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Updates

DATE	PAGE	DESCRIPTION
January 2024	A07, A11, B11, C05, C11, C14, C17, F07, F08, F09, F10	ETC4014 long leg outer frame and ACET619 foam added.

Specification

GENERAL DESCRIPTION

The "Alitherm 400 Tilt & Turn" window system described in this manual is suitable for both replacement windows for existing buildings, and for installation into new buildings.

The system incorporates internally beaded fixed lights & sashes.

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.

Alitherm 400 Tilt & Turn Quick-Glaze beads with integrated gasket, providing a fast and efficient glazing process. Non integrated gasket options are also available.

PROFILE SPECIFICATION

The window frame are 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.

GENERAL MANUFACTURING

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

The corners are joined using the Alitherm 400 Tilt & Turn 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.

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.

VENT

Prior to crimping the vents, remove the corners to the hardware channels to allow assembly of the tilt & turn hardware.

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.

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

Specification

GLAZING

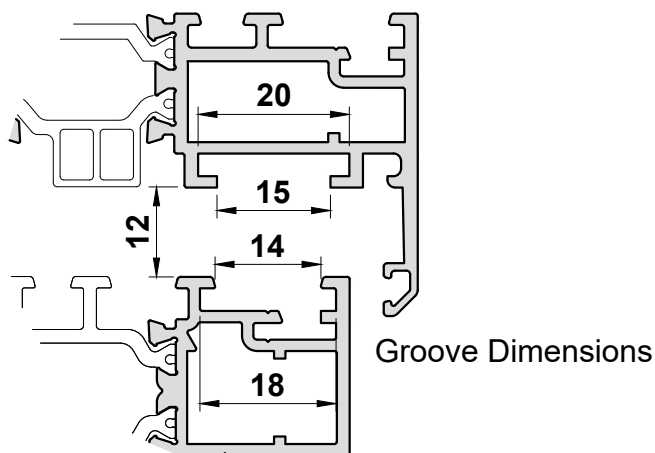
All beads are cut to suit the glazing aperture on the fully assembled window for glazing either at factory or on site as required.

INTERNALLY BEADED GLAZING

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

Hardware

For Hardware components, please refer to the SB-Chrono manual.



Specification

Alitherm 400 Tilt & Turn Window Weather Performance (BS6375-1)

BS EN 1026: 2000 Air Permeability: To be tested

BS EN 1027: 2000 Watertightness: To be tested

BS EN 12211: 2000 Resistance to Wind Load: To be tested

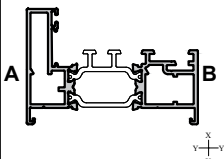
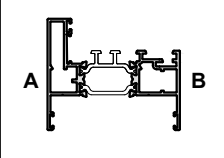
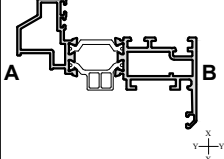
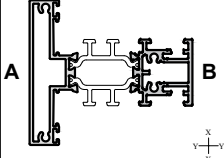
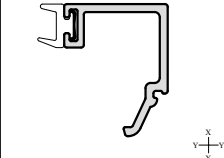
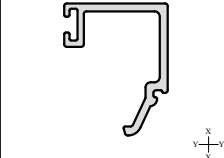
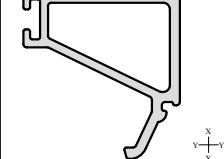
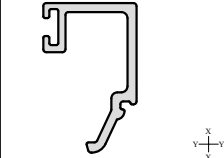
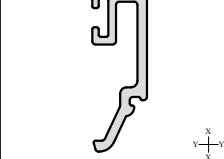
Alitherm 400 Tilt & Turn Window Security (PAS 24)

To be tested.

Alitherm 400 Tilt & Turn Window U Values

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

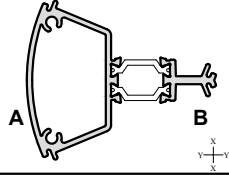
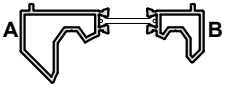
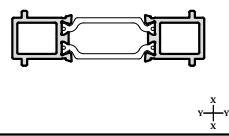
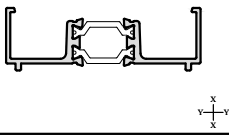
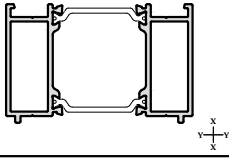
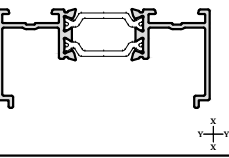
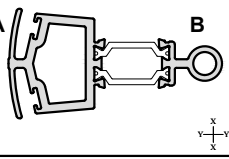
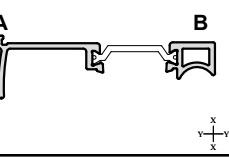
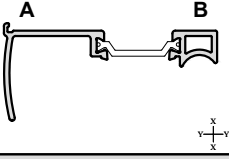
PROFILES : TECHNICAL INFORMATION

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ETC4011		A11	330	279	28.06 — 7.35	5.81 — 2.85	6.5	1	✓	✓	✓	✓	✓
ETC4014		A11	388	279	32.69 — 10.97	8.45 — 2.63	6.5	1	✓	✓	✓	✓	✓
ETC4021		A12	385	258	31.89 — 7.23	6.27 — 2.50	6.5	1	✓	✓	✓	✓	✓
ETC4031		A12	424	127	34.93 — 8.73	12.29 — 3.95	6.5	1	✓	✓	✓	✓	✓
UN3160G		A13	120	39	- — -	- — -	6.5	1	✓	✓	✓	✓	
UN3160		A13	105	41	- — -	- — -	6.5	1	✓	✓	✓	✓	
UN3162		A13	120	120	- — -	- — -	6.5	1	✓	✓	✓	✓	
UN3164		A14	112	33	- — -	- — -	6.5	1	✓	✓	✓	✓	
UN3166		A15	98	43	- — -	- — -	6.5	1	✓	✓	✓	✓	
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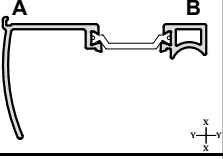
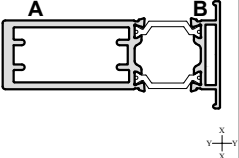
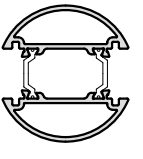
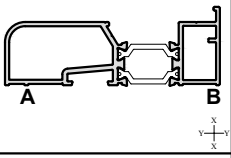
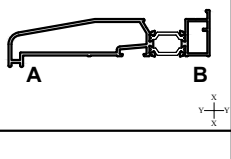
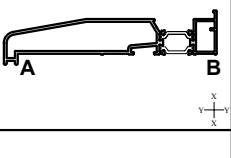
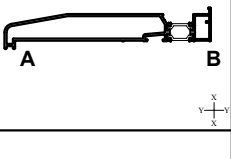
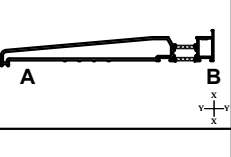
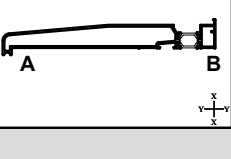
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ETC4061		A14	112	33	- -	- -	6.5	1	✓	✓	✓	✓	
ETC4061G		A14	112	33	- -	- -	6.5	1	✓	✓	✓	✓	
ETC4063		A16	82	24	- -	- -	6.5	1	✓	✓	✓	✓	
ETC4067G		A13	127	41	- -	- -	6.5	1	✓	✓	✓	✓	
ETC4067		A13	127	41	- -	- -	6.5	1	✓	✓	✓	✓	
ETC4179G		A15	104	29	- -	- -	6.5	1	✓	✓	✓	✓	
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UN3010		A17	369	226	41.4 ----- 10.7	40 ----- 11.6	6.5	1	✓	✓	✓	✓	✓
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PROFILES : TECHNICAL INFORMATION

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UN3015		A18	214.5	56	18.1 --- 5.2	1 --- 1	6.5	1	✓	✓	✓	✓	✓
UN3020		A18	281.6	70.4	14.8 --- 4.2	0.9 --- 1	6.5	1	✓	✓	✓	✓	✓
UN3042		A18	288.4	111	31.2 --- 8.9	9.5 --- 4.3	6.5	1	✓	✓	✓	✓	✓
UN3370		A19	360	61	18.4 --- 5.26	2.15 --- 1.97	6.5	1	✓	✓	✓	✓	✓
ETC080		A20	344	61	25.58 ----- 5.47	4.88 ----- 2.57	6.5	1	✓	✓	✓	✓	✓
ETC081		A20	197	35	13.85 ----- 3.8	0.36 ----- 0.52	6.5	1	✓	✓	✓	✓	✓
ETC082		A20	221	47	16.21 ----- 4.19	1.15 ----- 1.29	6.5	1	✓	✓	✓	✓	✓
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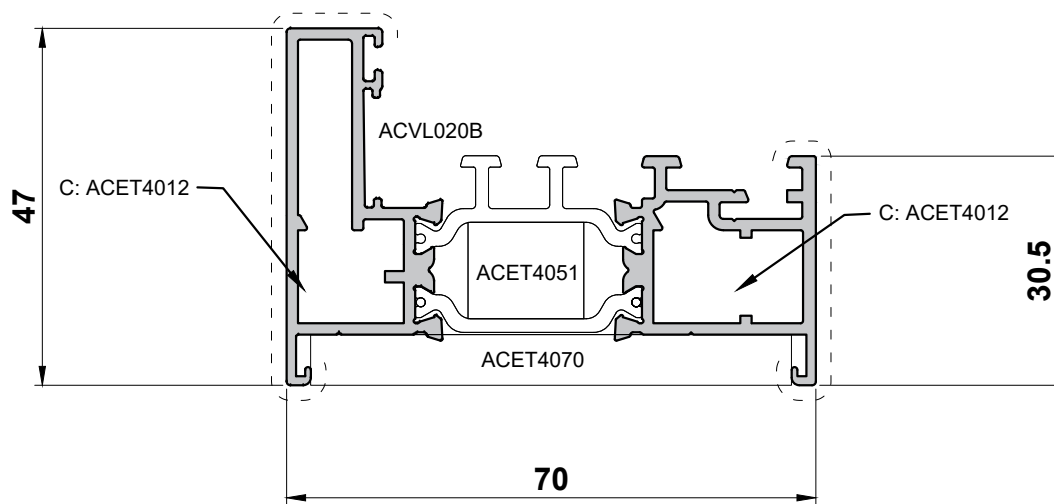
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ETC357		A19	297	138	41.5 --- 9.86	52 --- 2.67	6.5	1	✓	✓	✓	✓	✓
ETC869		A23	332	144	18.38 --- 6.13	14.3 --- 5.17	6.5	1	✓	✓	✓	✓	✓
ETC451		A21	271	180	32.44 ----- 7.29	3.46 ----- 2.79	6.5	1	✓	✓	✓	✓	✓
ETC452		A21	414	382	122.46 ----- 18.03	6.01 ----- 3.34	6.5	1	✓	✓	✓	✓	✓
ETC457		A21	444	212	164.27 --- 21.60	6.79 --- 3.73	6.5	1	✓	✓	✓	✓	✓
ETC458		A22	524	492	313.62 ----- 32.63	8.87 ----- 4.79	6.5	1	✓	✓	✓	✓	✓
ETC477		A22	752	408	1591.6 ----- 105.33	26.84 ----- 12.84	6.5	1	✓	✓	✓	✓	✓
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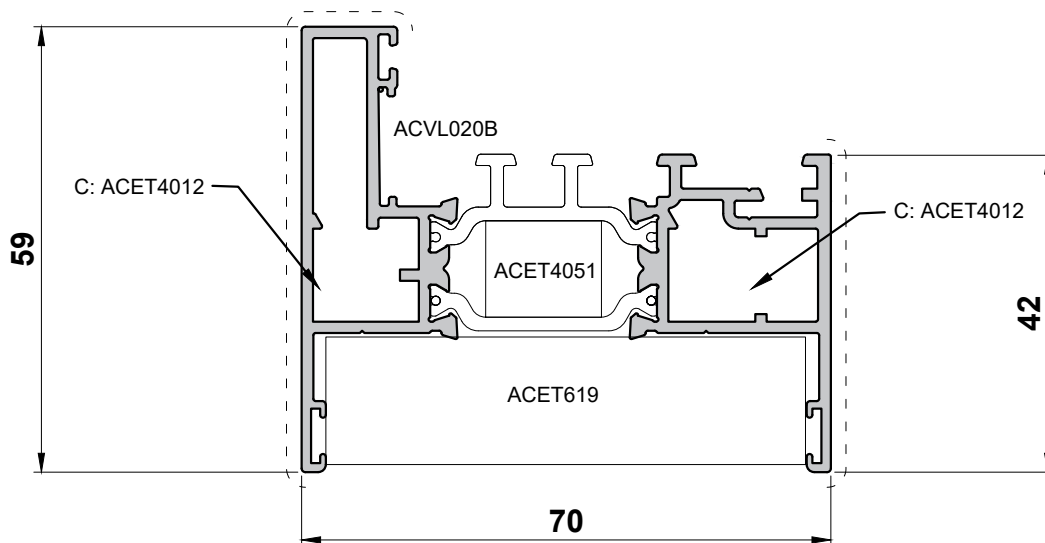
Primary Visible Side

Secondary Visible Side

ETC4011
Outer Frame



ETC4014
Long Leg Outer Frame

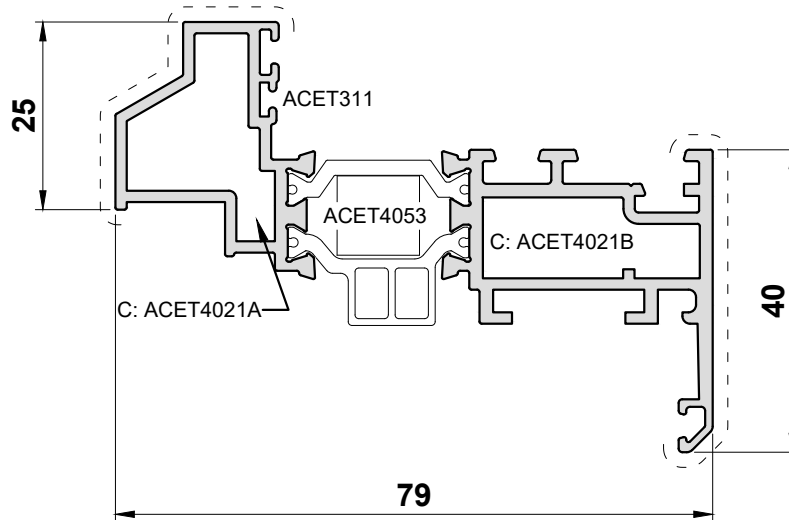


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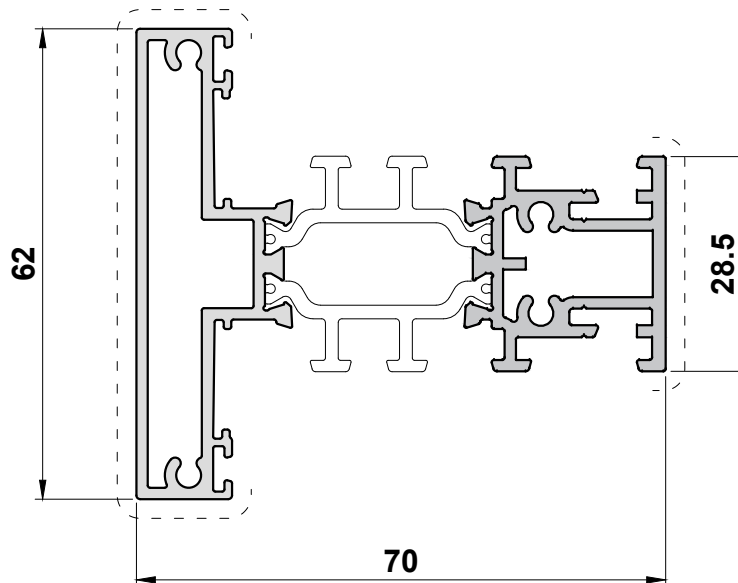
Primary Visible Side

Secondary Visible Side

ETC4021
Sash



ETC4031
Transom / Mullion

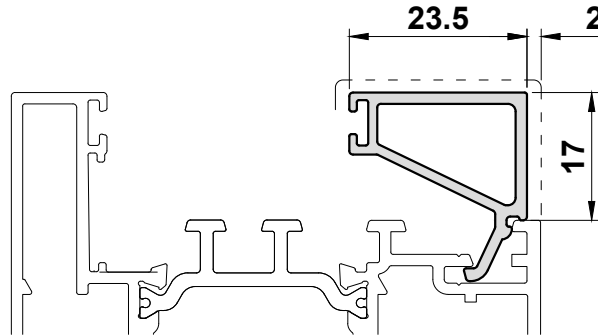


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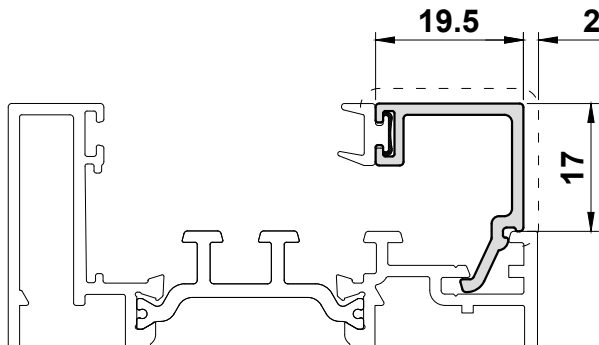
Primary Visible Side

Secondary Visible Side

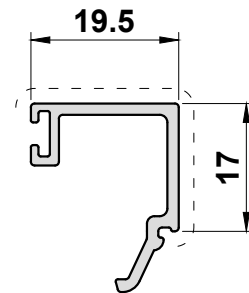
UN3162
24mm Glazing
Tap In Glazing Bead



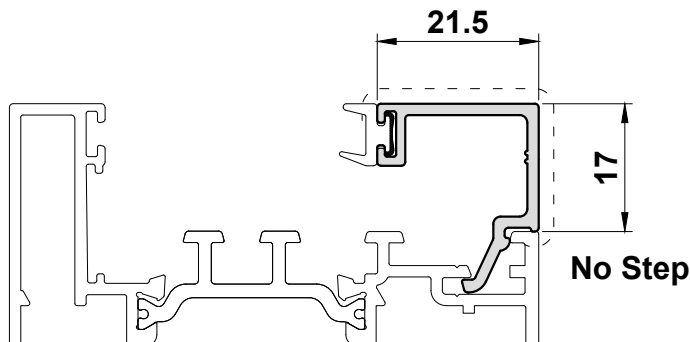
UN3160G
28mm Glazing
Tap In Glazing Bead



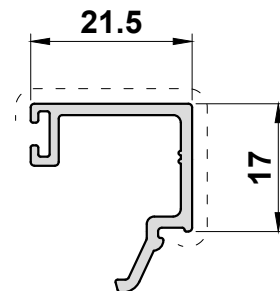
UN3160
28mm Glazing
Tap In Glazing Bead



ETC4067G
28mm Glazing
Tap In Glazing Bead



ETC4067
28mm Glazing
Tap In Glazing Bead

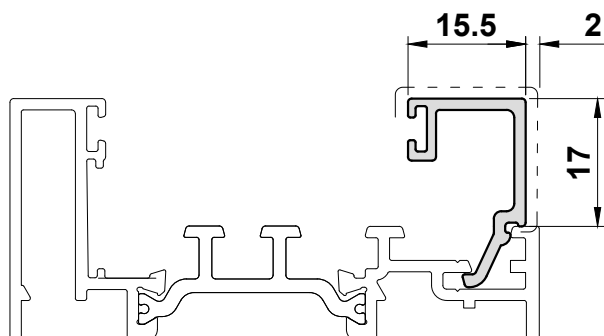


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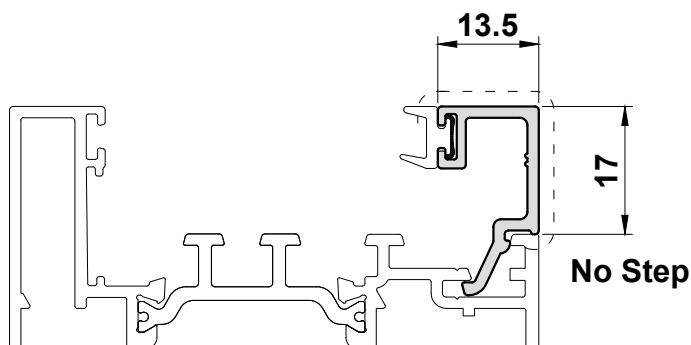
Primary Visible Side

Secondary Visible Side

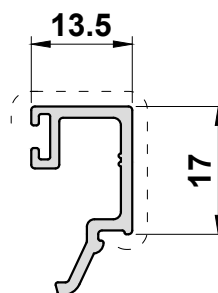
UN3164
32mm Glazing
Tap In Glazing Bead



ETC4061G
36mm Glazing
Tap In Glazing Bead



ETC4061
36mm Glazing
Tap In Glazing Bead

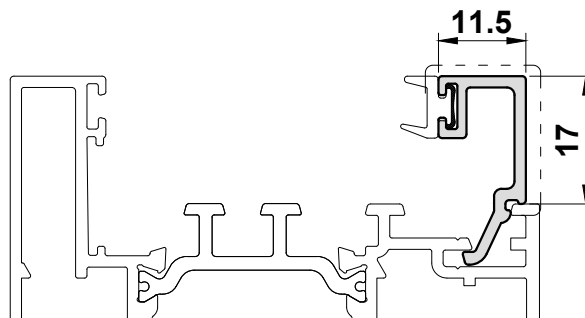


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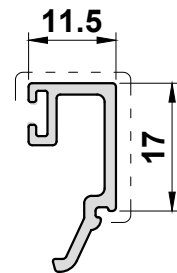
Primary Visible Side

Secondary Visible Side

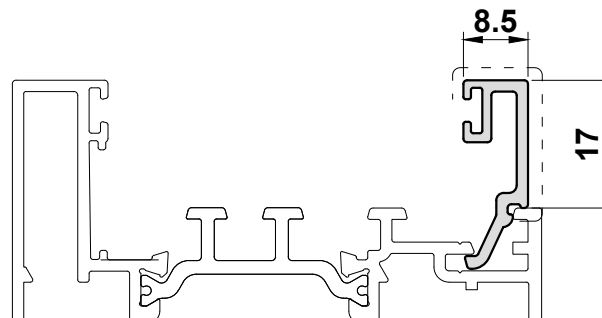
ETC4179G
36mm Glazing
Tap In Glazing Bead



ETC4179
36mm Glazing
Tap In Glazing Bead



UN3166
40mm Glazing
Tap In Glazing Bead

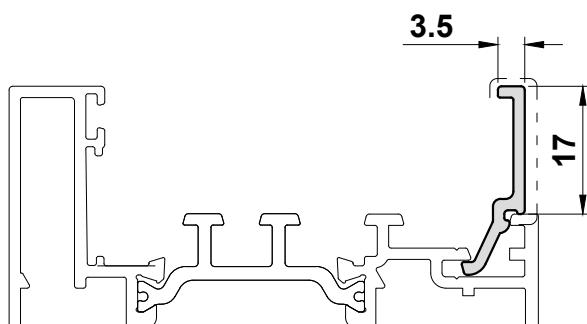


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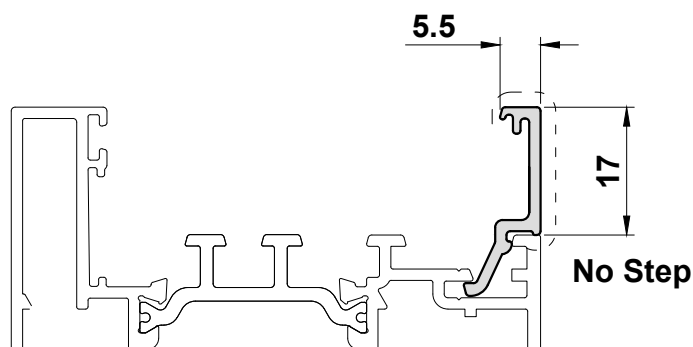
Primary Visible Side

Secondary Visible Side

UN3168
45mm Glazing
Tap In Glazing Bead



ETC4063
45mm Glazing
Tap In Glazing Bead



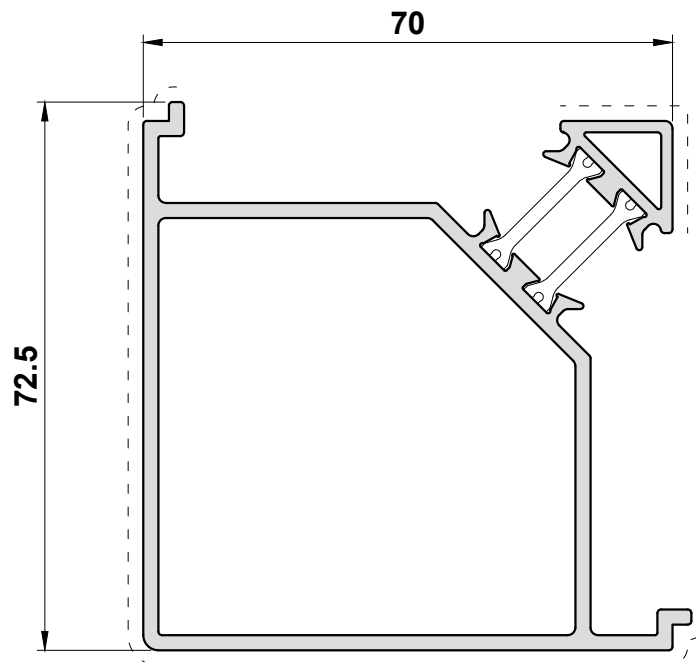
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Primary Visible Side

Secondary Visible Side

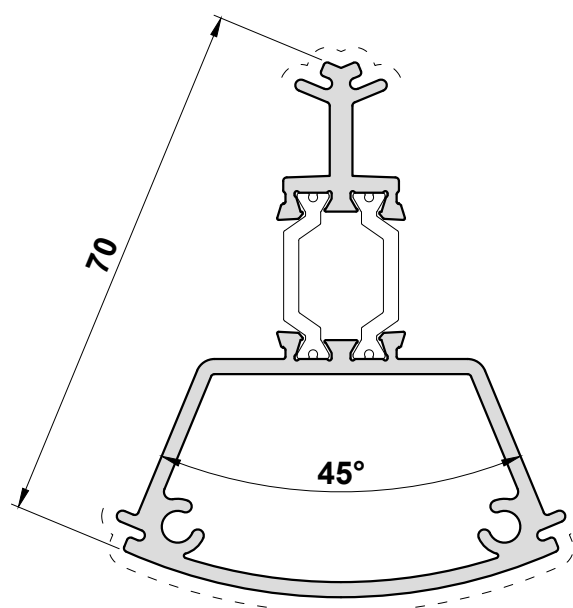
UN3010

70mm 90° Corner Post



UN3011

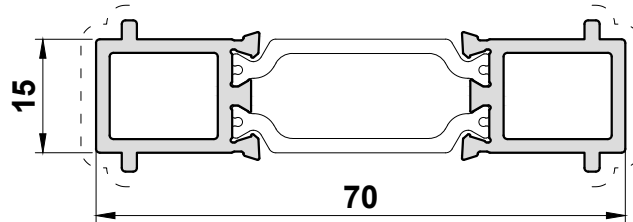
135° Bay Pole



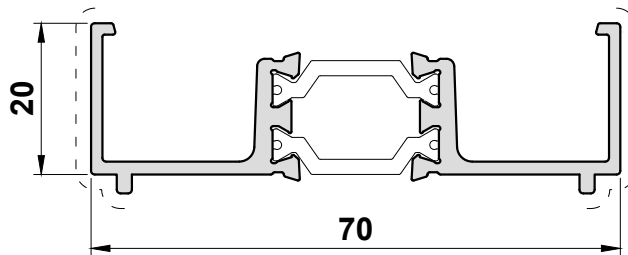
Primary Visible Side

Secondary Visible Side

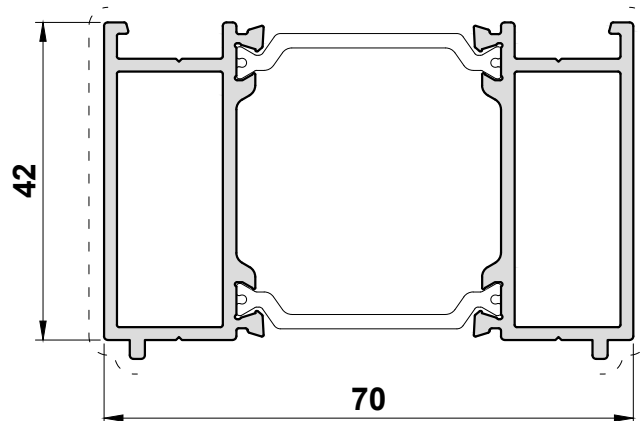
UN3015
70mm x 15mm Coupler



UN3020
20mm Frame Extension



UN3042
70mm x 42mm Head Extension

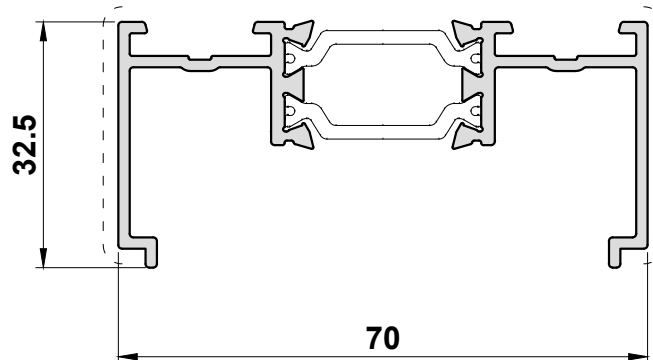


Scale 1:1

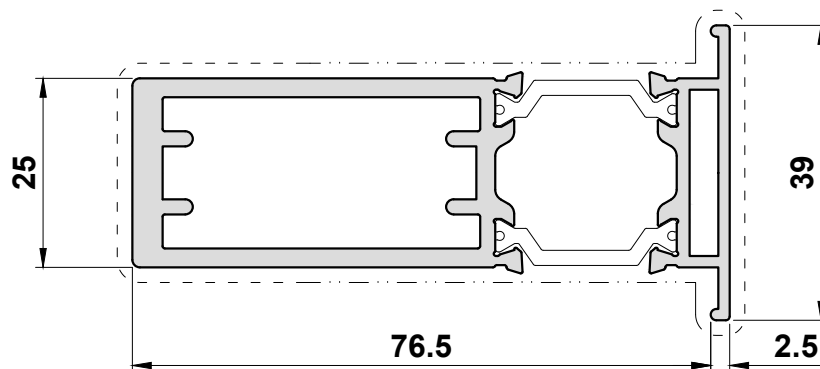
Primary Visible Side

Secondary Visible Side

UN3370
70mm x 32.5mm Head Extension



ETC357
Coupler

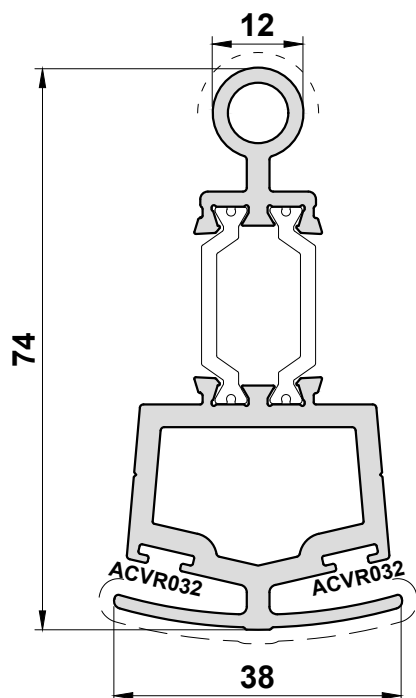


Scale 1:1

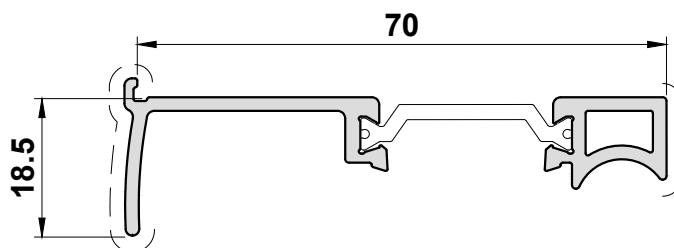
Primary Visible Side

Secondary Visible Side

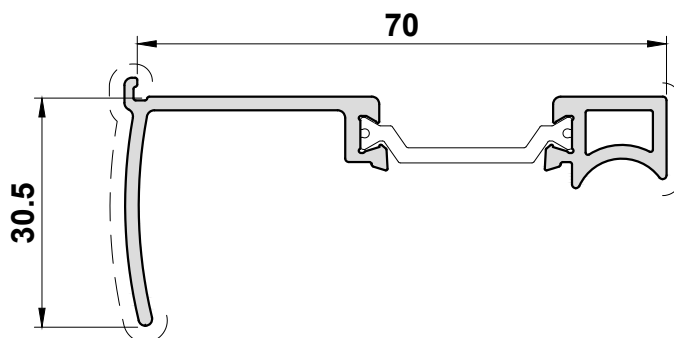
ETC080
Bay Pole



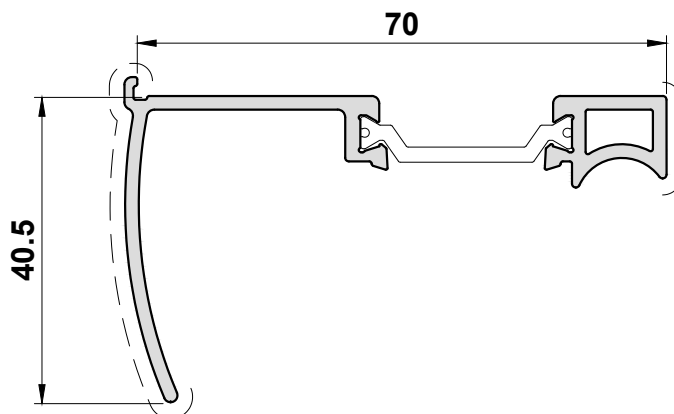
ETC081
169° - 150°
Bay Pole Adaptor



ETC082
149° - 130°
Bay Pole Adaptor



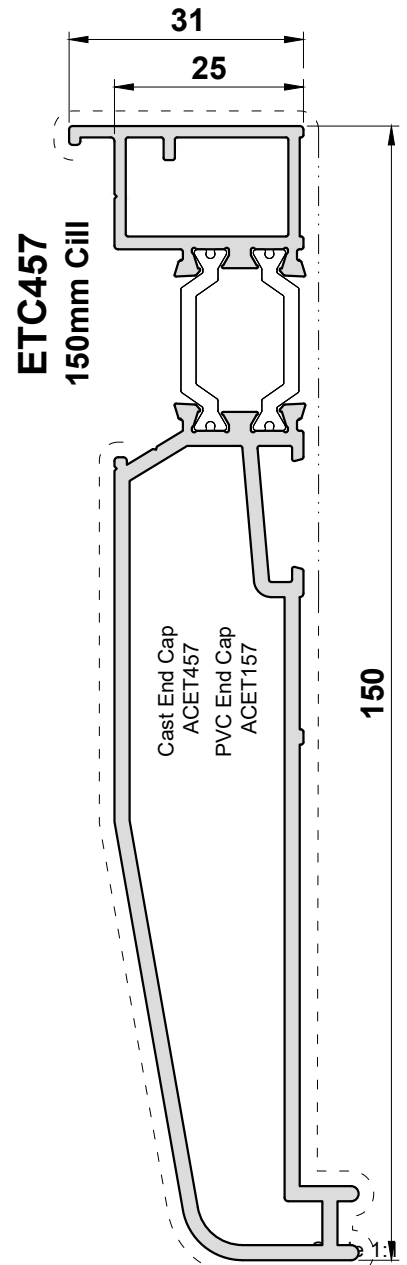
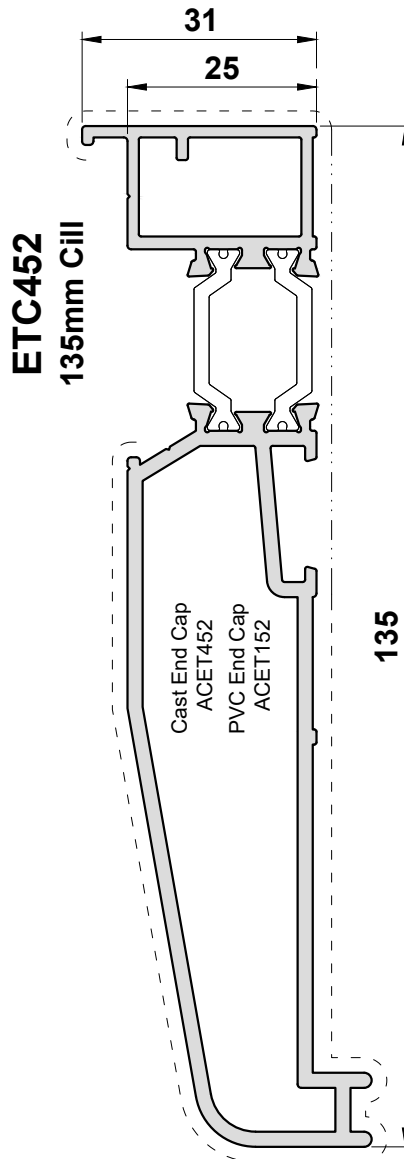
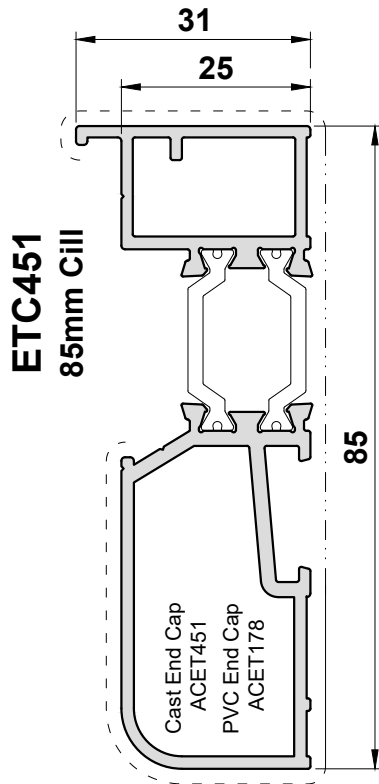
ETC083
129° - 115°
Bay Pole Adaptor



