TECHNICAL CATALOGUE

SLIDING WINDOW AND DOOR SYSTEM
WITH THERMAL BREAK

E160 E75 E85 E68 ES70 Q72 E75 ES38 E68 EW70 E45 Q60 E8000

ETEM

ES70
WINDOW AND DOOR SYSTEM WITH THERMAL BREAK

TABLE OF CONTENTS

GENERAL INFORMATION page 9
BUILDING PHYSICS page 15
TABLES page 19
PROFILES page 23
SECTIONS page 41
GLAZING OPTIONS page 59
CUTTING LISTS page 63
MACHINING page 77
ACCESSORIES page 117
CE MARKING page 145

ETEM HISTORY

ETEM is a leading aluminium extrusion company. It was founded in 1971 as a part of the largest metal manufacturing holding in the Balkans. With over 40 years of experience ETEM is a fully integrated designer and producer of architectural systems and aluminium profiles for industrial applications.

Our mission is to listen and promptly respond to our customers' requests and design and manufacture aluminium products and systems, taking into consideration technical and aesthetic requirements.

ETEM focuses on sustainable development and has proven its concern about the protection of the natural environment by making considerable investments in anti-pollution measures and by optimizing production processes following the applicable standards of the European Union.

SERVICES WE PROVIDE

ETEM supports you with the following:

⊳ design of conventional and bespoke architectural system solutions

⊳ innovative engineering in the field of curtain walls, ventilated facades, doors, windows

⊳ professional consultation and adequate technical advices ensured by our engineering team with wide experience in the field of profile extrusion as well as architectural systems' engineering

⊳ reliable customer care constant support trainings, technical support and audits on site

⊳ high quality engineering which guarantees offering the best solution according to the specific features of every single project

⊳ managing the process of certification in accordance with the applicable European standards in Notified Bodies

⊳ production of non-standard length profiles and non-standard processing high quality powder coating

ETEM PRODUCTS AND SUSTAINABLE DEVELOPMENT

SUSTAINABLE DEVELOPMENT IS DEVELOPMENT THAT MEETS THE NEEDS OF THE PRESENT WITHOUT COMPROMISING THE ABILITY OF FUTURE GENERATIONS TO MEET THEIR OWN NEEDS.*

For many, sustainable development is about environmental conservation. This is true but it also includes two other aspects: a social aspect and an economic aspect.

Sustainable development means striking the right balance between economic development, social equity and environmental protection.

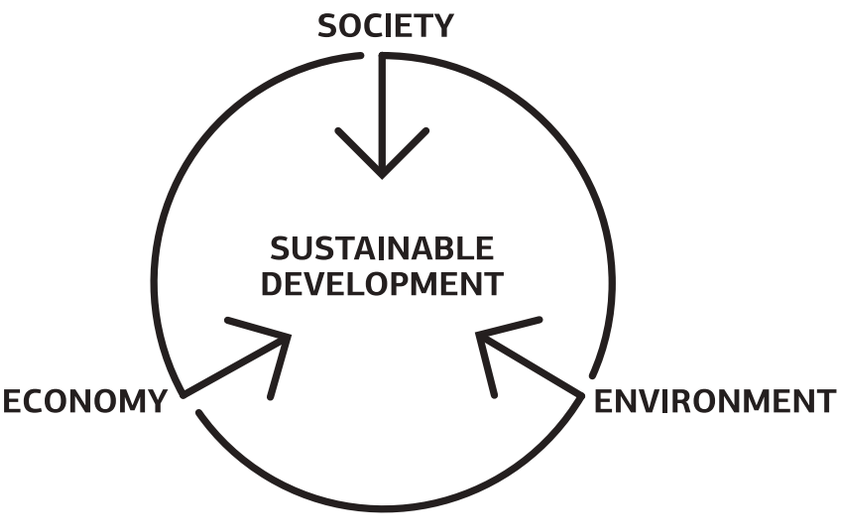
For us meeting this objective translates into the challenge of satisfying market demands at the lowest economic, social and environmental cost possible.

ETEM has always designed architectural systems which are in compliance with all requirements for achieving high energy efficiency.

In order to assure the comfort of the building inhabitants, ETEM systems adapt their functions to the changing environment.

As a moderator between outside and inside our systems provide:

