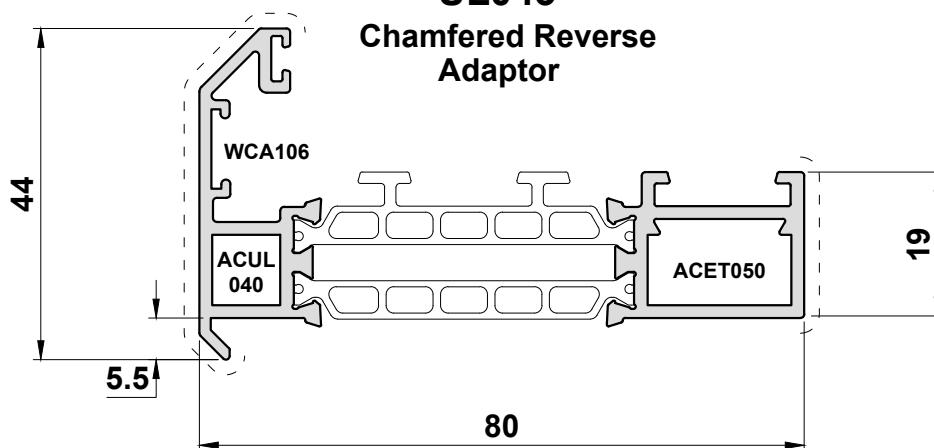
UL040

Reverse Adaptor



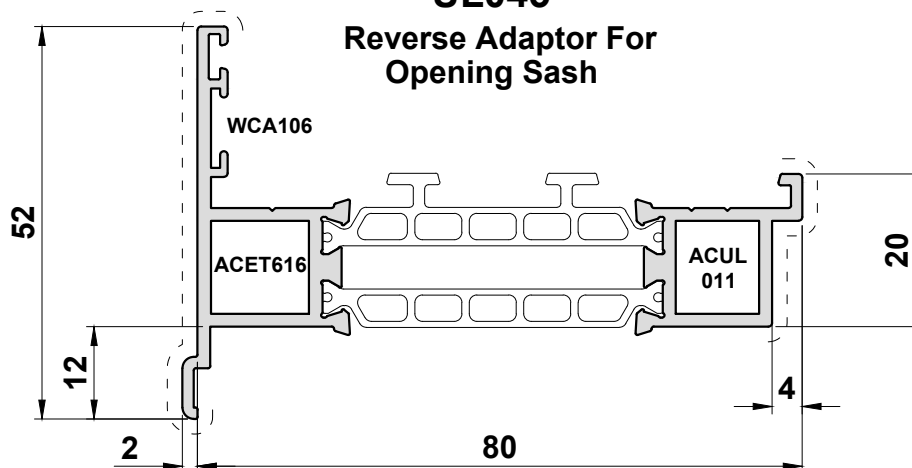
UL043

Chamfered Reverse Adaptor



UL045

Reverse Adaptor For Opening Sash

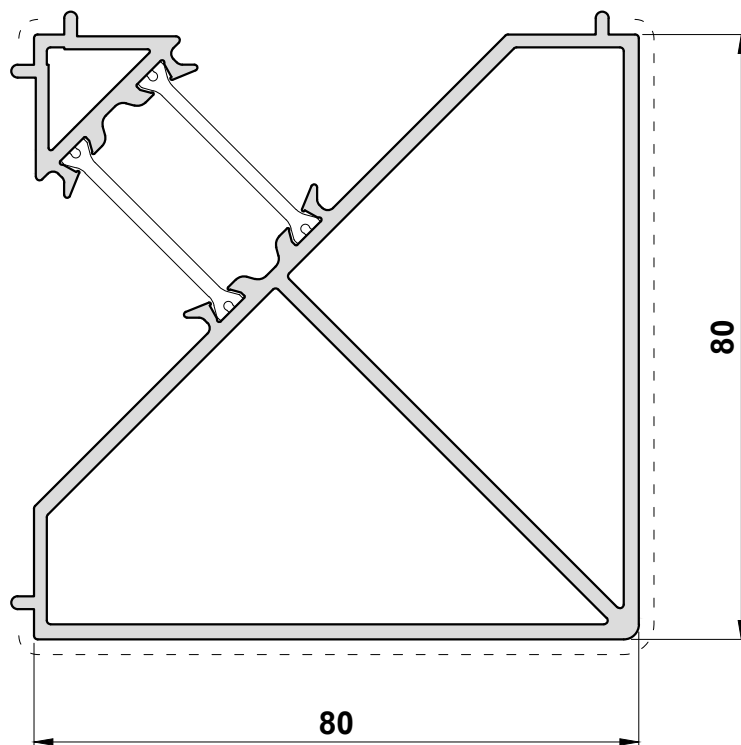


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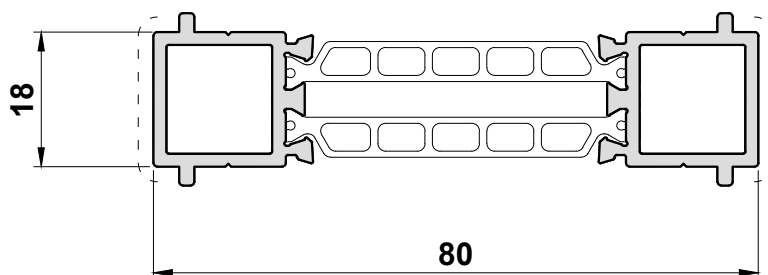
Primary Visible Side

Secondary Visible Side

UL048
90° Corner Post



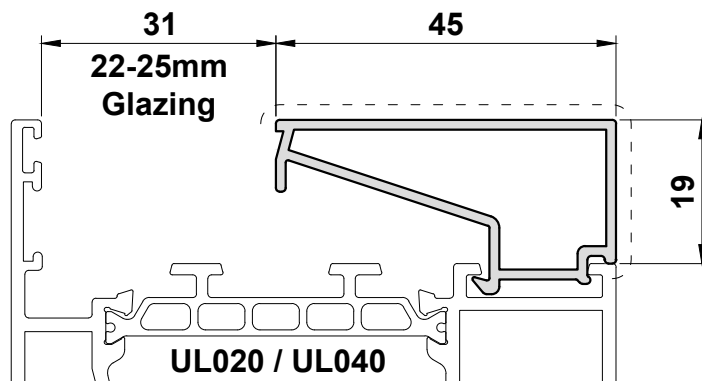
UL055
Coupler



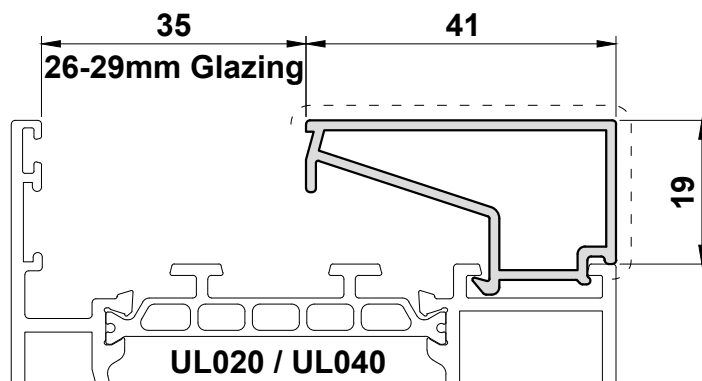
Scale 1:1

Primary Visible Side

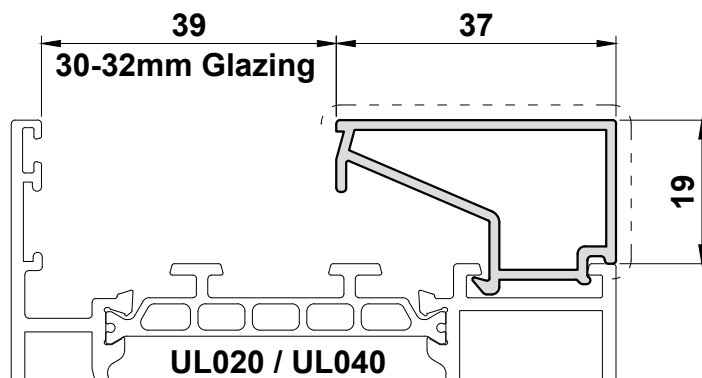
Secondary Visible Side



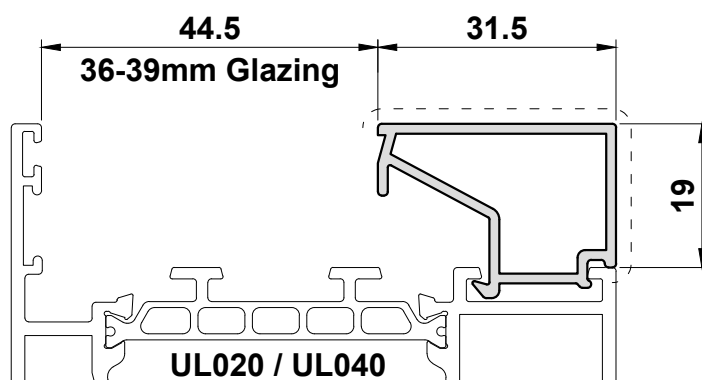
UL063
22-25mm Glazing Bead



UL064
26-29mm Glazing Bead



UL065
30-32mm Glazing Bead

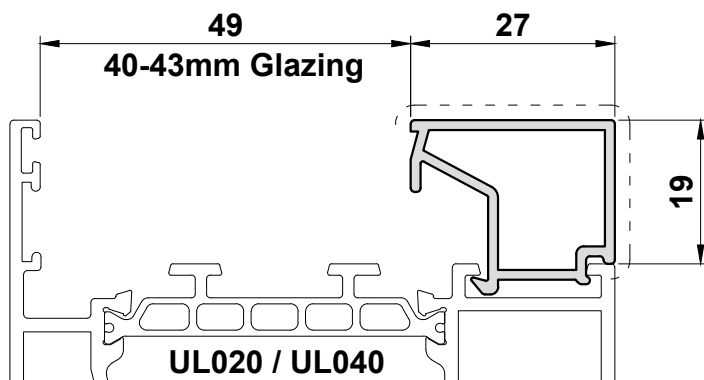


UL066
36-39mm Glazing Bead

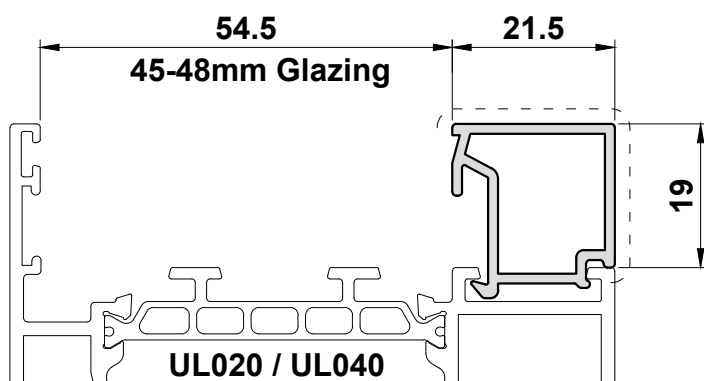
Scale 1:1

Primary Visible Side

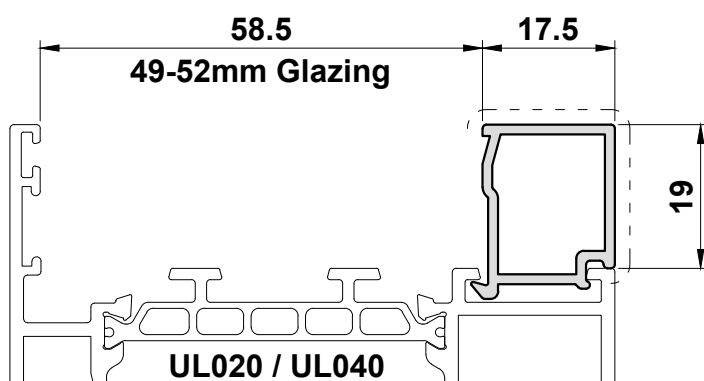
Secondary Visible Side



UL067
40-43mm Glazing Bead



UL068
45-48mm Glazing Bead

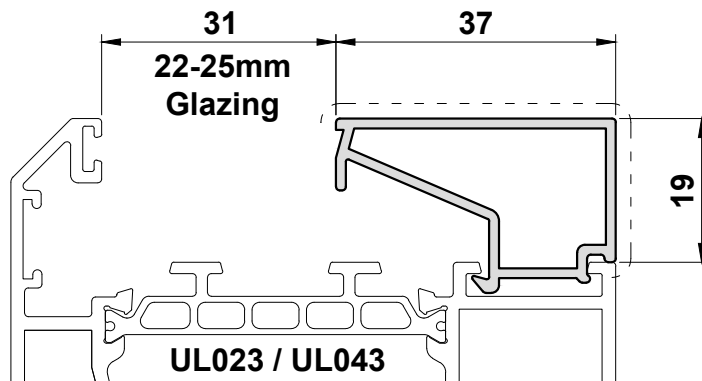


UL069
49-52mm Glazing Bead

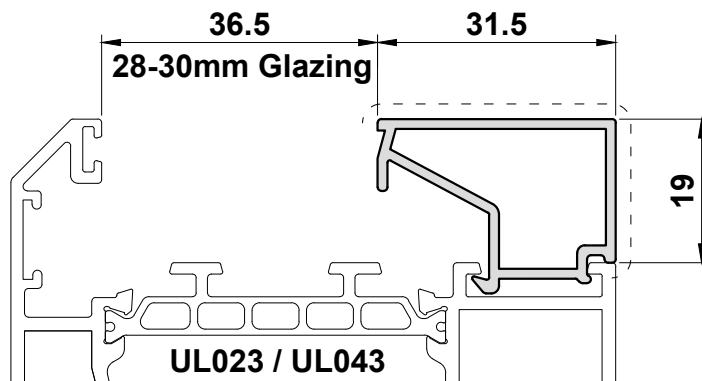
Scale 1:1

Primary Visible Side

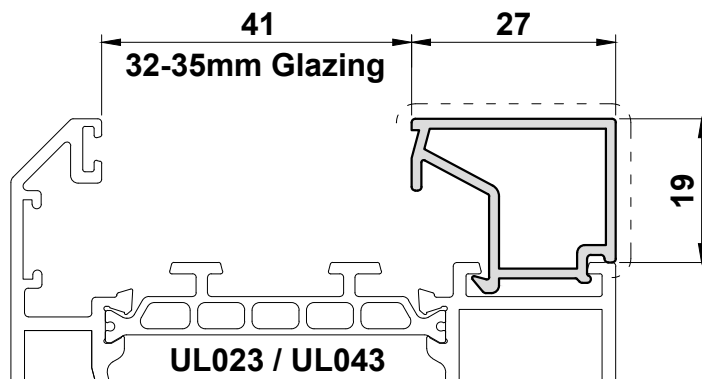
Secondary Visible Side



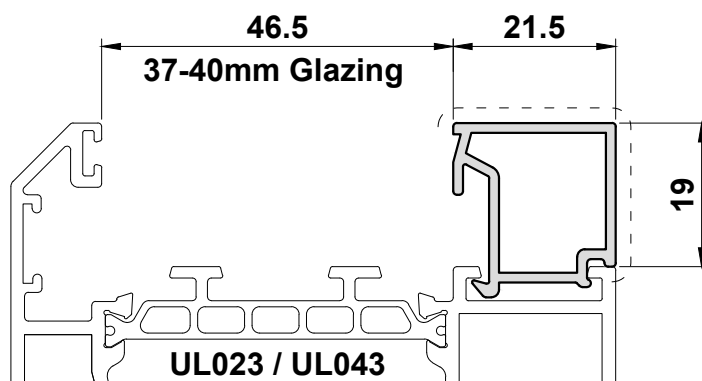
UL065
22-25mm Glazing Bead



UL066
28-30mm Glazing Bead



UL067
32-35mm Glazing Bead

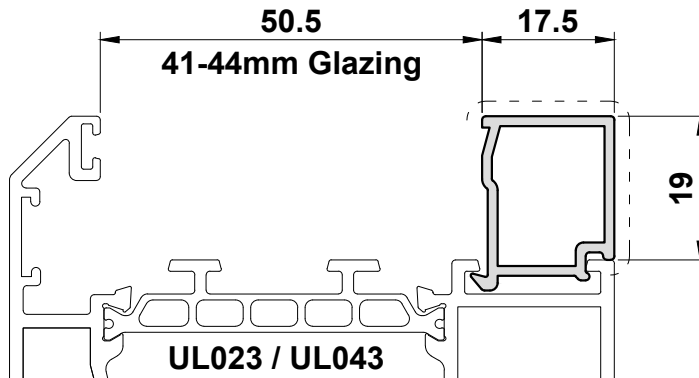


UL068
37-40mm Glazing Bead

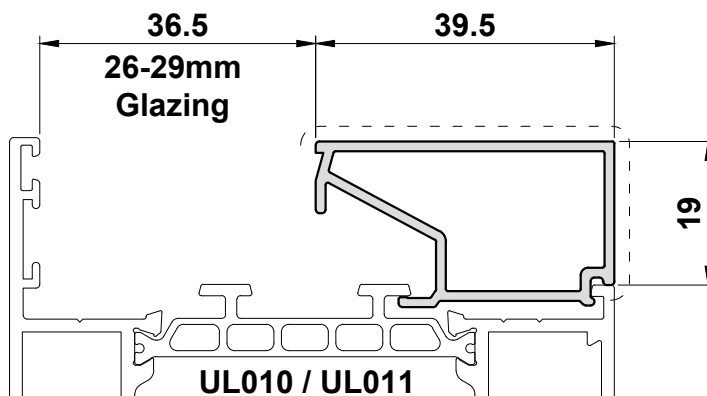
Scale 1:1

Primary Visible Side

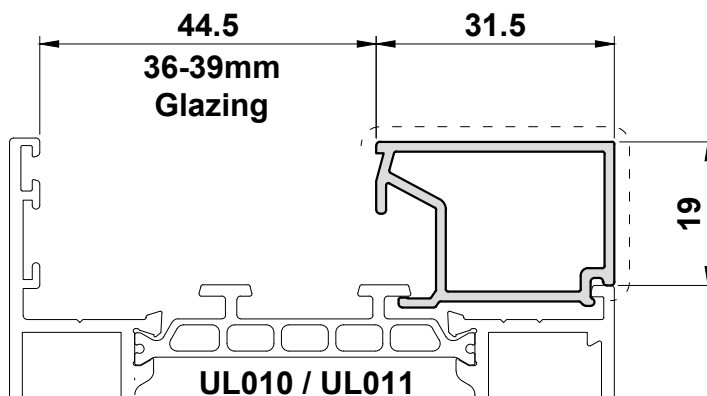
Secondary Visible Side



UL069
41-44mm Glazing Bead



UL074
26-29mm Glazing Bead

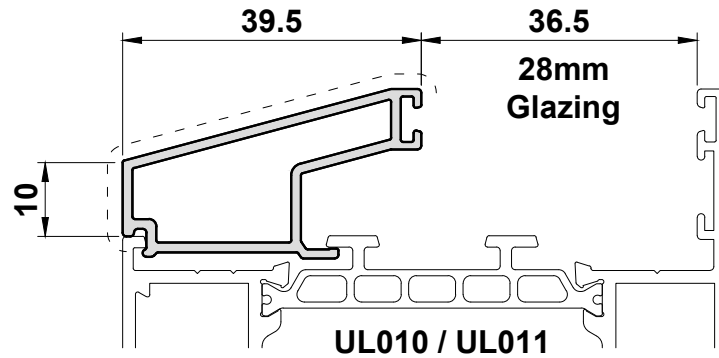


UL076
36-39mm Glazing Bead

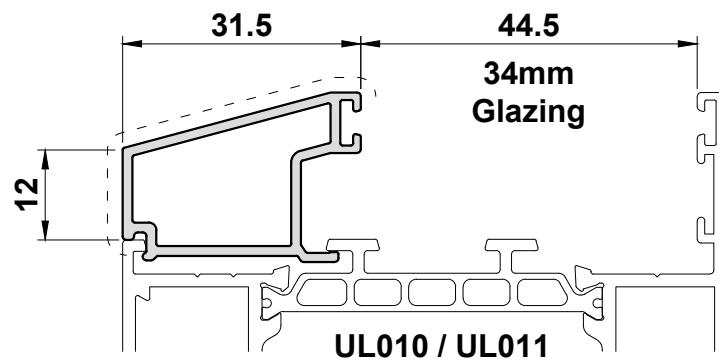
Scale 1:1

Primary Visible Side

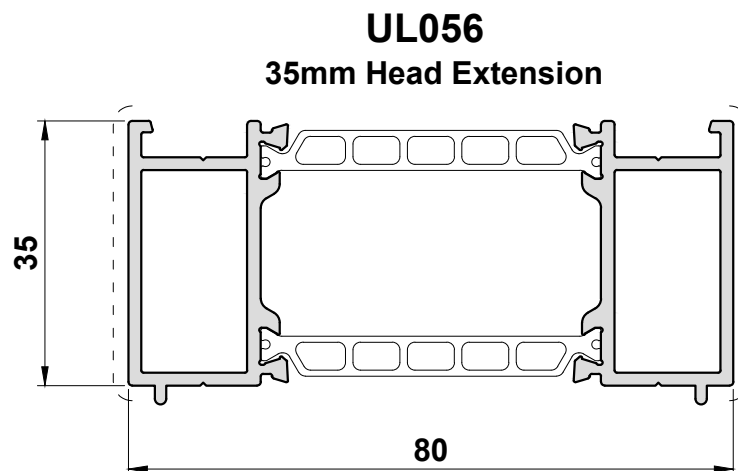
Secondary Visible Side



UL075
28mm Glazing Bead



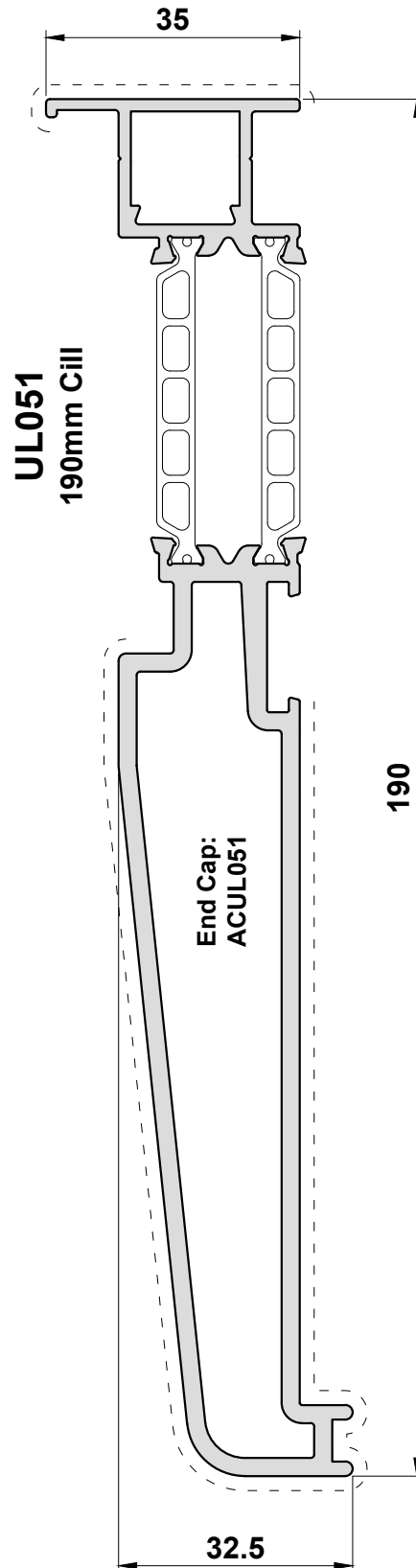
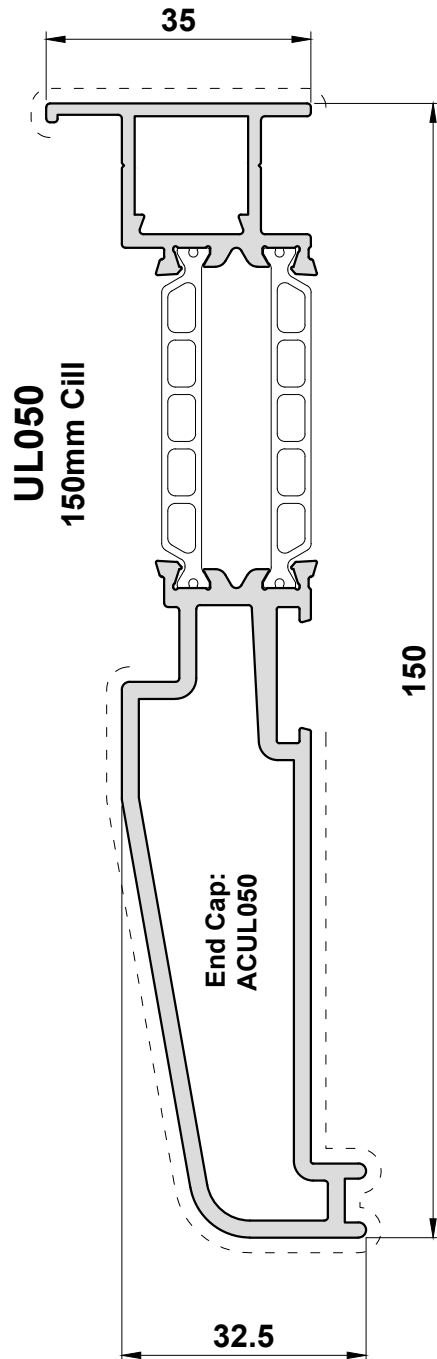
UL077
34mm Glazing Bead



Scale 1:1

Primary Visible Side

Secondary Visible Side

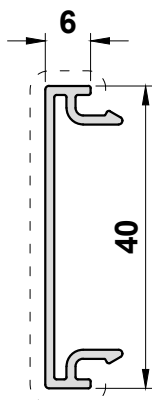


Scale 1:1

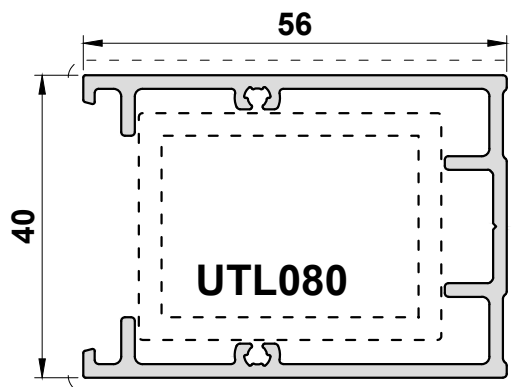
Primary Visible Side

Secondary Visible Side

UN500
UN510 Cover Cap

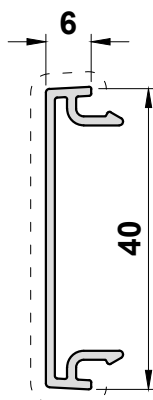


UN510
Reinforcement Profile

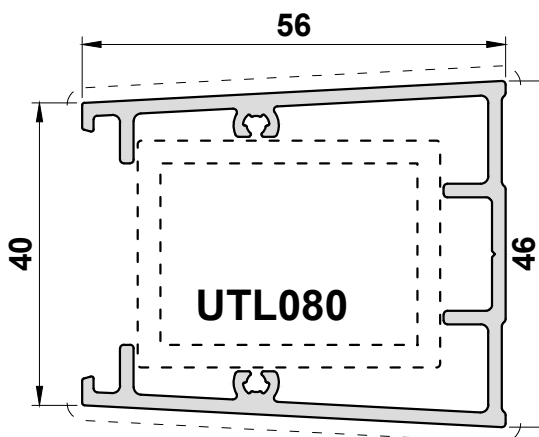


UN510
End Cap:
ACUN500

UN501
UN511 Cover Cap

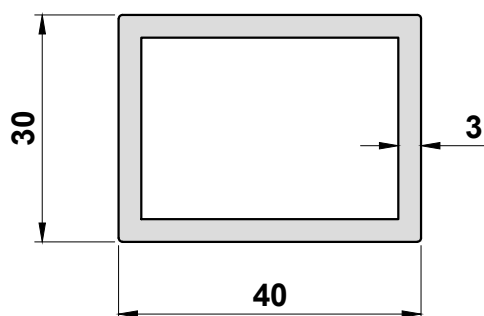


UN511
Reinforcement Profile



UN511
End Cap:
ACUN501

UTL080
Reinforcement Profile



Scale 1:1

Primary Visible Side

Secondary Visible Side

Scale 1:1

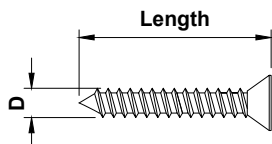
Section B

Accessories

Photos & Drawings



Countersunk Screws



Gauge	'D' (mm)
No.6	3.5
No.7	3.8
No.8	4
No.10	5
No.12	6

Part Number	Gauge	X	Length	Description	Box Qty.
ACUN3530	No.6	X	5/8" (16mm)	Countersunk Pozi Self Tapper S/S	100
MUA025SSZ	No.6	X	1" (25mm)	Countersunk Pozi Self Tapper S/S	100
ACET067	No.7	X	1/2" (12mm)	Countersunk Pozi Self Tapper S/S	100
ACET060	No.7	X	1" (25mm)	Countersunk Pozi Self Tapper S/S	100
ACET066	No.7	X	1 1/2" (40mm)	Countersunk Pozi Self Tapper S/S	100
MUA067SSZ	No.7	X	2" (50mm)	Countersunk Pozi Self Tapper S/S	100
ACET064	No.8	X	5/8" (16mm)	Countersunk Pozi Self Tapper S/S	100
ACUN3512	No.8	X	1 1/4" (30mm)	Countersunk Pozi Self Tapper S/S	100
ACUN3513	No.8	X	1 3/4" (45mm)	Countersunk Pozi Self Tapper S/S	100
ACET072	No.8	X	2 1/2" (60mm)	Countersunk Pozi Self Tapper S/S	100
ACET048	No.10	X	3/8" (10mm)	Countersunk Pozi Self Tapper S/S	100
ACIM062	No.10	X	1 1/4" (30mm)	Countersunk Pozi Self Tapper S/S	100
ACET062	No.10	X	2" (50mm)	Countersunk Pozi Self Tapper S/S	100
ACET076	No.10	X	2 1/2" (60mm)	Countersunk Pozi Self Tapper S/S	100

POLYAMIDE SCREWS

Part Number	Gauge	X	Length	Description	Box Qty.
ACET490	4.3mm	X	16mm	Countersunk PH2 Polyamide Screw	1000
ACET290	4.3mm	X	20mm	Countersunk PH2 Polyamide Screw	100
ACET390	4.3mm	X	25mm	Countersunk PH2 Polyamide Screw	200
ACET190	4.3mm	X	45mm	Countersunk PH2 Polyamide Screw	1000
ACVS062	4.3mm	X	65mm	Countersunk PH2 Polyamide Screw	1000



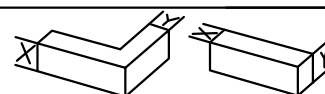
T-BARS
ACVG65=2.5mm
ACVG66=3.0mm
ACVL150=4.0mm



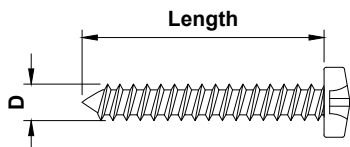
Screw (Grub)

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

WP = White
BL = Black



Pan Head Screws



Gauge	'D' (mm)
No.6	3.5
No.7	3.8
No.8	4
No.10	5
No.12	6

Part Number	Gauge	X	Length	Description	Box Qty.
ACET068	No.8	X	3/8" (10mm)	Pozi Flange AB	100
ACET063	No.8	X	1/2" (12mm)	Pan Head Self Tapper	100
ACET070	No.8	X	1/2" (12mm)	Pozi Flange Self Tapper S/S	100
ACUN3535	No.8	X	5/8" (16mm)	Pan Head Pozi S/S	100
ACET099	No.8	X	3/4" (20mm)	Pozi Flange Self Tapper S/S	100
ACDR050	4.8mm	X	32mm	Pan Head Pozi S/S	200
PUA028	No.10	X	1" (25mm)	Pan Head Pozi S/S	100
ACDR052	No.10	X	2" (50mm)	Pan Head Self Tapper S/S	200
ACET079	No.10	X	2 1/2" (60mm)	Pan Head Pozi S/S	100
ACW20160	No.12	X	1" (25mm)	Flange Head Self Tapper S/S	100
ACMC109	6.3mm	X	38mm	DIN7981 - Pan Head Self Tapper	200



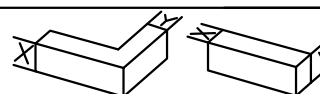
T-BARS
ACVG65=2.5mm
ACVG66=3.0mm
ACVL150=4.0mm



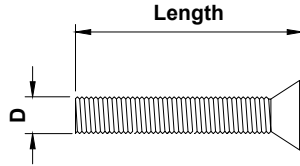
Screw (Grub)

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

WP = White
BL = Black



Machine Screws



Thread	'D' (mm) Nominal
M4	4
M5	5
M6	6
M8	8
M10	10

Part Number	Thread	X	Length	Description	Box Qty.
ACET122	M4	X	10	CSK Pozi Machine Screw	100
ACET123	M4	X	20	CSK Pozi Machine Screw	100
ACDV264	M4	X	35	CSK Pozi Machine Screw	100
ACSG071	M4	X	40	CSK Pozi Machine Screw	100
ACDV266	M4	X	45	CSK Pozi Machine Screw	100
ACDV262	M4	X	50	CSK Pozi Machine Screw	100
ACDV265	M4	X	60	CSK Pozi Machine Screw	100
ACDR051	M5	X	10	CSK Pozi Machine Screw	100
ACET069	M5	X	12	CSK Pozi Machine Screw	100
HEA132	M5	X	16	CSK Pozi Machine Screw	100
WCA134	M5	X	20	CSK Pozi Machine Screw	100
WCA143	M5	X	25	CSK Pozi Machine Screw	50
ACVS061	M5	X	40	CSK Pozi Machine Screw	100
ACET133	M5	X	50	CSK Pozi Machine Screw	100
ACET220	M5	X	60	CSK Pozi Machine Screw	100
ACET238	M5	X	70	CSK Pozi Machine Screw	100
ACMX861	M5	X	80	DIN965 - CSK Machine Screw	10
ACMX862	M5	X	90	DIN965 - CSK Machine Screw	10
ACUN3503	M6	X	10	CSK Socket Machine Screw	24
ACUN3501	M6	X	13	CSK Flange Socket Machine Screw	48
ACMX852	M6	X	16	DIN965 - CSK Machine Screw	10
HEA390	M6	X	16	CSK Socket Machine Screw	32
ACET235	M6	X	60	CSK Pozi Machine Screw	100
ACET237	M6	X	70	CSK Pozi Machine Screw	100



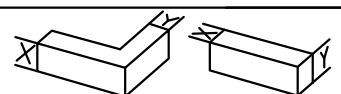
T-BARS
ACVG65=2.5mm
ACVG66=3.0mm
ACVL150=4.0mm



Screw (Grub)

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

WP = White
BL = Black



Glazing Gaskets

Retaining Gasket

Commonly known as an E Gasket.
Retaining gaskets create a seal between the Glass and the Aluminium Profile.

High Line	2mm		ACVG231
			200m
			BL
	3mm		ACVG31
			200m
			BL
Low Line	4mm		ACVG131
			100m
			BL
	2mm		ACET843
			200m
			BL
	3mm		ACET842
			200m
			BL
	4mm		ACET841
			200m
			BL
	4mm		ACET835
			200m
			BL
	4mm		ACVG131N
			100m
			BL
	5mm		ACUN3065
			100m
			BL

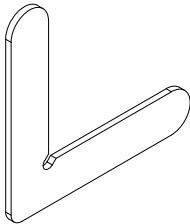
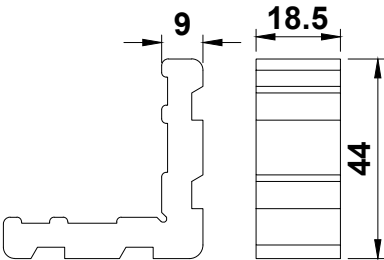
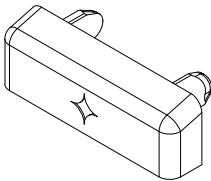
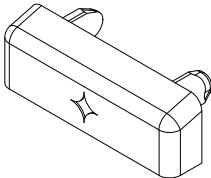
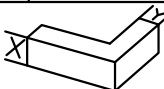
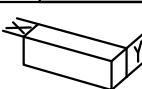
Thickness	Drawing 1:1	Part number
		Coil length
		Available Colours

Wedge Gasket

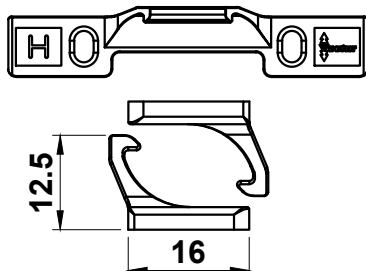
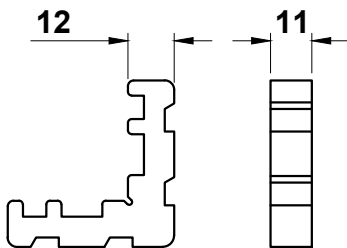
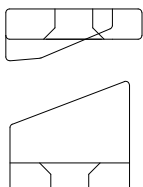
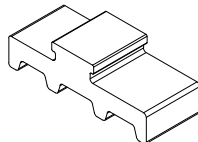
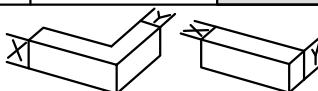
Wedge Gaskets help to hold the bead in place by providing tension between the bead and the glazing unit.

High Line	3mm		ACVG32
			100m
			BL
	3mm		ACVG32N
			100m
			BL
	4mm		ACVG33
			100m
			BL
	4mm		ACVG33N
			100m
			BL
Low Line	5mm		ACVG34
			100m
			BL
	5mm		ACVG34N
			100m
			BL
	6mm		ACVG340
			100m
			BL
	6mm		ACVG340N
			100m
			BL
	4mm - 3mm		ACW20038
			50m
			BL
	5mm - 4mm		ACET848
			200m
			BL
	5mm		ACET840N
			200m
			BL

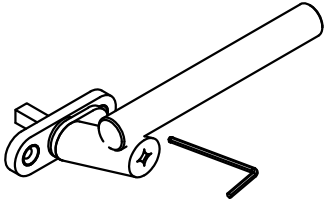
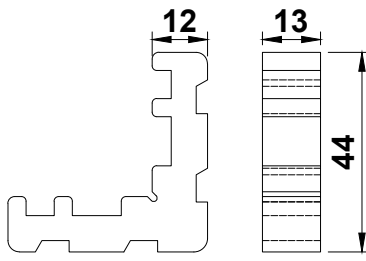
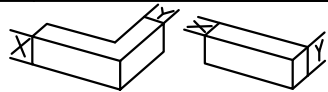
ACCESSORIES : PHOTOS & DRAWINGS

Image	Part Code	Pack	Unit	Application	Colour	
	ACET045 Stainless Steel Chevrone	100	pack	UL020 UL023	MF	
					SA	
					KL	
					HP	
					SSC	
					SMC	
					WP	
					BL	
					PC	
	ACET050 Internal Coner Cleat	24	pack	UL040 UL043	MF	
					SA	
					KL	
					HP	
					SSC	
					SMC	
					WP	
					BL	
					PC	
	ACET131 PVC Drainage Cap	100	pack		MF	
					SA	
					KL	
					HP	
					SSC	
					SMC	
					WP	✓
					BL	✓
					PC	
	ACET432 Colour Match Drainage Cover Cap	8	pack		MF	
					SA	
					KL	✓
					HP	✓
					SSC	
					SMC	
					WP	✓
					BL	✓
					PC	
	ACET461 Inline Espag Handle with 15mm Spindle	1	Each	ACUL001-6	MF	
					SA	
					KL	✓
					HP	✓
					SSC	✓
					SMC	✓
					WP	✓
					BL	✓
					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 SSC = Smooth Satin Chrome SMC = Smokey Chrome PC = Polished Chrome		WP = White BL = Black	 	

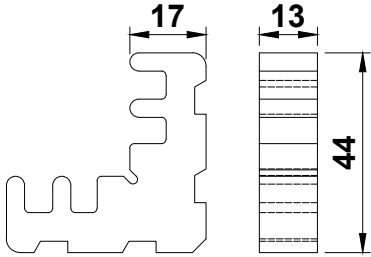
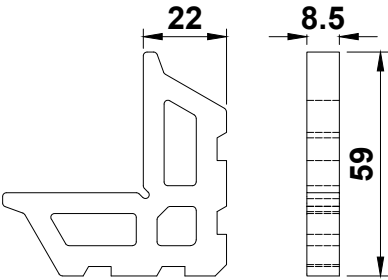
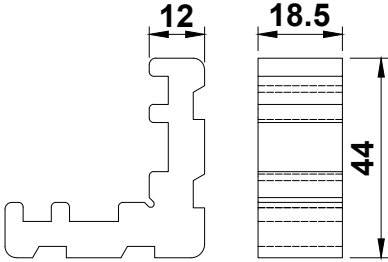
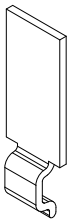
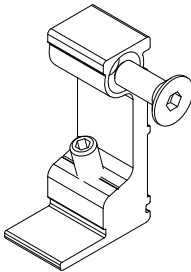
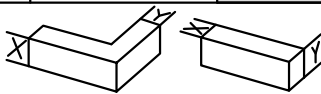
ACCESSORIES : PHOTOS & DRAWINGS

Image	Part Code	Pack	Unit	Application	Colour
	ACET466 L/R Cranked Espag Handle with 15mm Spindle	1	Each	ACUL001-6	MF
					SA
					KL
					HP
					SSC
					SMC
					WP
					BL
					PC
	ACET516 16mm Cavity Hinge Protector 4 Per Set (2 pairs)	50	sets		MF
					SA
					KL
					HP
					SSC
					SMC
					WP
					BL
					PC
	ACET616 Crimping Cleat	24	pack	UL045	MF
					SA
					KL
					HP
					SSC
					SMC
					WP
					BL
					PC
	ACET652 Pull-In Blocks	50	pack		MF
					SA
					KL
					HP
					SSC
					SMC
					WP
					BL
					PC
	ACET855 Insulation	100	m		MF
					SA
					KL
					HP
					SSC
					SMC
					WP
					BL
					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 SSC = Smooth Satin Chrome SMC = Smokey Chrome PC = Polished Chrome		WP = White BL = Black		

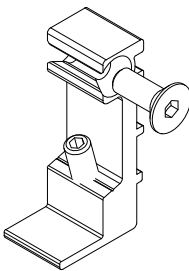
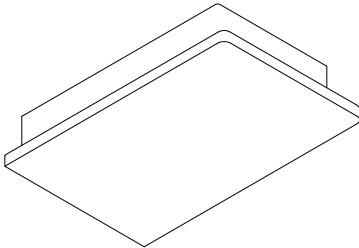
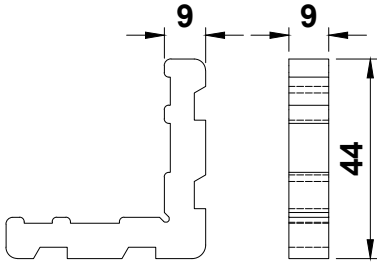
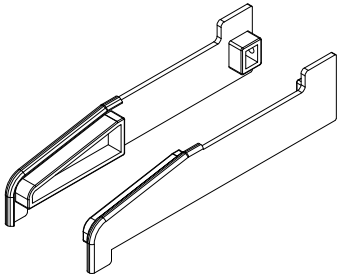
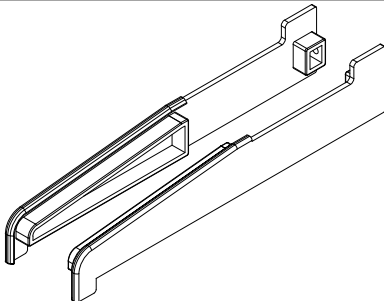
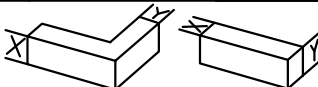
ACCESSORIES : PHOTOS & DRAWINGS

Image	Part Code	Pack	Unit	Application	Colour
	ACGT062 5mm Flipper Gasket	150	m	UL020 UL023	MF
					SA
					KL
					HP
					SSC
					SMC
					WP
					BL
					PC
	ACINS09 Cam adjustment device for sterling hinge	25	pairs		MF
					SA
					KL
					HP
					SSC
					SMC
					WP
					BL
					PC
	ACSM022SS L/R 15mm Spindle Espag Handle. Spindle & fixings provided Includes M4 Long Ball Point Allen Key for locking	1	each	ACUL001-6	MF
					SA
					KL
					HP
					SSC
					SMC
					WP
					BL
					PC
	ACSM050 Inline Architectural Espag Handle with 15mm Spindle	1	Each	ACUL001-6	MF
					SA
					KL
					HP
					SSC
					SMC
					WP ✓
					BL ✓
					PC ✓
	ACUL011 Outer Frame Crimping Cleat	24	pack	UL010	MF
					SA
					KL
					HP
					SSC
					SMC
					WP
					BL
					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 SSC = Smooth Satin Chrome SMC = Smokey Chrome PC = Polished Chrome				

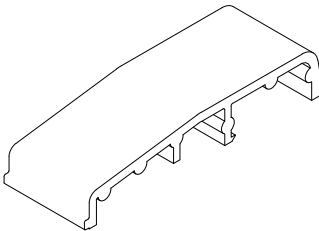
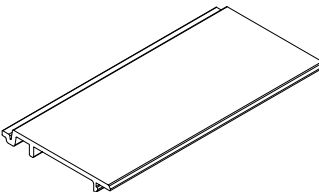
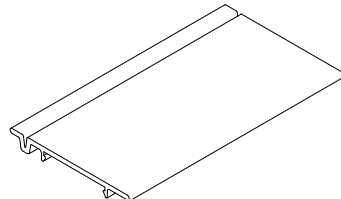
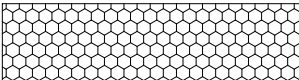
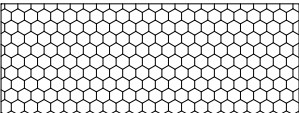
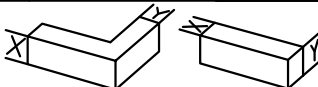
ACCESSORIES : PHOTOS & DRAWINGS