Scale 1:1

Primary Visible Side

Secondary Visible Side

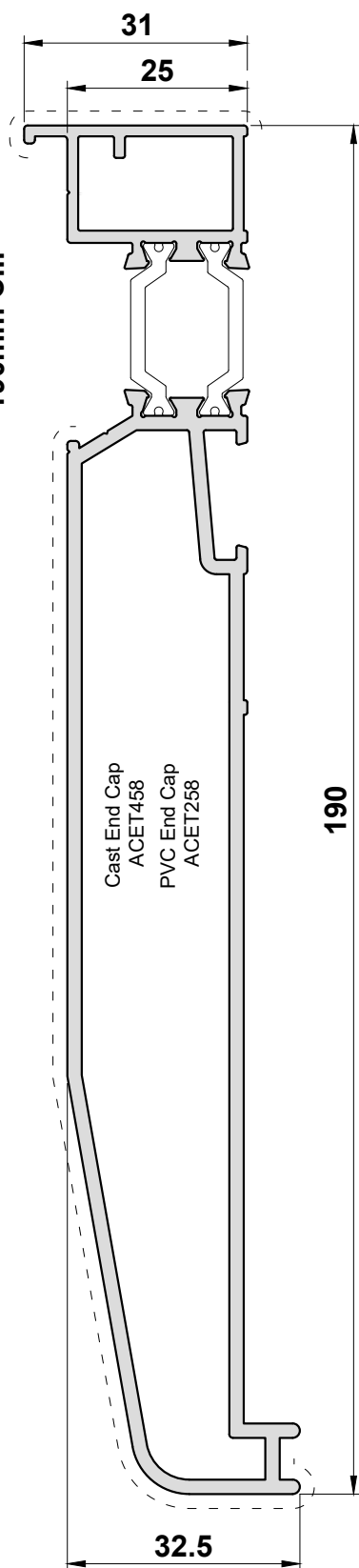


Scale 1:1

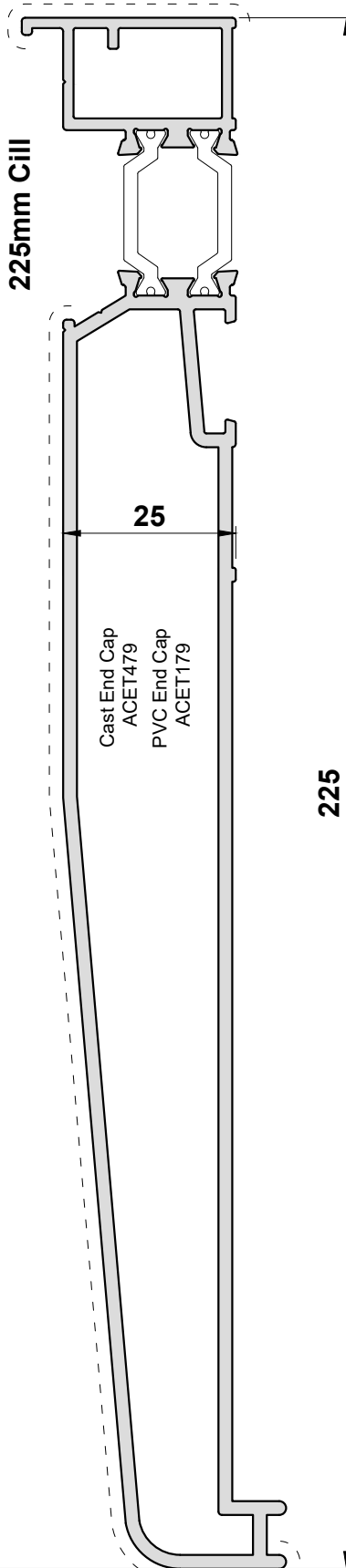
Primary Visible Side

Secondary Visible Side

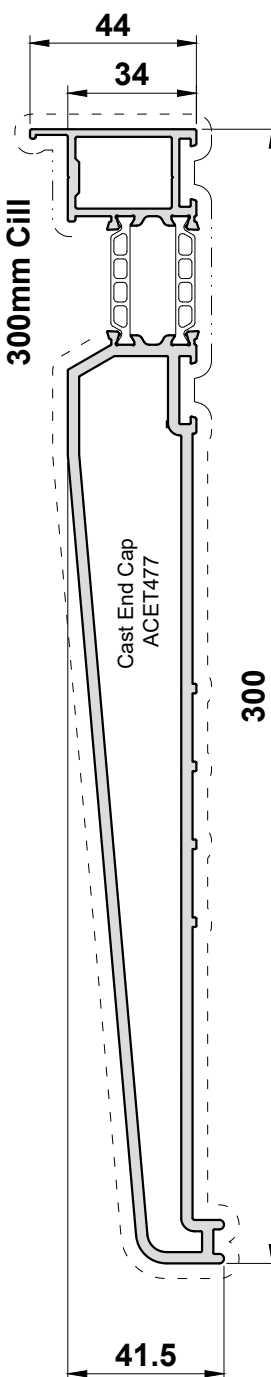
ETC458
190mm Cill



ETC479N
225mm Cill



ETC477
300mm Cill



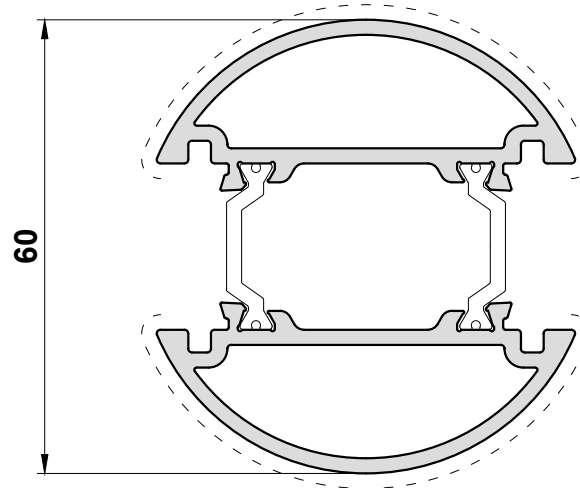
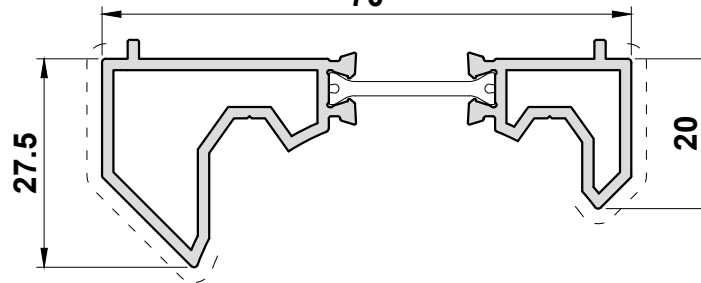
Scale 1:1

Primary Visible Side

Secondary Visible Side

UN3012

Bay Pole Adaptor
70



ETC869

Ø60mm Bay Pole

Scale 1:1

Primary Visible Side

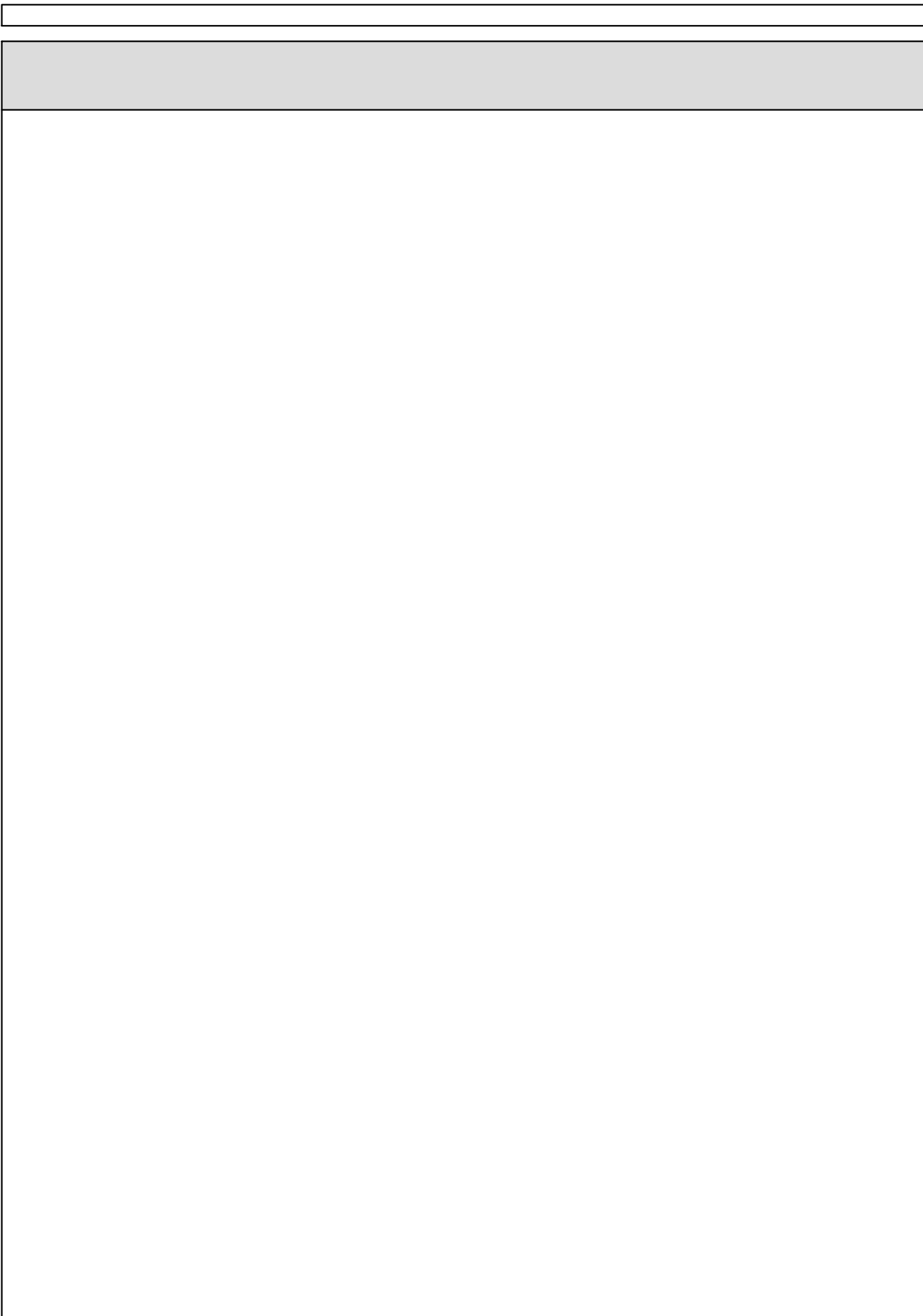
Secondary Visible Side

Scale 1:1

Section B

Accessories

Photos & Drawings

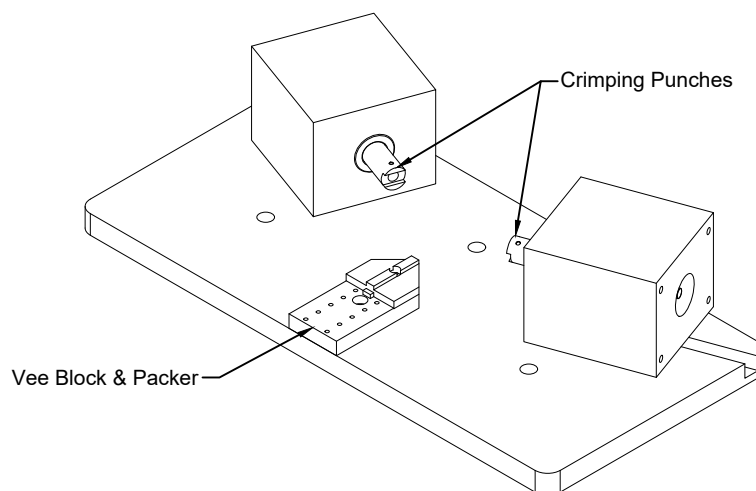


Corner Joint - Crimping

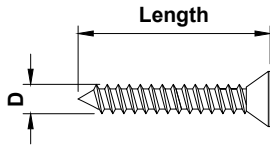
	Profile	Crimping Punches	Vee Block	Packer
Outerframe	ETC4011 ETC4014	ACET4395	ACET4390	ACET4391
Sash	ETC4021	ACET4394	ACET4392	ACET4393

PNEUMATIC CRIMPER
ACCR100

MANUAL CRIMPER
WUT024HSZA



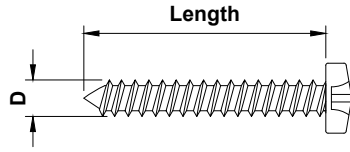
Countersunk Screws



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"	Countersunk Pozi Self Tapper S/S	100
MUA025SSZ	No.6	X	1"	Countersunk Pozi Self Tapper S/S	100
ACET067	No.7	X	1/2"	Countersunk Pozi Self Tapper S/S	100
ACET060	No.7	X	1"	Countersunk Pozi Self Tapper S/S	100
ACET066	No.7	X	1 1/2"	Countersunk Pozi Self Tapper S/S	100
MUA067SSZ	No.7	X	2"	Countersunk Pozi Self Tapper S/S	100
ACUN3544	No.7	X	3/4"	Countersunk Pozi Self Tapper S/S	100
ACET064	No.8	X	5/8"	Countersunk Pozi Self Tapper S/S	100
ACUN3512	No.8	X	1 1/4"	Countersunk Pozi Self Tapper S/S	100
ACUN3513	No.8	X	1 3/4"	Countersunk Pozi Self Tapper S/S	100
ACET072	No.8	X	2 1/2"	Countersunk Pozi Self Tapper S/S	100
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
ACET048	No.10	X	3/8"	Countersunk Pozi Self Tapper S/S	100
ACIM062	No.10	X	1 1/4"	Countersunk Pozi Self Tapper S/S	100
ACET062	No.10	X	2"	Countersunk Pozi Self Tapper S/S	100
ACET076	No.10	X	2 1/2"	Countersunk Pozi Self Tapper S/S	100

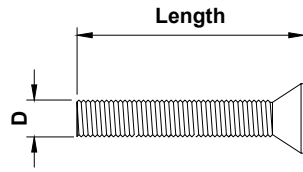
Pan Head Screws



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"	Pozi Flange AB	100
ACET063	No.8	X	1/2"	Pan Head Self Tapper	100
ACET070	No.8	X	1/2"	Pozi Flange Self Tapper S/S	100
ACUN3535	No.8	X	5/8"	Pan Head Pozi S/S	100
ACET099	No.8	X	3/4"	Pozi Flange Self Tapper S/S	100
ACDR050	4.8mm	X	32mm	Pan Head Pozi S/S	200
PUA028	No.10	X	1"	Pan Head Pozi S/S	100
ACDR052	No.10	X	2"	Pan Head Self Tapper S/S	200
ACET079	No.10	X	2 1/2"	Pan Head Pozi S/S	100
ACW20160	No.12	X	1"	Flange Head Self Tapper S/S	100
ACMC109	6.3mm	X	38mm	DIN7981 - Pan Head Self Tapper	200

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

Glazing Gaskets

Retaining Gasket

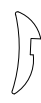
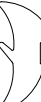
Commonly known as an E Gasket.
Retaining gaskets create a seal between the Glass and the Aluminium Profile.

High Line	2mm		ACVG231
			200m
			BL
	3mm		ACVG31
			200m
			BL
	4mm		ACVG131
			100m
			BL
Low Line	2mm		ACET844
			200m
			BL
	3mm		ACET842
			200m
			BL
	4mm		ACET841
			200m
			BL
	4mm		ACET835
			200m
			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
	5mm		ACVG34
			100m
			BL
	5mm		ACVG34N
			100m
			BL
	6mm		ACVG340
			200m
			BL
Low Line	6mm		ACVG340N
			100m
			BL
	4mm - 3mm		ACW20038
			50m
			BL
	5mm - 4mm		ACET848
			200m
			BL

ACCESSORIES : PHOTOS & DRAWINGS

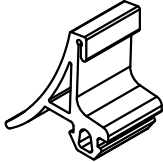
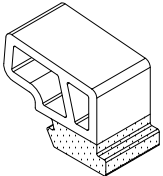
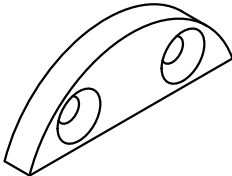
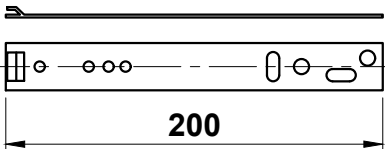
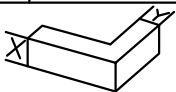
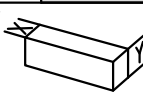
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					SA
					KL
					HP
					SSC
					SMC
					W
					Z
					PC
	ACEF030B Central gasket inward	100	m	ETC4011 ETC4031	MF
					SA
					KL
					HP
					SSC
					SMC
					W
					Z
					PC
	ACEF031A Pre-formed corners for ACEF030A	48	Pack	ETC4011 ETC4031	MF
					SA
					KL
					HP
					SSC
					SMC
					W
					Z
					PC
	ACET041 Cill Nose Bracket	1	Pack	ETC451 ETC452 ETC457 ETC458 ETC479	MF
					SA
					KL
					HP
					SSC
					SMC
					W
					Z
					PC
	ACET130 Galvanized Steel Fixing Strap 200mm x 25mm x 1.5mm	100	Pack	ETC4011	MF
					SA
					KL
					HP
					SSC
					SMC
					W
					Z
					PC
 T-BARS ACVG65=2.5mm ACVG66=3.0mm ACVL150=4.0mm  Screw (Grub)	MF = Mill Finish SA = Silver Anodised KL = Basic Colour HP = Special Colour SSC = Smooth Satin Chrome SMC = Smokey Chrome PC = Polished Chrome				 

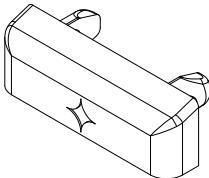
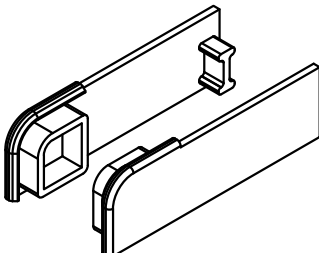
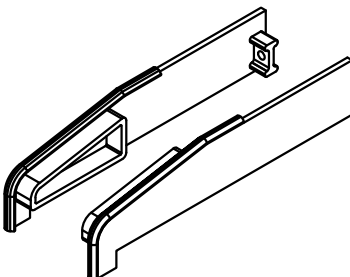
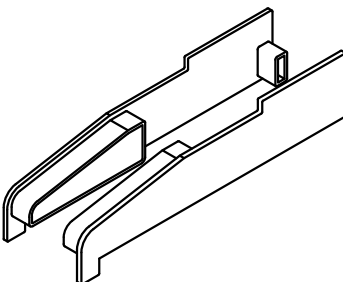
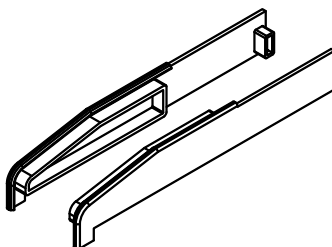
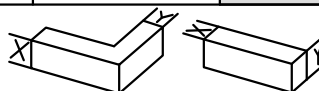
Image	Part Code	Pack	Unit	Application	Colour	
	ACET131 Drainage Cover Cap For colour matched drainage caps, please order ACET432	100	Pack	ETC4011	MF	
					SA	
					KL	
					HP	
					SSC	
					SMC	
					W	✓
					Z	✓
					PC	
	ACET178 PVC End Cap	10	Pair	ETC451	MF	
					SA	
					KL	
					HP	
					SSC	
					SMC	
					W	✓
					Z	✓
					PC	
	ACET152 PVC End Cap	10	Pair	ACET452	MF	
					SA	
					KL	
					HP	
					SSC	
					SMC	
					W	✓
					Z	✓
					PC	
	ACET157 PVC End Cap	10	Pair	ETC457	MF	
					SA	
					KL	
					HP	
					SSC	
					SMC	
					W	✓
					Z	✓
					PC	
	ACET258 PVC End Cap	10	Pair	ETC458	MF	
					SA	
					KL	
					HP	
					SSC	
					SMC	
					W	✓
					Z	✓
					PC	
 T-BARS ACVG65=2.5mm ACVG66=3.0mm ACVL150=4.0mm	 Screw (Grub)	MF = Mill Finish SA = Silver Anodised KL = Basic Colour HP = Special Colour SSC = Smooth Satin Chrome SMC = Smokey Chrome PC = Polished Chrome	W = White Z = Black			

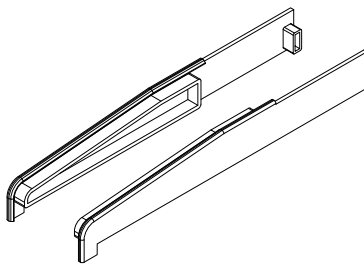
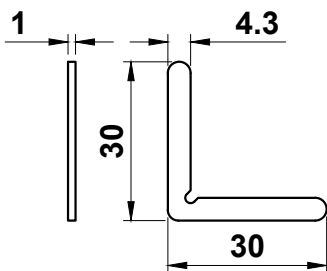
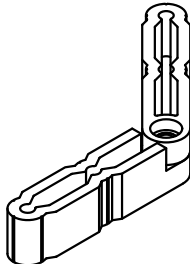
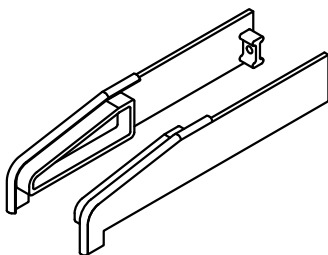
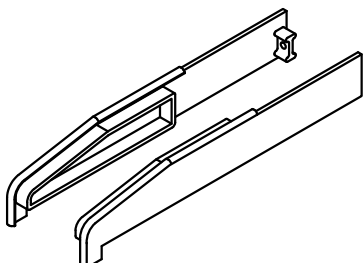
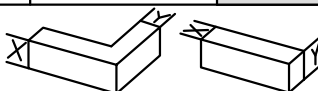
Image	Part Code	Pack	Unit	Application	Colour	
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					SA	
					KL	
					HP	
					SSC	
					SMC	
					W	✓
					Z	✓
					PC	
	ACET311 Stainless Steel Chevron	50	Pack	ETC4021	MF	✓
					SA	
					KL	
					HP	
					SSC	
					SMC	
					W	
					Z	
					PC	
	ACET440 Variable Cill Angle Bracket	10	Pack		MF	✓
					SA	
					KL	
					HP	
					SSC	
					SMC	
					W	
					Z	
					PC	
	ACET457 Cast End Cap	1	Pair	ETC457	MF	✓
					SA	
					KL	✓
					HP	✓
					SSC	
					SMC	
					W	
					Z	✓
					PC	✓
	ACET458 Cast End Cap	1	Pair	ETC458	MF	✓
					SA	
					KL	✓
					HP	✓
					SSC	
					SMC	
					W	
					Z	✓
					PC	✓
 T-BARS ACVG65=2.5mm ACVG66=3.0mm ACVL150=4.0mm	 Screw (Grub)	MF = Mill Finish SA = Silver Anodised KL = Basic Colour HP = Special Colour SSC = Smooth Satin Chrome SMC = Smokey Chrome PC = Polished Chrome		W = White Z = Black		

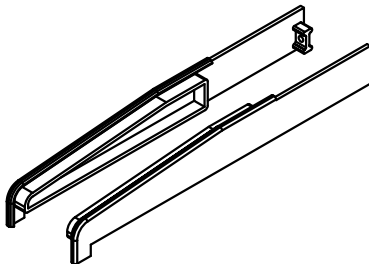
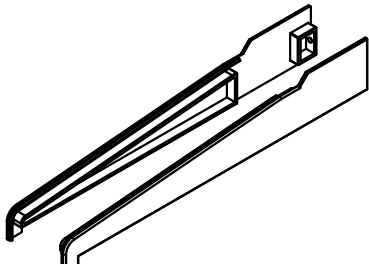
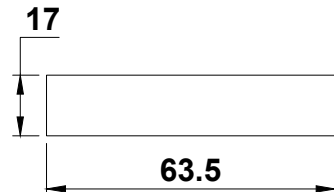
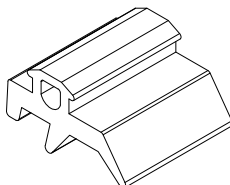
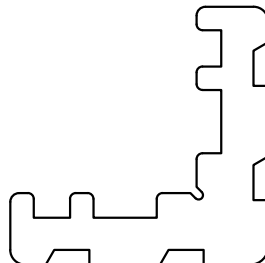
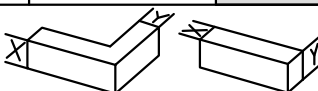
Image	Part Code	Pack	Unit	Application	Colour
	ACET479 Cast End Cap	1	pair	ETC479	MF ☒
					SA ☐
					KL ☒
					HP ☒
					SSC ☐
					SMC ☐
					W ☐
					Z ☒
					PC ☒
	ACET477 Cast End Cap	1	pair	ETC477	MF ☒
					SA ☐
					KL ☒
					HP ☒
					SSC ☐
					SMC ☐
					W ☐
					Z ☒
					PC ☒
	ACET619 Foam Length = 1250mm	1	Each	ETC4014	MF ☒
					SA ☐
					KL ☐
					HP ☐
					SSC ☐
					SMC ☐
					W ☐
					Z ☐
					PC ☐
	ACET842 3mm Low Line External Gasket	200	m	ETC4011 ETC4021 ETC4031	MF ☐
					SA ☐
					KL ☐
					HP ☐
					SSC ☐
					SMC ☐
					W ☐
					Z ☒
					PC ☐
	ACET4012 Crimping Cleat	24	Pack	ETC4011	MF ☒
					SA ☐
					KL ☐
					HP ☐
					SSC ☐
					SMC ☐
					W ☐
					Z ☐
					PC ☐
 T-BARS ACVG65=2.5mm ACVG66=3.0mm ACVL150=4.0mm	 Screw (Grub)	MF = Mill Finish SA = Silver Anodised KL = Basic Colour HP = Special Colour SSC = Smooth Satin Chrome SMC = Smokey Chrome PC = Polished Chrome	W = White Z = Black		

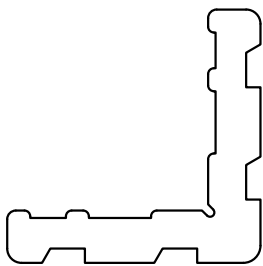
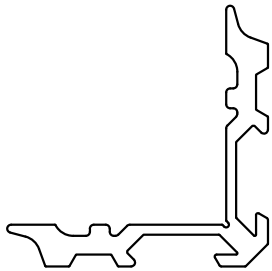
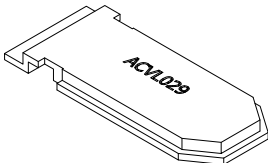
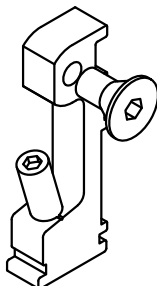
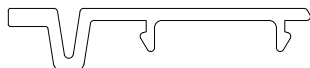
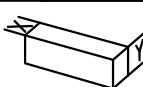
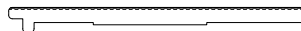
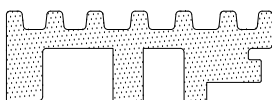
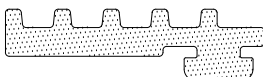
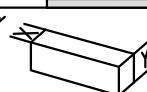
Image	Part Code	Pack	Unit	Application	Colour
	ACET4021A Crimping Cleat	24	Pack	ETC4021	MF ☒
					SA ☐
					KL ☐
					HP ☐
					SSC ☐
					SMC ☐
					W ☐
					Z ☐
					PC ☐
	ACET4021B Crimping Cleat	24	Pack	ETC4021	MF ☒
					SA ☐
					KL ☐
					HP ☐
					SSC ☐
					SMC ☐
					W ☐
					Z ☐
					PC ☐
	ACVL029 Strengthening piece	100	Pack	ETC4031	MF ☒
					SA ☐
					KL ☐
					HP ☐
					SSC ☐
					SMC ☐
					W ☐
					Z ☐
					PC ☐
	ACET4040 Transom Cleat	24	Pack	ETC4031	MF ☒
					SA ☐
					KL ☐
					HP ☐
					SSC ☐
					SMC ☐
					W ☐
					Z ☐
					PC ☐
	ACET4041 Bridge Packer	12	Pack	ETC4031	MF ☐
					SA ☐
					KL ☐
					HP ☐
					SSC ☐
					SMC ☐
					W ☐
					Z ☐
					PC ☐
 T-BARS ACVG65=2.5mm ACVG66=3.0mm ACVL150=4.0mm	 Screw (Grub)	MF = Mill Finish SA = Silver Anodised KL = Basic Colour HP = Special Colour SSC = Smooth Satin Chrome SMC = Smokey Chrome PC = Polished Chrome	W = White Z = Black		

Image	Part Code	Pack	Unit	Application	Colour
	ACET4042 Bridge Packer	12	Pack	ETC4021	MF ☒
					SA ☐
					KL ☐
					HP ☐
					SSC ☐
					SMC ☐
					W ☐
					Z ☐
					PC ☐
	ACET4051 Foam Length = 1250mm	1	Each	ETC4011	MF ☒
					SA ☐
					KL ☐
					HP ☐
					SSC ☐
					SMC ☐
					W ☐
					Z ☐
					PC ☐
	ACET4053 Foam Length = 1250mm	1	Each	ETC4021	MF ☒
					SA ☐
					KL ☐
					HP ☐
					SSC ☐
					SMC ☐
					W ☐
					Z ☐
					PC ☐
	ACET4056 Foam	150	M	ETC4031	MF ☒
					SA ☐
					KL ☐
					HP ☐
					SSC ☐
					SMC ☐
					W ☐
					Z ☐
					PC ☐
	ACET4059 Foam	150	M	ETC4021	MF ☒
					SA ☐
					KL ☐
					HP ☐
					SSC ☐
					SMC ☐
					W ☐
					Z ☐
					PC ☐
 T-BARS ACVG65=2.5mm ACVG66=3.0mm ACVL150=4.0mm	 Screw (Grub)	MF = Mill Finish SA = Silver Anodised KL = Basic Colour HP = Special Colour SSC = Smooth Satin Chrome SMC = Smokey Chrome PC = Polished Chrome	W = White Z = Black		

ACCESSORIES : PHOTOS & DRAWINGS

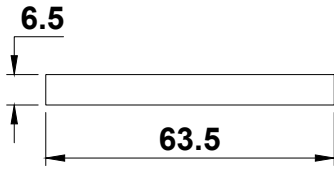
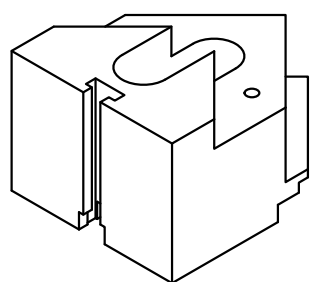
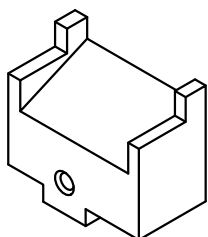
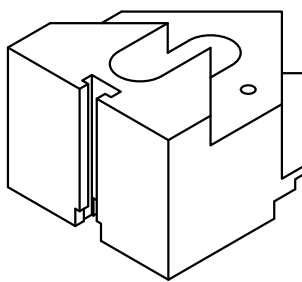
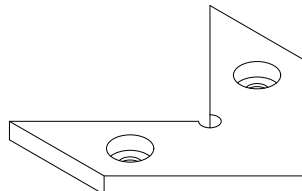
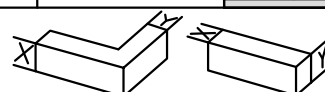
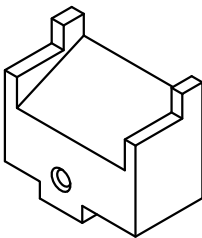
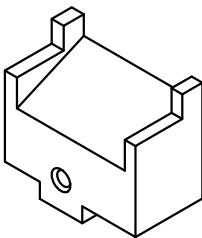
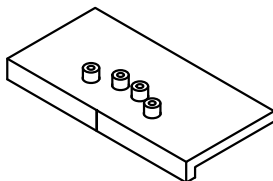
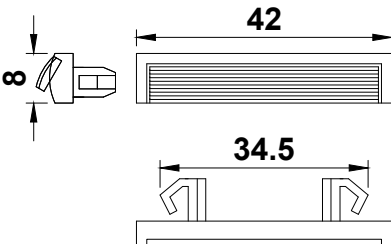
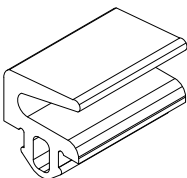
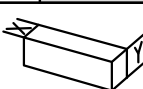
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	ACET4070 Foam Length = 1250mm	1	Each	ETC4011	MF	✓
					SA	
					KL	
					HP	
					SSC	
					SMC	
					W	
					Z	
					PC	
	ACET4390 VEE Block	1	Each	ETC4011	MF	
					SA	
					KL	
					HP	
					SSC	
					SMC	
					W	
					Z	
					PC	
	ACET4391 VEE Packer	1	Each	ETC4011	MF	
					SA	
					KL	
					HP	
					SSC	
					SMC	
					W	
					Z	
					PC	
	ACET4392 VEE Block	1	Each	ETC4021	MF	
					SA	
					KL	
					HP	
					SSC	
					SMC	
					W	
					Z	
					PC	
	ACET4393 Packer	1	Each	ETC4021	MF	
					SA	
					KL	
					HP	
					SSC	
					SMC	
					W	
					Z	
					PC	
	MF = Mill Finish SA = Silver Anodised KL = Basic Colour HP = Special Colour SSC = Smooth Satin Chrome SMC = Smokey Chrome PC = Polished Chrome		W = White Z = Black			

Image	Part Code	Pack	Unit	Application	Colour	
	ACET4394 Punches	1	Each	ETC4021	MF	
					SA	
					KL	
					HP	
					SSC	
					SMC	
					W	
					Z	
					PC	
	ACET4395 Punches	1	Each	ETC4011	MF	
					SA	
					KL	
					HP	
					SSC	
					SMC	
					W	
					Z	
					PC	
	ACET4931 Jig mark	1	Each	ETC4031	MF	
					SA	
					KL	
					HP	
					SSC	
					SMC	
					W	
					Z	
					PC	
	ACGSL045 Drainage Cap	100	Pack	ETC4011	MF	
					SA	
					KL	
					HP	
					SSC	
					SMC	
					W	✓
					Z	✓
					PC	
	ACVL031 EPDM Flipper Gasket	100	m	ETC4021	MF	
					SA	
					KL	
					HP	
					SSC	
					SMC	
					W	
					Z	✓
					PC	
 T-BARS ACVG65=2.5mm ACVG66=3.0mm ACVL150=4.0mm	 Screw (Grub)	MF = Mill Finish SA = Silver Anodised KL = Basic Colour HP = Special Colour SSC = Smooth Satin Chrome SMC = Smokey Chrome PC = Polished Chrome	W = White Z = Black	 		