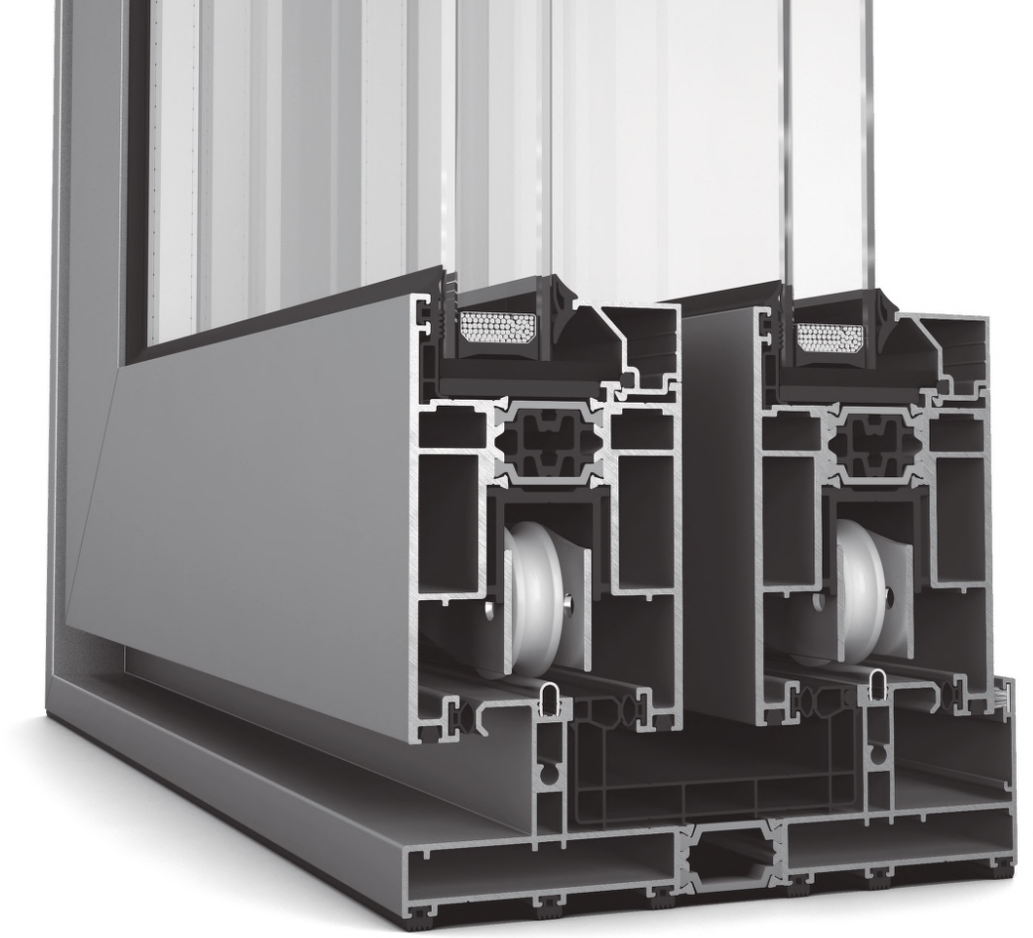
› ENERGY EFFICIENCY
› DAYLIGHT
› SUN-SHADING
› VENTILATION AND GOOD AIR QUALITY
› SAFETY AND SECURITY



* Extract from Brundtland Report, from the United Nations World Commission on Environment and Development WCED

GENERAL INFORMATION

CONCEPT / ADVANTAGES / CERTIFICATES



ES70 WINDOW CONCEPT

ES70 IS A HIGH-END SLIDING WINDOW SYSTEM WITH THERMAL BREAK, SUITABLE FOR OPPOSED BALCONY DOORS AND WINDOWS WITH HIGH REQUIREMENTS FOR THERMAL INSULATION, FUNCTIONALITY AND AESTHETICS.

- Elegant straight design
- Excellent water-tightness and air-permeability
- High thermal insulation
- Glazing sash with 70.0mm width allowing glass panel from 25.0 up to 52.0mm
- Ability of Slim Line Interlock
- Maximum weight per sash 400 kg.

COMPLIANCE WITH APPLICABLE REGULATIONS
Production management

Quality Management system is certified in accordance with EN ISO 9001:2008.

Environmental management system is certified in accordance with EN ISO 14001.

Factory production control system is certified according to the requirements of EN 15088. All ETEM profiles are CE marked and in compliance with applicable European Standards.

ETEM is authorized to use the QUALICOAT quality sign for paint, lacquer and powder coating on aluminium for architectural applications.

Occupational Health & Safety Management System is certified in accordance with OHSAS 18001.

PERFORMANCE CHARACTERISTICS OF ES70

Characteristic	**Classification / value**	**Standard**
Air permeability	Up to class 4	EN 1026 / EN 12207
Watertightness	Up to class E750	EN 1027 / EN 12208
Resistance to wind load	Up to class C5	EN 12211 / EN 12210
Thermal transmittance	from 2,73 $W/m^2.K$	EN ISO 10077-2

CLASSIFICATION OF CHARACTERISTICS

for windows without resistance to fire and/or smoke leakage characteristics according to EN 14351-1