Image	Part Code	Pack	Unit	Application	Colour
 17 13 44	ACUL013 Outer Frame Crimping Cleat	24	pack	UL011	MF
					SA
					KL
					HP
					SSC
					SMC
					WP
					BL
					PC
 22 8.5 59	ACUL020 Sash Outer Crimping Cleat	24	pack	UL020 UL023	MF
					SA
					KL
					HP
					SSC
					SMC
					WP
					BL
					PC
 12 18.5 44	ACUL021 Sash Inner Crimping Cleat	24	pack	UL020 UL023	MF
					SA
					KL
					HP
					SSC
					SMC
					WP
					BL
					PC
	ACUL025 Anti-Twist Clip	100	pack	UL030 UL031 UL032 UL033	MF
					SA
					KL
					HP
					SSC
					SMC
					WP
					BL
					PC
	ACUL030A External Transom/Mullion Bracket	24	pack	UL030 UL032	MF
					SA
					KL
					HP
					SSC
					SMC
					WP
					BL
					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 SSC = Smooth Satin Chrome SMC = Smokey Chrome PC = Polished Chrome WP = White BL = Black				

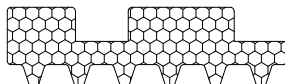
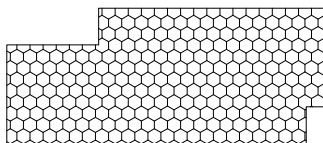
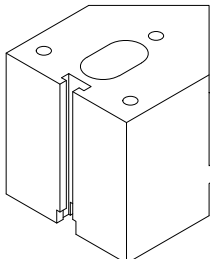
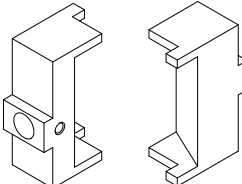
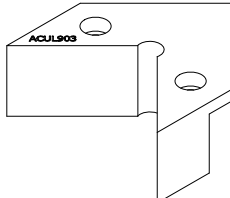
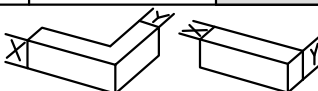
ACCESSORIES : PHOTOS & DRAWINGS

Image	Part Code	Pack	Unit	Application	Colour	
	ACUL030B Internal Transom/Mullion Bracket	24	pack	UL030 UL032	MF	
					SA	
					KL	
					HP	
					SSC	
					SMC	
					WP	
					BL	
					PC	
	ACUL032 End Cap (Black Only)	20	pack	UL032 UL033	MF	
					SA	
					KL	
					HP	
					SSC	
					SMC	
					WP	
					BL	✓
					PC	
	ACUL040 External Crimping Cleat	24	pack	UL040 UL043	MF	
					SA	
					KL	
					HP	
					SSC	
					SMC	
					WP	
					BL	
					PC	
	ACUL050 Cast Cill End Cap	10	pair	UL050	MF	
					SA	
					KL	✓
					HP	✓
					SSC	
					SMC	
					WP	✓
					BL	✓
					PC	
	ACUL051 Cast Cill End Cap	10	pair	UL051	MF	
					SA	
					KL	✓
					HP	✓
					SSC	
					SMC	
					WP	✓
					BL	✓
					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 SSC = Smooth Satin Chrome SMC = Smokey Chrome PC = Polished Chrome		WP = White BL = Black		

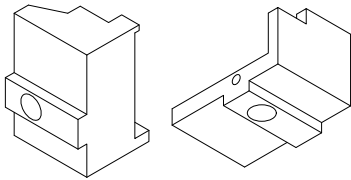
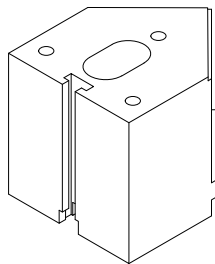
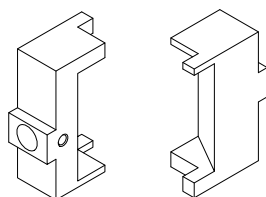
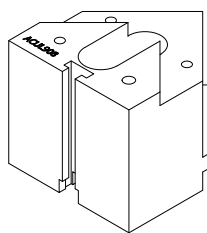
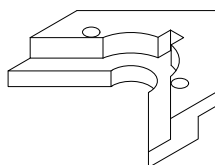
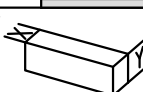
ACCESSORIES : PHOTOS & DRAWINGS

Image	Part Code	Pack	Unit	Application	Colour	
	ACUL057 Sash Guide	100	pack	UL020 UL023	MF	
					SA	
					KL	
					HP	
					SSC	
					SMC	
					WP	✓
					BL	✓
					PC	
	ACUL058 Bridge Packer	12	pack	UL010 UL011	MF	
					SA	
					KL	
					HP	
					SSC	
					SMC	
					WP	
					BL	
					PC	
	ACUL059 Bridge Packer	12	pack	UL020 UL023 UL040 UL043	MF	
					SA	
					KL	
					HP	
					SSC	
					SMC	
					WP	
					BL	✓
					PC	
	ACUL060 Foam	1	each	UL010 UL030 UL031 UL032 UL033	MF	
					SA	
					KL	
					HP	
					SSC	
					SMC	
					WP	
					BL	
					PC	
	ACUL061 Foam	1	each	UL011	MF	
					SA	
					KL	
					HP	
					SSC	
					SMC	
					WP	
					BL	
					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 SSC = Smooth Satin Chrome SMC = Smokey Chrome PC = Polished Chrome		WP = White BL = Black				

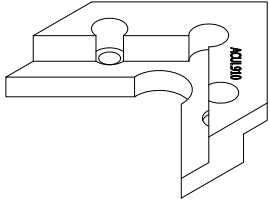
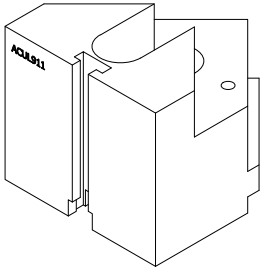
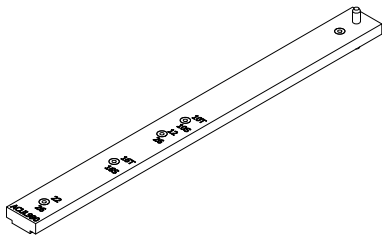
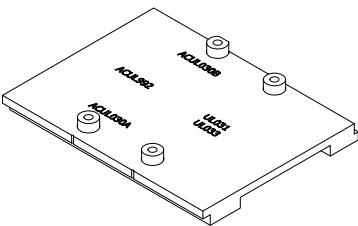
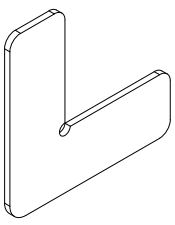
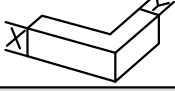
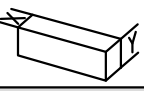
ACCESSORIES : PHOTOS & DRAWINGS

Image	Part Code	Pack	Unit	Application	Colour	
	ACUL062 Glazing Foam	1	each	UL020 UL023 UL040 UL043 UL030 UL031 UL032 UL033	MF	
					SA	
					KL	
					HP	
					SSC	
					SMC	
					WP	
					BL	
					PC	
	ACUL063 Foam	1	each	UL020 UL023	MF	
					SA	
					KL	
					HP	
					SSC	
					SMC	
					WP	
					BL	
					PC	
	ACUL901 Vee Block	1	Each	UL010 UL011	MF	
					SA	
					KL	
					HP	
					SSC	
					SMC	
					WP	
					BL	
					PC	
	ACUL902 Crimping Punches	1	Pair	UL010 UL011	MF	
					SA	
					KL	
					HP	
					SSC	
					SMC	
					WP	
					BL	
					PC	
	ACUL903 Vee Block	1	Each	UL020	MF	
					SA	
					KL	
					HP	
					SSC	
					SMC	
					WP	
					BL	
					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 SSC = Smooth Satin Chrome SMC = Smokey Chrome PC = Polished Chrome		WP = White BL = Black		

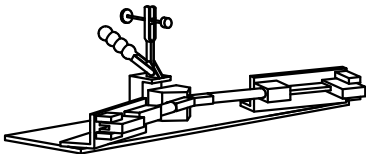
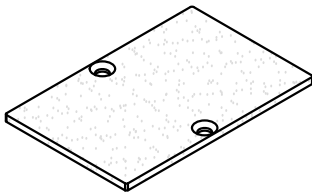
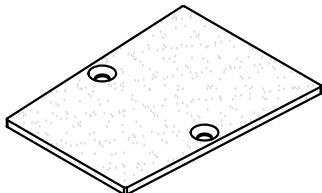
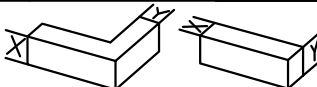
ACCESSORIES : PHOTOS & DRAWINGS

Image	Part Code	Pack	Unit	Application	Colour
	ACUL904 Crimping Punches	1	Pair	UL020 UL023	MF
					SA
					KL
					HP
					SSC
					SMC
					WP
					BL
					PC
	ACUL906 Vee Block	1	Each	UL040	MF
					SA
					KL
					HP
					SSC
					SMC
					WP
					BL
					PC
	ACUL907 Crimping Punches	1	Pair	UL040 UL043	MF
					SA
					KL
					HP
					SSC
					SMC
					WP
					BL
					PC
	ACUL908 Vee Block	1	Each	UL043	MF
					SA
					KL
					HP
					SSC
					SMC
					WP
					BL
					PC
	ACUL909 Packer for ACUL908	1	Each	UL043	MF
					SA
					KL
					HP
					SSC
					SMC
					WP
					BL
					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 SSC = Smooth Satin Chrome SMC = Smokey Chrome PC = Polished Chrome	WP = White BL = Black	 	

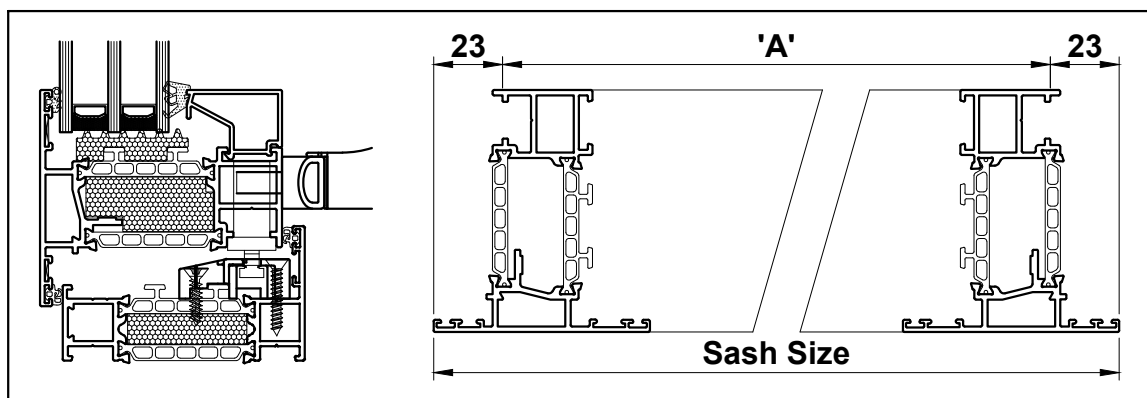
ACCESSORIES : PHOTOS & DRAWINGS

Image	Part Code	Pack	Unit	Application	Colour
	ACUL910 Packer for ACUL911	1	Each	UL023	MF
					SA
					KL
					HP
					SSC
					SMC
					WP
					BL
					PC
	ACUL911 Vee Block	1	Each	UL020 UL023	MF
					SA
					KL
					HP
					SSC
					SMC
					WP
					BL
					PC
	ACUL990 Friction Hinge Drill Jig	1	Each	UL020 UL023	MF
					SA
					KL
					HP
					SSC
					SMC
					WP
					BL
					PC
	ACUL992 Transom/Mullion Drill Jig	1	Each	ACUL030A ACUL030B UL030 UL031 UL032 UL033	MF
					SA
					KL
					HP
					SSC
					SMC
					WP
					BL
					PC
	WCA106 Stainless Steel Chevrans	50	pack	UL020 UL023 UL040 UL043	MF
					SA
					KL
					HP
					SSC
					SMC
					WP
					BL
					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 SSC = Smooth Satin Chrome SMC = Smokey Chrome PC = Polished Chrome			 	

ACCESSORIES : PHOTOS & DRAWINGS

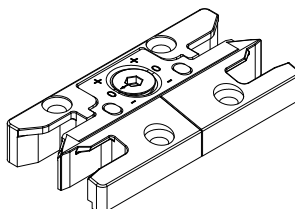
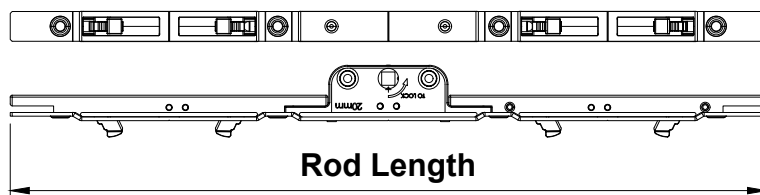
Image	Part Code	Pack	Unit	Application	Colour		
	WUT024HSZA Manual Crimper Note: Vee blocks & punches are sold separately	1	Each		MF		
					SA		
					KL		
					HP		
					SSC		
					SMC		
					WP		
					BL		
					PC		
	ACUN500 Cover plate	1	each	UN500 UN501	MF		
					SA		
					KL		
					HP		
					SSC		
					SMC		
					WP		
					BL		
					PC		
	ACUN501 Cover plate	1	each	UN500 UN511	MF		
					SA		
					KL		
					HP		
					SSC		
					SMC		
					WP		
					BL		
					PC		
					MF	✓	
					SA		
					KL		
					HP		
					SSC		
					SMC		
					WP		
					BL		
					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 SSC = Smooth Satin Chrome SMC = Smokey Chrome PC = Polished Chrome					WP = White BL = Black	

Locking



Part Code	Rod Length (mm)	Number of Keeps	Sash Rebate Size ('A')	
			Minimum	Maximum
ACUL001	200	1	200	400
ACUL002	400	2	400	600
ACUL003	600	2	600	800
ACUL004	800	3	800	1000
ACUL005	1000	3	1000	1200
ACUL006	1200	3	1200	1400

Please Note: ACUL001-006 Locks require handles with a 15mm spindle length.



For more information refer to Section E



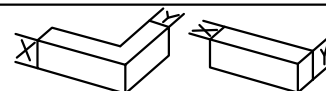
T-BARS
ACVG65=2.5mm
ACVG66=3.0mm
ACVL150=4.0mm



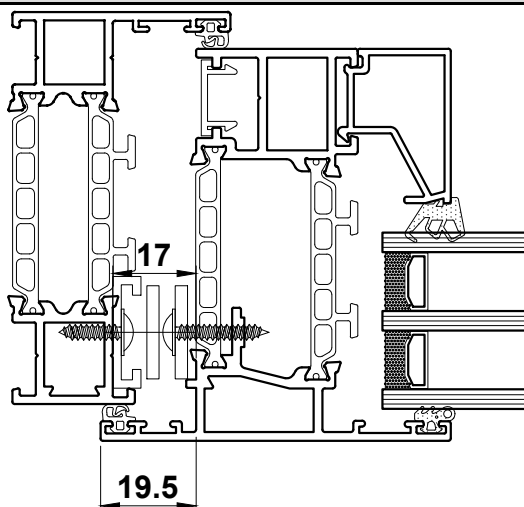
Screw (Grub)

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

WP = White
BL = Black



Friction Hinge Stays



Hinge Code Top Hung	Hinge Length (mm)	Max Vent Weight (kg)	Min Vent Height (mm)	Max Vent Height (mm)	Opening Angle (+/-2.5°)
ACINS10	262	40	315	640	50
ACINS12	313	50	640	800	50
ACINS16	415	65	800	1100	50
ACINS22	567	100	1090	1500	45
ACINS22W	567	100	1500	2000	20
ACINS26	680	180	2000	2500	20
Side Hung	Hinge Length (mm)	Max Vent Weight (kg)	Min Vent Width (mm)	Max Vent Width (mm)	Opening Angle (+/-2.5°)
ACINSSH10	262	38	327	660	85
ACINSSH16	415	55	450	838	60

Please Note:

1. Dimensions shown in table are sash sizes - not rebate sizes.
2. The minimum sash sizes for ACINS10 & ACINSSH10 can both be reduced to 281mm where cockspur handles are used.
3. Top hung height & side hung width sizes to be reduced by 2mm where size is 450mm or smaller.
4. Vents of 100kg must be fitted with ACINS09 cam adjustment devices, which are optional on lighter vents
5. Separate restrictors (ACINS30 & ACINS31) vent holding devices may be required to hold large vents in a selected ventilation position against variable wind pressure.



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
SSC = Smooth Satin Chrome
SMC = Smokey Chrome
PC = Polished Chrome

WP = White
BL = Black

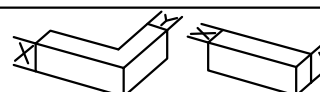


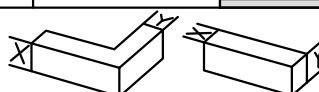
Image	Part Code	Pack	Unit	Application	Colour
	ACMX09700 Alu. Polish	1	each		MF
					SA
					KL
					HP
					SSC
					SMC
					WP
					BL
					PC
	ACMX09761 Maxi Gloss	1	each		MF
					SA
					KL
					HP
					SSC
					SMC
					WP
					BL
					PC
	ACMX09762 Alu. Bright	1	each		MF
					SA
					KL
					HP
					SSC
					SMC
					WP
					BL
					PC
	ACMX09763 Teflon Spray	1	each		MF
					SA
					KL
					HP
					SSC
					SMC
					WP
					BL
					PC
	ACMX09764 Maxi Clean	1	each		MF
					SA
					KL
					HP
					SSC
					SMC
					WP
					BL
					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 SSC = Smooth Satin Chrome SMC = Smokey Chrome PC = Polished Chrome	WP = White BL = Black		

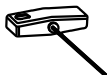
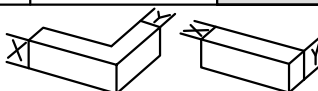
Image	Part Code	Pack	Unit	Application	Colour	
	ACMX09765 Alu. Cleaner	1	each		MF	
					SA	
					KL	
					HP	
					SSC	
					SMC	
					WP	
					BL	
					PC	
	ACMX09770 Roll & Wrap 100mm	1	each		MF	
					SA	
					KL	
					HP	
					SSC	
					SMC	
					WP	
					BL	
					PC	
	ACMX09775 Grip Handwrap	1	each		MF	
					SA	
					KL	
					HP	
					SSC	
					SMC	
					WP	
					BL	
					PC	
	ACMX09801 Protective Tape 50mm	1	each		MF	
					SA	
					KL	
					HP	
					SSC	
					SMC	
					WP	
					BL	
					PC	
	ACMX09802 Protective Tape 70mm	1	each		MF	
					SA	
					KL	
					HP	
					SSC	
					SMC	
					WP	
					BL	
					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 SSC = Smooth Satin Chrome SMC = Smokey Chrome PC = Polished Chrome	W = White BL = Black			

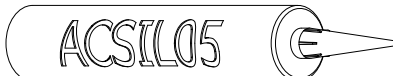
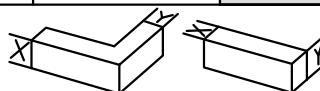
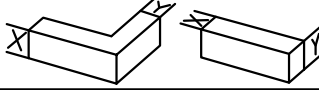
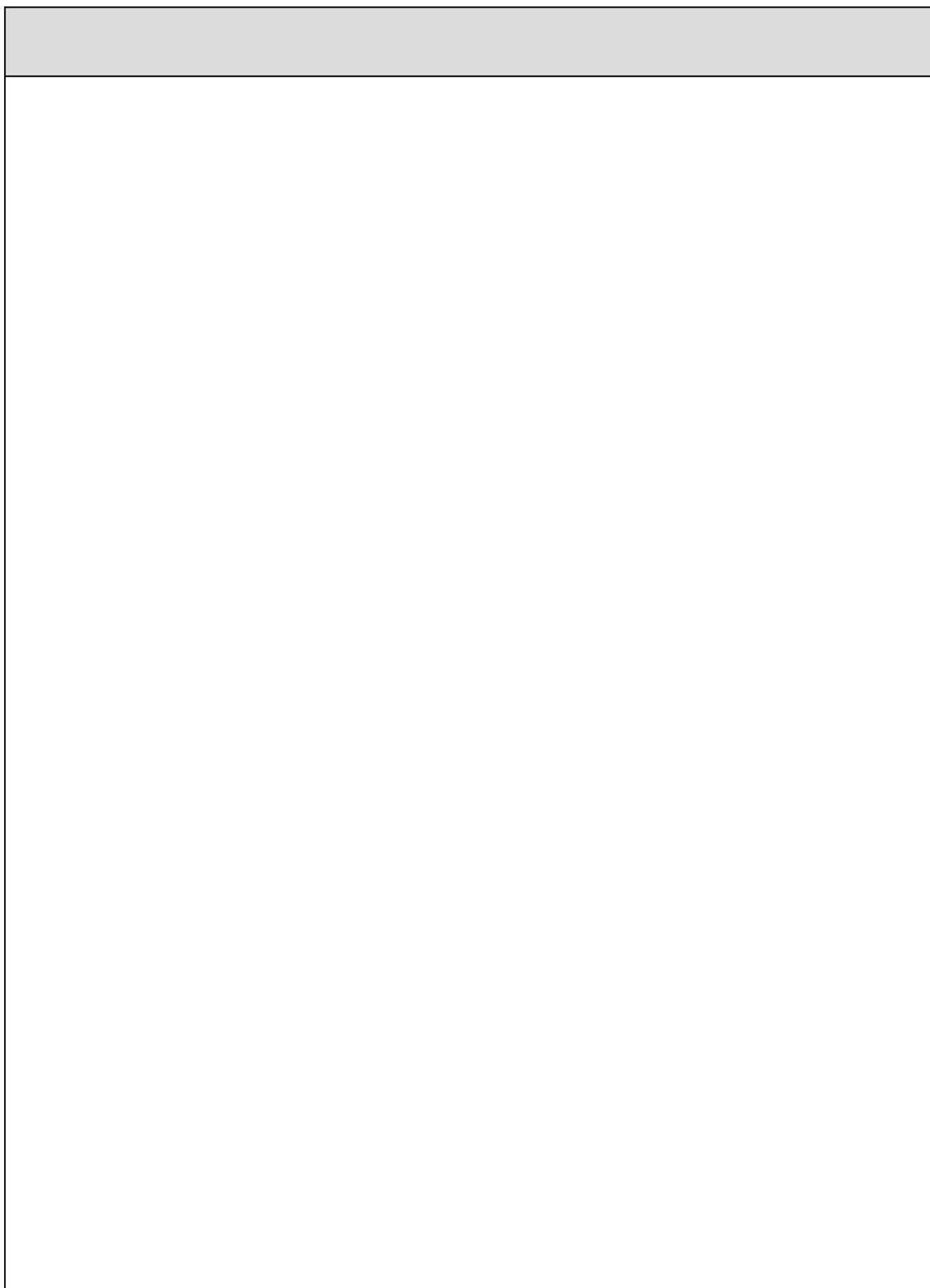
Image	Part Code	Pack	Unit	Application	Colour
	ACMX09803 Protective Tape 100mm	1	each		MF
					SA
					KL
					HP
					SSC
					SMC
					WP
					BL
					PC
	ACSIL04 Sealing Glue Order with suffix of KL colour (eg.ACSIL04KL005) or BL=Black/WP=White/ CL=Clear	1	each		MF
					SA
					KL
					HP
					SSC
					SMC
					WP
					BL
					PC
	ACSIL05 Rubber Sealant	1	each		MF
					SA
					KL
					HP
					SSC
					SMC
					WP
					BL
					PC
	ACSIL08 Silicon Gun	1	each		MF
					SA
					KL
					HP
					SSC
					SMC
					WP
					BL
					PC
	ACSIL013 Glue for Mitre	1	each		MF
					SA
					KL
					HP
					SSC
					SMC
					WP
					BL
					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 SSC = Smooth Satin Chrome SMC = Smokey Chrome PC = Polished Chrome	WP = White BL = Black		

Image	Part Code	Pack	Unit	Application	Colour
	ACSIL014 Anti-Corrosion Coating	1	each		MF
					SA
					KL
					HP
					SSC
					SMC
					WP
					BL
					PC
	ACUN3900 Gasket Roller	1	each		MF
					SA
					KL
					HP
					SSC
					SMC
					WP
					BL
					PC
					MF
					SA
					KL
					HP
					SSC
					SMC
					WP
					BL
					PC
					MF
					SA
					KL
					HP
					SSC
					SMC
					WP
					BL
					PC
	MF = Mill Finish SA = Silver Anodised KL = Basic Colour HP = Special Colour SSC = Smooth Satin Chrome SMC = Smokey Chrome PC = Polished Chrome				MF
					SA
					KL
					HP
					SSC
					SMC
					WP
					BL
					PC
					

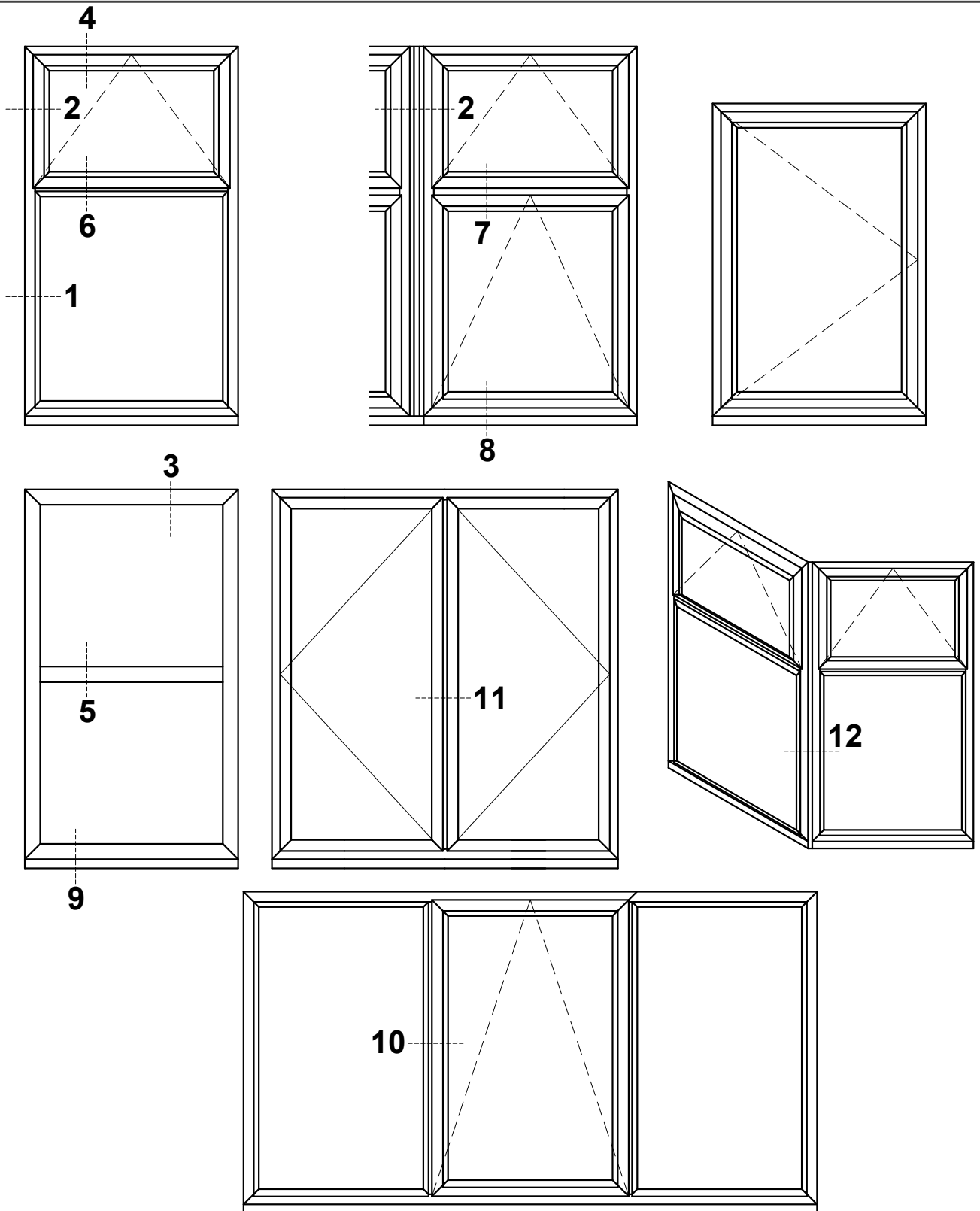
Section C

Sections

Scale Elevations

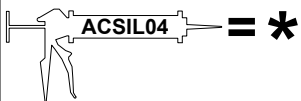
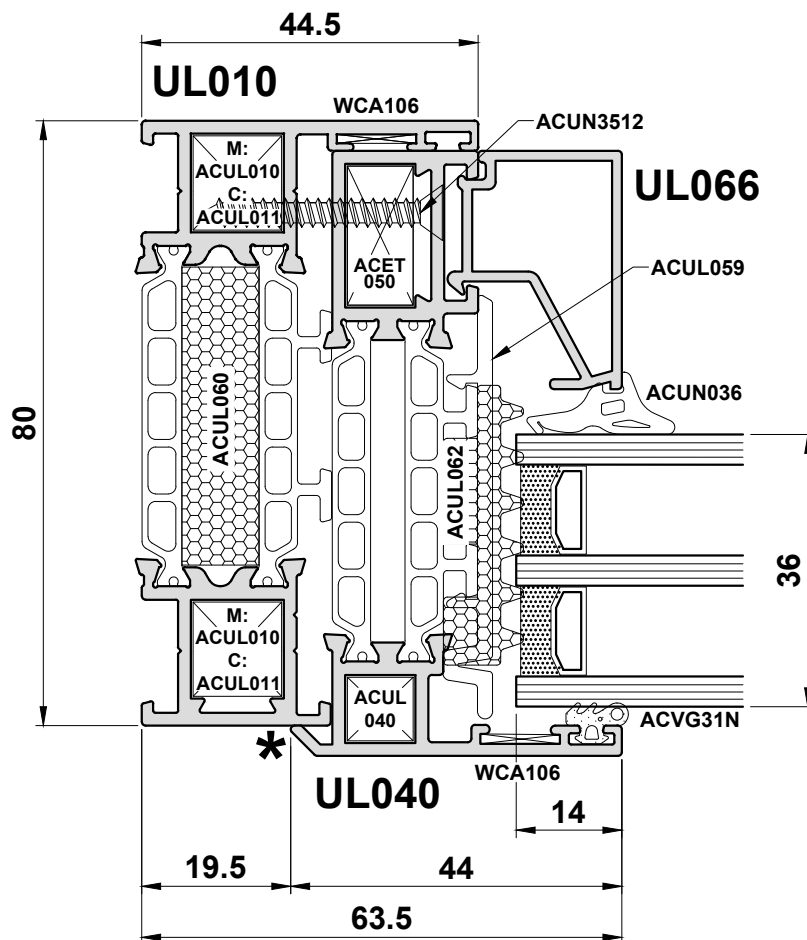
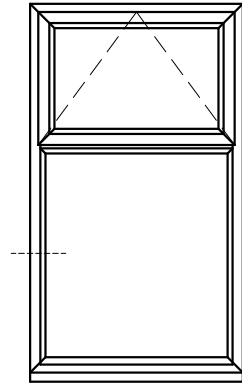


Detail



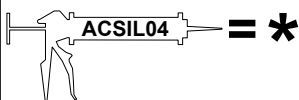
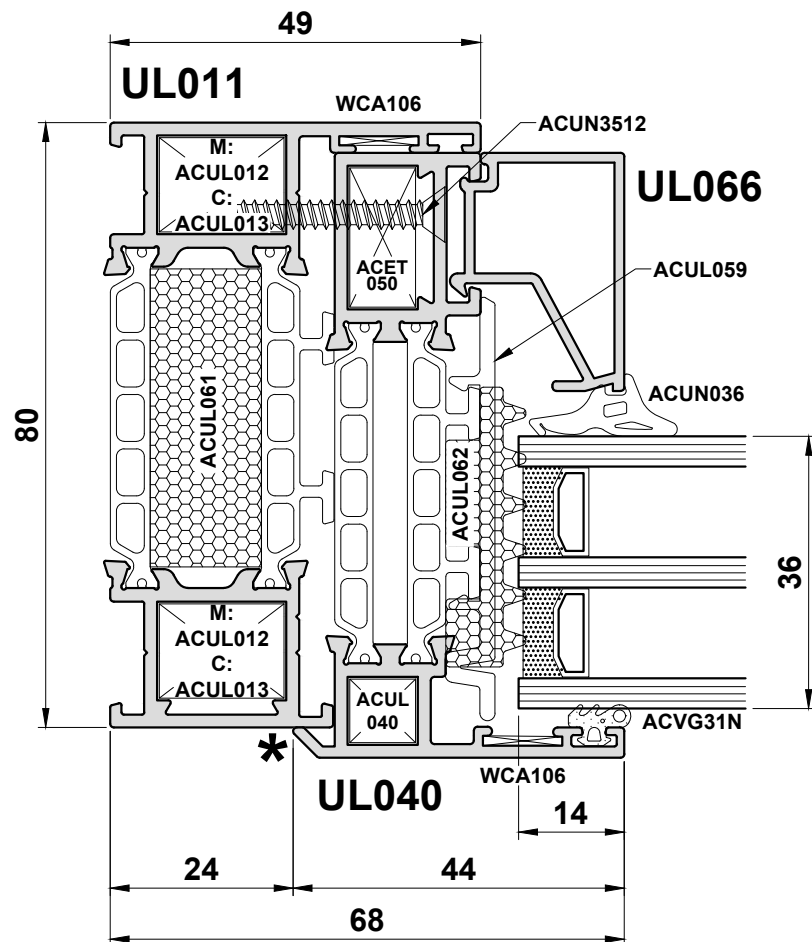
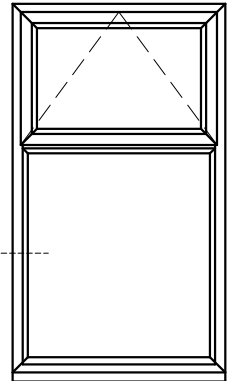
Do Not Scale From This Drawing

Detail 1A



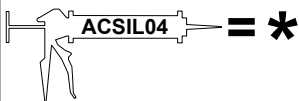
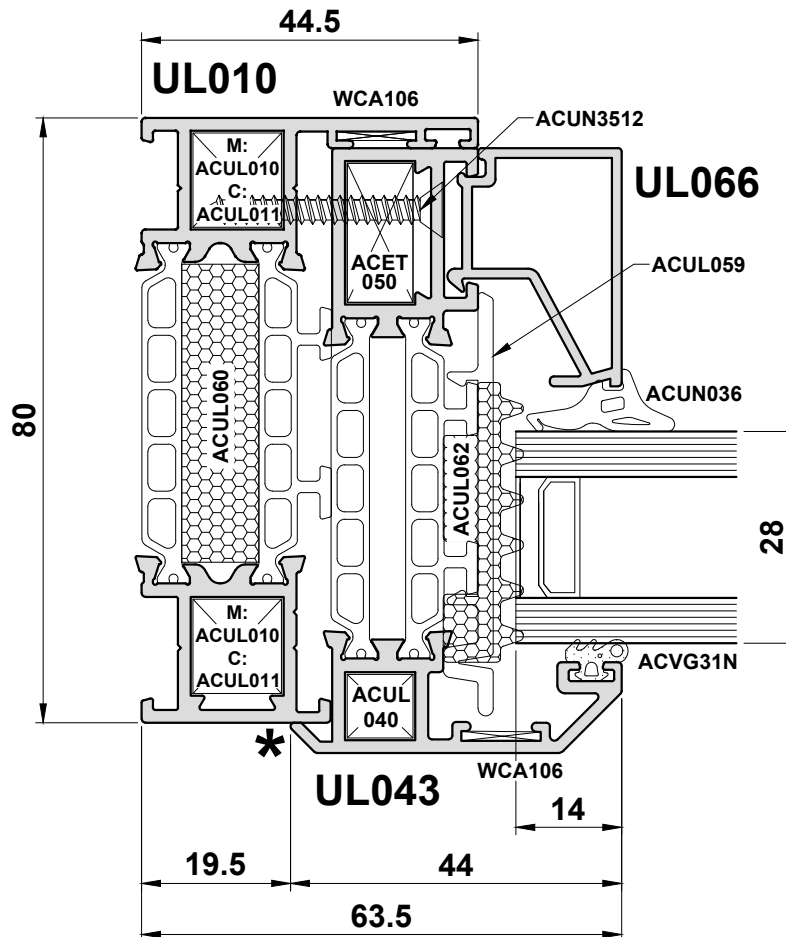
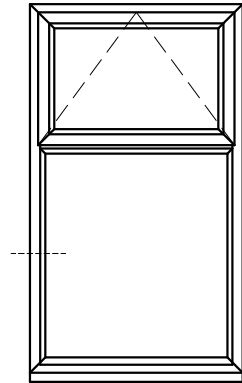
Do Not Scale From This Drawing

Detail 1B



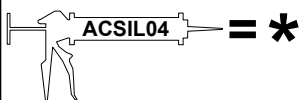
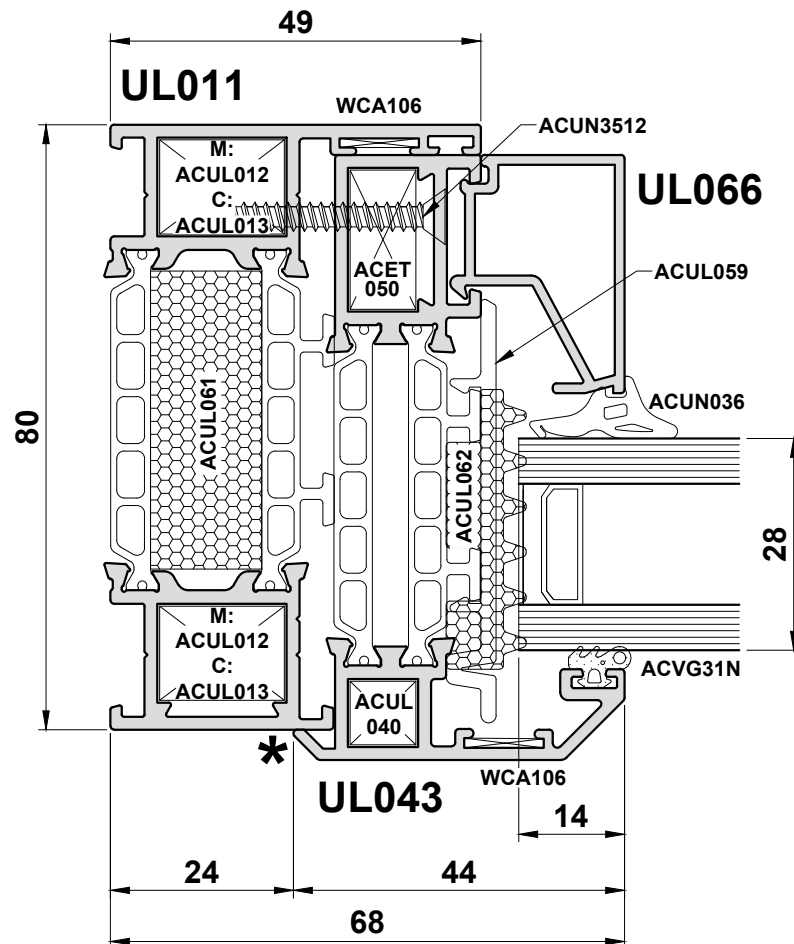
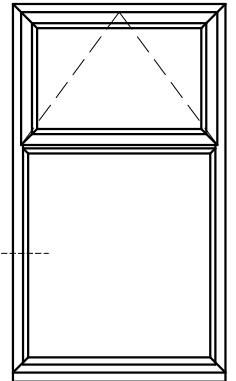
Do Not Scale From This Drawing

Detail 1C



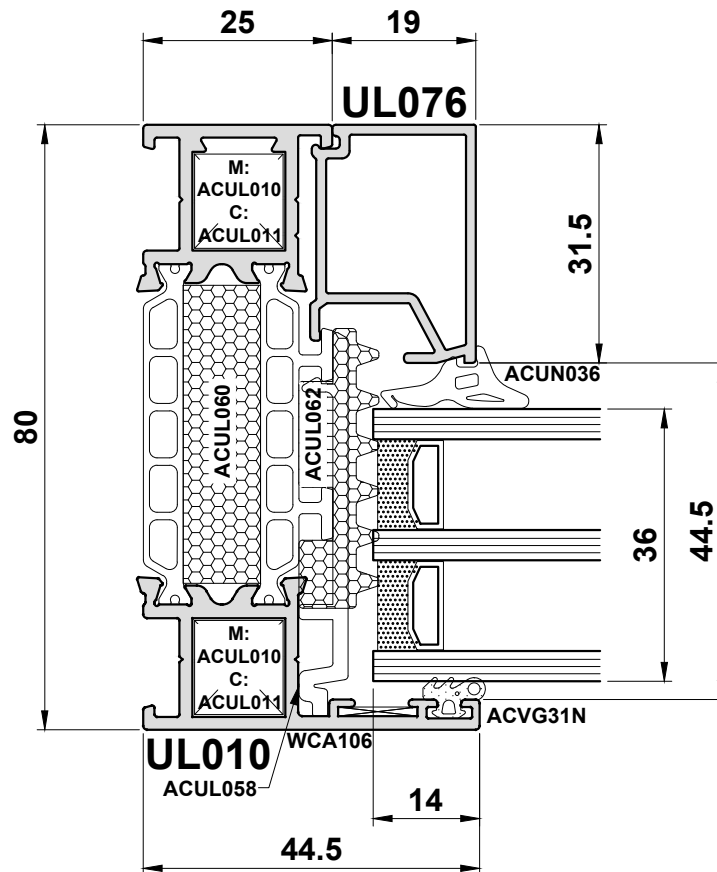
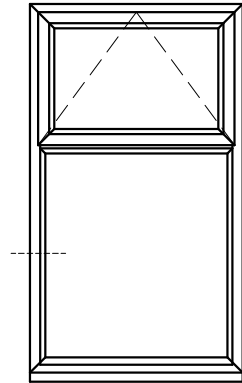
Do Not Scale From This Drawing

Detail 1D



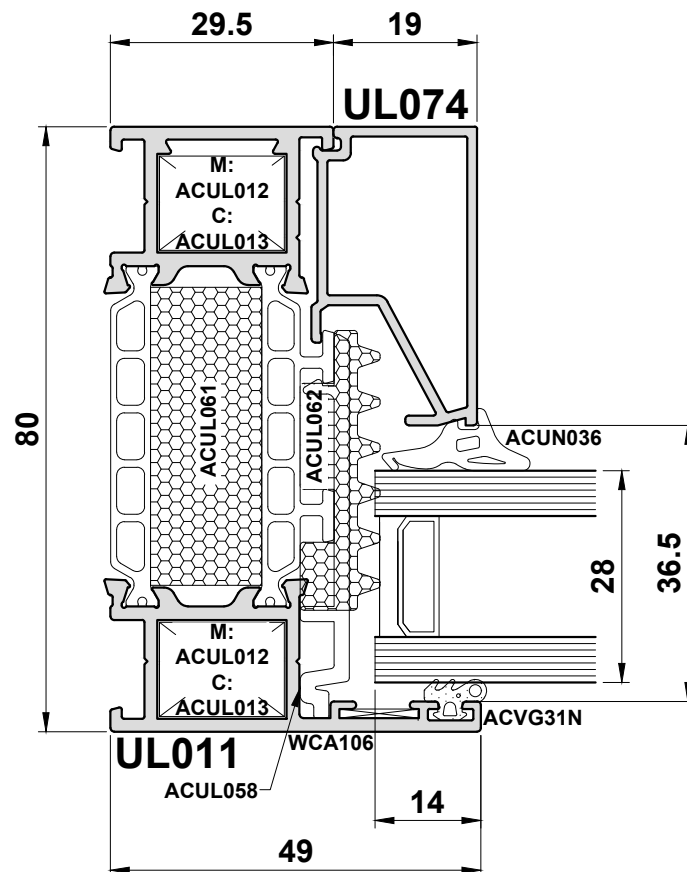
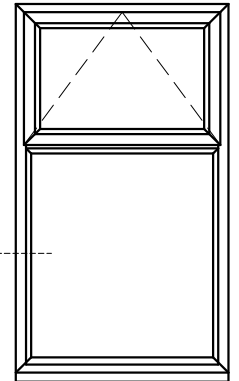
Do Not Scale From This Drawing

Detail 1E



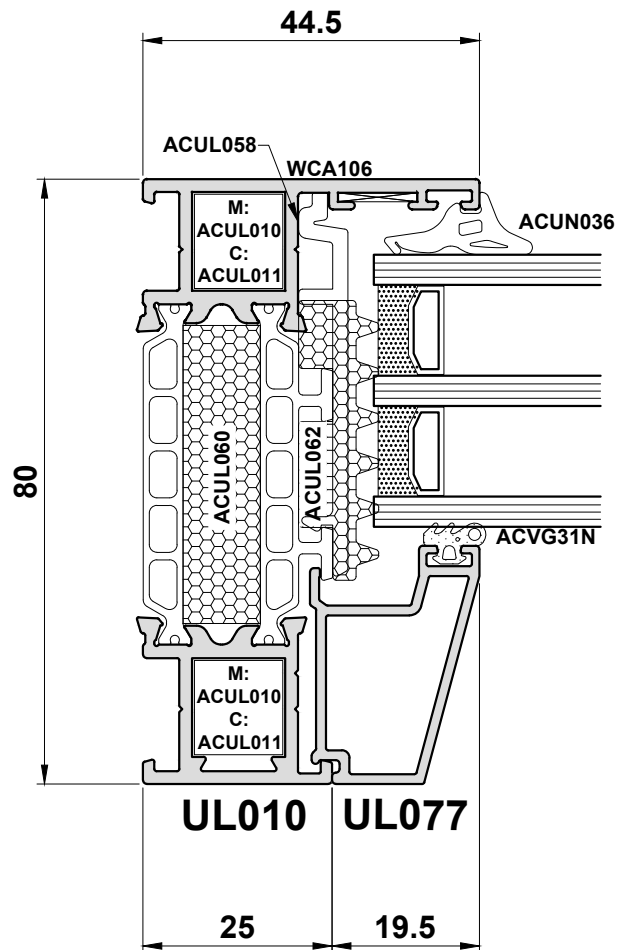
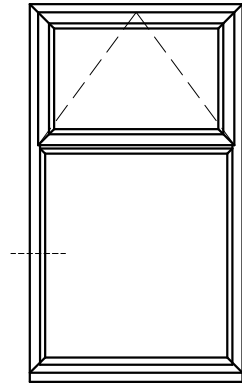
Do Not Scale From This Drawing