ACCESSORIES : PHOTOS & DRAWINGS

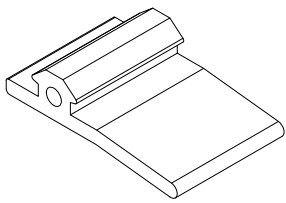
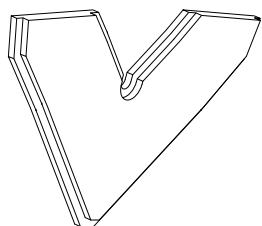
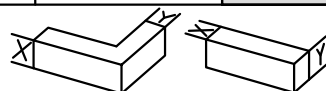
Image	Part Code	Pack	Unit	Application	Colour
	ACW20131 Outer Frame External Gasket	100	m	ETC4011 ETC4031	MF
					SA
					KL
					HP
					SSC
					SMC
					W
					Z
					PC
	ACVL020B Plastic chevron	100	pack	ETC4011	MF
					SA
					KL
					HP
					SSC
					SMC
					W
					Z
					PC
					MF
					SA
					KL
					HP
					SSC
					SMC
					W
					Z
					PC
					MF
					SA
					KL
					HP
					SSC
					SMC
					W
					Z
					PC
					MF
					SA
					KL
					HP
					SSC
					SMC
					W
					Z
					PC
 T-BARS ACVG65=2.5mm ACVG66=3.0mm ACVL150=4.0mm  Screw (Grub)	MF = Mill Finish SA = Silver Anodised KL = Basic Colour HP = Special Colour SSC = Smooth Satin Chrome SMC = Smokey Chrome PC = Polished Chrome				

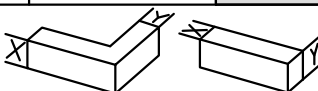
Image	Part Code	Pack	Unit	Application	Colour
	ACMX09700 Alu. Polish	1	each		MF ☒
					SA ☐
					KL ☐
					HP ☐
					SSC ☐
					SMC ☐
					W ☐
					Z ☐
					PC ☐
	ACMX09761 Maxi Gloss	1	each		MF ☐
					SA ☐
					KL ☐
					HP ☐
					SSC ☐
					SMC ☐
					W ☐
					Z ☐
					PC ☐
	ACMX09762 Alu. Bright	1	each		MF ☐
					SA ☐
					KL ☐
					HP ☐
					SSC ☐
					SMC ☐
					W ☐
					Z ☐
					PC ☐
	ACMX09763 Teflon Spray	1	each		MF ☐
					SA ☐
					KL ☐
					HP ☐
					SSC ☐
					SMC ☐
					W ☐
					Z ☐
					PC ☐
	ACMX09764 Maxi Clean	1	each		MF ☐
					SA ☐
					KL ☐
					HP ☐
					SSC ☐
					SMC ☐
					W ☐
					Z ☐
					PC ☐
 T-BARS ACVG65=2.5mm ACVG66=3.0mm ACVL150=4.0mm	 Screw (Grub)	MF = Mill Finish SA = Silver Anodised KL = Basic Colour HP = Special Colour SSC = Smooth Satin Chrome SMC = Smokey Chrome PC = Polished Chrome	W = White Z = Black		

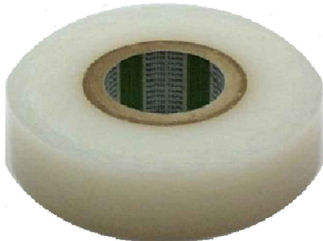
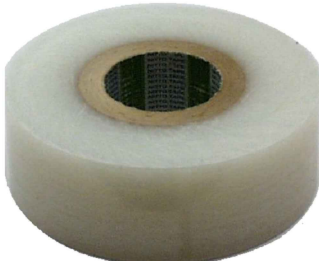
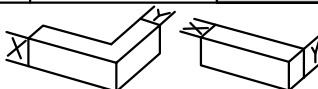
Image	Part Code	Pack	Unit	Application	Colour		
	ACMX09765 Alu. Cleaner	1	each		MF		
					SA		
					KL		
					HP		
					SSC		
					SMC		
					W		
					Z		
					PC		
	ACMX09770 Roll & Wrap 100mm	1	each		MF		
					SA		
					KL		
					HP		
					SSC		
					SMC		
					W		
					Z		
					PC		
	ACMX09775 Grip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

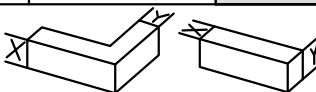
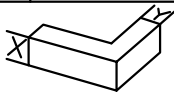
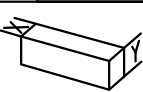
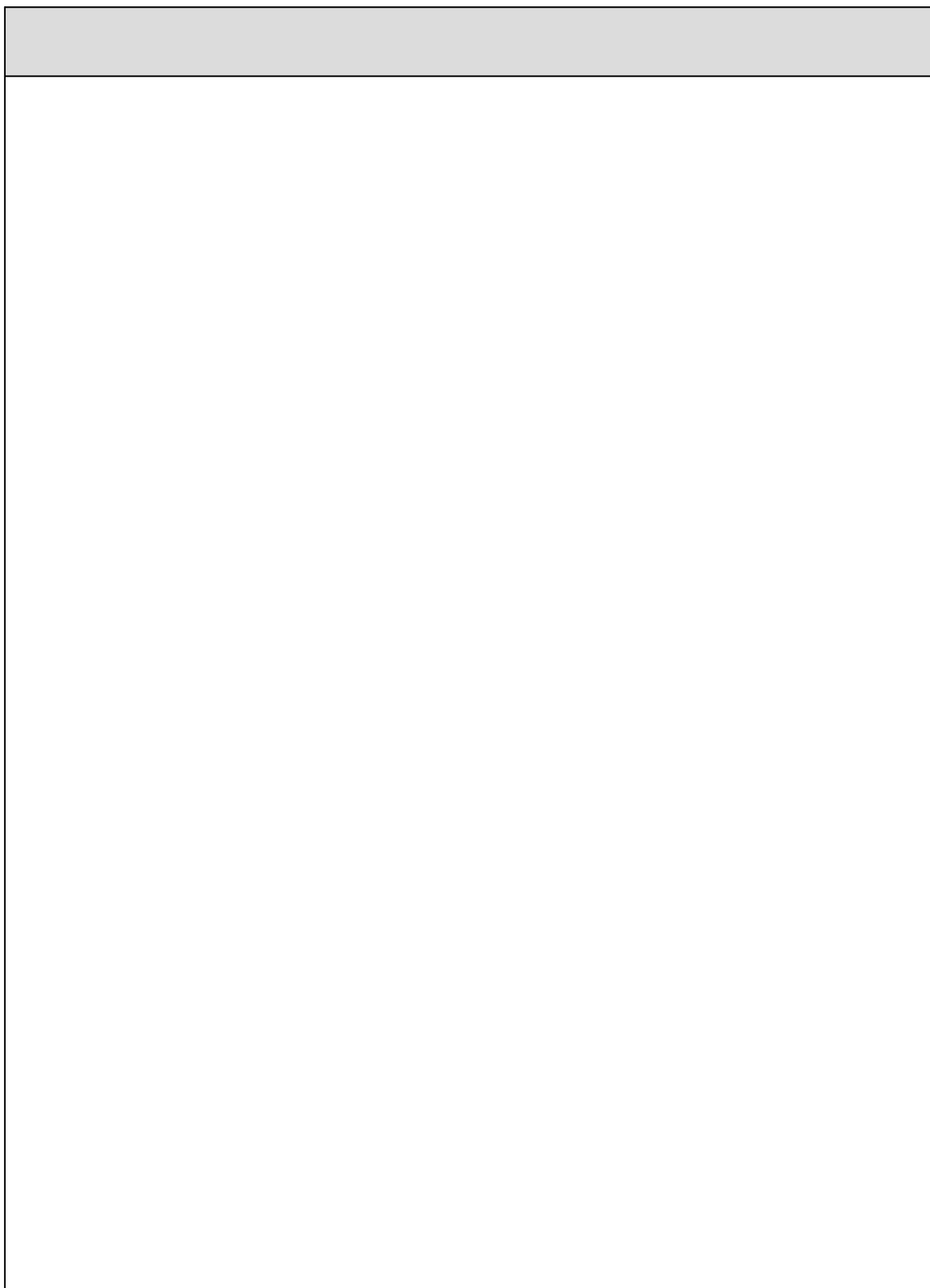
Image	Part Code	Pack	Unit	Application	Colour	
	ACMX09803 Protective Tape 100mm	1	each		MF	
					SA	
					KL	
					HP	
					SSC	
					SMC	
					W	
					Z	
					PC	
	ACMX09830 Rubber Sealant	1	each		MF	
					SA	
					KL	
					HP	
					SSC	
					SMC	
					W	
					Z	
					PC	
	ACSIL04 Sealing Glue Order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

Image	Part Code	Pack	Unit	Application	Colour	
	ACSIL014 Anti-Corrosion Coating	1	each		MF	✓
					SA	
					KL	
					HP	
					SSC	
					SMC	
					W	
					Z	
					PC	
	ACUN3900 Gasket Roller	1	each		MF	
					SA	
					KL	
					HP	
					SSC	
					SMC	
					W	
					Z	
					PC	
					MF	
					SA	
					KL	
					HP	
					SSC	
					SMC	
					W	
					Z	
					PC	
					MF	
					SA	
					KL	
					HP	
					SSC	
					SMC	
					W	
					Z	
					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	
					W	
					Z	
					PC	
				 		

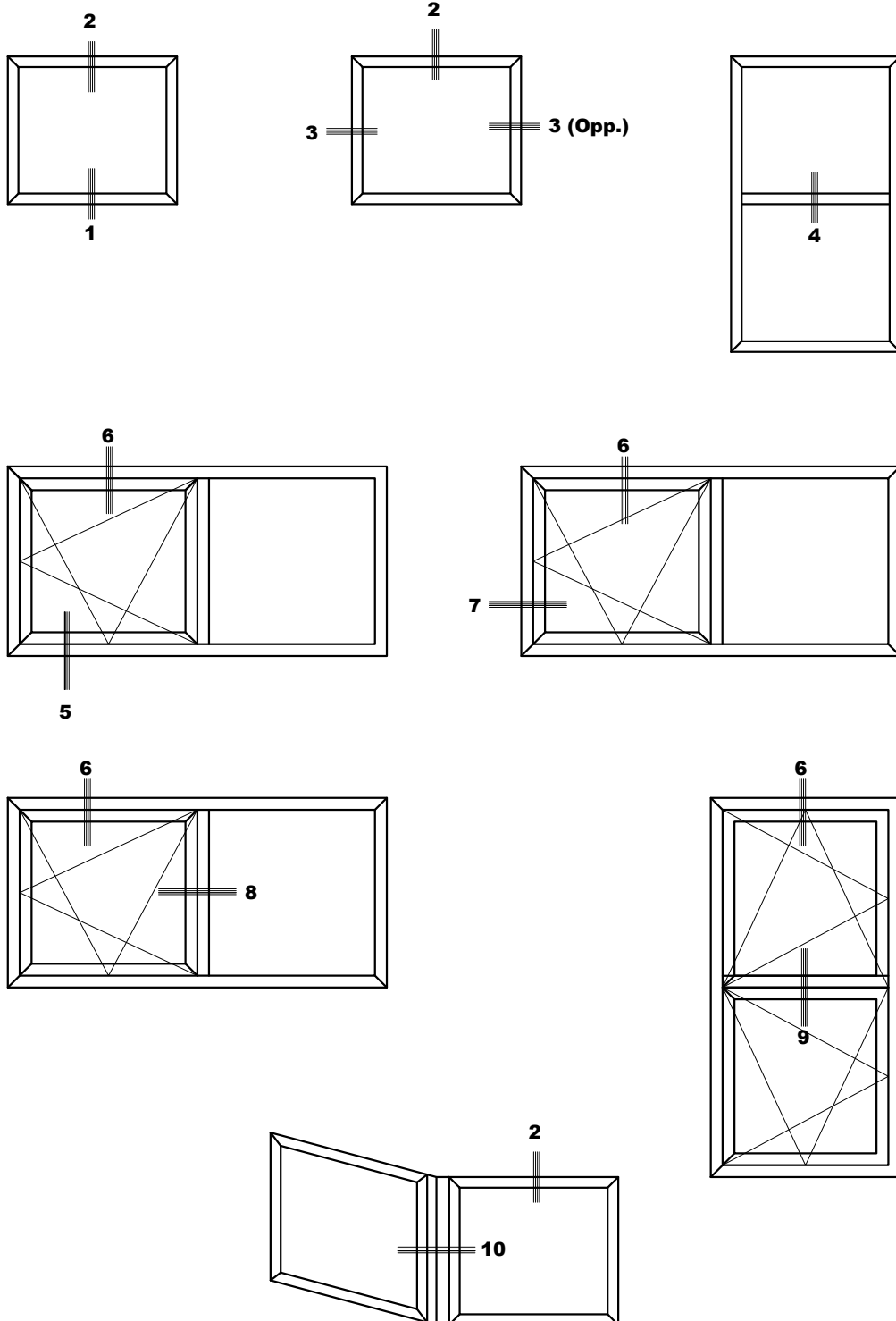
Section C

Sections

Scale Elevations

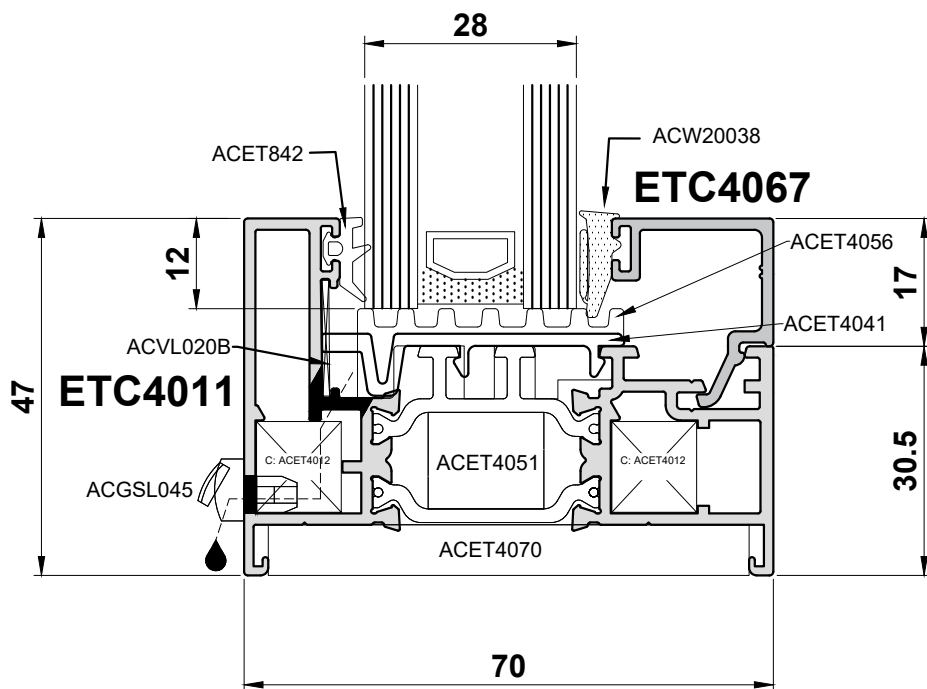
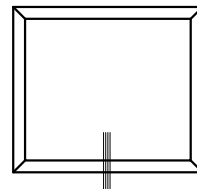


Detail



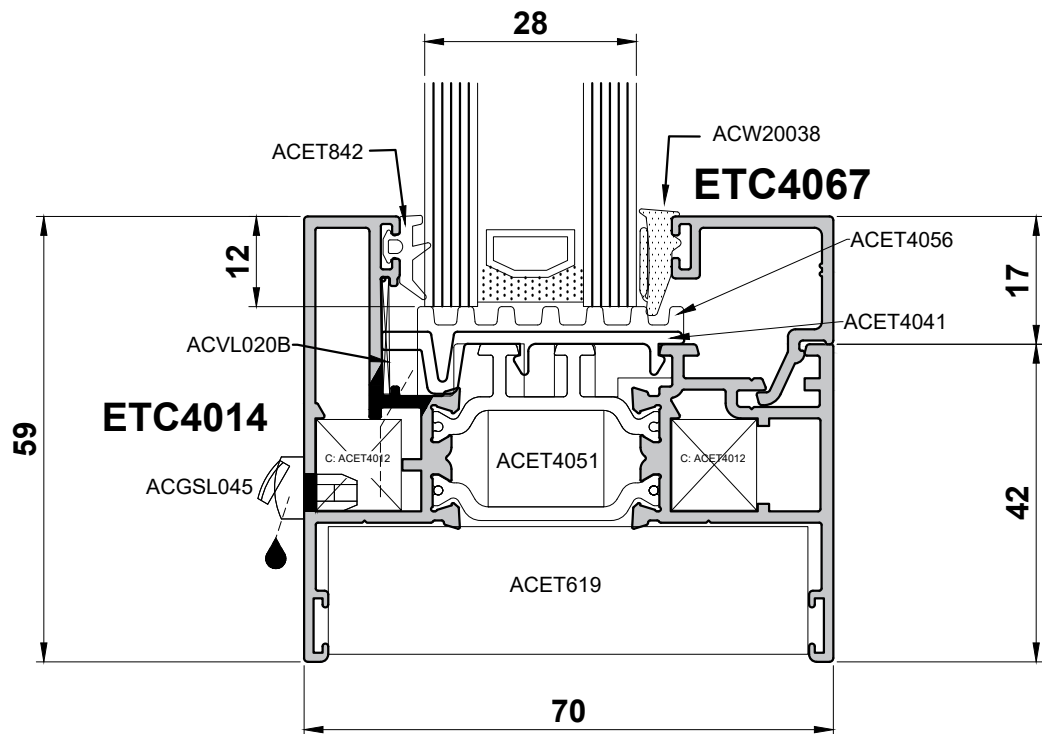
Do Not Scale From This Drawing

Detail 1A



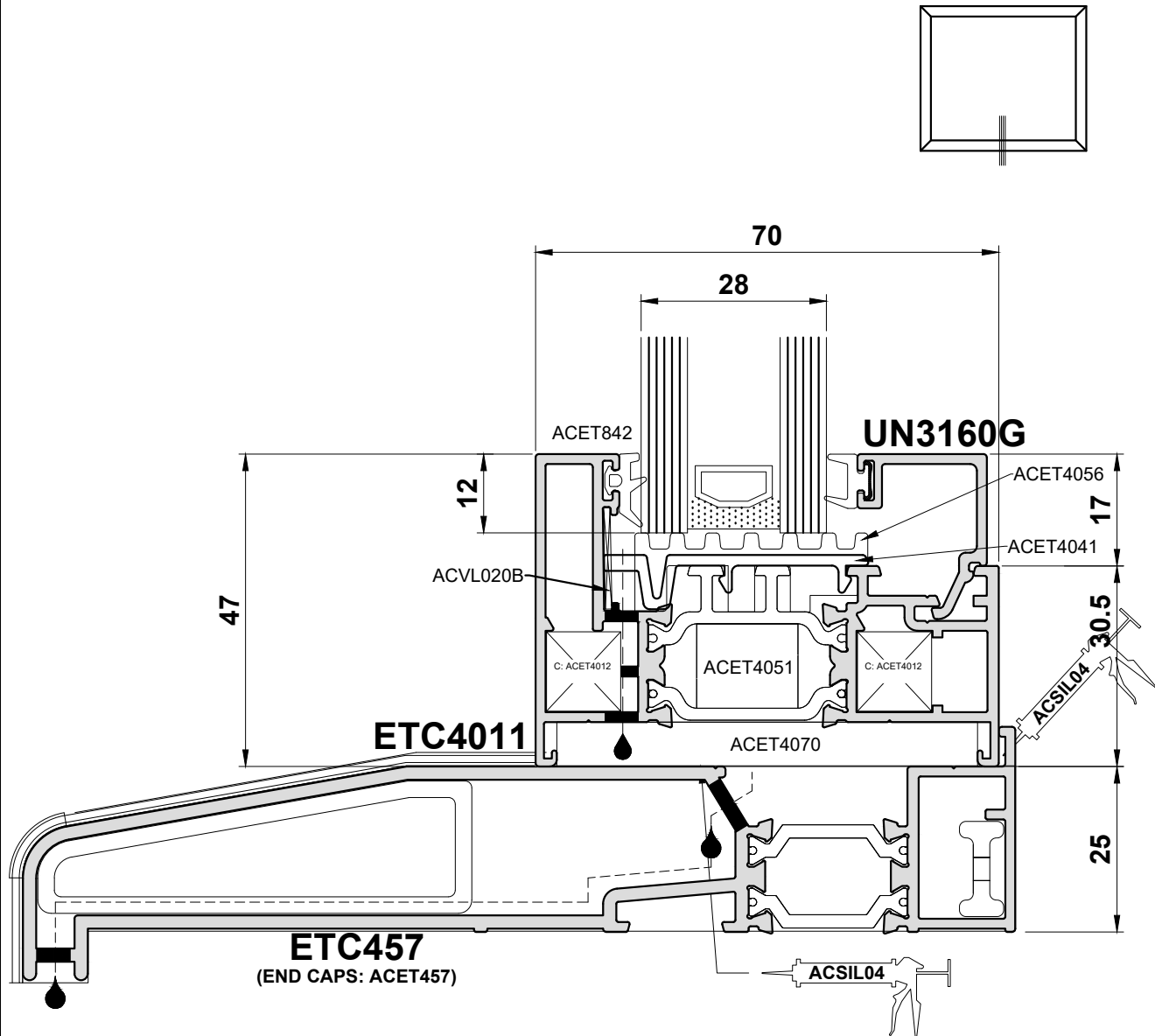
Do Not Scale From This Drawing

Detail 1B



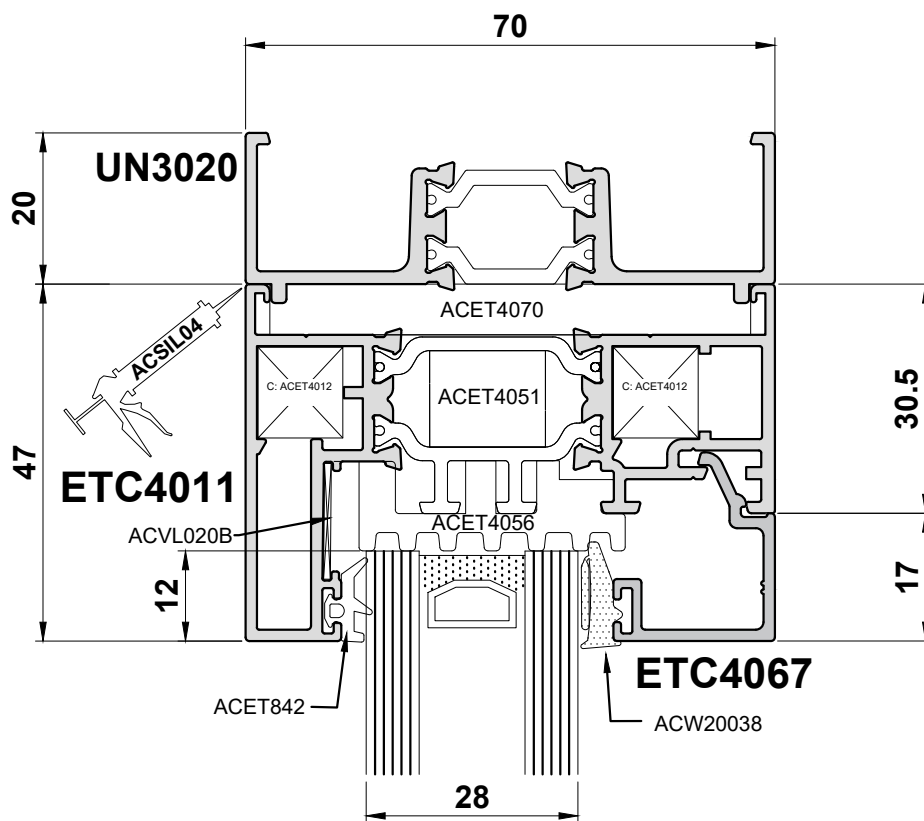
Do Not Scale From This Drawing

Detail 1C



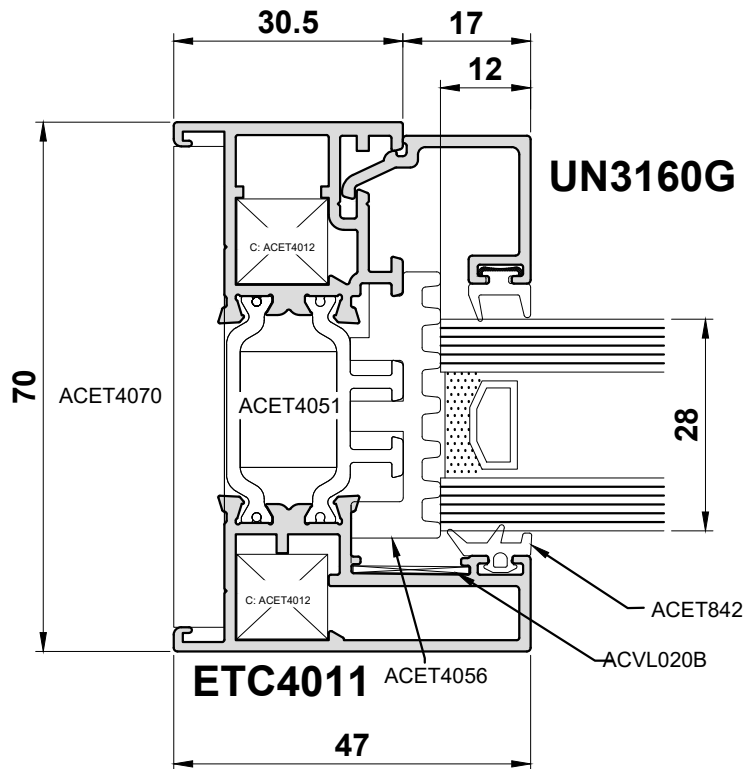
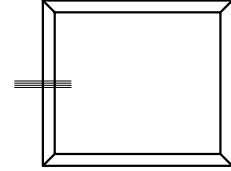
Do Not Scale From This Drawing

Detail 2



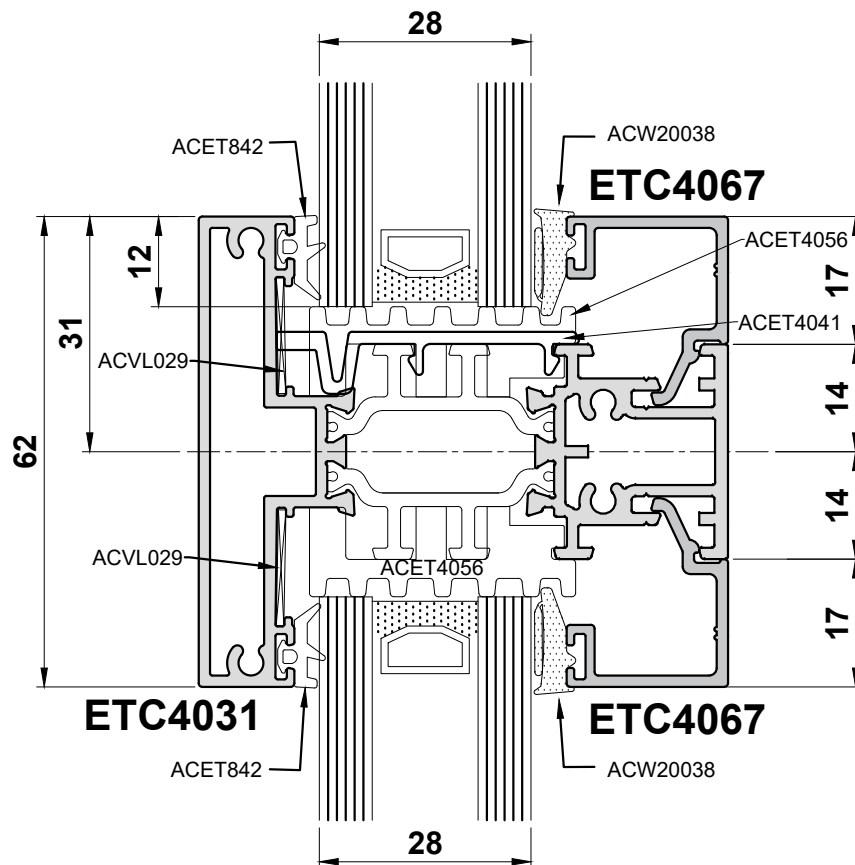
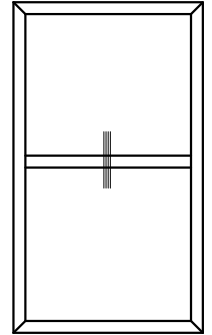
Do Not Scale From This Drawing

Detail 3



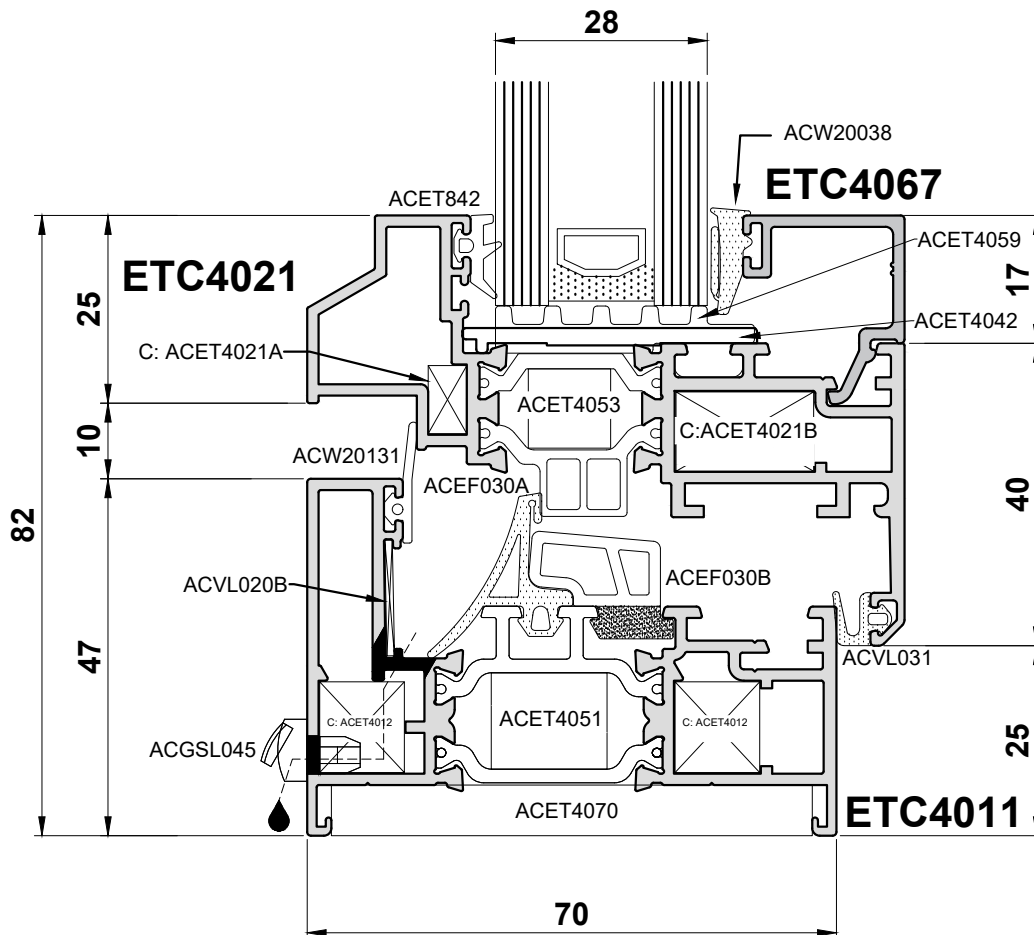
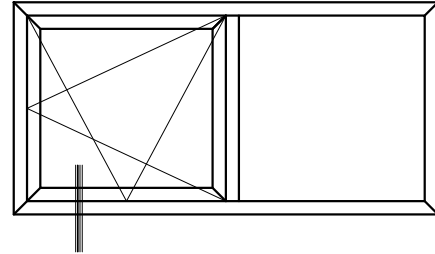
Do Not Scale From This Drawing

Detail 4



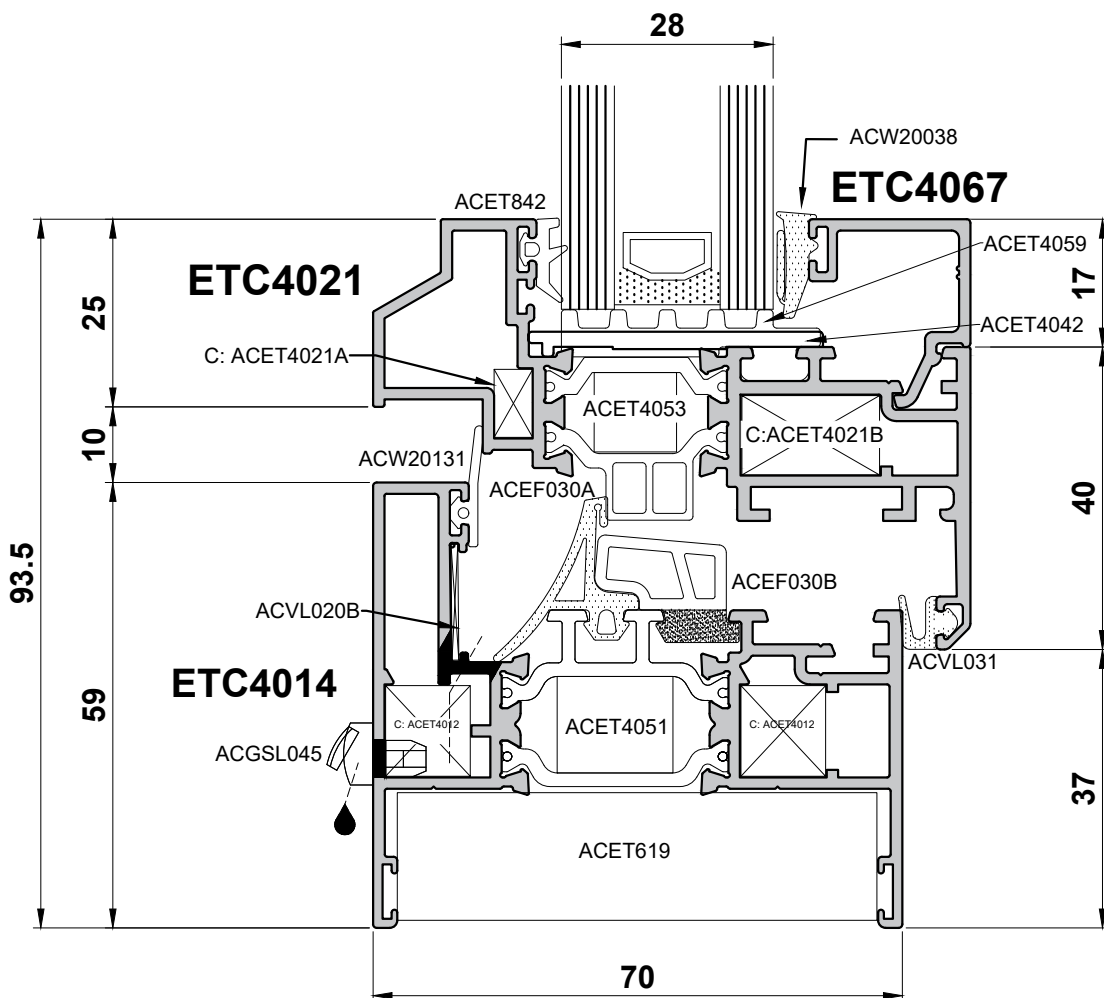
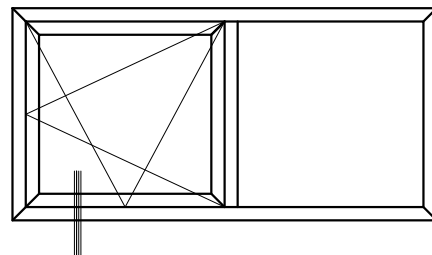
Do Not Scale From This Drawing