Characteristic / value / dimension	Classification / Value										
Resistance to wind load Test pressure P1 (Pa)	npd	1 (400)		2 (800)		3 (1200)		4 (1600)		5 (2000)	Exxxx (>2000)
Resistance to wind load Frame deflection	npd	A (≤1/150)				B (≤1/200)				C (≤1/300)	
Resistance to snow and permanent load	npd	Declared information on the infill (e.g. type and thickness of glass)									
Reaction to fire	npd	F		E		D		C		B	A2	A1
External fire performance	npd	According to EN 13501-5									
Watertightness Non-shielded (A) Test pressure (Pa)		1A (0)	2A (50)	3A (100)	4A (150)	5A (200)	6A (250)	7A (300)	8A (450)	9A (600)	Exxxx (>600)
Watertightness Shielded (B) Test pressure (Pa)	npd	1B (0)		2B (50)		3B (100)		4B (150)	5B (200)	6B (250)	7B (300)
Dangerous substances	npd	As required by regulations									
Impact resistance Drop height (mm)	npd	200		300		450		700		950	
Load-bearing capacity of safety devices	npd[a]	Threshold value									
Acoustic performance Sound insulation R_w ($C;C_{tr}$) (dB)	npd	Declared values									
Thermal transmittance U_w ($W/(m^2.K)$)	npd	Declared values									
Radiation properties Solar factor (g)	npd	Declared values									
Radiation properties Light transmittance (τv)	npd	Declared values									
Air permeability Max. test pressure (Pa) Reference air permeability at 100 Pa ($m^3/(h \cdot m^2)$ or $m^3/(h \cdot m)$)	npd	1 (150) (50 or 12.50)			2 (300) (27 or 6.75)			3 (600) (9 or 2.25)		4 (600) (3 or 0.75)	
Operating forces[b]	npd	1						2			
Mechanical strength	npd	1			2			3		4	
Ventilation Air flow exponent n Air flow characteristic K Air flow rates	npd	Declared values									
Bullet resistance	npd	FB1	FB2		FB3	FB4		FB5	FB6	FB7	FSG
Explosion resistance Shock tube	npd	EPR1			EPR2			EPR3		EPR4	
Explosion resistance Range test	npd	EXR1			EXR2		EXR3		EXR4		EXR5
Resistance to repeated opening and closing Number of cycles	npd	5000				10 000				20 000	
Behaviour between different climates	npd	Under development									
Burglar resistance	npd	1		2		3		4		5	6

NOTE 1: npd: no performance determined
NOTE 2: The figures in brackets are for information

[a] Only if safety device(s) is(are) not provided

[b] Manually operated windows only

BUILDING PHYSICS

DIMENSIONING / FORMULAS / EXAMPLES

ALUMINIUM AS MATERIAL

ALUMINIUM IS A VERY YOUNG METAL, EXTRACTED FOR THE FIRST TIME IN 1854. COMMERCIALLY PRODUCED AS A PRECIOUS METAL FROM 1886, ITS INDUSTRIAL PRODUCTION FOR CIVIL APPLICATIONS ONLY ACHIEVED WIDE USE IN THE 1950'S.

NOW ALUMINIUM PLAYS A KEY ROLE FOR THE SUSTAINABILITY OF NEW BUILDINGS AND THE RENOVATION OF EXISTING ONES. THANKS TO ITS PERFORMANCE PROPERTIES ALUMINIUM CONTRIBUTES TO THE ENERGY PERFORMANCE, SAFETY AND COMFORT OF NEW BUILDINGS.

ADVANTAGES

DESIGN FLEXIBILITY
The extrusion process offers an almost infinite range of forms and sections, allowing designers to integrate numerous functions into one profile

LONG SERVICE LIFE
Aluminium building products are made from alloys that are weatherproof, corrosion-resistant and immune to the harmful effects of UV rays, ensuring optimal performance over a very long period of time

HIGH STRENGTH-TO-WEIGHT RATIO
Thanks to the metal's inherent strength and stiffness, aluminium window and curtain wall frames can be very narrow. Material's light weight makes it easier to transport and handle on-site, reducing the risk of work-related injury

HIGH-REFLECTIVITY
This characteristic feature makes aluminium a very efficient material for light management. Aluminium shading devices can be used to reduce the need for air conditioning in summer

FIRE SAFETY
Aluminium does not burn and therefore is classified as a non-combustible construction material (European Fire Class A1). Aluminium alloys will nevertheless melt at around 6500 C, but without releasing harmful gases

NO RELEASE OF DANGEROUS SUBSTANCES
Several studies have proved that aluminium building products do not present a hazard to occupants or the surrounding environment. Aluminium building products have no negative impact, either on indoor air quality or on soil, surface and groundwater

OPTIMAL SECURITY
Where high security is required, specially designed, strengthened aluminium frames can be used. While the glass for such applications may well be heavy, the overall weight of the structure remains manageable thanks to the light weight of the aluminium frames.

ALLOYS

Aluminium in its pure form is a very soft metal. Thanks to the addition of alloying elements such as copper, manganese, magnesium, zinc, etc. and thanks to suitable production processes, the physical and mechanical properties can be varied in a wide range to satisfy the requirements of a large number of different applications.

ETEM profiles are extruded from the following alloys:
EN AW-1050 [Al 99.5]
EN AW-6060 [Al Mg Si]
EN AW-6063 [Al Mg0,7 Si]
EN AW-6061 [Al Mg1 Si Cu]
EN AW-6005 [Al Si Mg]
EN AW-6082 [Al Si1 Mg Mn]

The most common aluminium alloy which is used by ETEM is EN AW 6063.
Here are the properties of this alloy:

MATERIAL PROPERTIES	
Aluminium alloy	EN F22
Ultimate tensile strength	Rm = 210 N/mm^2
Yield strength	$R_{p0\,2}$ = 160 N/mm^2
Modulus of elasticity	Eal=70 000 N/mm^2 = 7.10^9 kg/m^2
Coefficient of thermal expansion	α=0 023 mm/m .K (up to 1 2 mm/m for difference up to 50°C)

EXTRUSION PROCESS

ETEM profiles are obtained through extrusion process, which consists of pushing a hot cylindrical bullet of aluminium through a shaped die. The extrusion process offers almost infinite range of forms and sections, allowing our designers to integrate numerous functions into one single profile.