Detail 1F



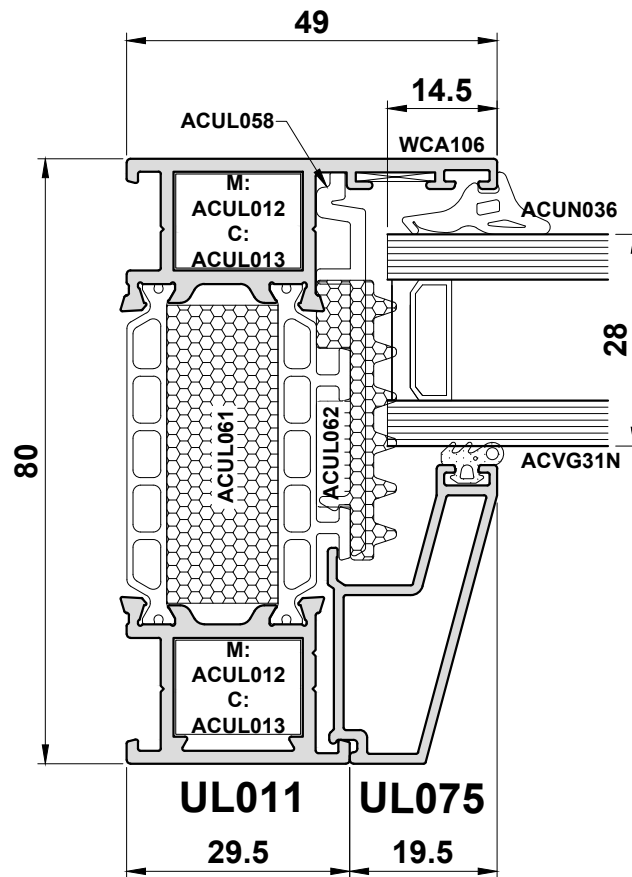
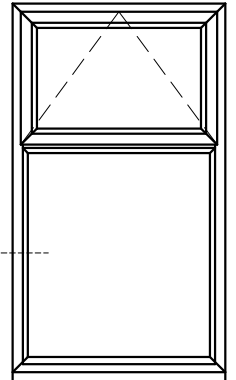
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Detail 1G



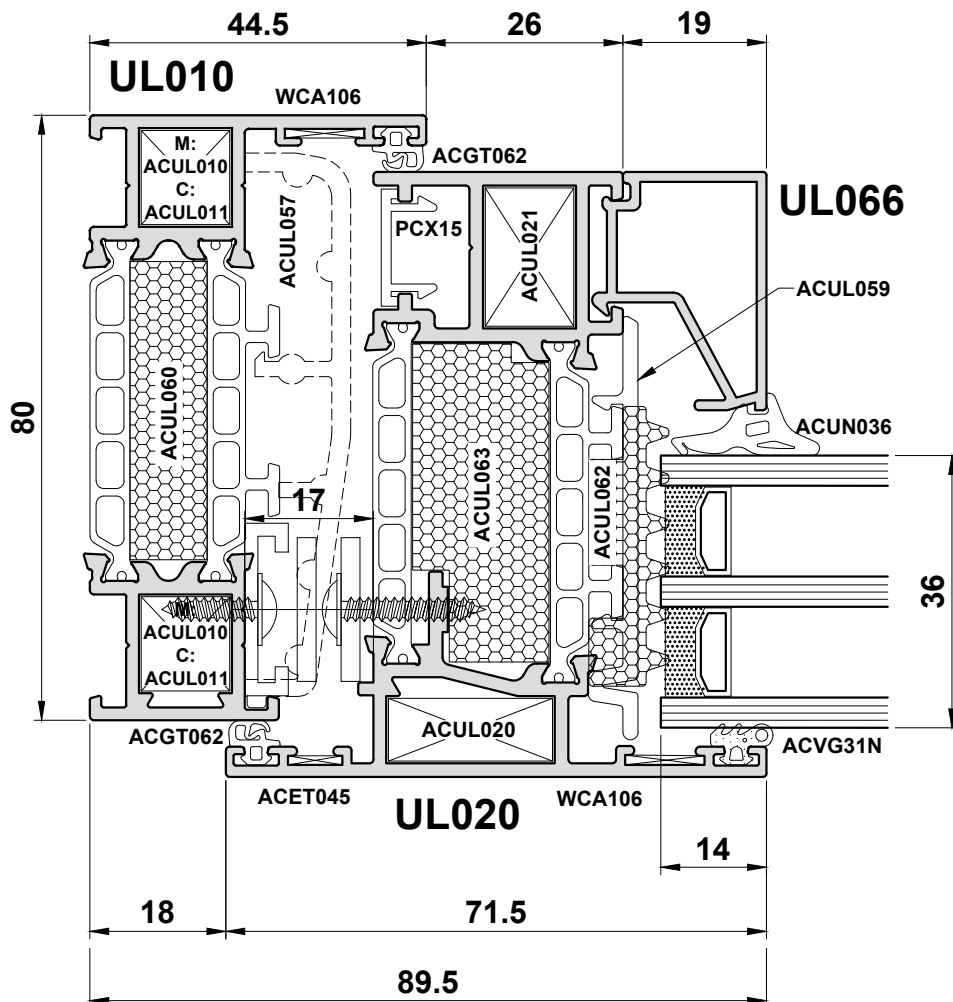
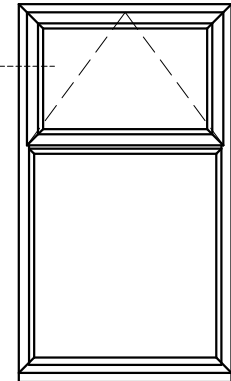
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Detail 1H



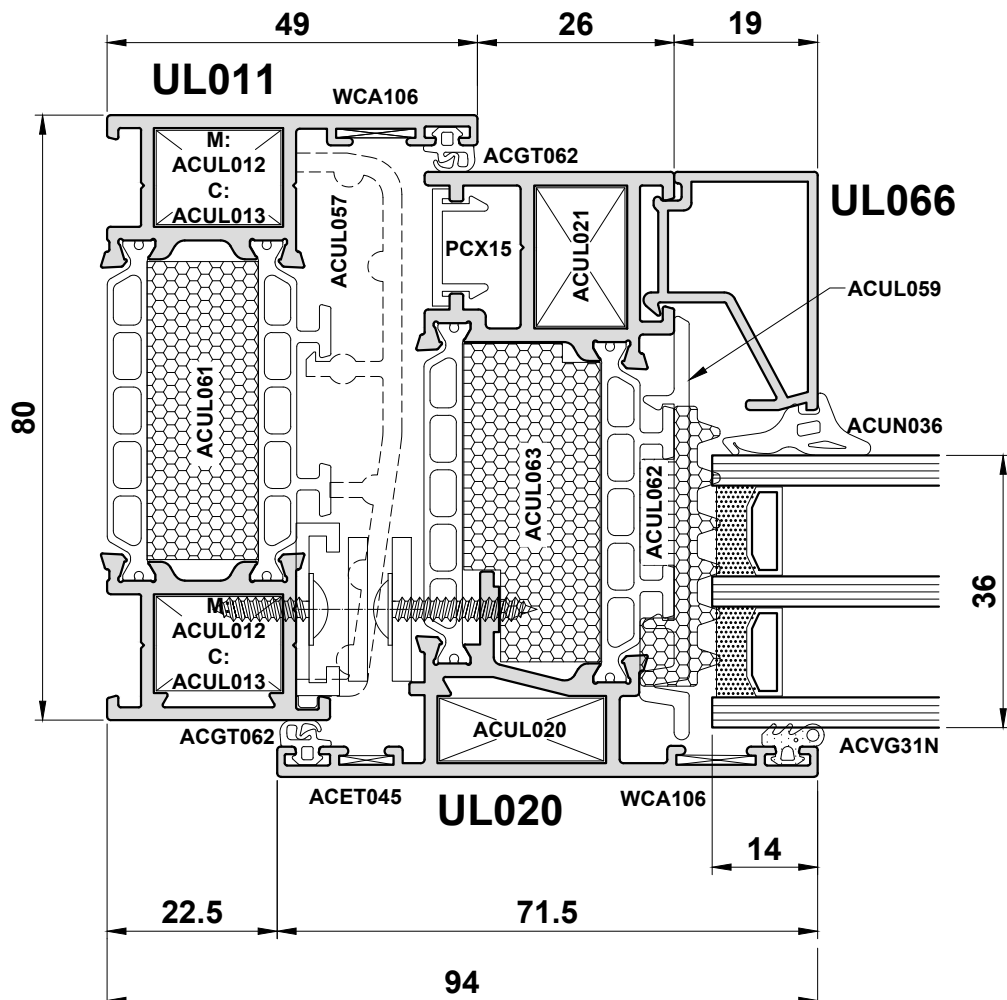
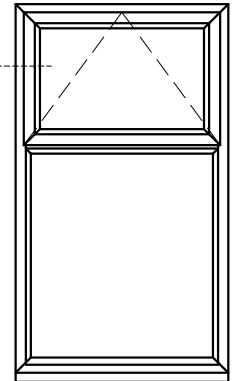
Do Not Scale From This Drawing

Detail 2A



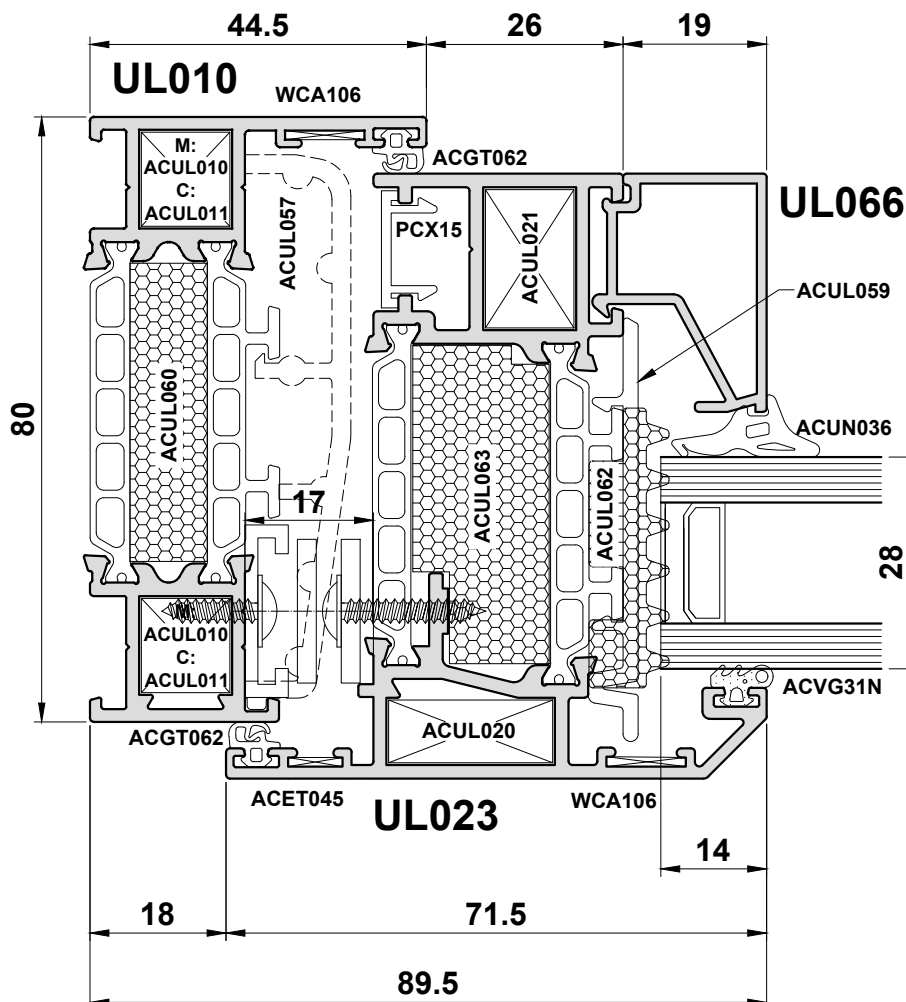
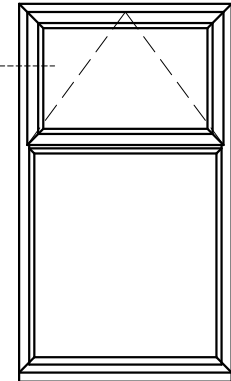
Do Not Scale From This Drawing

Detail 2B



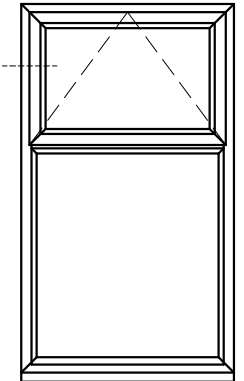
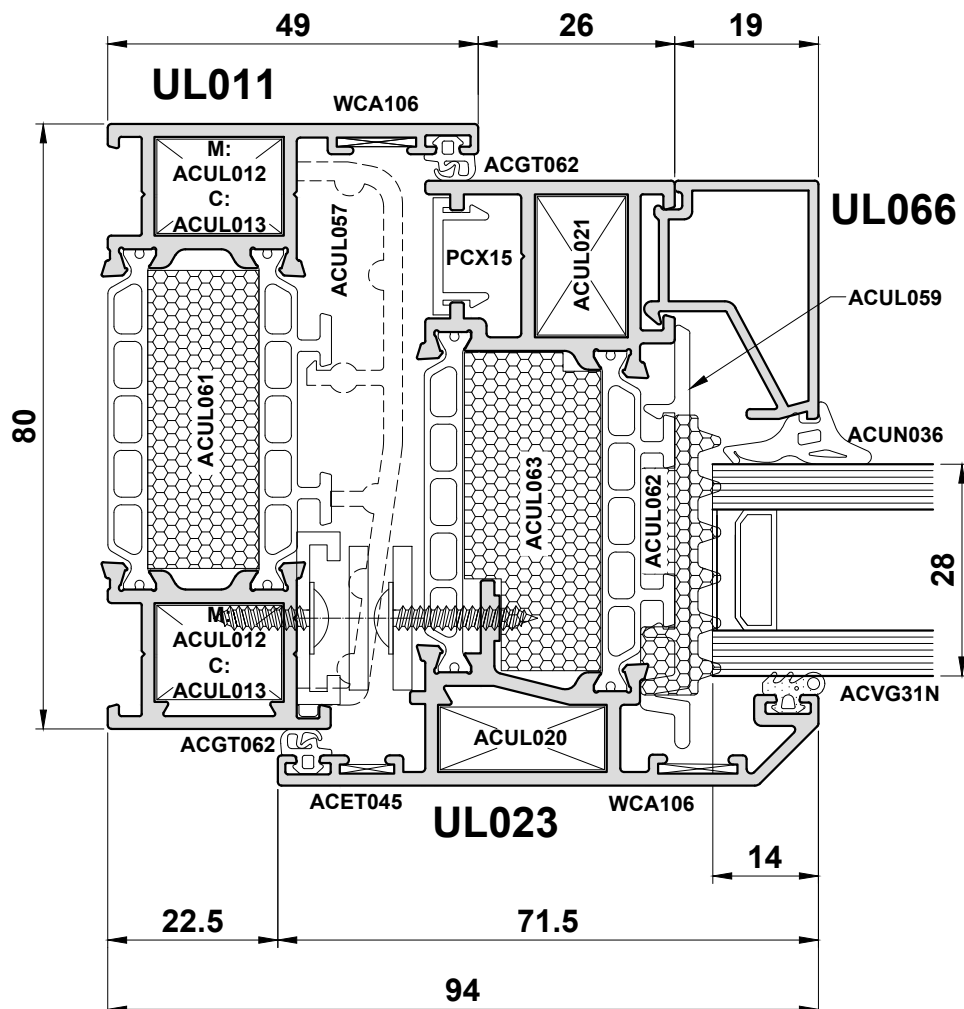
Do Not Scale From This Drawing

Detail 2C



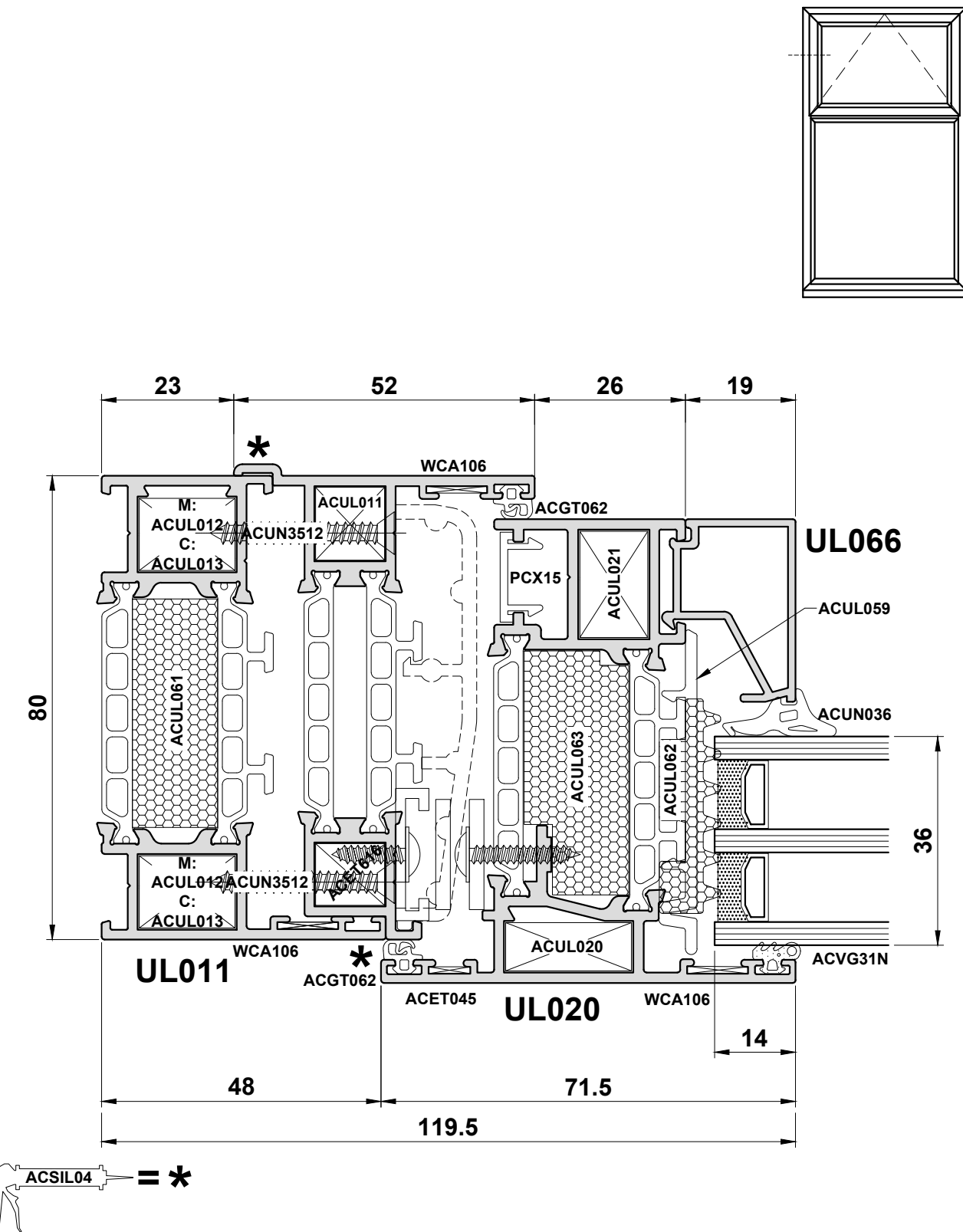
Do Not Scale From This Drawing

Detail 2D



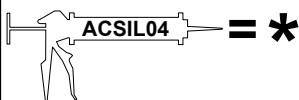
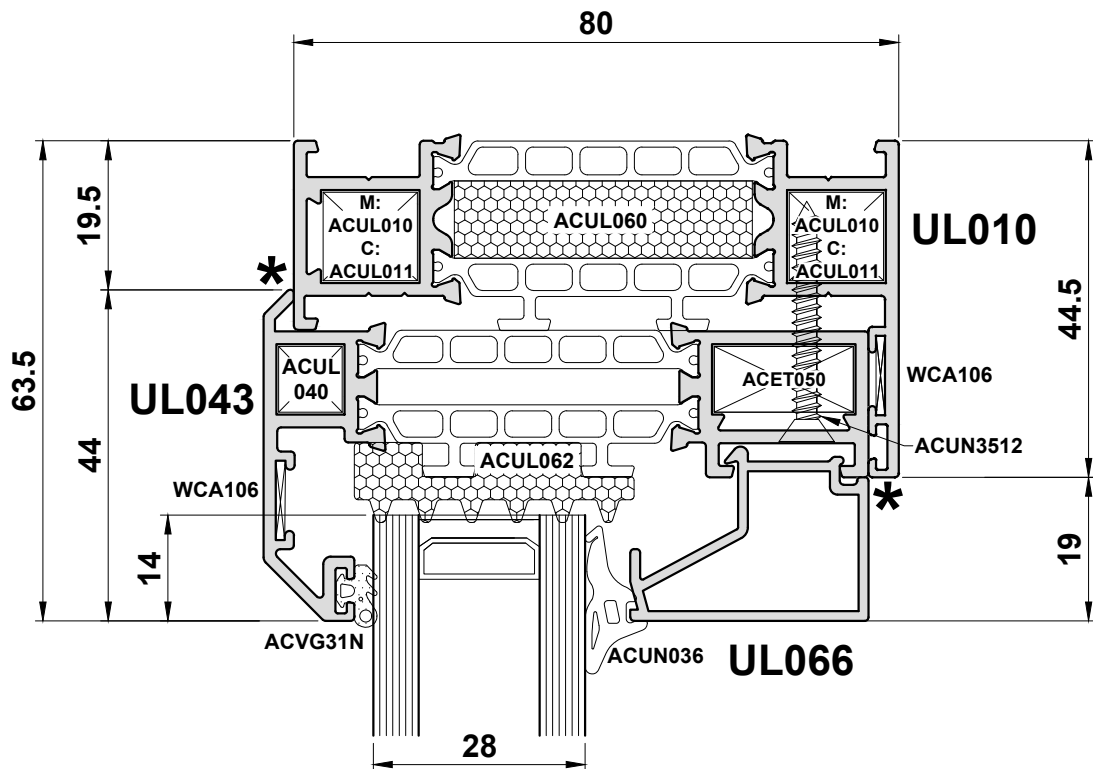
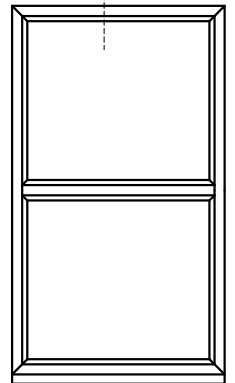
Do Not Scale From This Drawing

Detail 2E



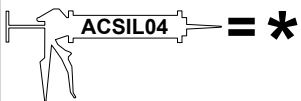
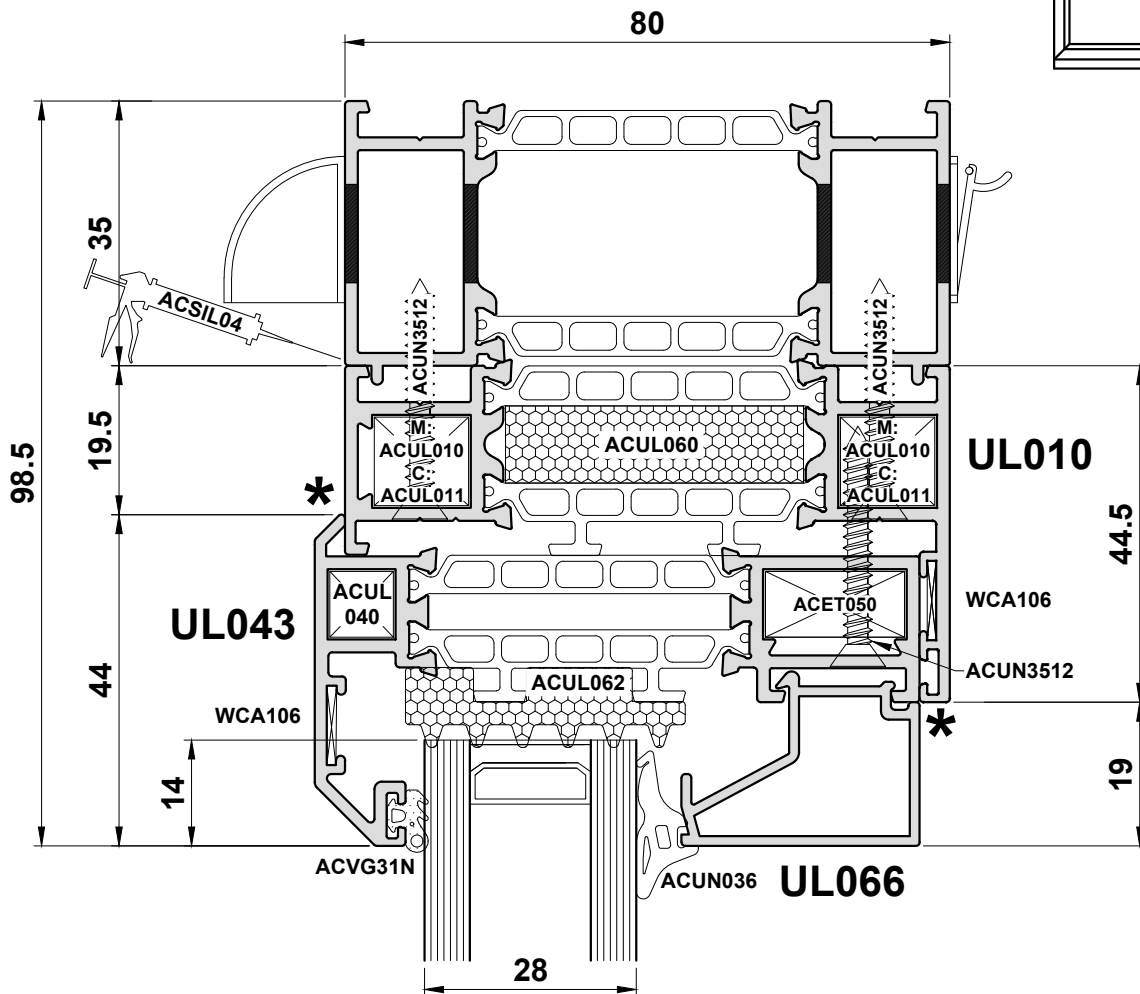
Do Not Scale From This Drawing

Detail 3A



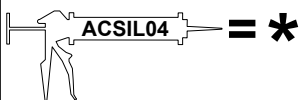
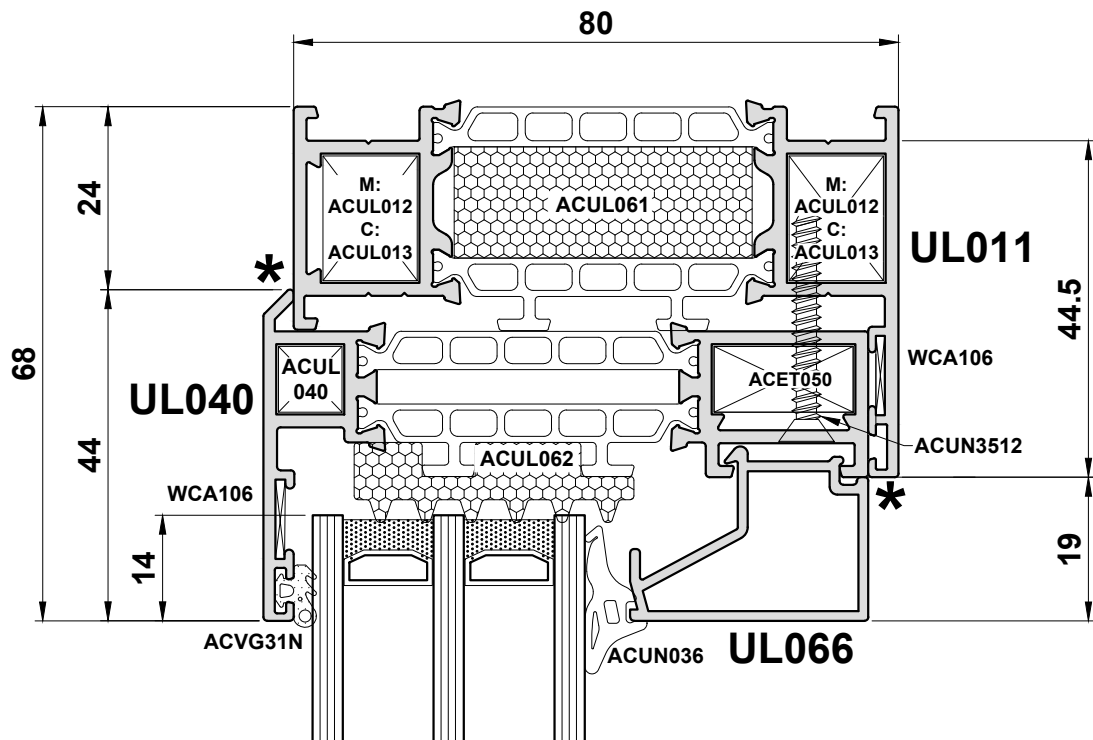
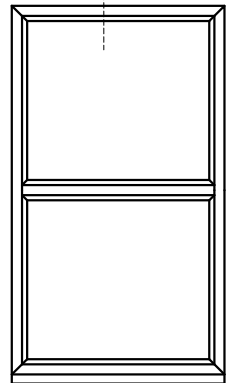
Do Not Scale From This Drawing

Detail 3B



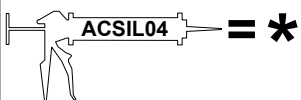
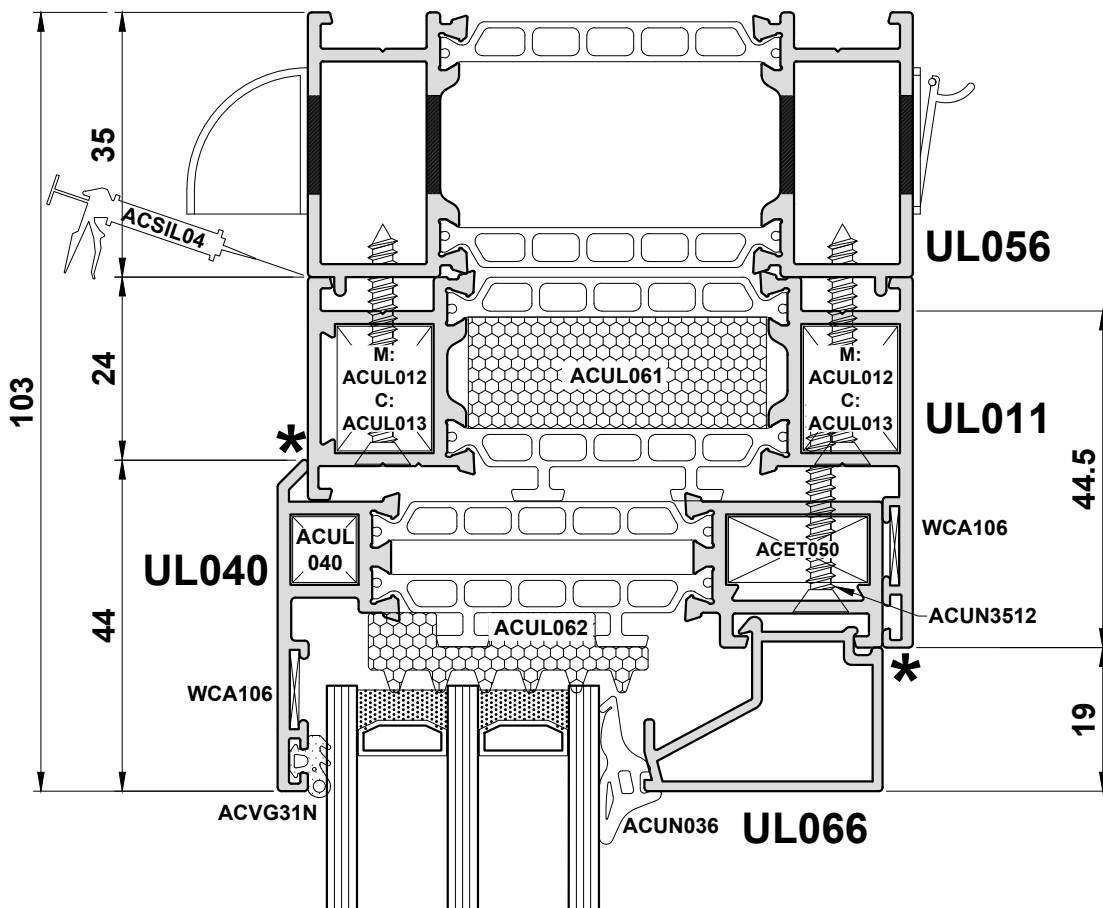
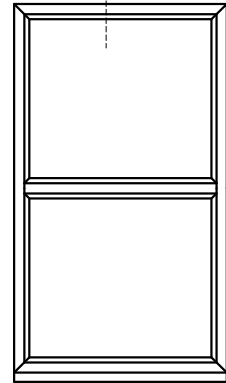
Do Not Scale From This Drawing

Detail 3C



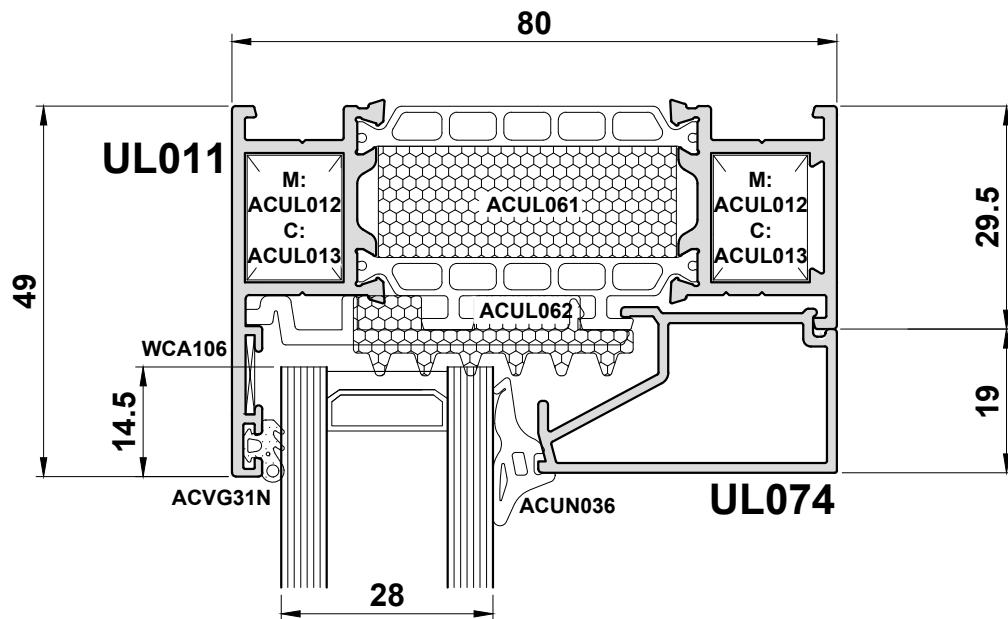
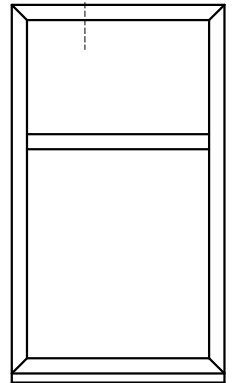
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Detail 3D



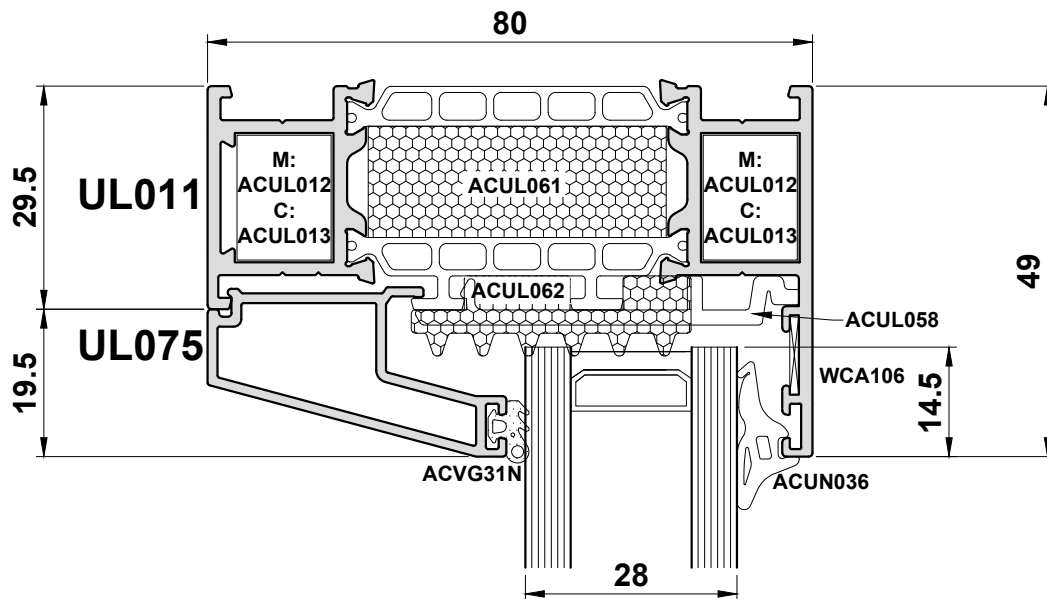
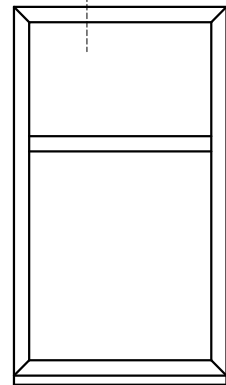
Do Not Scale From This Drawing

Detail 3E



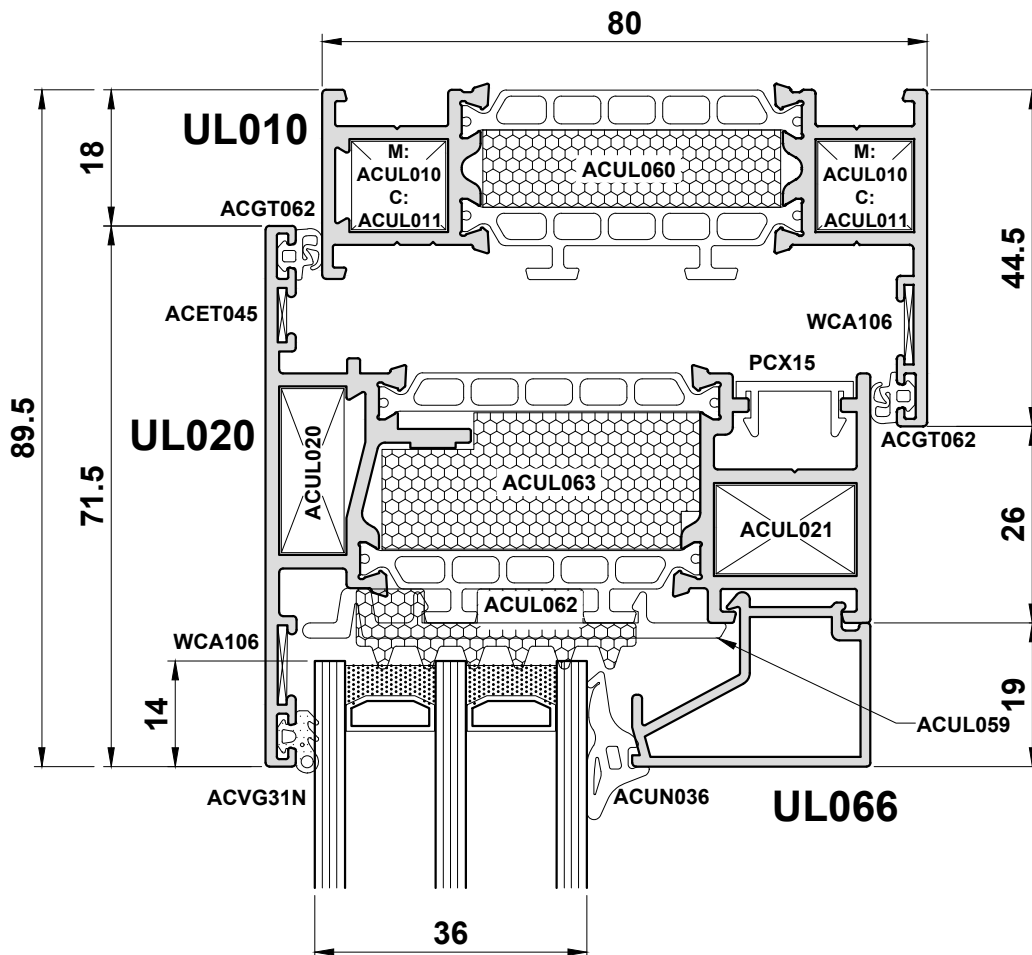
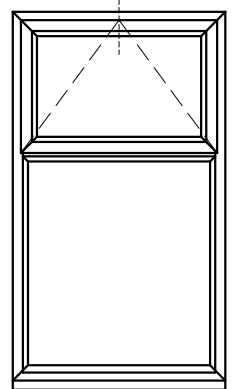
Do Not Scale From This Drawing

Detail 3F



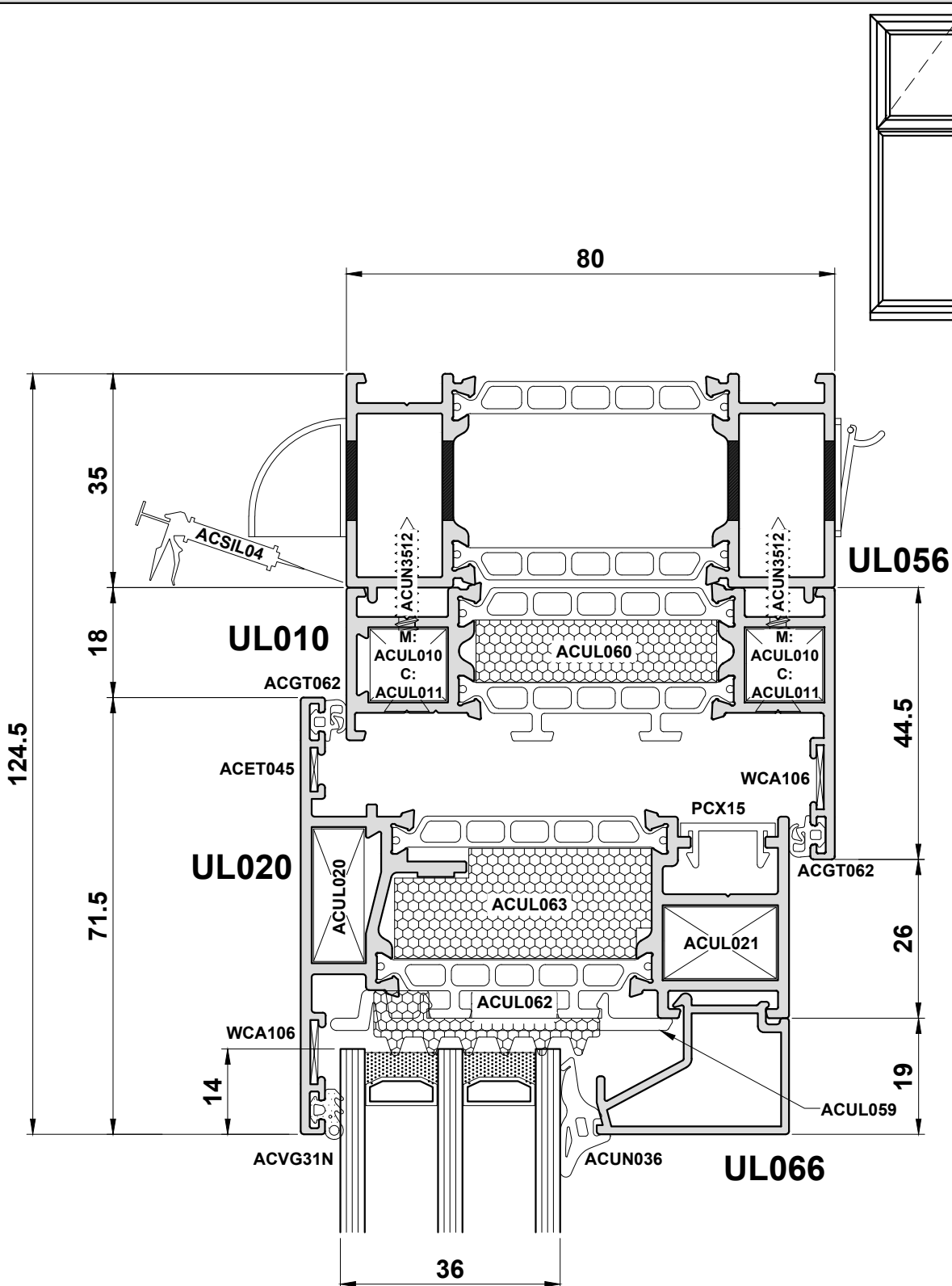
Do Not Scale From This Drawing

Detail 4A



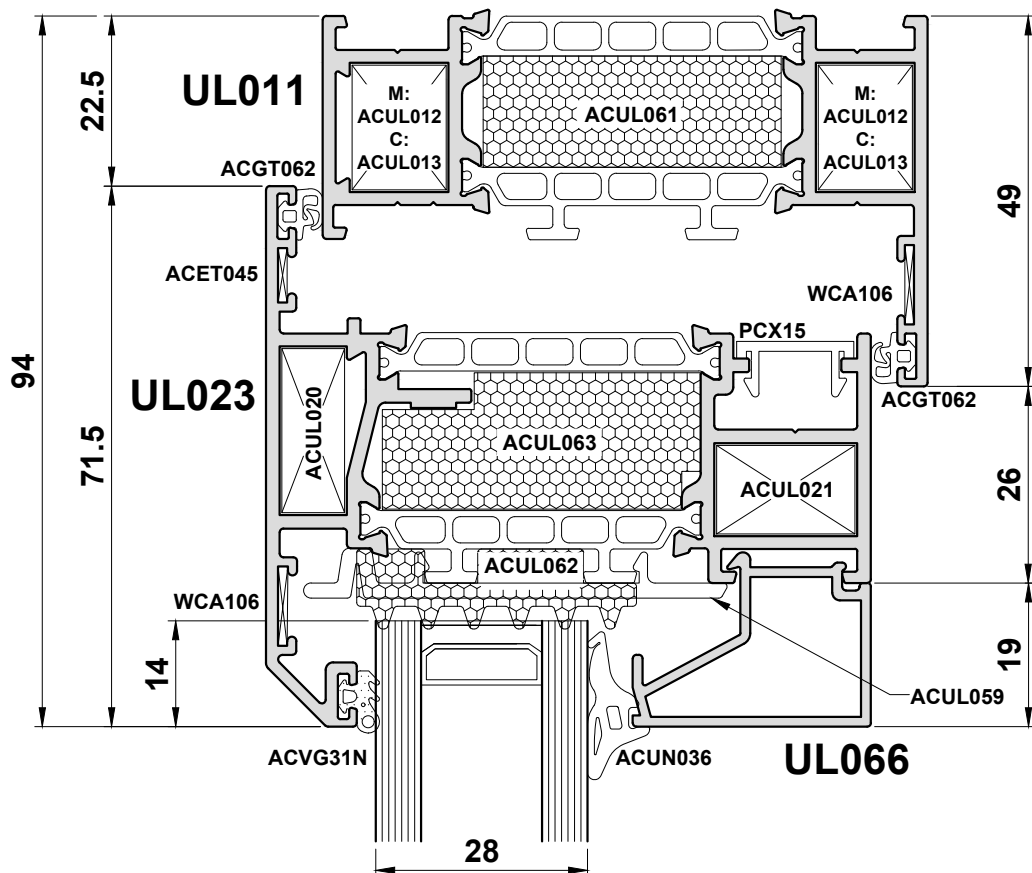
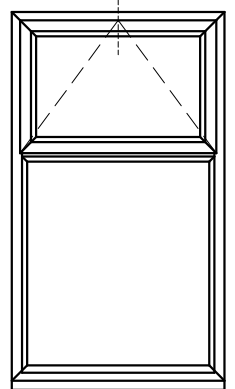
Do Not Scale From This Drawing