Detail 5A



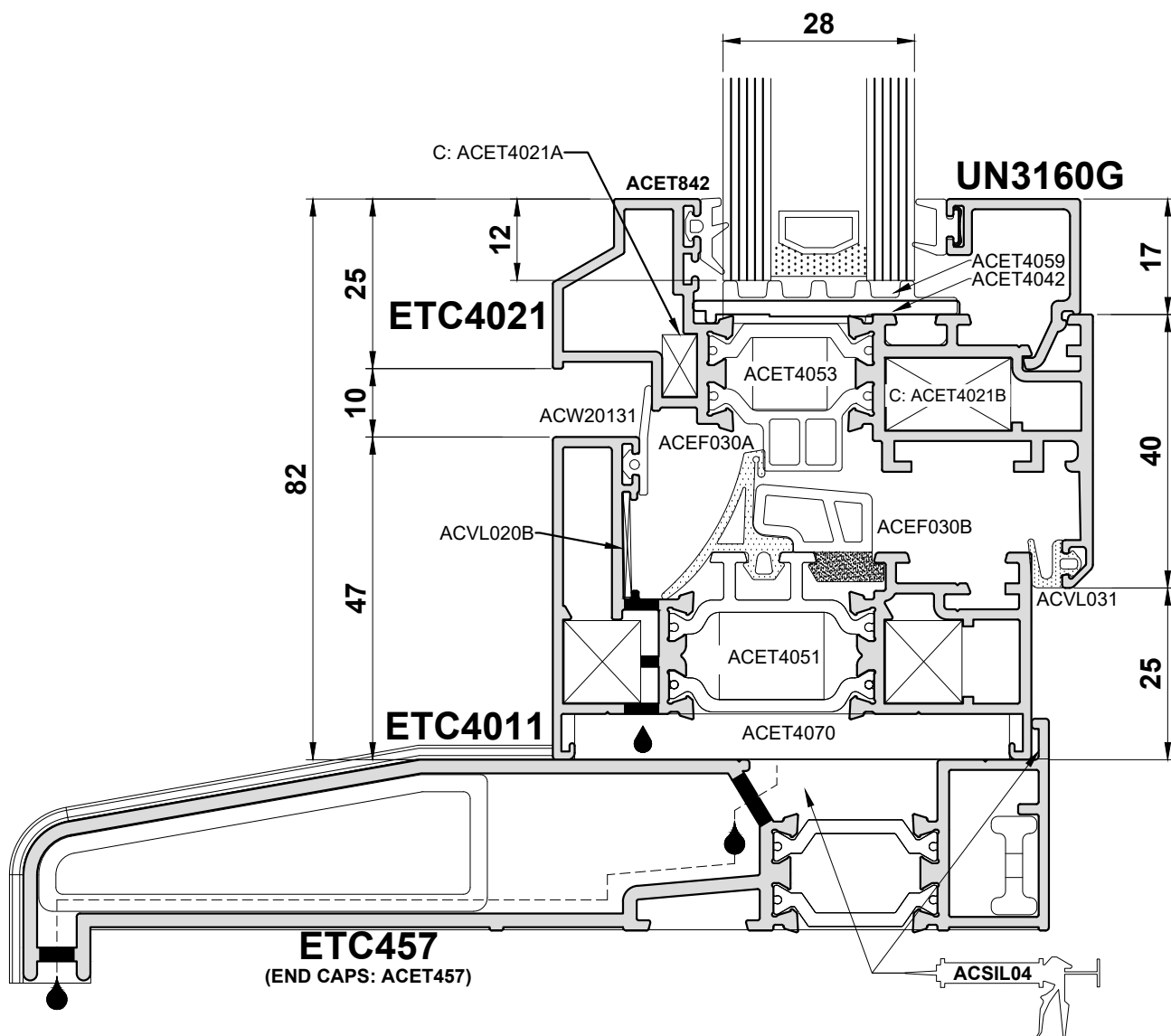
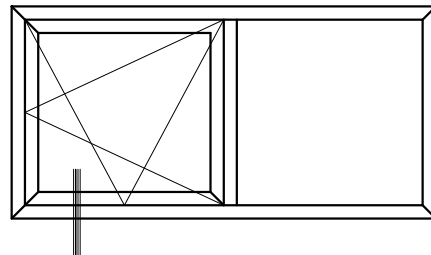
Do Not Scale From This Drawing

Detail 5B



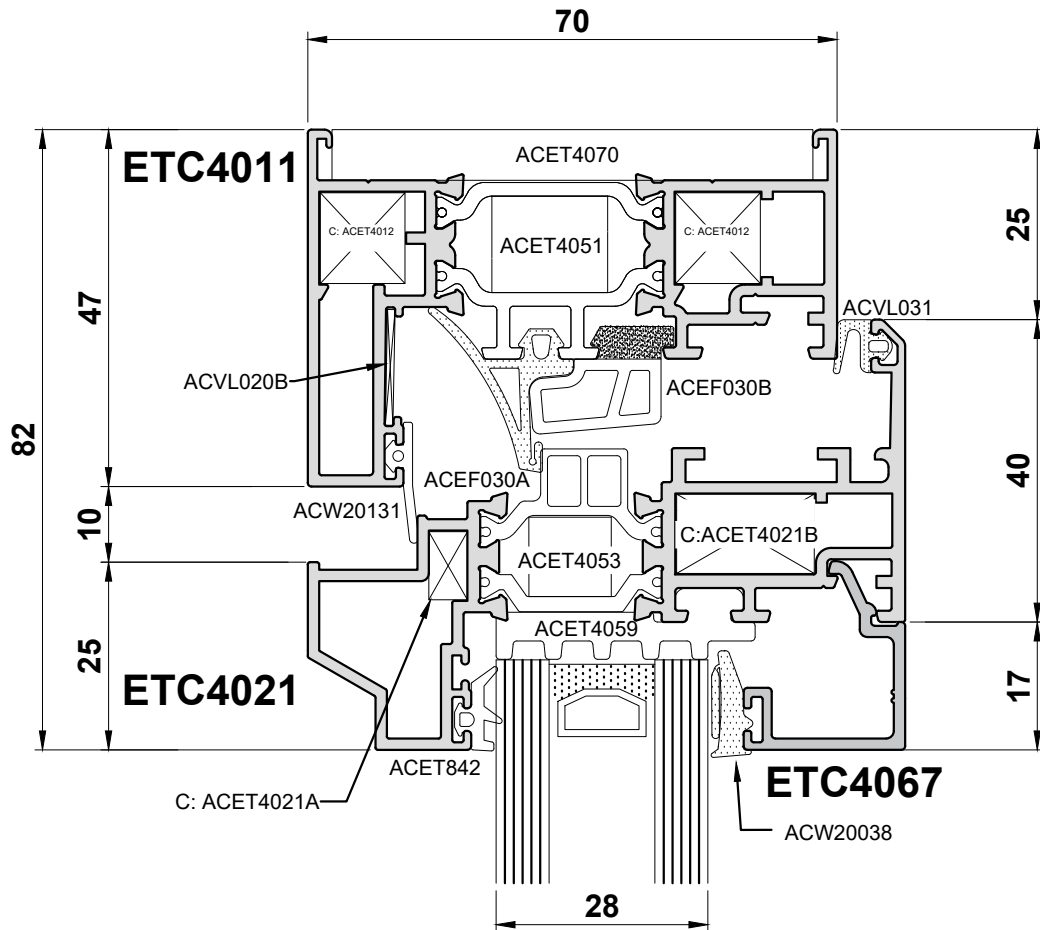
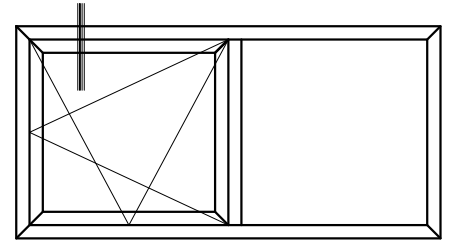
Do Not Scale From This Drawing

Detail 5C



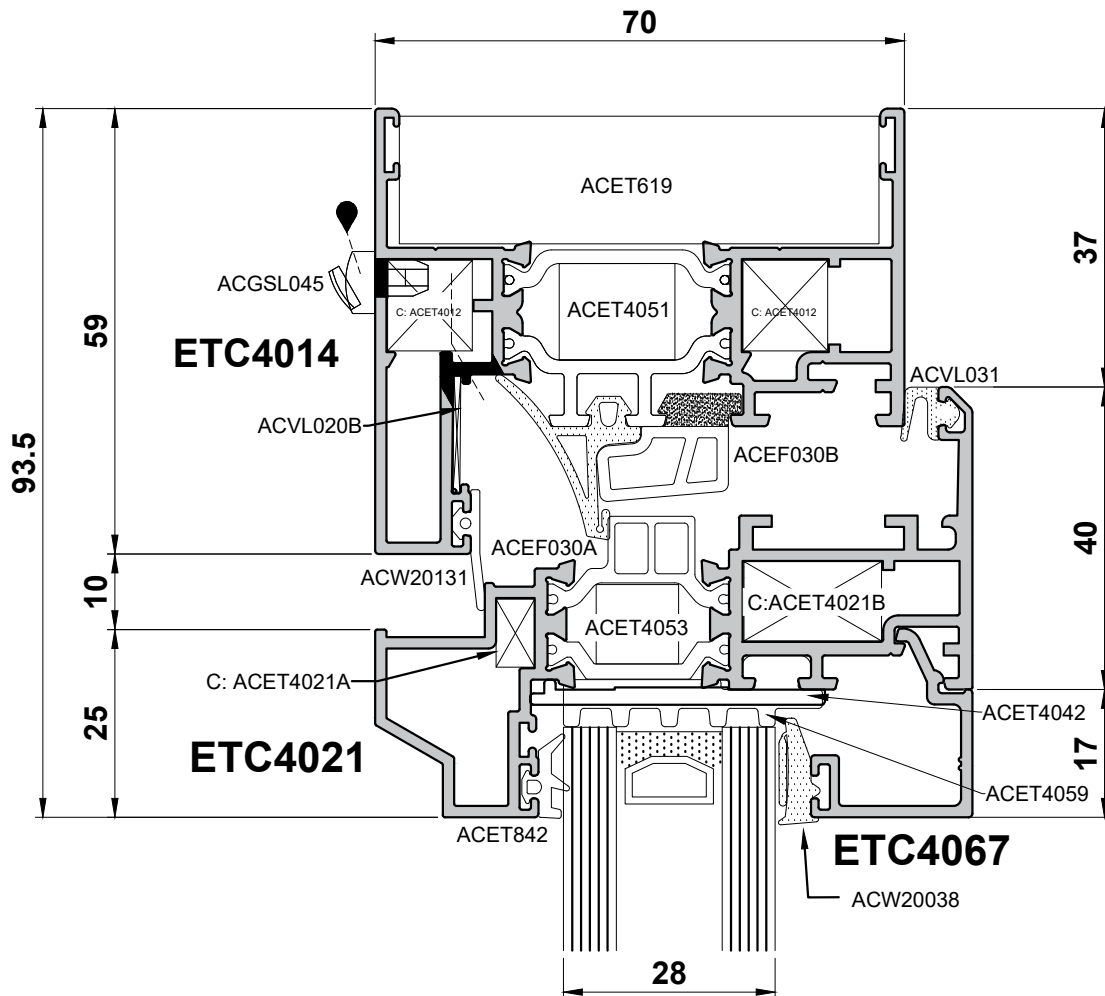
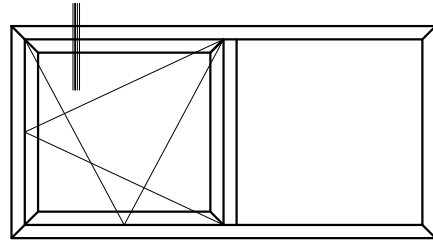
Do Not Scale From This Drawing

Detail 6A



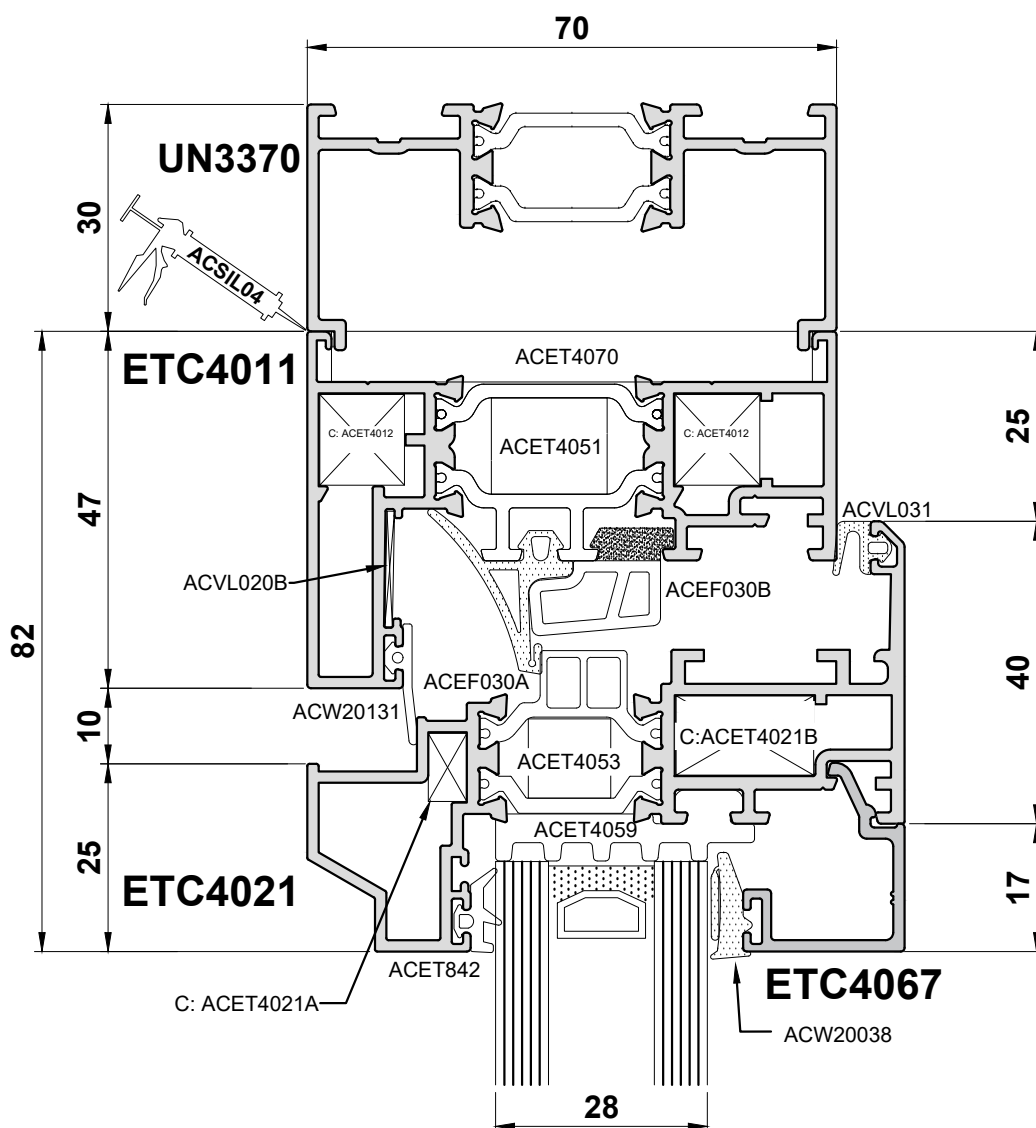
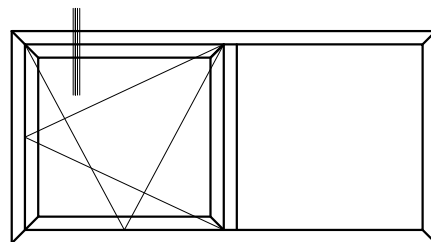
Do Not Scale From This Drawing

Detail 6B



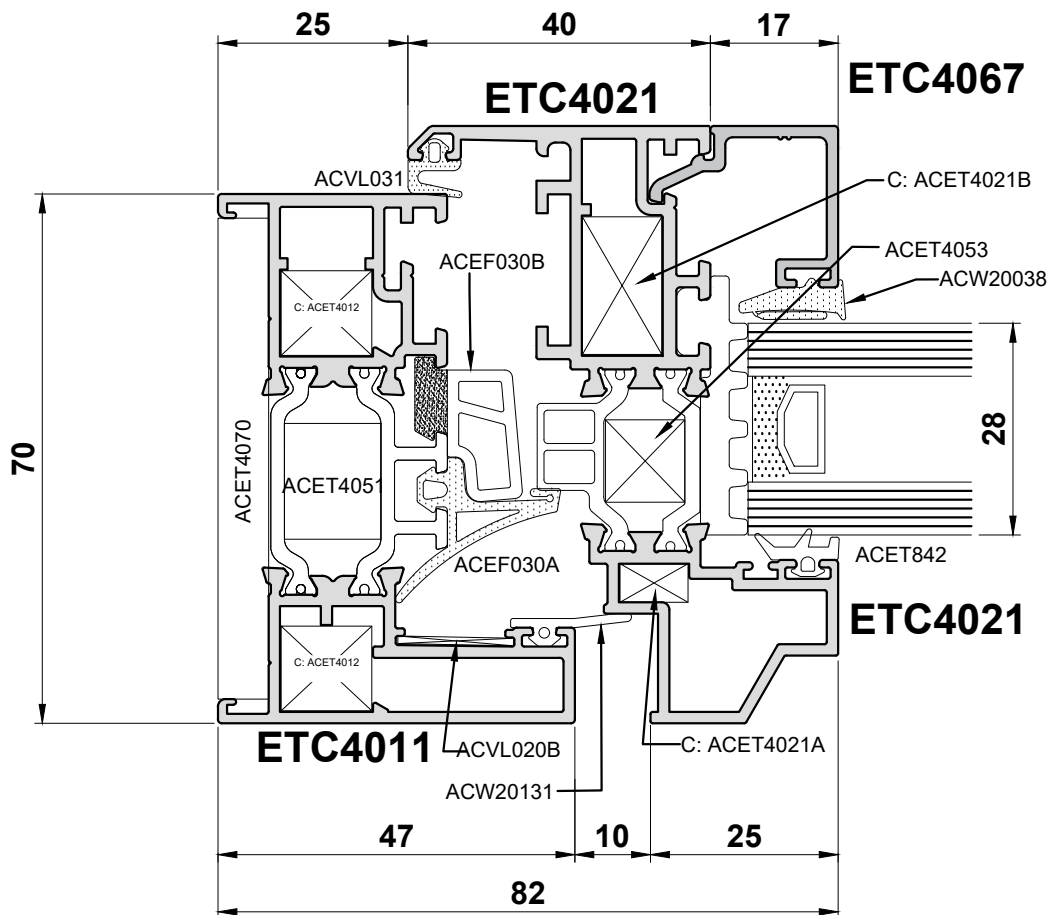
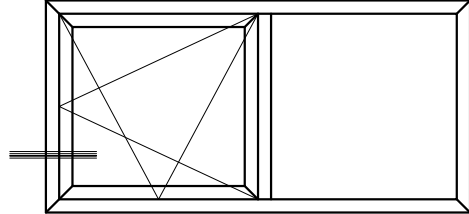
Do Not Scale From This Drawing

Detail 6C



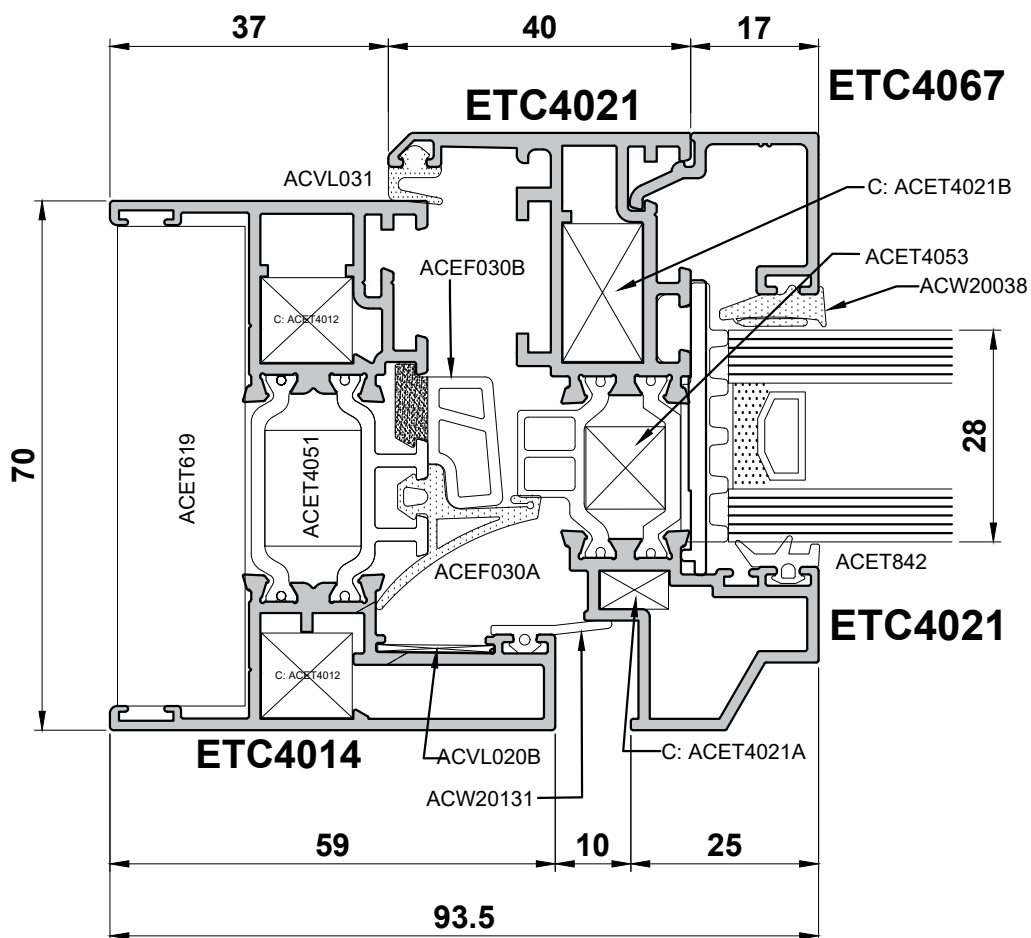
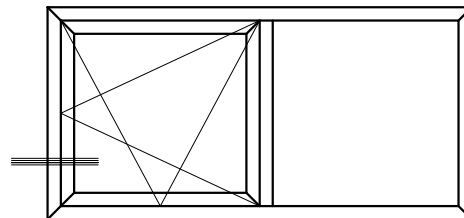
Do Not Scale From This Drawing

Detail 7A



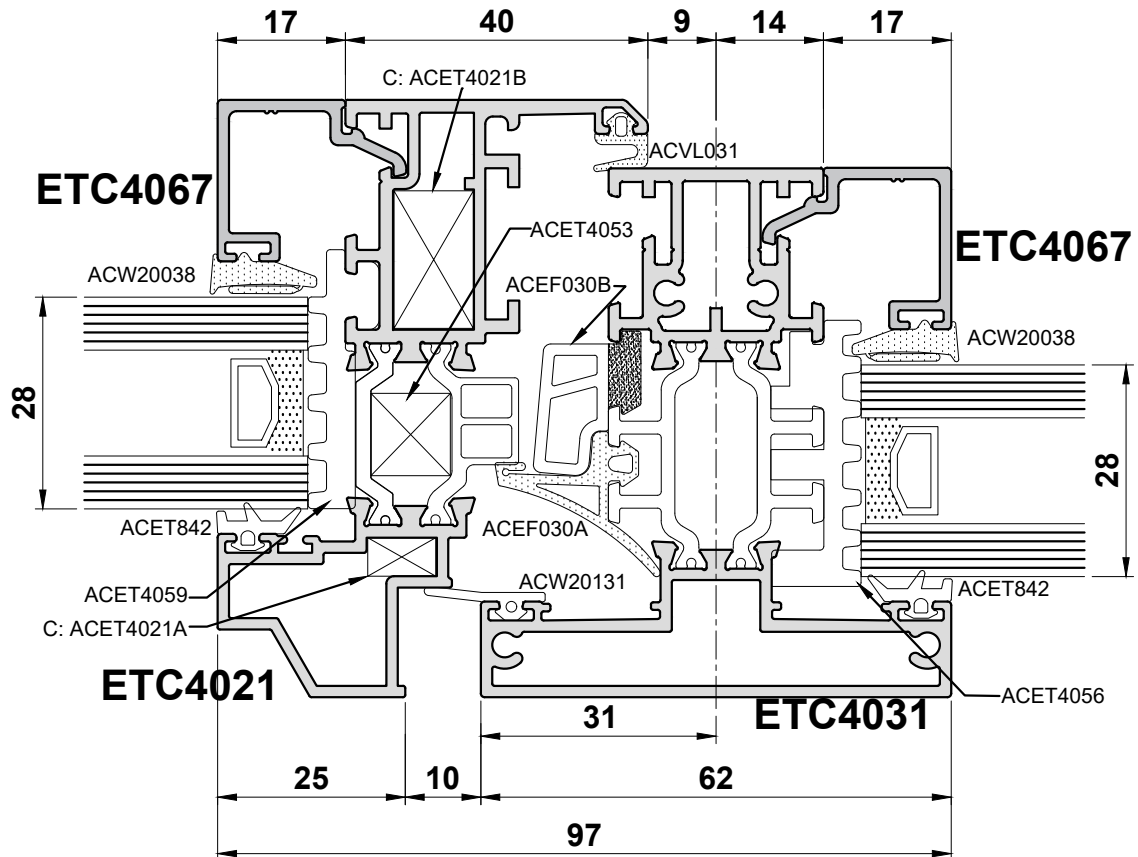
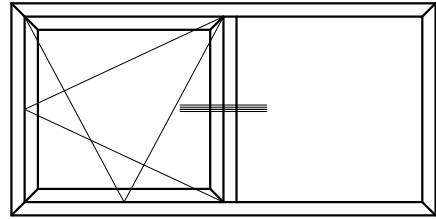
Do Not Scale From This Drawing

Detail 7B



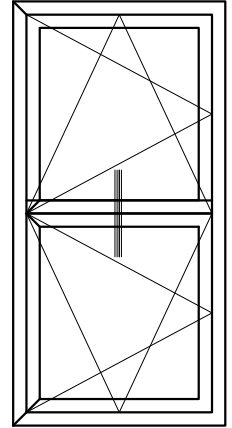
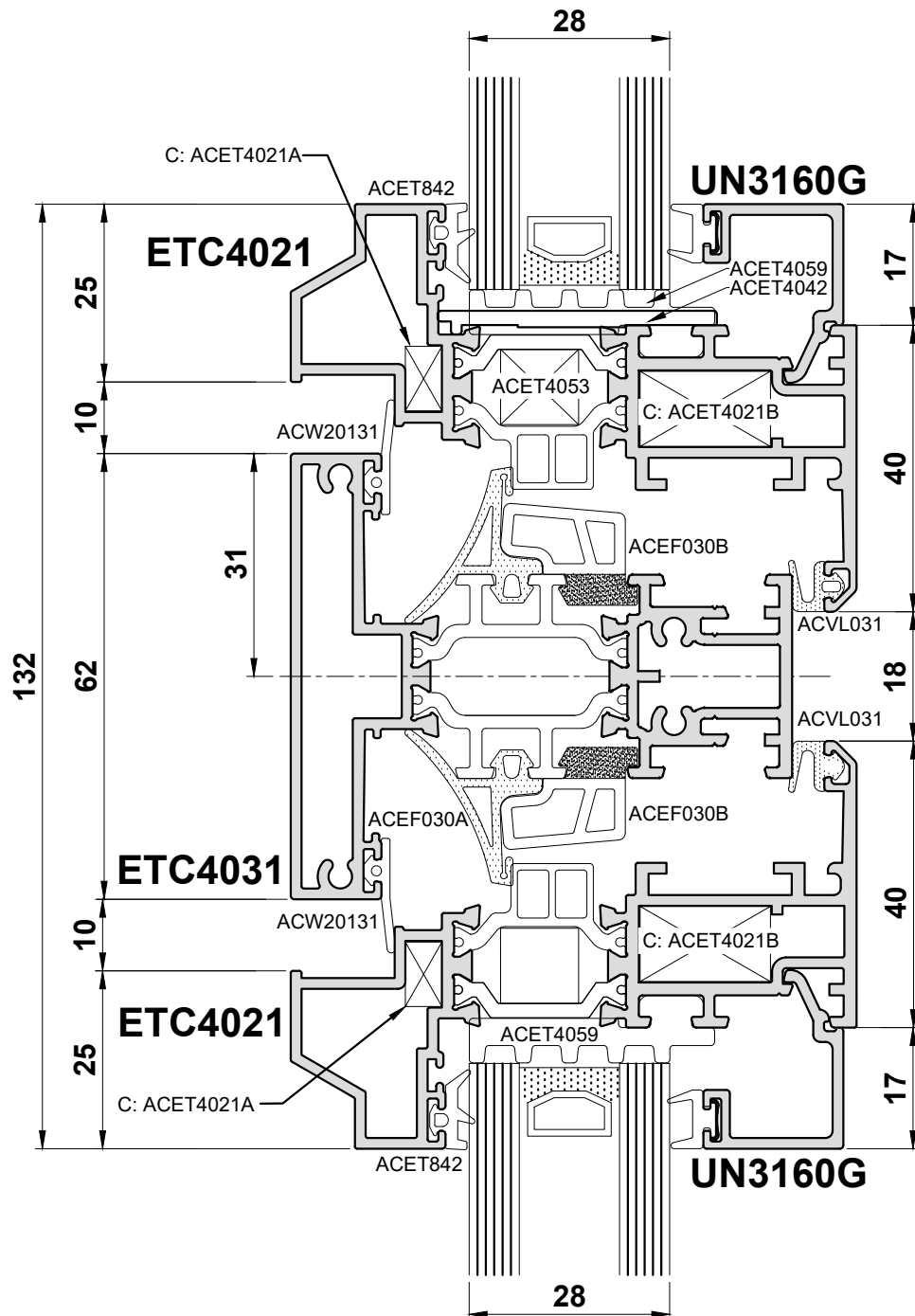
Do Not Scale From This Drawing

Detail 8



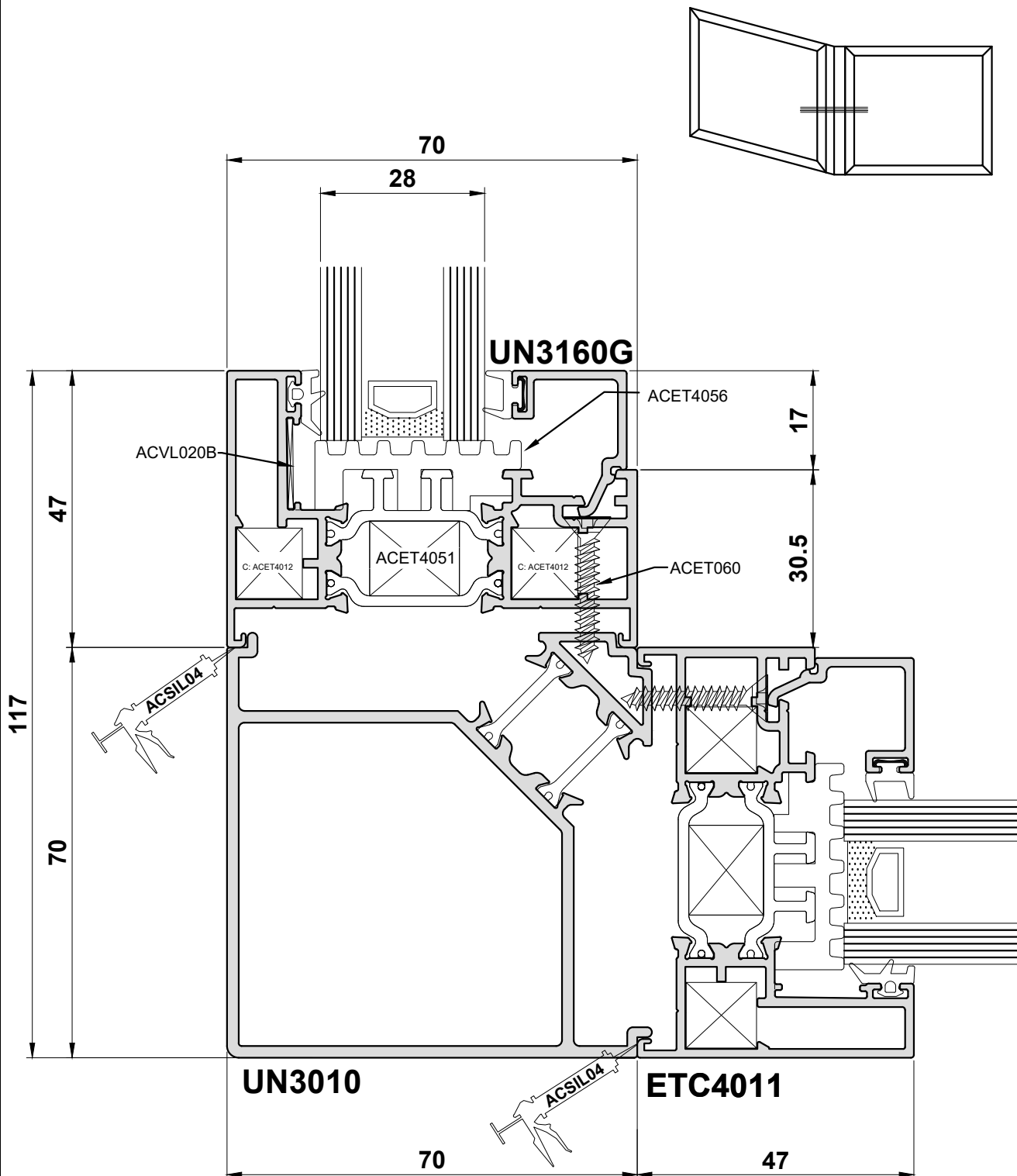
Do Not Scale From This Drawing

Detail 9



Do Not Scale From This Drawing

Detail 10



Do Not Scale From This Drawing

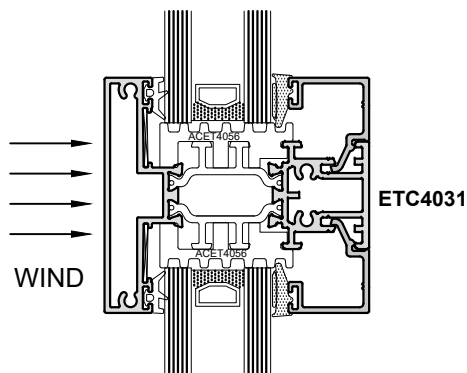
Section D

Statics

Open Out & In

General Size Limitations are shown on Page A02.

