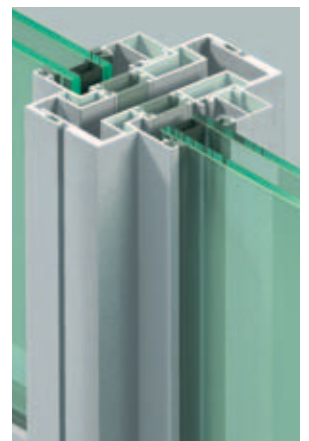


NC 135 WW

Architectural Envelope Window Wall



CATALOGUE RELEASE

CURRENT RELEASE

2009

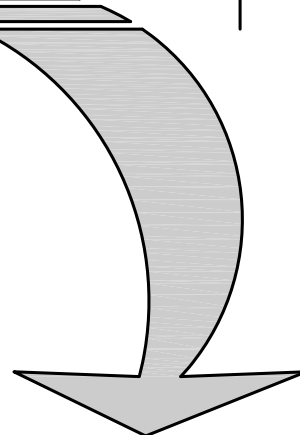
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Previous version:

SINGLE PAGE UPDATE:

Each page has a "Release" date
and a "replaced version" date if updated,
both are located at the lower right corner of each page.

As some pages may not vary from previous release,
please consider the Environment
when printing this Catalogue



NC 135 WW



Features

- 6063-T5 Aluminum Alloy Frame
- Shop Glazing
- Frame Depth 135 mm [5 3/8"]
- Captured Glazing
- Various Glass Size
- Weather Stripping: EPDM Gaskets
- Thermal Barrier: Polyamide
- Straight Cut 90° fastening with screws
- Custom Color
- Painted or Anodized Finish
- Dual Finish Available
- Durable Components

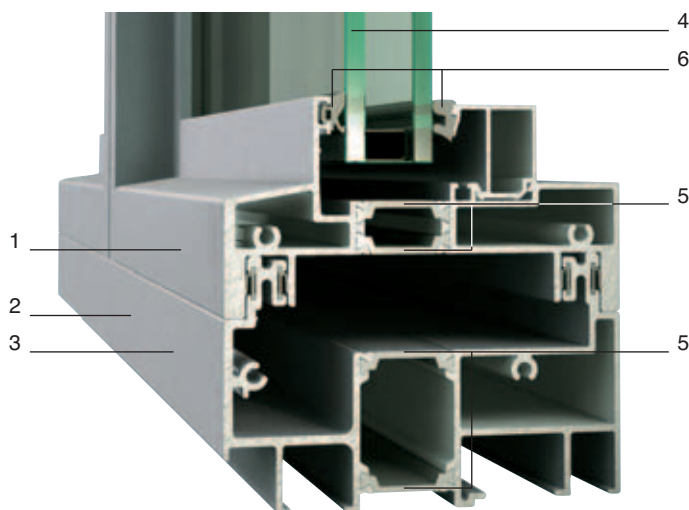
Benefits

- Quick Installation from inside
- Acoustic Insulation
- Thermal Insulation
- Quiet and Smooth Closing System
- Easy Maintenance
- Easy Glass Replacement

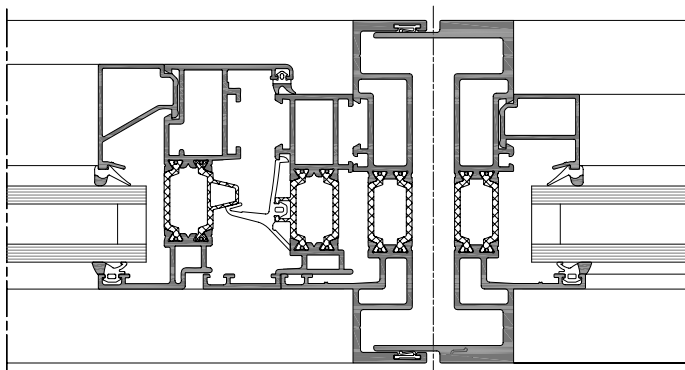
Applications

- Low, Mid, and High-Rise Buildings
- Storefronts

Technology

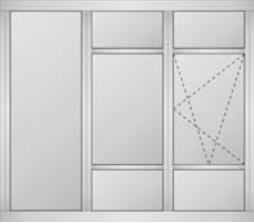


- 1- Pre-Assembled Module
- 2- Gutter
- 3- Painted or Anodized Finish
- 4- Insulating Glass Unit
- 5- Polyamidic Thermal Barrier
- 6- EPDM Gaskets

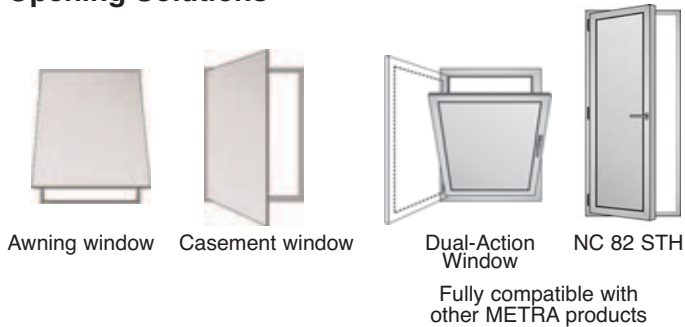


Horizontal Section
Operable-Fixed

Performance data

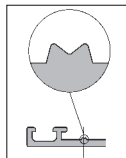
Tested Configuration	Specimen Size	AAMA / ASTM TEST PROCEDURES	
 NC 135 WW	DP 65 Window Wall 3680 x 3048 mm [115" x 120 "]	Air tightness @ 75 Pa [1.57 psf]	Air tightness @ 300 Pa [6.27 psf]
		$Q_{average}$: 0.23 L/s.m ² [0.045 ft ³ /min-ft ²]	$Q_{average}$: 0.46 L/s.m ² [0.091 ft ³ /min-ft ²]
		Static water penetration: ASTM E 331	
		DP 100: 720 Pa [15 psf]	
		Dynamic water penetration: AAMA 501.1	
		No water infiltration under a differential pressure of 720 Pa [15 psf]	
		Structural: ASTM E 330	
		DP 65 - Blow-out pressure: 4668 Pa [97.5 psf]	

Opening Solutions



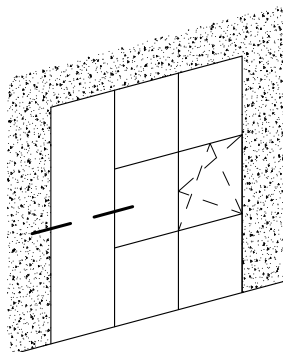
Quality

METRA stands for quality and optimal performance. Only original METRA profiles and accessories can certify the highest performance. Original METRA products have an "M" mark on the interior surface.



METRA quality is certified by ISO 9001. METRA controls the entire process of production for the extrusions. Manufacturing and installation of final products are performed through a network of independent specialists.





AIR-INS inc.

1320, boul. Lionel-Boulet, Varennes (Québec) J3X 1P7 – Tél. : (450) 652-0838 • Fax : (450) 652-7588 • info@air-ins.com

PERFORMANCE TESTS IN ACCORDANCE WITH AAMA 501.1,
ASTM-E283, ASTM-E330, ASTM E331 AND ASTM-E547 TEST PROCEDURES
(WITH REFERENCE TO CAN/CSA A440-00 "WINDOWS" STANDARD)

Prepared for:
METRA SYSTEM INC.
1995, BOUL. INDUSTRIEL
LAVAL, QUÉBEC
H7S 1P6

SUMMARY OF RESULTS	
Product Type:	Aluminium Window Wall
Product Series/Model:	NC 135 W/W
Skylight dimensions:	3680 mm width x 3048 mm height (145 in. width x 120 in. height)
<i>Results with reference to ASTM testing procedures only:</i>	
Air Tightness:	$Q_{average} = 0.23 \text{ L/s}\cdot\text{m}^2 \text{ @ } 75 \text{ Pa}$ (0.045 ft ³ /min-ft ² @ 1.57 psf) $Q_{average} = 0.46 \text{ L/s}\cdot\text{m}^2 \text{ @ } 300 \text{ Pa}$ (0.091 ft ³ /min-ft ² @ 6.27 psf)
Static Water Tightness:	No water infiltration under a differential pressure of 720 Pa (15 psf)
Dynamic Water Tightness:	No water infiltration under a differential pressure of 720 Pa (15 psf) equivalent to a wind velocity of 124 km/h (77 mph).
Structural Resistance:	Negative and positive design load = 3120 Pa (65 psf)
<i>Results with reference to CAN/CSA A400-00 "Windows" Standard:</i>	
Air Tightness:	A3/F
Water Tightness:	B7
Wind Load Resistance:	C4
Test Completion Date:	06/25/2009

AIR-INS INC.

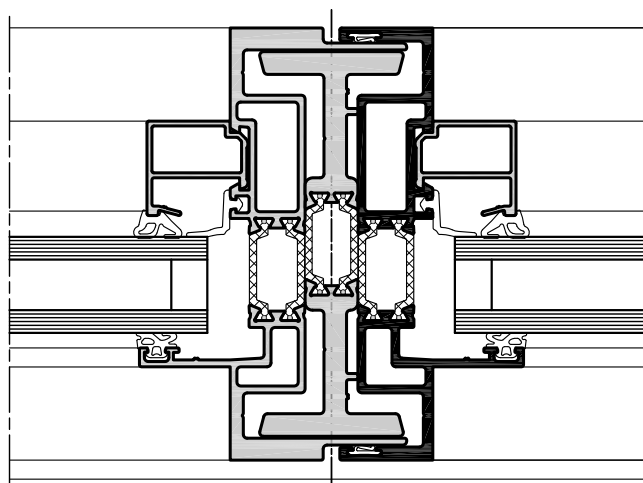
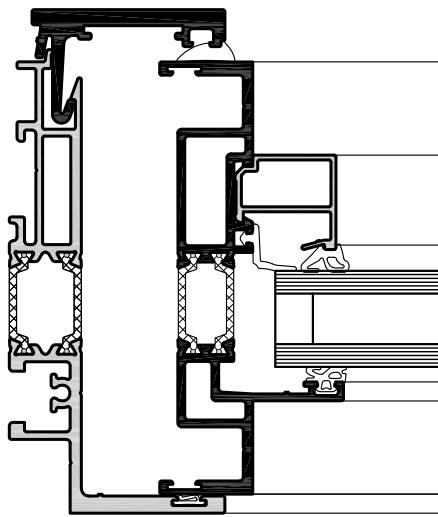
Report: AI-03257-B1
Report date: August 28th, 2009

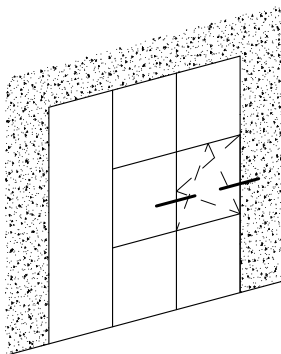
1320 boul. Lionel-Boulet
Varennes, Québec, Canada
J3X 1P7

Number of pages: 12

(Tél): (450) 652-0838
(Fax): (450) 652-7588

The results in this report relate only to the items tested. This report shall not be reproduced except in full, without the written approval of Air-Ins Inc.





AIR-INS inc.

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**PERFORMANCE TESTS
IN ACCORDANCE WITH CAN/CSA A440-00**

Prepared for:

**METRA SYSTEMS
1995 INDUSTRIAL BLVD
LAVAL, QUÉBEC
H7S 1P6
450-629-1806**

SUMMARY OF RESULTS

Product Type :	Aluminum Tilt and Turn Window
Product Series/Model :	NC 65 STH Series Tilt and Turn Window
Overall Dimensions:	1146 mm width x 1414 mm height
Air Tightness :	A3
Water Tightness :	B7
Wind Load Resistance :	C5
Test Completion Date :	07/28/2009

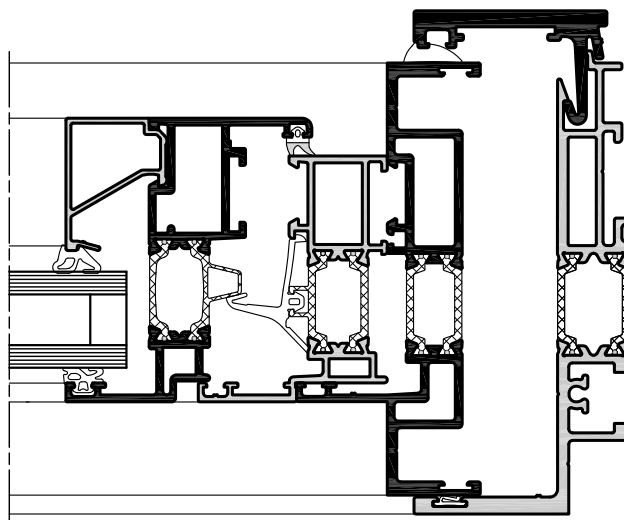
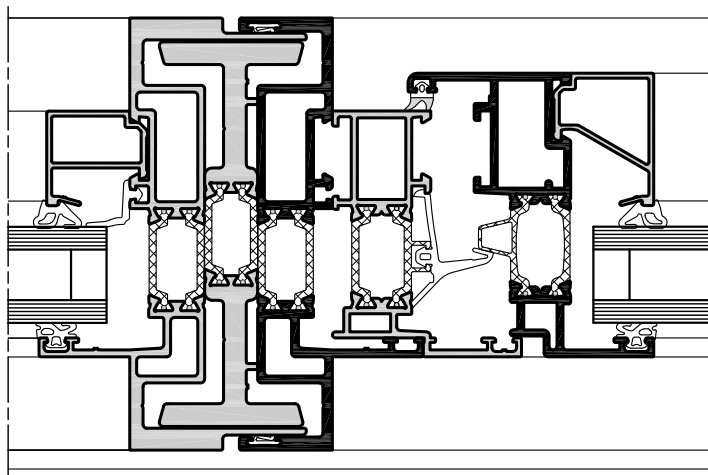
AIR-INS INC.

Report: AI-03257-C1
Date: 07/29/2009

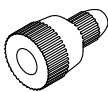
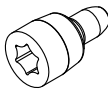
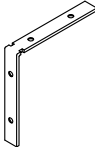
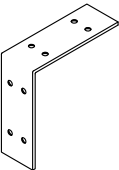
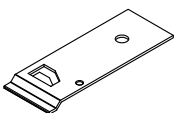
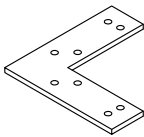
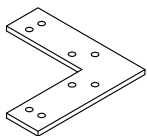
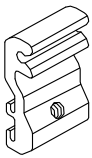
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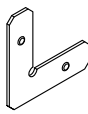
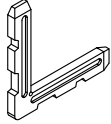
Number of pages: 7
Number of drawings: 1

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CODE	DRAWING	UTILIZATION
Ma 2410		Pin for corner keys Material: Aluminium
Ma 2411		Screw for corner keys T25 Torx head Material: Aluminium
Ma 2710		Receptors corner key Material: Aluminium
Ma 2711		Receptors corner key Material: Aluminium
Ma 2712		Receptors Fastener Material: Aluminium
Ma 2713		Receptors corner key for positive angle solution Material: Aluminium
Ma 2714		Receptors corner key for negative angle solution Material: Aluminium
Ma 2718		Outside shear block for NC70089 transom Material: Aluminium

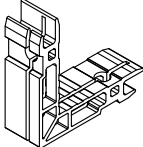
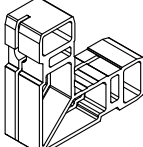
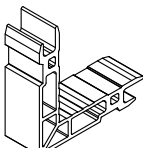
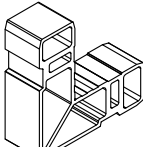
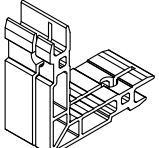
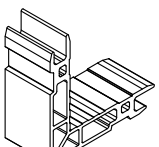
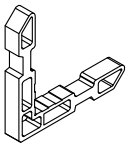
CODE	DRAWING	UTILIZATION
Ma 2719		Alignment corner key for NC70090 frame Material: Stainless steel
Ma 5550		Pin for corner keys Material: Zamak
Ma 6848		Crimp corner key for NC70090 frame Material: Aluminium
Ma 7401		Tilt and Turn hinges set Material: various
Ma 7402		90 - 130 kg [200 - 286 lb] complementary set Material: various
Ma 7403		Arm 400 Material: various
Ma 7404		Arm 600 Material: various
Ma 7405		Center set Material: various

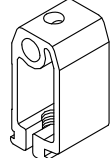
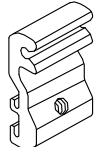
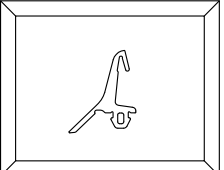
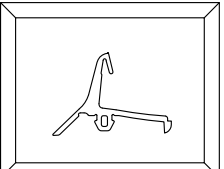
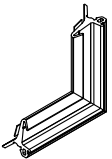
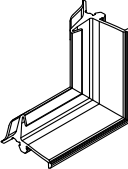
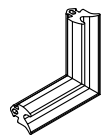


CODE	DRAWING	UTILIZATION
Ma 7406		Gear device Material: Various
Ma 7407		Center set Material: Various
Ma 7408		Closing point Material: Various
Ma 7409		Keeper Material: Various
Ma 7410		Secondary Arm Material: Various
Ma 7411		Roller closing point Material: Various
Ma 7412		Closing set Material: Various
Ma 7413		Hinges set Material: Various

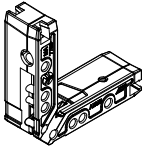
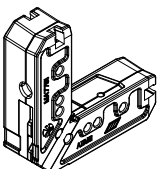
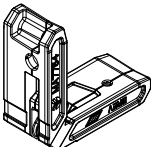
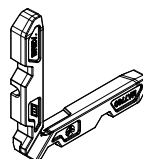
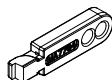
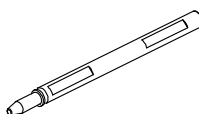
CODE	DRAWING	UTILIZATION
Ma 7415		Hinge Material: Various
Ma 7416		Snubber Material: Various
Ma 7417		Tilt op. arms Material: Various
Ma 7428		Handle Material: Various
Ma 7430		Handle Material: Various
Ma 7432		Handle Material: Various
Ma 7470		Closing points set Material: Various
Ma 7478		Tilt op. Closing points set Material: Various

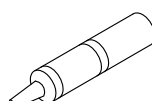
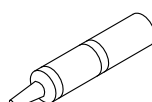
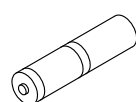


CODE	DRAWING	UTILIZATION
Ma 7479		Tilt op. arms Material: Various
Ma 7500		Crimp / Pin corner key for NC70090 frame Material: Aluminium
Ma 7501		Crimp / Pin corner key for NC70132 frame Material: Aluminium
Ma 7514		Crimp corner key for NC70090 frame Material: Aluminium
Ma 7515		Crimp corner key for NC70132 frame Material: Aluminium
Ma 7528		Crimp / Pin corner key for NC7535 sash Material: Aluminium
Ma 7539		Crimp corner key for NC7535 sash Material: Aluminium
Ma 7560		Crimp corner key for NC7535 sash Material: Aluminium

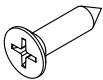
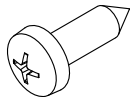
CODE	DRAWING	UTILIZATION
Ma 7568		Pin for corner keys Material: Brass
Ma 7593		Inside shear block for NC7557 / NC70089 transoms Material: Aluminium
Ma 7608		Outside shear block for NC7557 transom Material: Aluminium
Ma 7651		Vulcanized frame for MG750D Material: EPDM
Ma 7652		Vulcanized frame for MG754D Material: EPDM
Ma 7653		Vulcanized corner for MG750D Material: EPDM
Ma 7654		Vulcanized corner for MG754D Material: EPDM
Ma 7657		Vulcanized corner for MG764D Material: EPDM

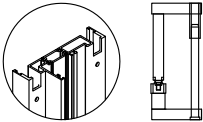


CODE	DRAWING	UTILIZATION
Ma 7750		Crimp / Pin / Screw corner key for NC70090 frame Material: Aluminium
Ma 7751		Crimp / Pin / Screw corner key for NC70132 frame Material: Aluminium
Ma 7754		Crimp / Pin / Screw corner key for NC7535 sash Material: Aluminium
Ma 7760		Crimp / Pin / Screw corner key for NC7535 sash Material: Aluminium
Ma 7764		Tilt and turn extension for frame corner keys Material: Aluminium
Ma 8250		Detachable pin for corner keys Material: Aluminium

CODE	DRAWING	UTILIZATION
Mu 0195	 Indicative picture	Milling group for Transoms Material: Steel
Mu 0430		Sealant for junctions Material: Butilic sealant
Mu 0440		Bi component cartridge 550 g. Material: -.
Mu 0441		Bi component MU0440 manual gun
Mu 0442		Bi component MU0440 pneumatic gun Material: -.
Mu 0443		Mixing device for MU0440 cartridge Material: -.
Mu 0481		Sealant for junctions Material: Siliconic sealant
Mu 0501		Sealant for Mu 3200 Glue machine Material: Siliconic sealant



CODE	DRAWING	UTILIZATION
Mu 0613		ISO 7050 4.8 x 16 screw for corner solution Material: stainless-steel
Mu 0706		Self-tapping screw for MA5957 Material: stainless-steel

CODE	DRAWING	UTILIZATION
Mu 4000		Punching machine Power unit 4 punch units capacity Material: various
Mu 4001		Punching machine Power unit 2 punch units capacity Material: various
Mu 4080		Punching unit for NC70076 - NC70079 Material: various
Mu 2102		Crimping and Pin automatic machine Material: various
Mu 2103		Pneumatic Pin Gun Material: various
Mu 3200		Glue machine Material: various
Mu 3202		Crimping machine Material: various



CODE	DRAWING	UTILIZATION
Mg 385D		Inside Glass Gasket Material: EPDM
Mg 386D		Outside Glazing Gasket 4 [$\frac{3}{16}$ "] Material: EPDM
Mg 387D		Unit Junction Gasket Material: EPDM
Mg 388D		Frame Gasket Material: EPDM
Mg 440D		Perimeter Gasket for Snap-on profiles 4 [$\frac{3}{16}$ "] Material: EPDM
Mg 612D		Inside Glass Gasket for Glass Stop 3 [$\frac{1}{8}$ "] to 4 [$\frac{3}{16}$ "] Material: EPDM
Mg 613D		Inside Glass Gasket for Glass Stop 4 [$\frac{3}{16}$ "] to 6 [$\frac{1}{4}$ "] Material: EPDM
Mg 614D		Inside Glass Gasket for Glass Stop 6.5 [$\frac{1}{4}$ "] to 8 [$\frac{5}{16}$ "] Material: EPDM

CODE	DRAWING	UTILIZATION
Mg 750D		Main Gasket for Operable windows Material: EPDM
Mg 754D		Main Gasket for Operable windows Material: EPDM
Mg 761D		Outside Glazing Gasket 4 [$\frac{3}{16}$ "] Material: EPDM
Mg 764D		Inside Sash Gasket Material: EPDM



PROFILE CLASS

What is the Profile Class?