Detail 4B



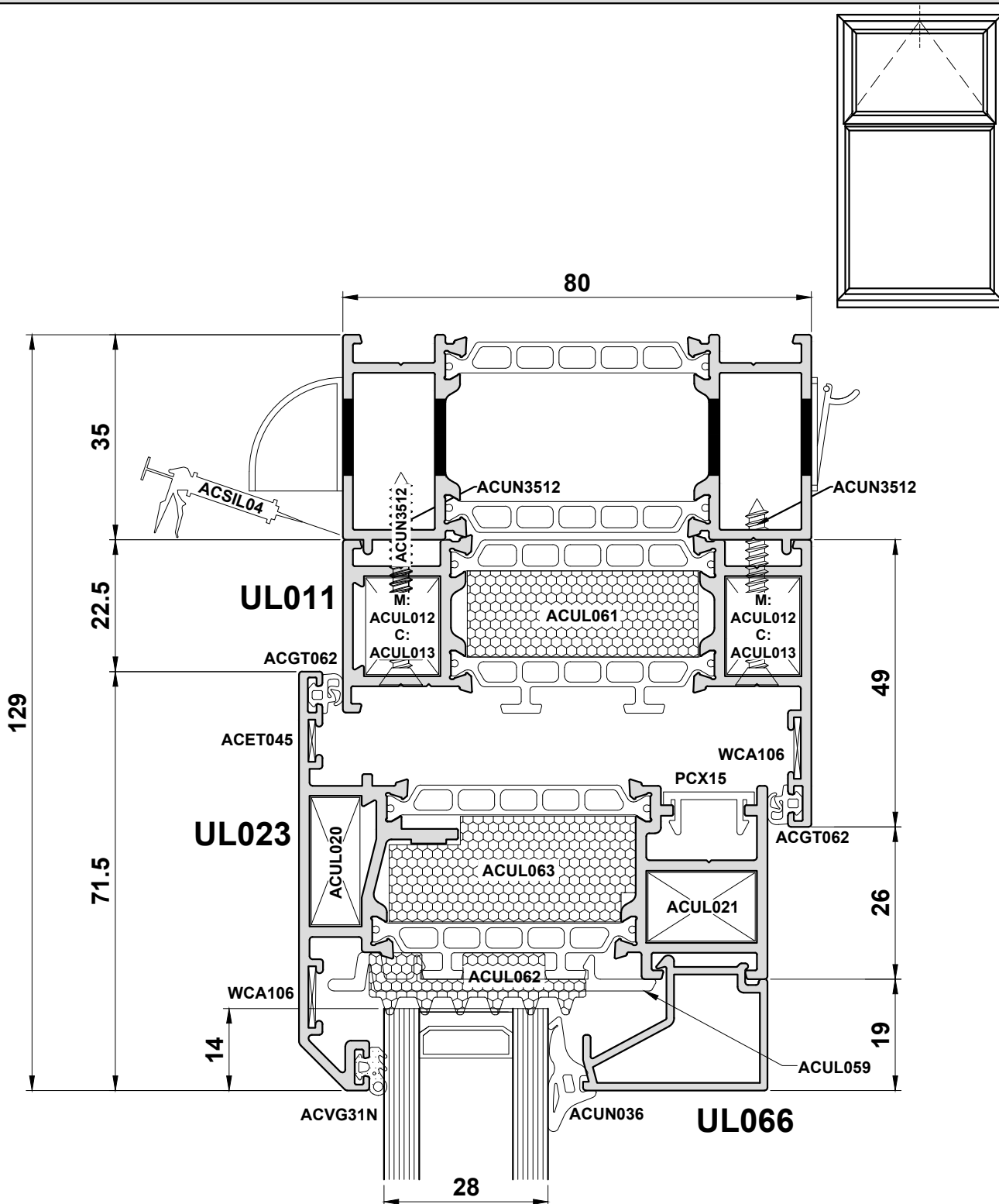
Do Not Scale From This Drawing

Detail 4C



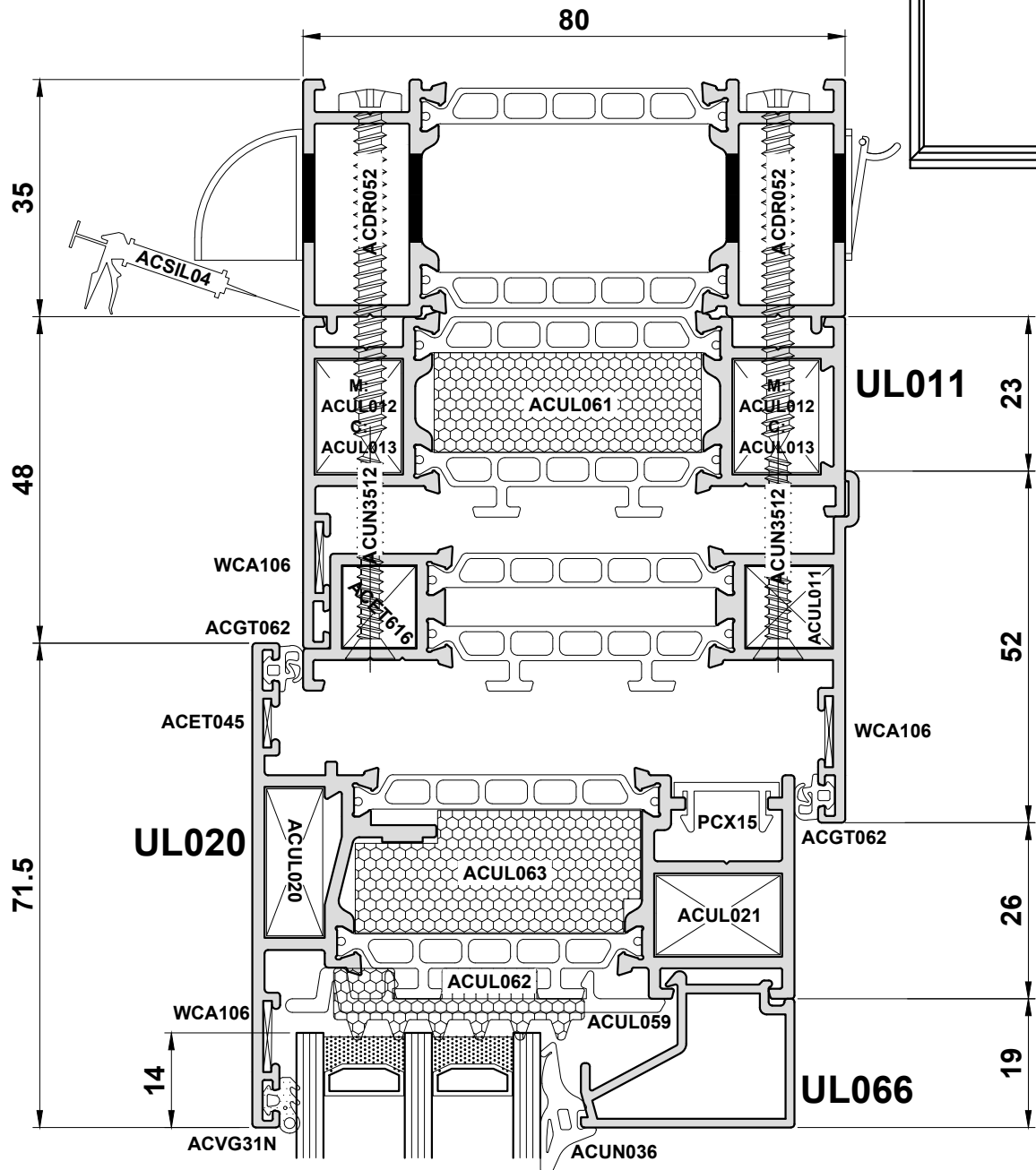
Do Not Scale From This Drawing

Detail 4D



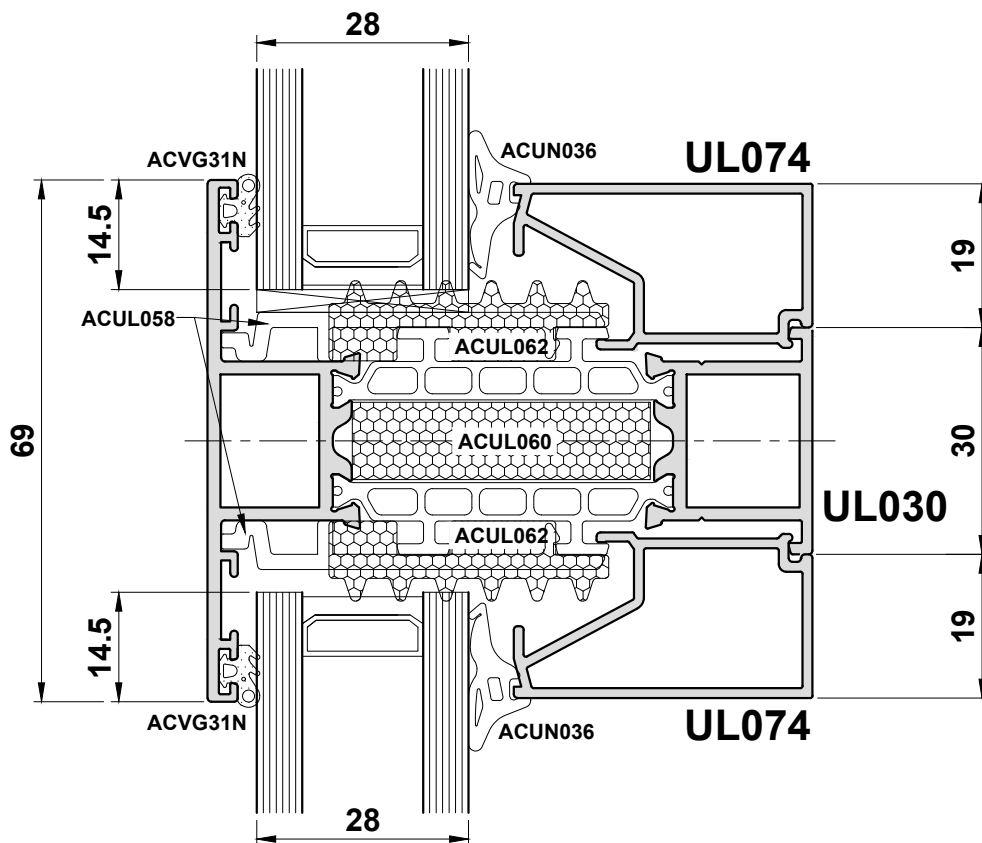
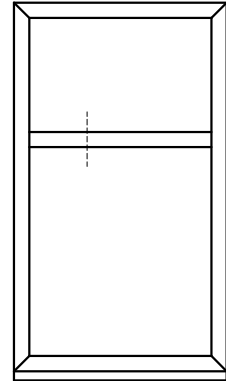
Do Not Scale From This Drawing

Detail 4E



Do Not Scale From This Drawing

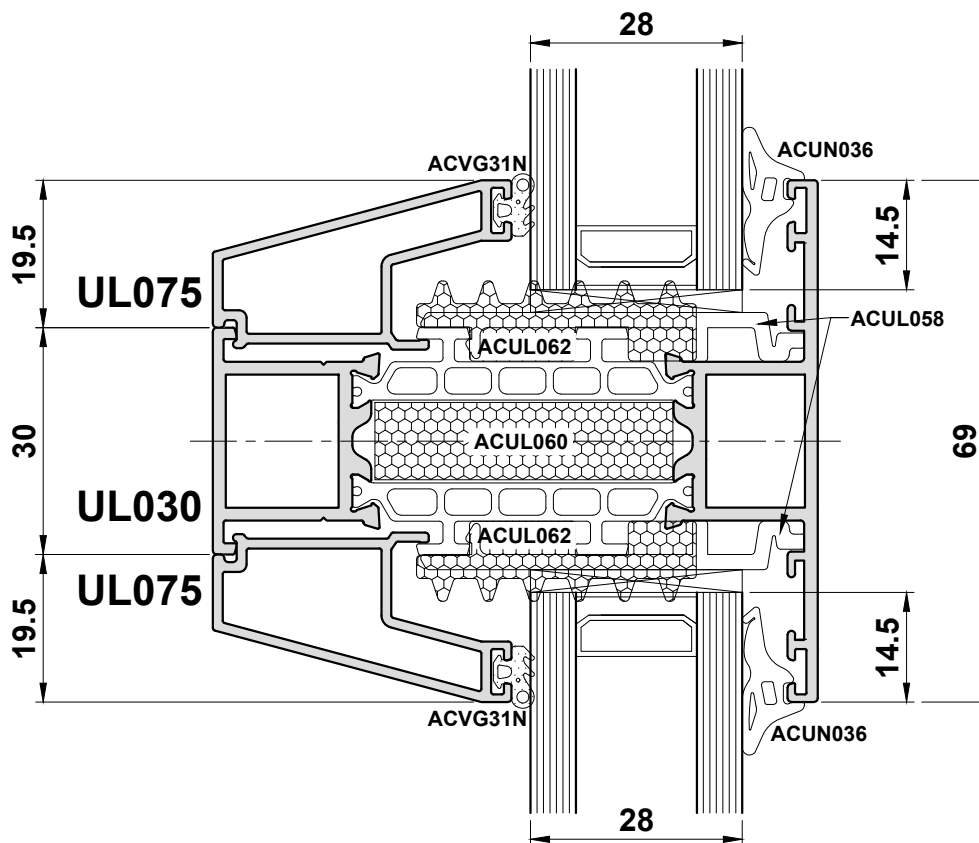
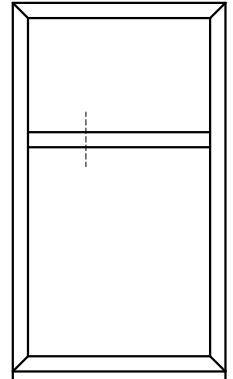
Detail 5A