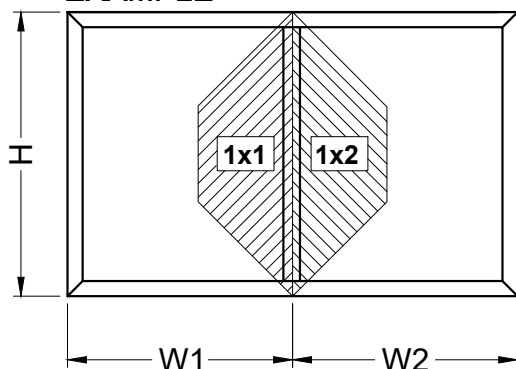
**For Wind Loading Limitations, Please Contact
The Technical Department - T: 01934 833100**



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



$H = 175\text{cm}$

$W1 = 120\text{cm}$

$W2 = 100\text{cm}$

$P = 1250\text{ Pa}$ (wind pressure)

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

$I_{xx} = 21.0\text{ cm}^4$

- 2) Determine suitability



Number	Picture	$I_x(\text{cm}^4)$ $W_x(\text{cm}^3)$	$I_y(\text{cm}^4)$ $W_y(\text{cm}^3)$
ETC4031		34.93 ---	12.29 ---
		8.73	3.95

Section E



Construction Drawings

Corner Joint Details.....	E03
Corner Crimping.....	E04
Cill Drainage.....	E05
Angle Sub Cill.....	E06
Tilt & Turn Outer Frame & Sash.....	E07
Tilt & Turn Overview.....	E08
ACUN3140.....	E09
Window Drainage.....	E10
Mullion/Transom Detail.....	E11
Glazing Chart.....	E12-14
70mm Outer Frame Bay Pole Angles/Deductions	E15

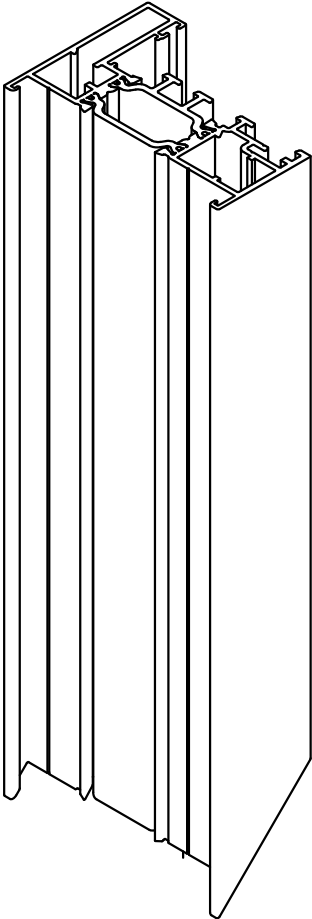
Corner Joint Details

Notes

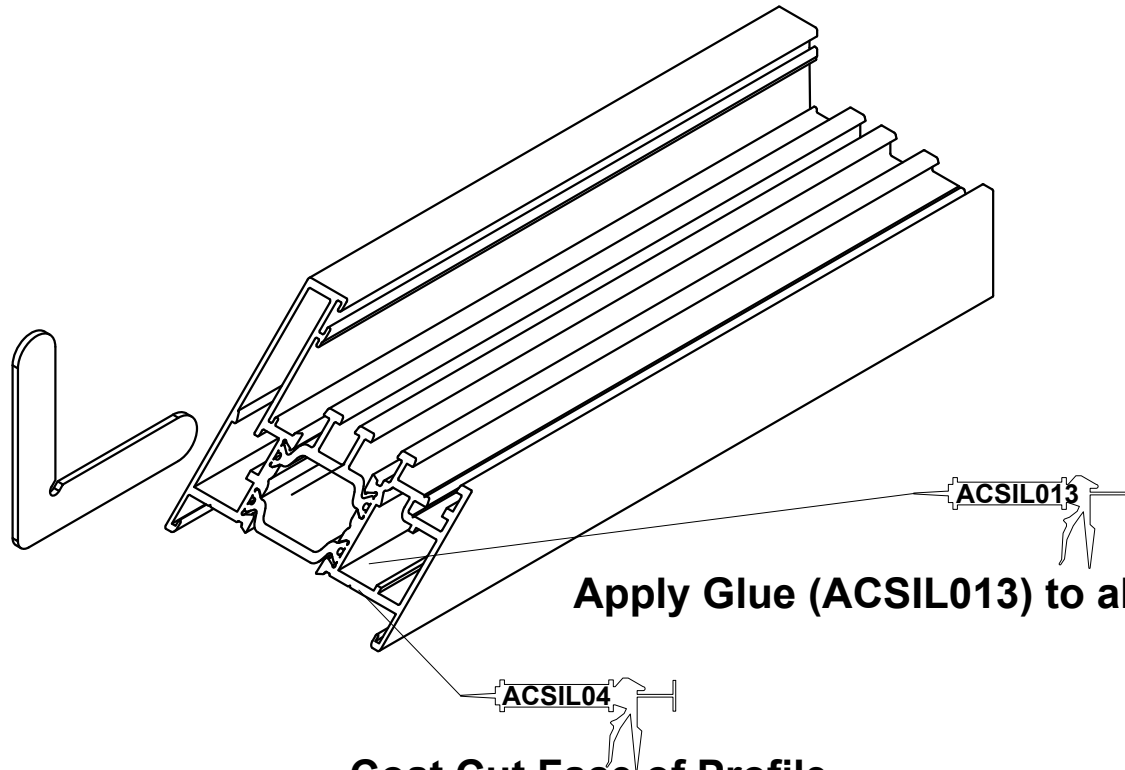
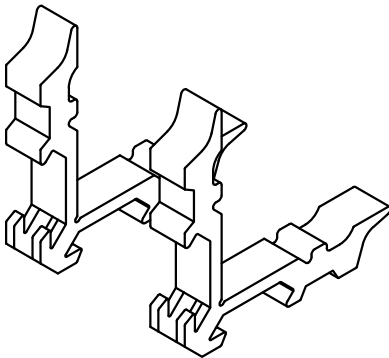
1. Degrease mitre sections
2. Cover mitred faces with ACSIL04
3. Apply ACSIL013 to cleat chamber
4. Apply ACSIL04 to any fractures formed by crimping to make watertight

Table 1

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



Corner Chevron



Apply Glue (ACSIL013) to all Cleat Apertures

Coat Cut Face of Profile with ACSIL04 Prior to Crimping (available in KL colours - see Table 1)

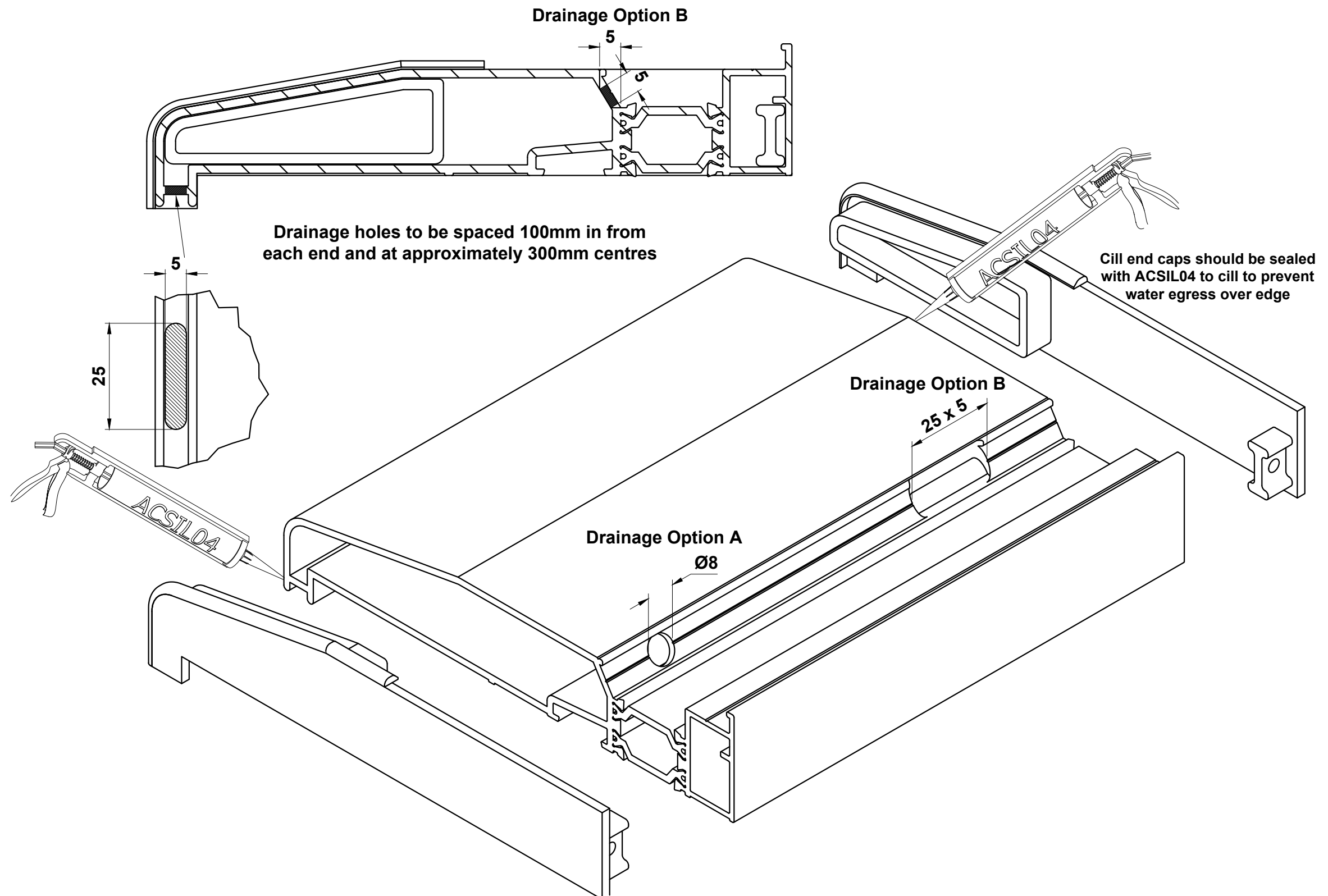
Do Not Scale From This Drawing

Corner Crimping



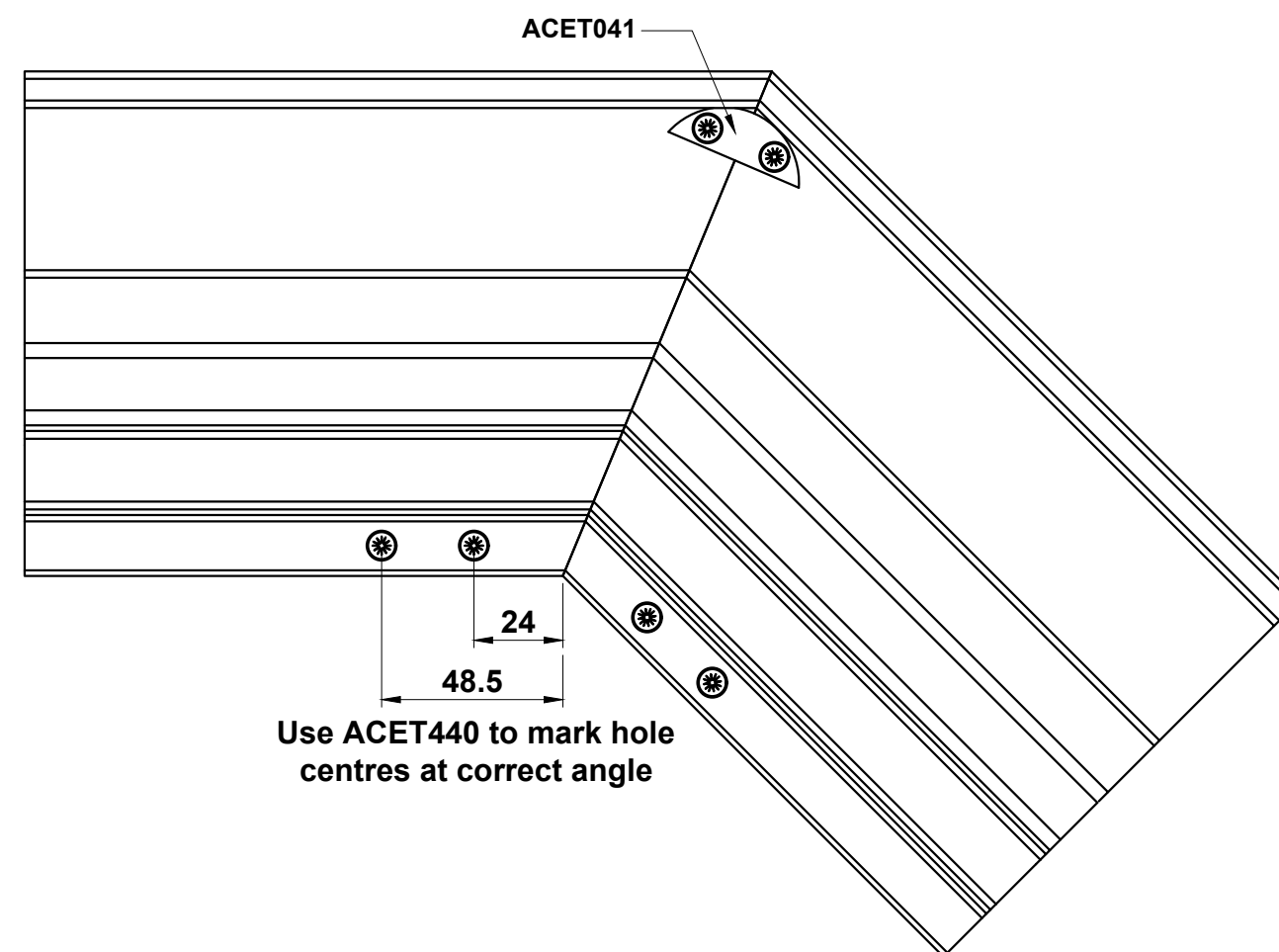
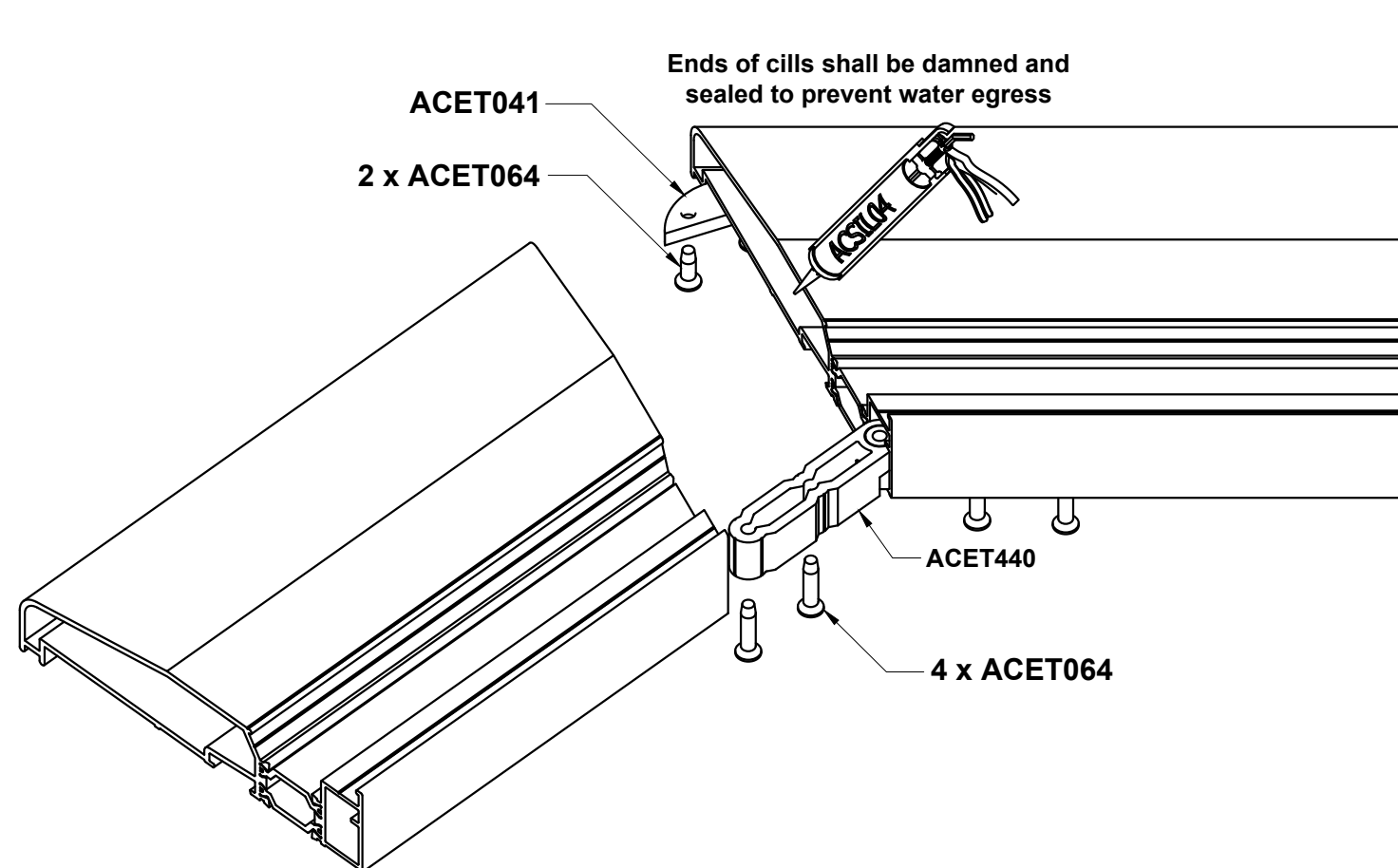
Do Not Scale From This Drawing

Cill Drainage



Do Not Scale From This Drawing

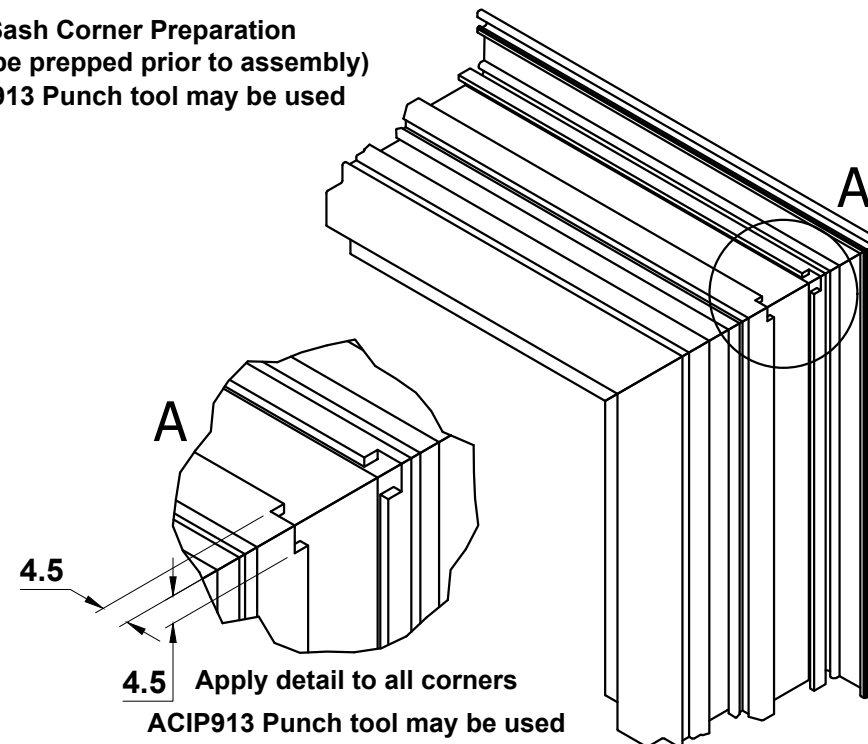
Angled Sub Cill



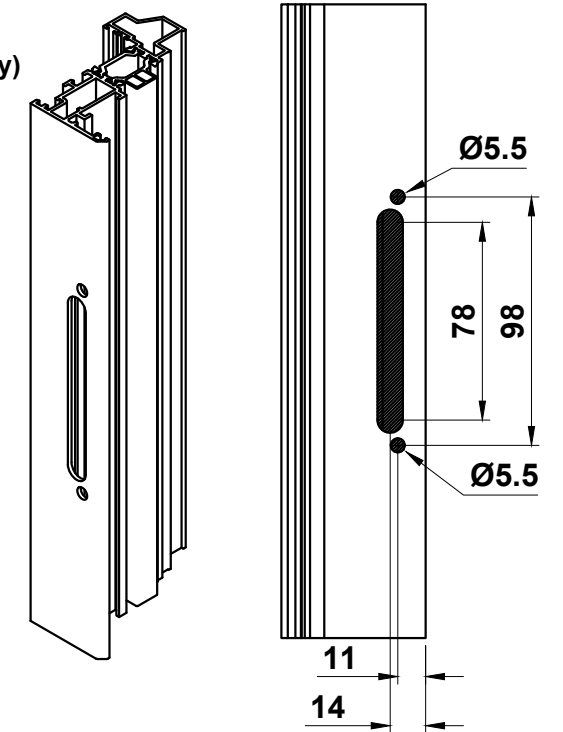
Do Not Scale From This Drawing

Tilt & Turn Outer Frame & Sash

Sash Corner Preparation
(must be prepped prior to assembly)
ACIP913 Punch tool may be used



Handle Preparation
(must be prepped prior to assembly)
ACIP913 Punch tool may be used



Outer Frame Gasket

ACEF030A
ACEF030B

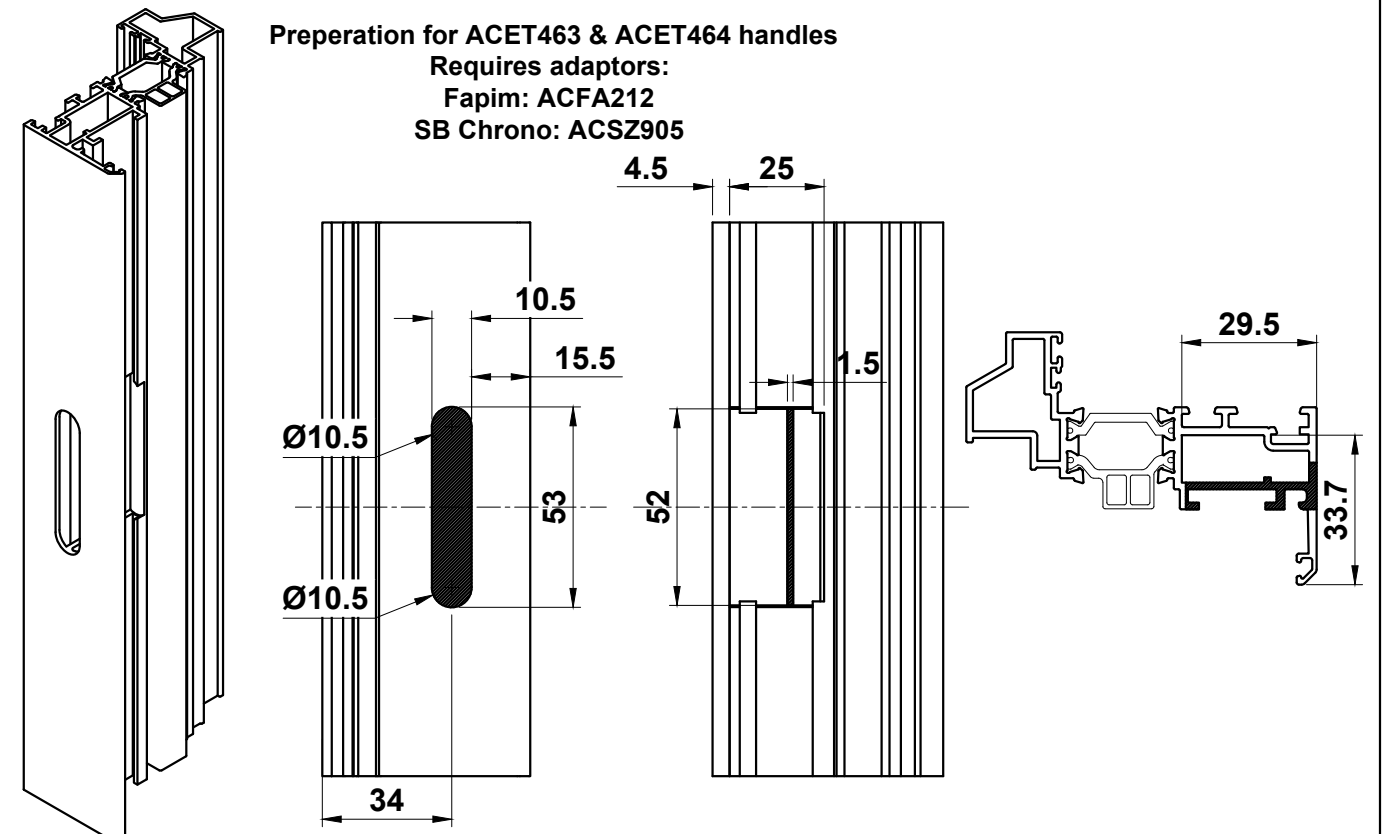
ACEF031A 100 x 100mm
Corner Moulding

Use ACSIL05 to seal
ACEF031A to ACEF030A
& B

ACEF030A
ACEF030B

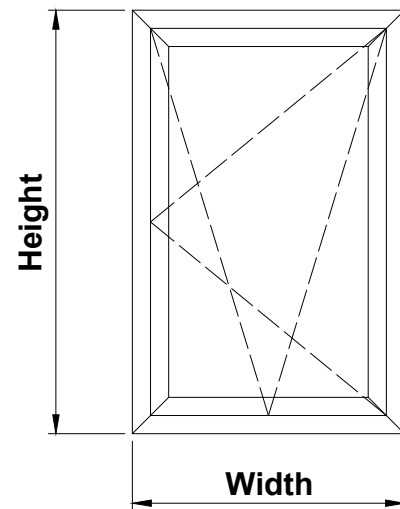
ETC4011

Preparation for ACET463 & ACET464 handles
Requires adaptors:
Fapim: ACFA212
SB Chrono: ACSZ905



Do Not Scale From This Drawing

Tilt & Turn Overview

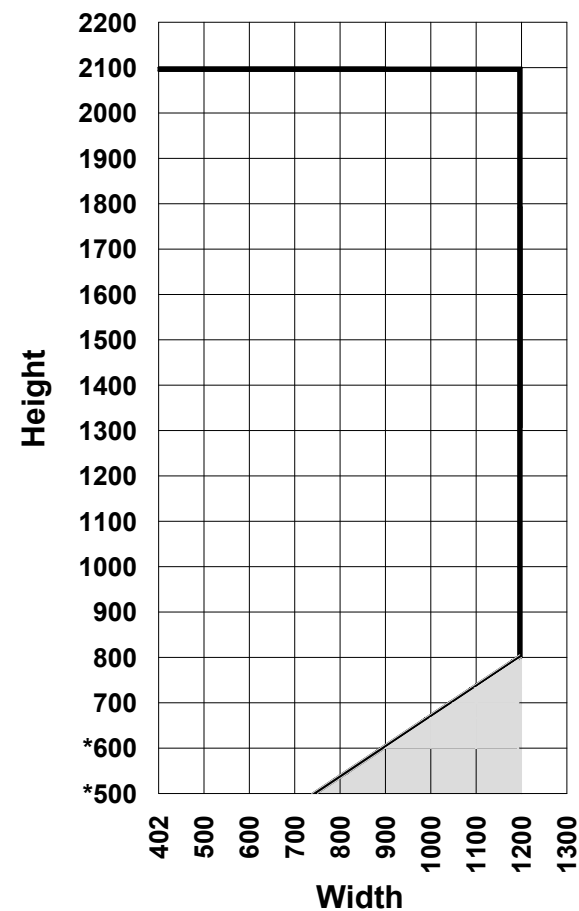


Important Notes:

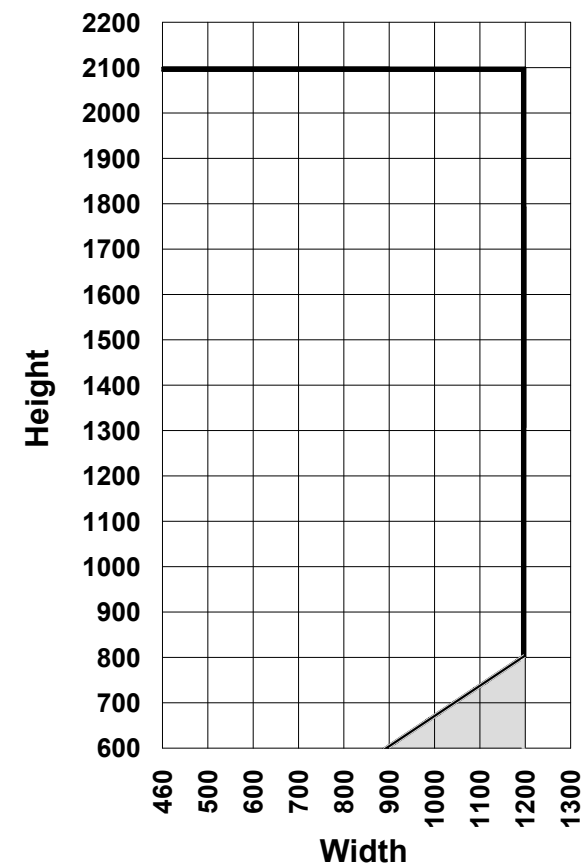
1. The size limitations of the chosen tilt & turn hardware must be adhered to
2. The width of the sash cannot be more than 1.5 times the height
3. Maximum sash weight = 90kg
4. Please refer to the tilt & turn hardware manuals for the latest information.

*Due to the narrow outer frame, we recommend using the Chrono Invision tilt & turn gear to avoid issue with the internal render. Alternatively, an extension section maybe used as shown.
Please see the SB Chrono manual or the Fapim manual for full gearing details

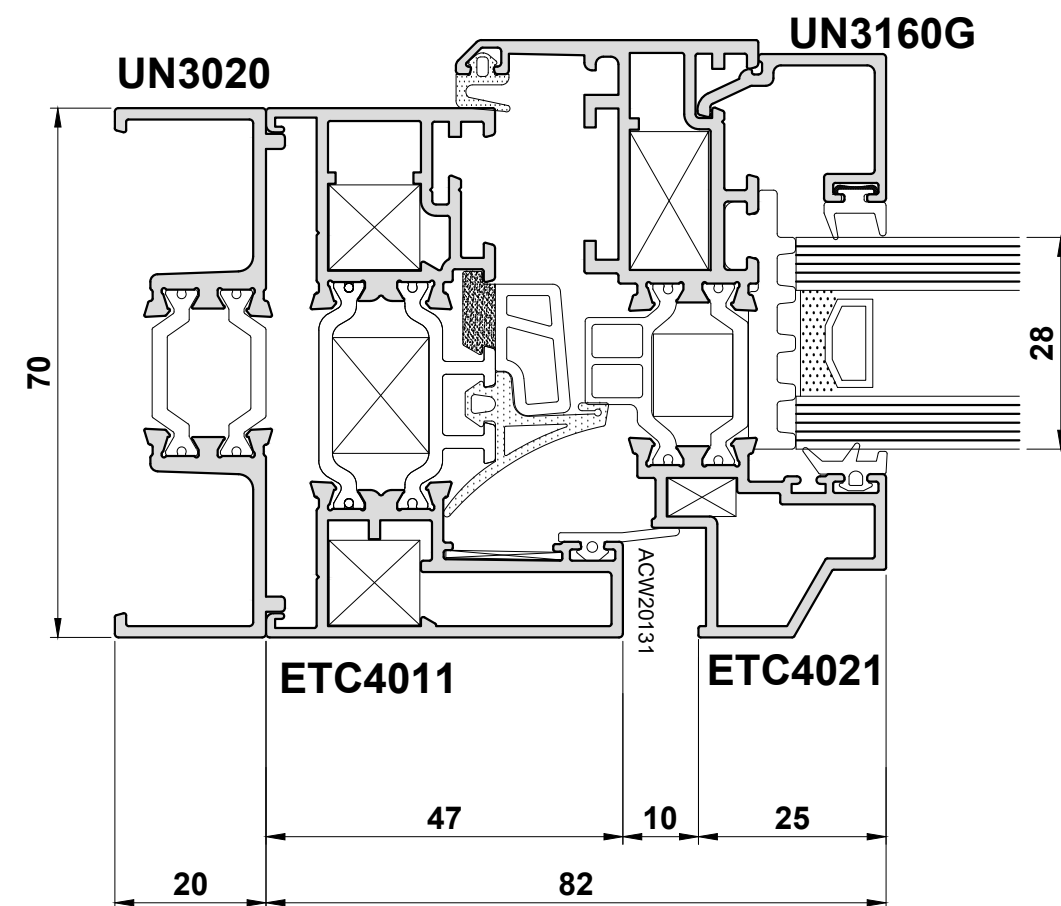
Fapim Tilt & Turn Hardware



Sobinco Tilt & Turn Hardware



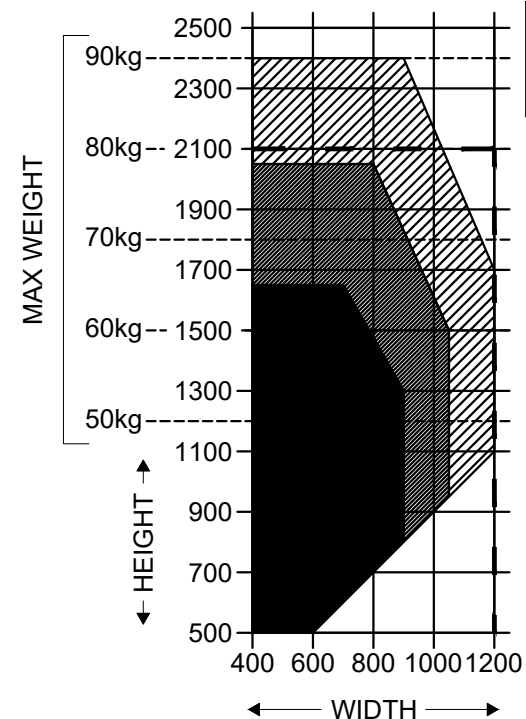
Important Note:
For PAS24 use Sobinco Safe Invision



Do Not Scale From This Drawing

ACUN3140 Hinge

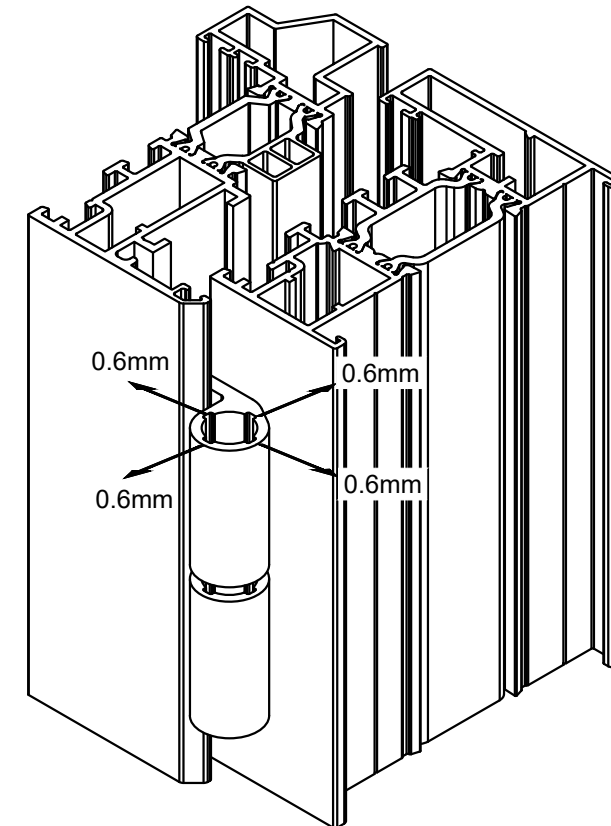
ACUN3140 - Hinge Limitations



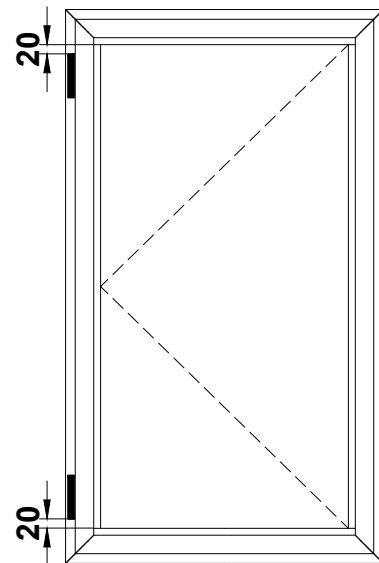
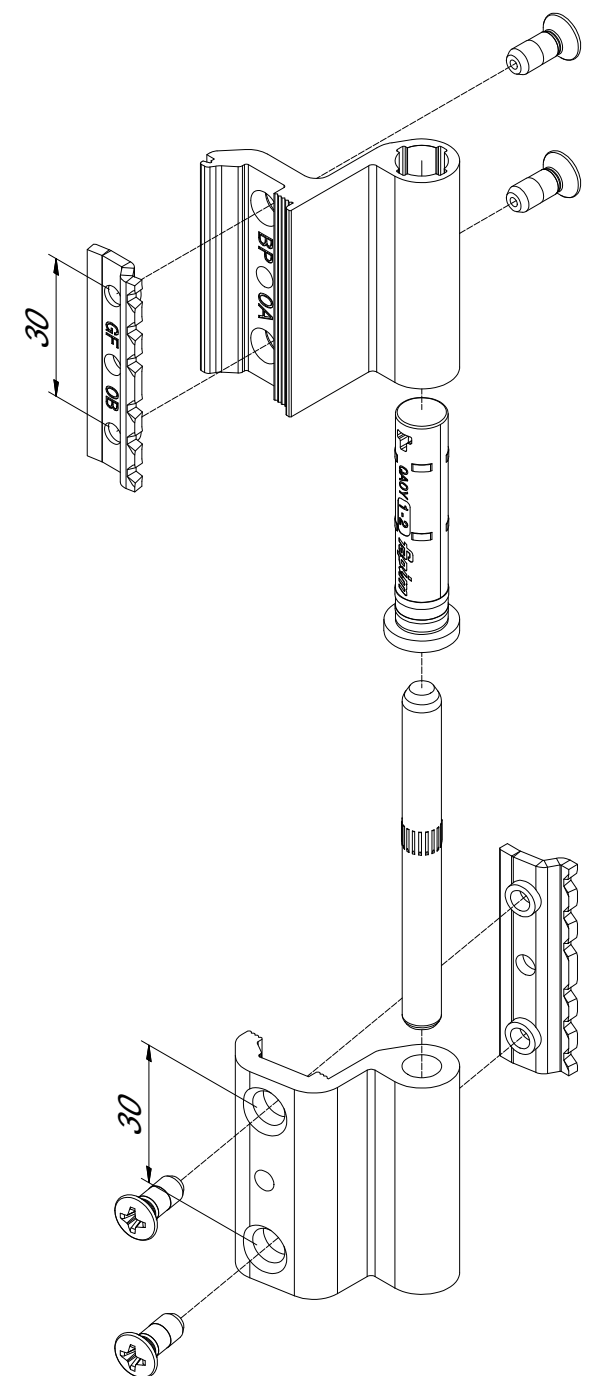
FOR BOTTOM OR SIDE
HUNG OPEN IN WINDOWS.
(hardware by others)

Please note:
Sash and Hinge
Limitations are different.
Anything fabricated outside
of Smart Systems Ltd.
sash limitations will not be
covered by Kitemark.