FINISHING

POWDER COATING
It is a type of paint that is applied as a dry powder. Coating is applied on ETEM profiles electrostatically and then is cured under heat to allow it to flow and form a "skin".
ETEM is authorized to use the quality sign QUALICOAT for powder coatings on aluminium for architectural applications. A wide range of colors and gloss levels can be achieved.
ETEM also offers timber imitations painting, in addition to all RAL colors. The technology EZY provides the following colors: Golden Oak, Acero, Betulla, Mogano, Verde Scuro, Wenge, Noce Fiammato, Noce Chiaro, Ciliegio Rosso, Acacia Scuro, Ciliegio Antico, Noce Reale, Ciliegio Reale.

ANODIZING
It is an electrochemical process whereby to reinforce the natural oxide film on the aluminium surface, increasing hardness, corrosion and abrasion resistance. Anodizing gives a very decorative silver matt surface finish, and colored can also be obtained by sealing metallic dyes into the anodized layer.

MAINTENANCE

Apart from routine cleaning for aesthetic reasons, ETEM aluminium profiles do not require any maintenance which translates into a major cost and ecological advantage over lifetime of the product.

RECYCLING

Aluminium scrap can be repeatedly recycled without any loss of value or properties.
In many instances, aluminium is combined with other materials such as steel or plastics, which are most frequently mechanically separated from aluminium before being molten.

CALCULATION OF GLASS PANE THICKNESS

*Glazing thickness:

For single glazing the minimum thickness is given by the following equations:

a) If $\frac{h_g}{l_g} \leq 3$, $t = \sqrt{\frac{10 \cdot l_g \cdot h_g \cdot w}{72}}$,mm

or

b) If $\frac{h_g}{l_g} > 3$, $t = \frac{l_g \cdot \sqrt{10 \cdot w}}{72}$,mm

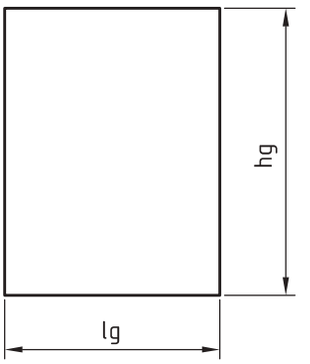
Where:
t – Minimum theoretical glass thickness, mm
w – Wind pressure, kg/m^2
l_g – The smallest dimension of the glass pane, m
h_g – The largest dimension of the glass pane, m

For double glazing, the total thickness of both glasses in the panel is equal to the thickness of a single glass pane (evaluated using the above equations) multiplied by 1.5

For triple glazing, the total thickness of all glasses in the panel is equal to the thickness of a single glass pane (evaluated using the above equations) multiplied by 1.7

Always consult facade engineer or glazing manufacturer when calculating for required glazing thickness and maximum allowable dimensions.

Example:



Initial data:
l_g = 1,5 m
h_g = 2,0 m
w = 60 kg/m^2

$$\frac{h_g}{l_g} = \frac{2}{1,5} = 1,33 \leq 3$$

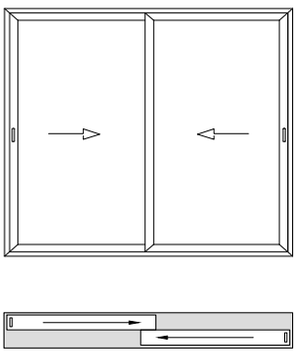
$$t = \sqrt{\frac{10 \cdot l_g \cdot h_g \cdot w}{72}} = \sqrt{\frac{10 \cdot 1,5 \cdot 2 \cdot 60}{72}} = \sqrt{\frac{1800}{72}} = 5 \text{ mm}$$

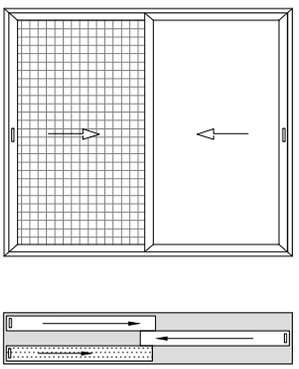
For double glazing t_{req} = 1,5 . 5 = 7,5 mm