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

Do Not Scale From This Drawing

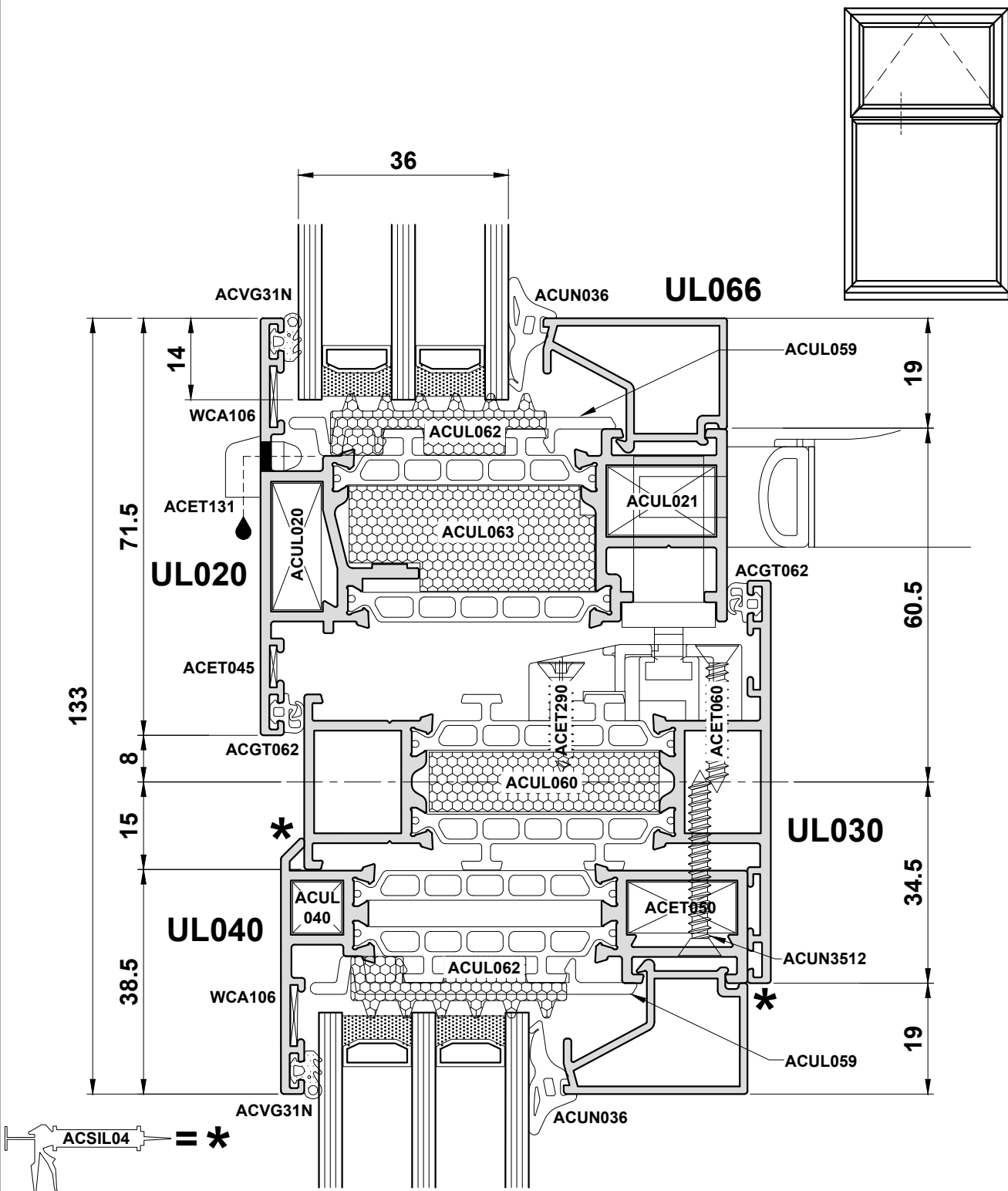
Detail 5B



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

Do Not Scale From This Drawing

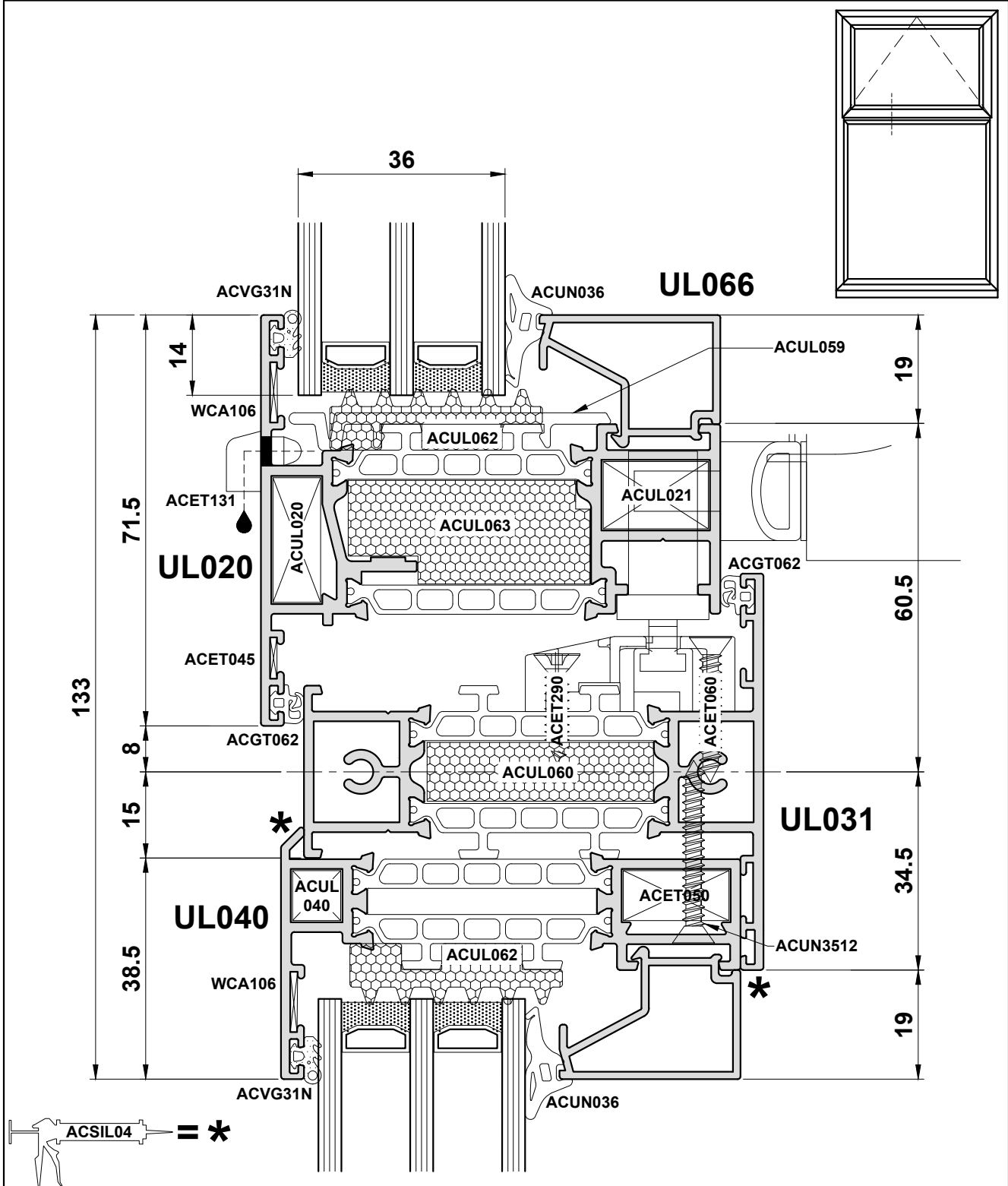
Detail 6A



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

Do Not Scale From This Drawing

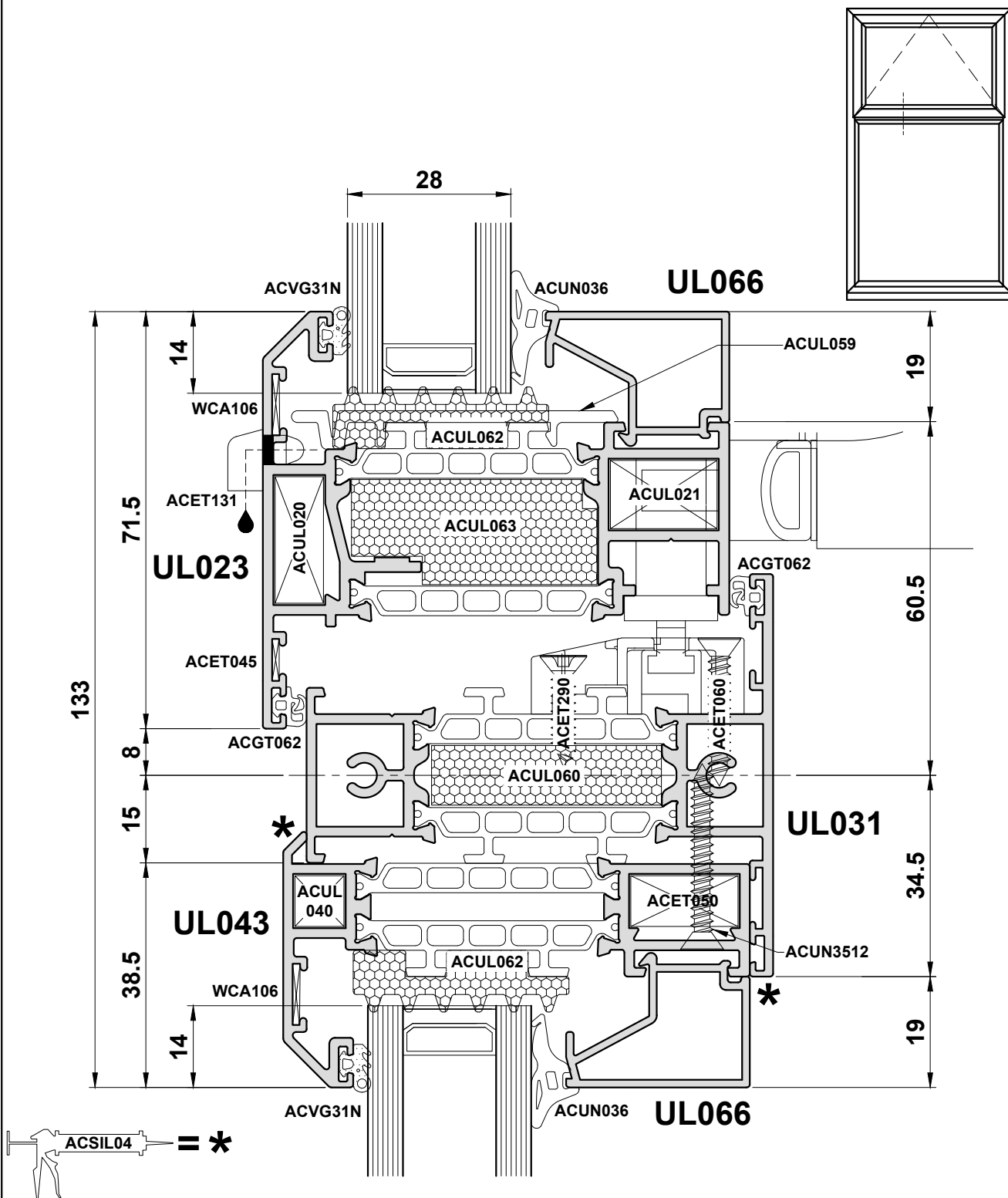
Detail 6B



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

Do Not Scale From This Drawing

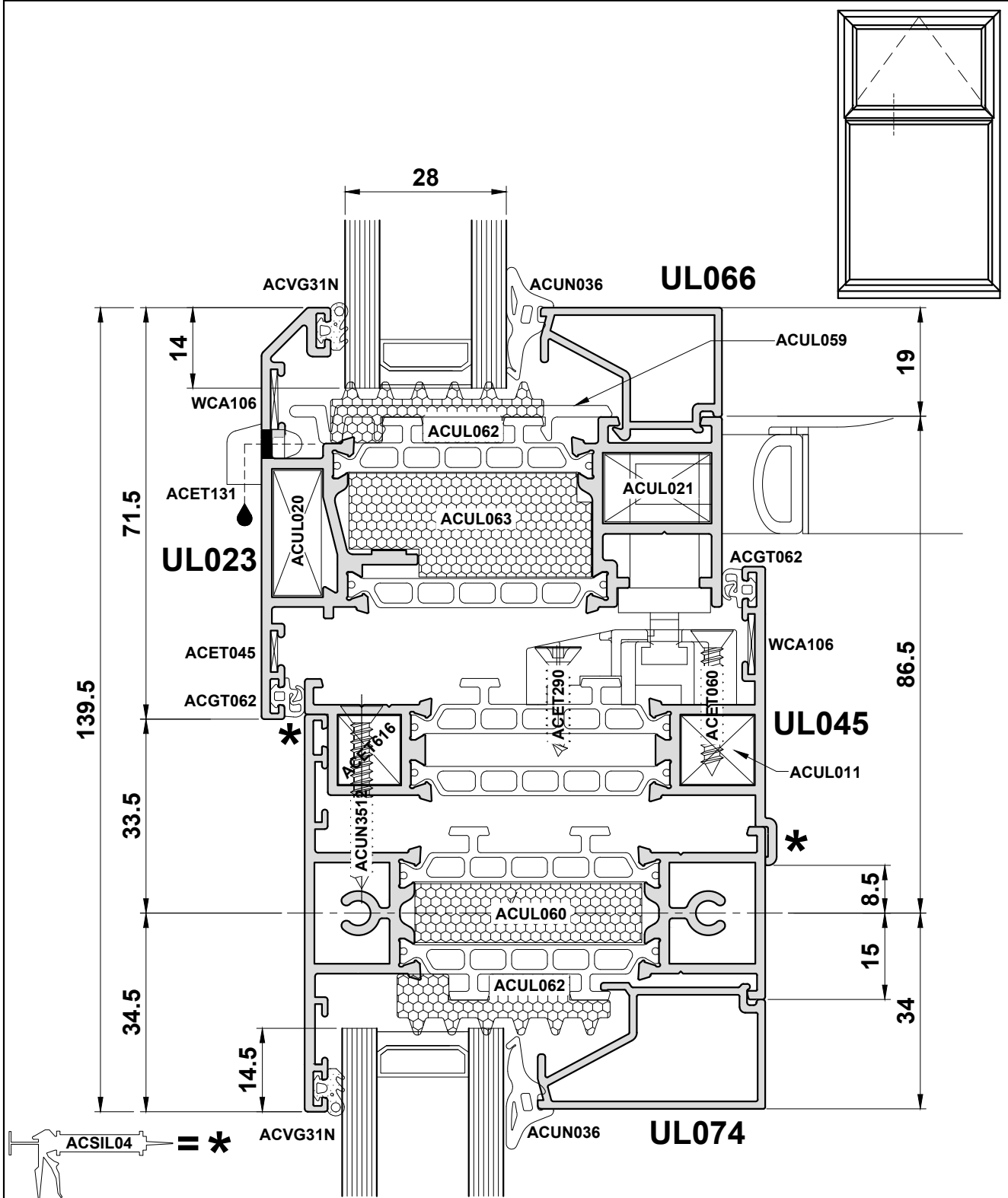
Detail 6C



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

Do Not Scale From This Drawing

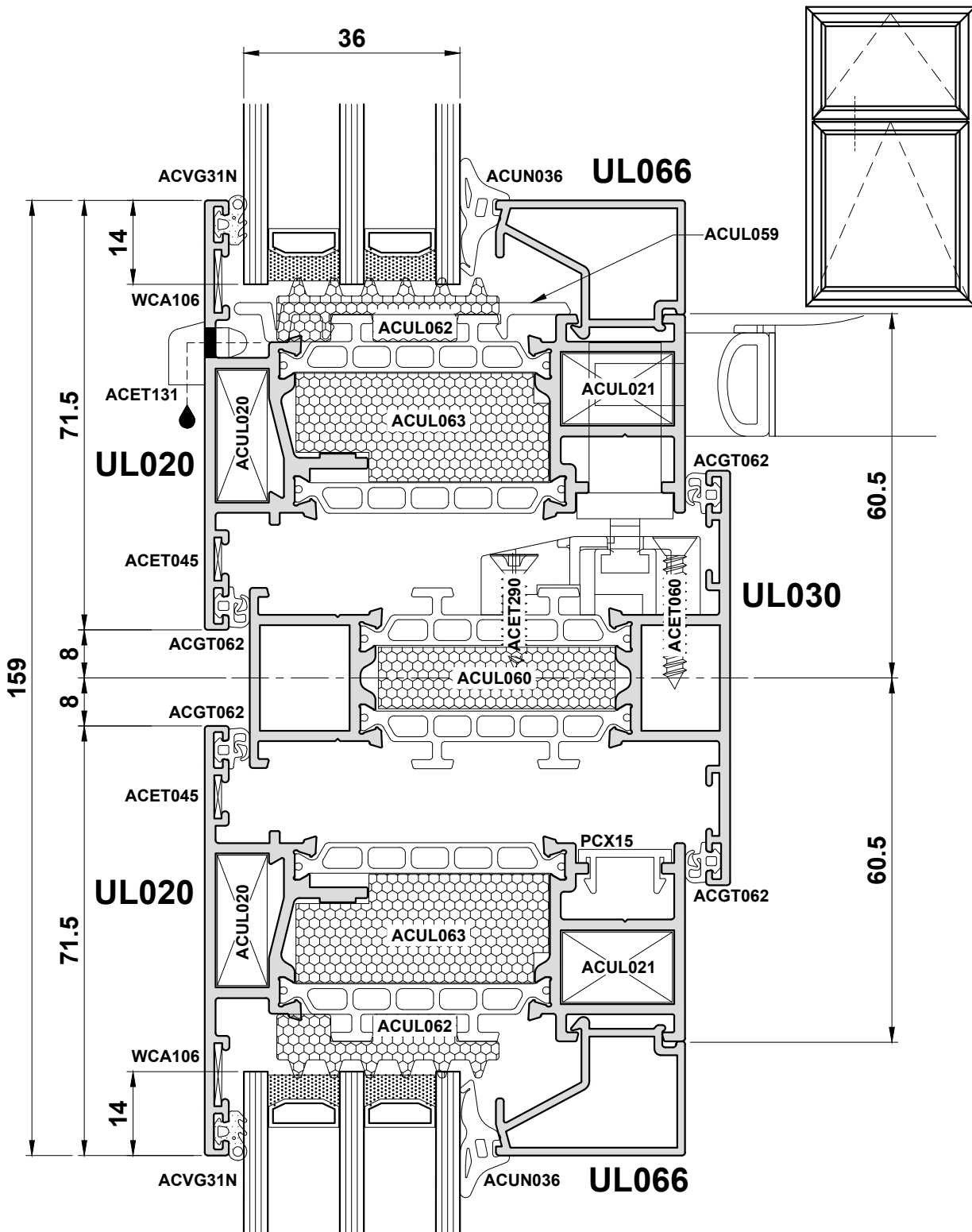
Detail 6D



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

Do Not Scale From This Drawing

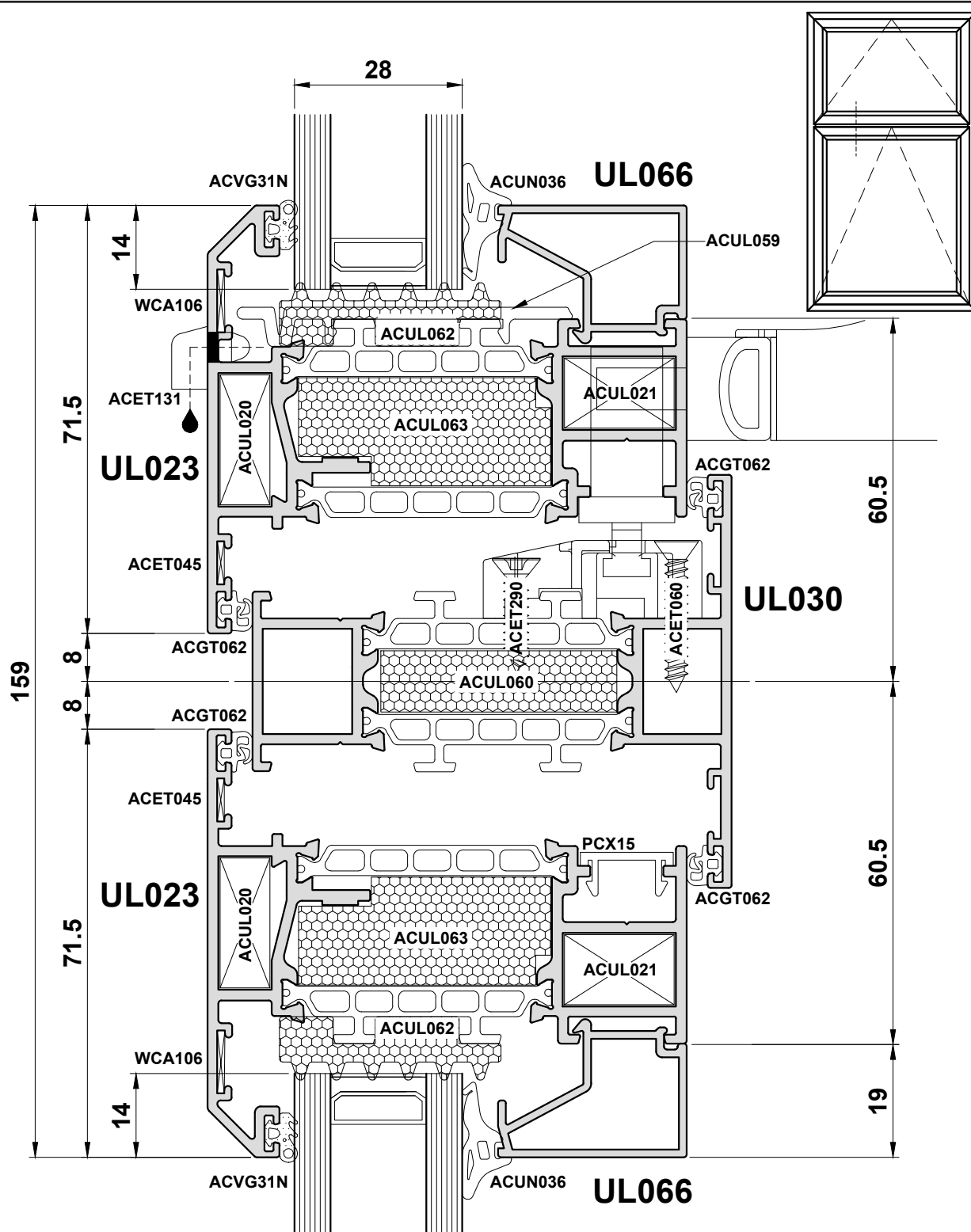
Detail 7A



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

Do Not Scale From This Drawing

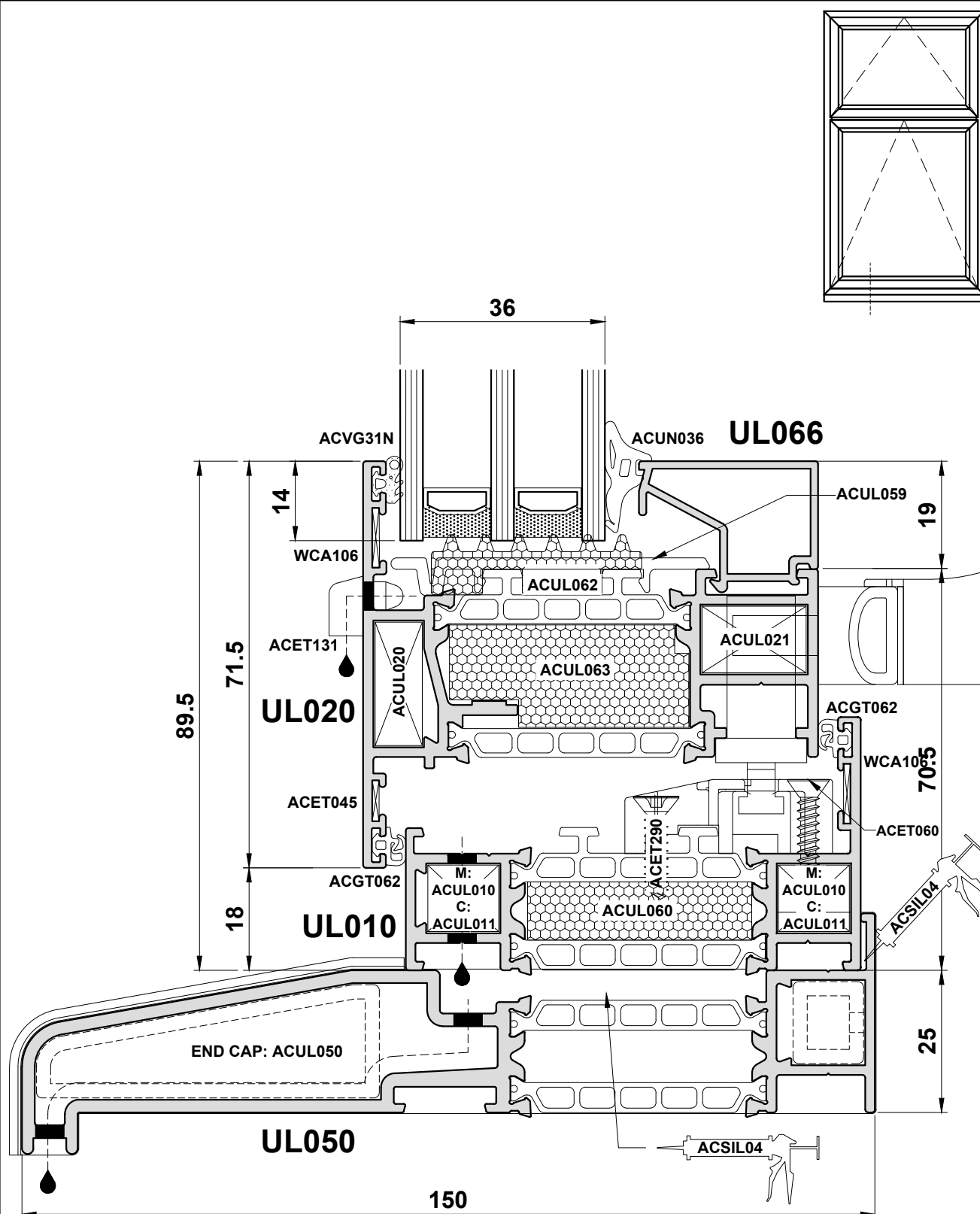
Detail 7B



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

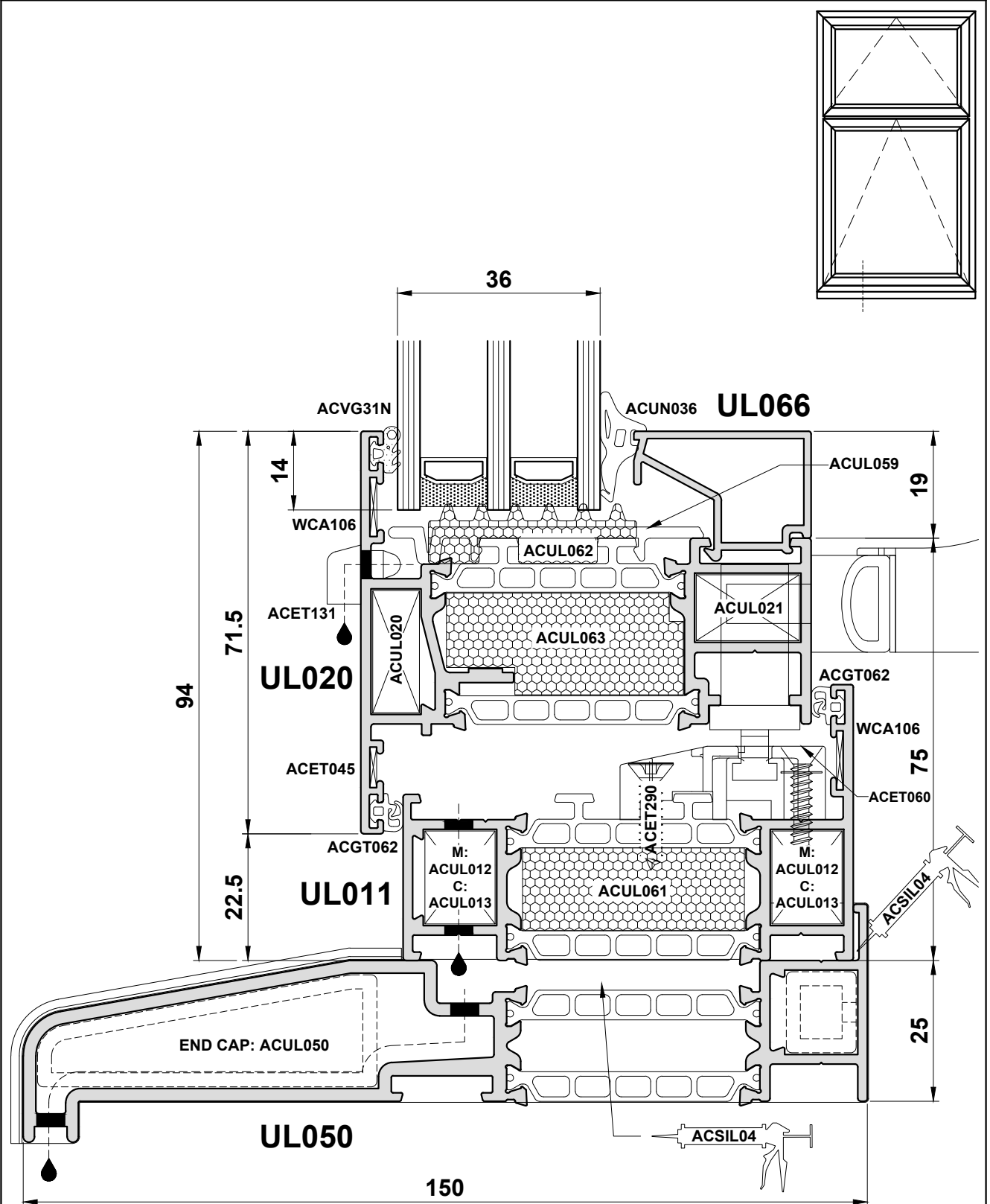
Do Not Scale From This Drawing

Detail 8A



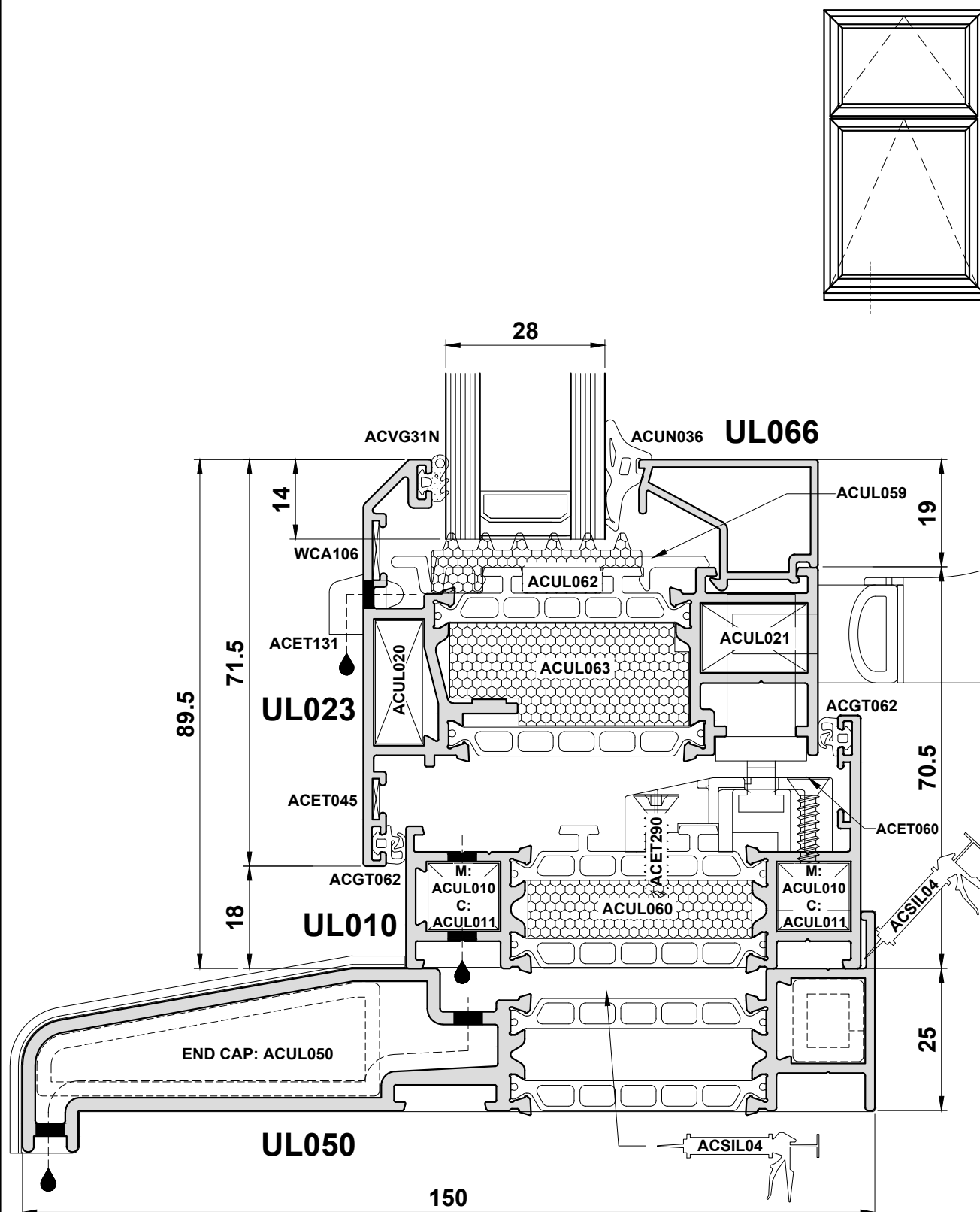
Do Not Scale From This Drawing

Detail 8B



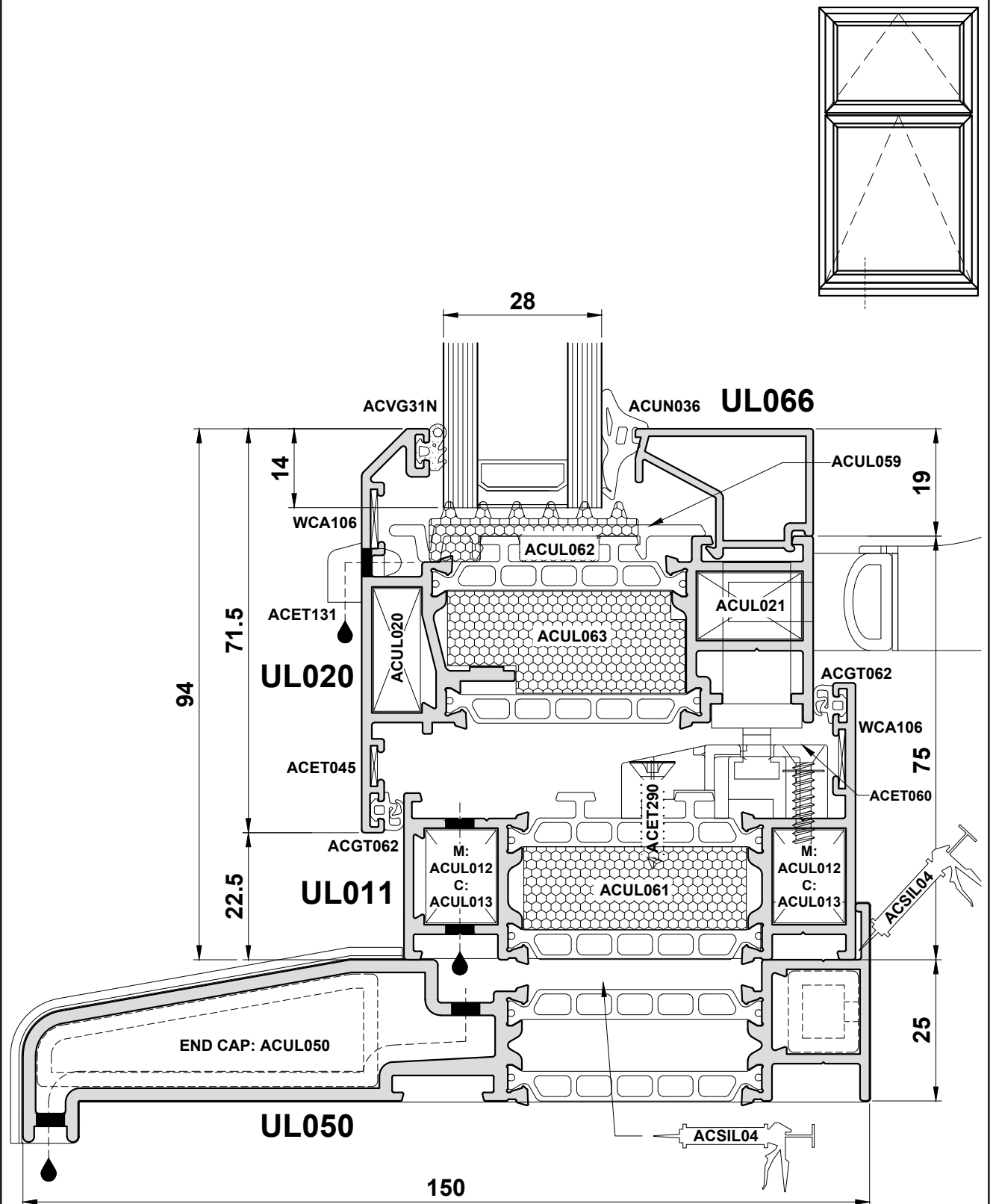
Do Not Scale From This Drawing

Detail 8C



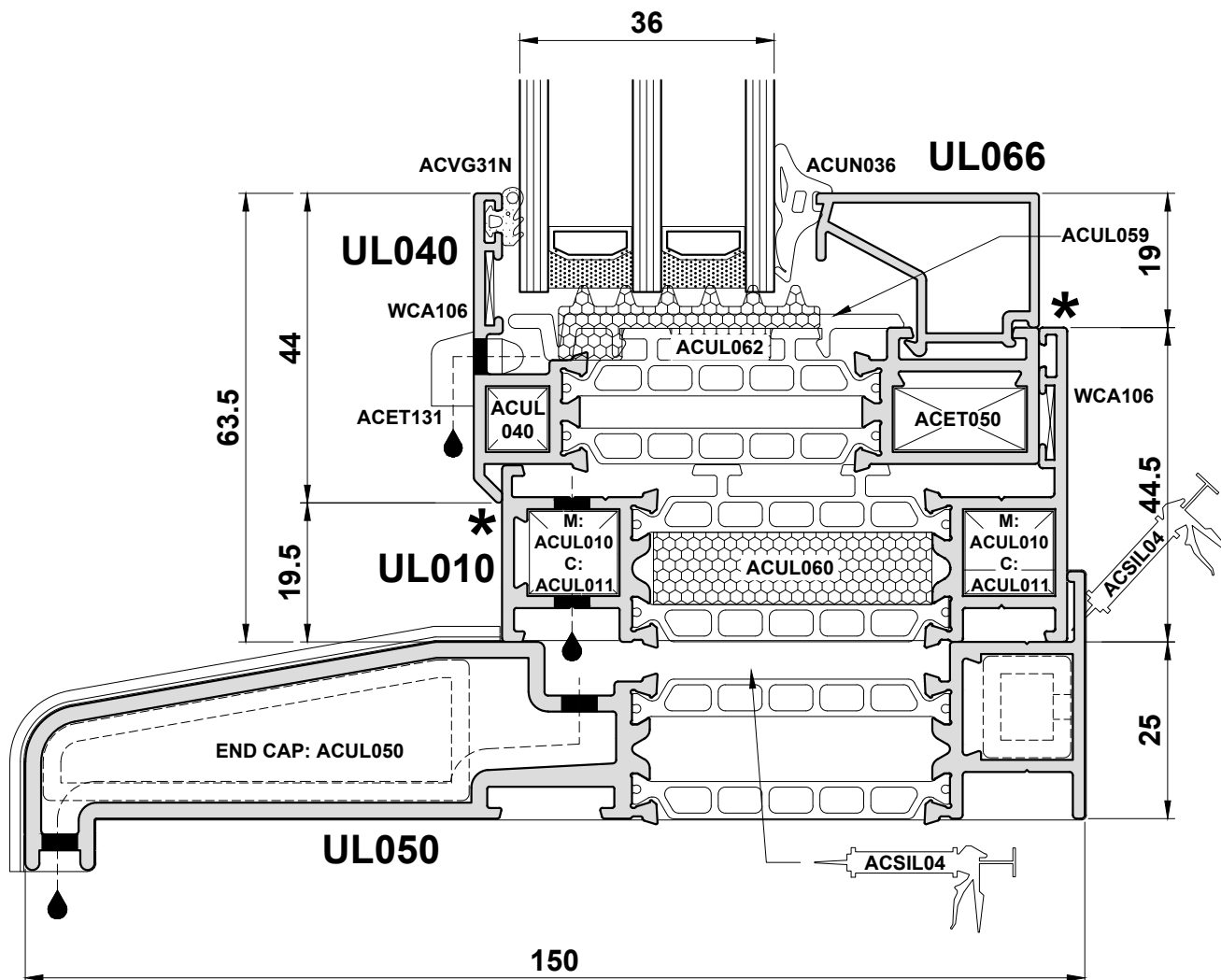
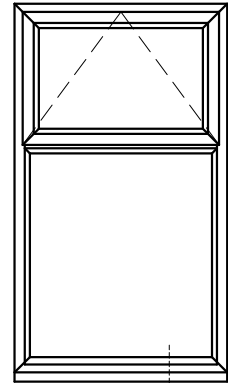
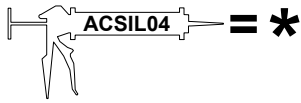
Do Not Scale From This Drawing

Detail 8D



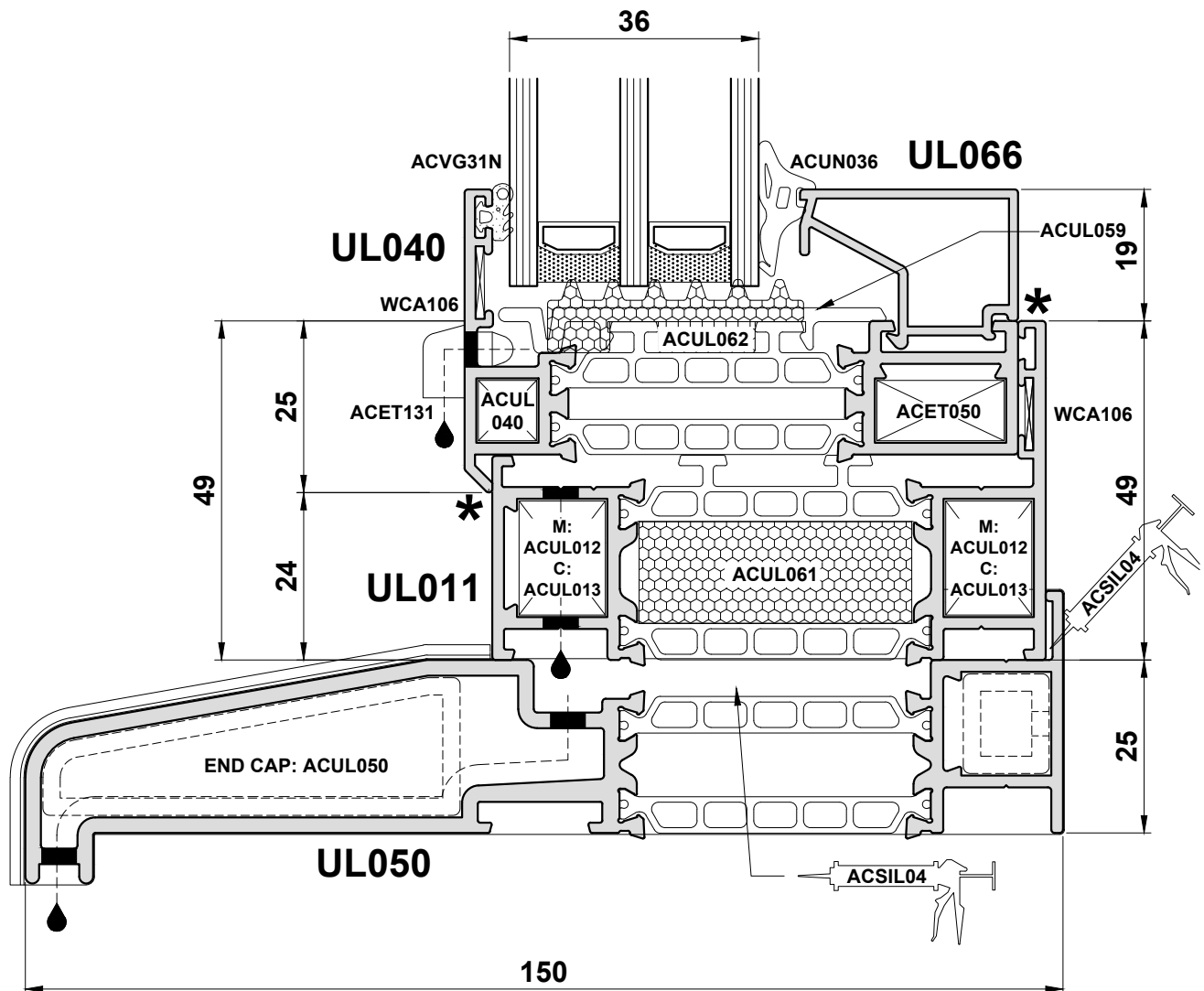
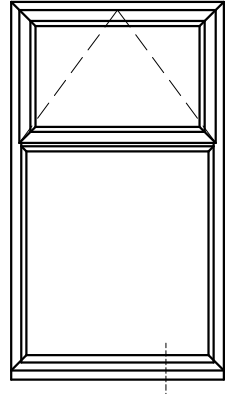
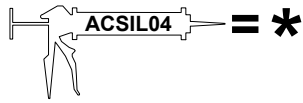
Do Not Scale From This Drawing

Detail 9A



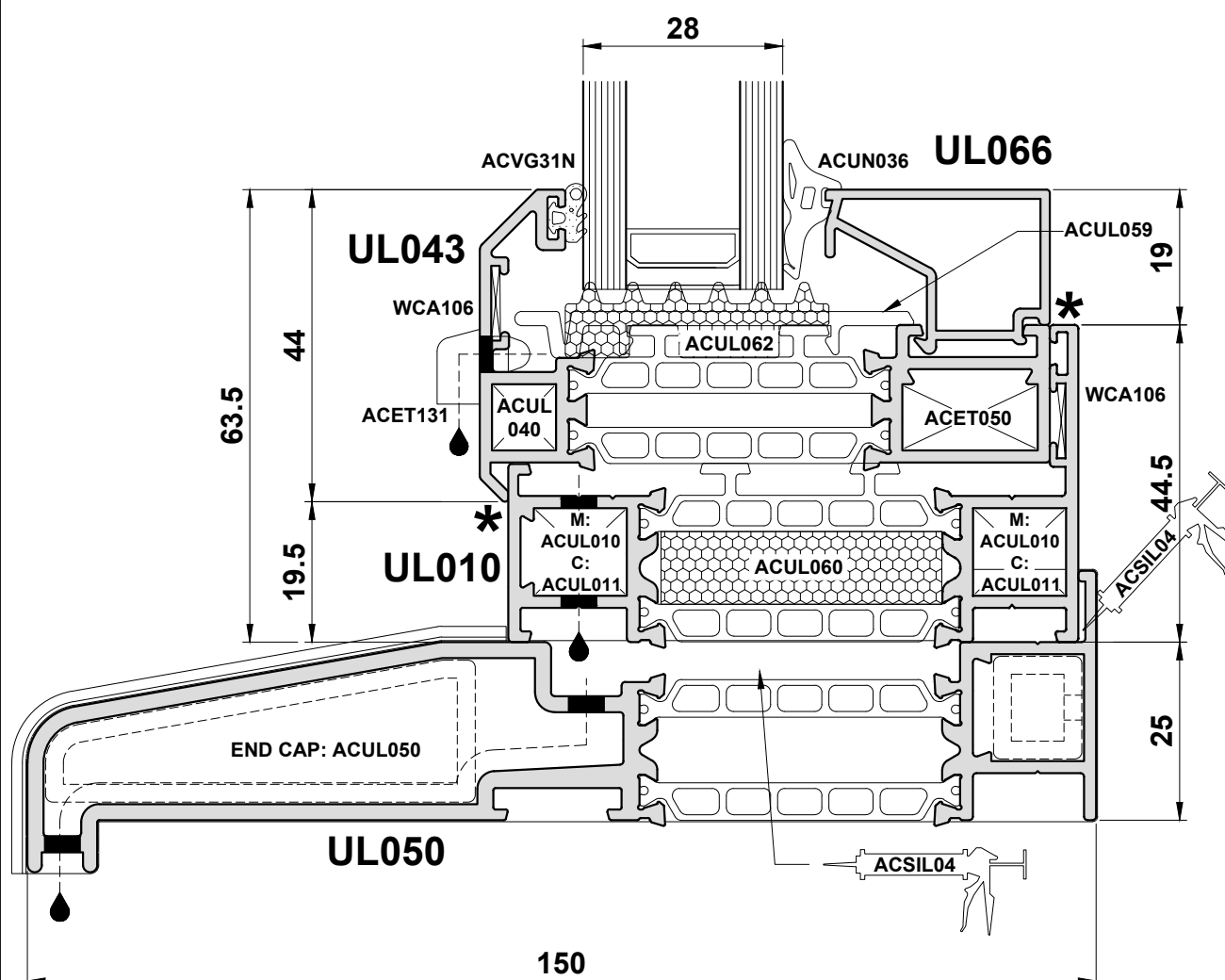
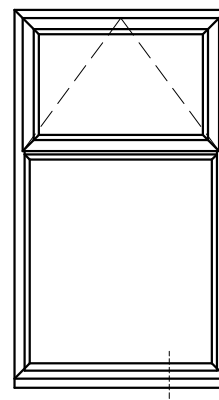
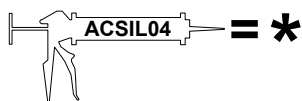
Do Not Scale From This Drawing

Detail 9B



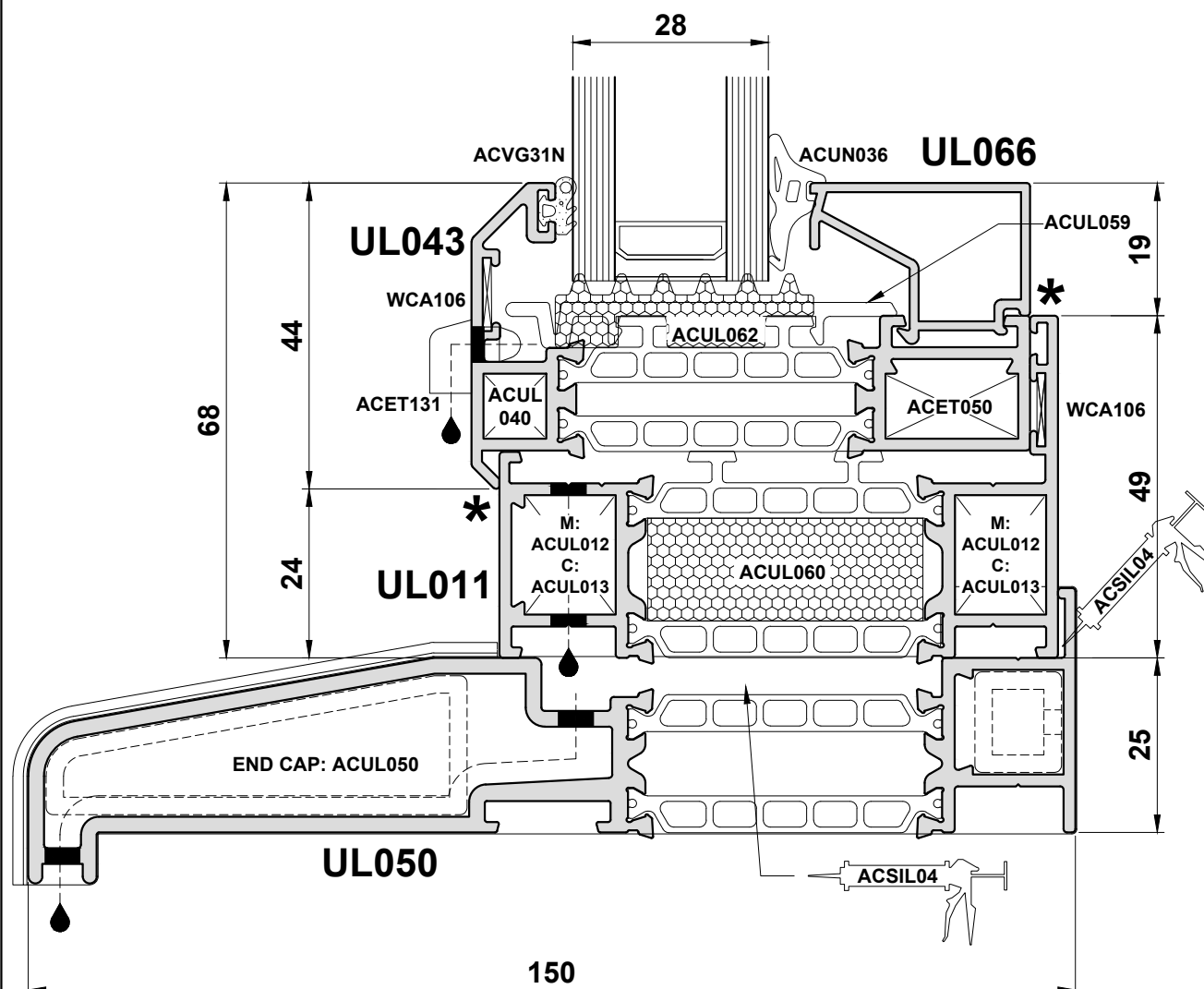
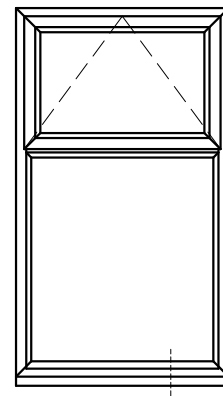
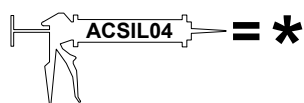
Do Not Scale From This Drawing

Detail 9C



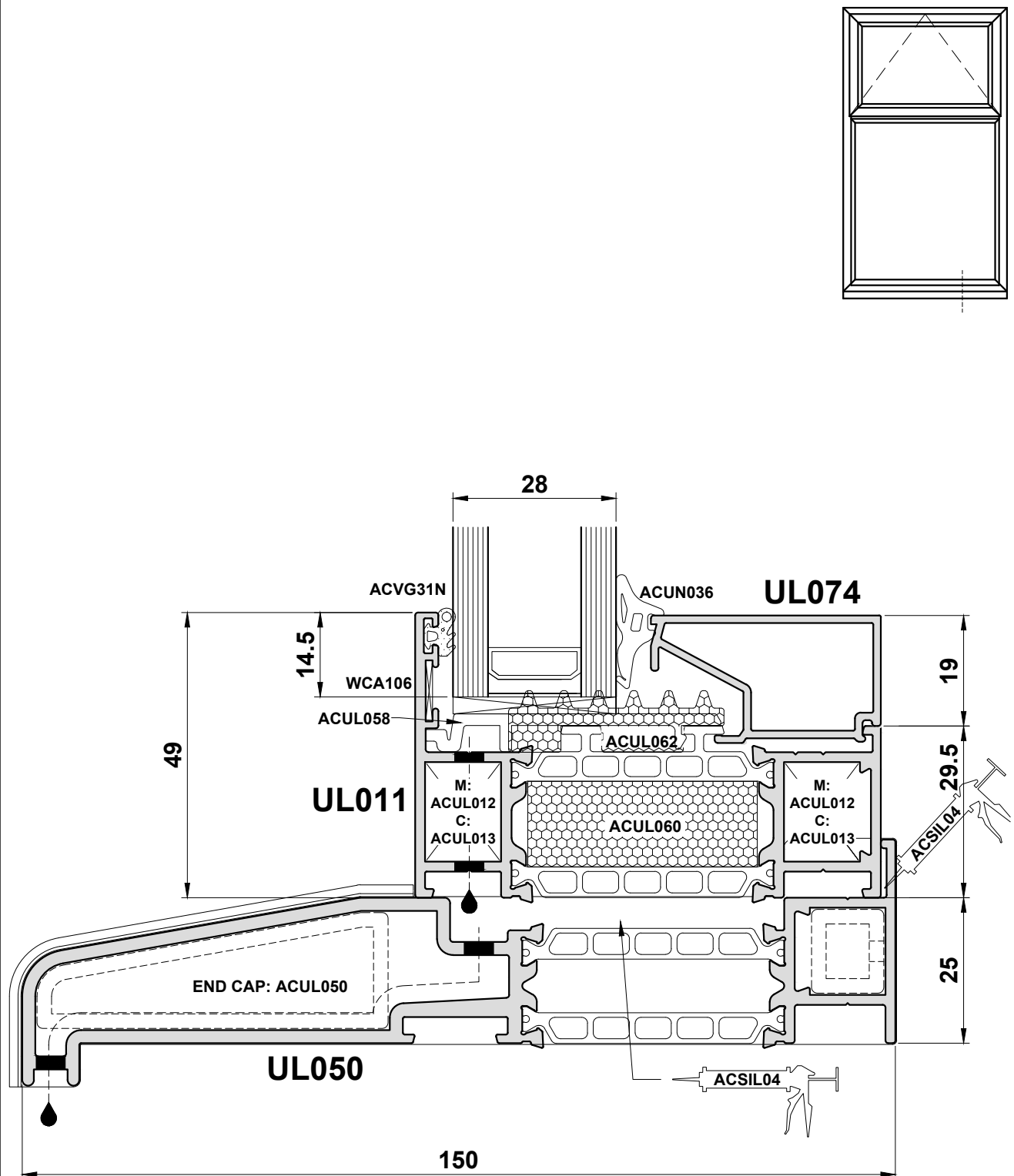
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Detail 9D



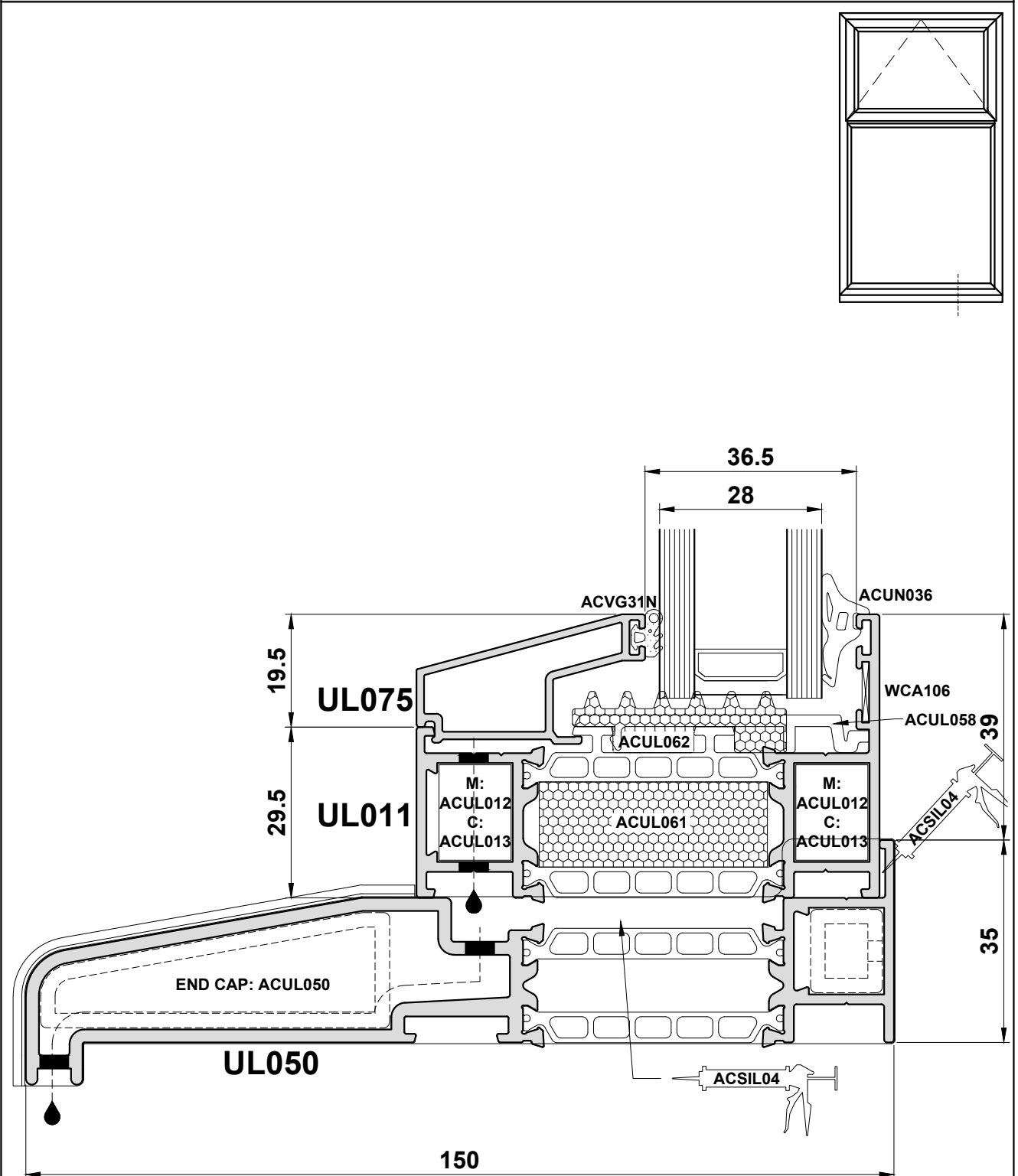
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Detail 9E



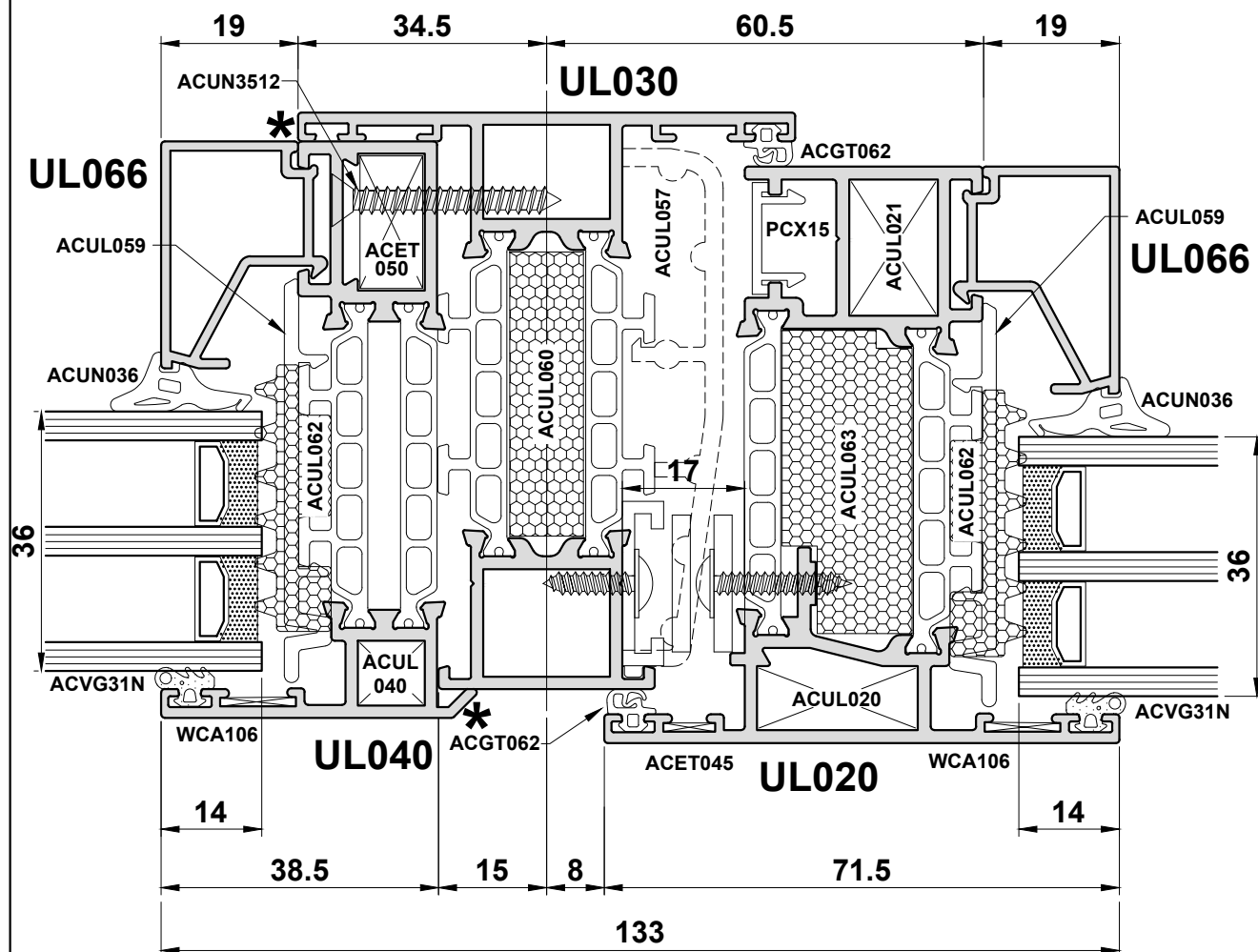
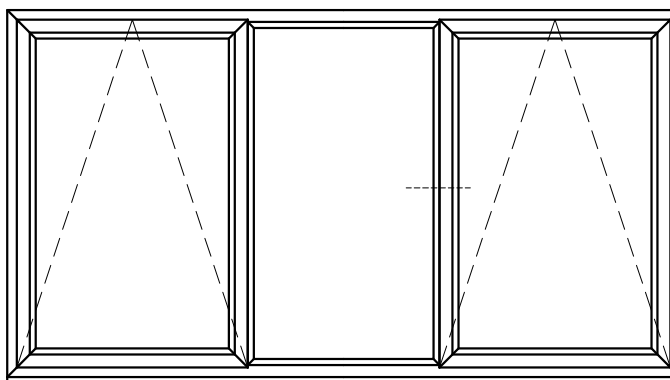
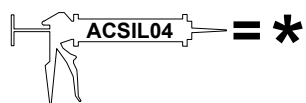
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Detail 9F



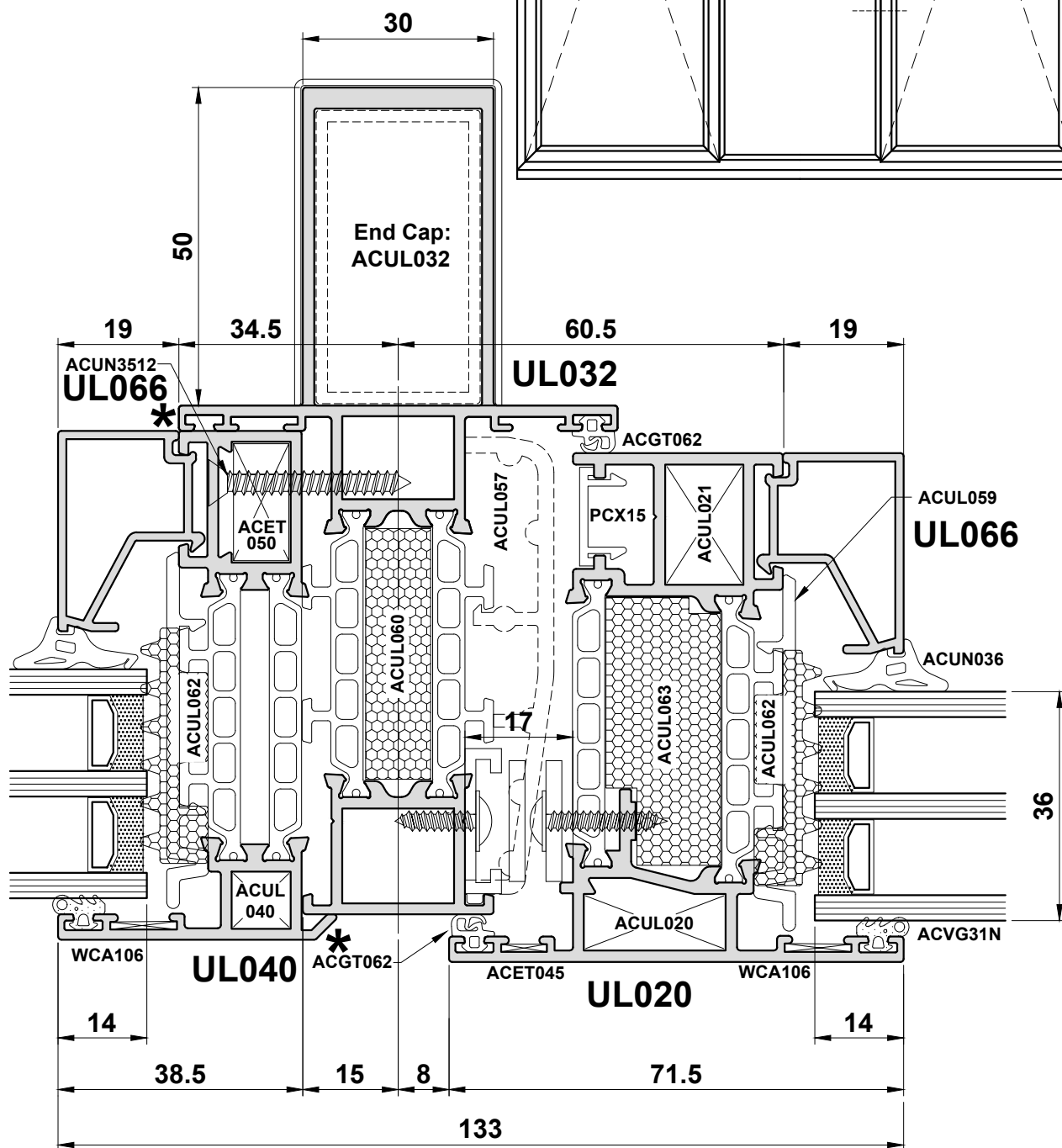
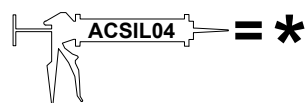
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Detail 10A



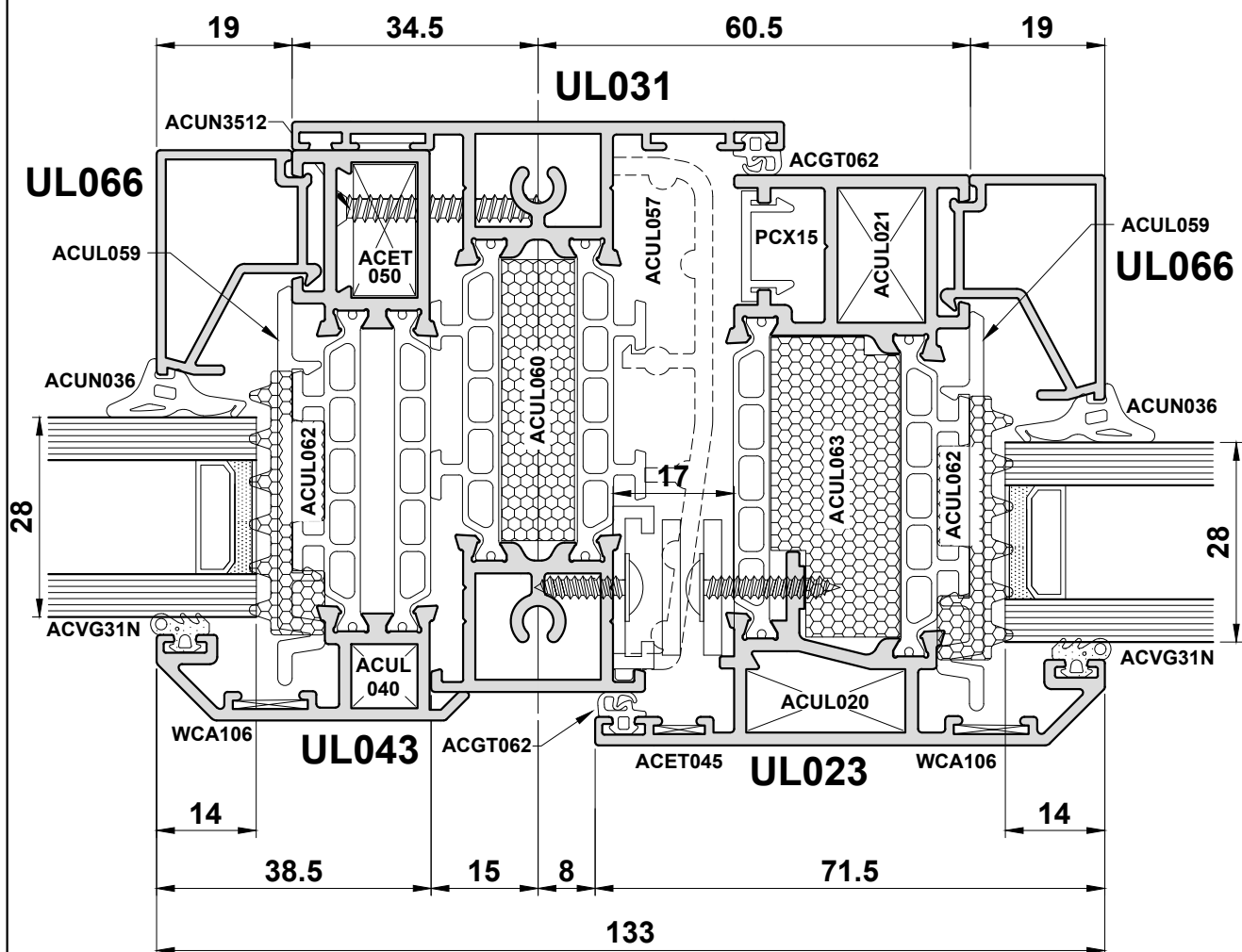
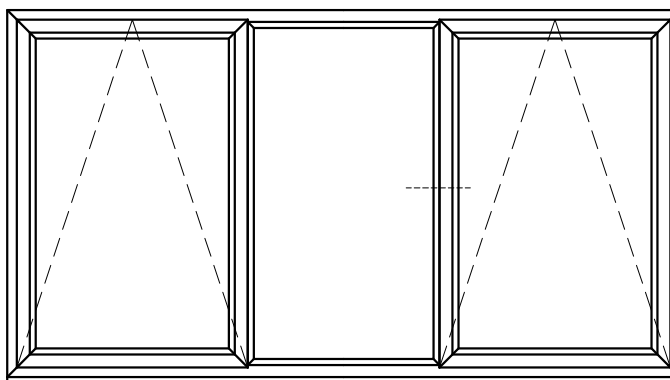
Do Not Scale From This Drawing

Detail 10B



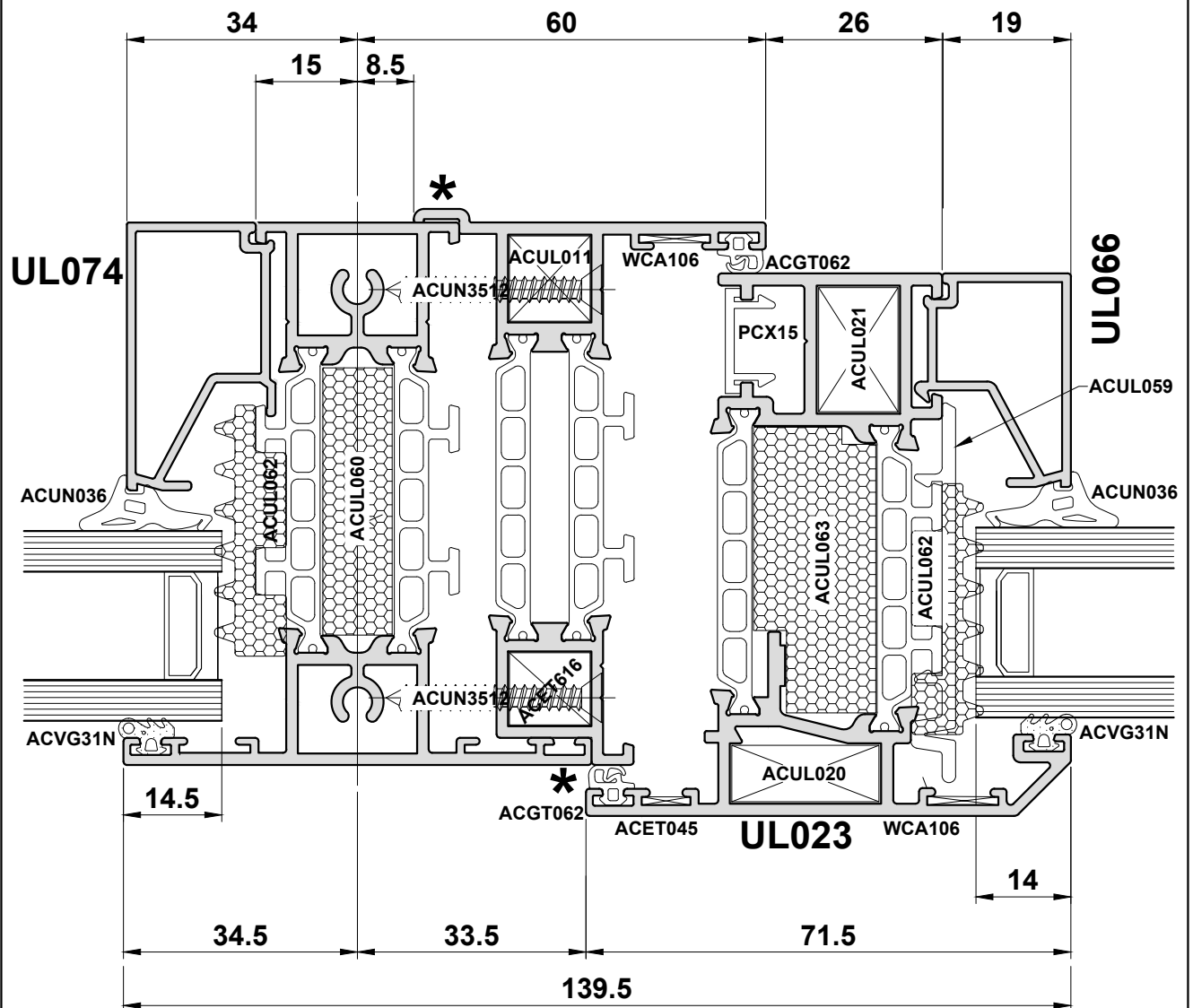
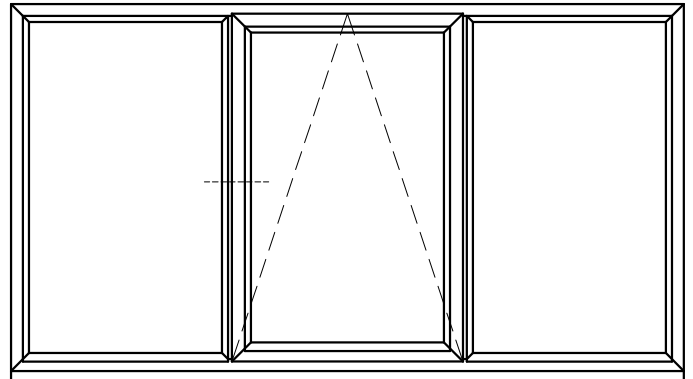
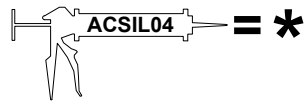
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Detail 10C