Is the fastest way to know
if a shape is available for production

How many classes do we have?



1. Class Y: Extrusion die available at Metra Systems.



Profiles available on short term
Minimum quantities required
Please verify term and conditions with
Metra Systems sales department



2. Class N: Extrusion die is not available at Metra Systems.

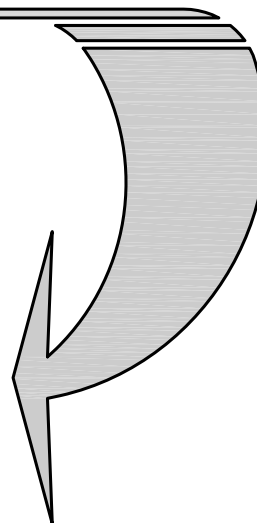


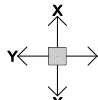
Please verify term and conditions with
Metra Systems sales department

Where do I see the Profile Class?

At the Profile Chart - Group A (next page)

SECTION	CODE	BAR EXTENSION m [ft]	2x 2y	Wx Wy	UTILIZATION	PA CU
	NC70058	6500	38.429	9.965	Gutter	B
		[21'-0"]	170.122	29.496		Y
	NC70076	6500	155.516	26.403	Frame Mullion	B
		[21'-0"]	12.305	3.489		Y
	NC70079	6500	89.795	15.068	Frame Mullion	B
		[21'-0"]	5.642	1.783		Y
	NC70082	6500	27.026	9.624	Frame Top - Bottom Transom	B
		[21'-0"]	239.634	33.053		Y
	NC70084	6500	140.115	27.555	Reinforcement	B
		[21'-0"]	5.429	2.797		Y
	NC70089	6500	19.383	4.624	Frame Intermediate Transom	B
		[21'-0"]	84.918	15.54		Y
	NC70090	6500	20.329	5.809	Operable Frame	B
		[21'-0"]	5.085	1.532		Y





METRA

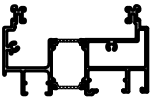
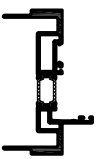
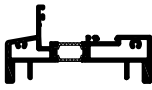
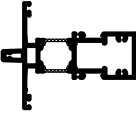
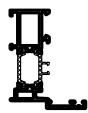
74
SYSTEM

A
GROUP

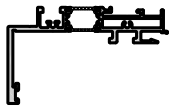
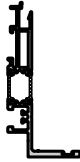
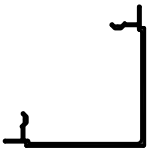
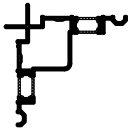
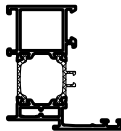
02
PAGE

SECTION	CODE	BAR LENGTH m [ft]	Jx Jy cm ⁴	Wx Wy cm ³	UTILIZATION	PAGE
						CLASS
	NC7535	6500	7.145	2.176	Sash	B 01
		[21'-3 ⁷ / ₈ "	32.592	8.115		Y
	NC7557	6500	15.402	3.667	36 mm [1 ¹ / ₂ " Transom	B 02
		[21'-3 ⁷ / ₈ "	30.3	7.879		Y
	NC7686	6500	-	-	20 mm [13/ ₁₆ " Glass Stop	B 02
		[21'-3 ⁷ / ₈ "	-	-		Y
	NC7687	6500	-	-	25 mm [1" Glass Stop	B 03
		[21'-3 ⁷ / ₈ "	-	-		Y
	NC7688	6500	-	-	30 mm [3/ ₁₆ " Glass Stop	B 03
		[21'-3 ⁷ / ₈ "	-	-		Y
	NC7689	6500	-	-	35 mm [3/ ₁₆ " Glass Stop	B 03
		[21'-3 ⁷ / ₈ "	-	-		N
	NC7689	6500	-	-	40 mm [9/ ₁₆ " Glass stop	B 03
		[21'-3 ⁷ / ₈ "	-	-		N



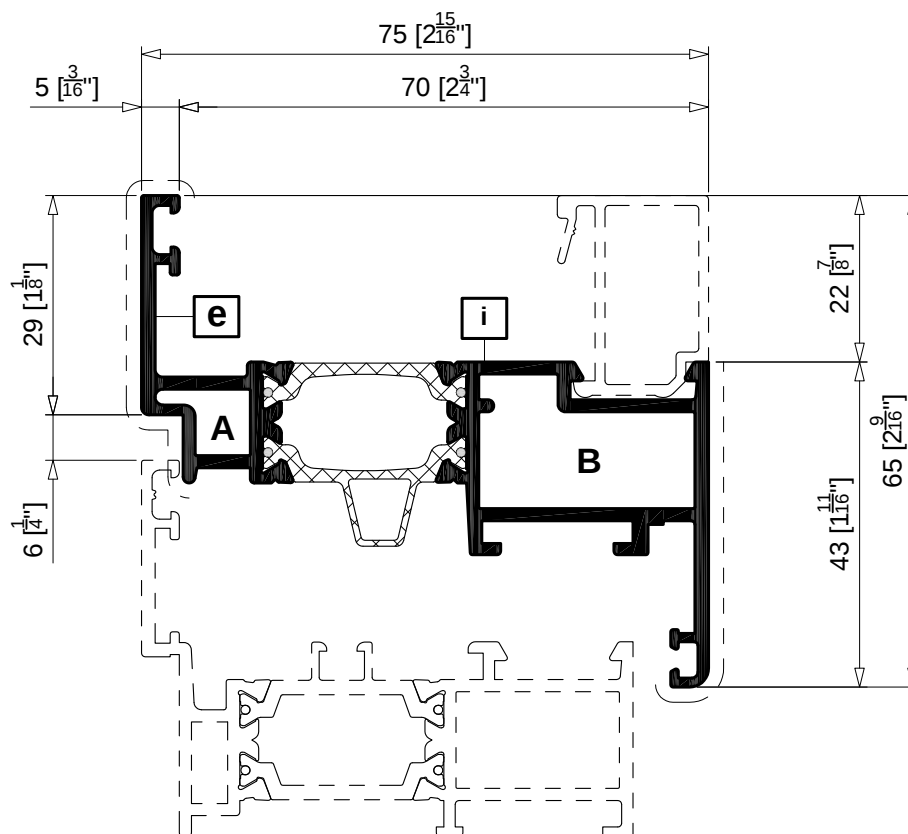
SECTION	CODE	BAR LENGTH m [ft]	Jx Jy cm ⁴	Wx Wy cm ³	UTILIZATION	PAGE
						CLASS
	NC70058	6500	38.429	9.965	Gutter	B 04
		[21'-3 ⁷ / ₈ "	170.122	29.496		Y
	NC70076	6500	155.516	26.403	Frame Mullion	B 05
		[21'-3 ⁷ / ₈ "	12.305	3.459		Y
	NC70079	6500	89.755	15.068	Frame Mullion	B 05
		[21'-3 ⁷ / ₈ "	5.642	1.783		Y
	NC70082	6500	27.026	9.624	Frame Top - Bottom Transom	B 06
		[21'-3 ⁷ / ₈ "	239.634	33.053		Y
	NC70084	6500	140.115	27.555	Reinforcement	B 06
		[21'-3 ⁷ / ₈ "	5.429	2.797		Y
	NC70089	6500	19.383	4.614	Frame Intermediate Transom	B 07
		[21'-3 ⁷ / ₈ "	84.918	15.54		Y
	NC70090	6500	20.329	5.809	Operable Frame	B 08
		[21'-3 ⁷ / ₈ "	5.055	1.532		Y



SECTION	CODE	BAR LENGTH m [ft]	Jx Jy cm ⁴	Wx Wy cm ³	UTILIZATION	PAGE
						CLASS
	NC70120	6500	39.628	7.572	Head Receptor	B 09
		[21'-3 ⁷ / ₈ "	194.212	26.323		Y
	NC70121	6500	-	-	Head Receptor Snap-on	B 09
		[21'-3 ⁷ / ₈ "	-	-		Y
	NC70123	6500	112.939	15.55	Jamb Receptor	B 10
		[21'-3 ⁷ / ₈ "	11.424	2.852		Y
	NC70124	6500	-	-	Jamb Receptor Snap-on	B 10
		[21'-3 ⁷ / ₈ "	-	-		Y
	NC70129	6500	145.954	15.726	90° Corner solution	B 11
		[21'-3 ⁷ / ₈ "	145.954	15.726		N
	NC70130	6500	58.898	8.285	90° Corner solution	B 11
		[21'-3 ⁷ / ₈ "	58.898	8.285		N
	NC70132	6500	25.187	7.179	Operable Frame	B 12
		[21'-3 ⁷ / ₈ "	9.172	2.419		N



NC 7535



SECTION	NC7535	J_X J_Y cm ⁴	W_X W_Y cm ³	UTILIZATION
	BAR LENGTH m [ft]	7.145 32.592	2.176 8.115	SASH
	6500 [21'-3 7/8"]	OUT. PERIMETER		EXPOSED SURFACE
		361 [14 3/8"]	— — — 103 [4 1/8"]	

COMPONENTS

SHAPE	CODE	OUT. PERIMETER	EXPOSED SURFACE
i	NC7534	234 [9 3/8\"]	— — — 50 [1 15/16\"]
e	NC7533	159 [6 1/4\"]	— — — 45 [1 3/4\"]
	346600		346800

A		B		
	MA7560		MA7760	
	MA5550 x2 MA7528		MA7539	

mm
[inches]

SCALE 1:1

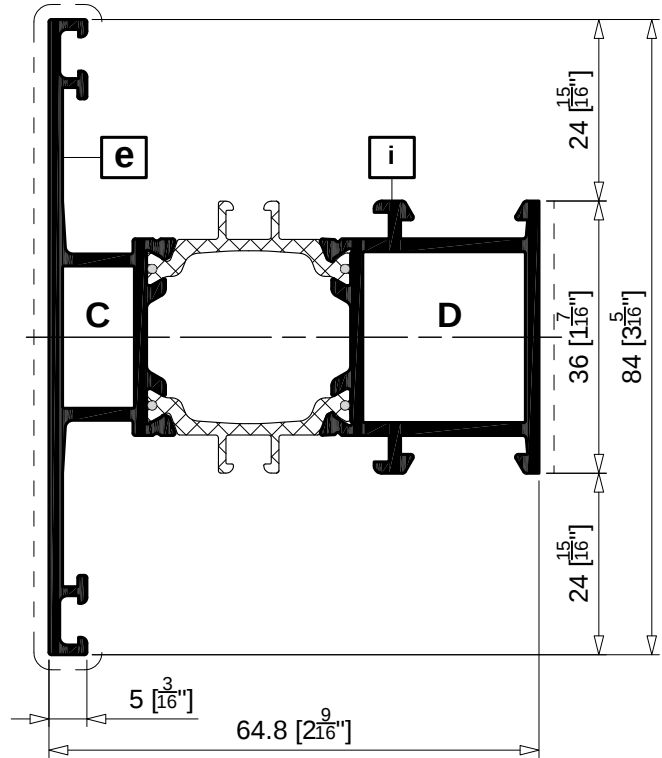


SECTION	NC7557	J_X J_Y cm ⁴	W_X W_Y cm ³	UTILIZATION
	BAR LENGTH m [ft]	-	-	TRANSOM
	6500 [21'-3 7/8"]	OUT. PERIMETER	EXPOSED SURFACE	
		396 [15 5/8"]	--- 129 [5 1/8"]	

COMPONENTS

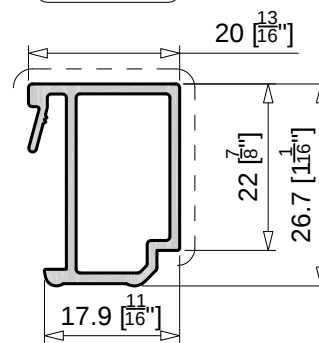
SHAPE	CODE	OUT. PERIMETER	EXPOSED SURFACE
i	NC2456	185 [7 1/4"]	--- 36 [1 3/8"]
e	NC5055	265 [10 3/8"]	--- 93 [3 5/8"]
	346700		

NC 7557



SECTION	NC7686	J_X J_Y cm ⁴	W_X W_Y cm ³	UTILIZATION
	BAR LENGTH m [ft]	-	-	GLASS STOP
	6500 [21'-3 7/8"]	OUT. PERIMETER	EXPOSED SURFACE	
		111 [4 3/8"]	--- 42 [1 5/8"]	

NC 7686



C	D
MA7568 x 2 MA7608	MA5550 x 2 MA7593

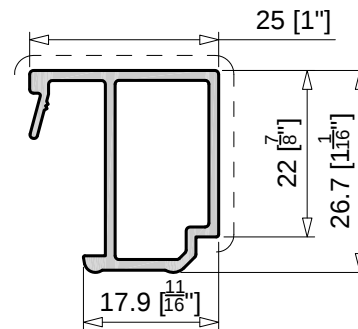
mm
[inches]

SCALE 1:1



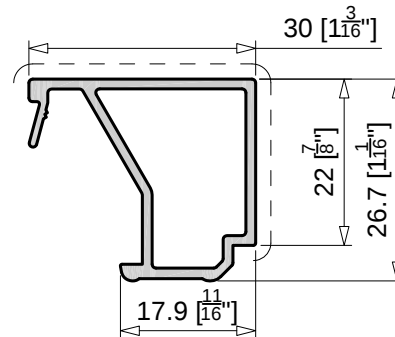
SECTION	NC7687	J_X J_Y cm ⁴	W_X W_Y cm ³	UTILIZATION
	BAR LENGTH m [ft]	-	-	GLASS STOP
	6500 [21'-38"]	OUT. PERIMETER	EXPOSED SURFACE	
		121 [4 $\frac{3}{4}$ "]	— — — 47 [1 $\frac{7}{8}$ "]	

NC 7687



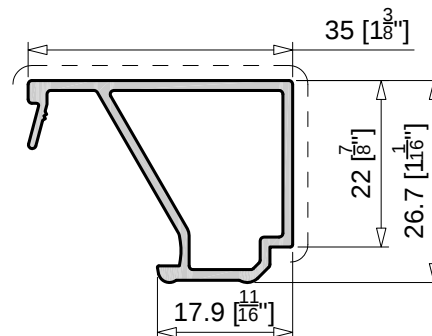
SECTION	NC7688	J_X J_Y cm ⁴	W_X W_Y cm ³	UTILIZATION
	BAR LENGTH m [ft]	-	-	GLASS STOP
	6500 [21'-38"]	OUT. PERIMETER	EXPOSED SURFACE	
		126 [4 $\frac{15}{16}$ "]	— — — 52 [2 $\frac{1}{16}$ "]	

NC 7688



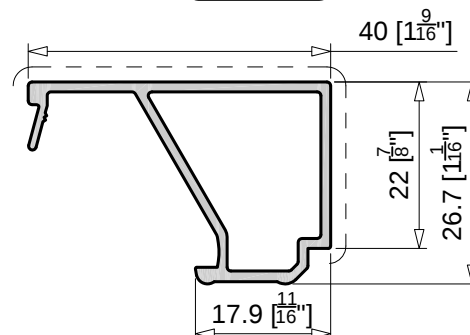
SECTION	NC7689	J_X J_Y cm ⁴	W_X W_Y cm ³	UTILIZATION
	BAR LENGTH m [ft]	-	-	GLASS STOP
	6500 [21'-38"]	OUT. PERIMETER	EXPOSED SURFACE	
		134 [5 $\frac{1}{4}$ "]	— — — 57 [2 $\frac{1}{4}$ "]	

NC 7689



SECTION	NC7690	J_X J_Y cm ⁴	W_X W_Y cm ³	UTILIZATION
	BAR LENGTH m [ft]	-	-	GLASS STOP
	6500 [21'-38"]	OUT. PERIMETER	EXPOSED SURFACE	
		144 [5 $\frac{11}{16}$ "]	— — — 62 [2 $\frac{7}{16}$ "]	

NC 7690

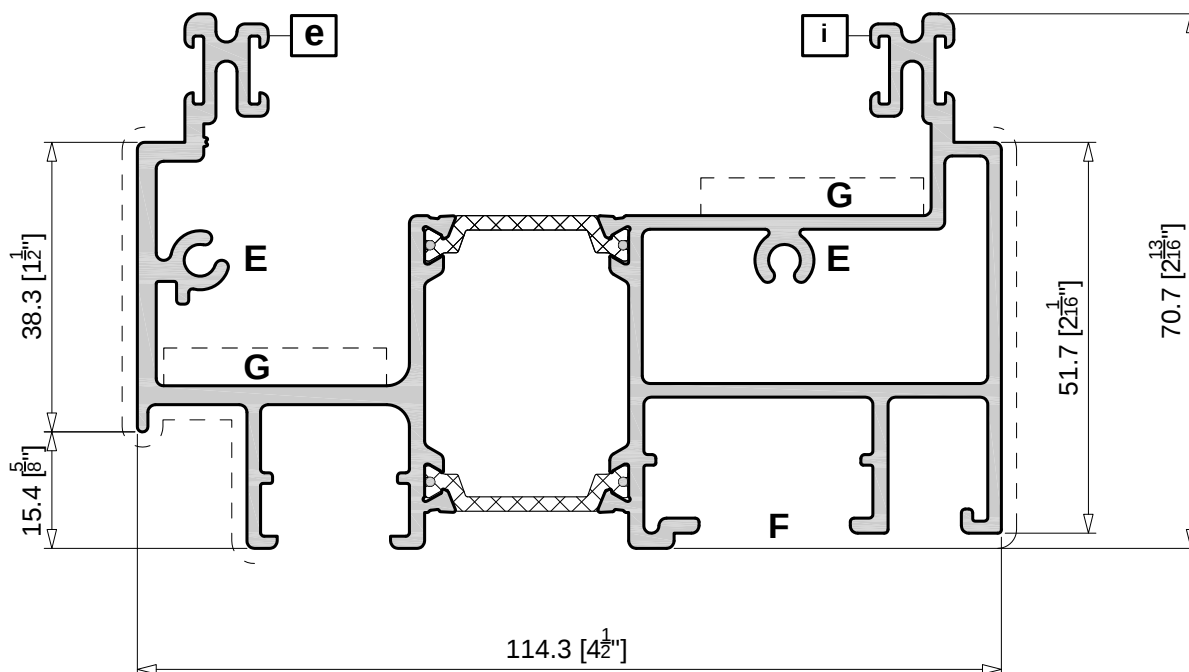


mm
[inches]

SCALE 1:1



NC70058



SECTION	NC70058	J_X J_Y cm ⁴	W_X W_Y cm ³	UTILIZATION
	BAR LENGTH m [ft]	38.429 170.122	9.965 29.496	GUTTER
	6500 [21'-3 7/8"]	OUT. PERIMETER		EXPOSED SURFACE
		781 [2'-6 3/4"]		— — — 128 [5 1/16"]

COMPONENTS

SHAPE	CODE	OUT. PERIMETER	EXPOSED SURFACE
e	NC70056	442 [1'-5 3/8"]	— — — 75 [2 7/8"]
i	NC70057	422 [1'-4 5/8"]	— — — 53 [2 1/16"]

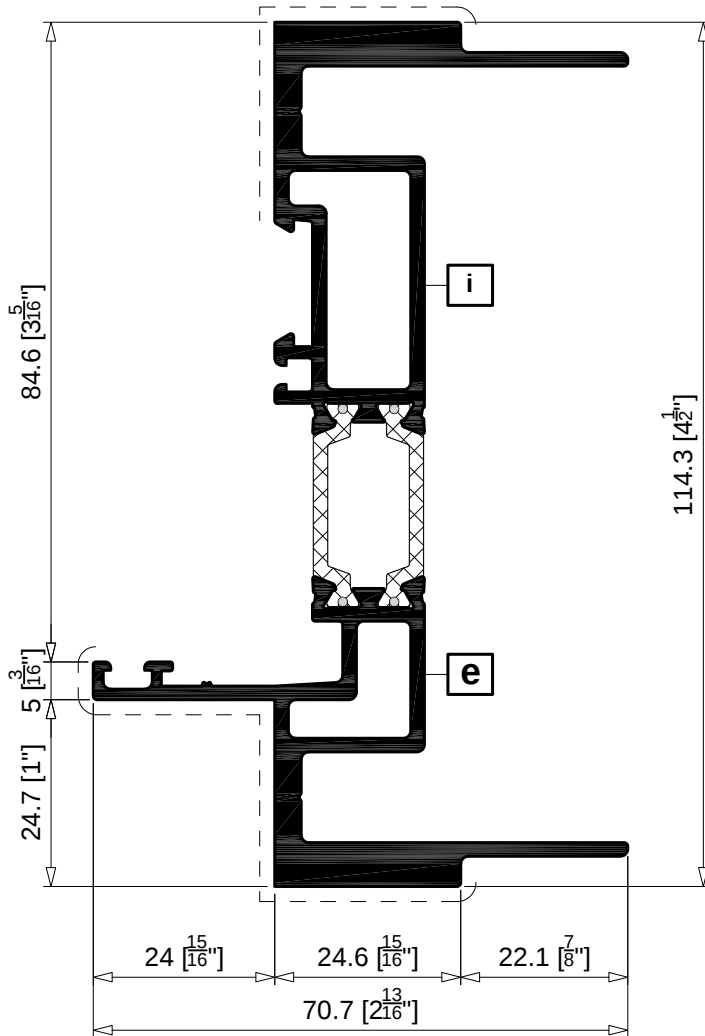
	971605
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E	F	G	
# 10 32 mm [1 1/4"]	Ma 2712	Ma 2713	Ma 2714