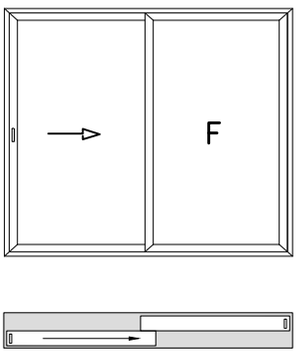
We choose double glazing 5/14/5

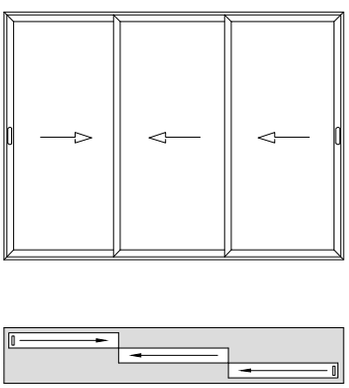
TABLES

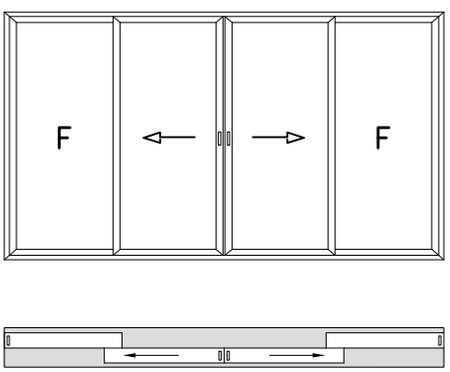
TYPOLOGIES / LIST OF PROFILES / CHARACTERISTICS

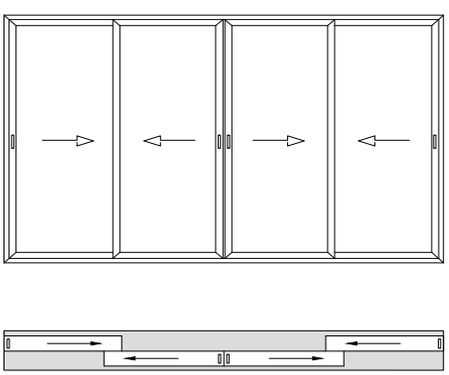


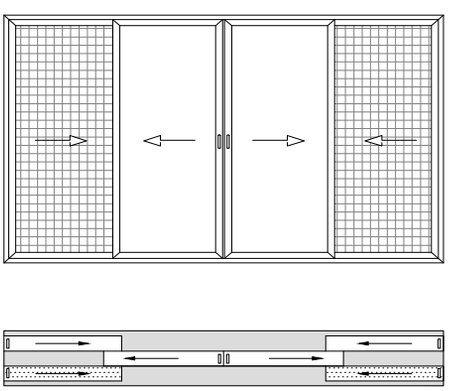



F



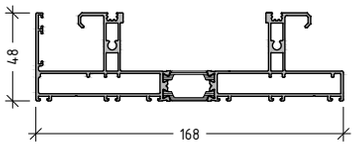
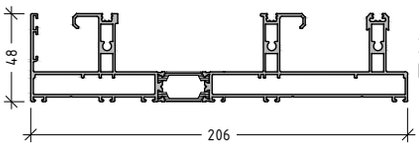
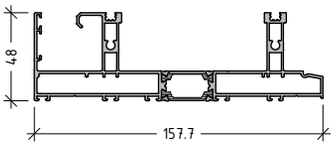
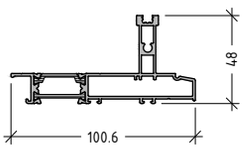
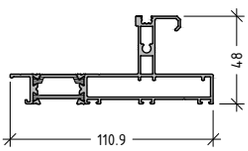
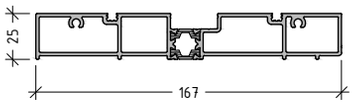

F
F

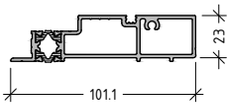
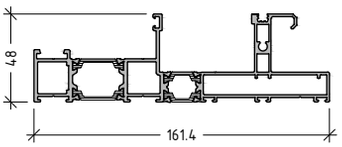
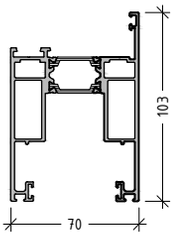
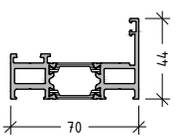
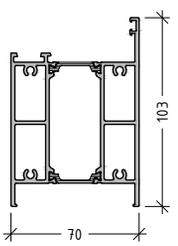
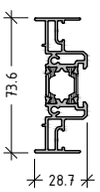




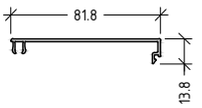
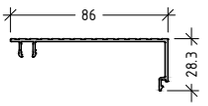
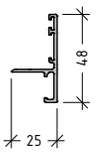
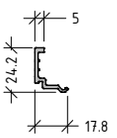
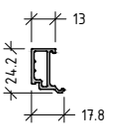
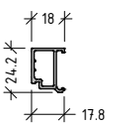
PROFILES

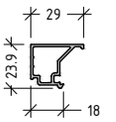
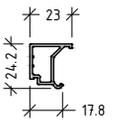
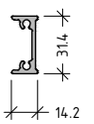
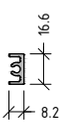
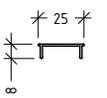
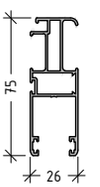
DRAWINGS / SCALE 1:1

code	profile	weight length moment of inertia
E6270103		2711 g/m L=6.01 m
E6270104		3341 g/m L=6.01 m
E6270105 Internal part of triple – multi rail		2549 g/m L=6.01 m
E6270106 Additional for multi rail		1393 g/m L=6.01 m
E6270107 Additional part for triple – multi rail		1553 g/m L=6.01 m
E6270130 Double flat rail		2542 g/m L=6.01 m