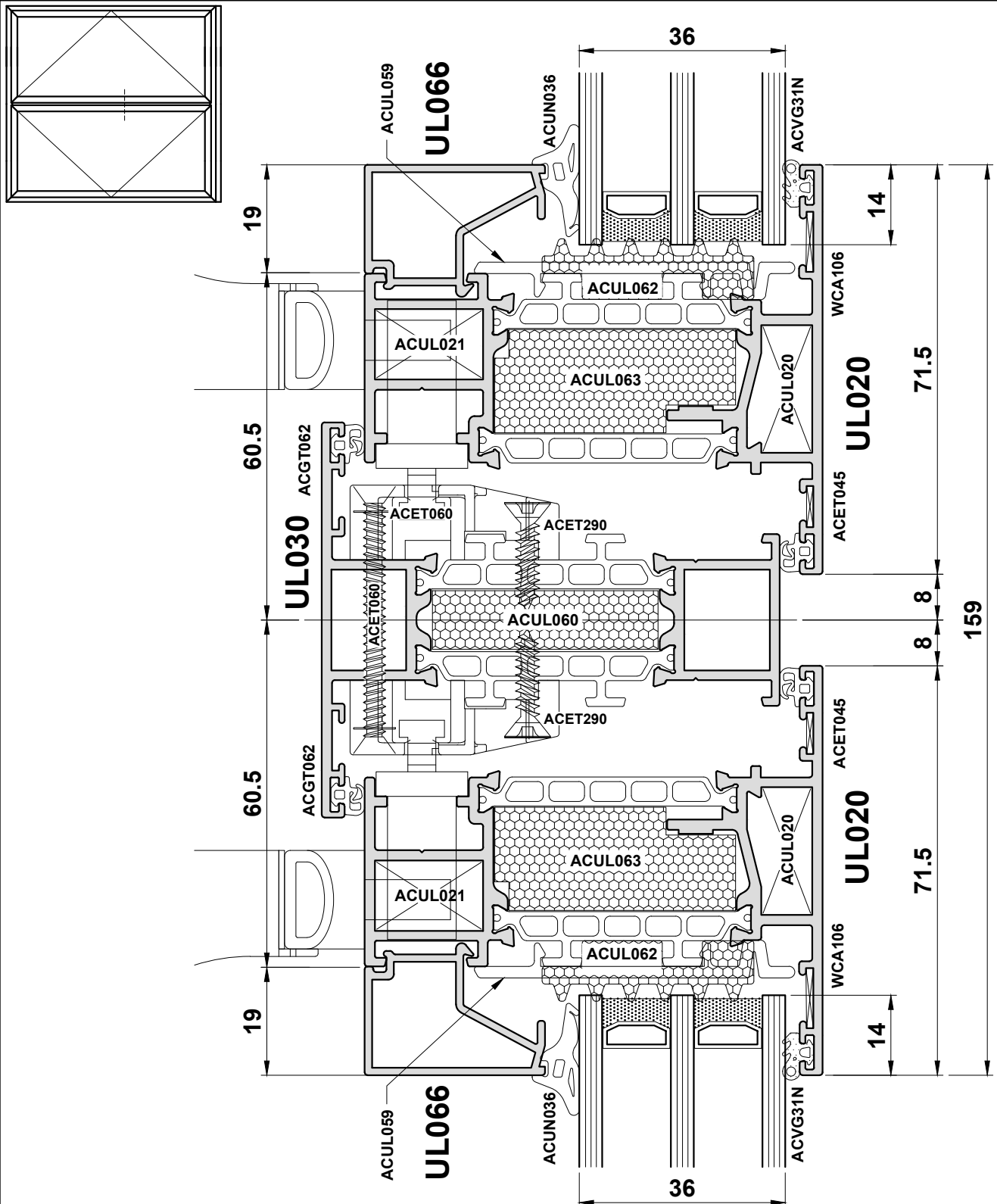
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Detail 10D



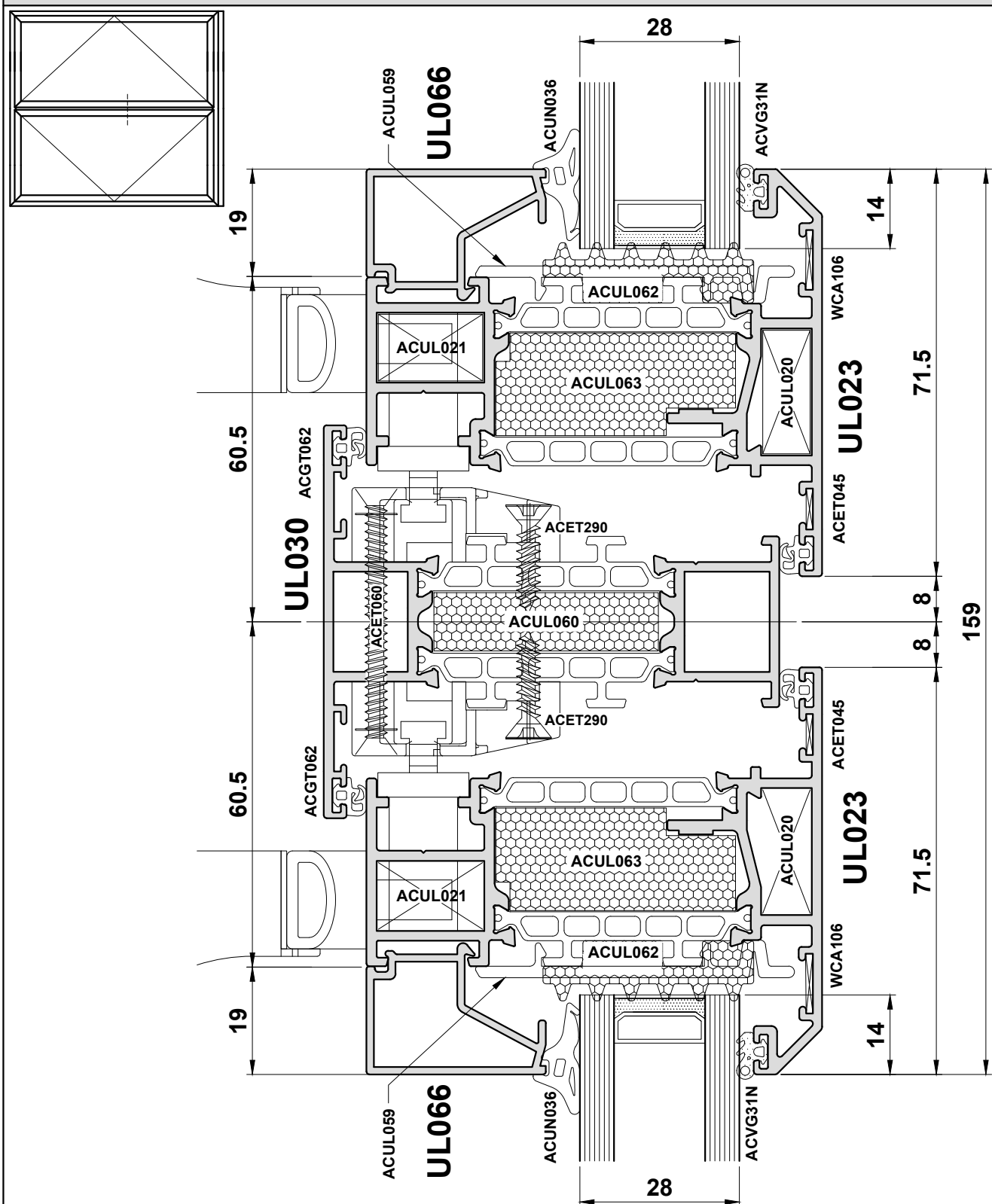
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Detail 11A



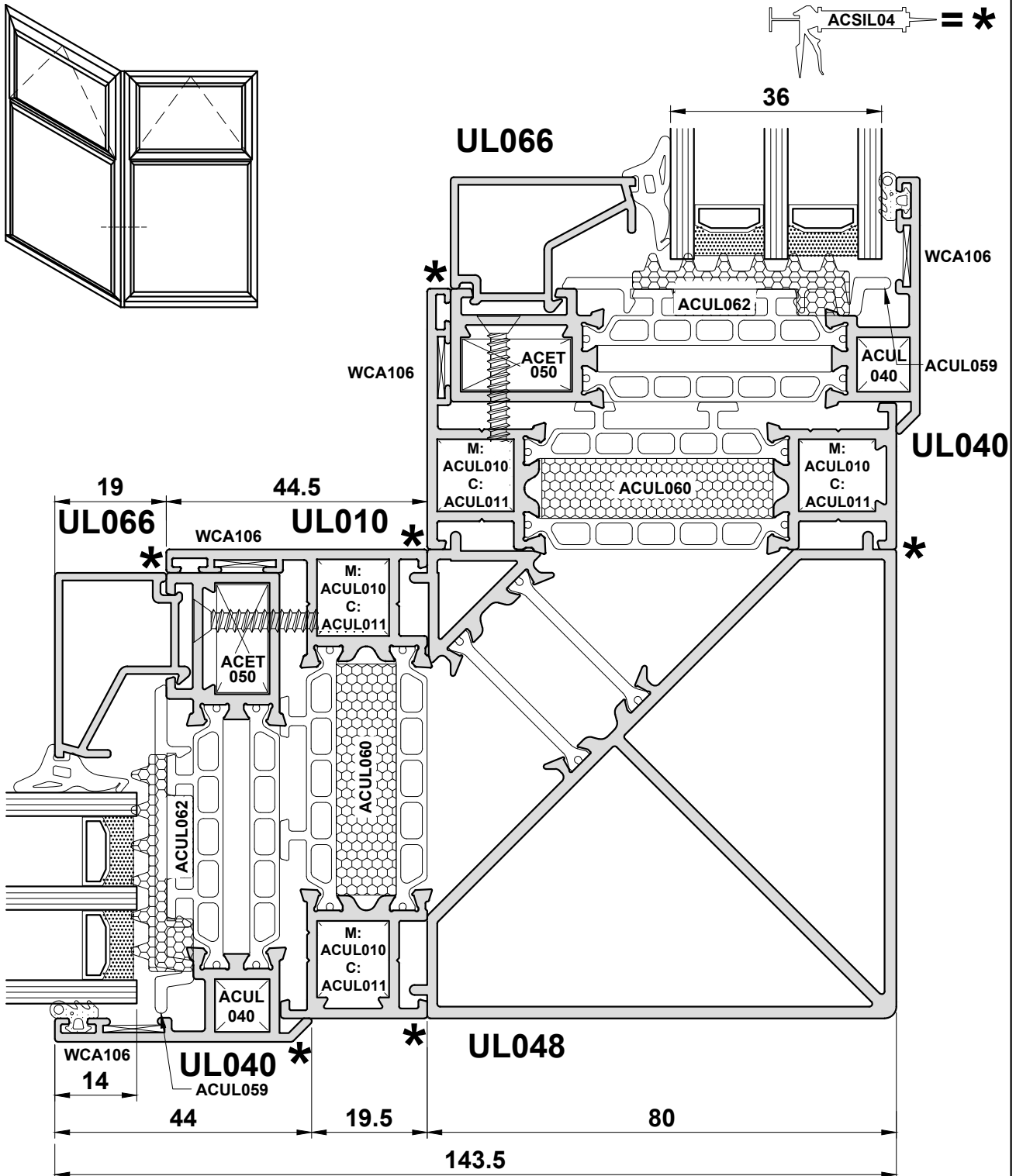
Do Not Scale From This Drawing

Detail 11B



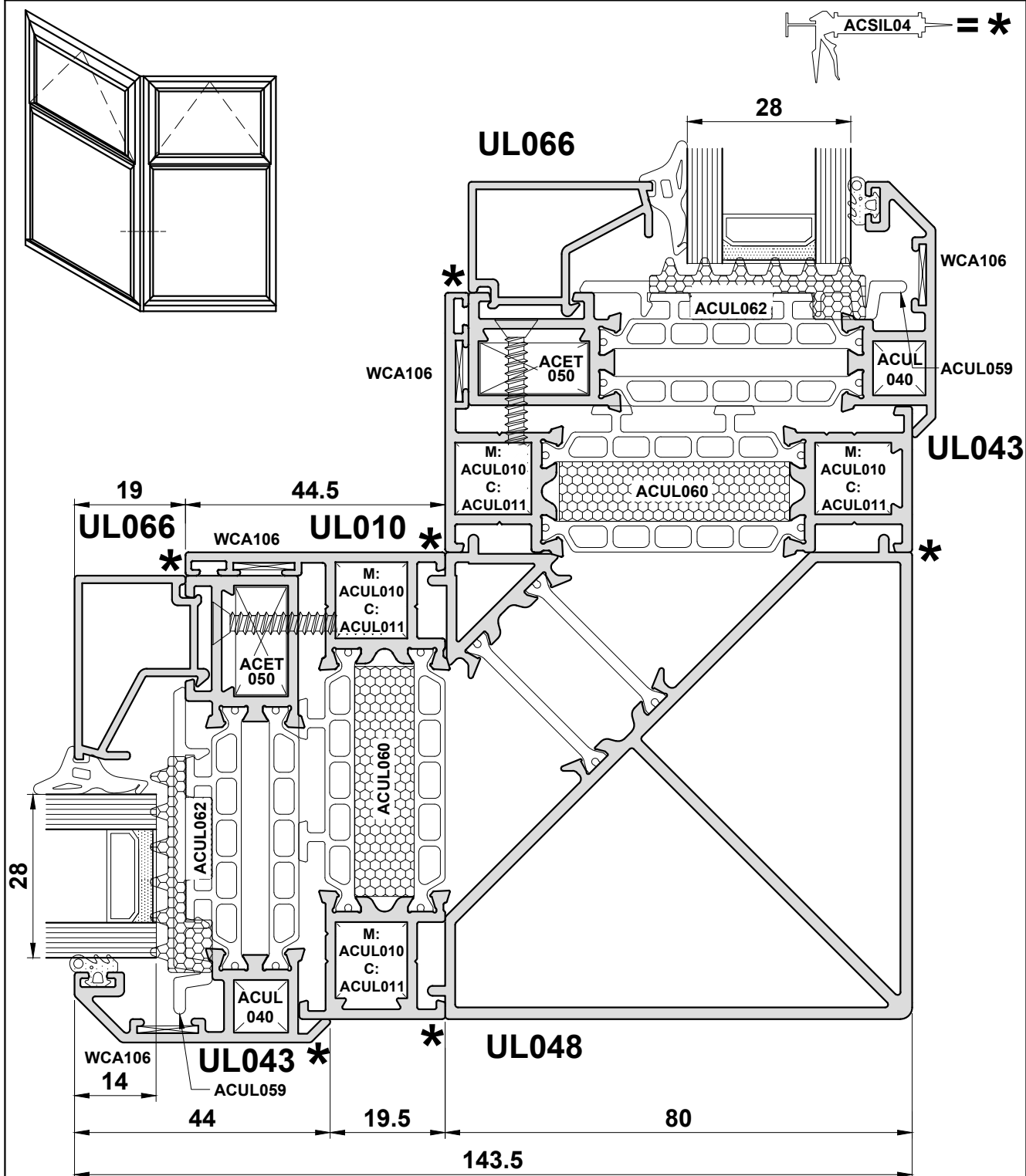
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Detail 12A



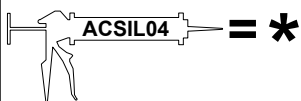
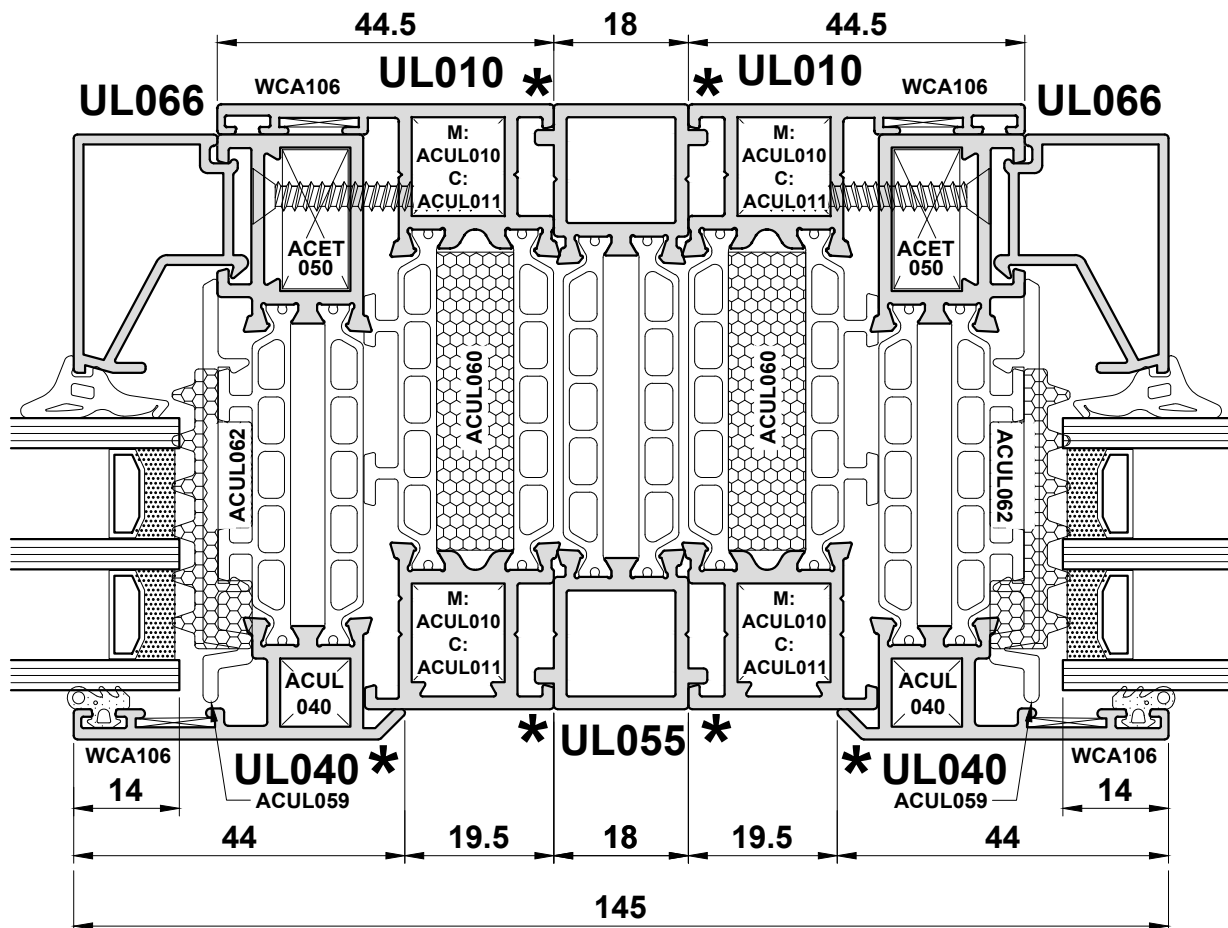
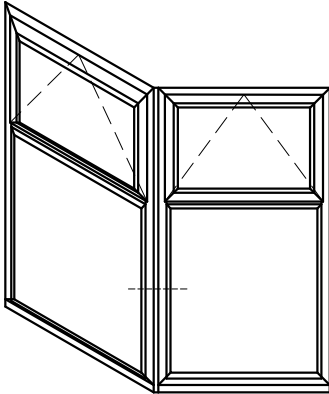
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Detail 12B



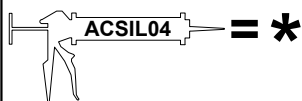
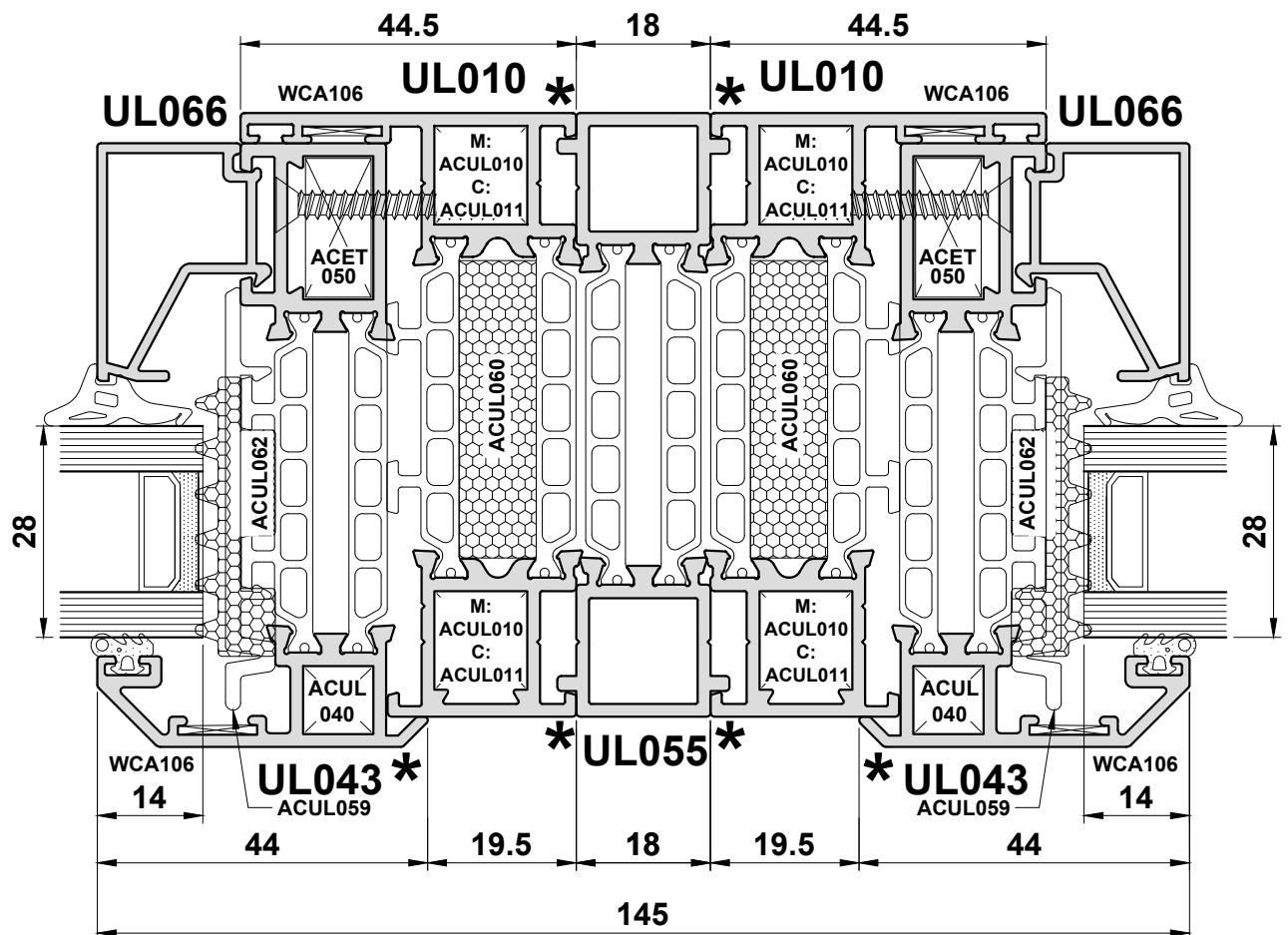
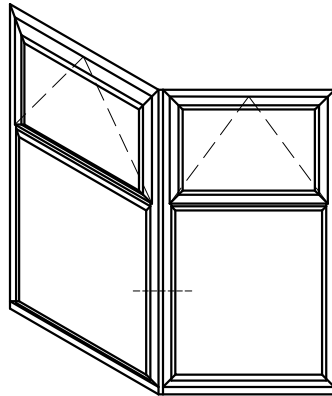
Do Not Scale From This Drawing

Detail 12C



Do Not Scale From This Drawing

Detail 12D



Do Not Scale From This Drawing

Detail

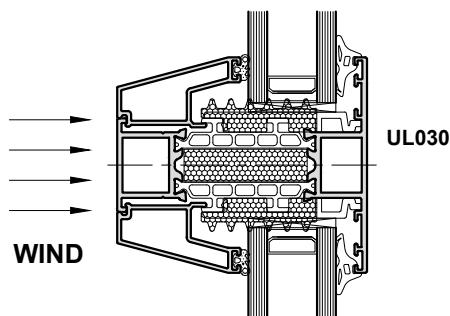
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Section D

Statics

General Size Limitations are shown on Page A02.

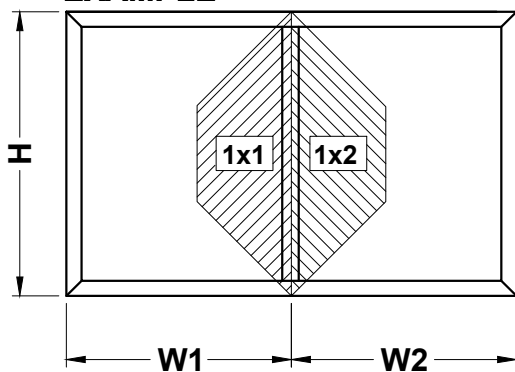
**For Wind Loading Limitations, Please Contact
The Technical Department - T: 01934 833100**



The position of the axes is an indication for the use and application of the moments of inertia (I_x and I_y) and the section modulus (W_x and W_y). We always choose the values of the axis perpendicular to the load to resist it.

- To resist the wind loads we use the values I_x and W_x .

EXAMPLE



$H = 220\text{cm}$

$W1 = 120\text{cm}$

$W2 = 120\text{cm}$

$P = 1000\text{ Pa}$ (wind pressure)

- 1) Determine I_{xx} value for the stiles (if required) using the Specification Wizard

$I_{xx} = 47.5\text{ cm}^4$

- 2) Determine suitability

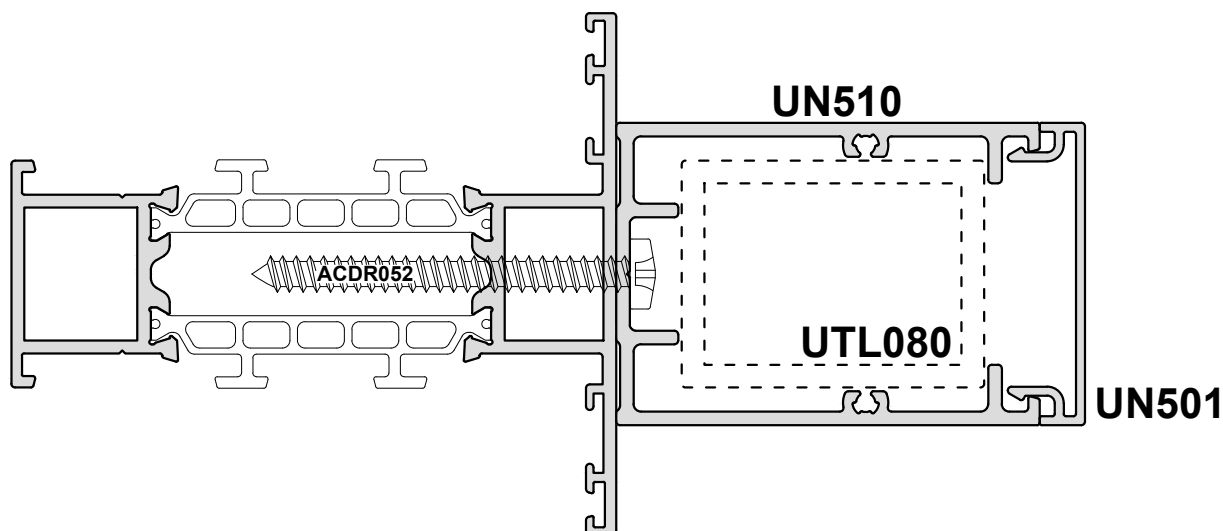
OK

Number	Picture	$I_x(\text{cm}^4)$ $W_x(\text{cm}^3)$	$I_y(\text{cm}^4)$ $W_y(\text{cm}^3)$
UL030		42.83	8.2
		8.89	2.38
UL031		48.34	8.22
		10.26	2.38

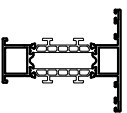
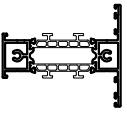
Section D

Moments of Inertia Table

Reinforcement profiles shall be fixed at a maximum of 300mm centres and 100mm in from each end

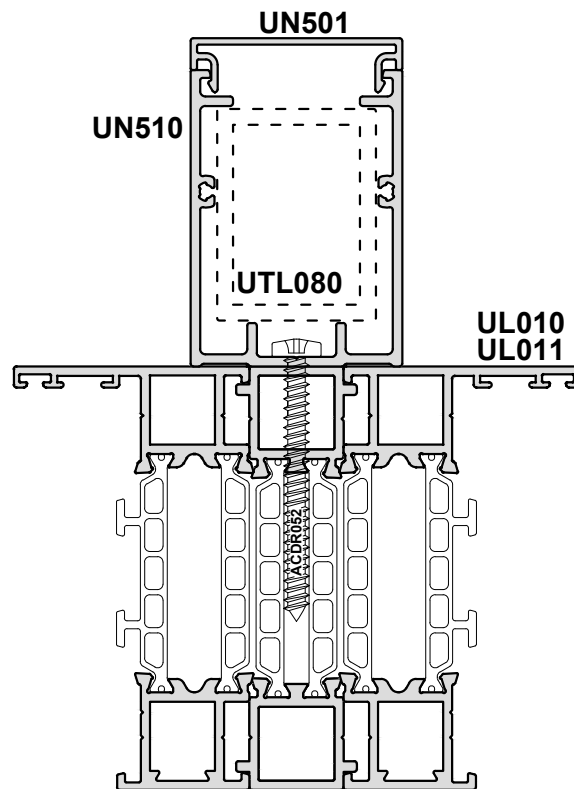


Please consider potential hardware clashes or access issues where using reinforcement profile.

Reinforcement Internally		Without Reinforcement		UN510		UN510 + UTL080		UN511		UN511 + UTL080	
Section		lx(cm4) wx(cm3)	ly(cm4) wy(cm3)	lx(cm4) wx(cm3)	ly(cm4) wy(cm3)	lx(cm4) wx(cm3)	ly(cm4) wy(cm3)	lx(cm4) wx(cm3)	ly(cm4) wy(cm3)	lx(cm4) wx(cm3)	ly(cm4) wy(cm3)
UL030		42.83 — 8.89	8.2 — 2.38	112.24 — 15.46	17.67 — 5.12	152.65 — 18.07	22.75 — 6.59	114.6 — 15.61	19.71 — 5.71	153.86 — 18.14	24.79 — 7.19
UL031		48.34 — 10.26	8.22 — 2.38	123.49 — 17.59	17.69 — 5.13	169.4 — 20.58	22.77 — 6.6	126.17 — 17.77	19.73 — 5.72	170.78 — 20.68	24.81 — 7.19

Moments of Inertia Table

Reinforcement & coupled profiles shall be fixed at a maximum of 300mm centres and 100mm in from each end



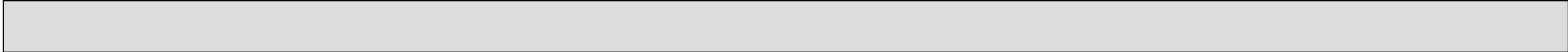
Reinforcement Internally		Without Reinforcement		UN510		UN510 + UTL080		UN511		UN511 + UTL080	
Section		lx(cm4) wx(cm3)	ly(cm4) wy(cm3)	lx(cm4) wx(cm3)	ly(cm4) wy(cm3)	lx(cm4) wx(cm3)	ly(cm4) wy(cm3)	lx(cm4) wx(cm3)	ly(cm4) wy(cm3)	lx(cm4) wx(cm3)	ly(cm4) wy(cm3)
UL010 & UL055		100.1	49.33	213.3	74.09	299.92	79.17	218.16	76.13	302.94	81.21
		— 23.38	— 9.24	— 27.07	— 12.8	— 44.04	— 13.67	— 27.93	— 13.15	— 44.22	— 14.03
UL011 & UL055		106.7	64.62	204.98	58.8	288.49	63.88	209.69	60.84	291.35	65.92
		— 24.95	— 11.16	— 26.28	— 11.01	— 41.75	— 11.96	— 27.13	— 11.39	— 41.92	— 12.34

Section E

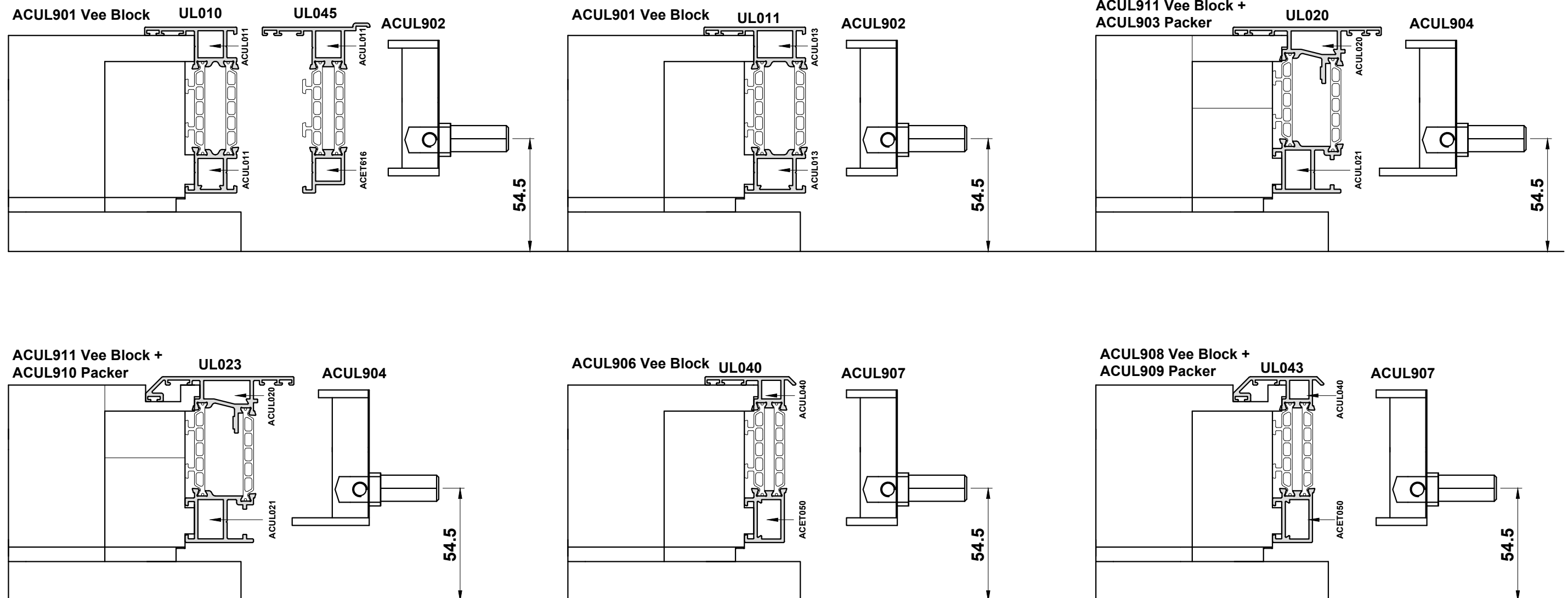


Construction Drawings

Crimping Details.....	E03
Drainage.....	E04 - E05
Transom/Mullion Details.....	E06 - E09
Friction Stay & Accessory Details.....	E10 - E11
Lock Details.....	E12 - E13
Glazing Details.....	E14 - E15



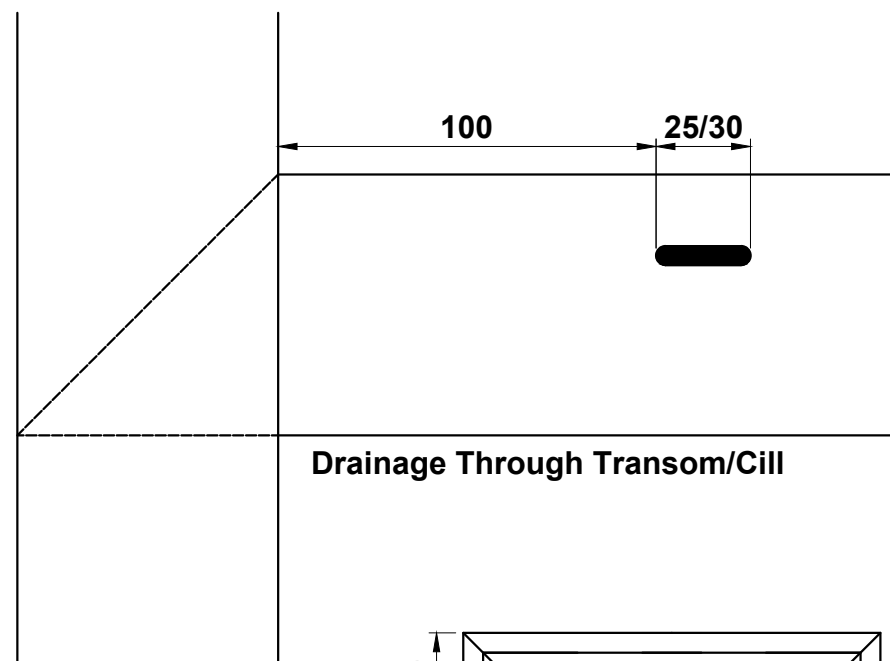
Crimping Details



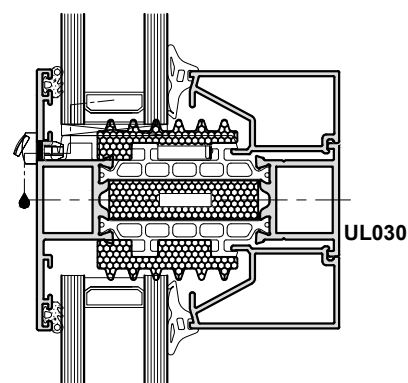
Manual Crimper = WUT024HSZA

Do Not Scale From This Drawing

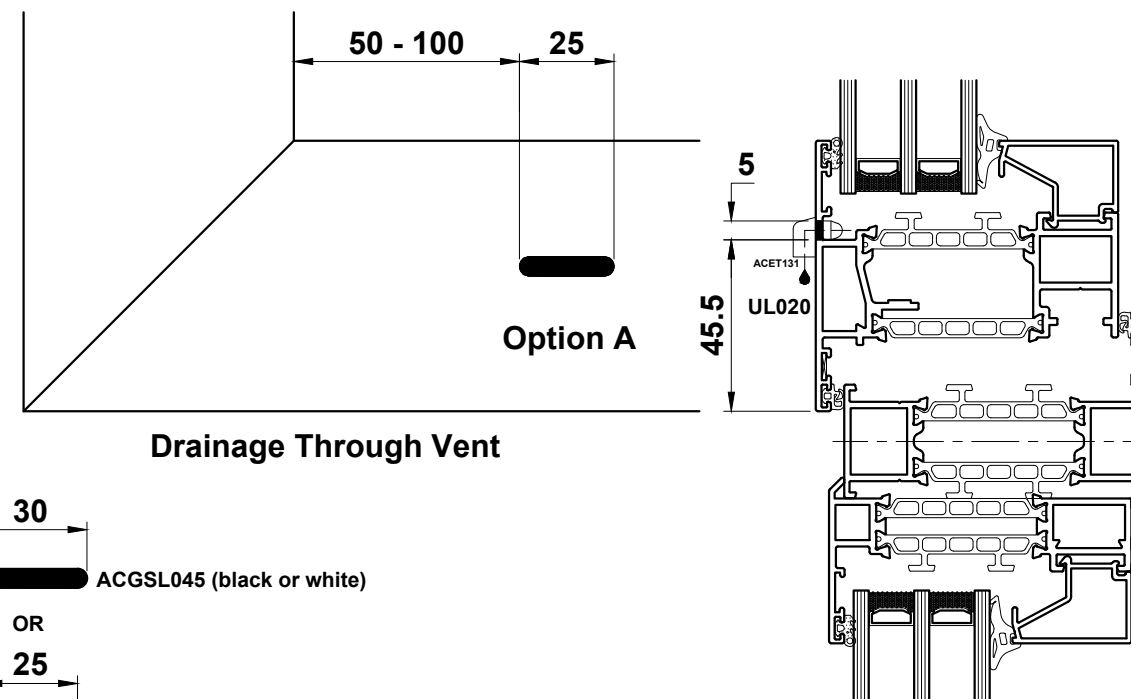
Drainage Details



Drainage Through Transom/Cill



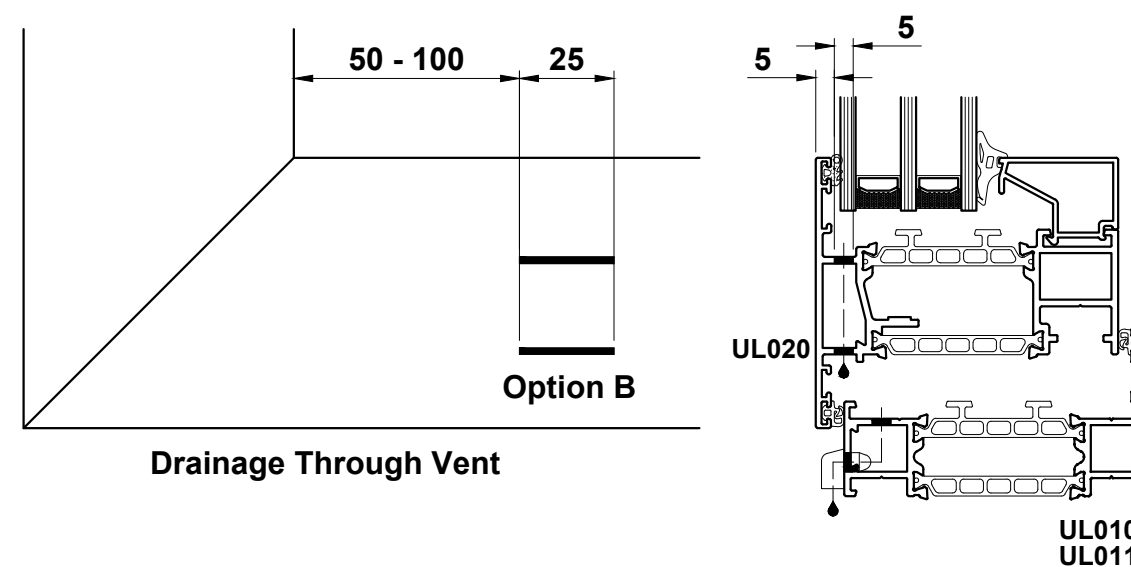
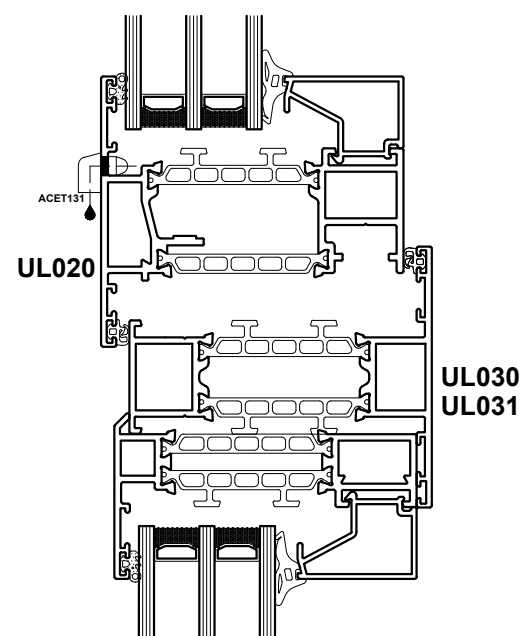
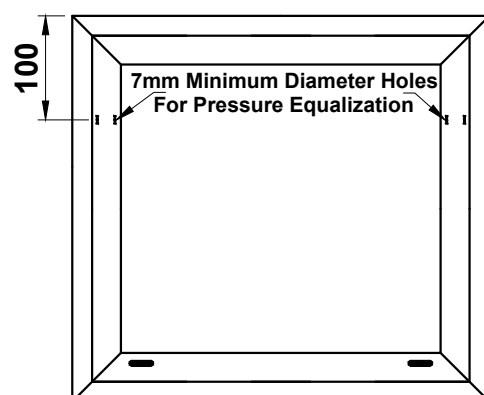
Transoms will also drain through the join to the outerframe



Drainage Through Vent



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

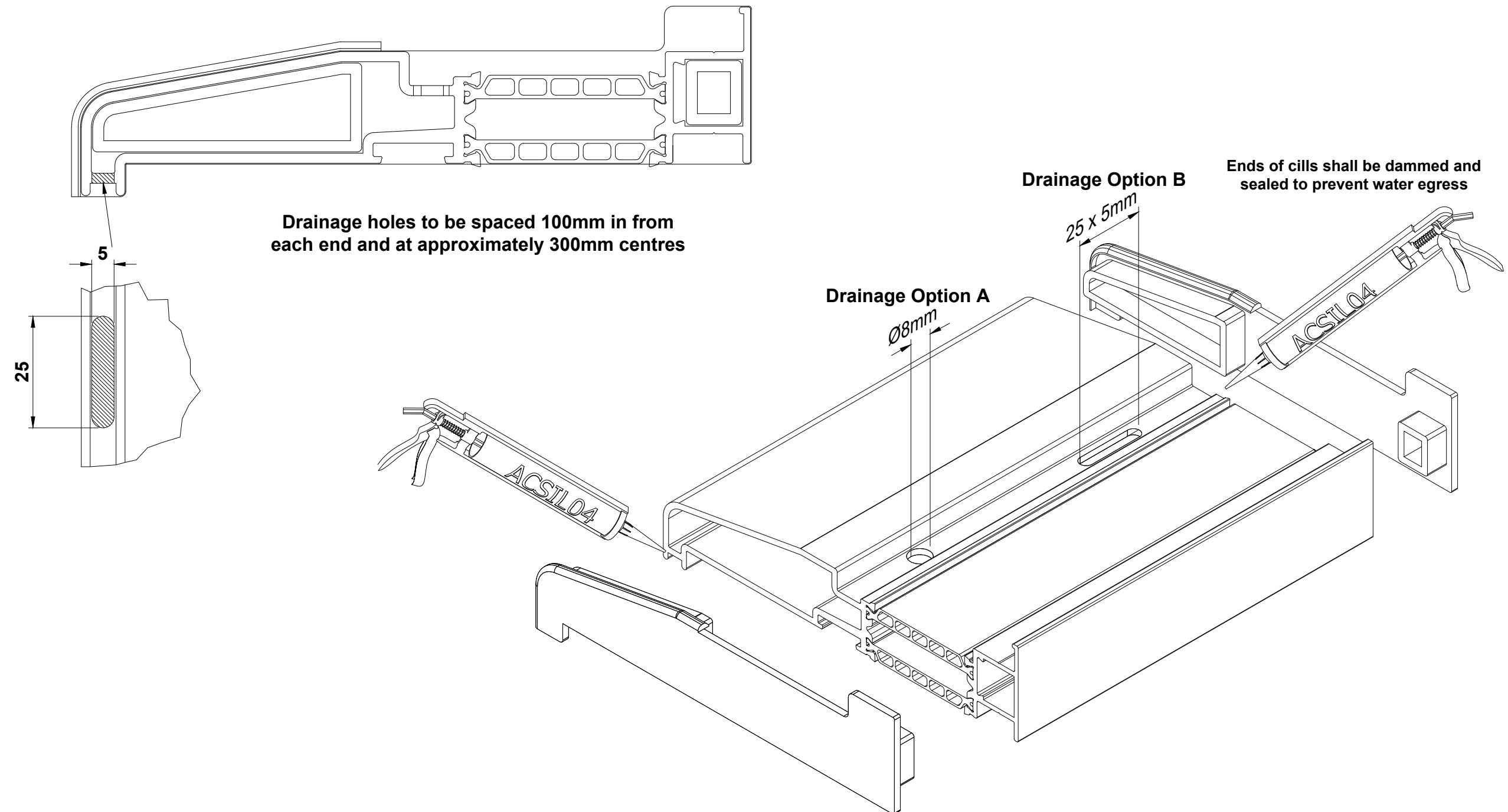


Drainage Through Vent

Important Note: All exposed aluminium should be coated using ACSIL014 or painted to match the frame.