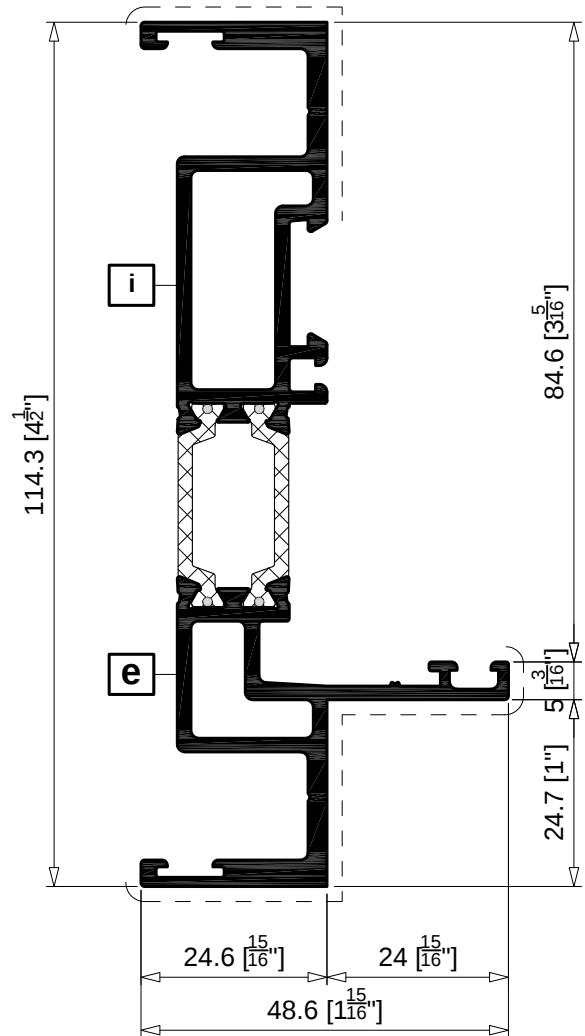
mm
[inches]
SCALE 1:1



NC70076



NC70079



SECTION	NC70076	J_X J_Y cm ⁴	W_X W_Y cm ³	UTILIZATION
	BAR LENGTH m [ft]	155.516 12.305	26.403 3.459	MULLION
	6500 [21'-3 7/8"]	OUT. PERIMETER	EXPOSED SURFACE	
		547 [1'-9 9/16"]	— — — 130 [5 1/8"]	

SECTION	NC70079	J_X J_Y cm ⁴	W_X W_Y cm ³	UTILIZATION
	BAR LENGTH m [ft]	89.755 5.642	15.068 1.783	MULLION
	6500 [21'-3 7/8"]	OUT. PERIMETER	EXPOSED SURFACE	
		511 [1'-8 3/8"]	— — — 130 [5 1/8"]	

COMPONENTS

SHAPE	CODE	OUT. PERIMETER	EXPOSED SURFACE
e	NC70074	297 [11 1/16"]	— — — 79 [3 1/8"]
i	NC70075	277 [10 7/8"]	— — — 51 [2"]

	971605
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COMPONENTS

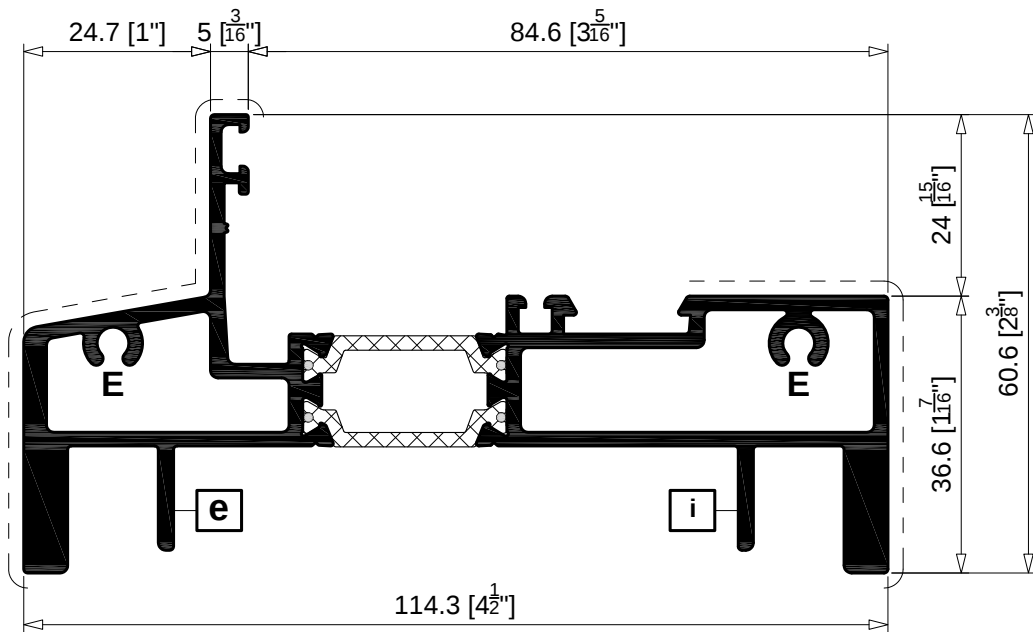
SHAPE	CODE	OUT. PERIMETER	EXPOSED SURFACE
e	NC70077	266 [10 1/2"]	— — — 79 [3 1/8"]
i	NC70078	245 [9 5/8"]	— — — 51 [2"]

	971605
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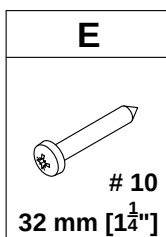
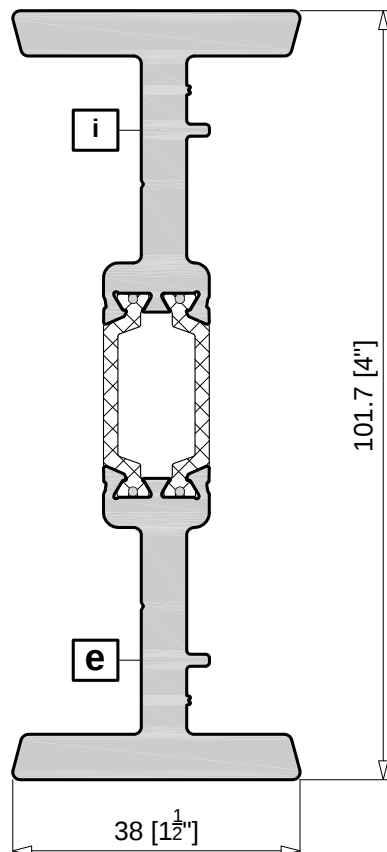
mm
[inches]
SCALE 1:1



NC70082



NC70084



SECTION	NC70082	J_X J_Y cm ⁴	W_X W_Y cm ³	UTILIZATION
	BAR LENGTH m [ft]	27.026 239.634	9.624 33.053	TOP - BOTTOM TRANSOM
	6500 [21'-3 7/8"]	OUT. PERIMETER		EXPOSED SURFACE
		493 [1'-7 7/16"]		— — — 120 [4 3/4"]

COMPONENTS

SHAPE	CODE	OUT. PERIMETER	EXPOSED SURFACE
e	NC70080	268 [10 9/16"]	— — — 86 [3 3/8"]
i	NC70081	252 [9 15/16"]	— — — 63 [2 1/2"]

	971605
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SECTION	NC70084	J_X J_Y cm ⁴	W_X W_Y cm ³	UTILIZATION
	BAR LENGTH m [ft]	140.115 5.429	27.555 2.797	MULLION
	6500 [21'-3 7/8"]	OUT. PERIMETER		EXPOSED SURFACE
		384 [1'-3 1/8"]		— — — 0

COMPONENTS

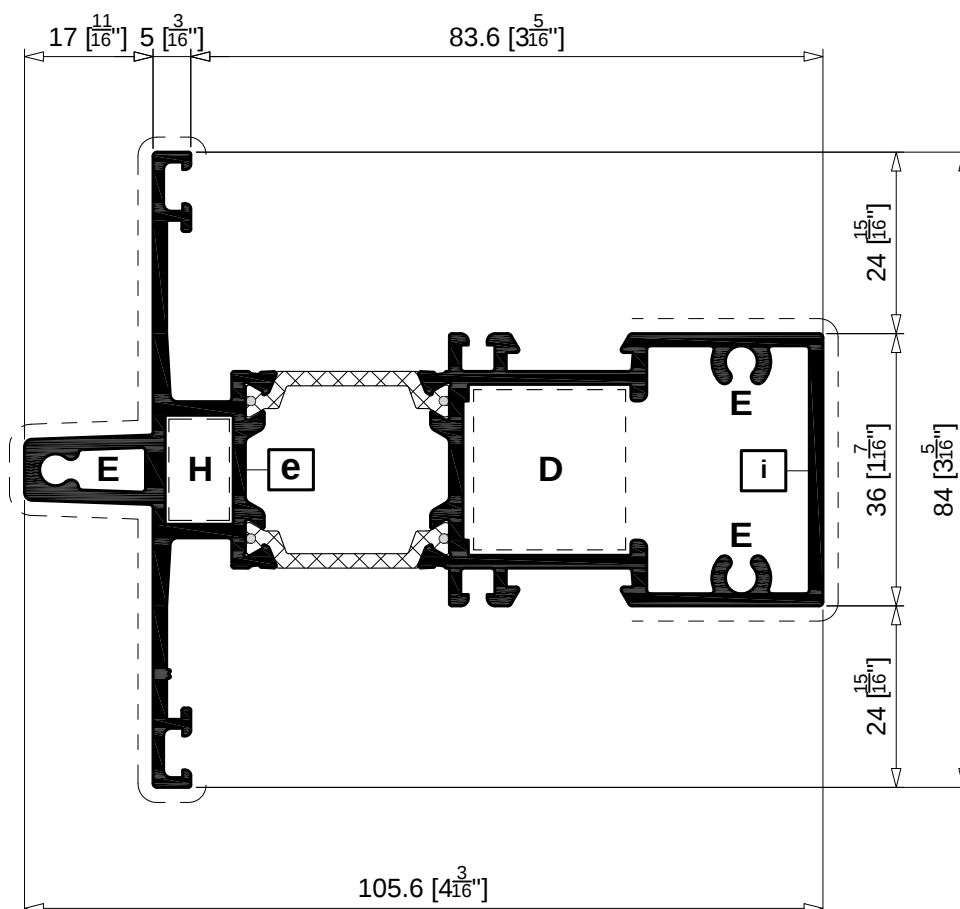
SHAPE	CODE	OUT. PERIMETER	EXPOSED SURFACE
e i	NC70073	192 [7 9/16"]	— — — 0

	971605
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mm
[inches]
SCALE 1:1



NC70089



SECTION	NC70089	J_X J_Y cm ⁴	W_X W_Y cm ³	UTILIZATION
	BAR LENGTH m [ft]	19.383 84.918	4.614 15.54	INTERMEDIATE TRANSOM
	6500 [21'-3 7/8"]	OUT. PERIMETER		EXPOSED SURFACE
		502 [1'-7 3/4"]		— — — 212 [8 3/8"]

COMPONENTS

SHAPE	CODE	OUT. PERIMETER	EXPOSED SURFACE
e	NC70038	304 [11 15/16"]	— — — 126 [4 15/16"]
i	NC70039	252 [9 15/16"]	— — — 86 [3 3/8"]

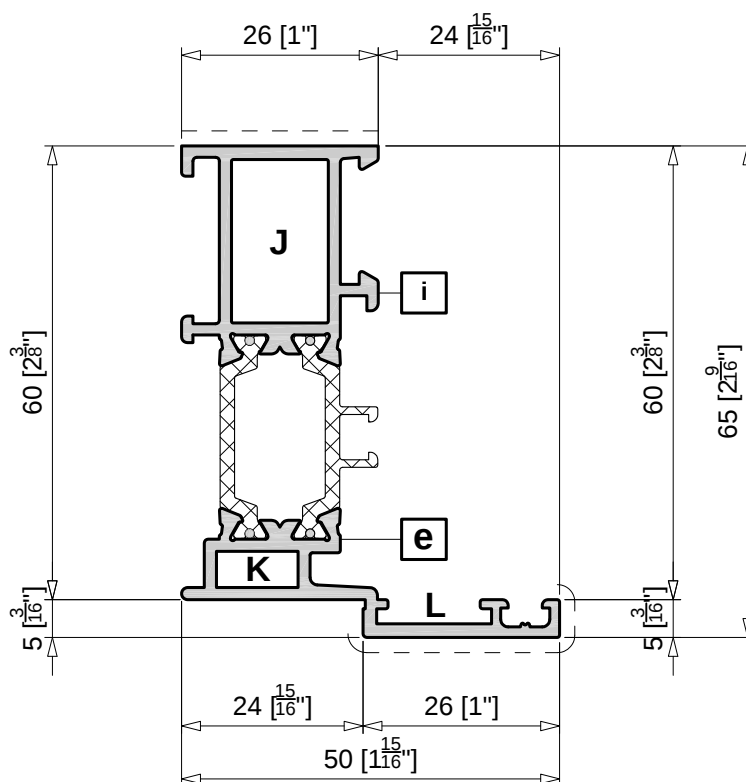
	971605
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D	E	H

mm
[inches]
SCALE 1:1



NC70090



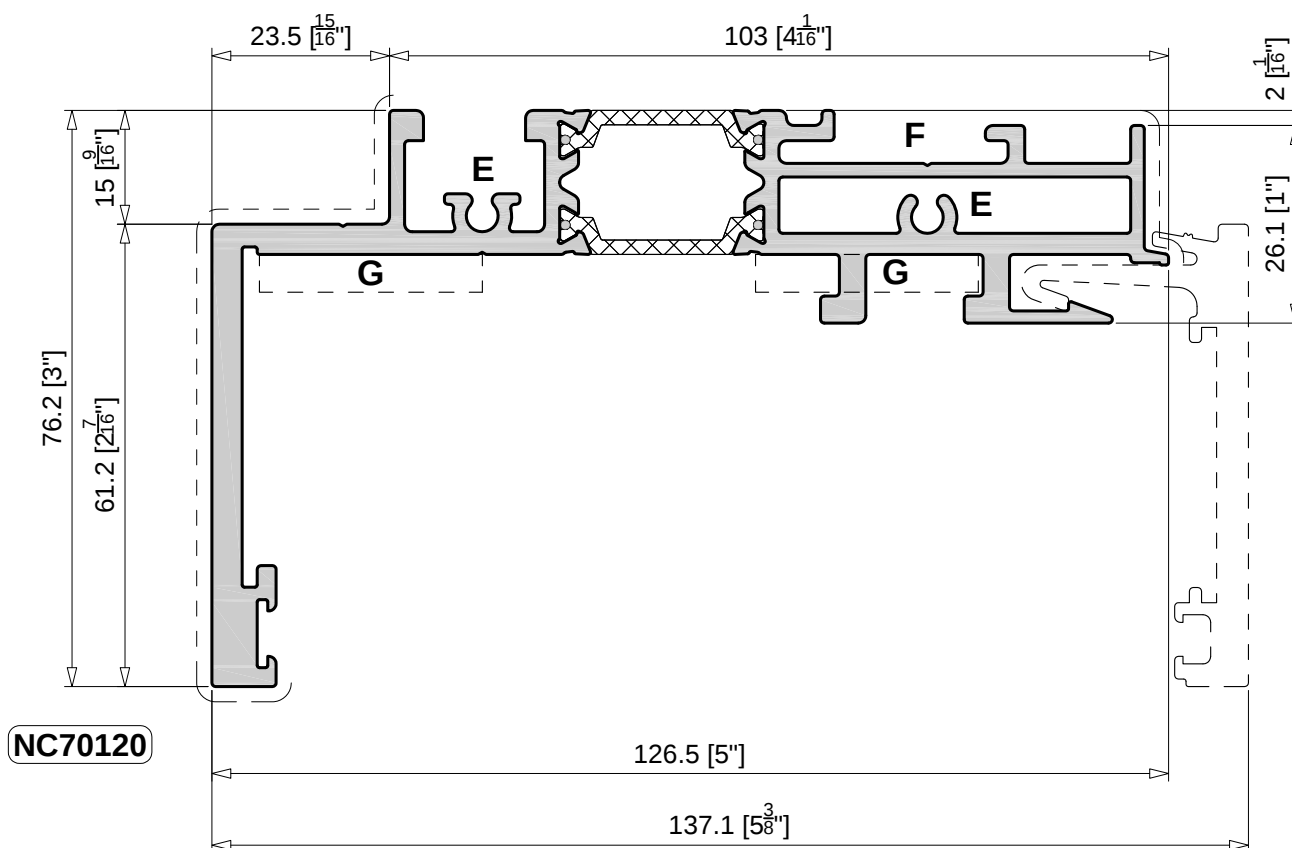
SECTION	NC70089	J_x J_y	W_x W_y	UTILIZATION
	BAR LENGTH m [ft]	19.383	4.614	INTERMEDIATE TRANSOM
		84.918	15.54	
	6500 [21'-3 7/8"]	OUT. PERIMETER		EXPOSED SURFACE
		345 [1'-1 9/16"]		— — — 57 [2 1/4"]

COMPONENTS

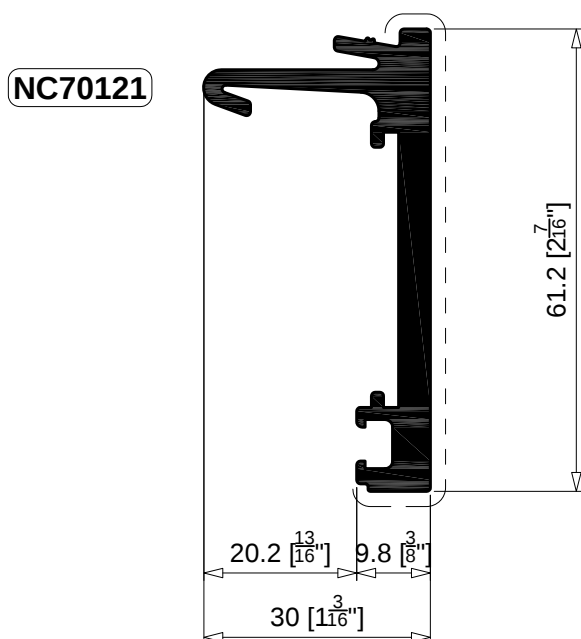
SHAPE	CODE	OUT. PERIMETER	EXPOSED SURFACE
e	NC70088	181 [7 1/8"]	— — — 31 [1 1/4"]
i	NC7501	164 [6 7/16"]	— — — 26 [1"]
	971605		971705

J			K	L
Ma 5550 x2	Ma 7500	Ma 7514	Ma 7750	Ma 6848
				Ma 2719

mm
[inches]
SCALE 1:1



NC70120



NC70121

SECTION	NC70120	J_x J_y cm ⁴	W_x W_y cm ³	UTILIZATION
	BAR LENGTH m [ft]	39.628 194.212	7.572 26.323	HEAD RECEPTOR
	6500 [21'-3 7/8"]	OUT. PERIMETER		EXPOSED SURFACE
		606 [1'-11 5/8"]		— — — 125 [4 15/16"]

COMPONENTS

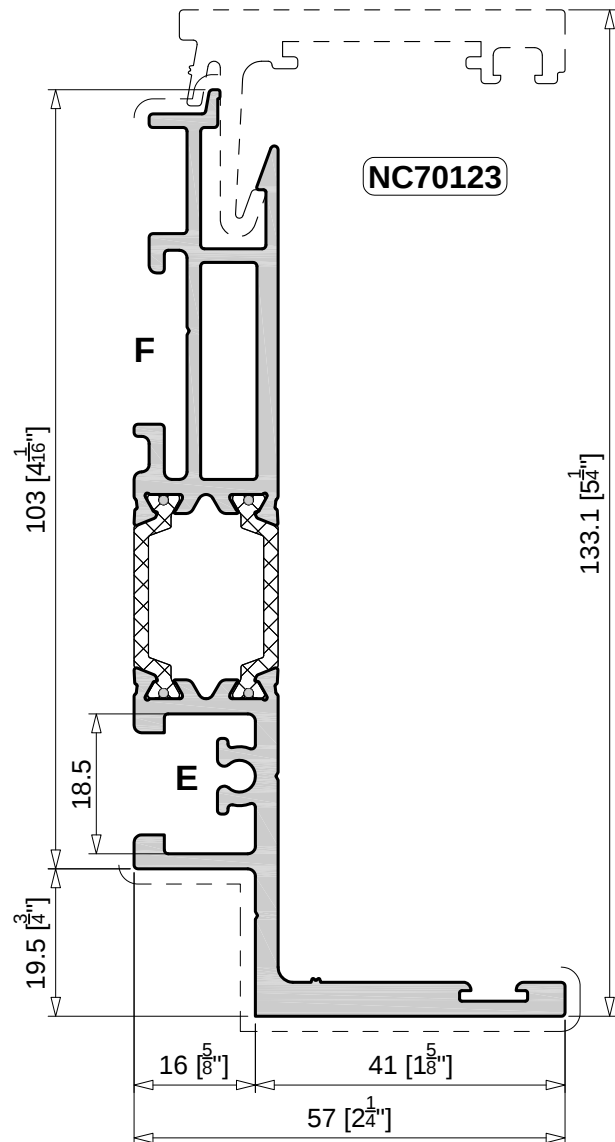
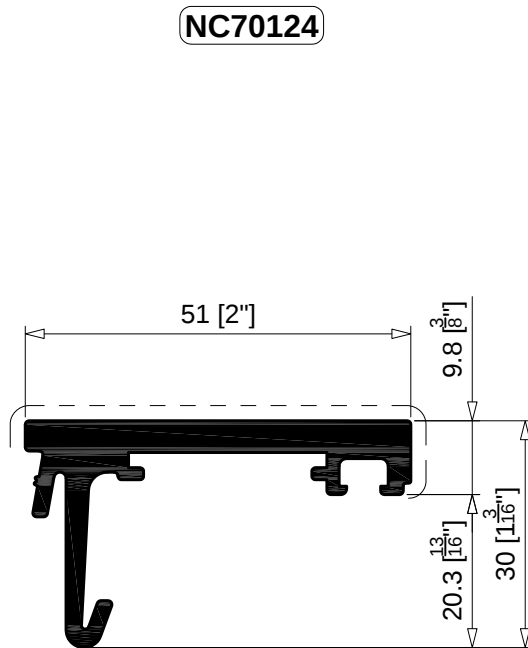
SHAPE	CODE	OUT. PERIMETER	EXPOSED SURFACE
e	NC70059	361 [1'-2 3/16"]	— — — 108 [4 1/4"]
i	NC70119	285 [11 1/4"]	— — — 17 [11/16"]