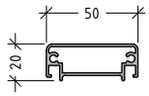
code	profile	weight length moment of inertia
E6270131 Additional flat rail		1510 g/m L=6.01 m
E6270150 Hotel type rail		2731 g/m L=6.01 m
E6270201 Glazing sash		2676 g/m L=6.01 m Jx=63.7 cm⁴ Jy=69.4 cm⁴
E6270250 Narrow sash interlock		1540 g/m L=6.01 m Jx=4.5 cm⁴ Jy=33.0 cm⁴
E6270350 Hotel type mullion		3087 g/m L=6.01 m Jx=69.0 cm⁴ Jy=71.1 cm⁴
E6270510 Adjoining profile		1250 g/m L=6.01 m Jx=20.9 cm⁴ Jy=2.0 cm⁴

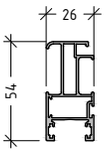
ES70.L-01

code	profile	weight length moment of inertia
E6270501 Interlock profile		456 g/m L=6.01 m
E6270650 Hotel type cap		535 g/m L=6.01 m
E6270620 Drip profile		410 g/m L=6.01 m
E6270680 Glazing bead		211 g/m L=6.01 m
E6270681 Glazing bead		281 g/m L=6.01 m
E6270682 Glazing bead		297 g/m L=6.01 m

code	profile	weight length moment of inertia
E6270683 Glazing bead		340 g/m L=6.01 m
E6270684 Glazing bead		324 g/m L=6.01 m
E6270902 Connecting rod		389 g/m L=6.01 m
E6270904 Connecting rod (for narrow sash)		186 g/m L=6.01 m
E50901W1 Aluminium drainage grill (available only perforated)		124 g/m L=6.01 m
E22214 Fly-screen sash		857 g/m L=6.01 m

ES70.L-02

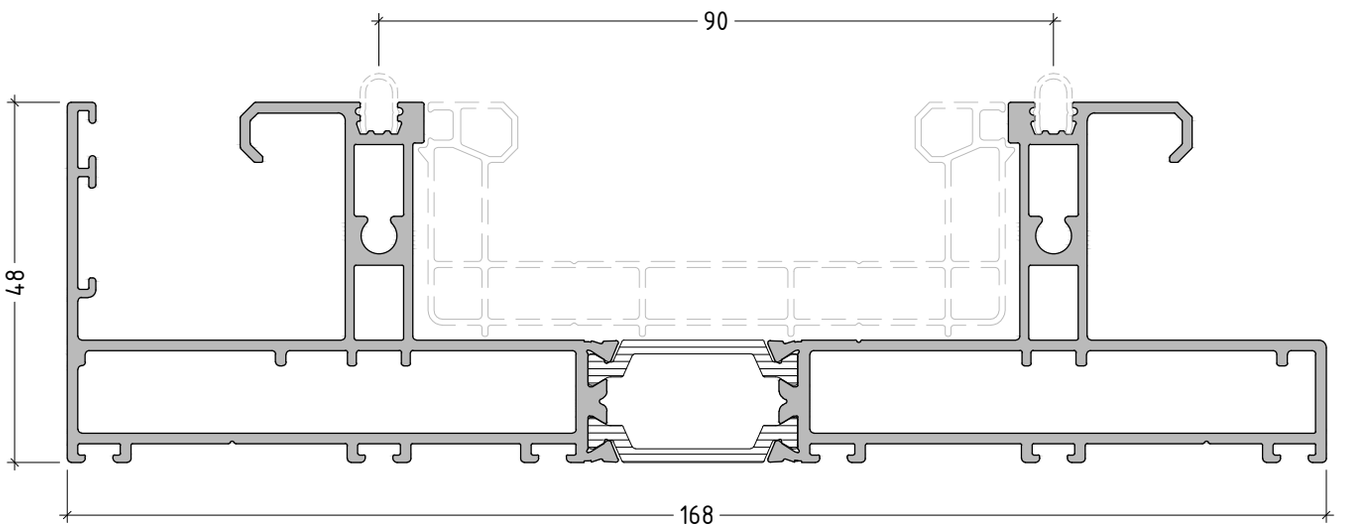
code	profile	weight length moment of inertia
E22215 "T" profile for fly screen		591 g/m L=6.01 m
E22616 Cover for fly screen		105 g/m L=6.01 m

code	profile	weight length moment of inertia
E22216 Vertical screen sash		732 g/m L=6.01 m
E19651 Cover for fly screen		100 g/m L=6.01 m