Do Not Scale From This Drawing

Sub Cill Drainage



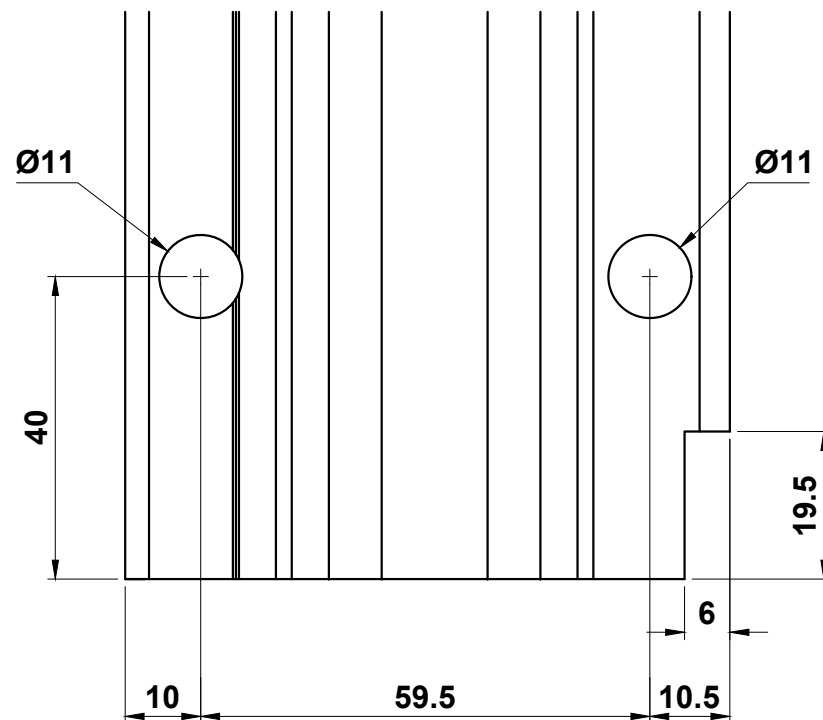
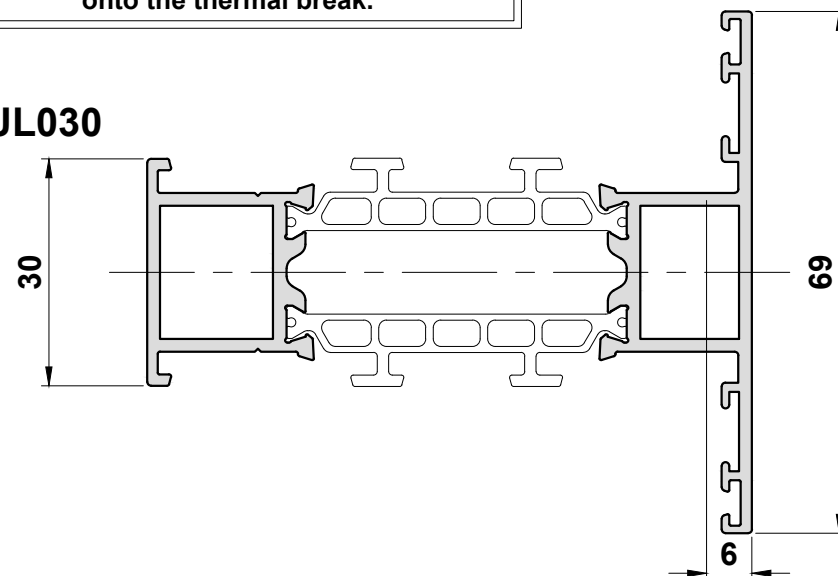
Do Not Scale From This Drawing

Mullion/Transom Detail

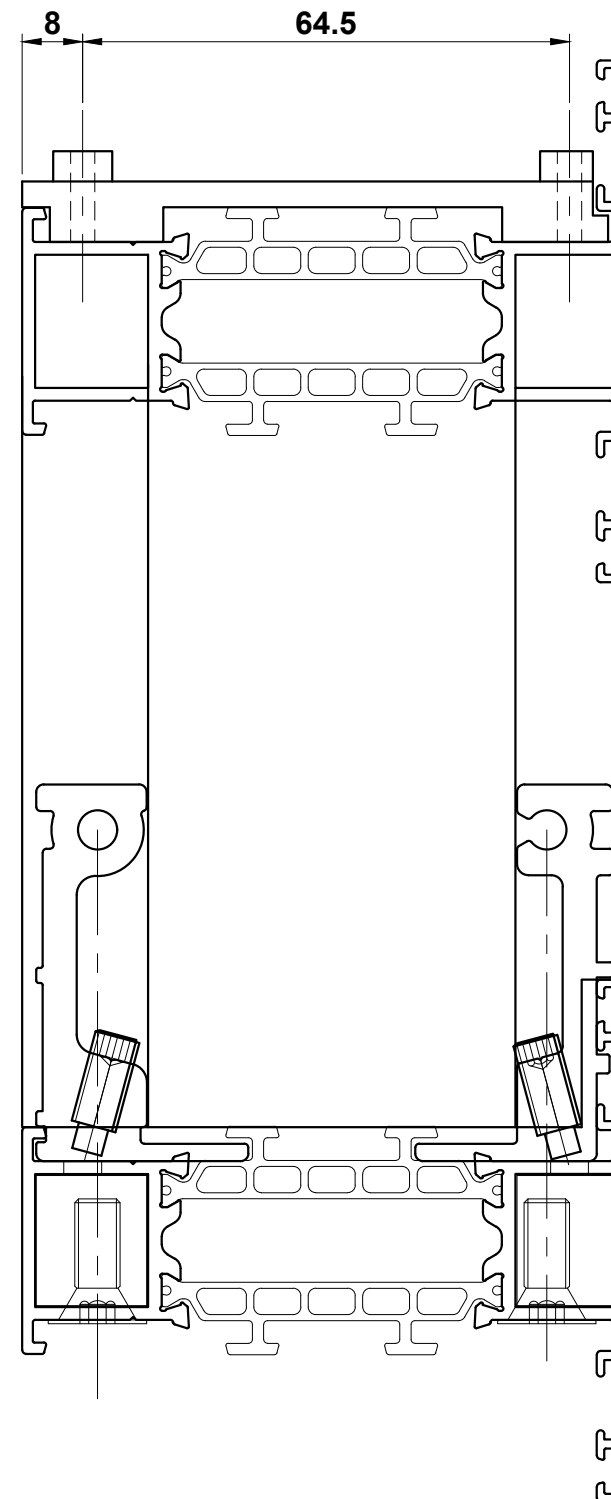
Important Fabrication Note:

When end milling, do NOT clamp directly onto the thermal break.

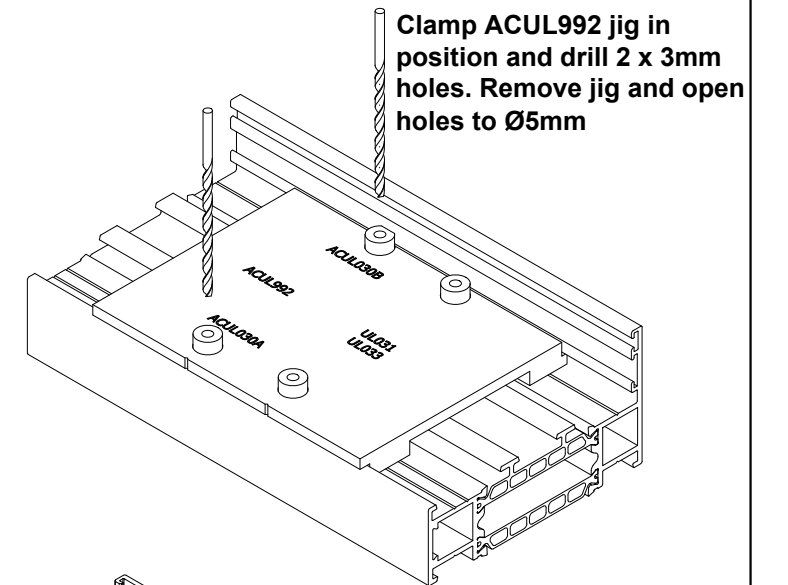
UL030



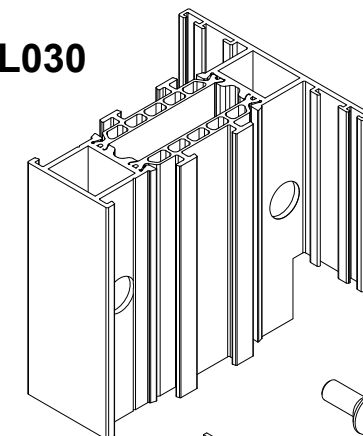
ACUL992



Clamp ACUL992 jig in position and drill 2 x 3mm holes. Remove jig and open holes to Ø5mm



UL030

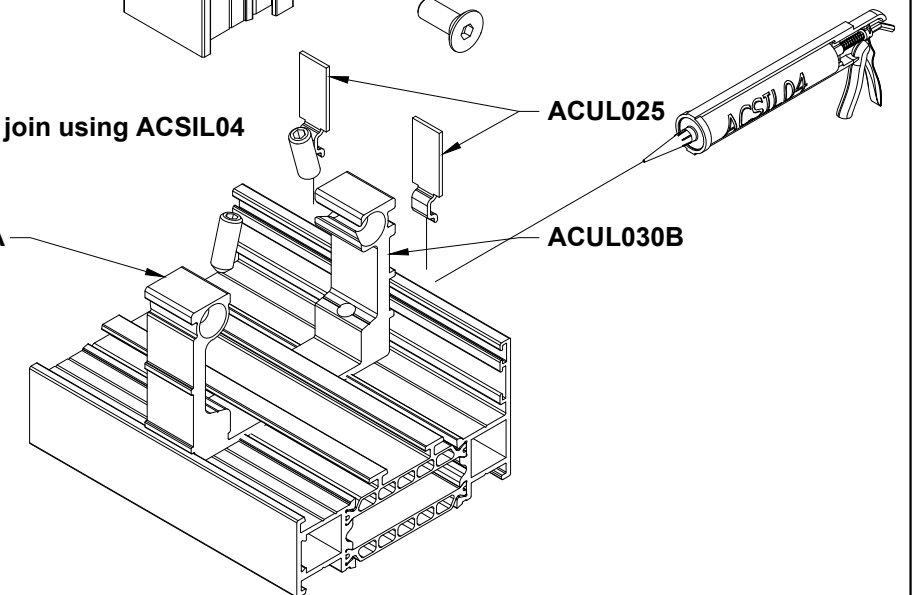


Seal joint using ACSIL04

ACUL025

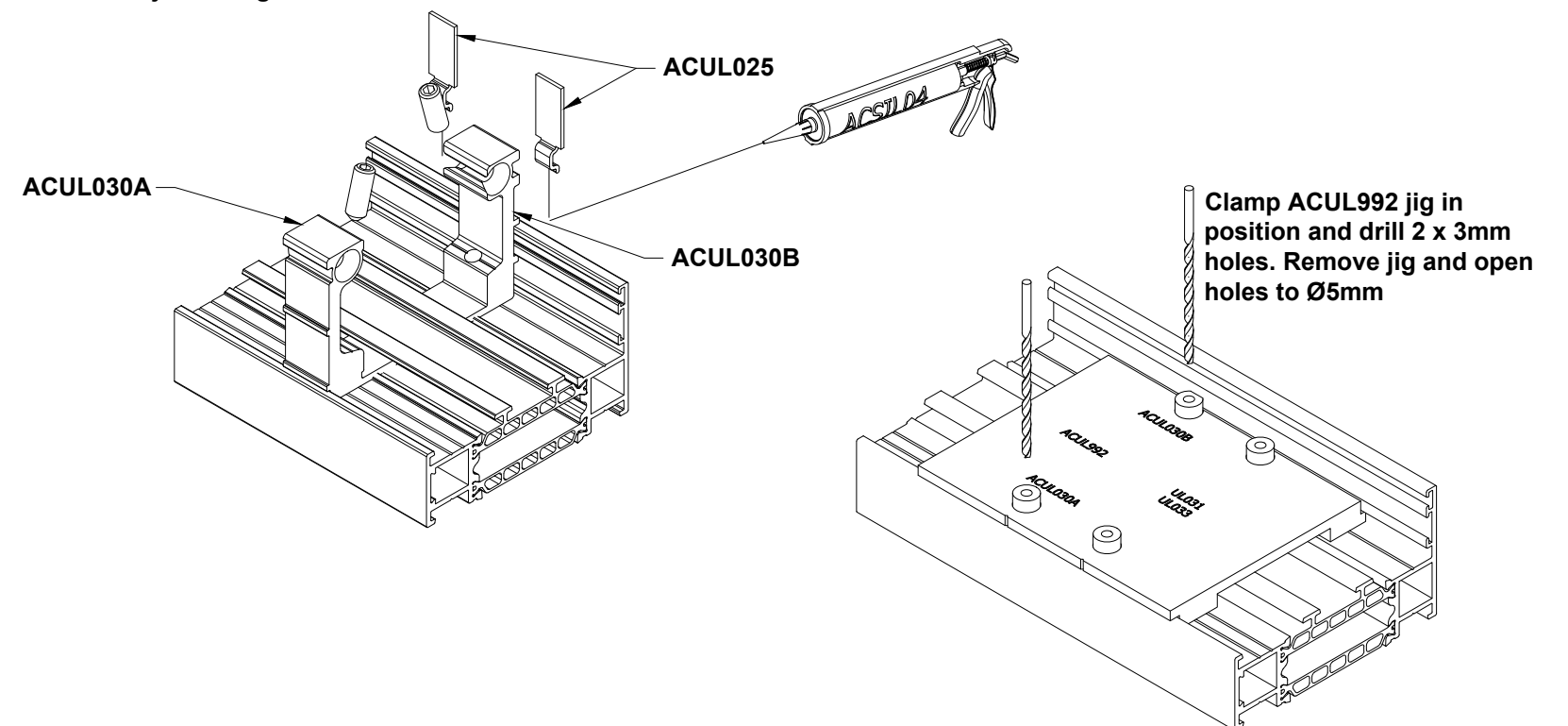
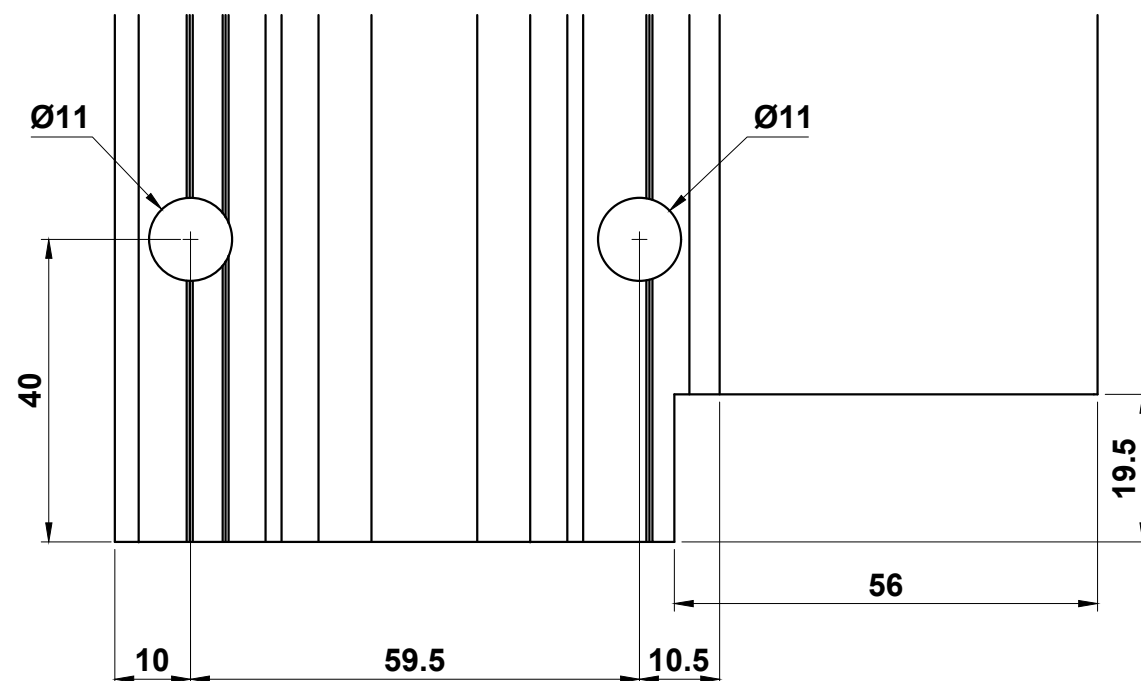
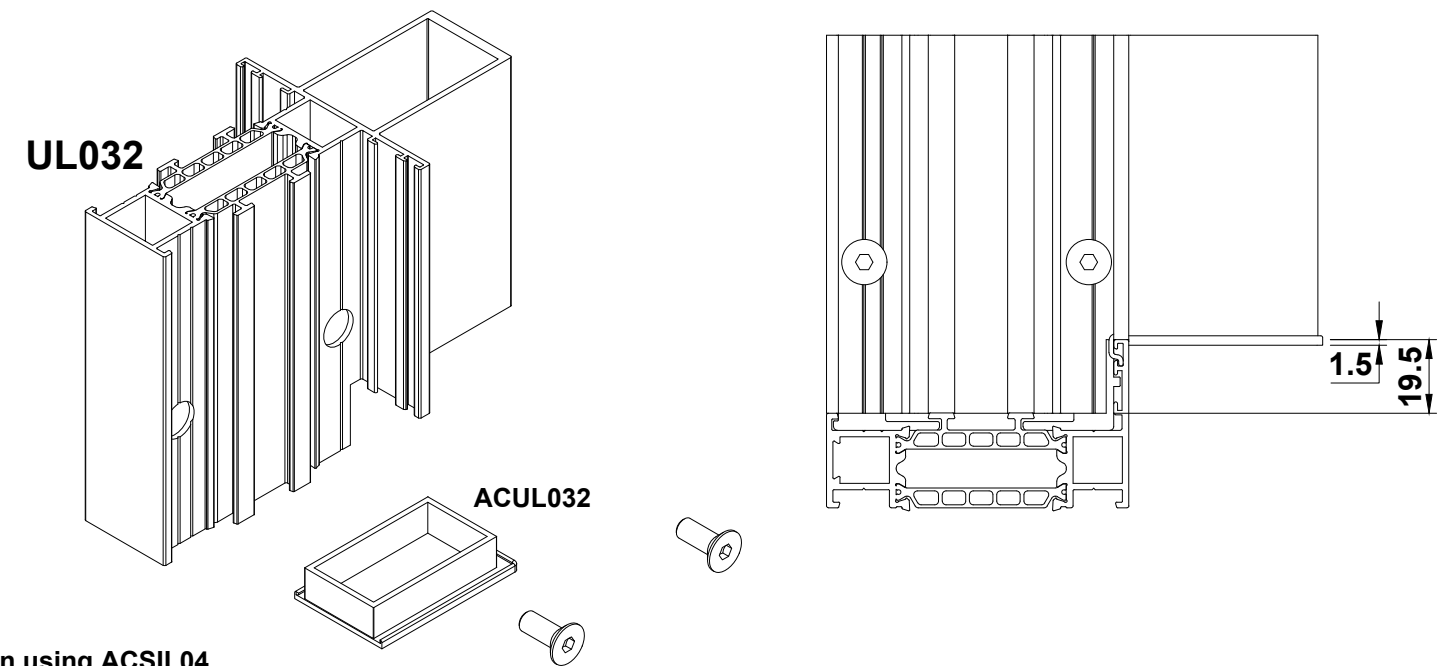
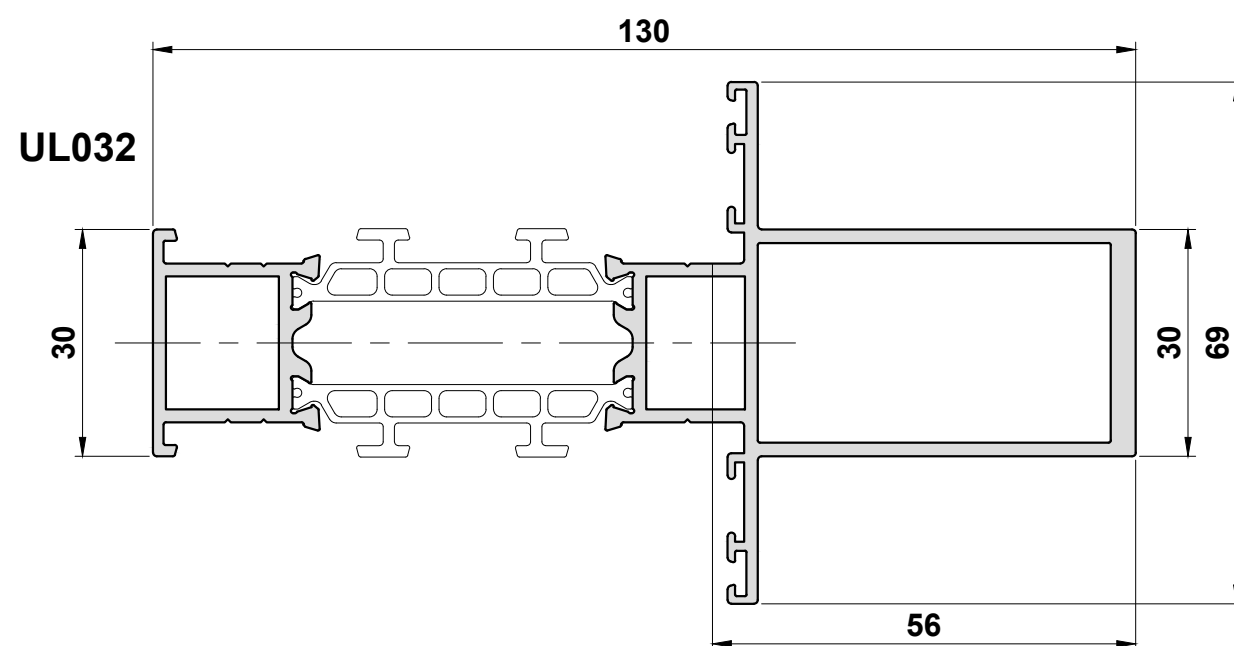
ACUL030B

ACUL030A



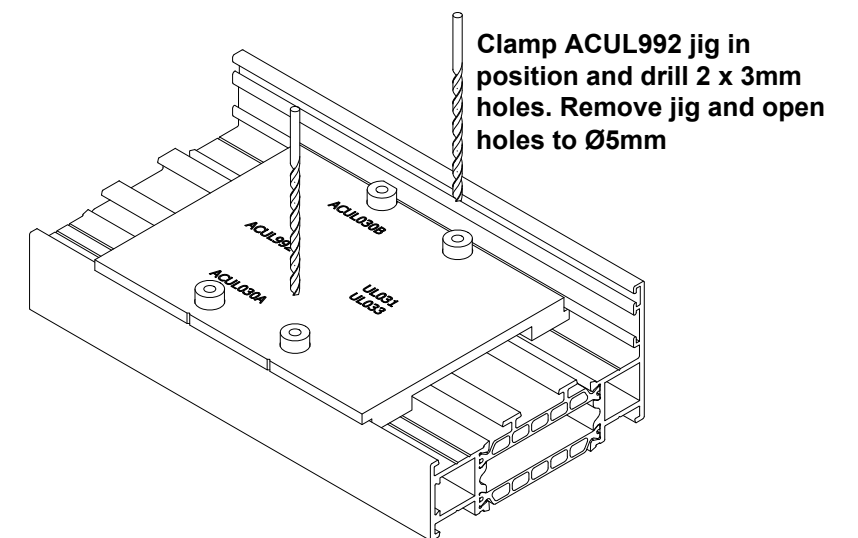
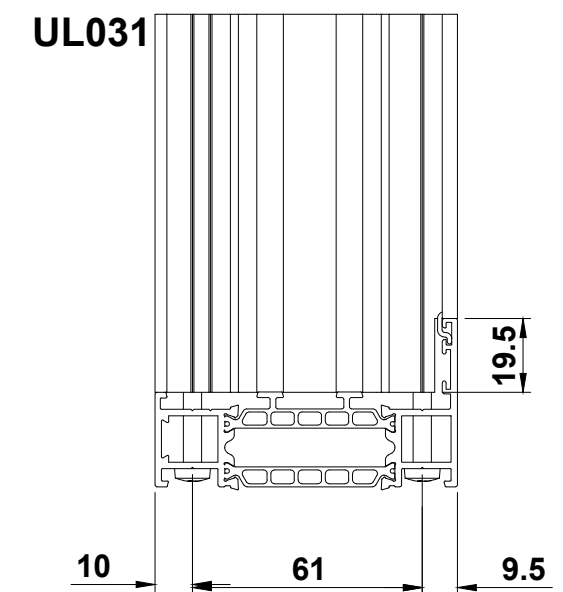
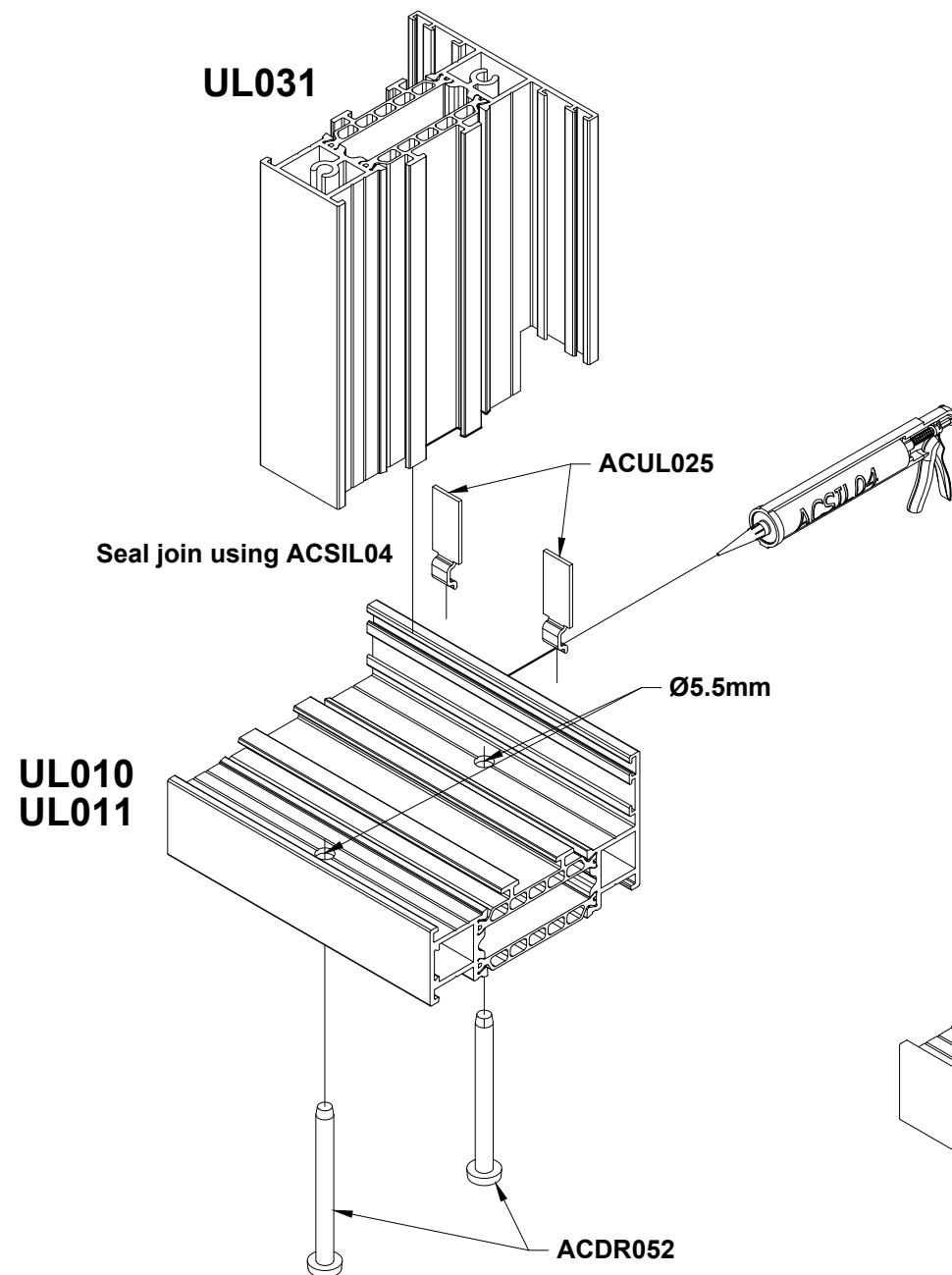
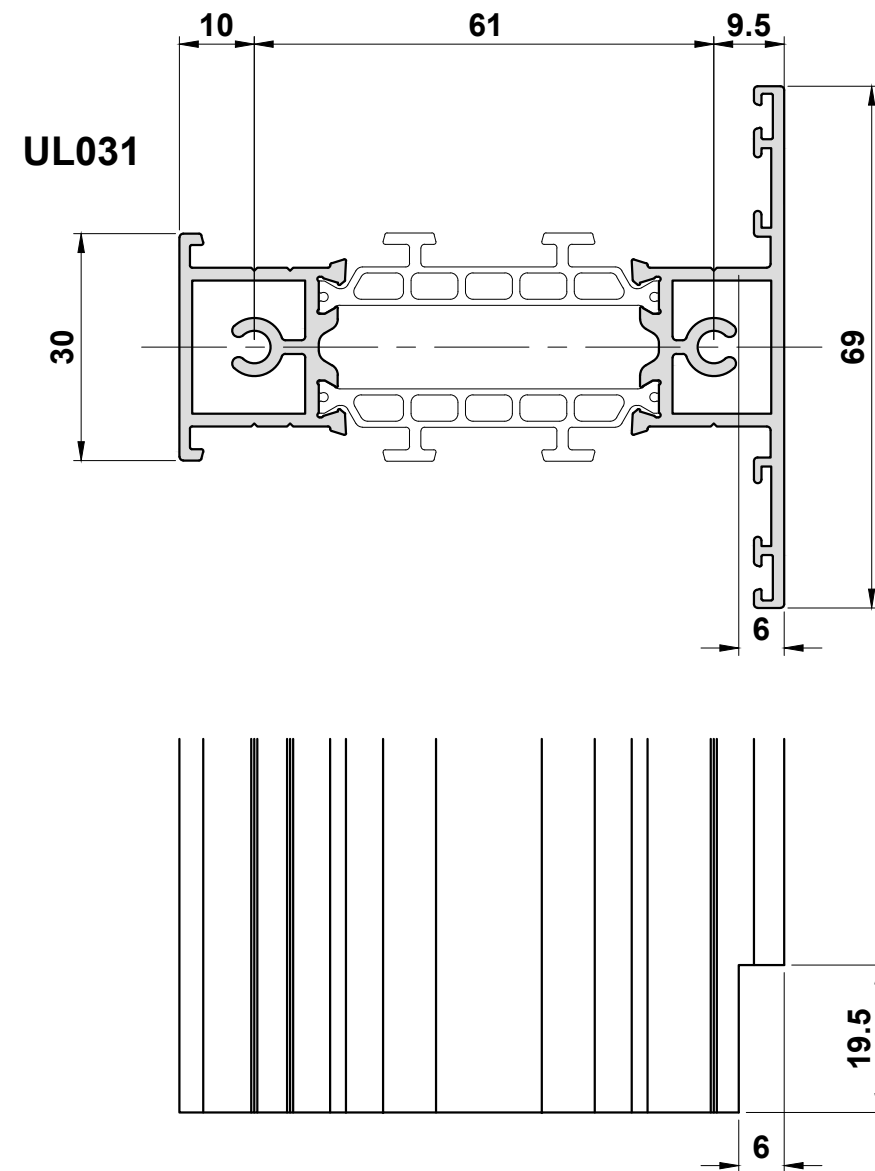
Do Not Scale From This Drawing

Mullion/Transom Detail



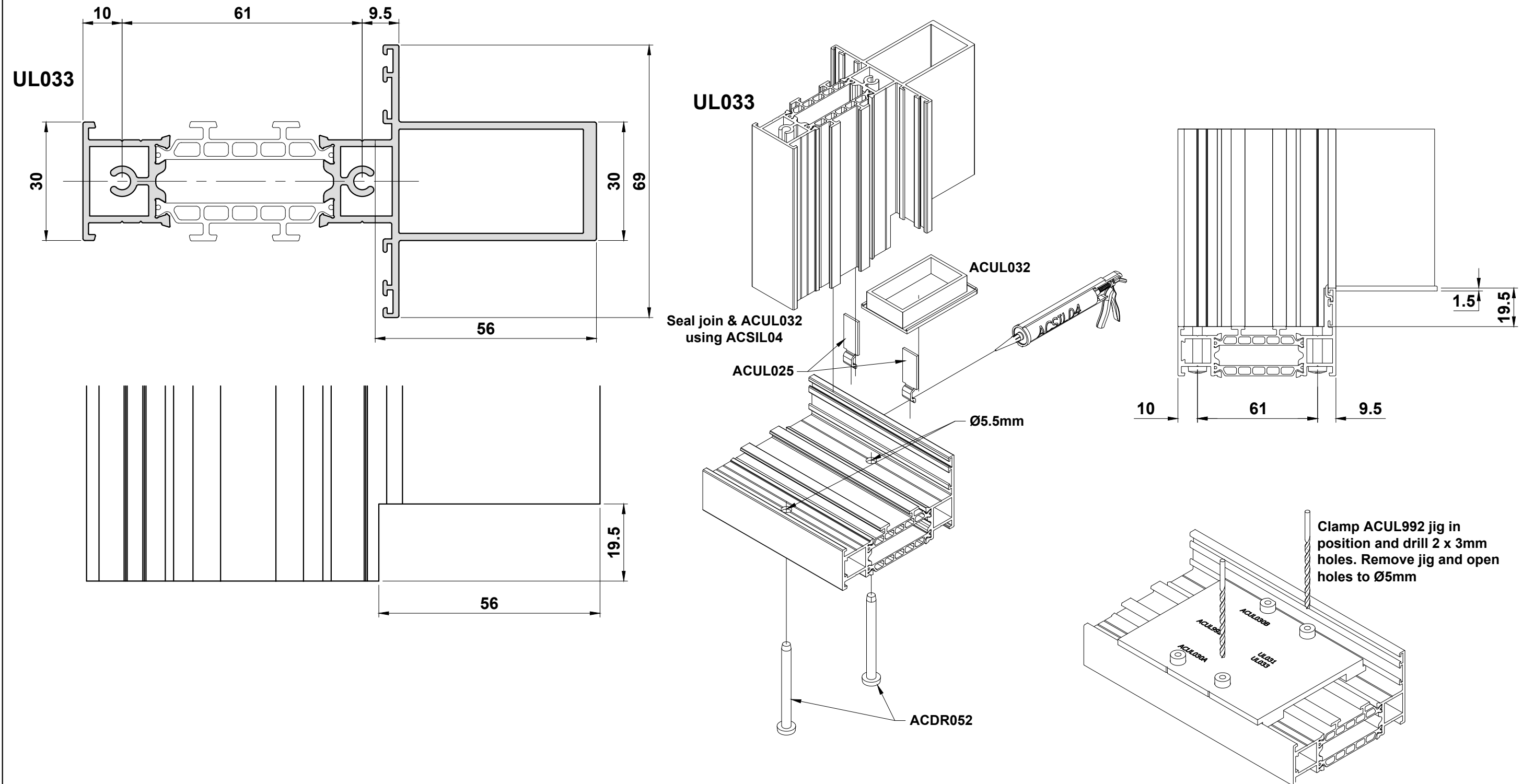
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Mullion/Transom Detail



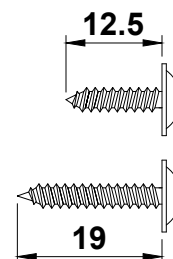
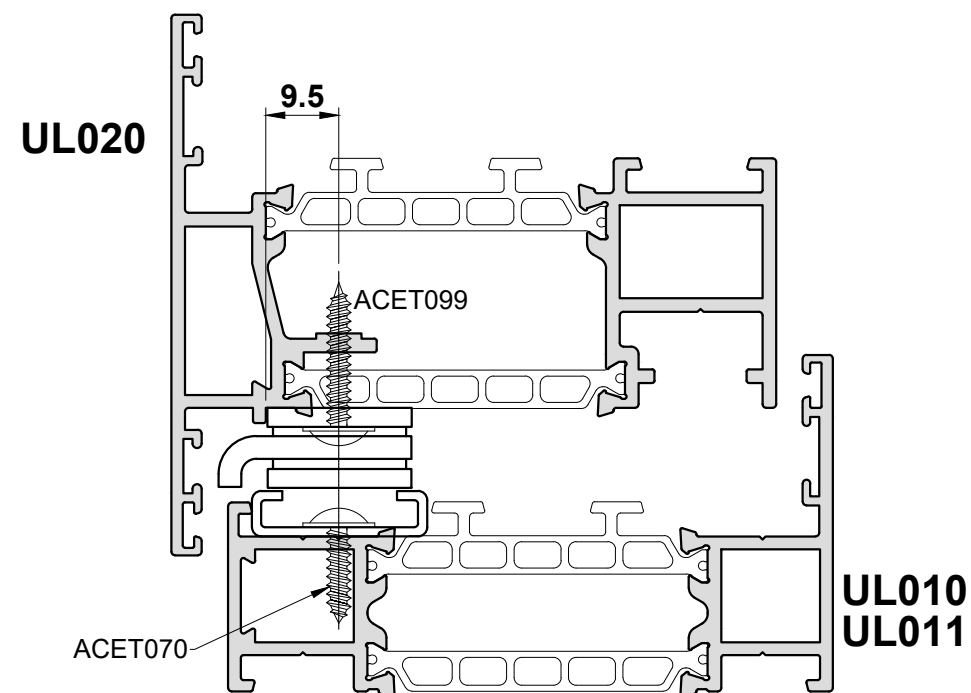
Do Not Scale From This Drawing

Mullion/Transom Detail



Friction Stay Accessories

**Vent Sizes 450mm or Smaller
to be Reduced by 2mm**



ACET070 = Recommended screw
for fixing stay to outer frame

ACET099 = Recommended screw
for fixing stay to sash

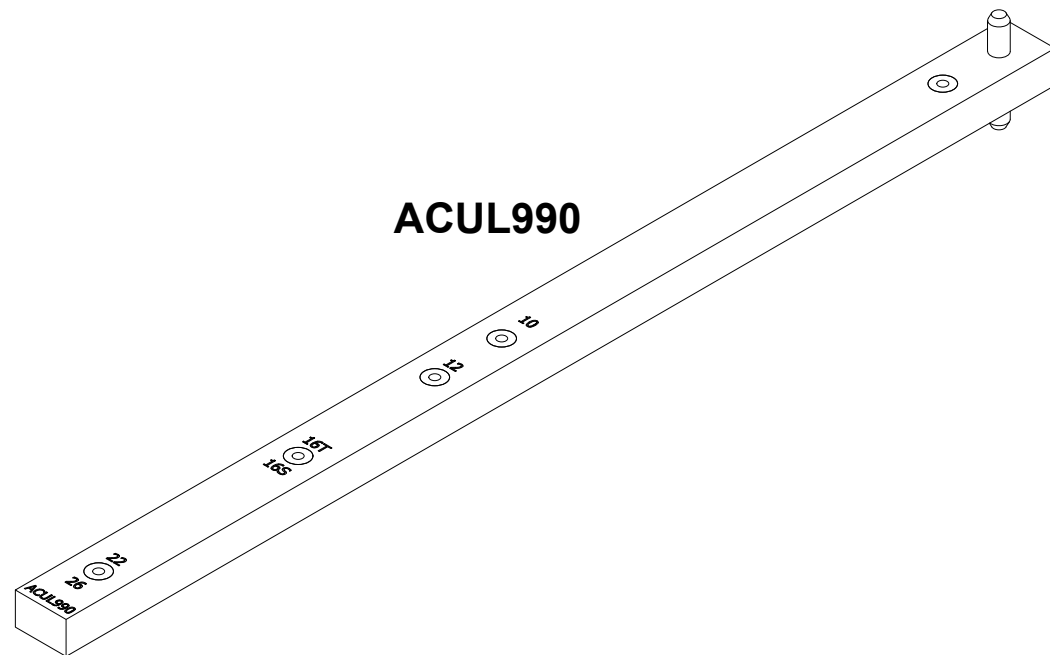
Heavy Duty (Sterling) Stays

Hinge Code Top Hung	Hinge Length (mm)	Max Vent Weight (kg)	Min Vent Height (mm)	Max Vent Height (mm)	Opening Angle (+/-2.5°)
ACINS10	262	40	315	640	50
ACINS12	313	50	640	800	50
ACINS16	415	65	800	1100	50
ACINS22	567	100	1090	1500	45
ACINS22W	567	100	1500	2000	20
ACINS26	680	180	2000	2500	20
Side Hung	Hinge Length (mm)	Max Vent Weight (kg)	Min Vent Width (mm)	Max Vent Width (mm)	Opening Angle (+/-2.5°)
ACINSSH10	262	38	327	660	85
ACINSSH16	415	55	450	838	60

Please Note:

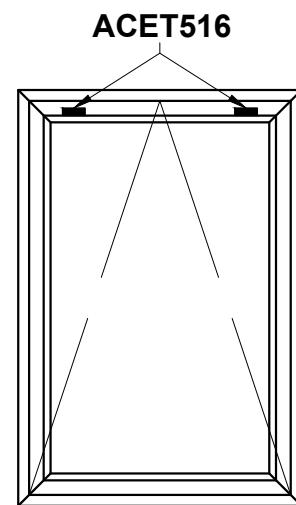
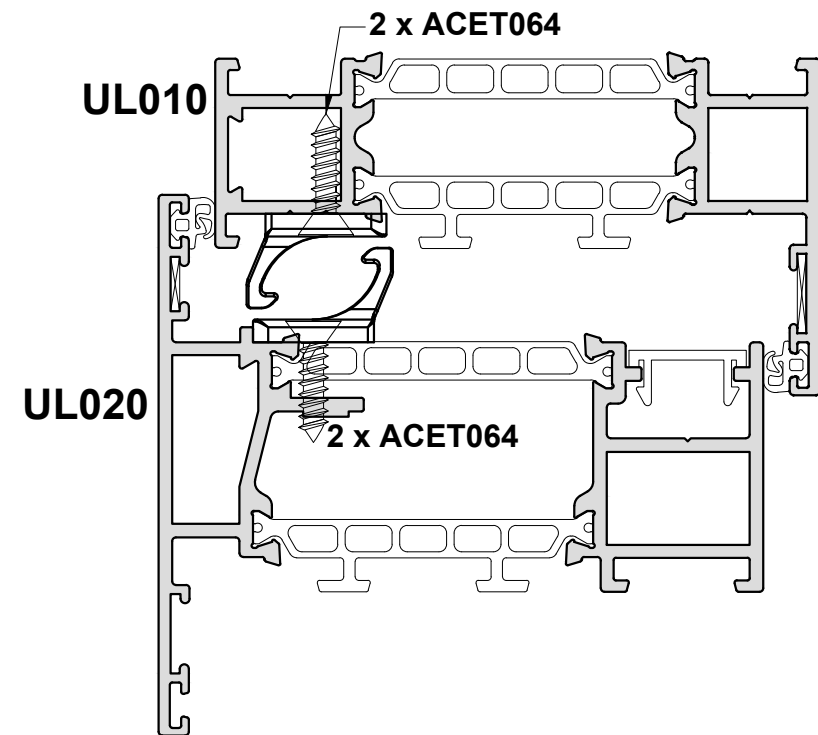
- Dimensions shown in table are sash sizes - not rebate sizes.
- The minimum sash sizes for ACINS10 & ACINSSH10 can both be reduced to 281mm where cockspur handles are used.
- Top hung height & side hung width sizes to be reduced by 2mm where size is 450mm or smaller.