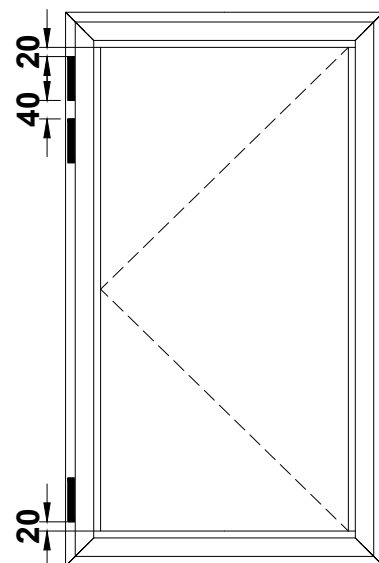
Smart Systems Ltd.
sash size limitations
— — —



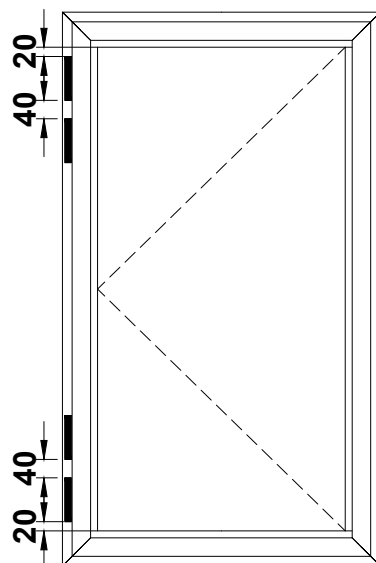
ACUN3140 - Hinge Assembly



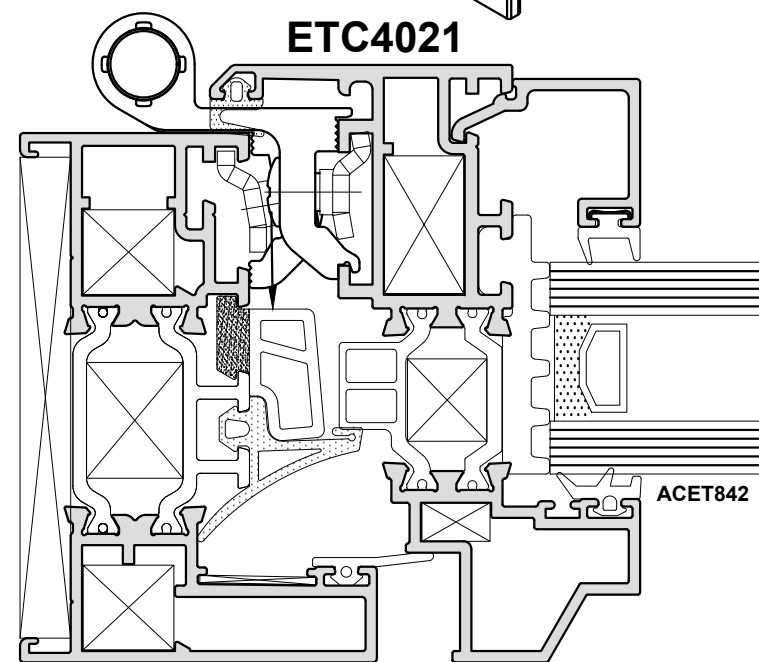
2 Hinge Locations



3 Hinge Locations

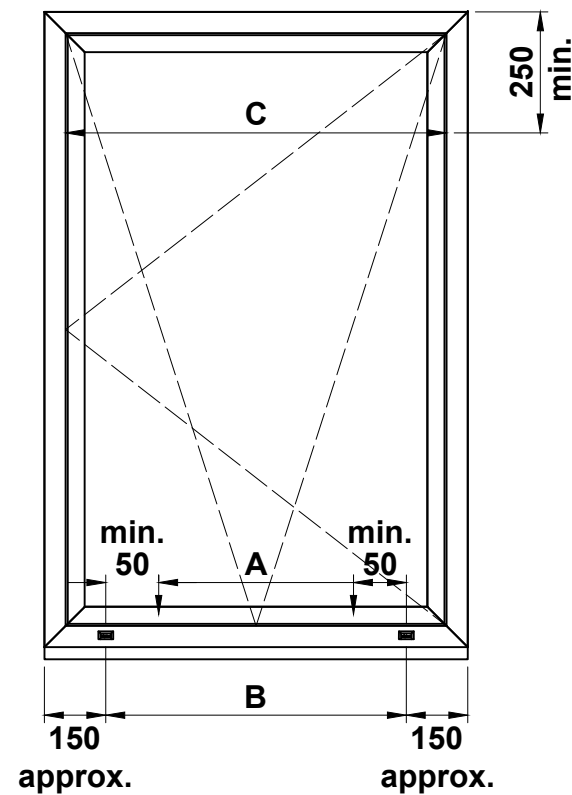


4 Hinge Locations



ETC4011

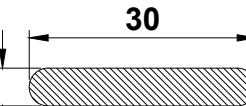
Window Drainage



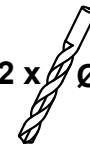
A: Vent Drainage = 2 x $\varnothing 8$



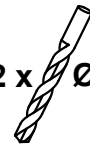
B1: Outer Frame Drainage = 2 x $\varnothing 5$



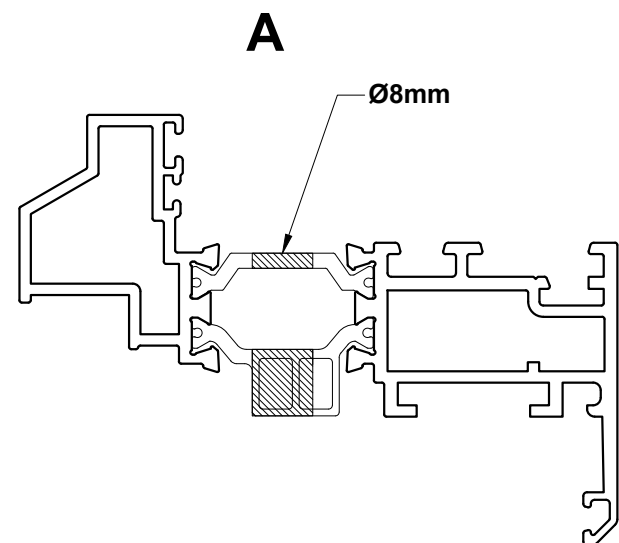
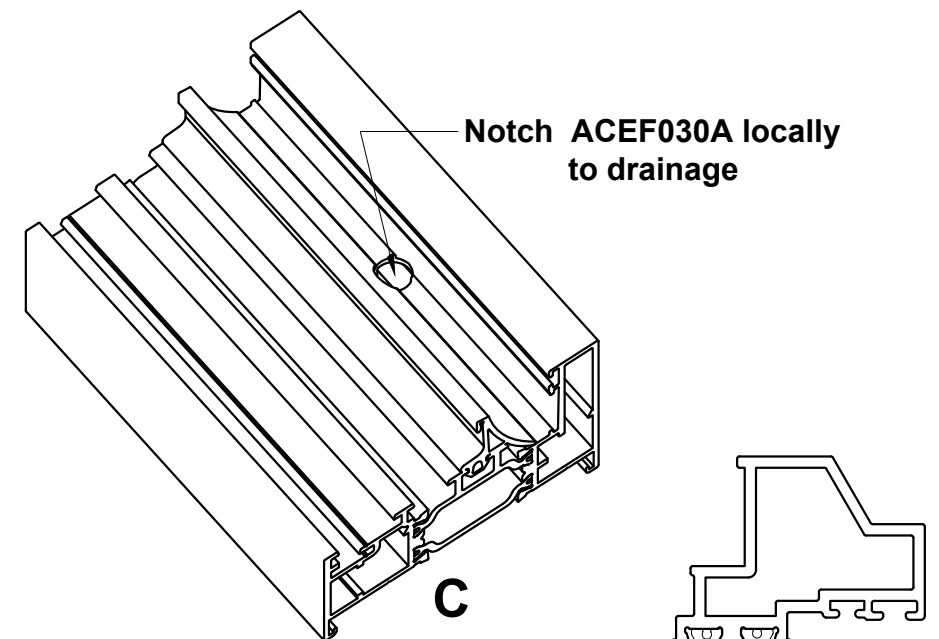
B2: Outer Frame Drainage = 2 x $\varnothing 8$



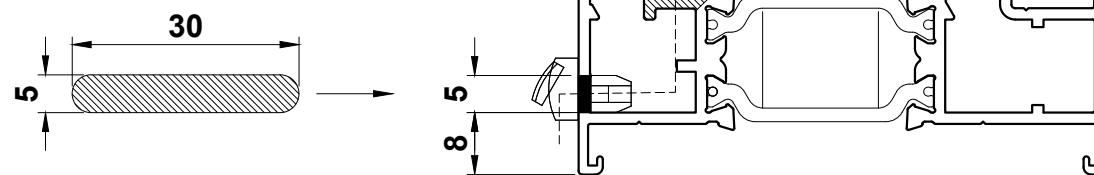
C: Sash Ventilation Holes = 2 x $\varnothing 8$



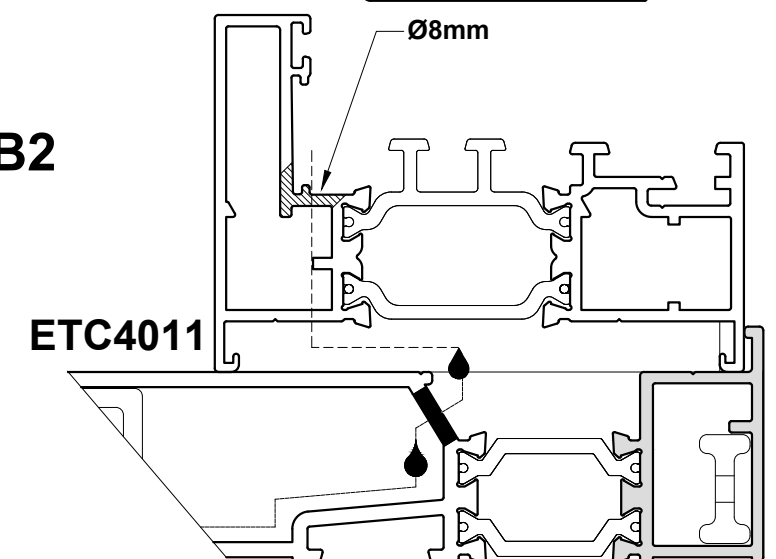
Important Note: All exposed aluminium should be coated using ACSIL014 or painted to match the frame.



B1

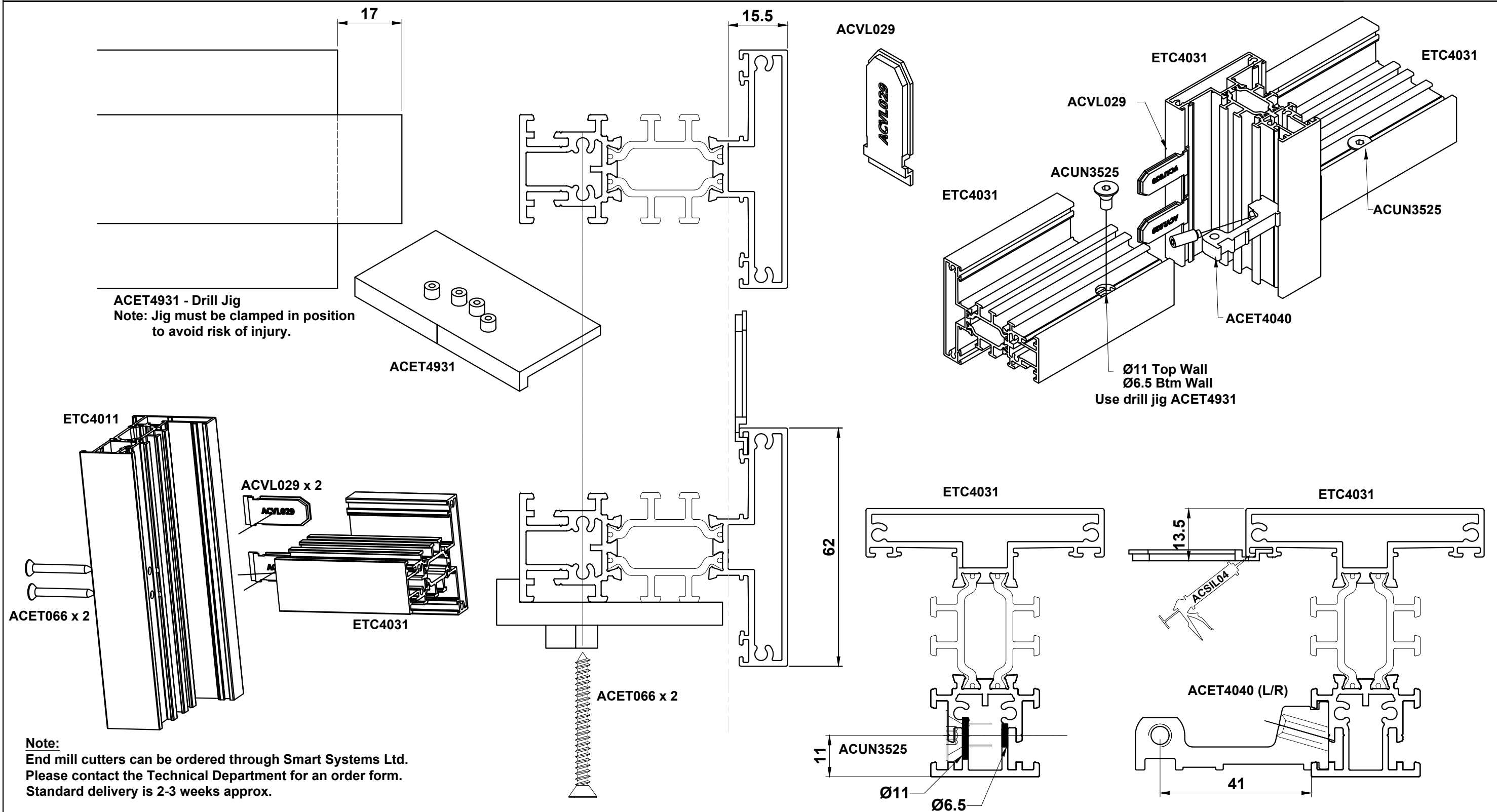


B2



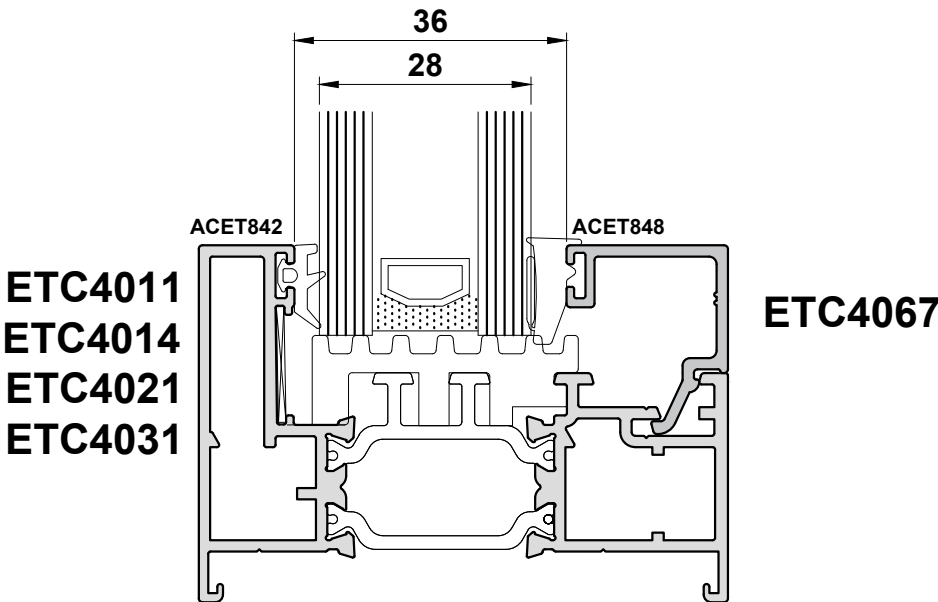
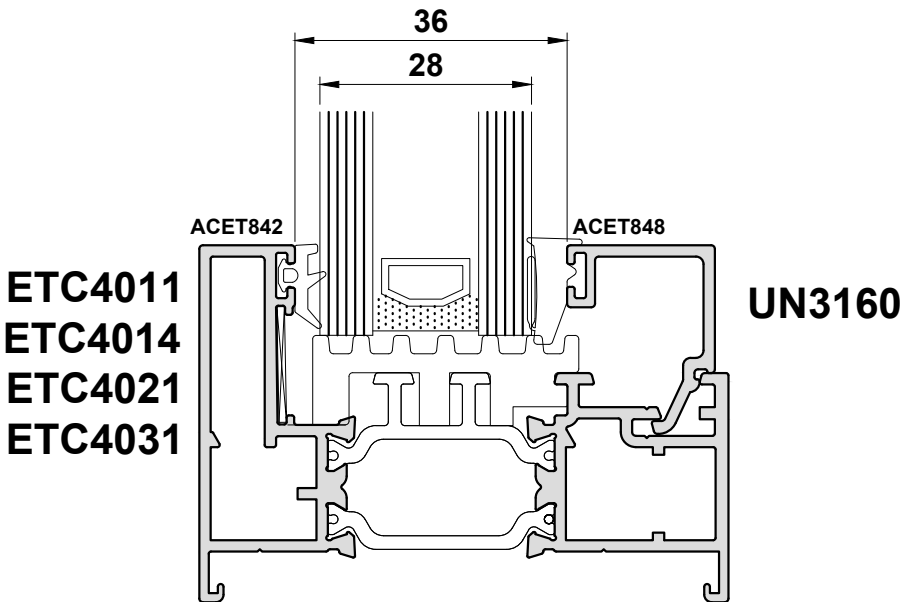
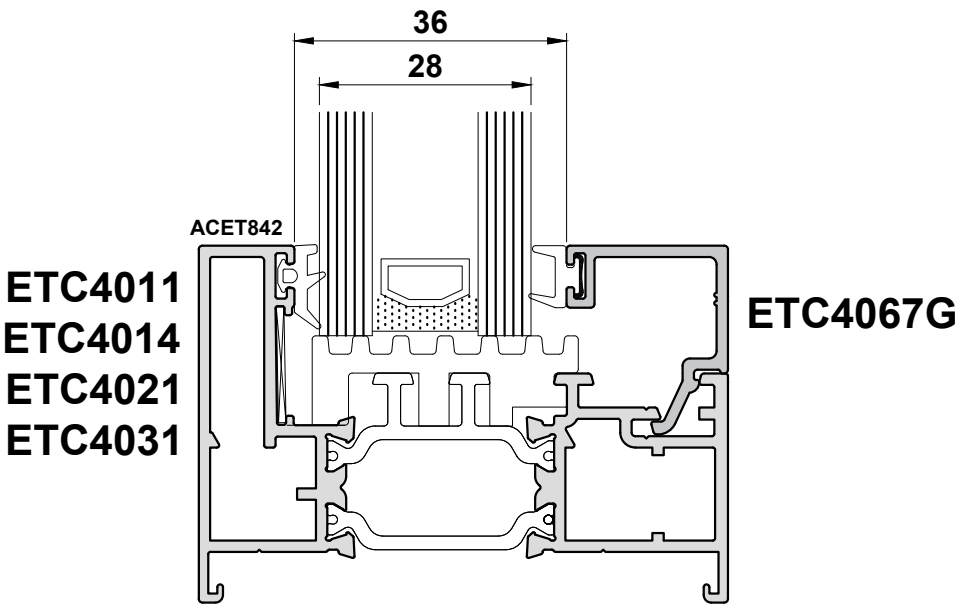
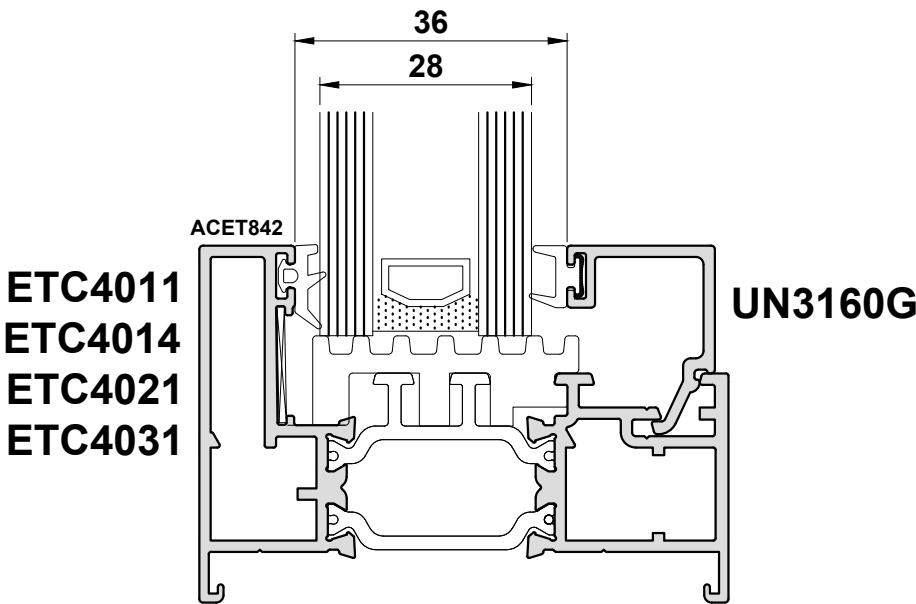
Do Not Scale From This Drawing

Mullion/Transom Detail



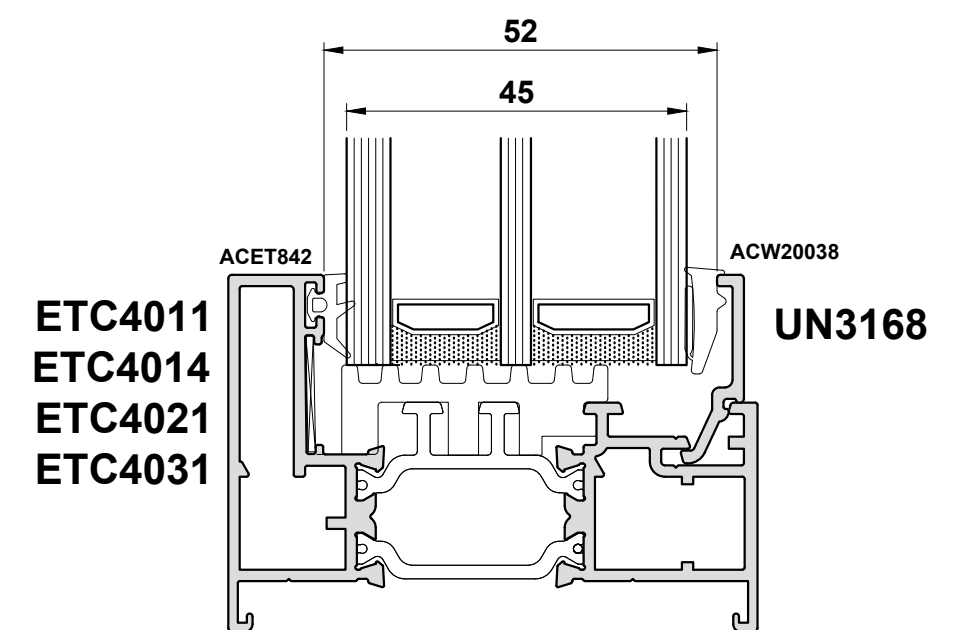
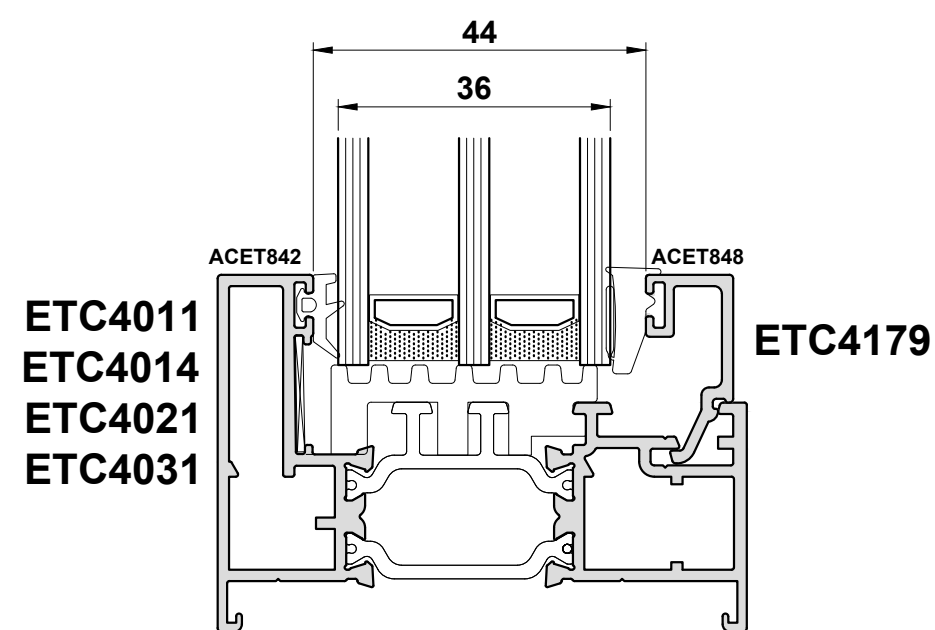
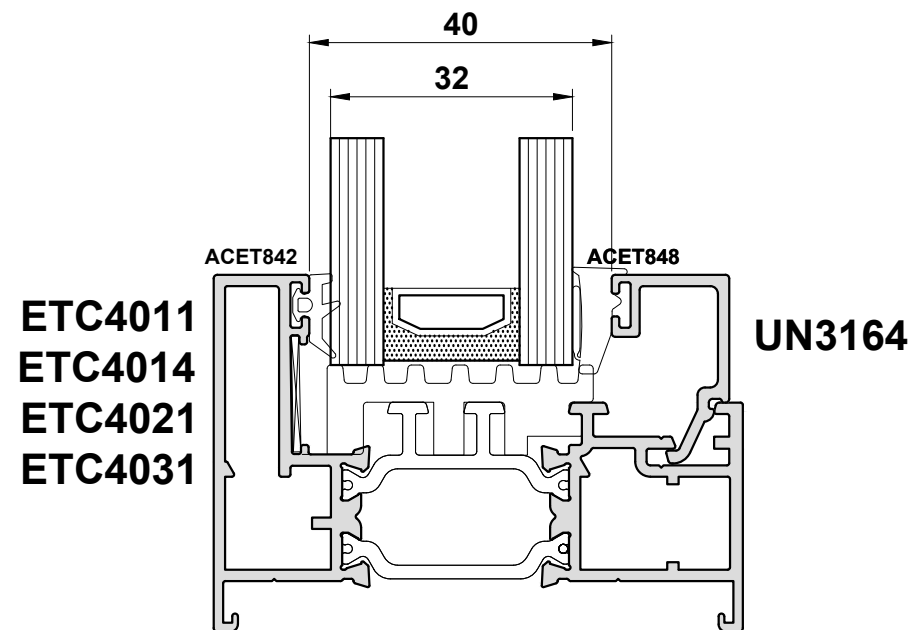
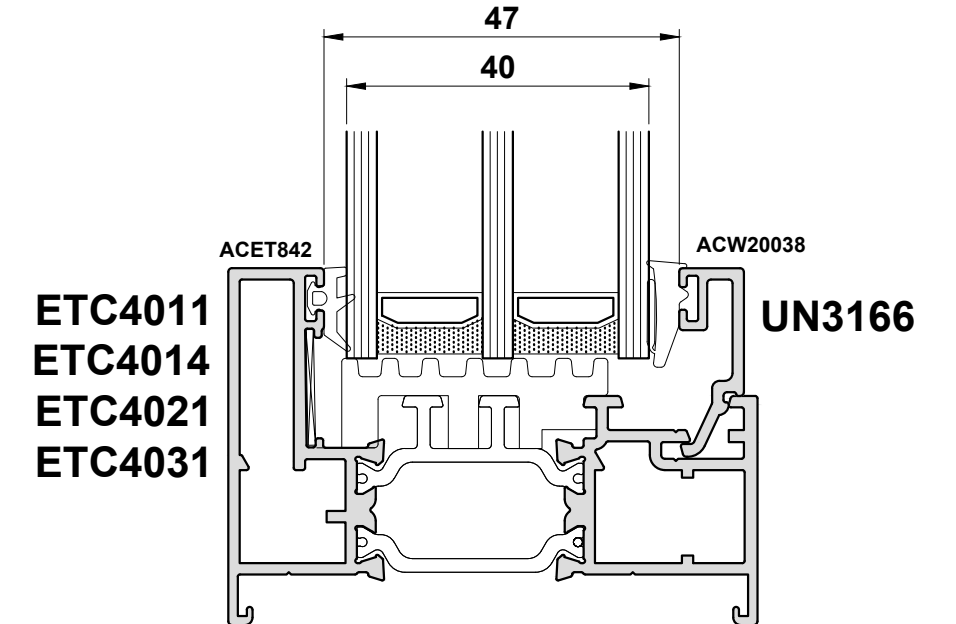
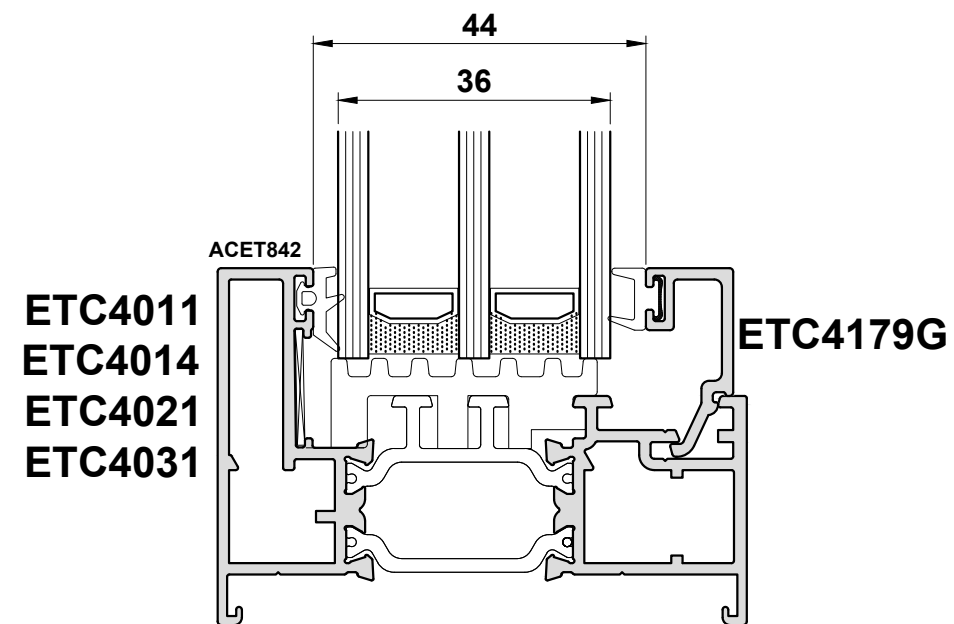
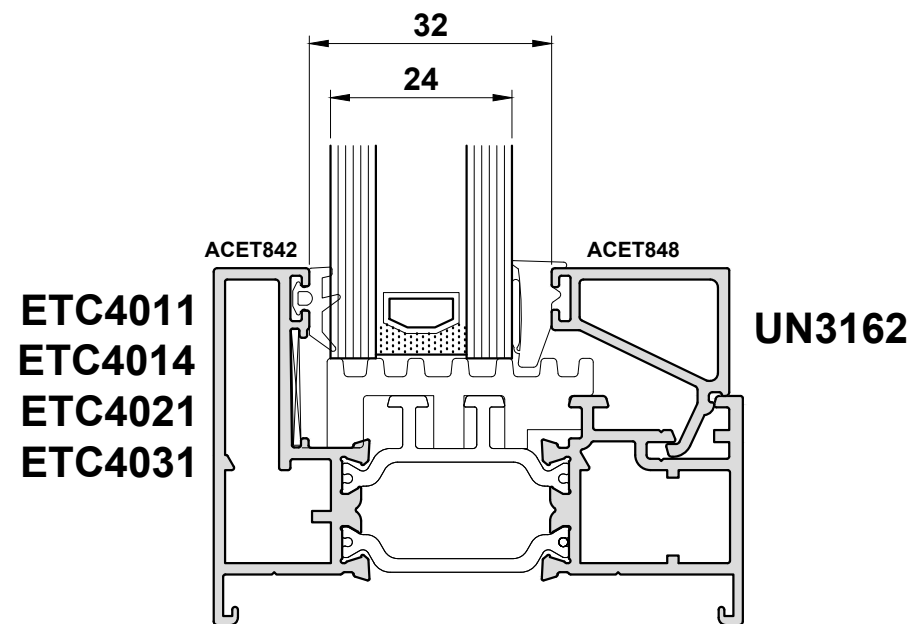
Do Not Scale From This Drawing

Glazing Chart



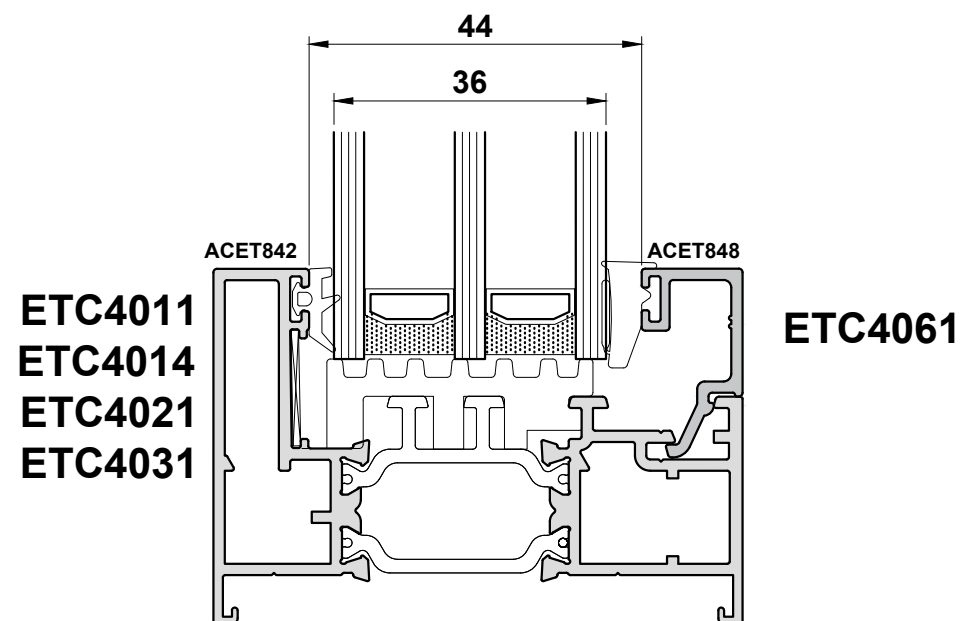
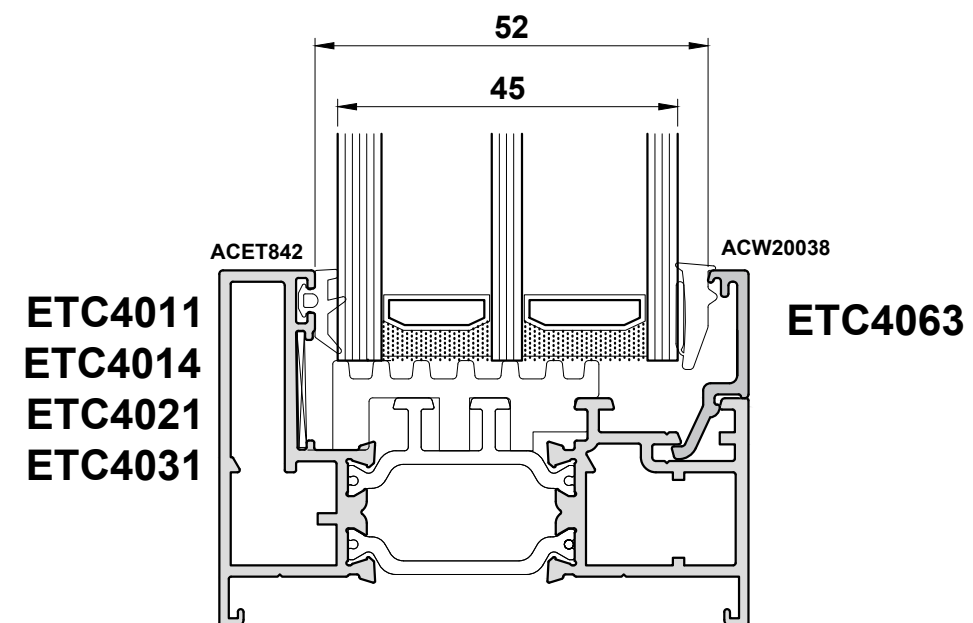
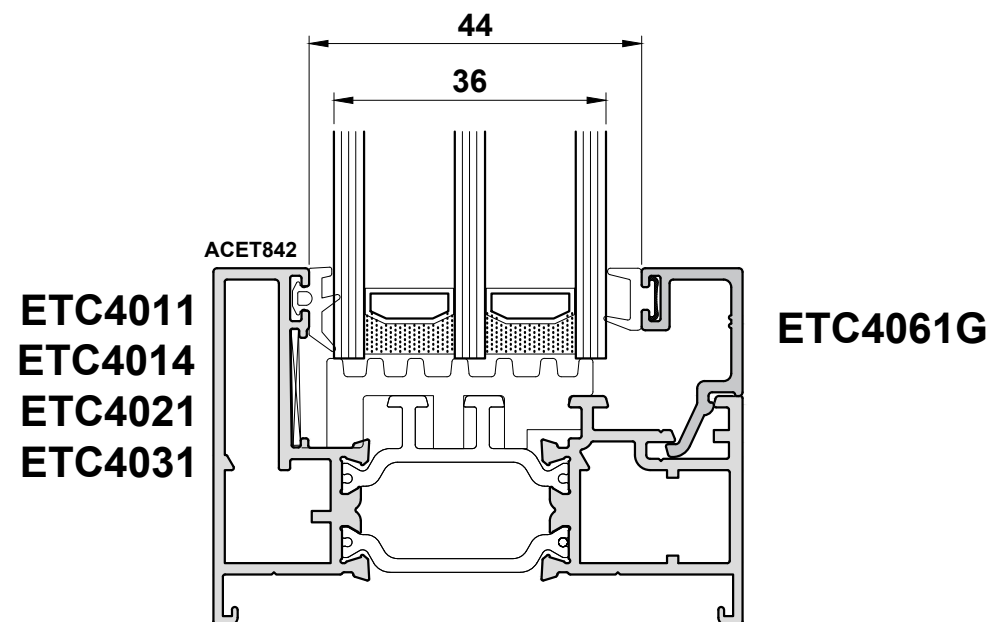
Do Not Scale From This Drawing