	971605
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SECTION	NC70121	J_x J_y cm ⁴	W_x W_y cm ³	UTILIZATION
	BAR LENGTH m [ft]	-	-	HEAD RECEPTOR SNAP-ON
	6500 [21'-3 7/8"]	OUT. PERIMETER		EXPOSED SURFACE
		234 [9 15/16"]		— — — 73 [2 7/8"]

E	F	G	
# 10 32 mm [1 1/4"]	Ma 2712	Ma 2713	Ma 2714

mm
[inches]
SCALE 1:1



SECTION	NC70076	J _X J _Y cm ⁴	W _X W _Y cm ³	UTILIZATION
	BAR LENGTH m [ft]	-	-	JAMB RECEPTOR SNAP-ON
	6500 [21'-3 7/8\"]	OUT. PERIMETER	EXPOSED SURFACE	
		213 [8 3/8\"]	— — — 63 [2 1/2\"]	

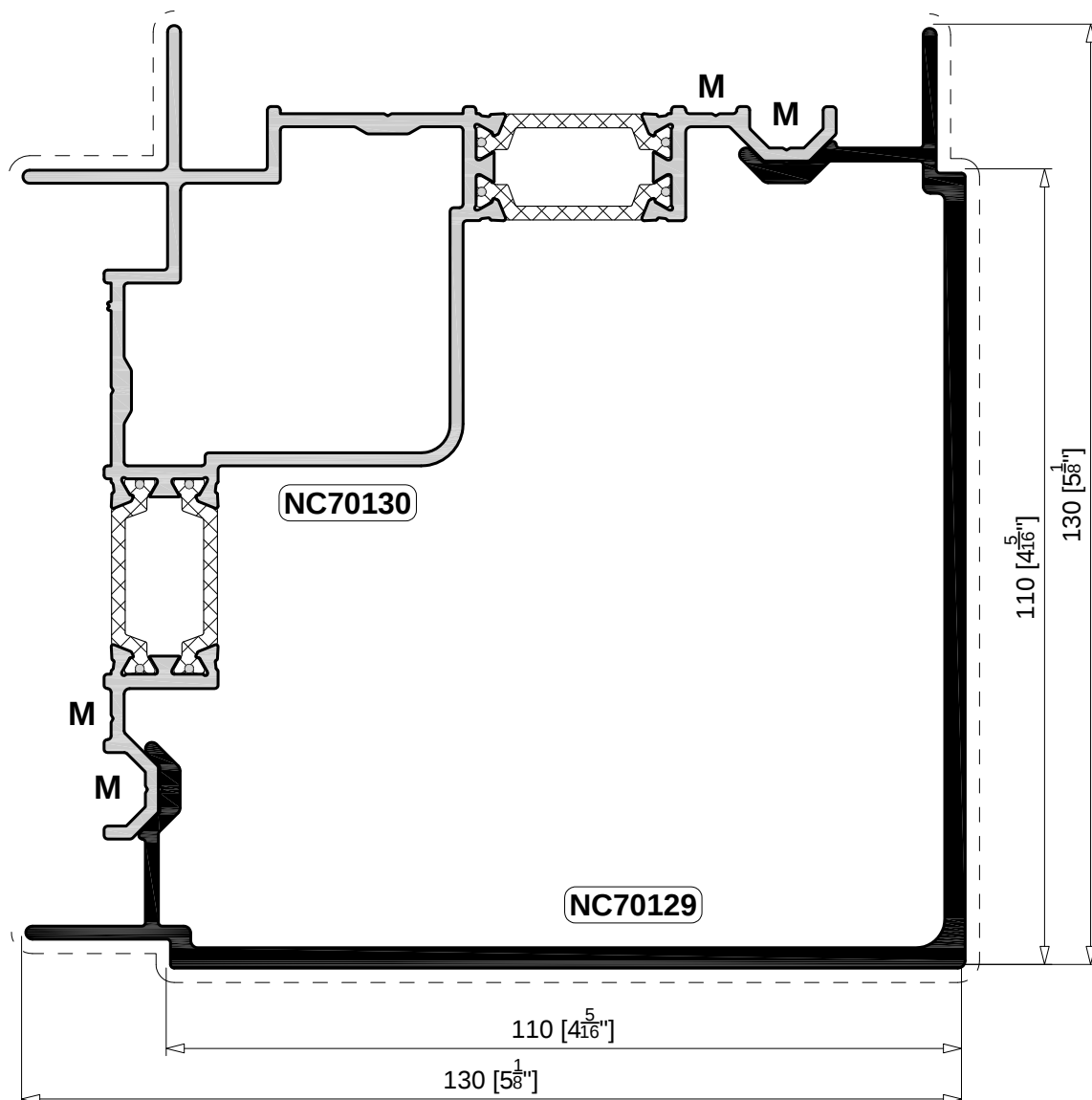
SECTION	NC70076	J _X J _Y cm ⁴	W _X W _Y cm ³	UTILIZATION
	BAR LENGTH m [ft]	112.939 11.424	15.55 2.852	JAMB RECEPTOR
	6500 [21'-3 7/8\"]	OUT. PERIMETER	EXPOSED SURFACE	
		503 [1'-7 13/16\"]	— — — 89 [3 1/2\"]	

E	F
# 10 32 mm [1 1/4\"]	Ma 2712

COMPONENTS

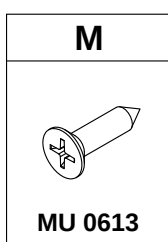
SHAPE	CODE	OUT. PERIMETER	EXPOSED SURFACE
e	NC70063	298 [11 3/4\"]	— — — 81 [3 1/8\"]
i	NC70122	244 [9 5/8\"]	— — — 8 [5/16\"]
	971605		

mm
[inches]
SCALE 1:1



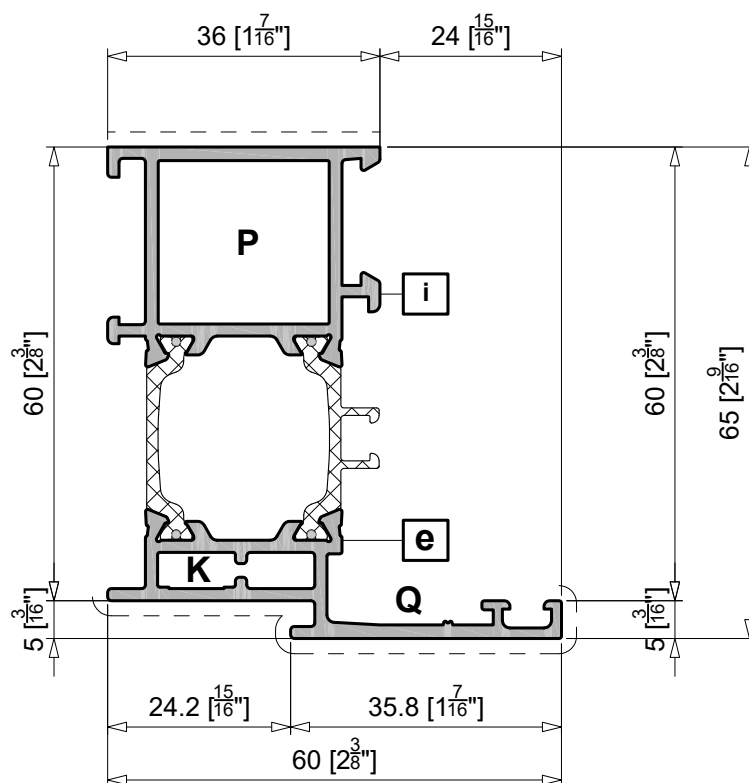
SECTION	NC70129	J_X J_Y	W_X W_Y	UTILIZATION
	BAR LENGTH m [ft]	145.954 145.954	15.726 15.726	90° CORNER
	6500 [21'-3 $\frac{7}{8}$ "]	OUT. PERIMETER		EXPOSED SURFACE
		635 [25"]		— — — 268 [10 $\frac{9}{16}$ "]

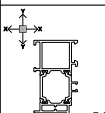
SECTION	NC70130	J_X J_Y	W_X W_Y	UTILIZATION
	BAR LENGTH m [ft]	58.898 58.939	8.285 8.289	90° CORNER
	6500 [21'-3 $\frac{7}{8}$ "]	OUT. PERIMETER		EXPOSED SURFACE
		514 [20 $\frac{1}{4}$ "]		— — — 40 [1 $\frac{9}{16}$ "]



mm
[inches]

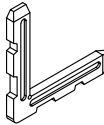
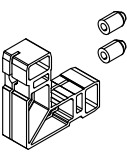
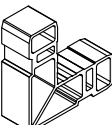
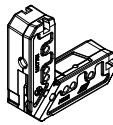
SCALE 1:1

NC70132


SECTION	NC70132	J_X J_Y cm ⁴	W_X W_Y cm ³	UTILIZATION
	BAR LENGTH m [ft]	25.187 9.172	7.179 2.419	INTERMEDIATE TRANSOM
	6500 [21'-3 ⁷ / ₈ "]	OUT. PERIMETER	EXPOSED SURFACE	
		335 [1'-1 ³ / ₁₆ "]	— — — 77 [3 ¹ / ₁₆ "]	

COMPONENTS

SHAPE	CODE	OUT. PERIMETER	EXPOSED SURFACE
 e	NC70131	202 [7 ¹⁵ / ₁₆ "]	— — — 41 [1 ⁵ / ₁₆ "]
 i	NC7520	185 [7 ⁵ / ₁₆ "]	— — — 36 [1 ⁷ / ₁₆ "]
 346600 / 971605		 346700 / 971705	

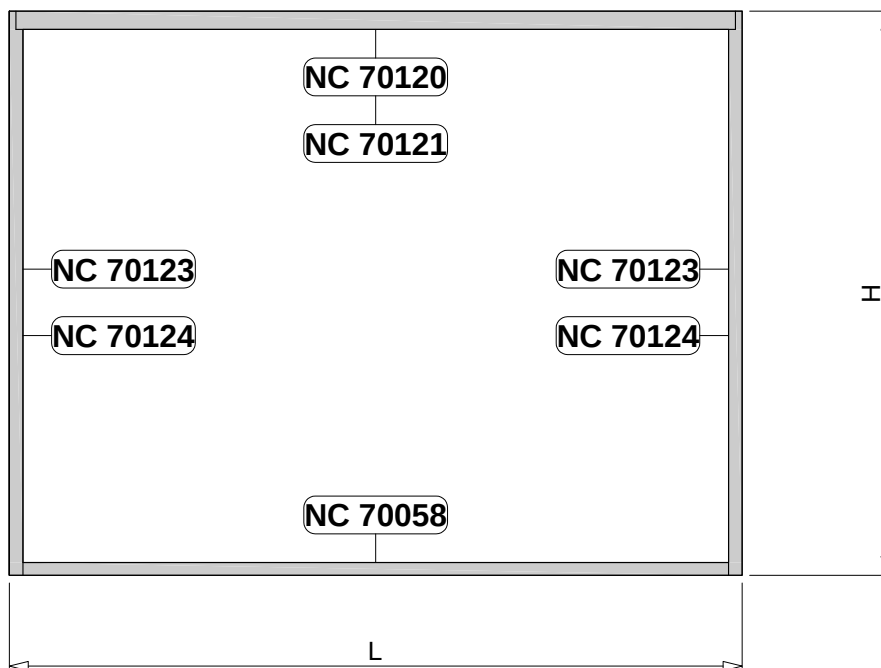
K	P		Q	
				
Ma 6848	Ma 5550 x2 Ma 7501	Ma 7515	Ma 7751	Ma 7551

mm
[inches]
SCALE 1:1



CUTTING DIMENSIONS

PERIMETER
RECEPTORS



PROFILE	SHAPE	mm [inches]	PIECES	CUTTING ANGLE
NC 70058		L - 38 [$1\frac{1}{2}$ "]	1	90° 90°
NC70120		L - 38 [$1\frac{1}{2}$ "]	1	90° 90°
NC70121		L - 114 [$4\frac{1}{2}$ "]	1	90° 90°
NC70123		H	2	90° 90°
NC70124		H	2	90° 90°

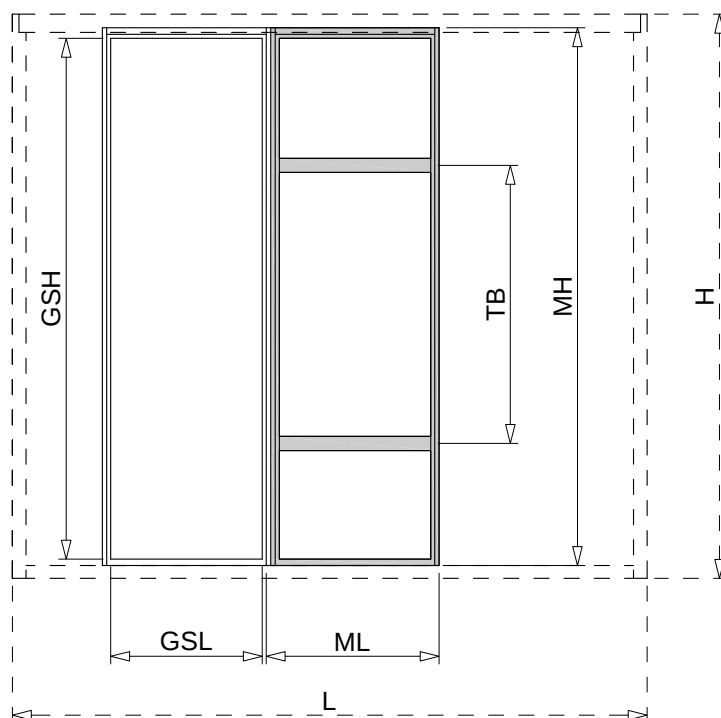
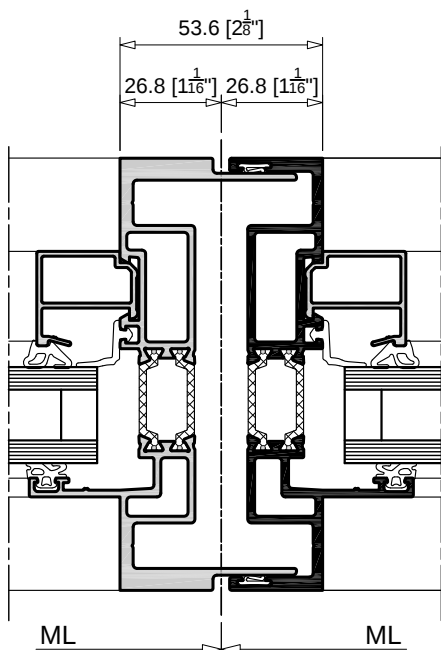
NOTICE: THEORETICAL DIMENSIONS TO BE VERIFIED BEFORE MANUFACTURING

mm
[inches]



CUTTING DIMENSIONS

MODULES



PROFILE	SHAPE	mm [inches]	PIECES	CUTTING ANGLE
NC 70076		$MH = H - 104 \left[4 \frac{1}{8} \right]$ Perimeter tollerances $+ 2 \left[\frac{3}{8} \right] - 10 \left[\frac{3}{8} \right]$	1	90° 90°
NC70079			1	90° 90°
NC70082		ML - 53.6 $\left[2 \frac{1}{8} \right]$	2	90° 90°
NC70084		121.5 $\left[4 \frac{3}{4} \right]$	1	90° 90°
NC70089		ML - 53.6 $\left[2 \frac{1}{8} \right]$	?	90° 90°
NC 7687 Glass Stop		GSH = MH - 73.2 $\left[2 \frac{7}{8} \right]$	2	90° 90°
		TB - 36 $\left[1 \frac{3}{8} \right]$	?	
		GSL = ML - 97.6 $\left[3 \frac{7}{8} \right]$	?	

?: Quantities as per module configuration

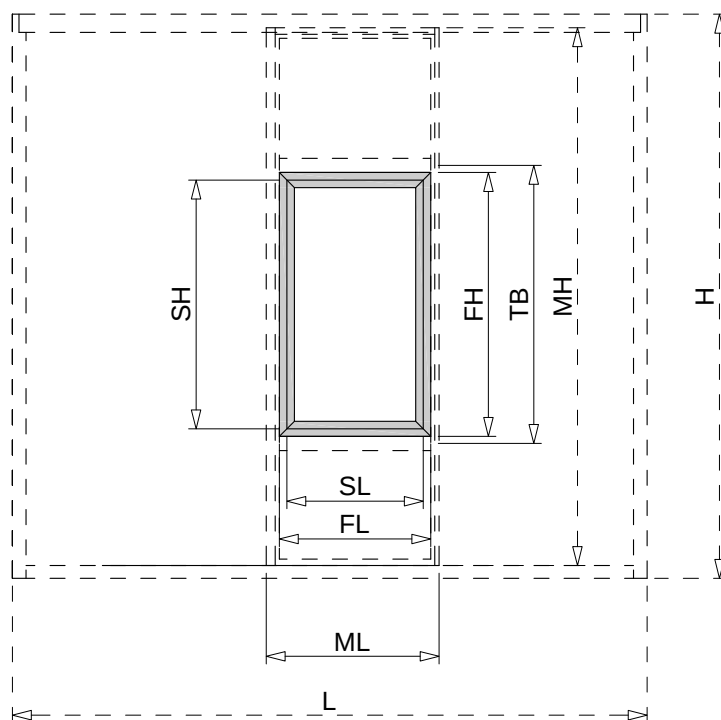
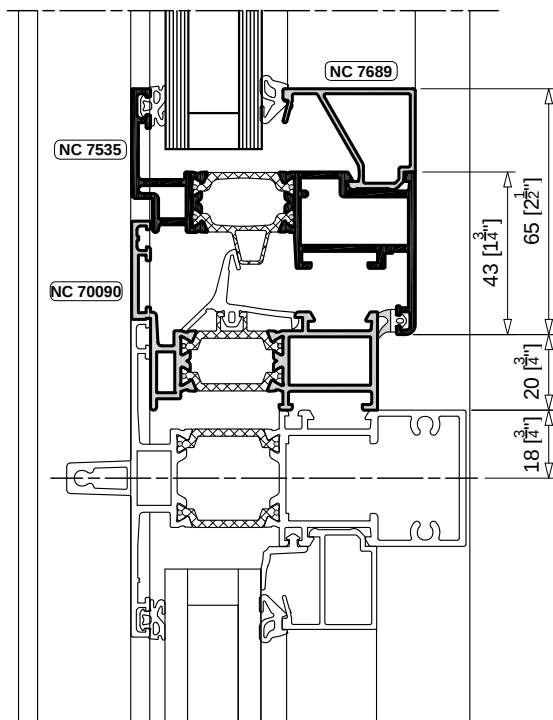
NOTICE: THEORETICAL DIMENSIONS TO BE VERIFIED BEFORE MANUFACTURING

mm
[inches]



CUTTING DIMENSIONS

OPERABLE NC 65 STH
OPENING INWARD



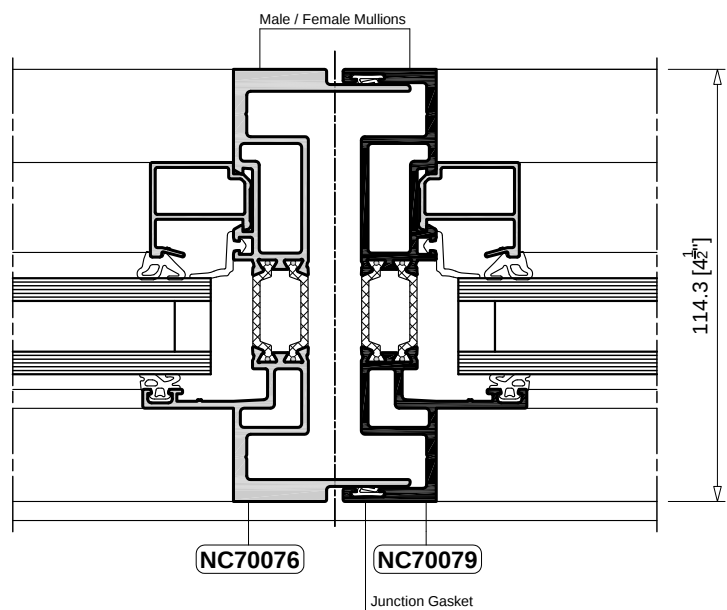
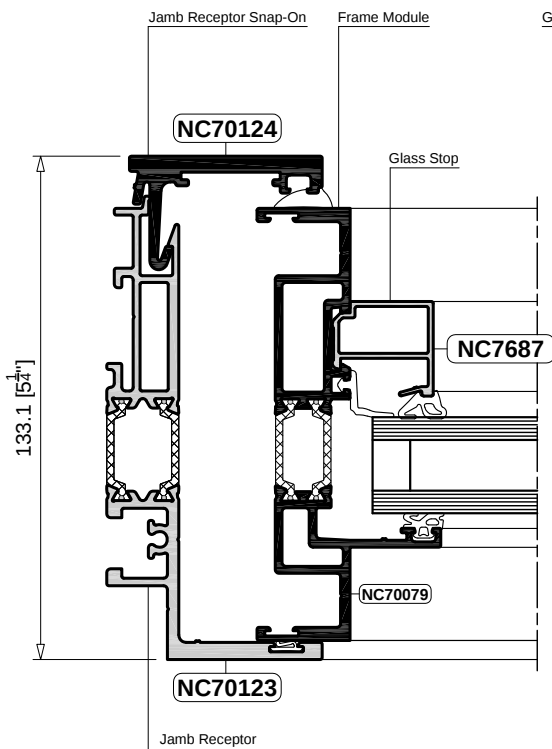
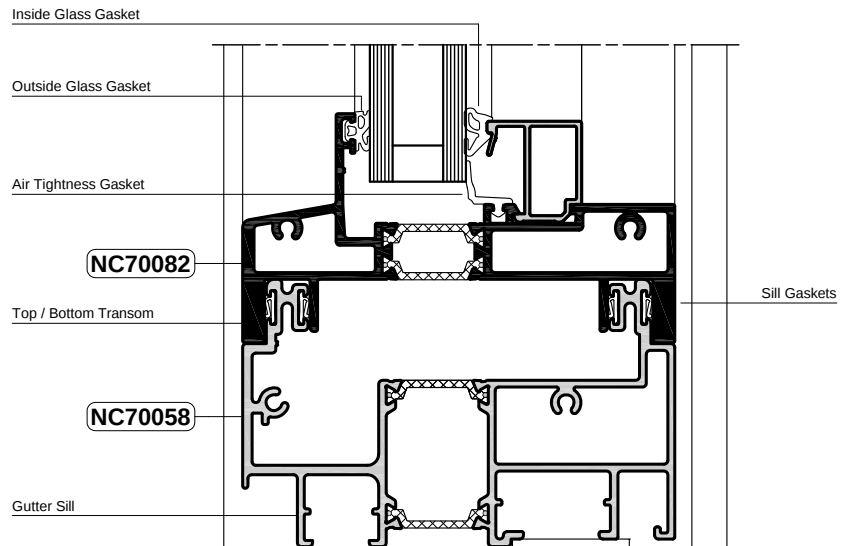
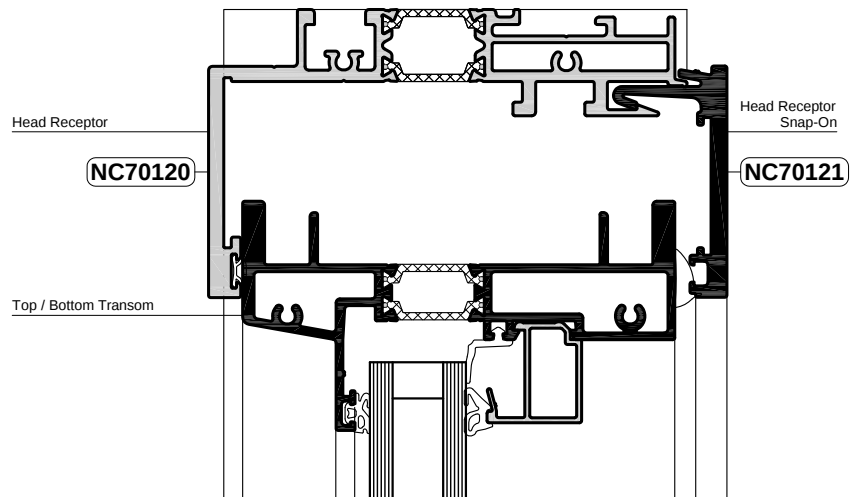
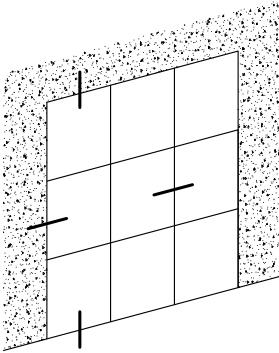
PROFILE	SHAPE	mm [inches]	PIECES	CUTTING ANGLE
NC70090		$FL = ML - 53.6 [2 \frac{1}{8}"]$	2	45° 45°
		$FH = TB - 36 [1 \frac{3}{8}"]$	2	45° 45°
NC 7535		$SL = FL - 40 [1 \frac{1}{2}"]$	2	45° 45°
		$SH = FH - 40 [1 \frac{1}{2}"]$	2	45° 45°
NC 7689 Glass Stop		$SL - 86 [3 \frac{1}{2}"]$	2	90° 90°
		$SH - 130 [5"]$	2	