ACUL990

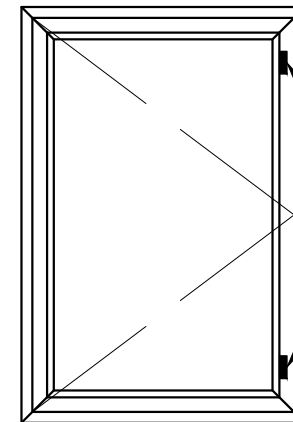


Do Not Scale From This Drawing

Hinge Protectors & Pull In Blocks



Top Hung

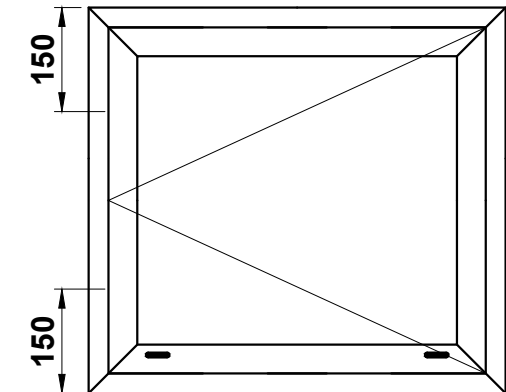
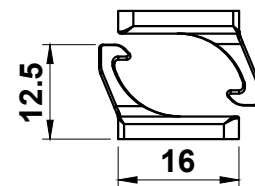
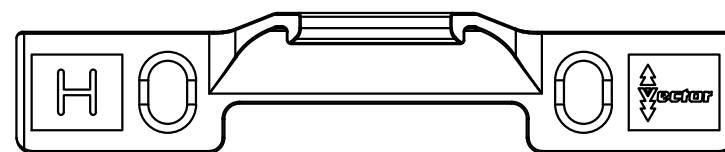


Side Hung

Please Note:

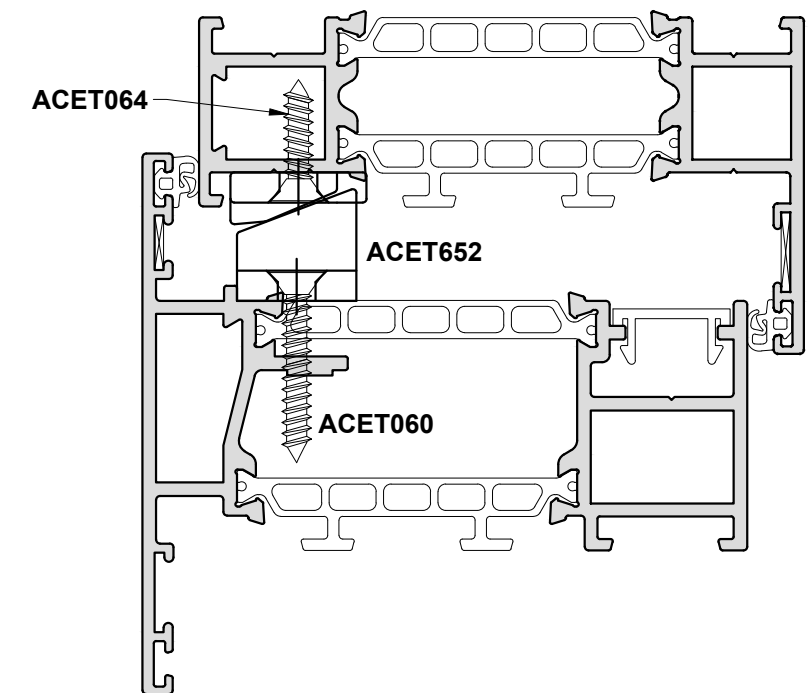
- 2 pairs per opening vent to be fitted to hinged side of window
- Each pair must be fitted with the hook centre within 100mm of each hinge

ACET516
Scale 1:1



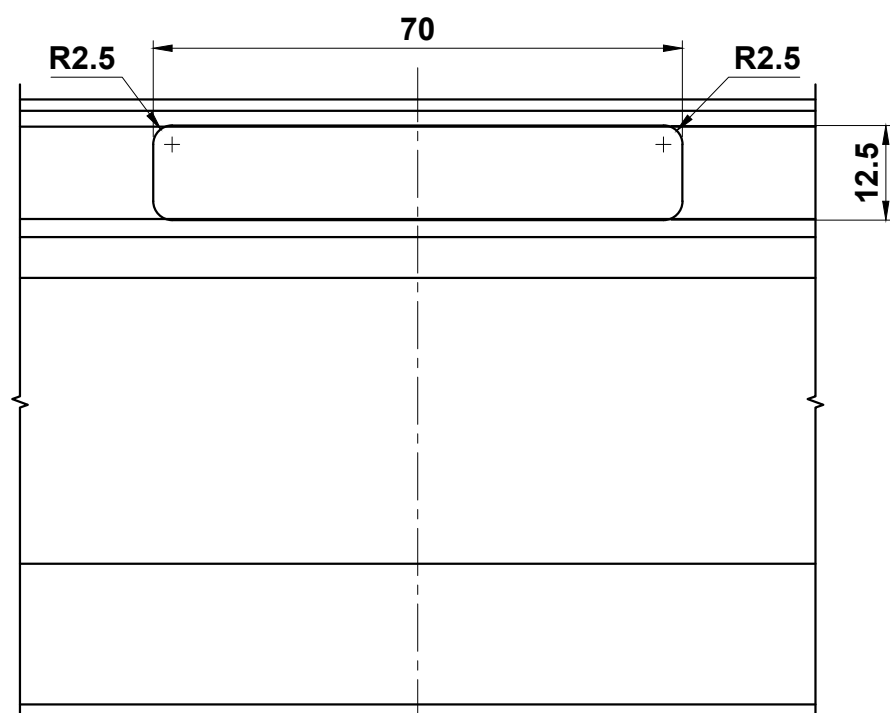
Please Note:

- 2 pairs per opening vent to be fitted to hinged side of window
- Each pair must be fitted with the wedge centre within 150mm of each hinge and in the centre of the window when sash height is greater than 800mm.



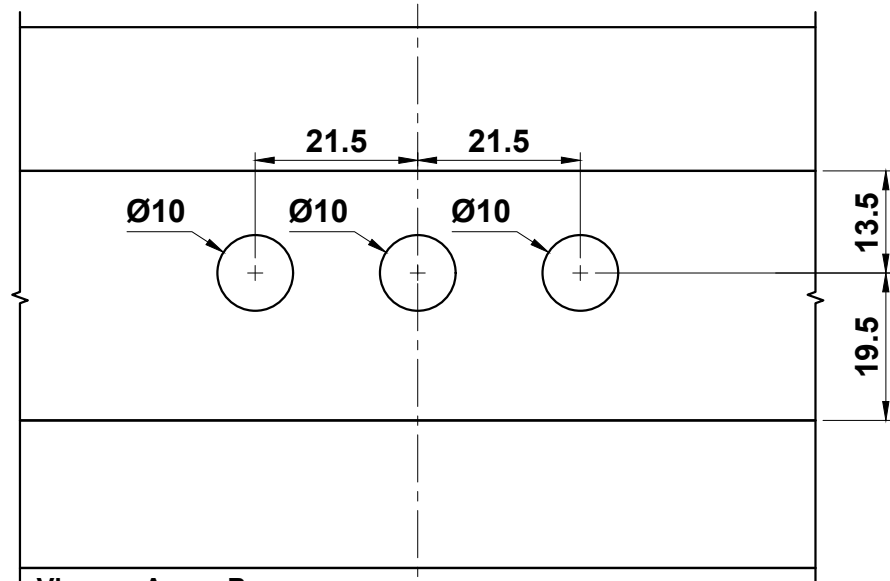
Do Not Scale From This Drawing

Lock Installation

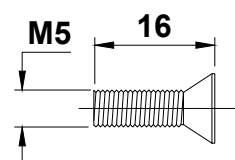
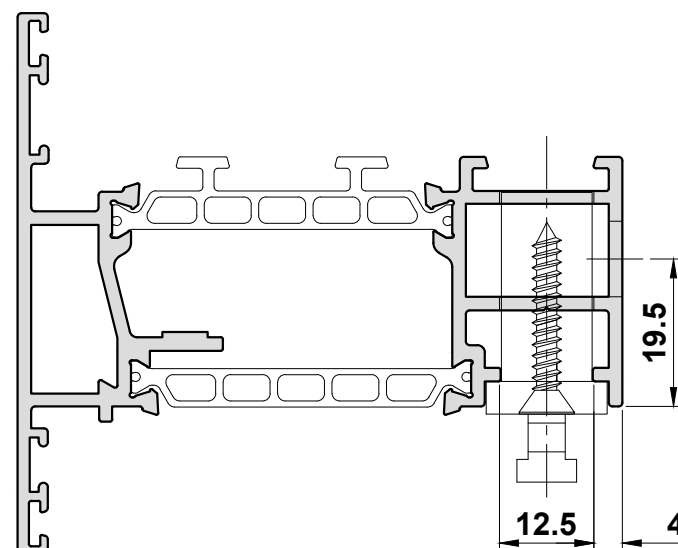
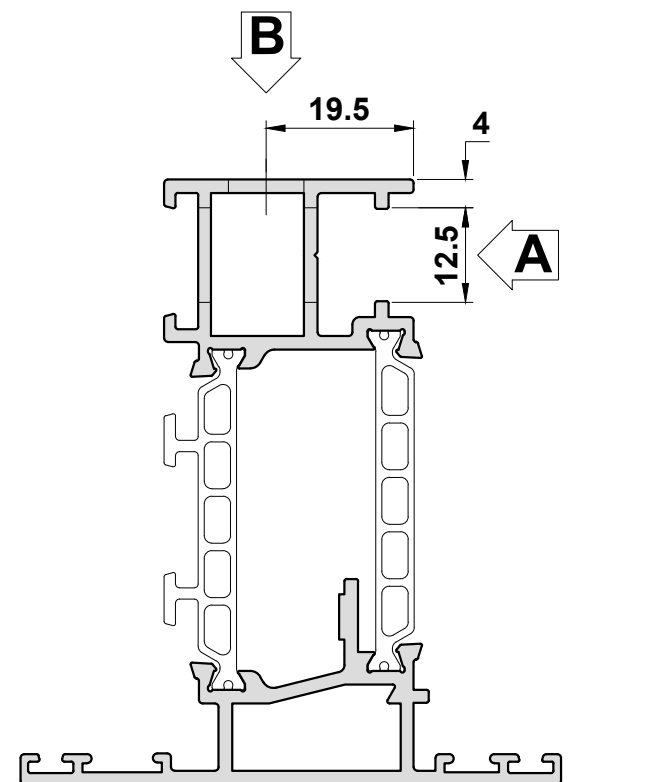


View on Arrow A

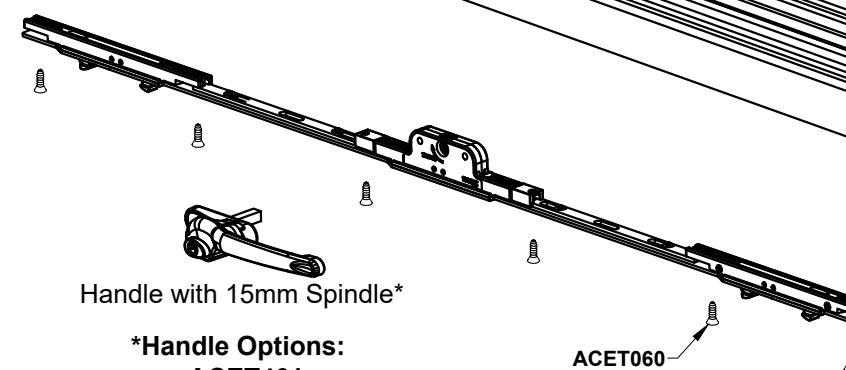
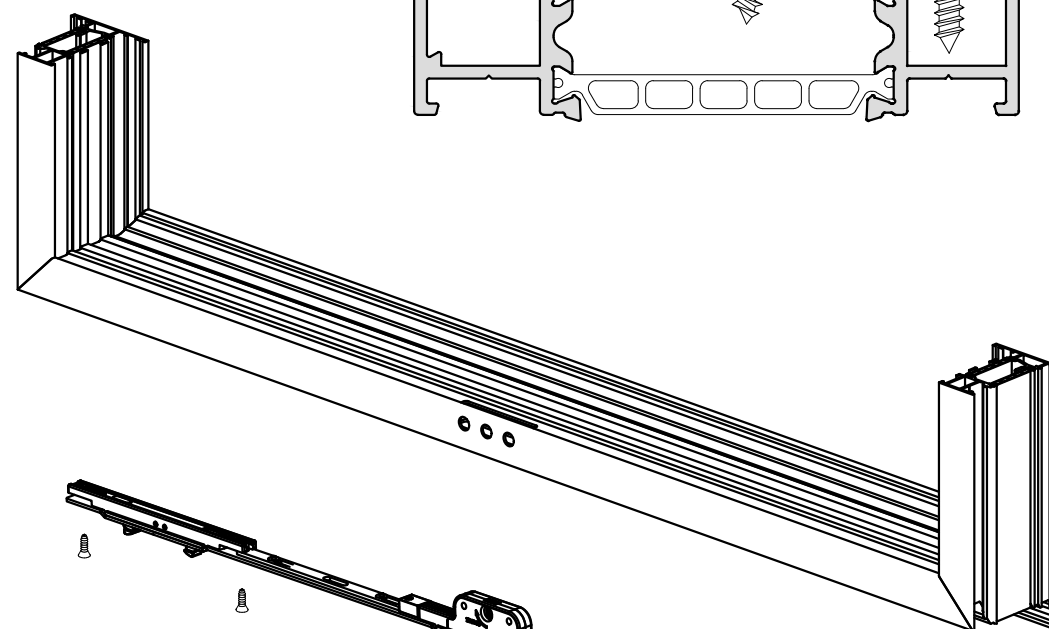
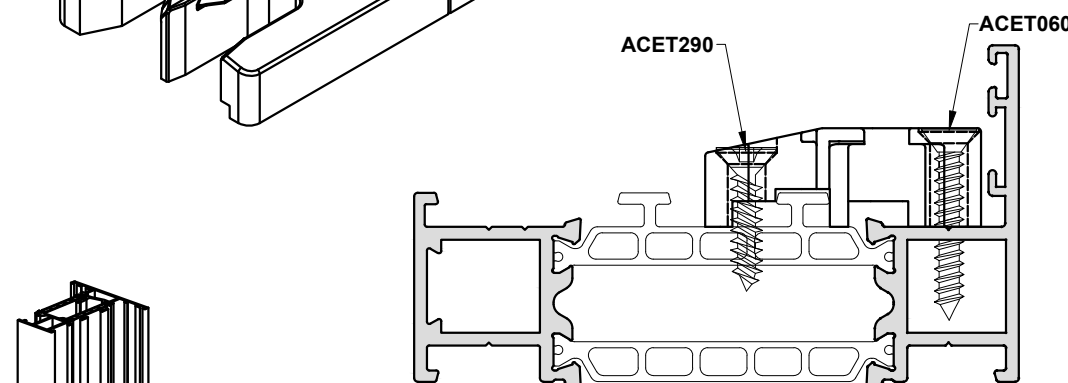
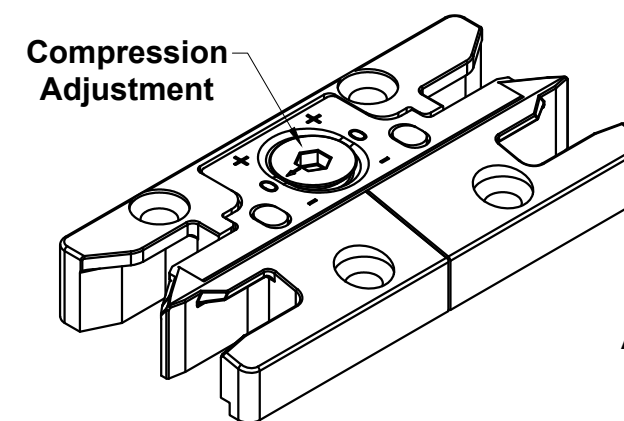
Centre Line



View on Arrow B



Handle Fixing Screw = HEA132

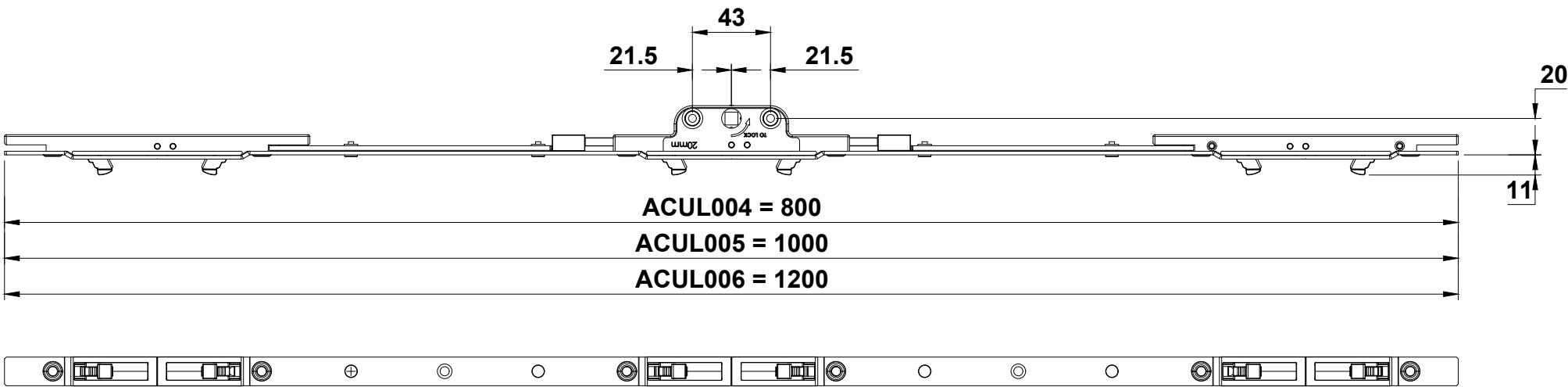
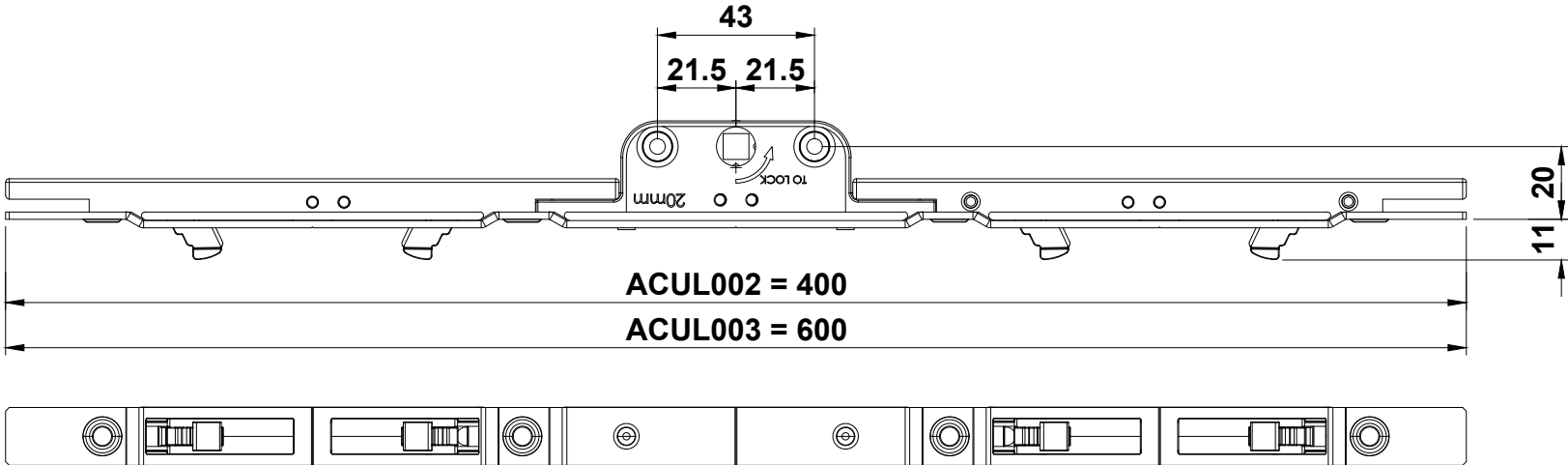
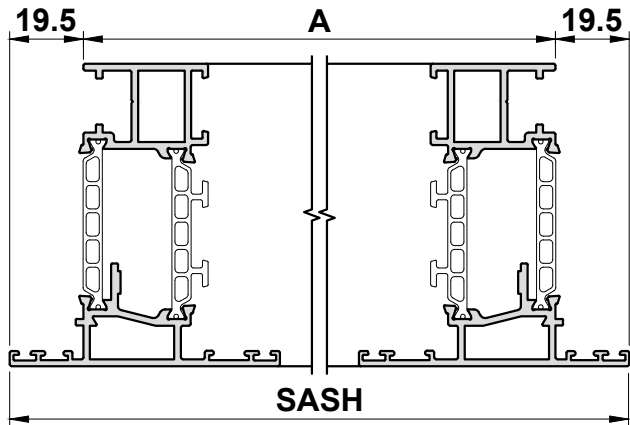
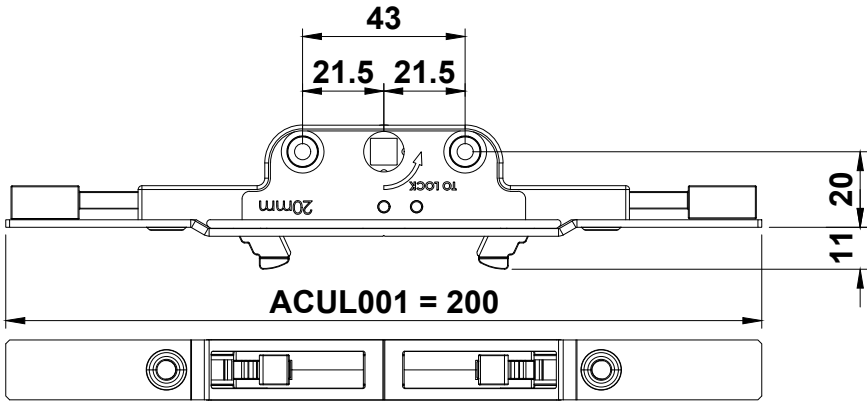


Handle with 15mm Spindle*

- *Handle Options:
- ACET461
 - ACET466
 - ACSM022
 - ACM050

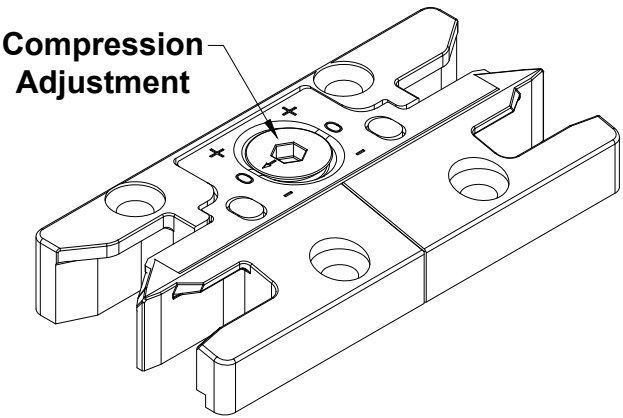
Do Not Scale From This Drawing

Lock Details



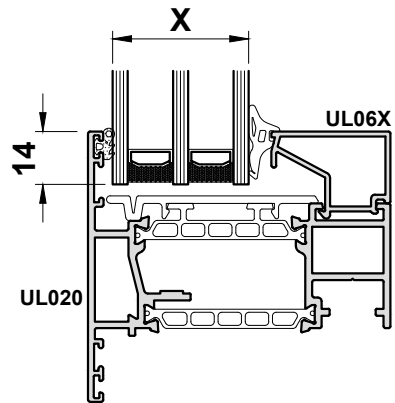
Part Code	Rod Length (mm)	Number of Keeps	Sash Rebate Size ('A')	
			Minimum	Maximum
ACUL001	200	1	200	400
ACUL002	400	2	400	600
ACUL003	600	2	600	800
ACUL004	800	3	800	1000
ACUL005	1000	3	1000	1200
ACUL006	1200	3	1200	1400

Note: To suit handles with 15mm spindles: ACET461, ACET466, ACET868, ACSM022 or ACSM050



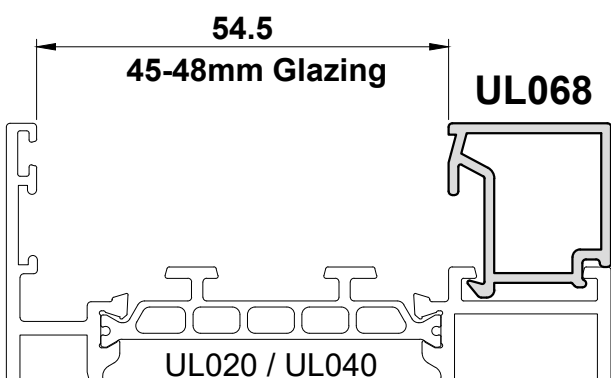
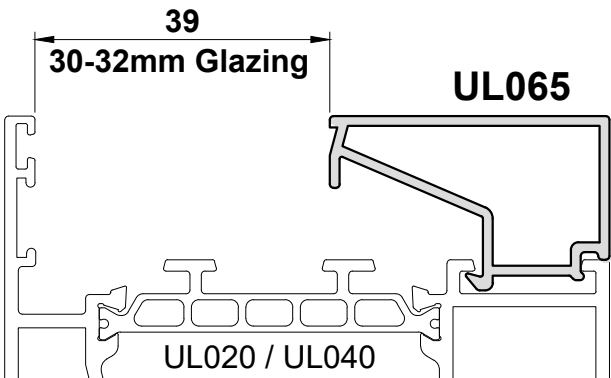
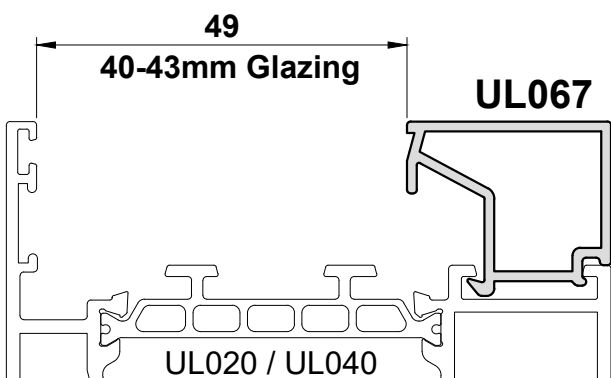
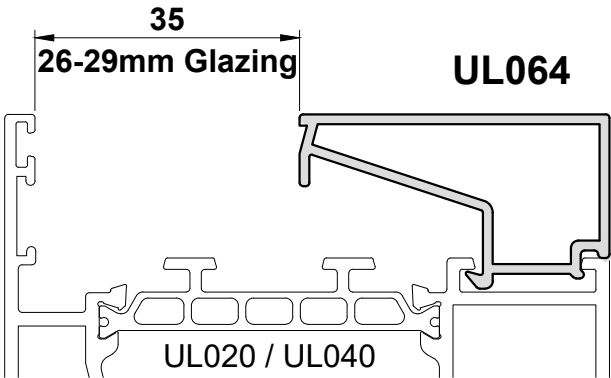
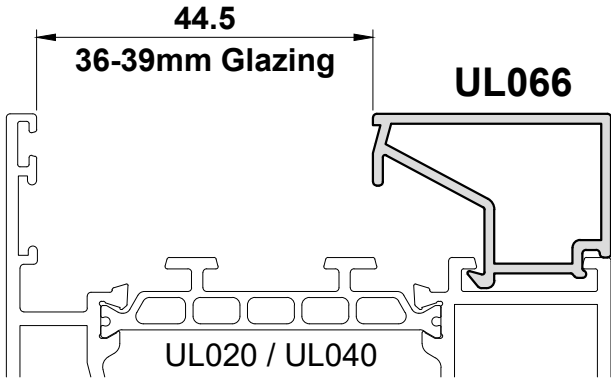
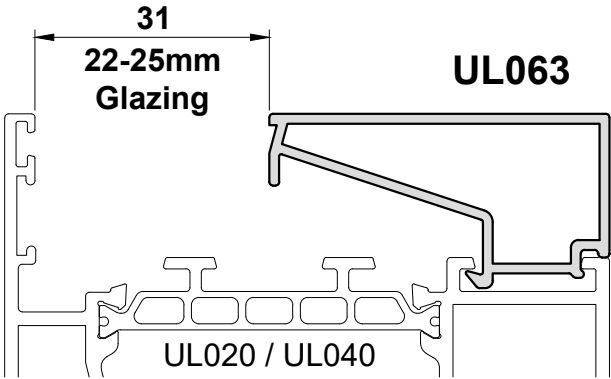
Do Not Scale From This Drawing

Glazing Details



Glass Thickness	External Gasket	Internal Gasket	Glazing Bead
22	ACVG31N	ACUN036	UL063
23	ACVG31N	ACUN036	UL063
24	ACVG31N	ACUN033	UL063
25	ACVG31N	ACUN033	UL063
26	ACVG31N	ACUN036	UL064
27	ACVG31N	ACUN036	UL064
28	ACVG31N	ACUN033	UL064
29	ACVG31N	ACUN033	UL064
30	ACVG31N	ACUN036	UL065
31	ACVG31N	ACUN036	UL065
32	ACVG31N	ACUN033	UL065

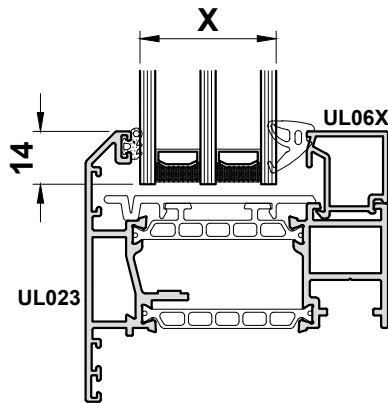
Glass Thickness	External Gasket	Internal Gasket	Glazing Bead
36	ACVG31N	ACUN036	UL066
37	ACVG31N	ACUN033	UL066
38	ACVG31N	ACUN033	UL066
39	ACVG31N	ACUN033	UL066
40	ACVG31N	ACUN036	UL067
41	ACVG31N	ACUN036	UL067
42	ACVG31N	ACUN033	UL067
43	ACVG31N	ACUN033	UL067
45	ACVG31N	ACUN036	UL068
46	ACVG31N	ACUN033	UL068
47	ACVG31N	ACUN033	UL068
48	ACVG31N	ACUN033	UL068



Important Note
Outerframe and Transoms cannot be glazed directly. For fixed lights a reverse adaptor or dummy sash must be used.

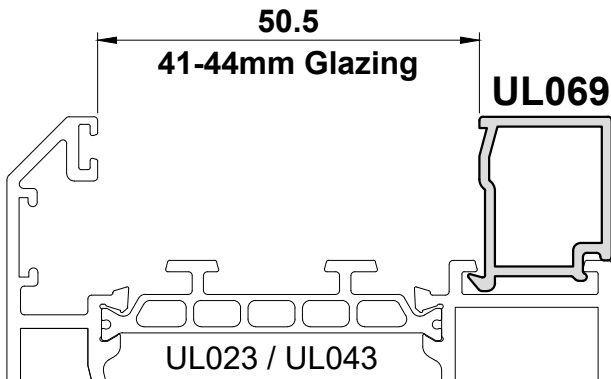
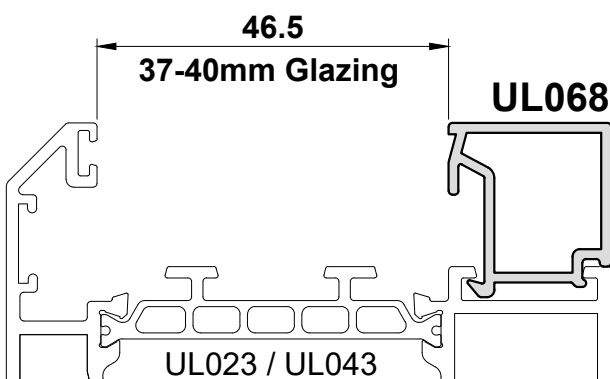
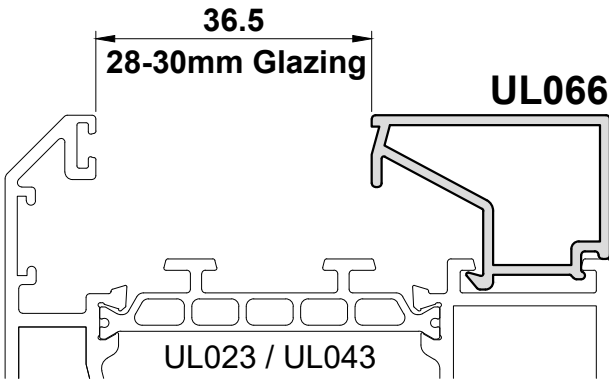
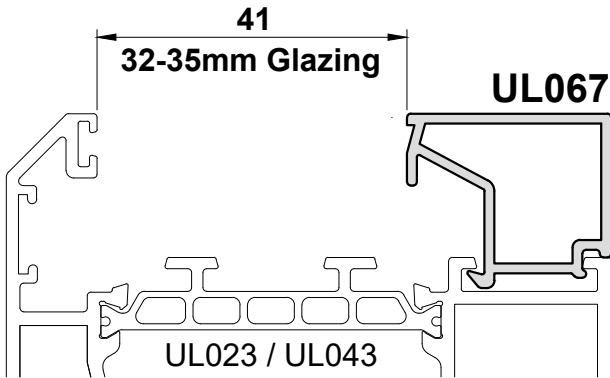
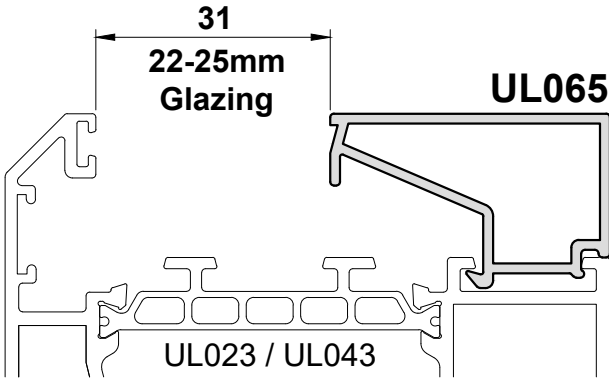
Do Not Scale From This Drawing

Glazing Details



Glass Thickness	External Gasket	Internal Gasket	Glazing Bead
22	ACVG31N	ACUN036	UL065
23	ACVG31N	ACUN036	UL065
24	ACVG31N	ACUN033	UL065
25	ACVG31N	ACUN033	UL065
28	ACVG31N	ACUN036	UL066
29	ACVG31N	ACUN033	UL066
30	ACVG31N	ACUN033	UL066

Glass Thickness	External Gasket	Internal Gasket	Glazing Bead
32	ACVG31N	ACUN033	UL067
33	ACVG31N	ACUN033	UL067
34	ACVG31N	ACUN033	UL067
35	ACVG31N	ACUN033	UL067
37	ACVG31N	ACUN036	UL068
38	ACVG31N	ACUN036	UL068
39	ACVG31N	ACUN033	UL068
40	ACVG31N	ACUN033	UL068
41	ACVG31N	ACUN036	UL069
42	ACVG31N	ACUN036	UL069
43	ACVG31N	ACUN033	UL069
44	ACVG31N	ACUN033	UL069



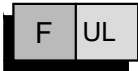
Important Note

Outerframe and Transoms cannot be glazed directly. For fixed lights a reverse adaptor or dummy sash must be used.

Do Not Scale From This Drawing

Do Not Scale From This Drawing

Section F



Sawing Tables

UL010 Cutting Information.....	F03
UL011 Cutting Information.....	F04



Cutting Information

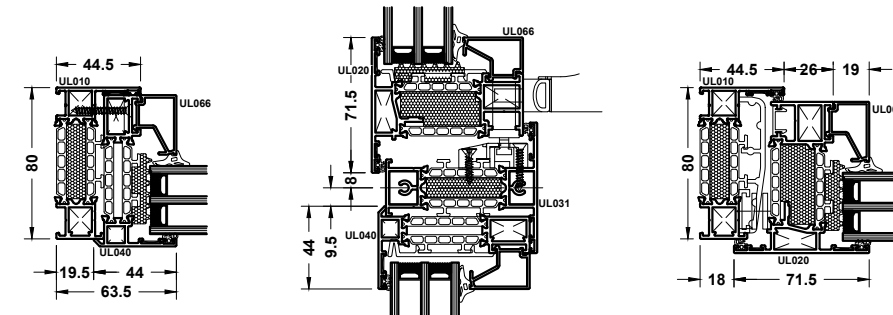
PART DESCRIPTIONS		TYPICAL STYLES															
Outer Frame	Head & Cill		W	W	W	W	W	W	W	W	W	W	W	W	W	W	W
	Jambs		H	H	H	H	H	H	H	H	H	H	H	H	H	H	H
	Transoms			W - 50		W - 50	W - 50	W - 50		OF to €M - 40	W - 50		OF to €M - 40	€M to €M - 30	W - 50	OF to €M - 40	W - 50
	Mullions								H - 50	H - 50	OF to €T - 40	H - 50	H - 50	H - 50	OF to €T - 40	H - 50	
Vent (1)	Horizontal Members				W - 36	W - 36	W - 36	W - 36	OF to €M - 26	OF to €M - 26	OF to €M - 26	OF to €M - 26	OF to €M - 26	OF to €M - 26	OF to €M - 26	OF to €M - 26	W - 36
	Vertical Members				H - 36	OF to €T - 26	OF to €T - 26	€T to €T - 16	H - 36	H - 36	OF to €T - 26	H - 36	OF to €T - 26	H - 36	OF to €T - 26	OF to €T - 26	OF to €T - 26
	Glass Width				W - 151	W - 151	W - 151	W - 151	OF to €M - 141	OF to €M - 141	OF to €M - 141	OF to €M - 141	OF to €M - 141	OF to €M - 141	OF to €M - 141	OF to €M - 141	W - 151
	Glass Height				H - 151	OF to €T - 141	OF to €T - 141	€T to €T - 131	H - 151	H - 151	OF to €T - 141	H - 151	OF to €T - 141	H - 151	OF to €T - 141	OF to €T - 141	OF to €T - 141
Vent (2)	Horizontal Members						W - 36			OF to €M - 26			OF to €M - 26	€M to €M - 16	€M to €M - 16	OF to €M - 26	
	Vertical Members						OF to €T - 26			OF to €T - 26			OF to €T - 26	OF to €T - 26	OF to €T - 26	OF to €T - 26	
	Glass Width						W - 151			OF to €M - 141			OF to €M - 141	€M to €M - 131	€M to €M - 131	OF to €M - 141	
	Glass Height						OF to €T - 141			OF to €T - 141			OF to €T - 141	OF to €T - 141	OF to €T - 141	OF to €T - 141	
Fixed Pane (1)	Horizontal Members		W - 39	W - 39		W - 39		W - 39	OF to €M - 29	OF to €M - 29	W - 39	€M to €M - 19	€M to €M - 19	€M to €M - 19	W - 39	OF to €M - 29	W - 39
	Vertical Members		H - 39	OF to €T - 29		OF to €T - 29		OF to €T - 29	H - 39	OF to €T - 29	OF to €T - 29	H - 39	H - 39	OF to €T - 29	OF to €T - 29	H - 39	OF to €T - 29
	Glass Width		W - 99	W - 99		W - 99		W - 99	OF to €M - 89	OF to €M - 89	W - 99	€M to €M - 79	€M to €M - 79	€M to €M - 79	W - 99	OF to €M - 89	W - 99
	Glass Height		H - 99	OF to €T - 89		OF to €T - 89		OF to €T - 89	H - 99	OF to €T - 89	OF to €T - 89	H - 99	H - 99	OF to €T - 89	OF to €T - 89	H - 99	OF to €T - 89

Legend

W	=	Outer Frame Width (Longest Leg)
H	=	Outer Frame Height (Longest Leg)
€T	=	Centre Line of Transom
€M	=	Centre Line of Mullion
OF	=	Edge of Outer Frame (Longest Leg)

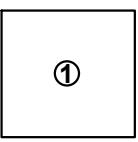
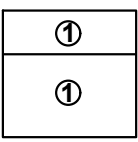
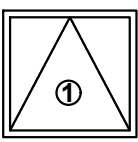
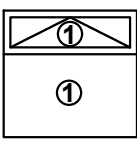
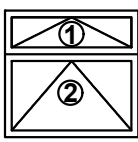
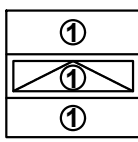
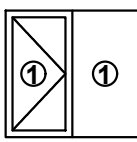
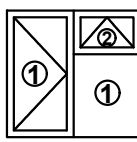
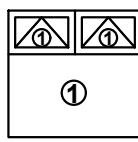
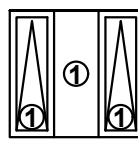
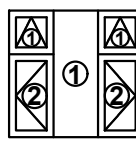
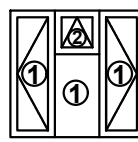
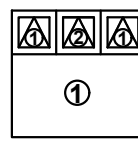
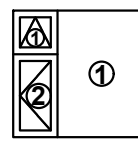
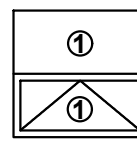
Sections

Outer Frame:	UL010
Sash:	UL020, UL023
Fixed Light:	UL040, UL043
Transom/Mullion:	UL030, UL031, UL032, UL033



Do Not Scale From This Drawing

Cutting Information

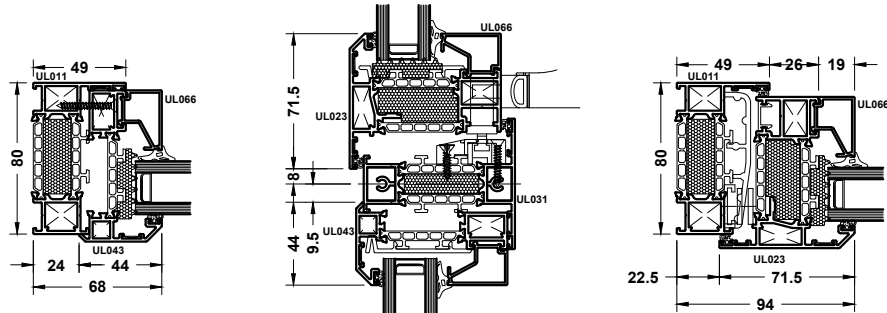
PART DESCRIPTIONS		TYPICAL STYLES															
Outer Frame	Head & Cill	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W
	Jambs	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H
	Transoms		W - 59		W - 59	W - 59	W - 59		OF to €M - 44.5	W - 59		OF to €M - 44.5	€M to €M - 30	W - 59	OF to €M - 44.5	W - 59	
	Mullions							H - 59	H - 59	OF to €T - 44.5	H - 59	H - 59	H - 59	OF to €T - 44.5	H - 59		
Vent (1)	Horizontal Members			W - 45	W - 45	W - 45	W - 45	OF to €M - 30.5	OF to €M - 30.5	OF to €M - 30.5	OF to €M - 30.5	OF to €M - 30.5	OF to €M - 30.5	OF to €M - 30.5	OF to €M - 30.5	OF to €M - 30.5	W - 45
	Vertical Members			H - 45	OF to €T - 30.5	OF to €T - 30.5	€T to €T - 16	H - 45	H - 45	OF to €T - 30.5	H - 45	OF to €T - 30.5	H - 45	OF to €T - 30.5	OF to €T - 30.5	OF to €T - 30.5	OF to €T - 30.5
	Glass Width			W - 160	W - 160	W - 160	W - 160	OF to €M - 145.5	OF to €M - 145.5	OF to €M - 145.5	OF to €M - 145.5	OF to €M - 145.5	OF to €M - 145.5	OF to €M - 145.5	OF to €M - 145.5	OF to €M - 145.5	W - 160
	Glass Height			H - 160	OF to €T - 145.5	OF to €T - 145.5	€T to €T - 131	H - 160	H - 160	OF to €T - 145.5	H - 160	OF to €T - 145.5	H - 160	OF to €T - 145.5	OF to €T - 145.5	OF to €T - 145.5	OF to €T - 145.5
Vent (2)	Horizontal Members					W - 45			OF to €M - 30.5			OF to €M - 30.5	€M to €M - 16	€M to €M - 16	OF to €M - 30.5		
	Vertical Members					OF to €T - 30.5			OF to €T - 30.5			OF to €T - 30.5	OF to €T - 30.5	OF to €T - 30.5	OF to €T - 30.5	OF to €T - 30.5	
	Glass Width					W - 160			OF to €M - 145.5			OF to €M - 145.5	€M to €M -131	€M to €M -131	OF to €M - 145.5		
	Glass Height					OF to €T - 145.5			OF to €T - 145.5			OF to €T - 145.5	OF to €T - 145.5	OF to €T - 145.5	OF to €T - 145.5	OF to €T - 145.5	
Fixed Pane (1)	Horizontal Members	W - 48	W - 48		W - 48		W - 48	OF to €M - 33.5	OF to €M - 33.5	W - 48	€M to €M - 19	€M to €M - 19	€M to €M - 19	W - 48	OF to €M - 33.5	W - 48	
	Vertical Members	H - 48	OF to €T - 33.5		OF to €T - 33.5		OF to €T - 33.5	H - 48	OF to €T - 33.5	OF to €T - 33.5	H - 48	H - 48	OF to €T - 33.5	OF to €T - 33.5	H - 48	OF to €T - 33.5	
	Glass Width	W - 108	W - 108		W - 108		W - 108	OF to €M - 93.5	OF to €M - 93.5	W - 108	€M to €M - 79	€M to €M - 79	€M to €M - 79	W - 108	OF to €M - 93.5	W - 108	
	Glass Height	H - 108	OF to €T - 93.5		OF to €T - 93.5		OF to €T - 93.5	H - 108	OF to €T - 93.5	OF to €T - 93.5	H - 108	H - 108	OF to €T - 93.5	OF to €T - 93.5	H - 108	OF to €T - 93.5	

Legend

W = Outer Frame Width (Longest Leg)
H = Outer Frame Height (Longest Leg)
€T = Centre Line of Transom
€M = Centre Line of Mullion
OF = Edge of Outer Frame (Longest Leg)

Sections

Outer Frame: UL011
Sash: UL020, UL023
Fixed Light: UL040, UL043
Transom/Mullion: UL030, UL031, UL032, UL033



Do Not Scale From This Drawing