E6270103

Double rail

2711 gr/m



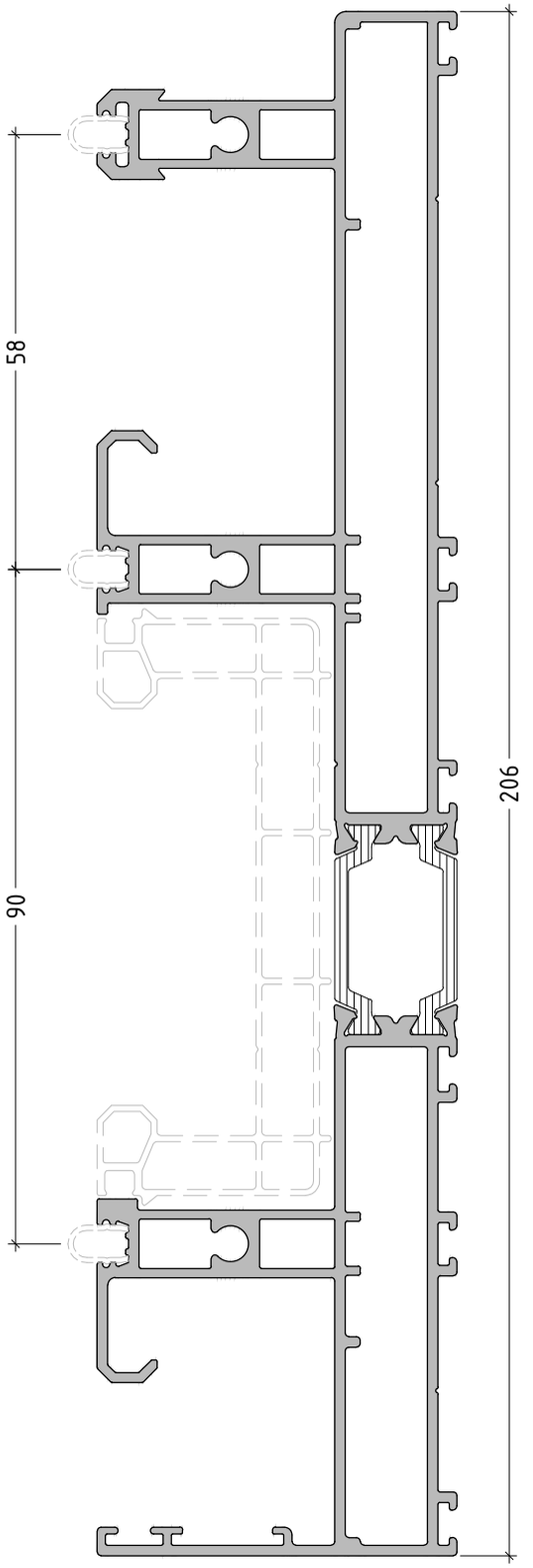
scale : 1:1

ES70.P-01

E6270104

Triple rail

3341 gr/m



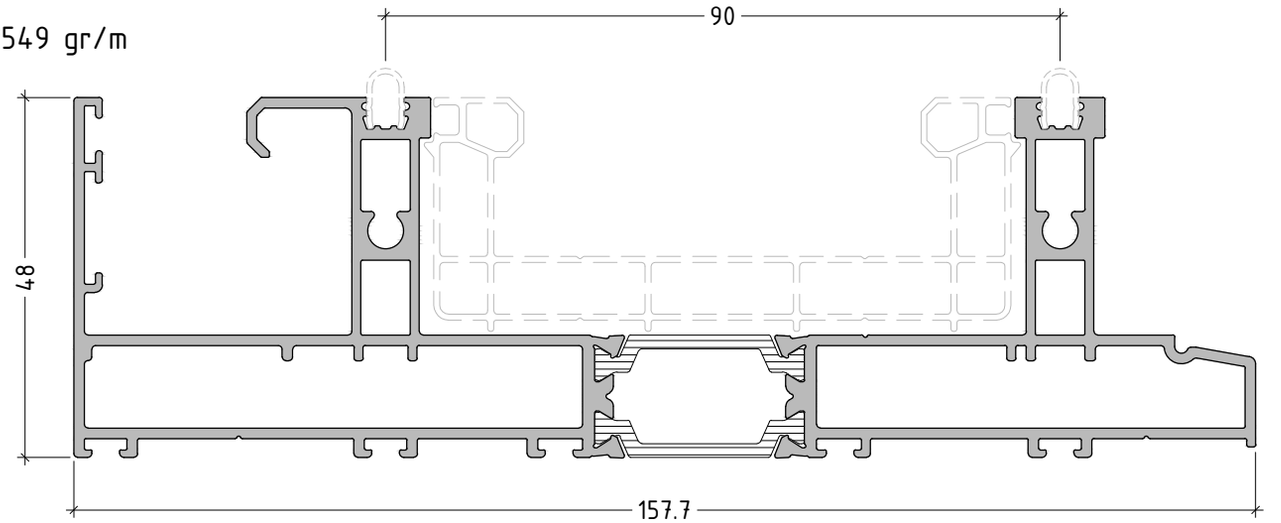
scale : 1:1

ES70P-02

E6270105

Internal part of triple
- multi rail

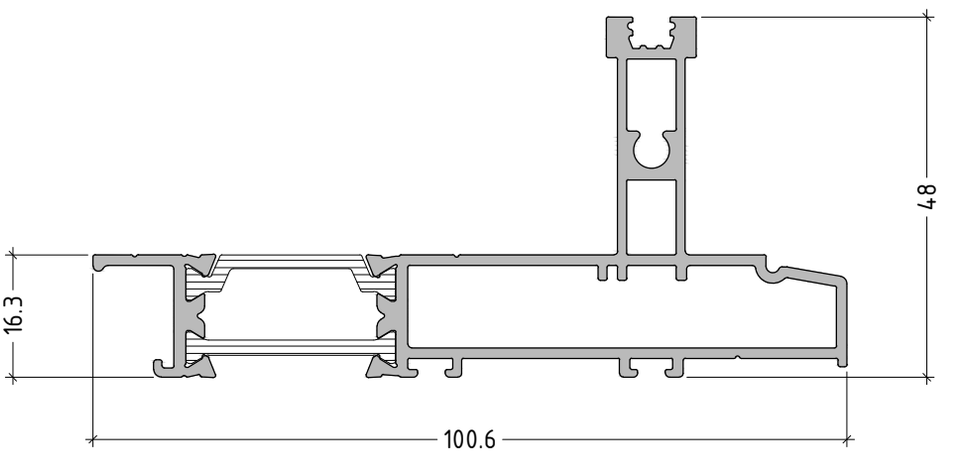
2549 gr/m



E6270106

Additional rail for