NOTICE: THEORETICAL DIMENSIONS TO BE VERIFIED BEFORE MANUFACTURING

mm
[inches]



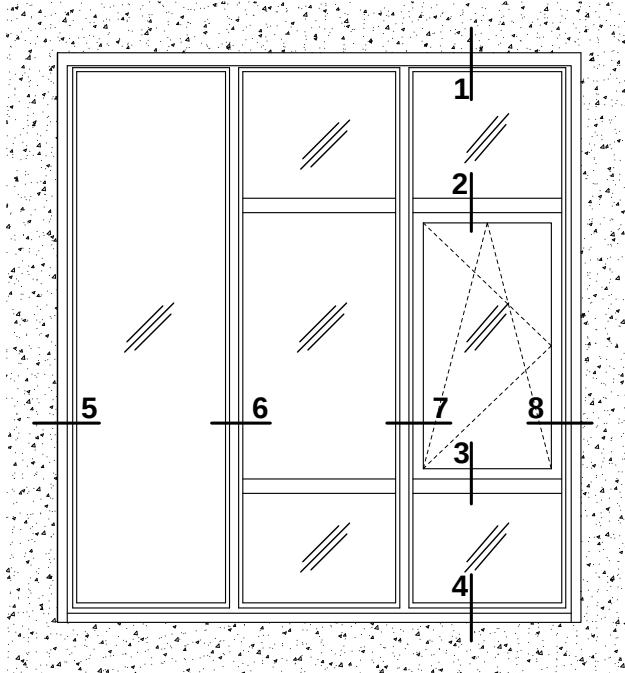
SYSTEM COMPONENTS



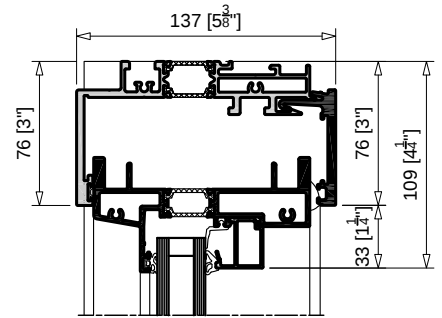


MAIN SECTIONS

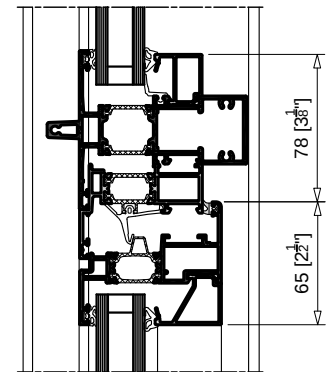
FIXED
TRANSOM
OPERABLE



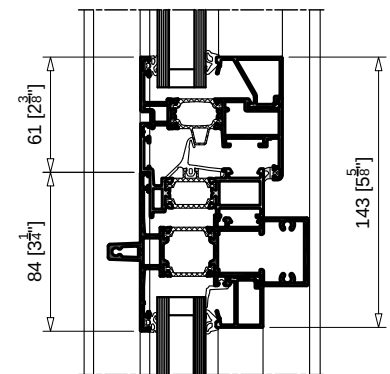
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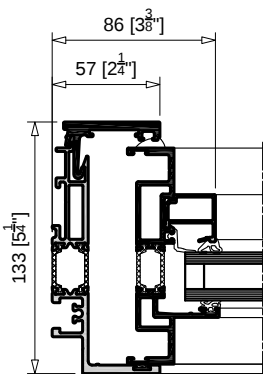
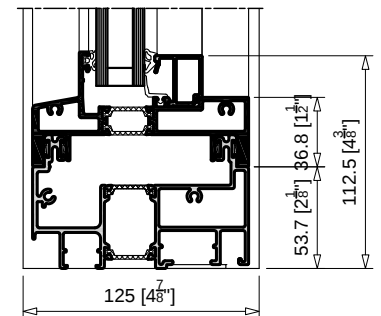
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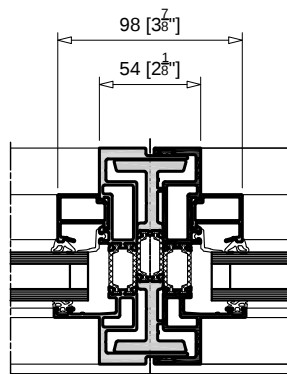
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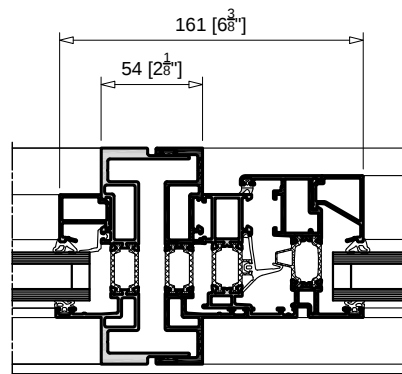
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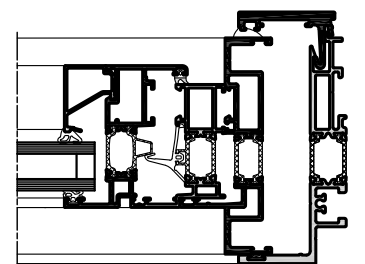
5



6



7



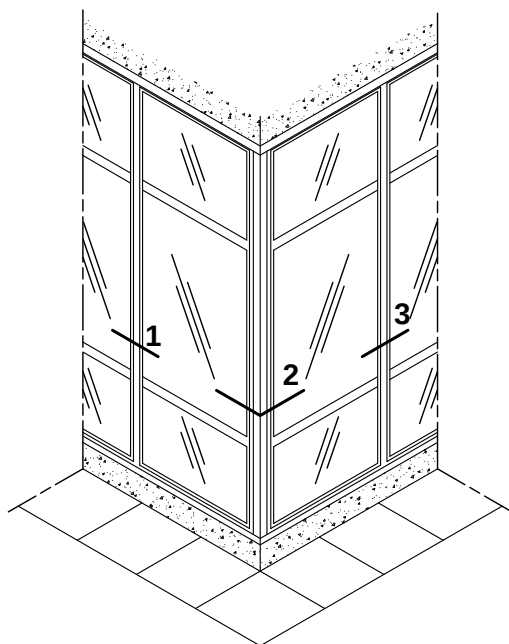
8

mm
[inches]
SCALE 1:1

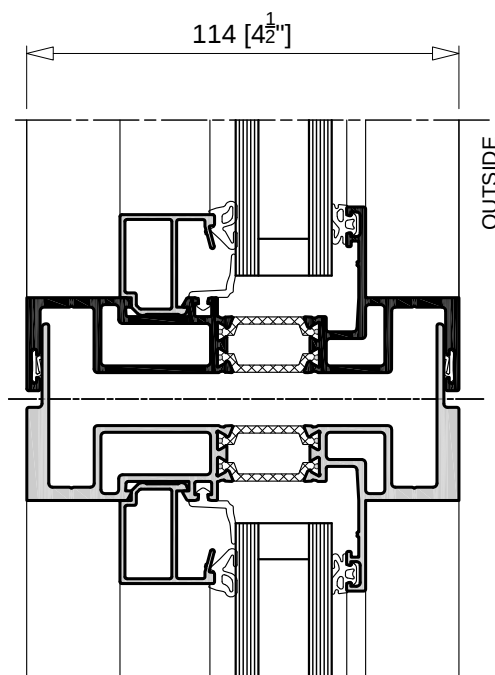


MAIN SECTIONS

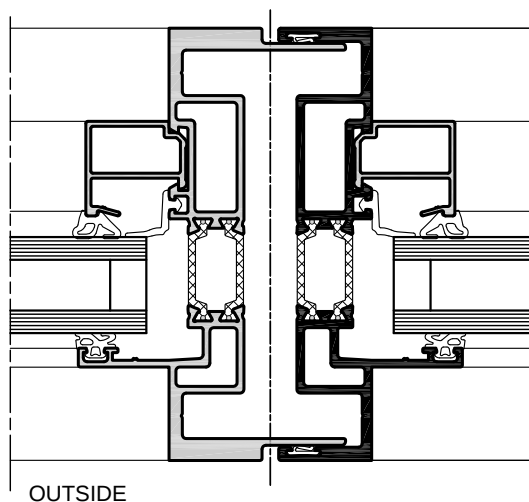
CORNERS
90° POSITIVE ANGLE



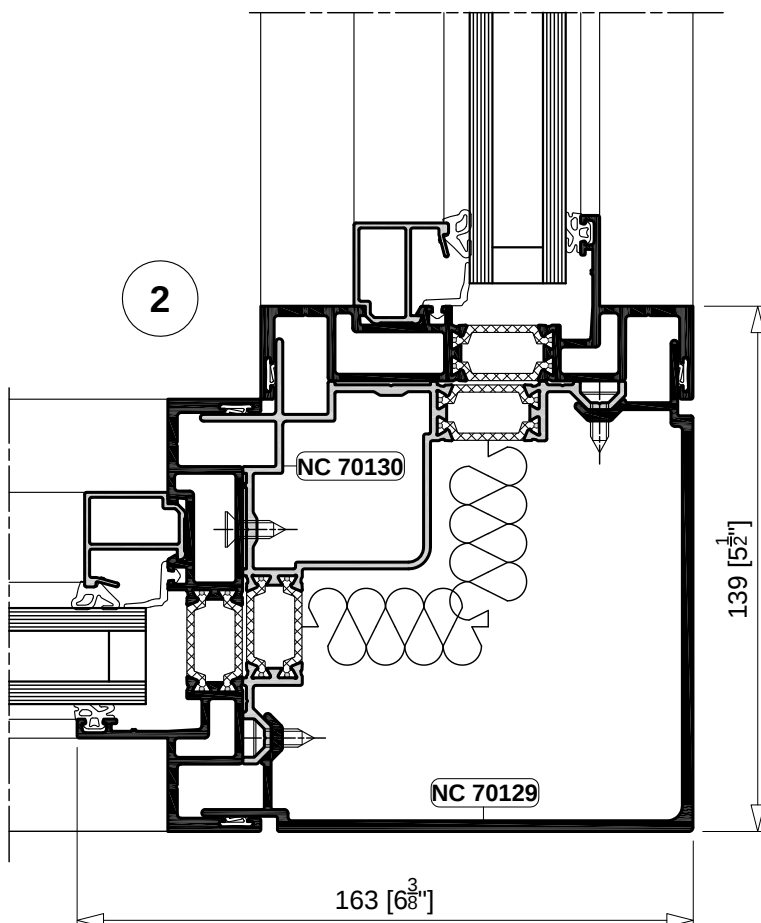
3



1



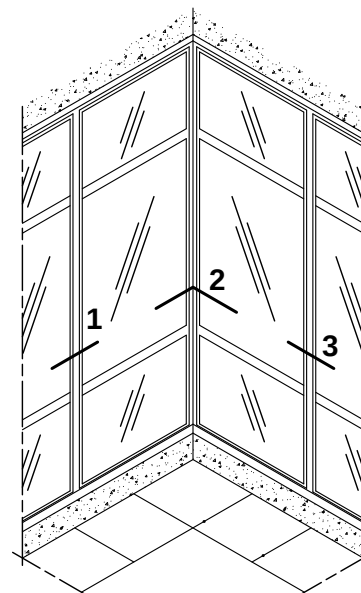
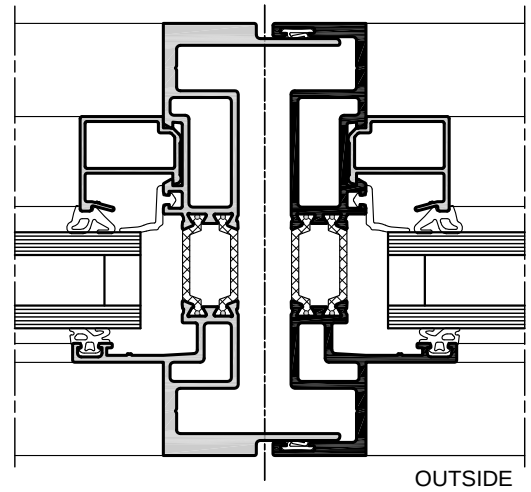
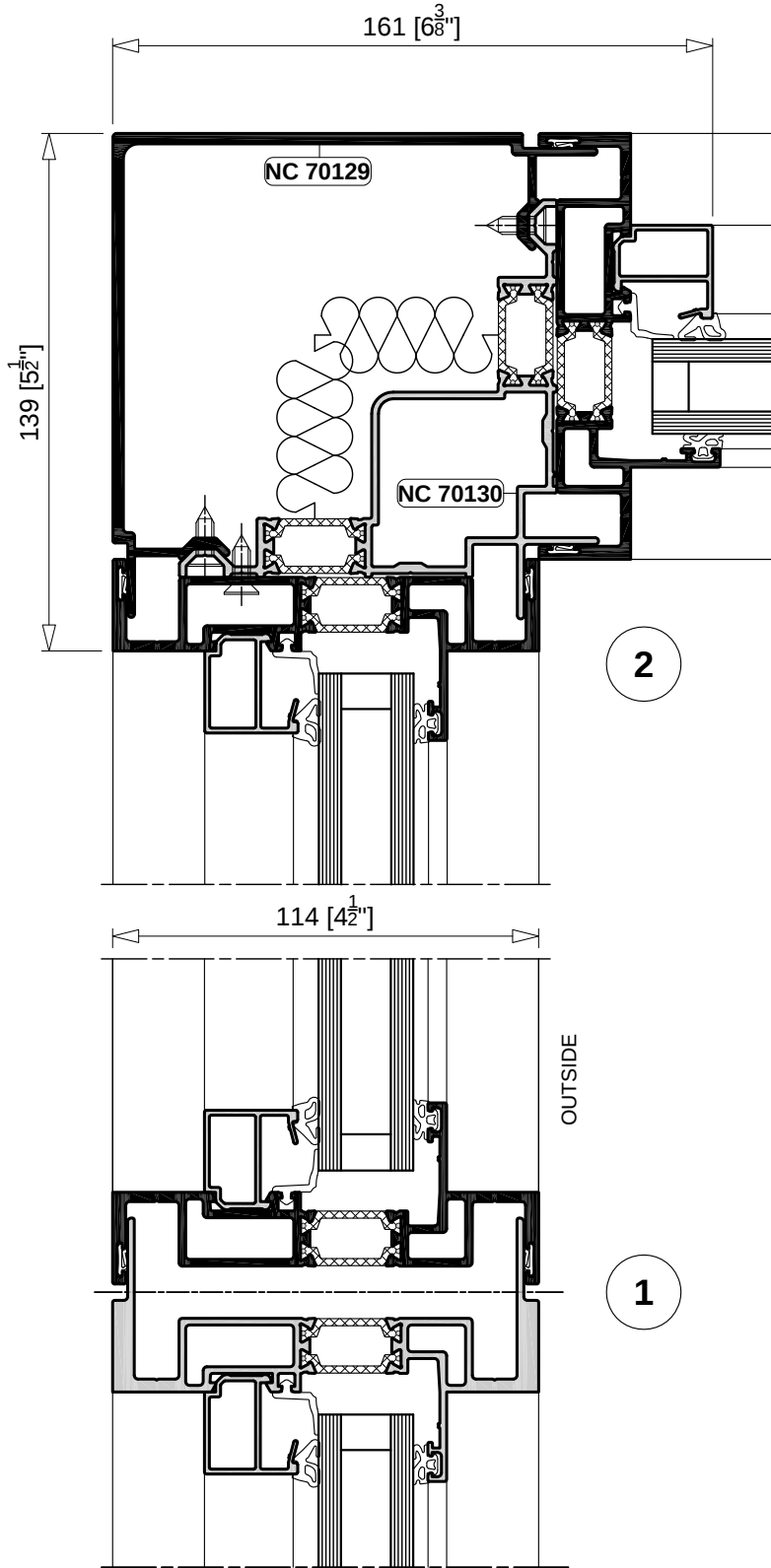
2



mm
[inches]
SCALE 1:2

MAIN SECTIONS

CORNERS
90° NEGATIVE ANGLE

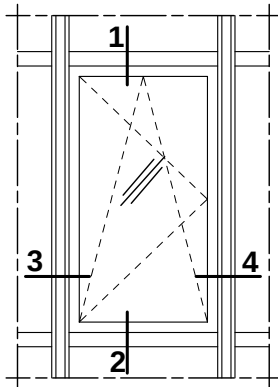


mm
[inches]
SCALE 1:2

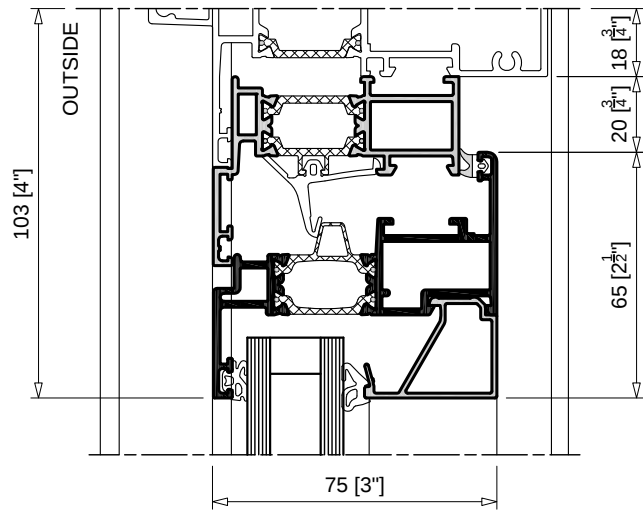


MAIN SECTIONS

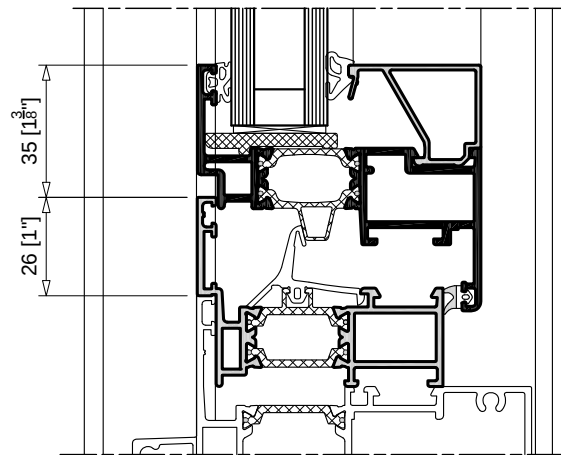
OPERABLE NC 65 STH
OPENING INWARD - TILT AND TURN



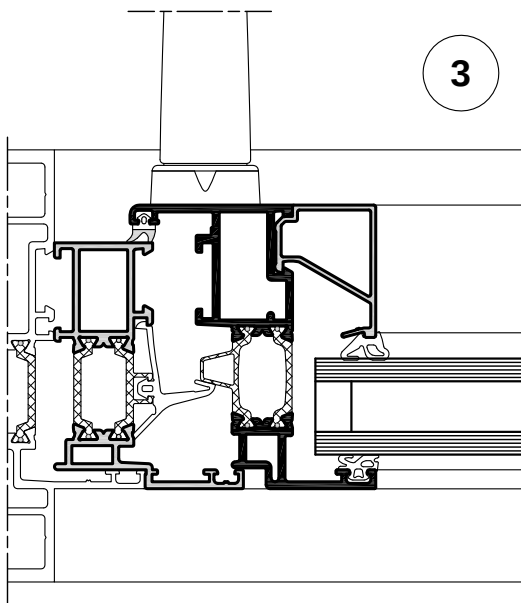
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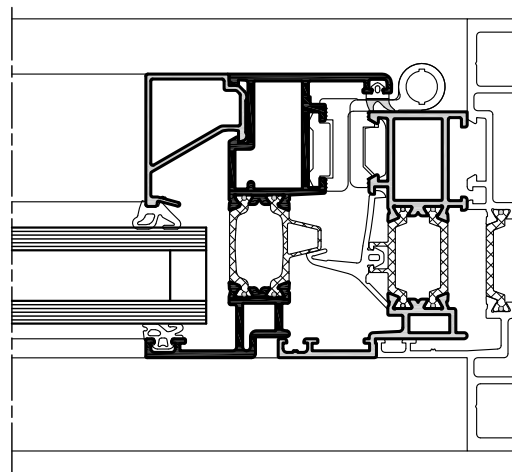
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3