Glazing Chart



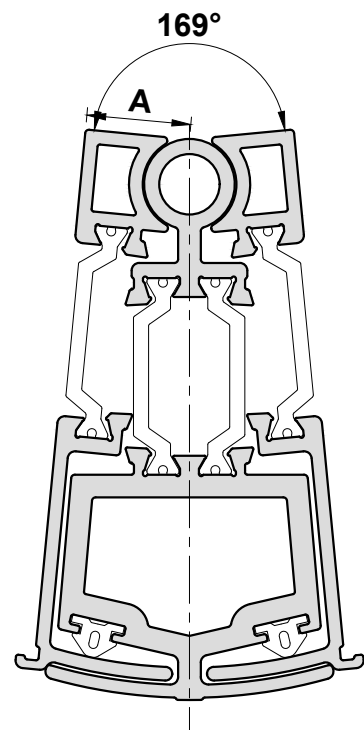
Do Not Scale From This Drawing

Glazing Chart



Do Not Scale From This Drawing

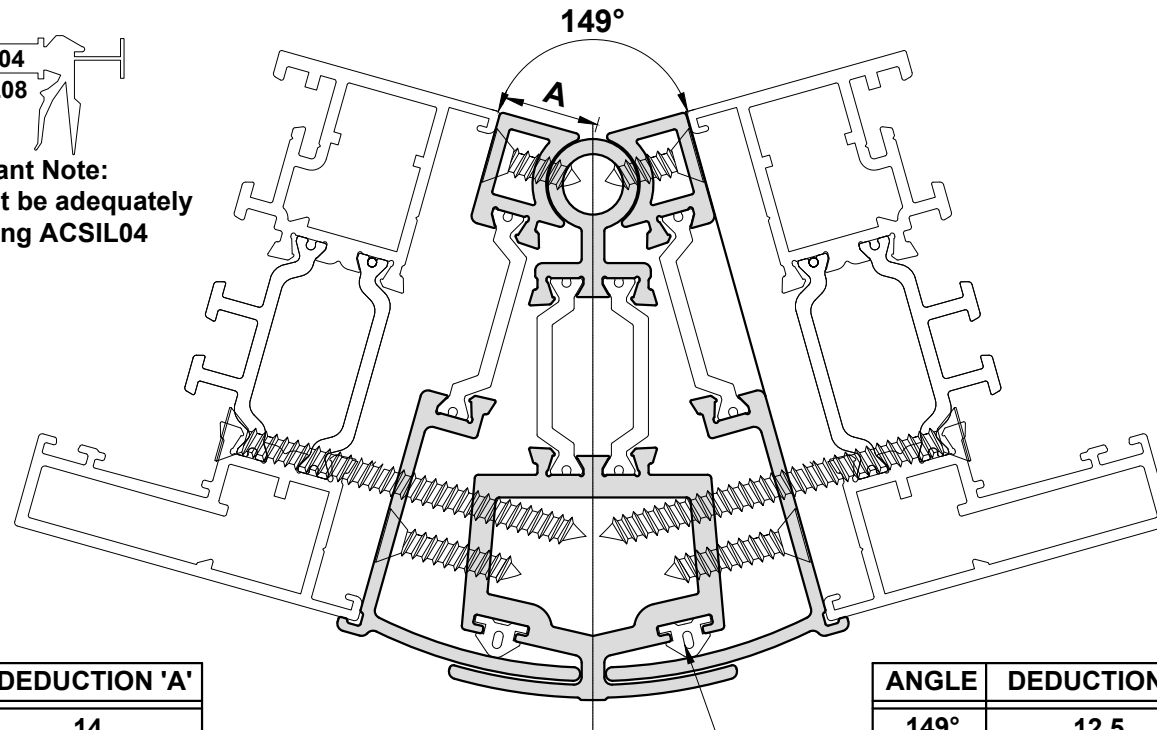
70mm Outer Frame Bay Pole Angles/Deductions



ACSIL04
ACSIL08

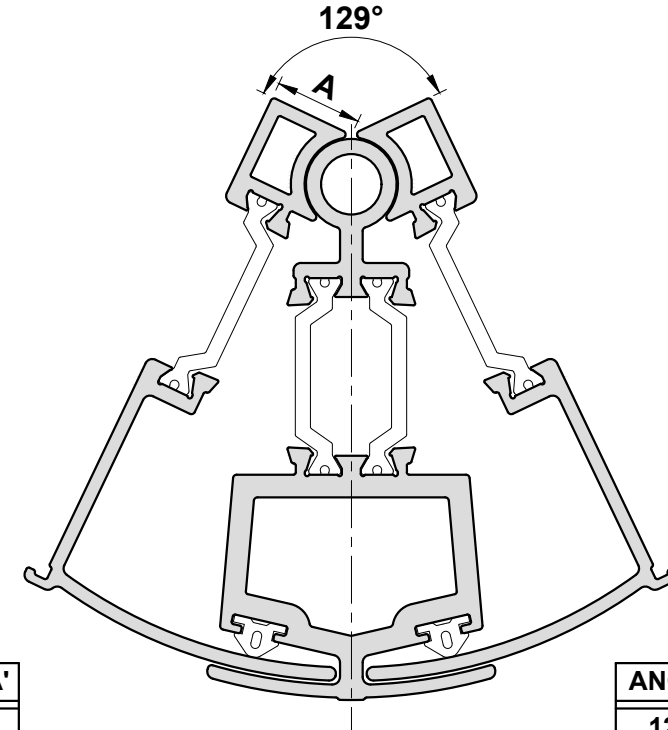
Important Note:
All joints must be adequately
sealed using ACSIL04

ANGLE	DEDUCTION 'A'
169°	14
165°	13.5
160°	13.6
155°	13
150°	13

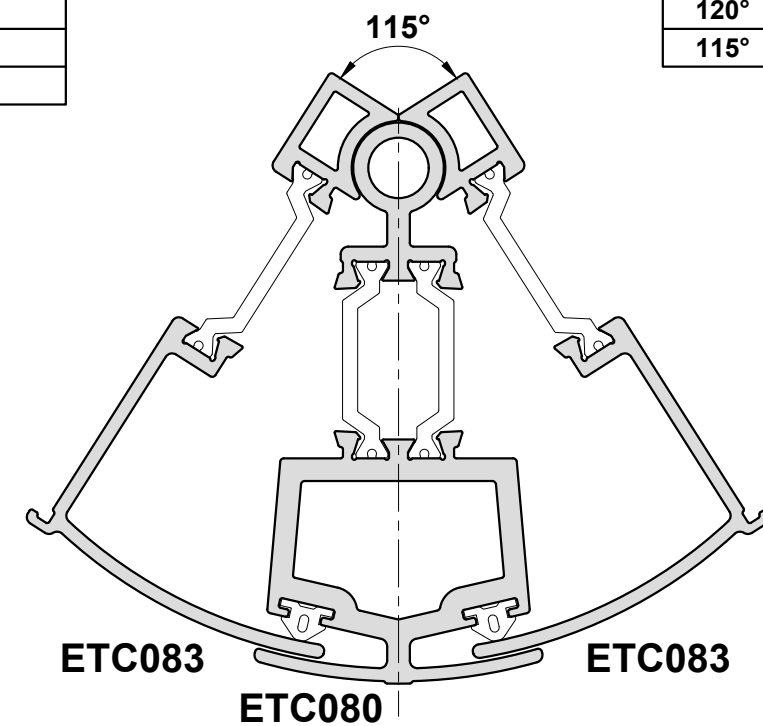
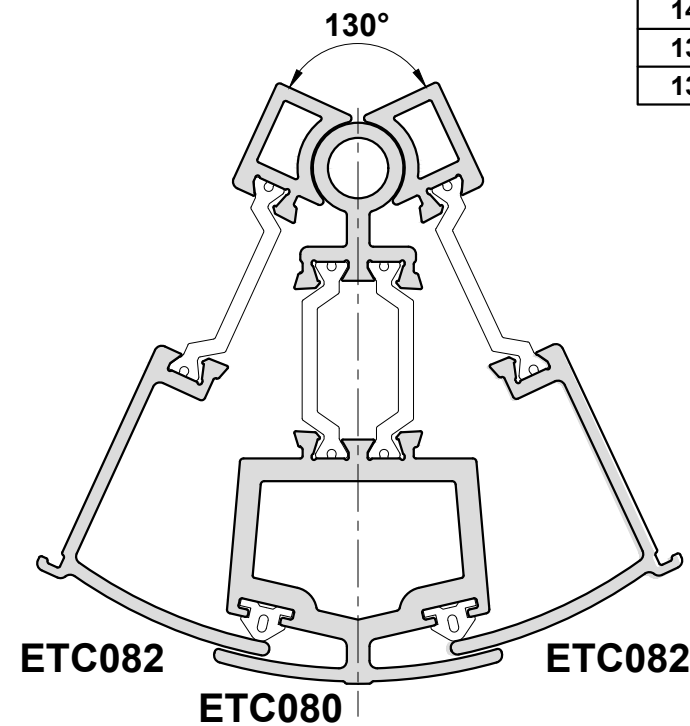
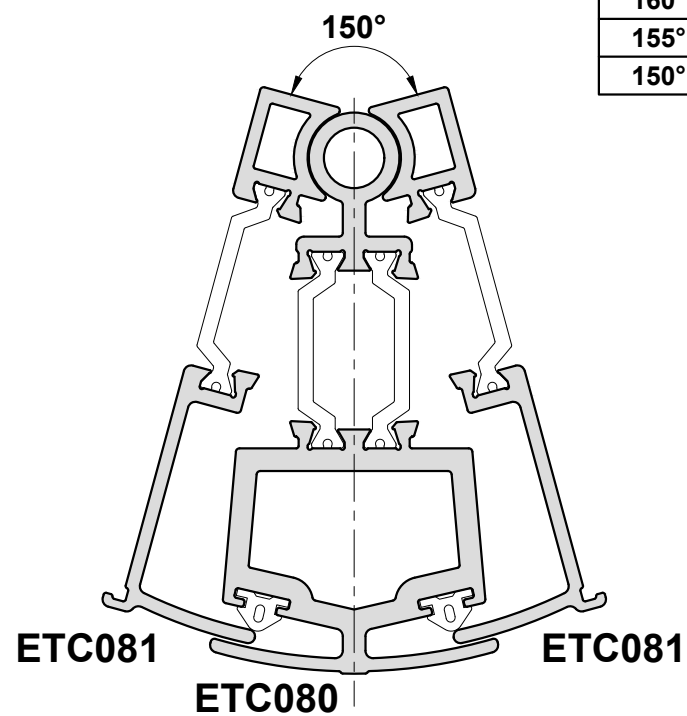


ACVS010

ANGLE	DEDUCTION 'A'
149°	12.5
145°	12.5
140°	12
135°	12
130°	11.5

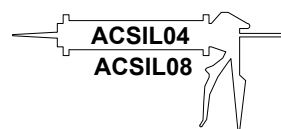
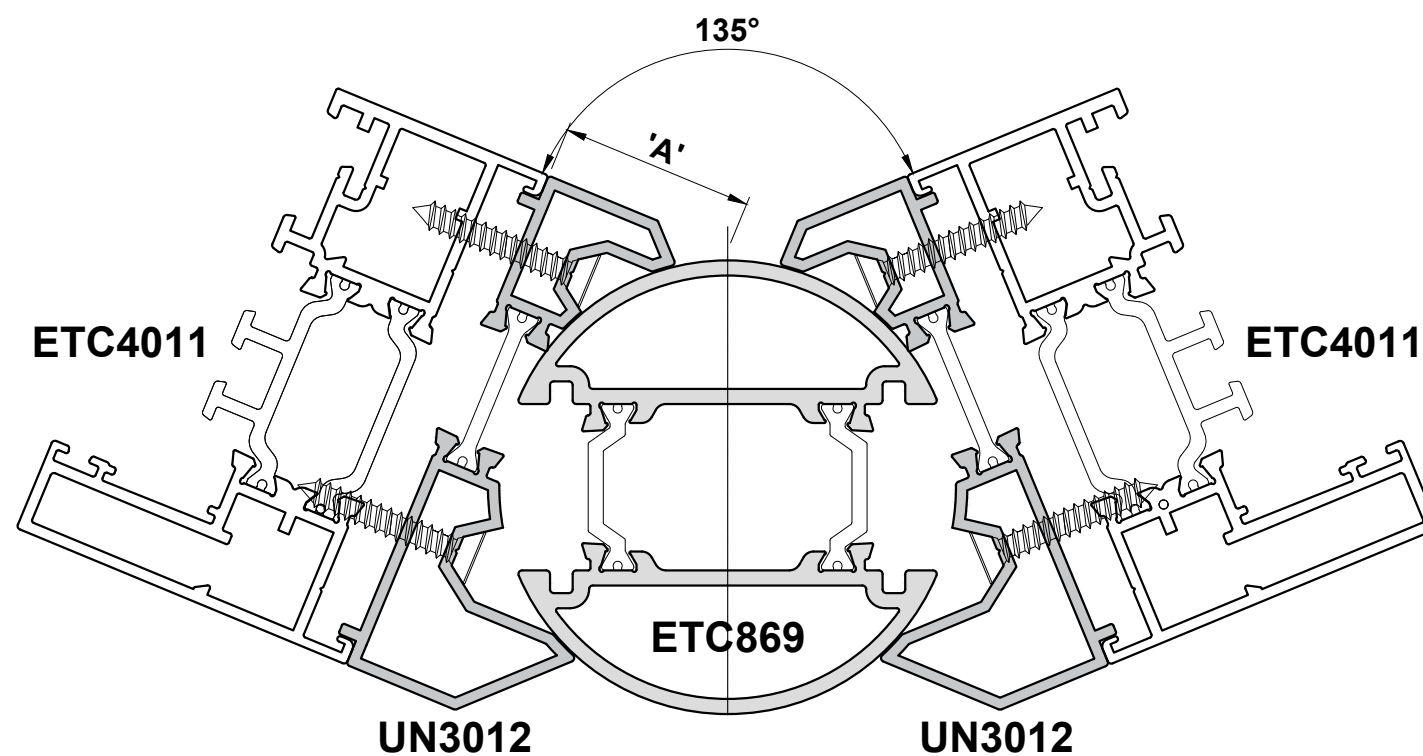
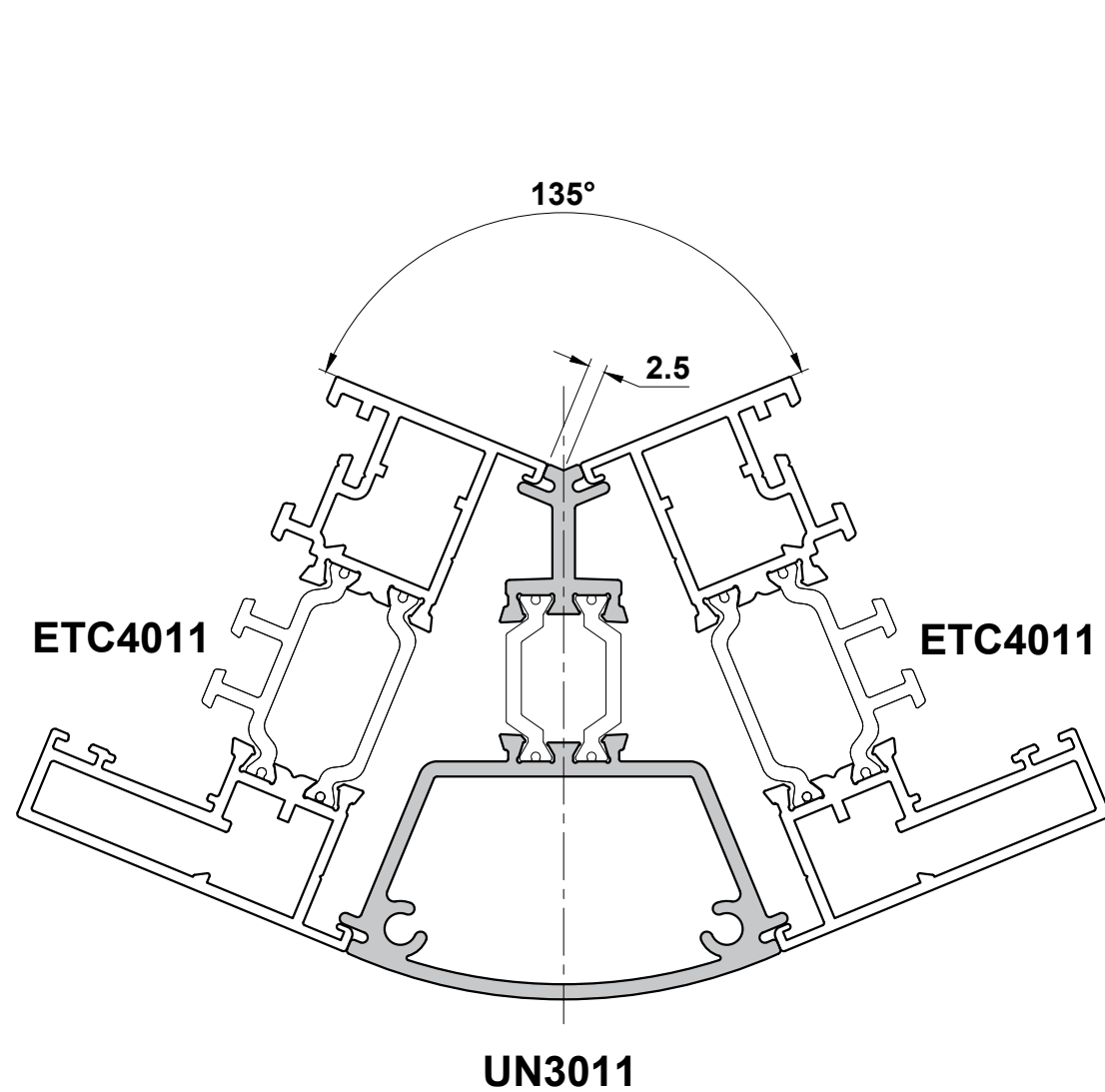


ANGLE	DEDUCTION 'A'
129°	11.5
125°	11.5
120°	11
115°	10.5



Do Not Scale From This Drawing

Fixed Bay Pole Angle / Deductions



Important Note:
All joints must be adequately
sealed using ACSIL04

ANGLE	DEDUCTION 'A'
180°	37.5
175°	36
170°	35
165°	33.5
160°	32.5
155°	31
150°	30
145°	28.5
140°	27
135°	25.5

Do Not Scale From This Drawing

Section F



Sawing Tables

Cutting information..... F03 - F06

Section F

Cutting Information - Fixing Light Frame - Equal Leg ETC4011

Sections

ETC4011		2		H
ETC4011		2		W
Bead		2		W - 61
Bead		2		H - 94

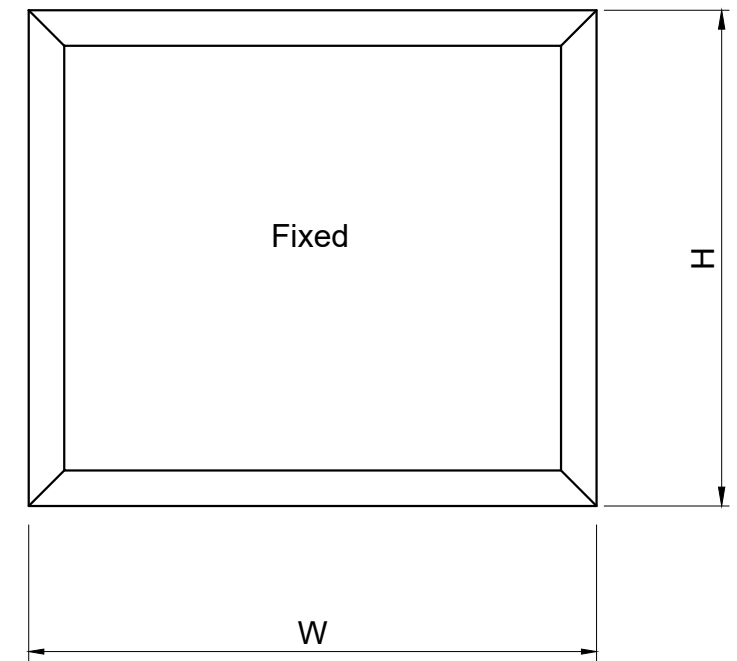
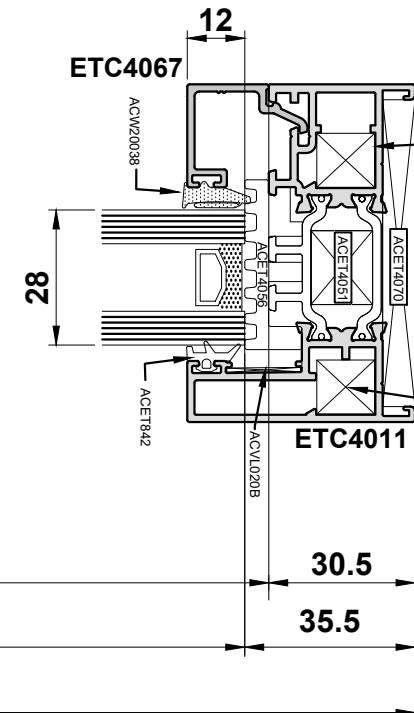
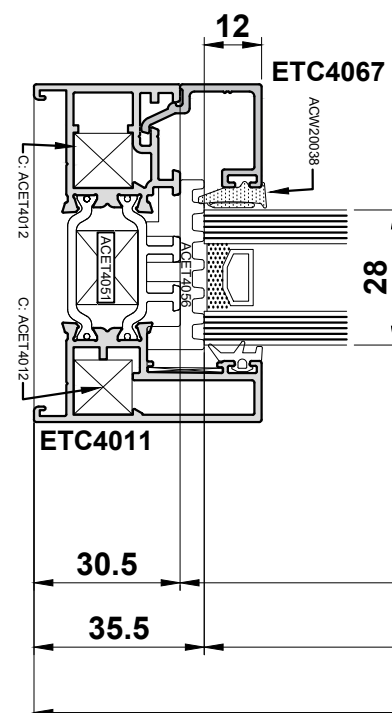
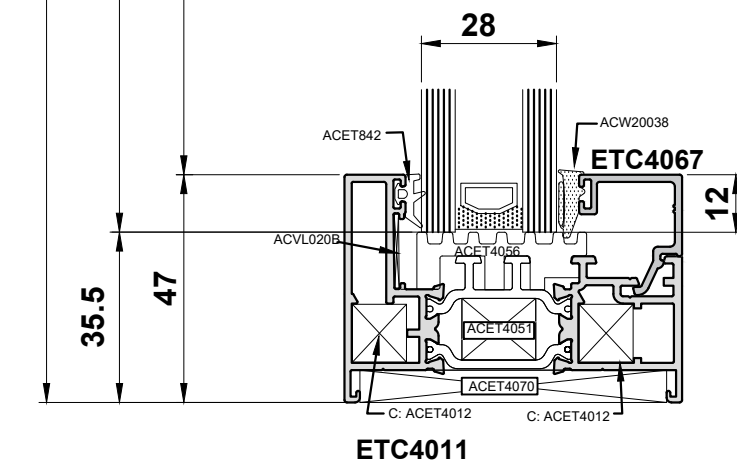
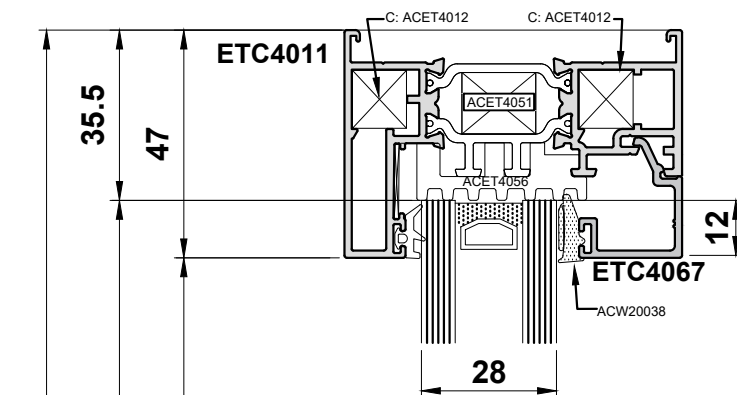
Glass
W - 71
H - 71

Accessories

ACVL020B	4	Chevron
ACET4012	8	Cleat Outerframe
ACET842	2(W+H)	E Gasket
ACW20038	2(W+H)	Wedge Gasket
ACGSL045	2	Drainage Cap
ACET4041	2	Bridge Packer

Foam

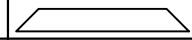
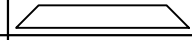
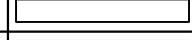
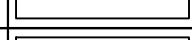
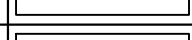
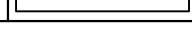
ACET4070	2(W+H)	Foam
ACET4051	2(W+H)	Foam
ACET4056	2(W+H)	Foam



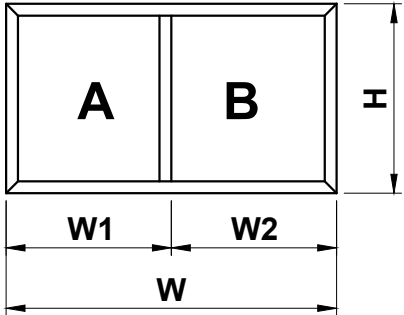
Do Not Scale From This Drawing

Cutting Information

Sections

ETC4011		2		H
ETC4011		2		W
ETC4031		1		H - 61
Bead		2		W1 - 44.5
Bead		2		W2 - 44.5
Bead		4		H - 94

	Glass
A	W1 - 54.5 x H-71
B	W2 - 54.5 x H-71

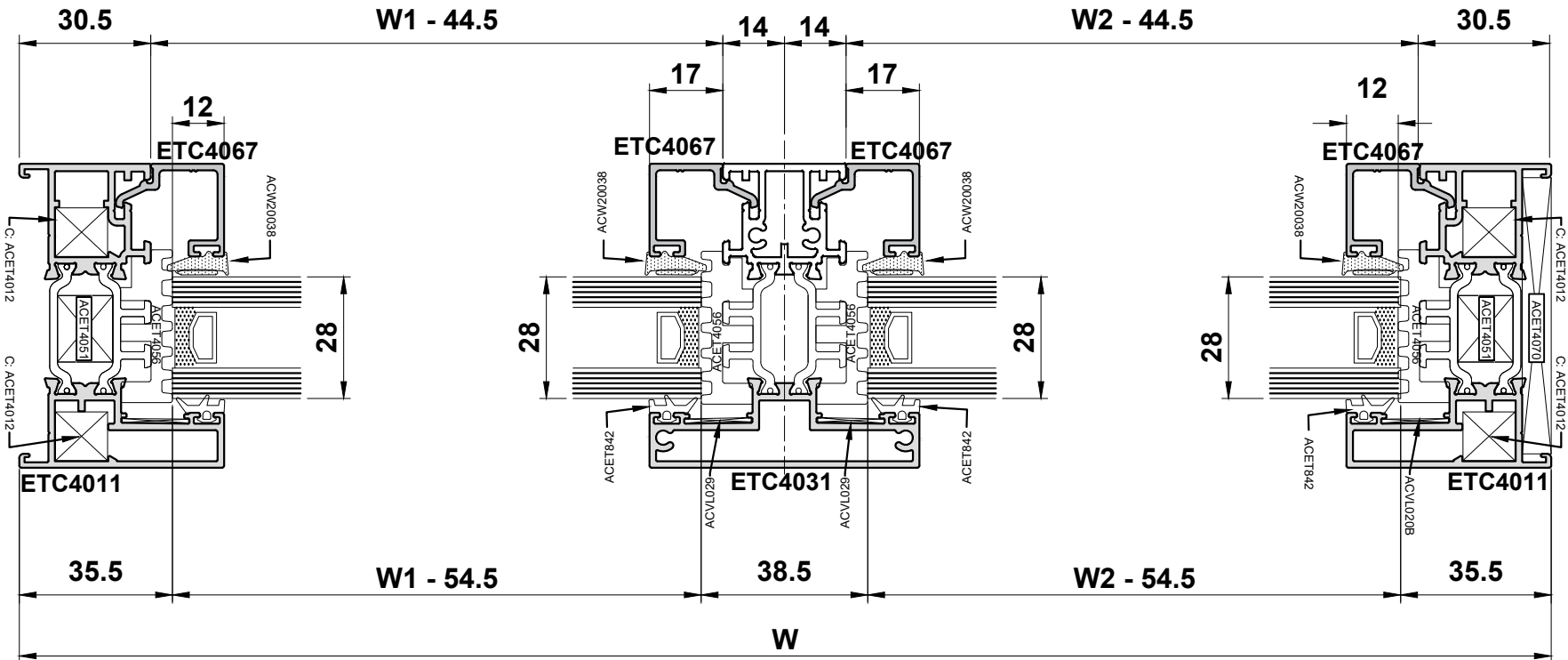
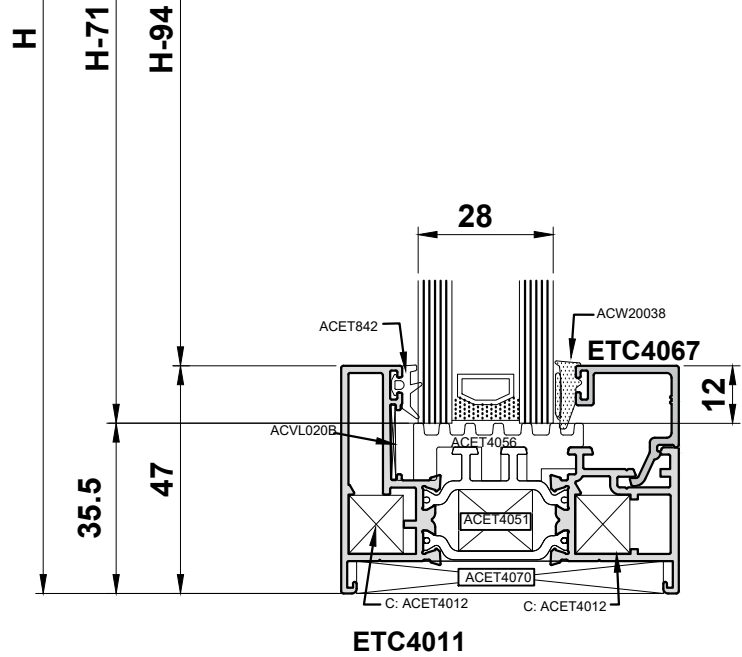
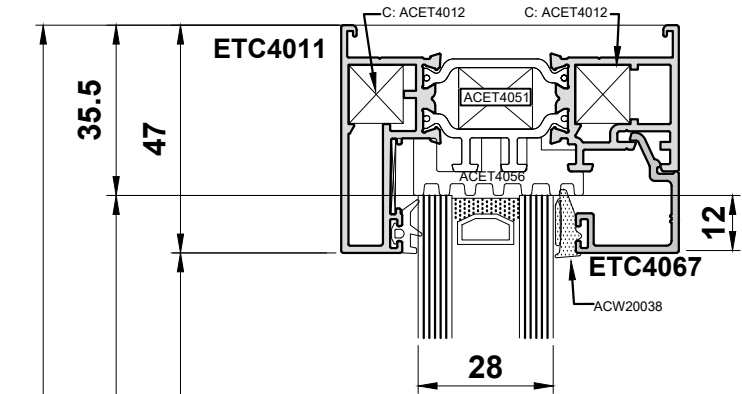


Accessories

ACVL020B	4	Chevron
ACET4012	8	Cleat Outerframe
ACVL029	4	Anti-Twist Clip
ACET066	4	Mullion Screws
ACET842	(2W)+(4H)	E Gasket
ACW20038	(2W)+(4H)	Wedge Gasket
ACGSL045	2	Drainage Cap
ACET4041	4	Bridge Packer

Foam

ACET4070	2(W+H)	Foam
ACET4051	2(W+H)	Foam
ACET4056	(2 x W) + (4 x H)	Foam



Do Not Scale From This Drawing

Cutting Information

Sections

ETC4011		2		H
ETC4011		2		W
ETC4021		2		H - 50
ETC4021		2		W - 50
Bead		2		W - 130
Bead		2		H - 164

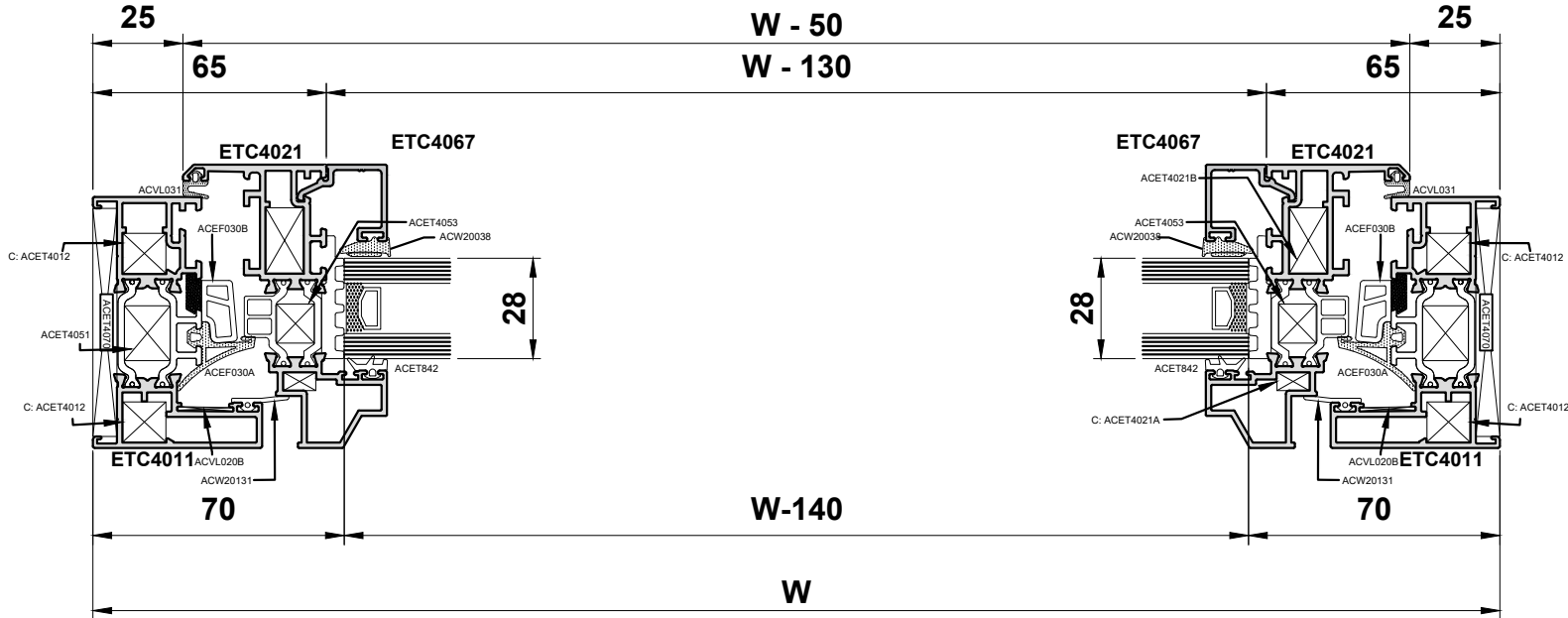
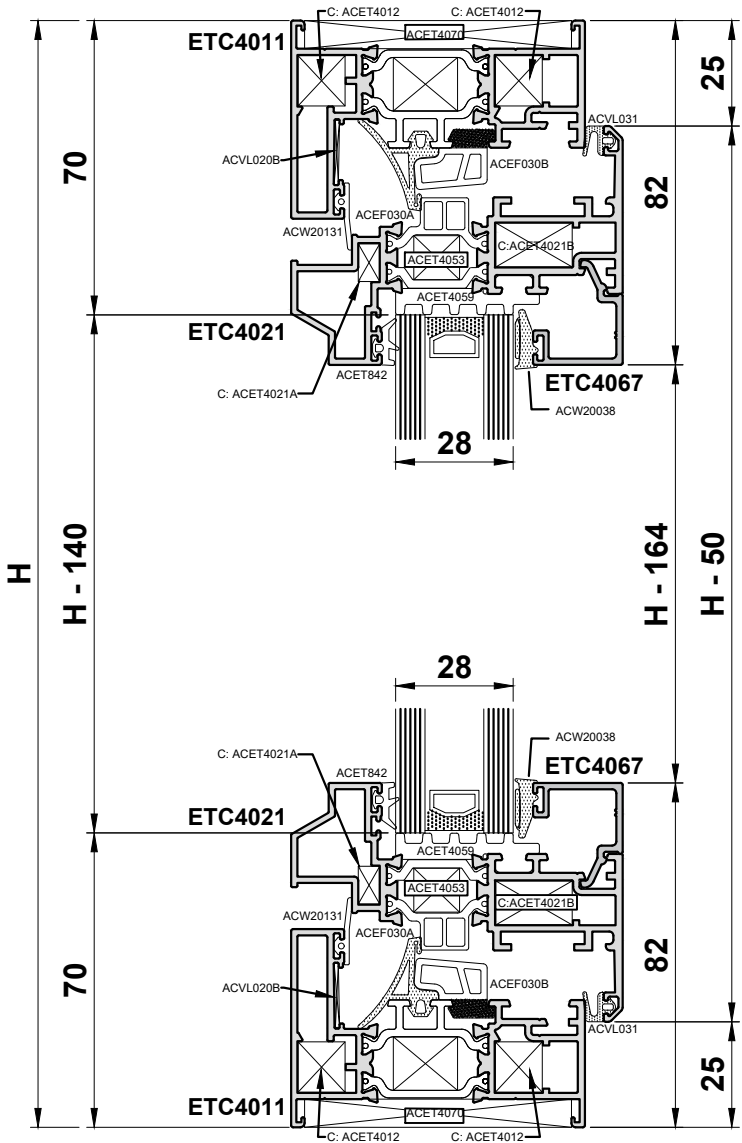
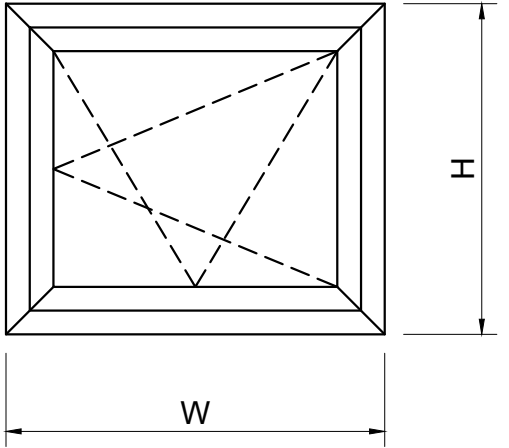
Glass
W - 140
H - 140