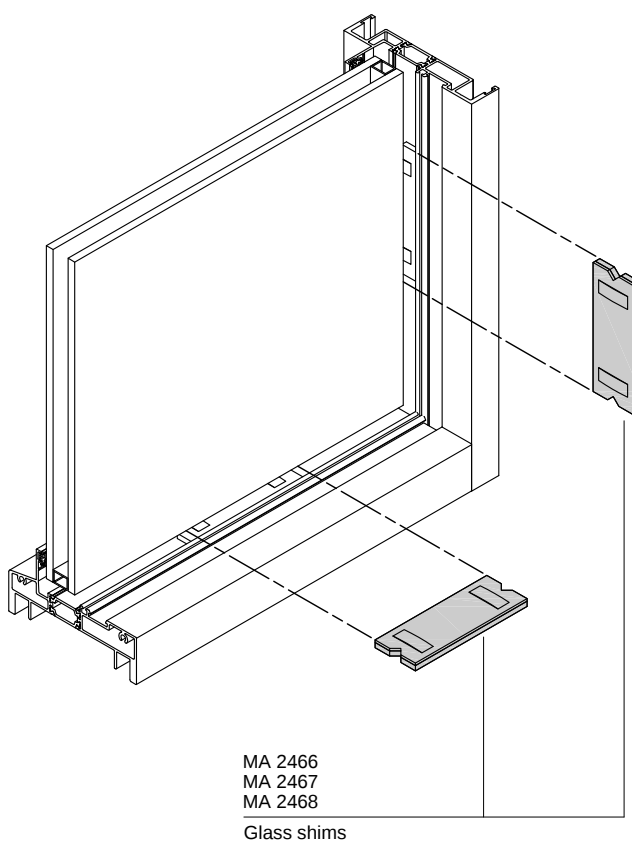
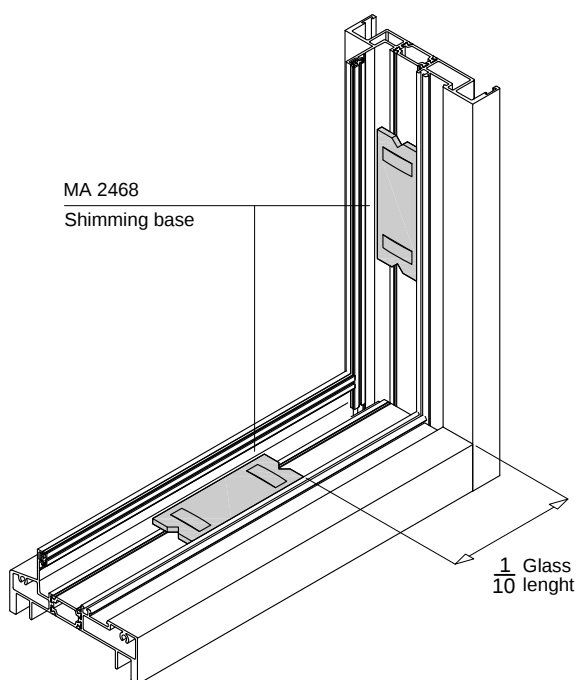
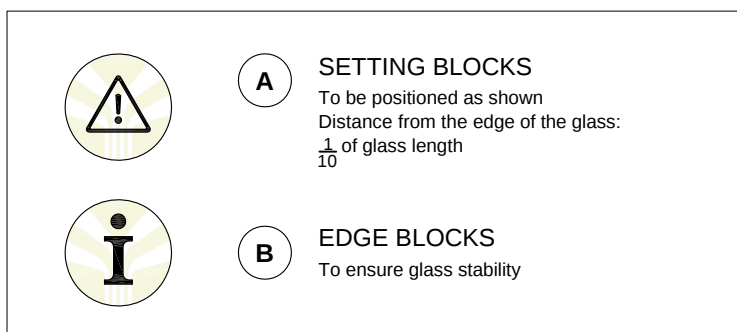
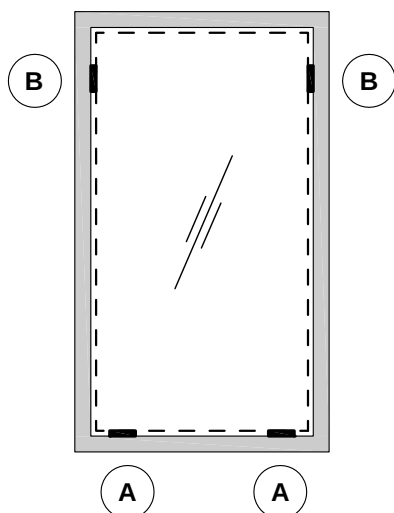
4



mm
[inches]
SCALE 1:2

GLAZING

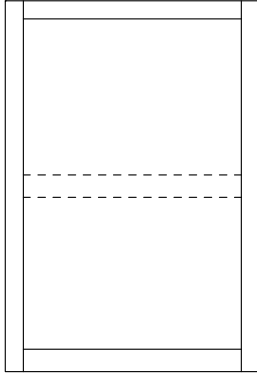
FIXED
SINGLE GLASS UNIT
TRANSOM UNIT





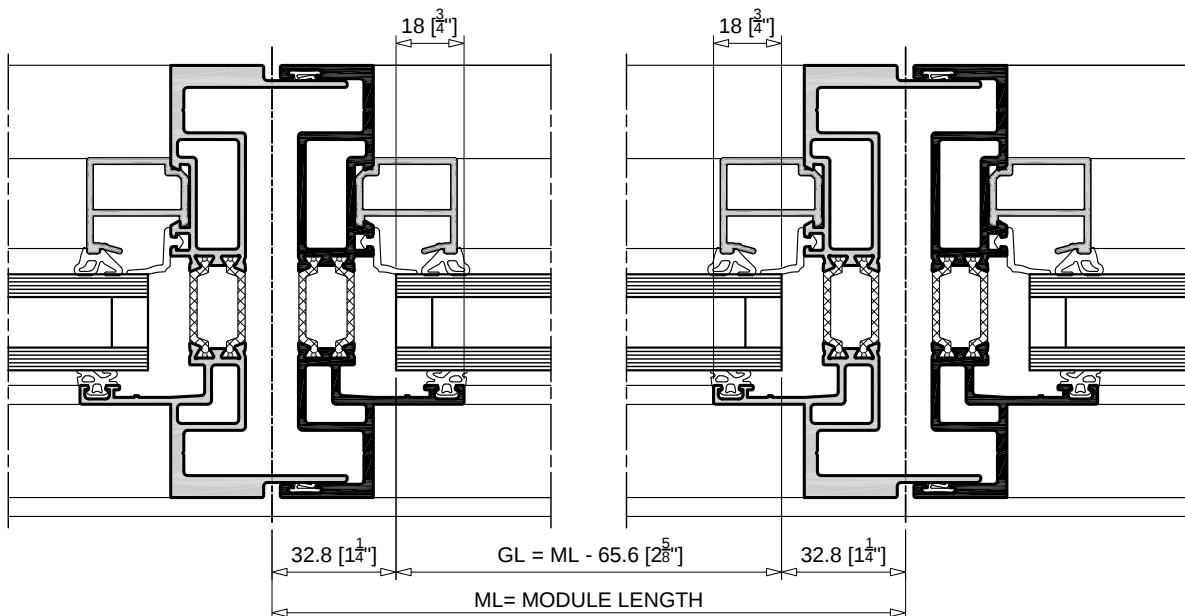
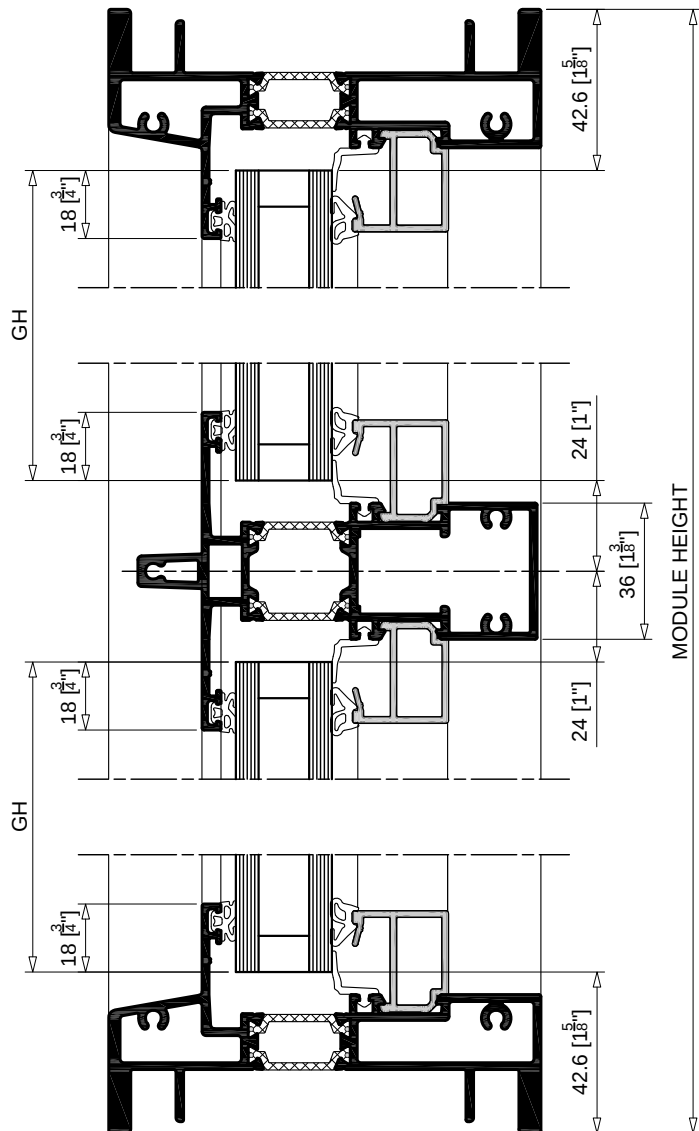
GLAZING

FIXED
SINGLE GLASS UNIT
TRANSOM UNIT



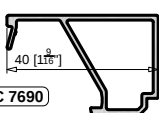
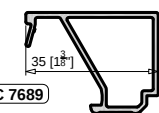
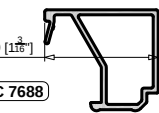
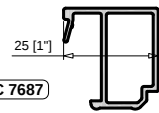
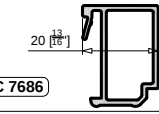
GLASS CUTTING LIST
IS RELATED TO
MODULE DIMENSION

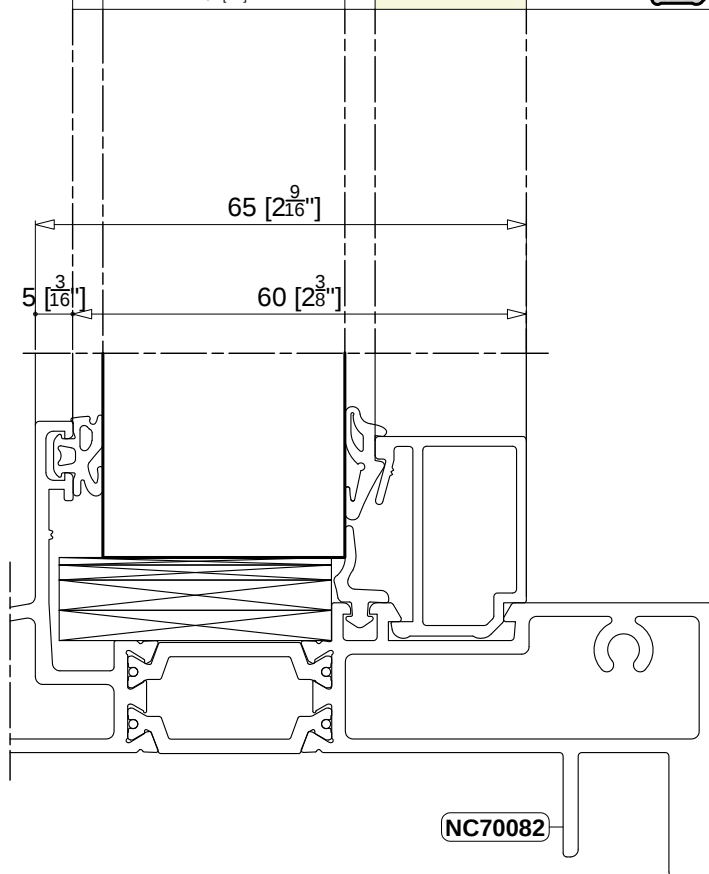
Refer to Chapter C
Cutting List



mm
[inches]
SCALE 1:2

NOTICE: THEORETICAL DIMENSIONS TO BE VERIFIED BEFORE MANUFACTURING

Outside Gasket	Glass Thickness	Inside Gasket	Glass Stop Size	Glass Stop
B	9 $\frac{3}{8}$ "	F	40 [11 $\frac{3}{8}$ "]	 NC 7690
B	10 $\frac{3}{8}$ "	F		
B	11 $\frac{3}{8}$ "	E		
B	12 $\frac{3}{8}$ "	E		
B	13 $\frac{3}{8}$ "	D		
B	14 $\frac{3}{8}$ "	F	35 [1 $\frac{3}{8}$ "]	 NC 7689
B	15 $\frac{3}{8}$ "	F		
B	16 $\frac{3}{8}$ "	E		
B	17 $\frac{3}{8}$ "	E		
B	18 $\frac{3}{8}$ "	D		
B	19 $\frac{3}{8}$ "	F	30 [1 $\frac{3}{8}$ "]	 NC 7688
B	20 $\frac{3}{8}$ "	F		
B	21 $\frac{3}{8}$ "	E		
B	22 $\frac{3}{8}$ "	E		
B	23 $\frac{3}{8}$ "	D		
B	24 $\frac{3}{8}$ "	F	25 [1"]	 NC 7687
B	25 [1"]	F		
B	26 [1"]	E		
B	27 [1 $\frac{1}{8}$ "]	E		
B	28 [1 $\frac{1}{8}$ "]	D		
B	29 [1 $\frac{1}{8}$ "]	F	20 [1 $\frac{1}{8}$ "]	 NC 7686
B	30 [1 $\frac{3}{8}$ "]	F		
B	31 [1 $\frac{1}{4}$ "]	E		
B	32 [1 $\frac{1}{4}$ "]	E		


NOTICE:

**Indicated Dimensions
are theoretical.**

**Glazing and Profiles real
dimensions are related to
production tollerances and must
be always verified.**

**Eventual differences between real
and theoretical dimensions shall be
corrected by choosing a different
Inside Gasket.**

MA 2468



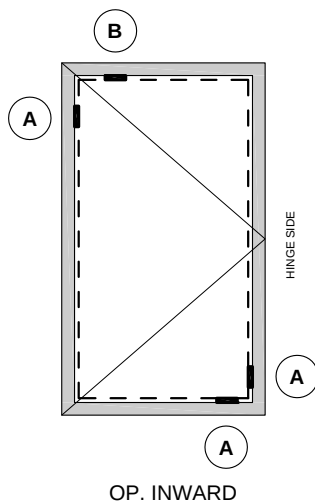
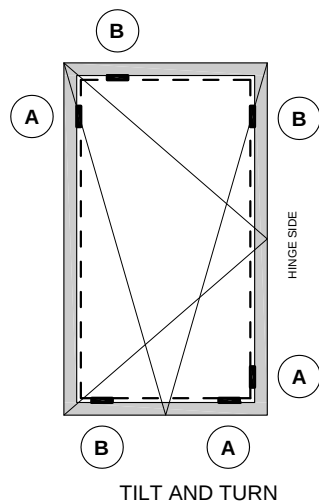
Glass Shimming Base

	Code	Ref.	Dimension
Outside Glass Gasket	 Mg 386D	B	4 $\frac{3}{16}$ "
	 Mg 761D	C	4 $\frac{3}{16}$ "
Inside Glass Gasket	 Mg 385D		From 25 [1"] to 32 [1 $\frac{1}{4}$ "]
Inside Glass-stop Gasket	 Mg 612D	D	3 $\frac{1}{8}$ " to 4 $\frac{3}{16}$ "
	 Mg 613D	E	4.5 $\frac{3}{16}$ " to 6 $\frac{1}{4}$ "
	 Mg 614D	F	6.5 $\frac{1}{4}$ " to 8 $\frac{5}{16}$ "

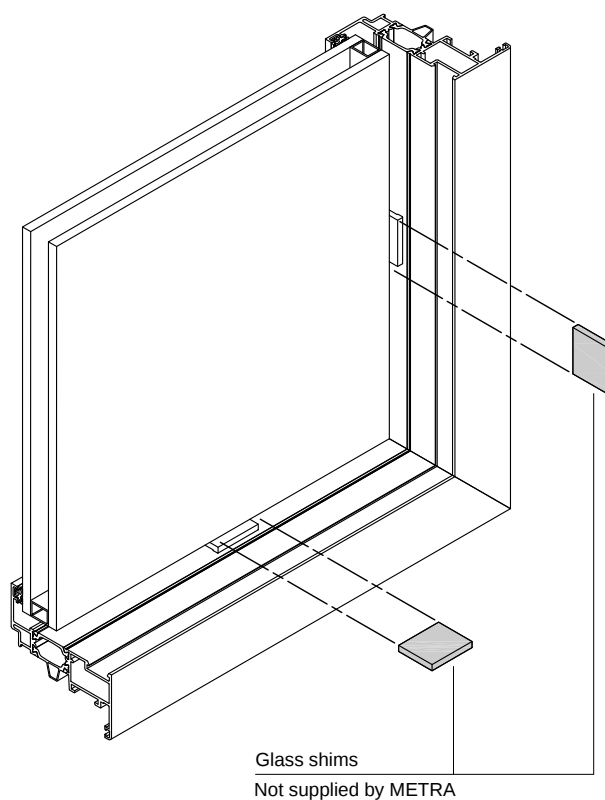
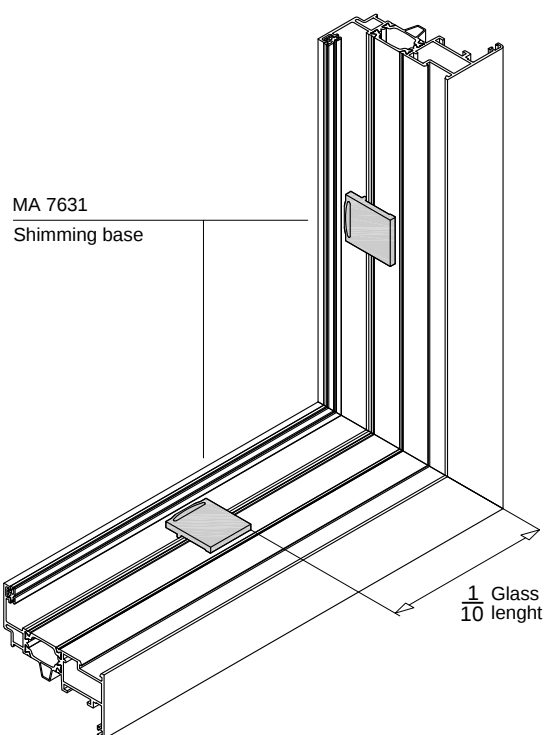
Scale 1:2
mm [inches]

GLAZING

OPERABLE
NC 65 STH



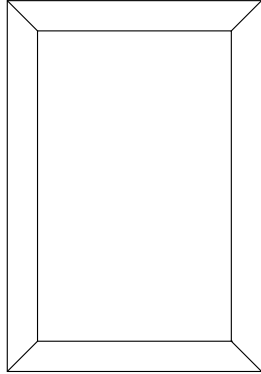
- A** **SETTING BLOCKS**
To be positioned as shown
Distance from the edge of the glass:
 $\frac{1}{10}$ of glass length
- B** **EDGE BLOCKS**
To ensure glass stability





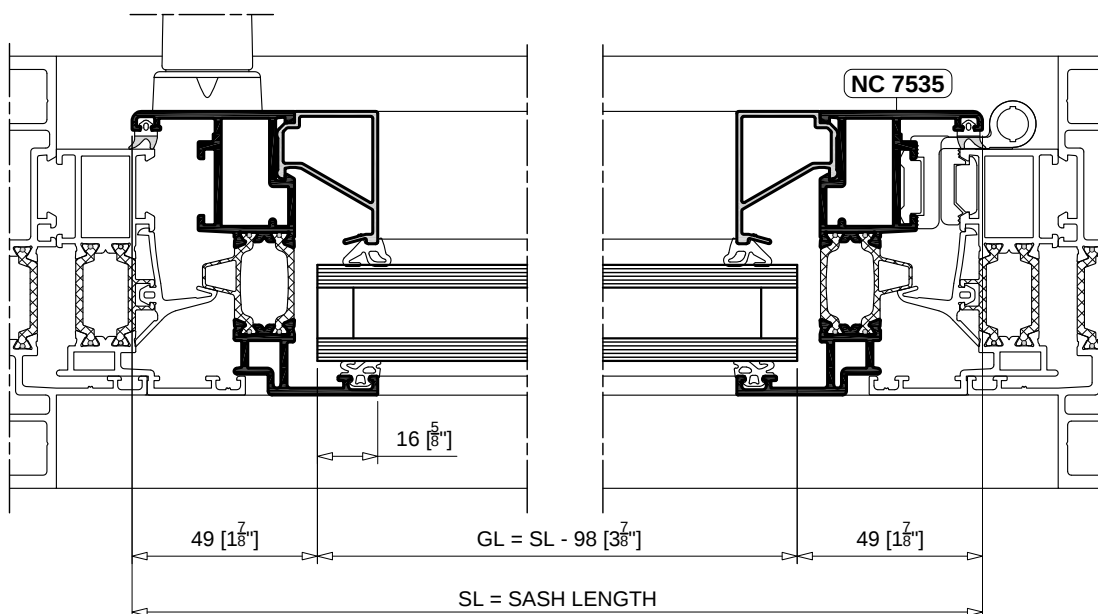
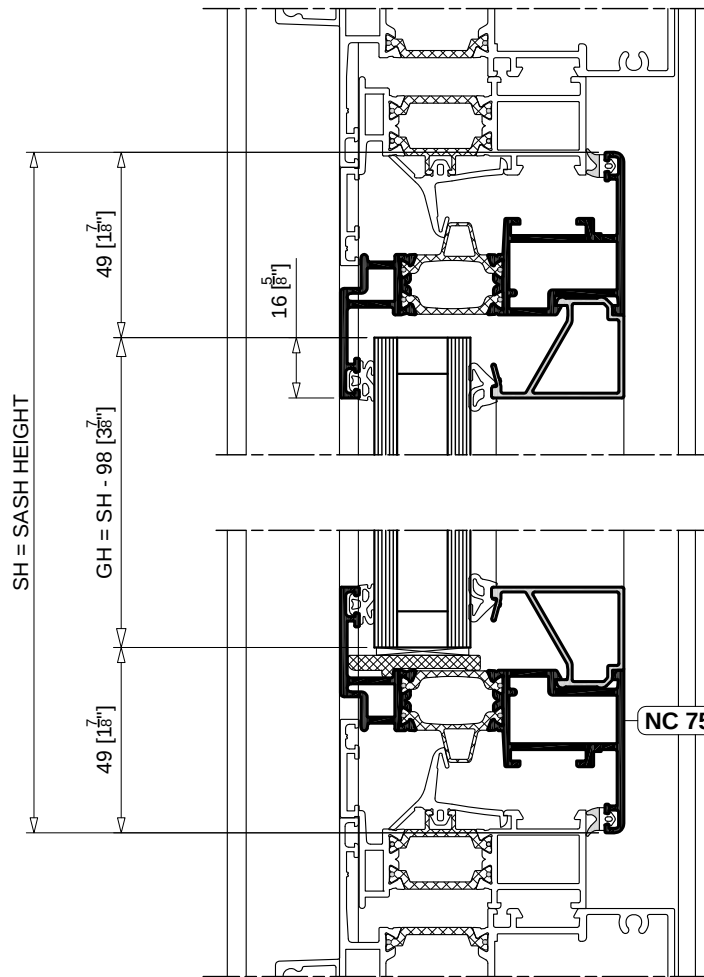
GLAZING

OPERABLE
NC 65 STH



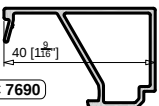
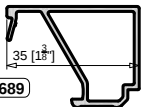
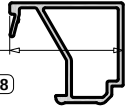
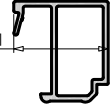
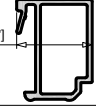
GLASS CUTTING LIST
IS RELATED TO
OPERABLE DIMENSION
AND PROFILE TYPE

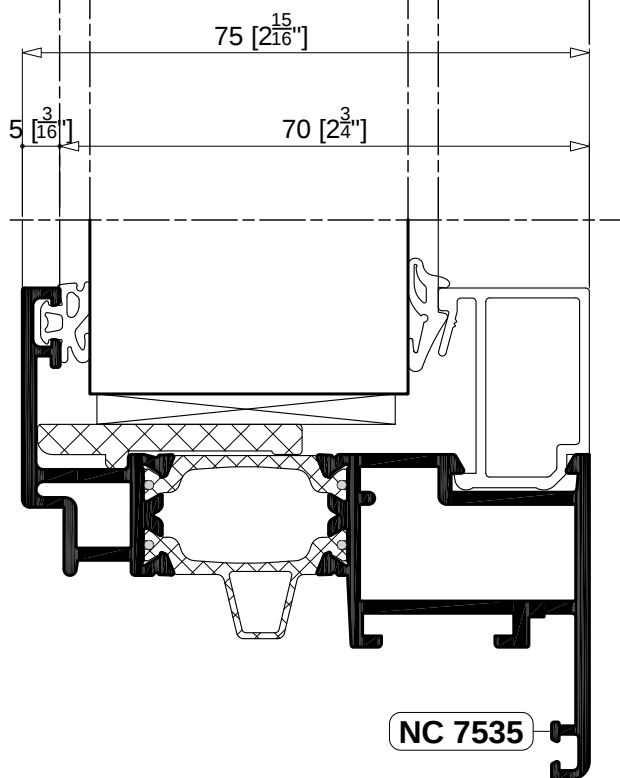
Refer to Chapter C
Cutting List



NOTICE: THEORETICAL DIMENSIONS TO BE VERIFIED BEFORE MANUFACTURING

mm
[inches]
SCALE 1:2

Outside Gasket	Glass Thickness	Inside Gasket	Glass Stop Size	Glass Stop
B	19 [$\frac{3}{4}$ "]	F	40 [$\frac{9}{16}$ "]	 NC 7690
B	20 [$\frac{7}{8}$ "]	F		
B	21 [$\frac{7}{8}$ "]	E		
B	22 [$\frac{7}{8}$ "]	E		
B	23 [$\frac{7}{8}$ "]	D		
B	24 [$\frac{7}{8}$ "]	F	35 [$\frac{3}{8}$ "]	 NC 7689
B	25 [1"]	F		
B	26 [1"]	E		
B	27 [$\frac{1}{16}$ "]	E		
B	28 [$\frac{1}{16}$ "]	D		
B	29 [$\frac{1}{16}$ "]	F	30 [$\frac{3}{16}$ "]	 NC 7688
B	30 [$\frac{1}{16}$ "]	F		
B	31 [$\frac{1}{16}$ "]	E		
B	32 [$\frac{1}{16}$ "]	E		
B	33 [$\frac{1}{16}$ "]	D		
B	34 [$\frac{1}{16}$ "]	F	25 [1"]	 NC 7687
B	35 [$\frac{1}{16}$ "]	F		
B	36 [$\frac{1}{16}$ "]	E		
B	37 [$\frac{1}{16}$ "]	E		
B	38 [$\frac{1}{16}$ "]	D		
B	39 [$\frac{9}{16}$ "]	F	20 [$\frac{13}{16}$ "]	 NC 7686
B	40 [$\frac{9}{16}$ "]	F		
B	41 [$\frac{5}{8}$ "]	E		
B	42 [$\frac{5}{8}$ "]	E		


NOTICE:

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are theoretical.**

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dimensions are related to
production tollerances and must
be always verified.**

**Eventual differences between real
and theoretical dimensions shall be
corrected by choosing a different
Inside Gasket.**

MA 7631



Glass Shimming Base

	Code	Ref.	Dimension
Outside Glass Gasket	 Mg 386D	B	4 [$\frac{3}{16}$ "]
	 Mg 761D	C	4 [$\frac{3}{16}$ "]
Inside Glass-stop Gasket	 Mg 612D	D	3 [$\frac{1}{8}$ "] to 4 [$\frac{3}{16}$ "]
	 Mg 613D	E	4.5 [$\frac{3}{16}$ "] to 6 [$\frac{1}{4}$ "]
	 Mg 614D	F	6.5 [$\frac{1}{4}$ "] to 8 [$\frac{5}{16}$ "]

Scale 1:2
mm [inches]



PERIMETER CONDITIONS

AAMA 501-05
CAN/CSA A440-00 "WINDOWS"
INSTALLATION DETAILS
FASTENING DIAGRAM



Self-tapping screws:

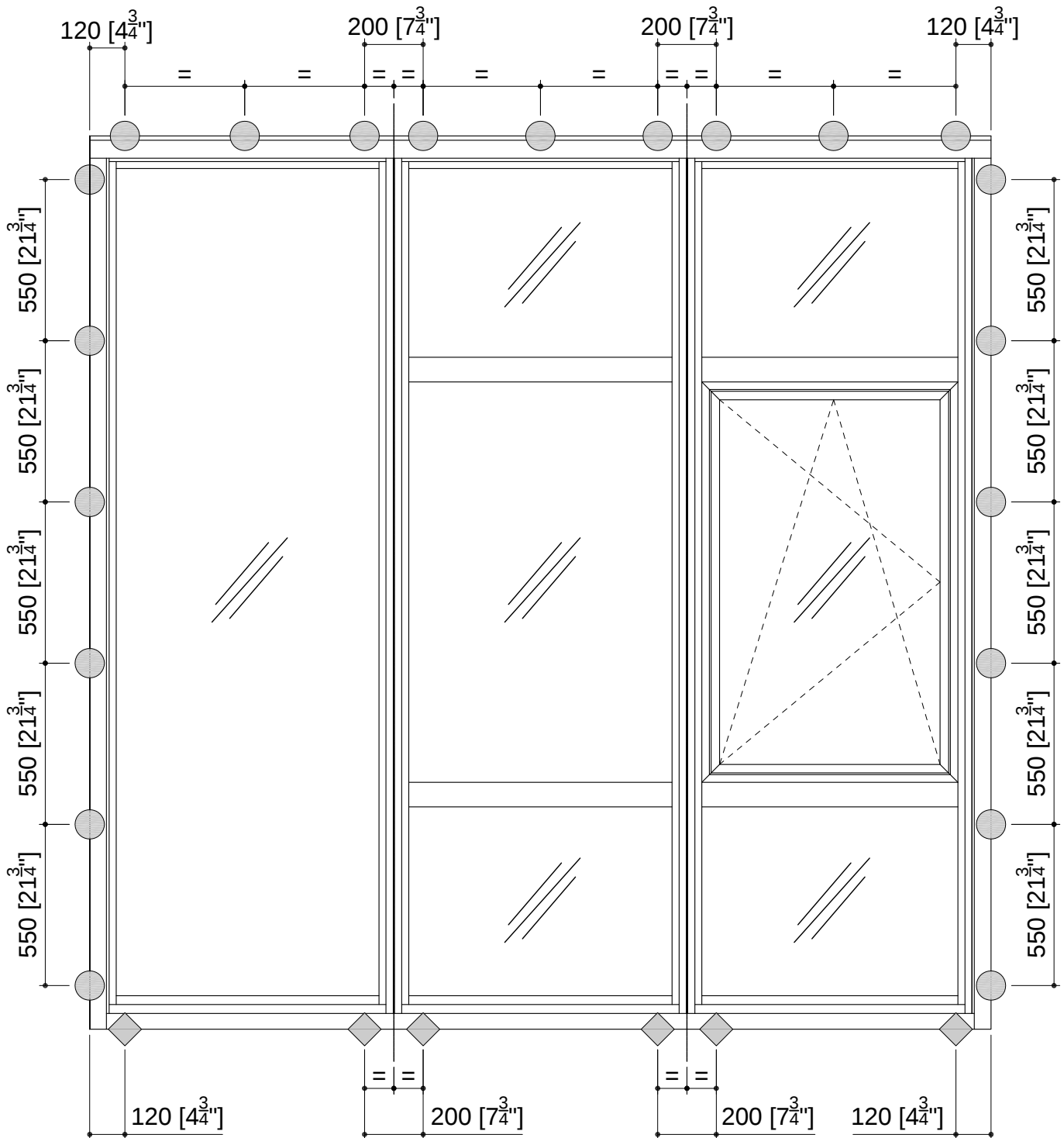


#12 x 50 [2"]



12 x 60 [2 $\frac{1}{4}$ "]

See next pages for details



mm [inches]

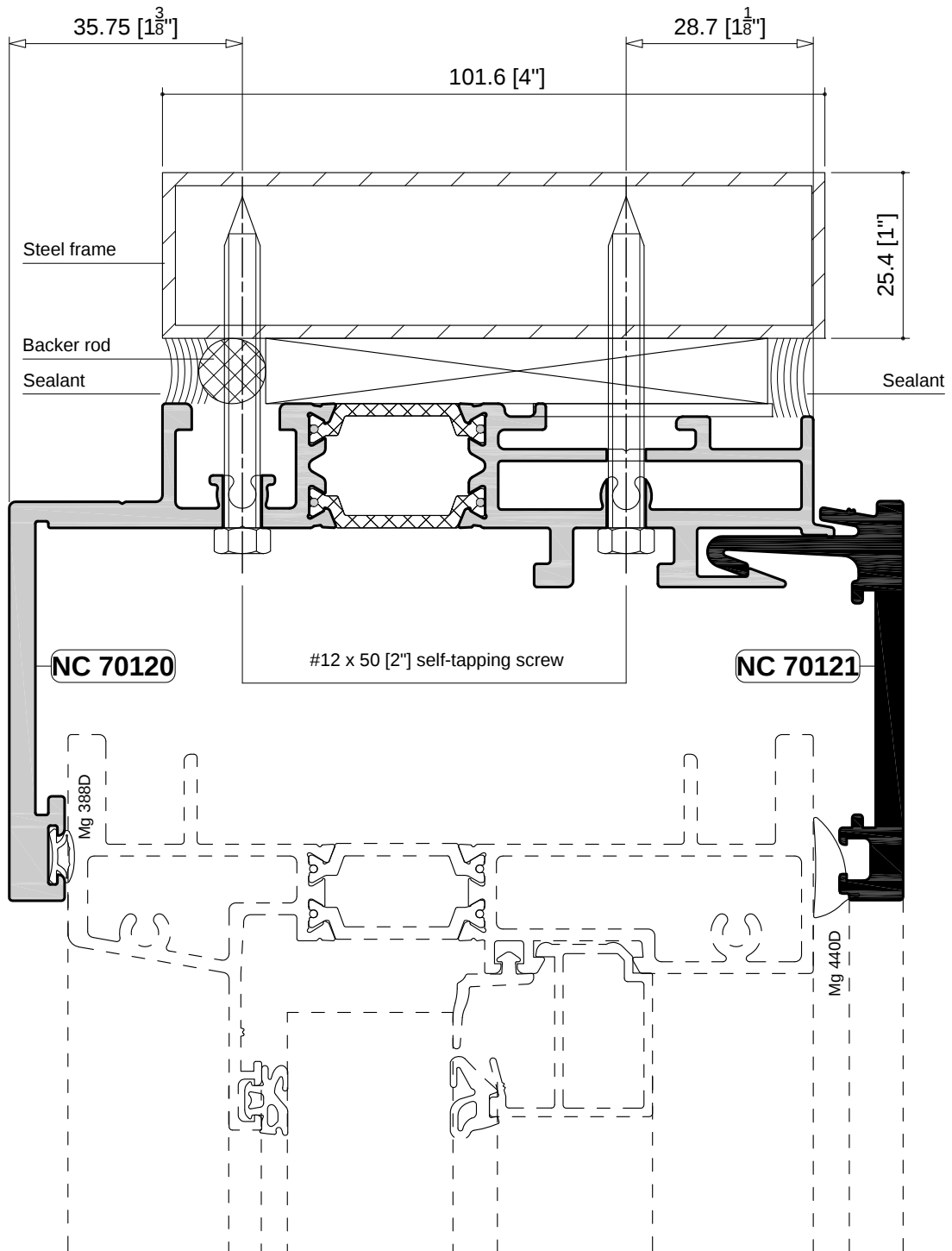
PERIMETER CONDITIONS

AAMA 501-05
CAN/CSA A440-00 "WINDOWS"
INSTALLATION DETAILS
TOP SECTION



Drill holes $\varnothing 6 \frac{1}{4}$ "

Apply sealant on hole
before screw insertion



SCALE 1:1
mm [inches]



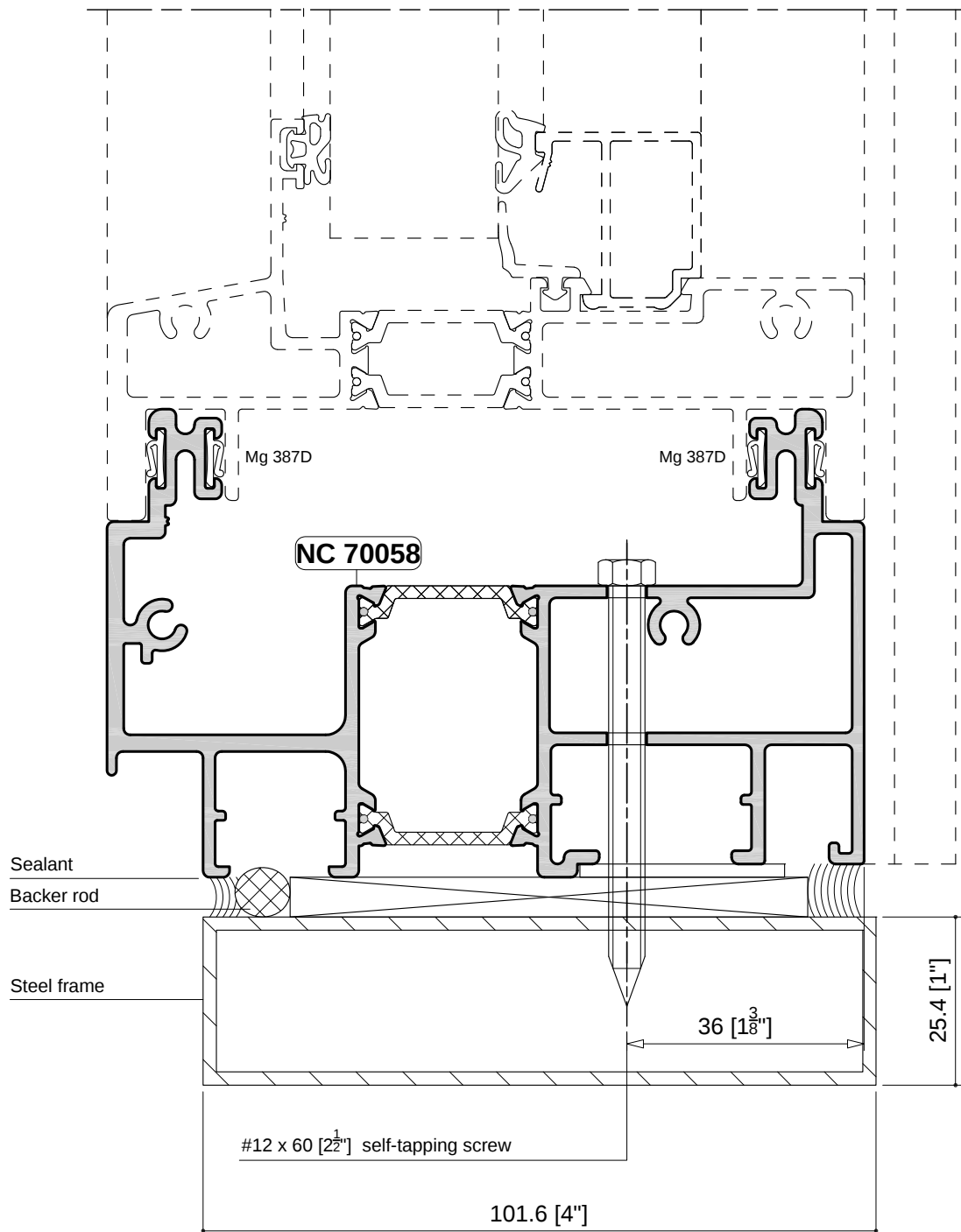
PERIMETER CONDITIONS

AAMA 501-05
CAN/CSA A440-00 "WINDOWS"
INSTALLATION DETAILS
BOTTOM SECTION



Apply sealant on hole
before screw insertion

Drill holes $\varnothing 6 \frac{1}{4}$ "

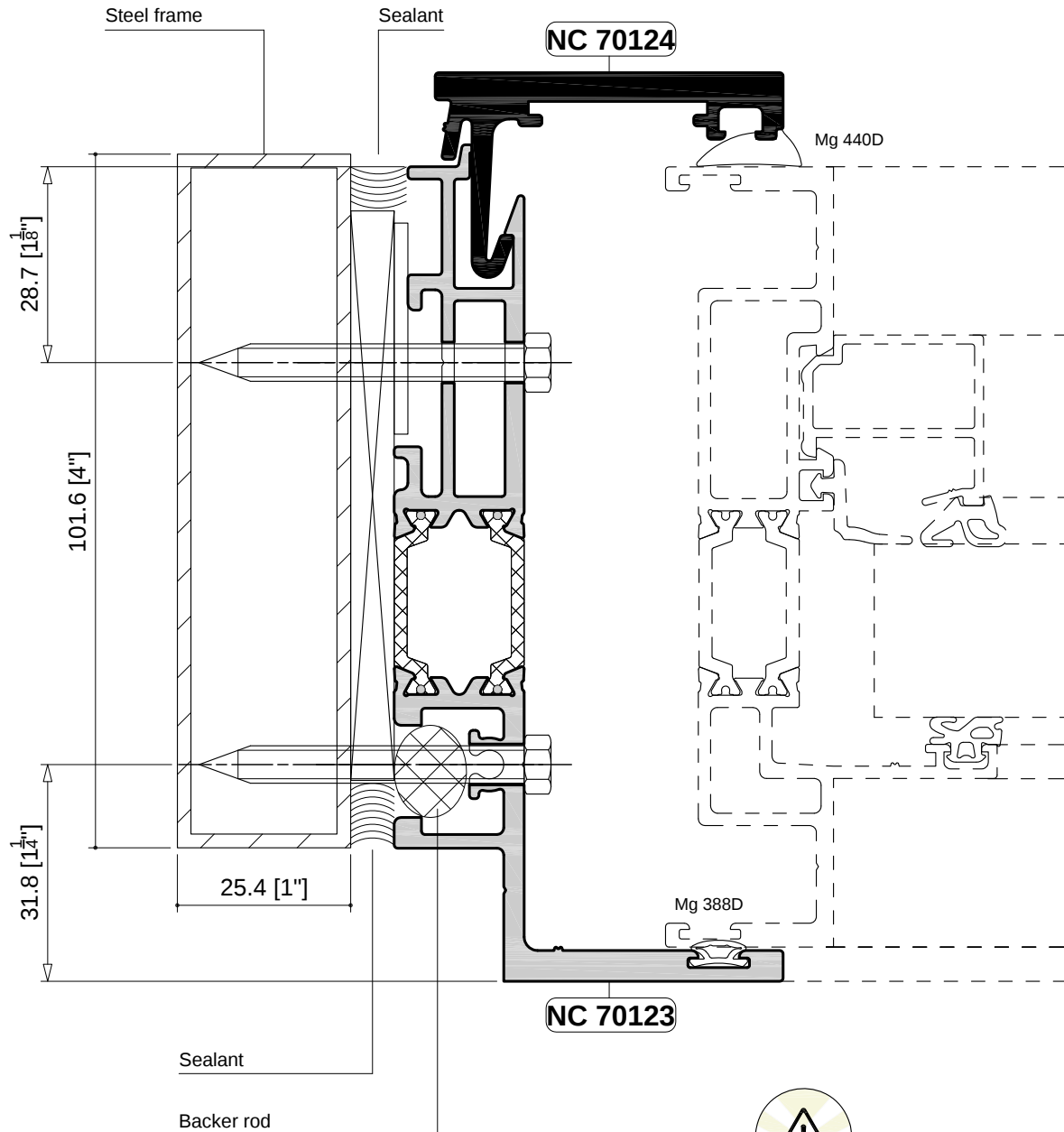


SCALE 1:1
mm [inches]