Accessories

ACET311	4	Chevron (sash)
ACVL020B	4	Chevron (frame)
ACET4012	8	Frame Cleat
ACET4021A	4	Sash Cleat (outer)
ACET4021B	4	Sash Cleat (inner)
ACW20131	2(W+H)	External Flat Gasket (frame)
ACEF030A	2(W+H)	Centre Gasket (frame)
ACEF030B	2(W+H)	Centre Gasket (frame)
ACEF031B	4	Centre Gasket Corner (frame)
ACVL031	2(W+H)	Flipper Gasket (sash)
ACET4042	6	Bridge Packer
ACET842	2(W+H)	Gasket E
ACW20038	2(W+H)	Wedge Gasket
ACGSL045	2	Drainage Cap

Foam

ACET4070	2(W+H)	Foam (frame)
ACET4051	2(W+H)	Foam (frame)
ACET4053	2(W+H)	Foam (sash)
ACET4059	2(W+H)	Foam (sash)



Do Not Scale From This Drawing

Cutting Information

Sections

ETC4011		2		H
ETC4011		2		W
ETC4021		2		H - 50
ETC4021		2		W1 - 34
ETC4031		1		H - 61
Bead		2		W1 - 114
Bead		2		H - 164
Bead		2		W2 - 44.5
Bead		2		H - 94

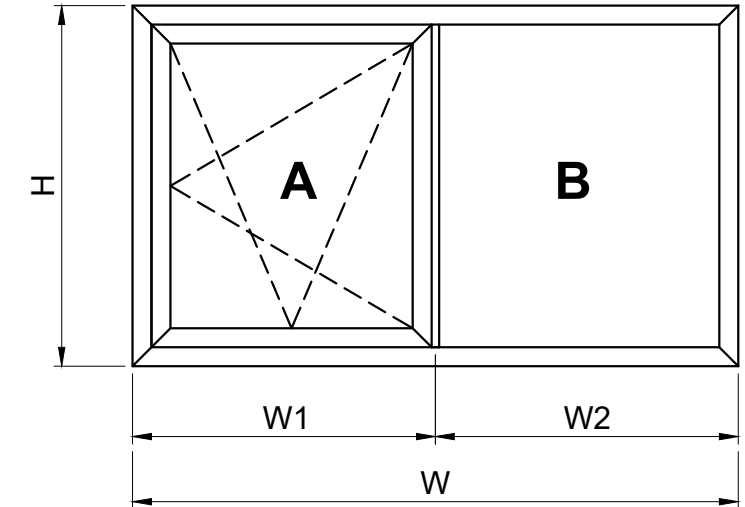
Foam

ACET4070	2(W+H)	Foam (frame)
ACET4051	2(W+H)	Foam (frame)
ACET4056	(2 x W2) + (2 x H)	Foam (frame)
ACET4053	(2 x W1) + (2 x H)	Foam (sash)
ACET4059	(2 x W1) + (2 x H)	Foam (sash)

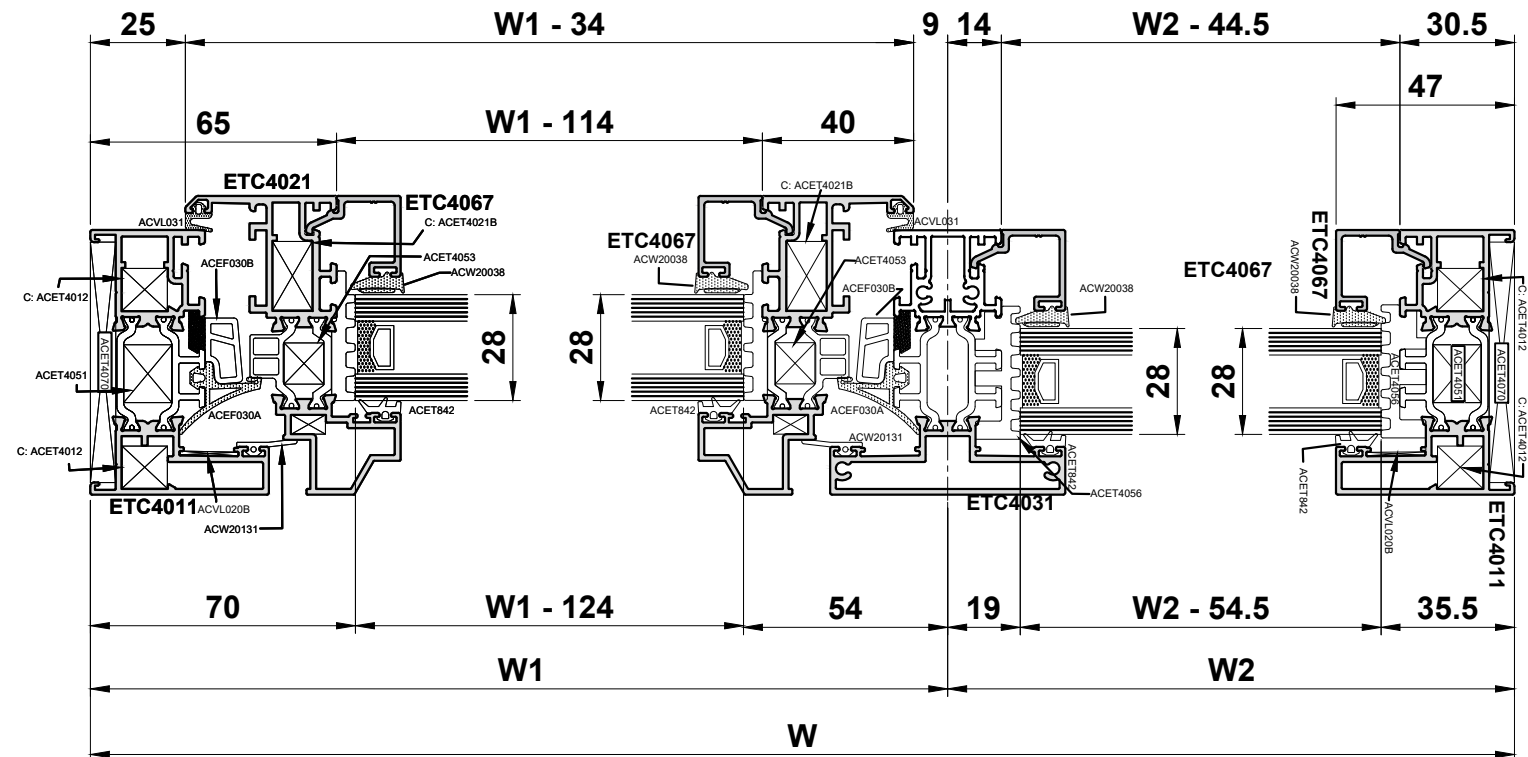
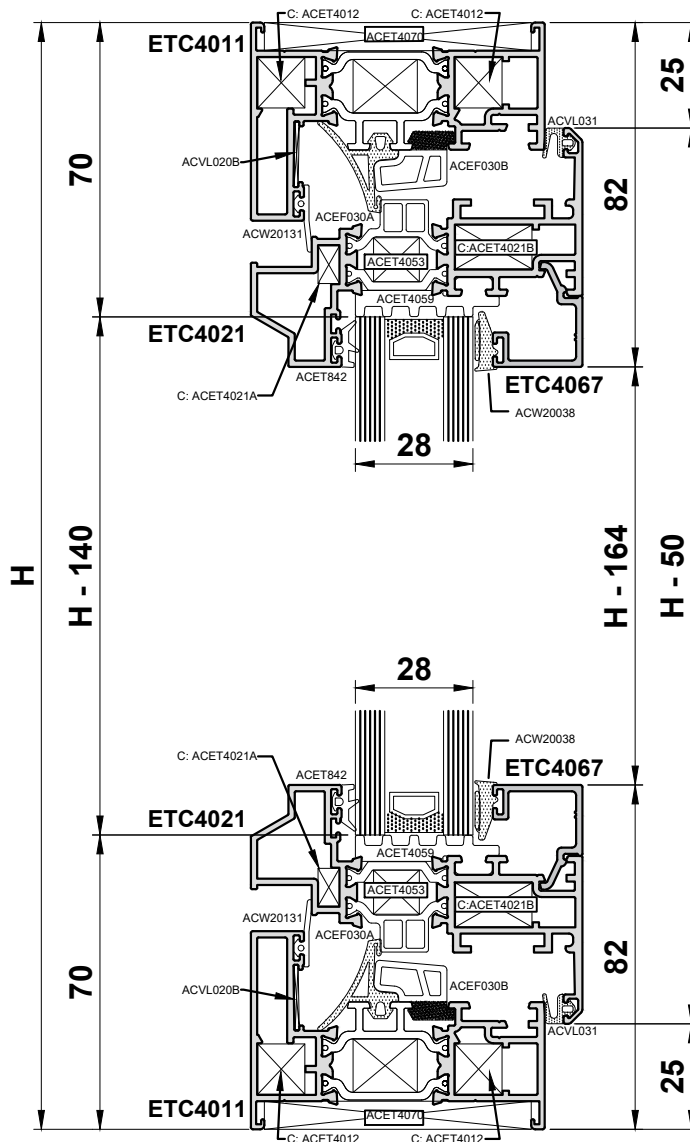
Accessories

ACET311	4	Chevron (sash)
ACVL020B	4	Chevron (frame)
ACET4012	8	Frame Cleat
ACET4021A	4	Sash Cleat (outer)
ACET4021B	4	Sash Cleat (inner)
ACVL029	4	Anti-Twist Clip (mullion)
ACET066	4	Mullion Screws
ACW20131	2(W1+H)	External Flat Gasket (frame A)
ACEF030A	2(W1+H)	Centre Gasket (frame A)
ACEF030B	2(W1+H)	Centre Gasket (frame A)
ACEF031B	4	Centre Gasket Corner (frame A)
ACVL031	2(W1+H)	Flipper Gasket (sash)
ACET4041	2	Bridge Packer (frame B)
ACET4042	6	Bridge Packer (sash)
ACET842	(2W)+(4H)	Gasket E
ACW20038	(2W)+(4H)	Wedge Gasket
ACGSL045	4	Drainage Cap

Please refer to the SB Chrono or Fapim manual
for tilt & turn hardware

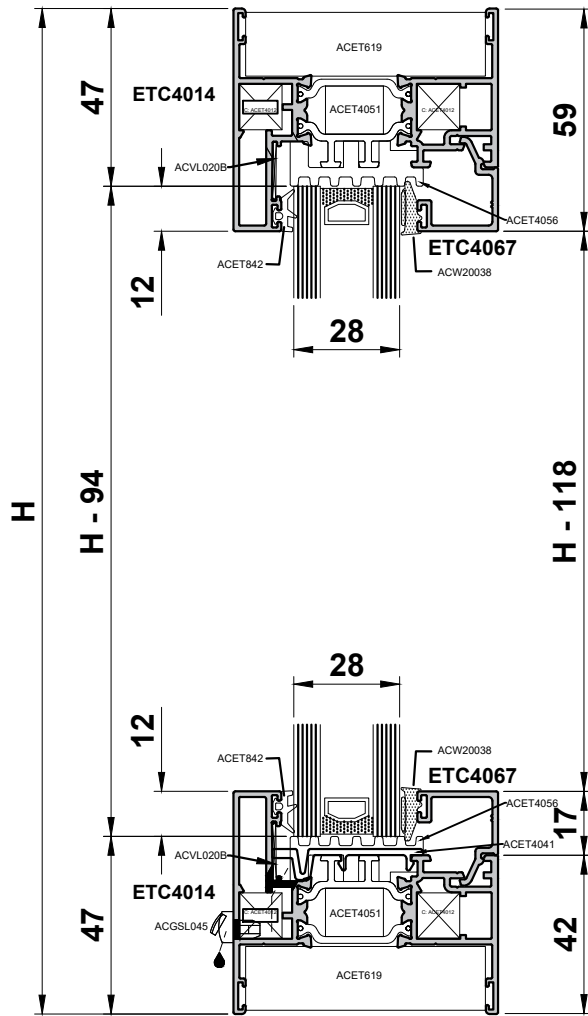


	Glass
A	W1 - 124 x H - 140
B	W2 - 54.5 x H - 71



Do Not Scale From This Drawing

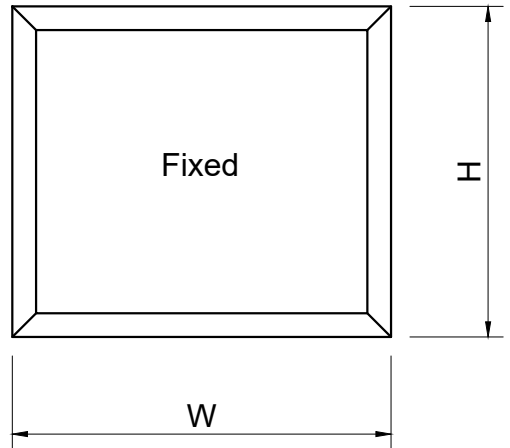
Cutting Information



Sections

ETC4014		2		H
ETC4014		2		W
Bead		2		W - 84
Bead		2		H - 118

Glass
W - 94
H - 94

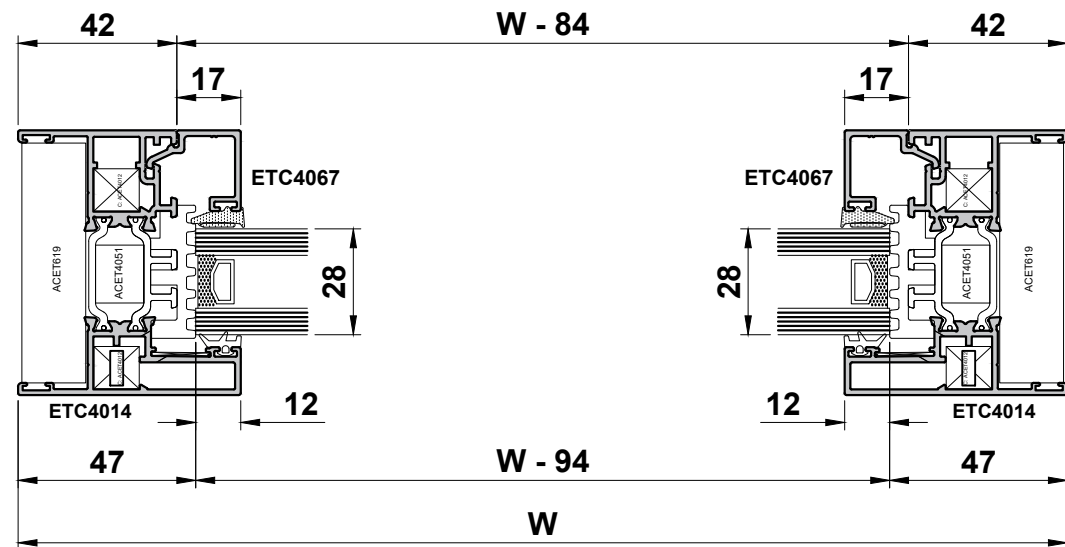


Accessories

ACVL020B	4	Chevron
ACET4012	8	Cleat Outerframe
ACET842	2(W+H)	E Gasket
ACW20038	2(W+H)	Wedge Gasket
ACGSL045	2	Drainage Cap
ACET4041	2	Bridge Packer

Foam

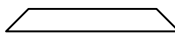
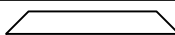
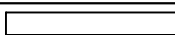
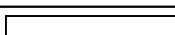
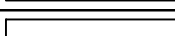
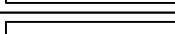
ACET619	2(W+H)	Foam
ACET4051	2(W+H)	Foam
ACET4056	2(W+H)	Foam



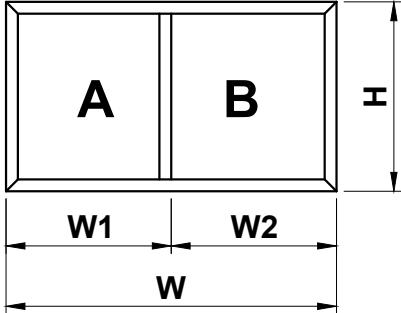
Do Not Scale From This Drawing

Cutting Information

Sections

ETC4014		2		H
ETC4014		2		W
ETC4031		1		H - 84
Bead		2		W1 - 56
Bead		2		W2 - 56
Bead		4		H - 118

	Glass
A	W1 - 66 x H - 94
B	W2 - 66 x H - 94

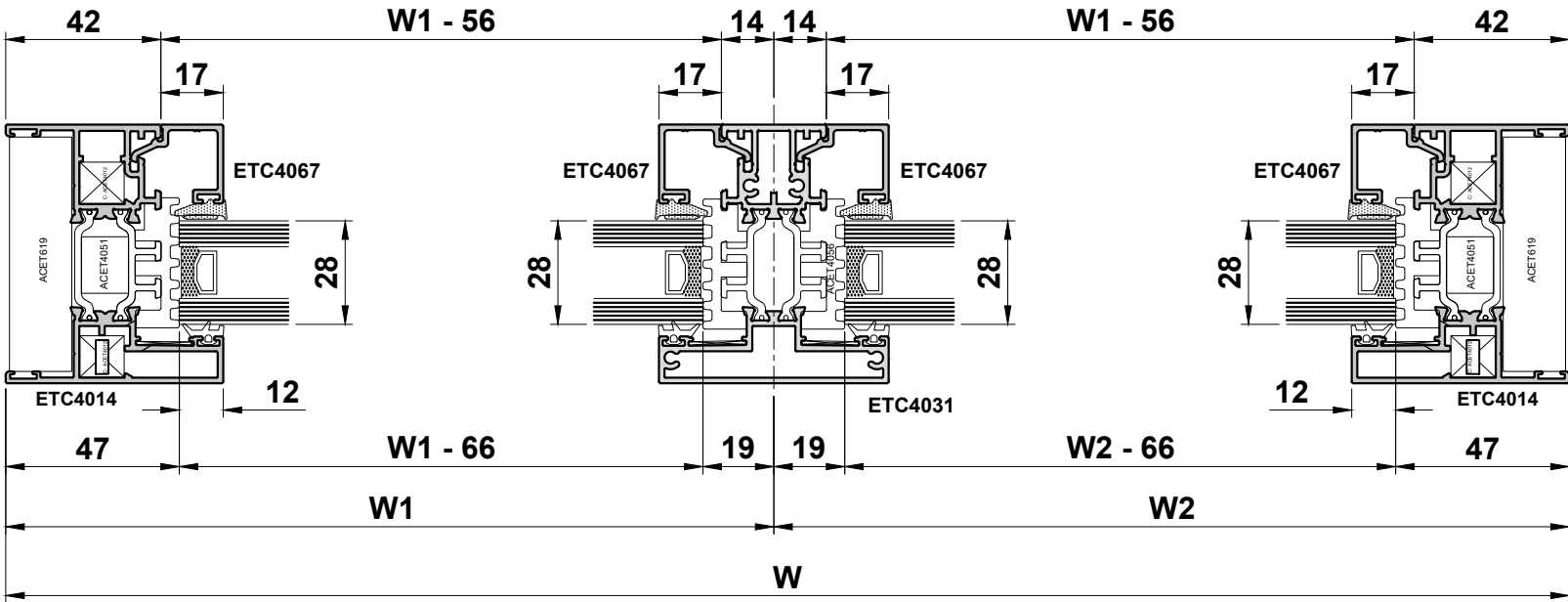
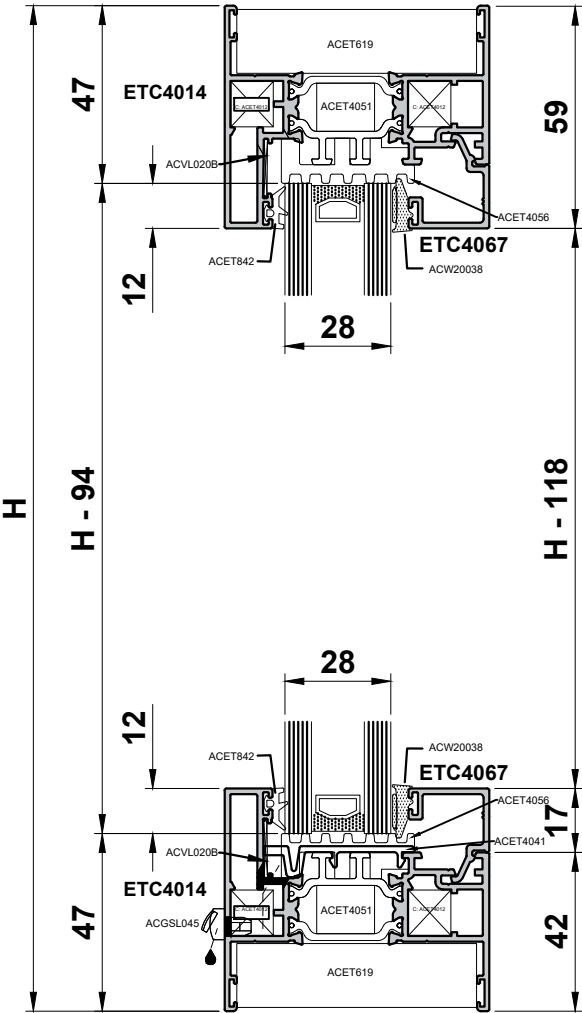


Accessories

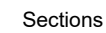
ACVL020B	4	Chevron
ACET4012	8	Cleat Outerframe
ACVL029	4	Anti-Twist Clip
ACET066	4	Mullion Screws
ACET842	(2W)+(4H)	E Gasket
ACW20038	(2W)+(4H)	Wedge Gasket
ACGSL045	2	Drainage Cap
ACET4041	4	Bridge Packer

Foam

ACET619	2(W+H)	Foam
ACET4051	2(W+H)	Foam
ACET4056	(2 x W) + (4 x H)	Foam

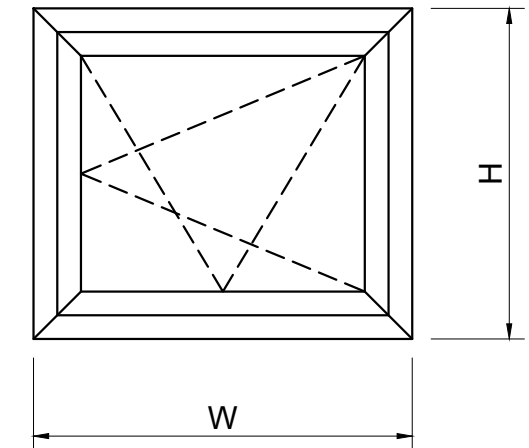


Do Not Scale From This Drawing



ETC4014		2		H
ETC4014		2		W
ETC4021		2		H - 74
ETC4021		2		W - 74
Bead		2		W - 15
Bead		2		H - 18

Glass
W - 164
H - 164



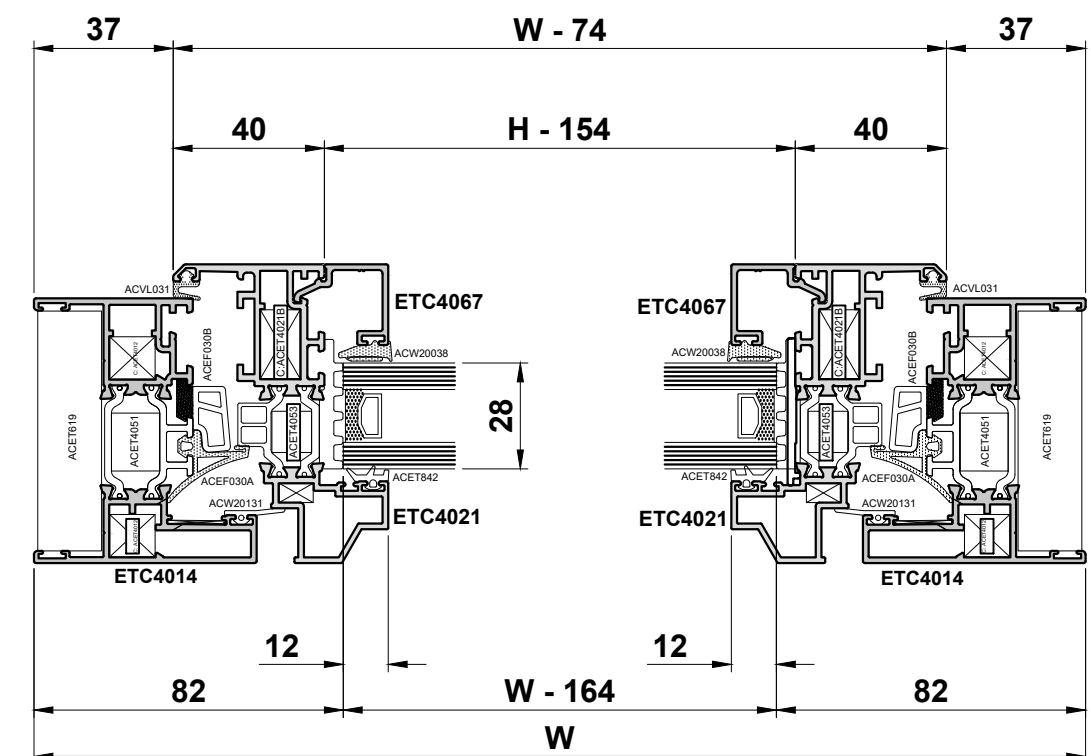
Accessories

ACET311	4	Chevron (sash)
ACVL020B	4	Chevron (frame)
ACET4012	8	Frame Cleat
ACET4021A	4	Sash Cleat (outer)
ACET4021B	4	Sash Cleat (inner)
ACW20131	2(W+H)	External Flat Gasket (frame)
ACEF030A	2(W+H)	Centre Gasket (frame)
ACEF030B	2(W+H)	Centre Gasket (frame)
ACEF031B	4	Centre Gasket Corner (frame)
ACVL031	2(W+H)	Flipper Gasket (sash)
ACET4042	6	Bridge Packer
ACET842	2(W+H)	Gasket E
ACW20038	2(W+H)	Wedge Gasket
ACGSL045	2	Drainage Cap

Please refer to the SB Chrono or Fapim manual
for tilt & turn hardware

Foam

ACET619	2(W+H)	Foam (frame)
ACET4051	2(W+H)	Foam (frame)
ACET4053	2(W+H)	Foam (sash)
ACET4059	2(W+H)	Foam (sash)



Do Not Scale From This Drawing

Cutting Information

Sections

ETC4014		2		H
ETC4014		2		W
ETC4021		2		H - 74
ETC4021		2		W1 - 46
ETC4031		1		H - 84
Bead		2		W1 - 126
Bead		2		H - 188
Bead		2		W2 - 56
Bead		2		H - 118

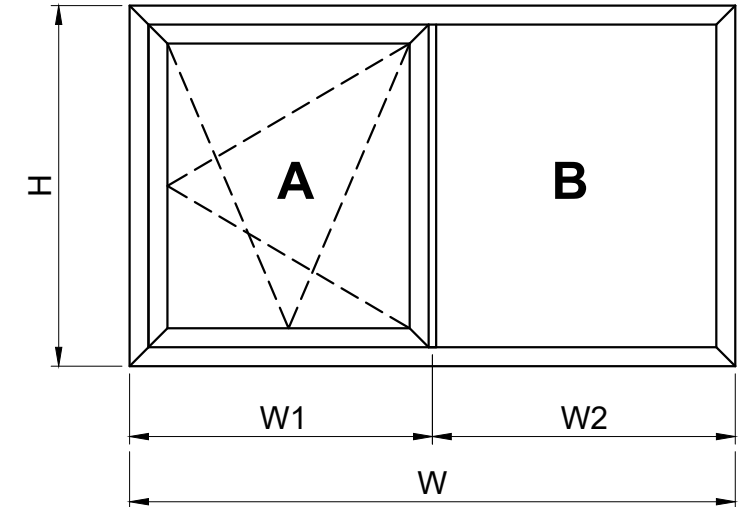
Foam

ACET916	2(W+H)	Foam (frame)
ACET4051	2(W+H)	Foam (frame)
ACET4056	(2 x W2) + (2 x H)	Foam (frame)
ACET4053	(2 x W1) + (2 x H)	Foam (sash)
ACET4059	(2 x W1) + (2 x H)	Foam (sash)

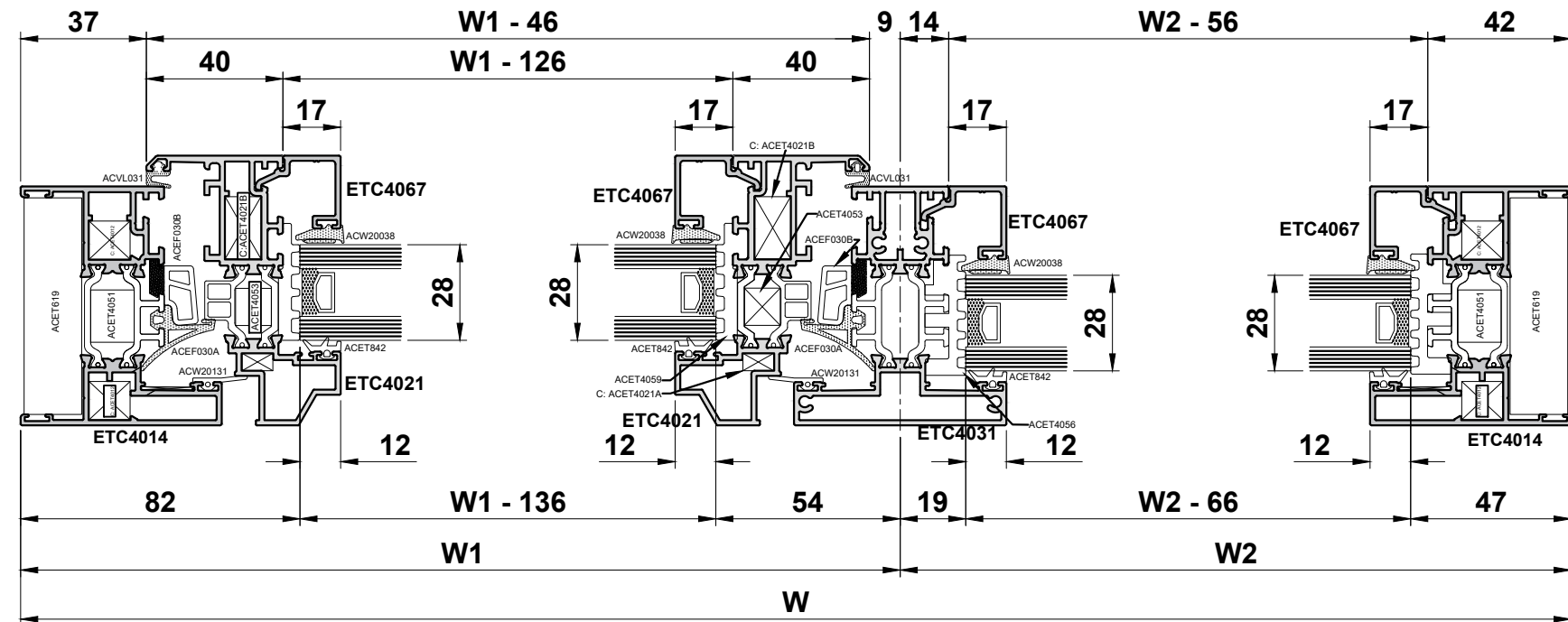
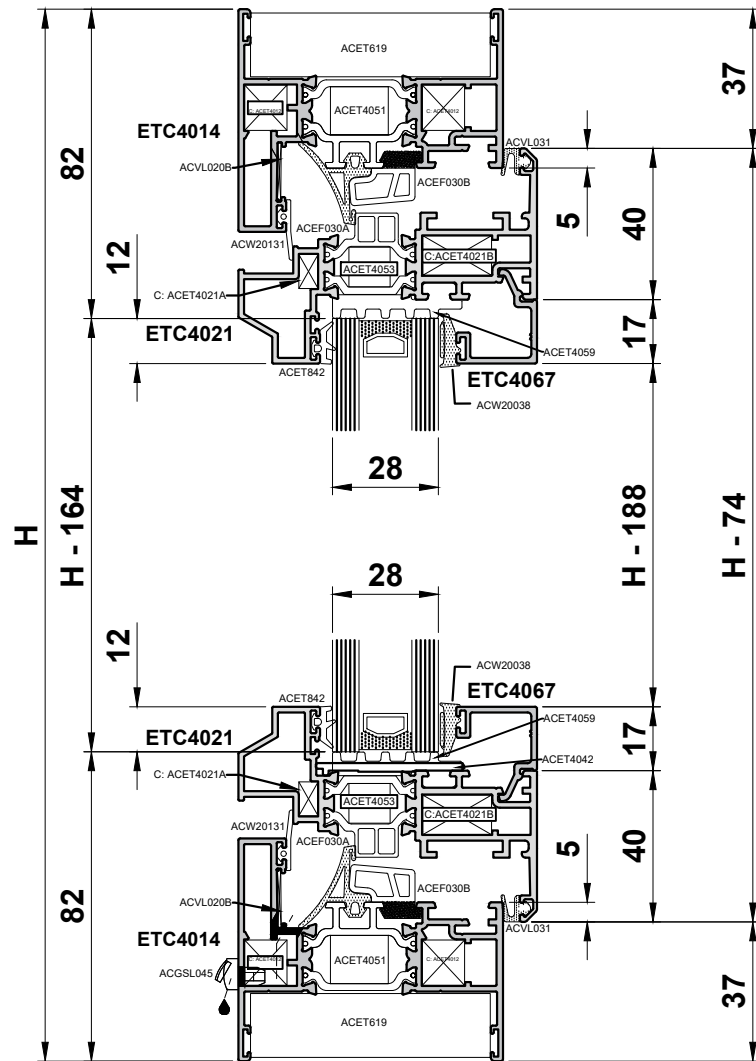
Accessories

ACET311	4	Chevron (sash)
ACVL020B	4	Chevron (frame)
ACET4012	8	Frame Cleat
ACET4021A	4	Sash Cleat (outer)
ACET4021B	4	Sash Cleat (inner)
ACVL029	4	Anti-Twist Clip (mullion)
ACET066	4	Mullion Screws
ACW20131	2(W1+H)	External Flat Gasket (frame A)
ACEF030A	2(W1+H)	Centre Gasket (frame A)
ACEF030B	2(W1+H)	Centre Gasket (frame A)
ACEF031B	4	Centre Gasket Corner (frame A)
ACVL031	2(W1+H)	Flipper Gasket (sash)
ACET4041	2	Bridge Packer (frame B)
ACET4042	6	Bridge Packer (sash)
ACET842	(2W)+(4H)	Gasket E
ACW20038	(2W)+(4H)	Wedge Gasket
ACGSL045	4	Drainage Cap

Please refer to the SB Chrono or Fapim manual
for tilt & turn hardware



	Glass
A	W1 - 136 x H - 164
B	W2 - 66 x H - 94



Do Not Scale From This Drawing