PERIMETER CONDITIONS

AAMA 501-05
CAN/CSA A440-00 "WINDOWS"
INSTALLATION DETAILS
SIDES SECTION



Drill holes Ø 1

Apply sealant on hole
before screw insertion

SCALE 1:1
mm [inches]

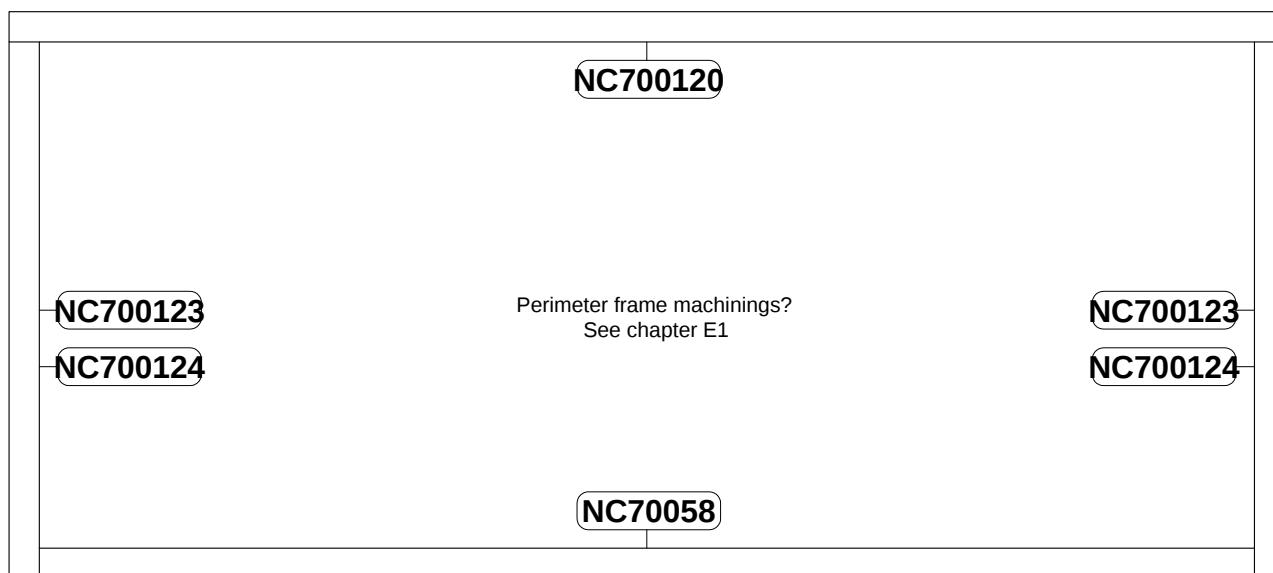
PERIMETER CONDITIONS

INSTALLATION SEQUENCE

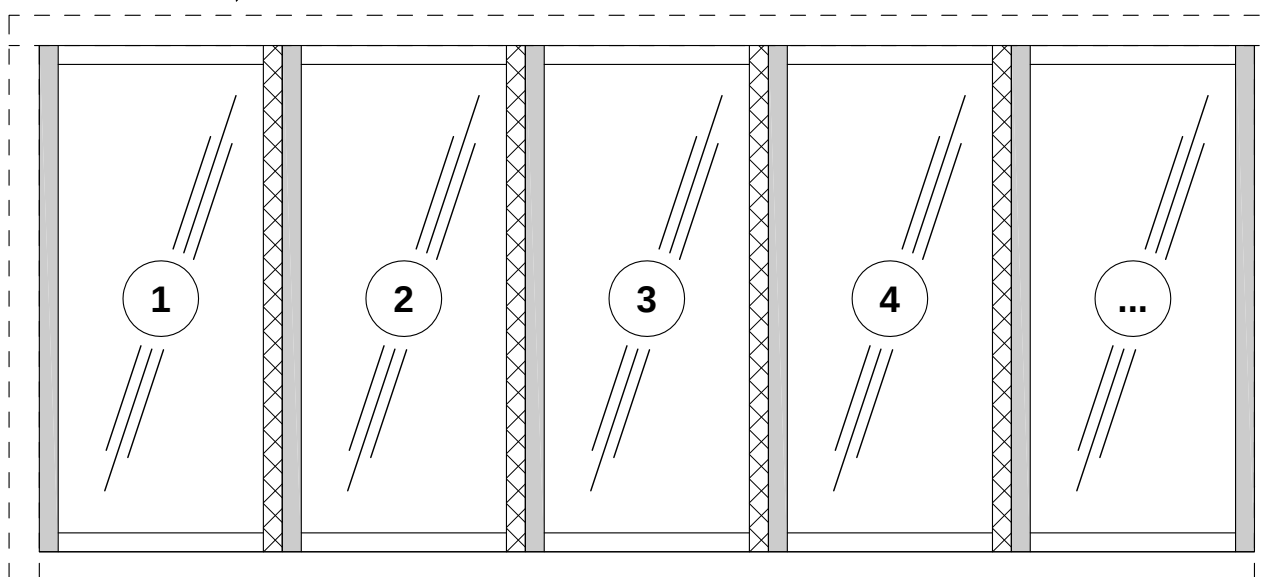
INSTALLATION
TO BE PERFORMED
FROM INSIDE OF BUILDING



A PERIMETER FRAME INSTALLATION



B MODULES INSTALLATION



MODULE TYPES?
SEE NEXT PAGE FOR DETAILS

PERIMETER CONDITIONS

INSTALLATION SEQUENCE

B

MODULES
INSTALLATION

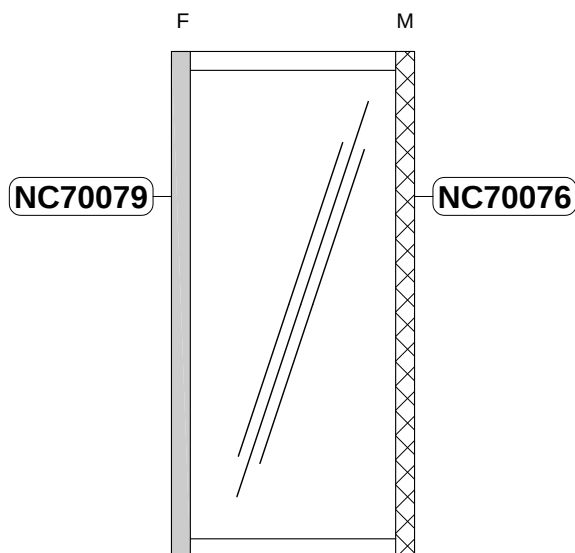
MODULE TYPES:

1

FEMALE - MALE
MODULE

Applies to:

FIRST MODULE
INTERMEDIATE MODULES

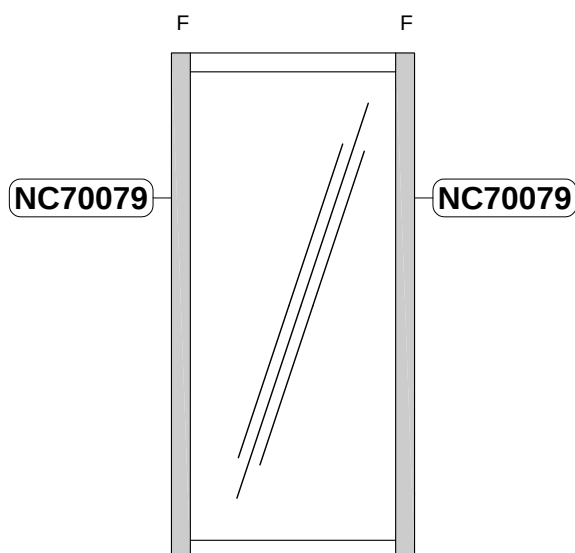


...

FEMALE - FEMALE
MODULE

Applies to:

LAST MODULE



INSTALLATION SEQUENCE?
SEE NEXT PAGE

PERIMETER CONDITIONS

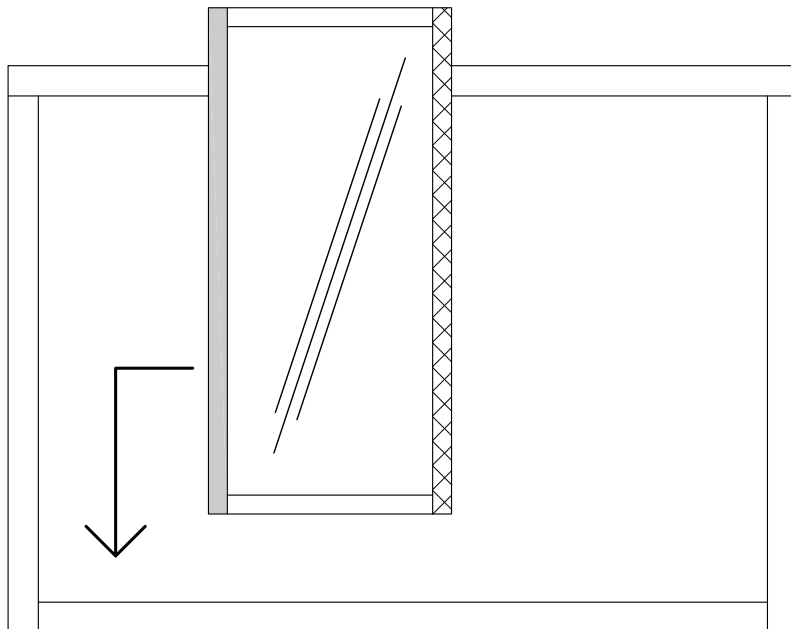
INSTALLATION SEQUENCE

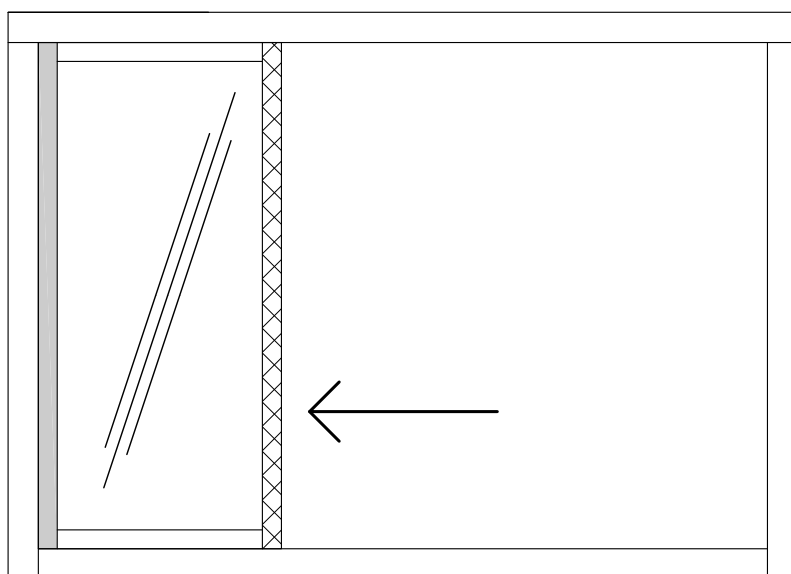
B

MODULES
INSTALLATION

SEQUENCE

1

DROP-IN MODULE
INTO SILL

2

SLIDE MODULE
INTO POSITION


PERIMETER CONDITIONS

INSTALLATION SEQUENCE

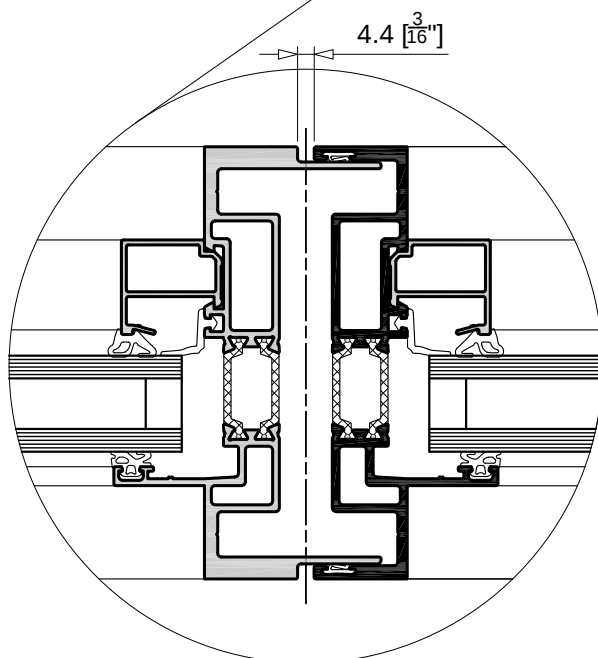
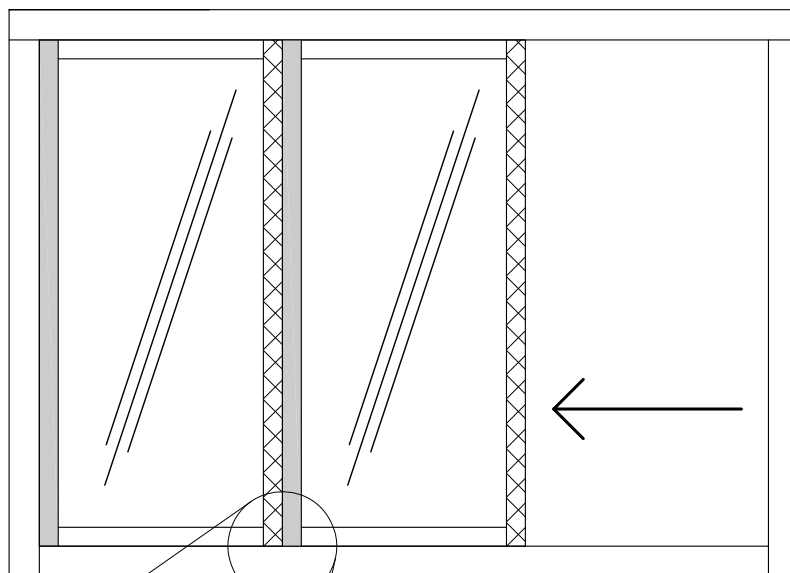
B

MODULES
INSTALLATION

SEQUENCE

3

REPEAT STEPS 1-2



LEAVE
DILATION GAP
BETWEEN MODULES

PERIMETER CONDITIONS

INSTALLATION SEQUENCE

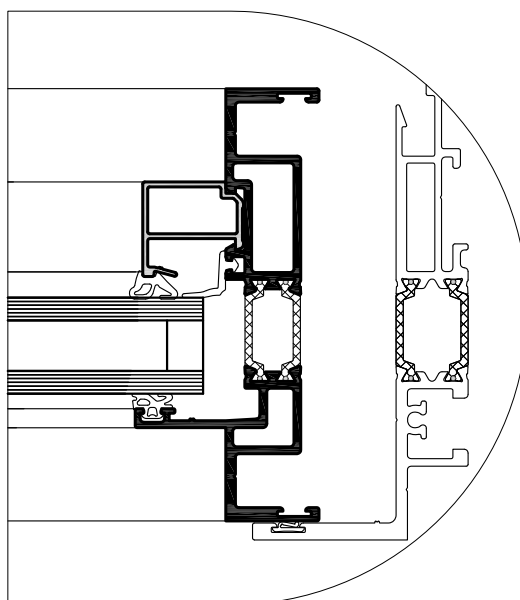
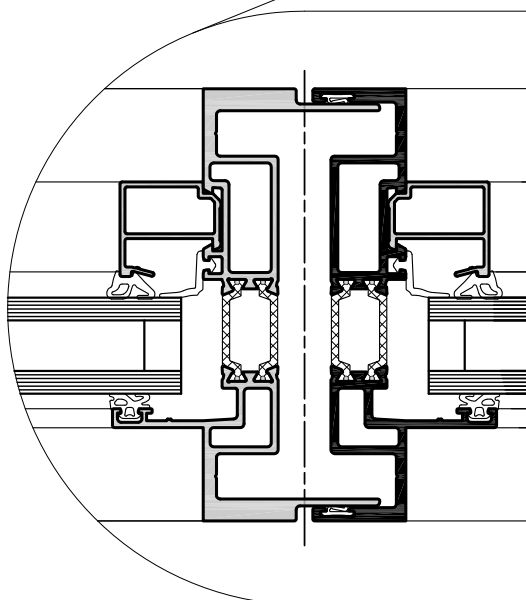
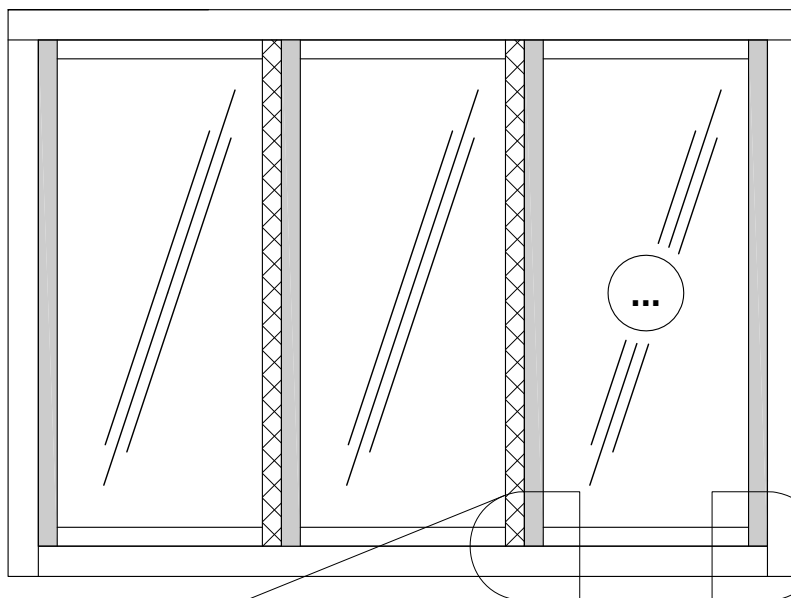
B

MODULES
INSTALLATION

SEQUENCE

4

REPEAT STEPS 1-2



LAST MODULE
TO BE FEMALE - FEMALE
FOR EASIER INSTALLATION

PERIMETER CONDITIONS

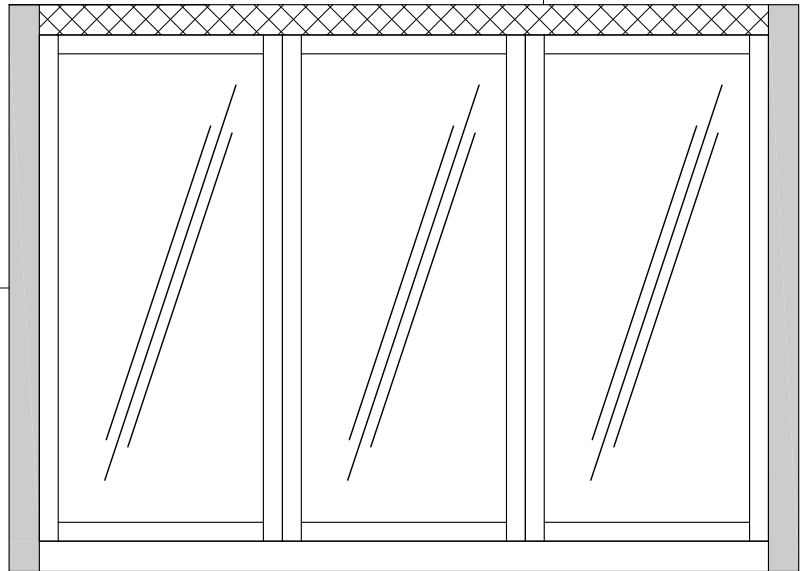
INSTALLATION SEQUENCE

C INSIDE SNAP-ON
INSTALLATION

INSTALL SNAP-ON
PROFILES AS INDICATED

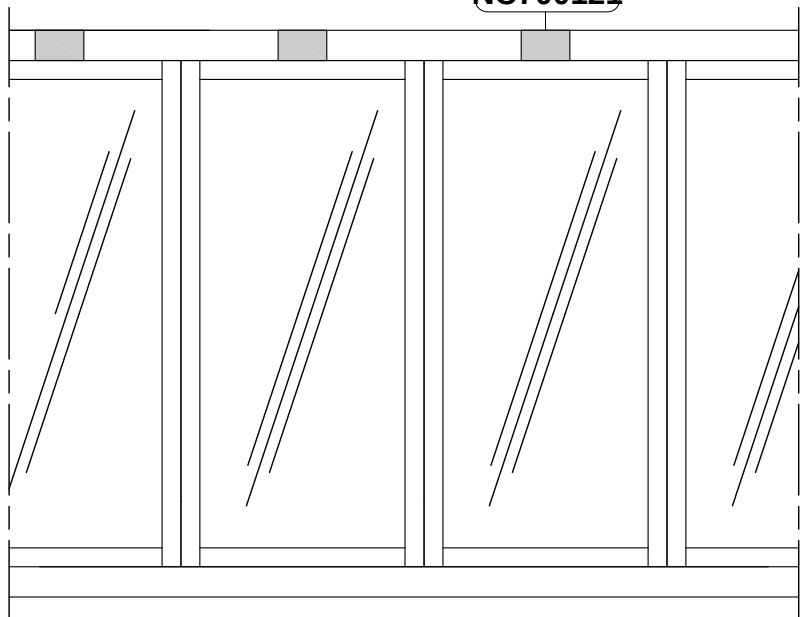
NC700124

NC700121



USE PORTIONS OF
SNAP-ON PROFILES
TO SECURE
INTERMEDIATE MODULES
WHEN PERFORMING
STEP B3 OF INSTALLATION
PROCESS

NC700121





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