multiple frames

1393 gr/m



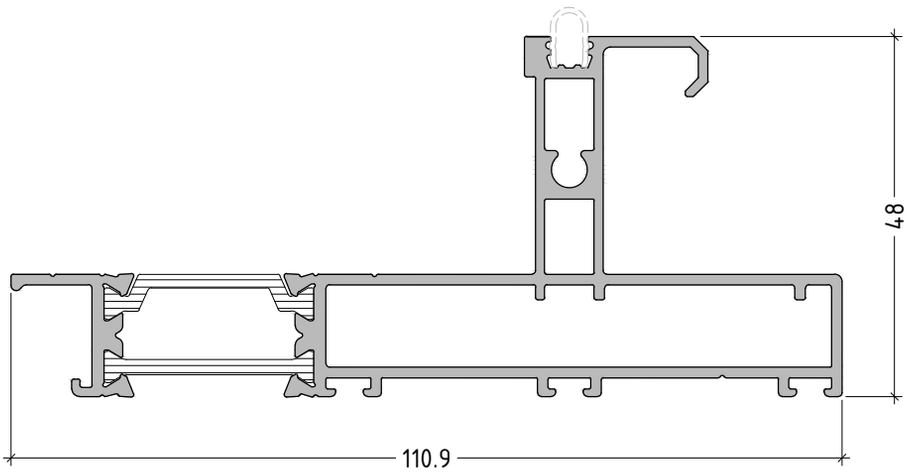
scale : 1:1

ES70.P-03

E6270107

Additional part for
triple - multi rail

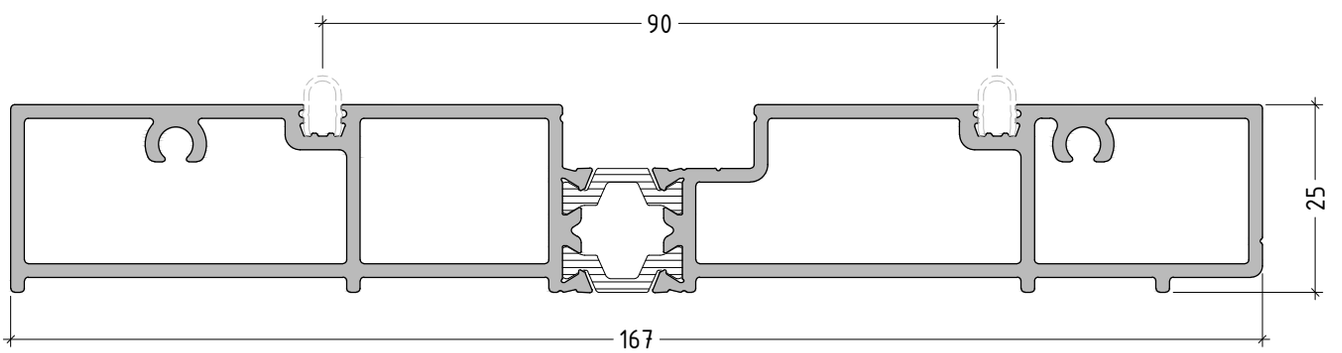
1553 gr/m



E6270130

Double low rail

2542 gr/m



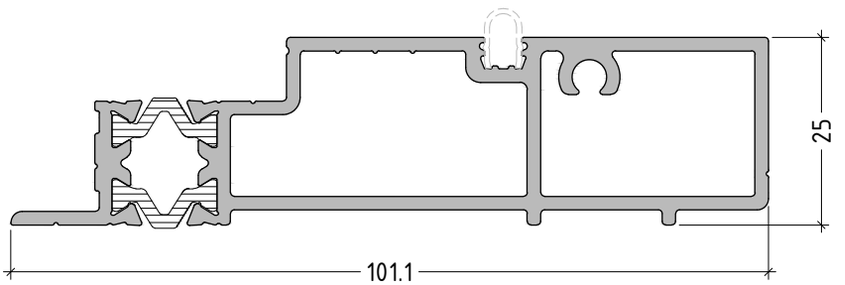
scale : 1:1

ES70P-04

E6270131

Additional low rail

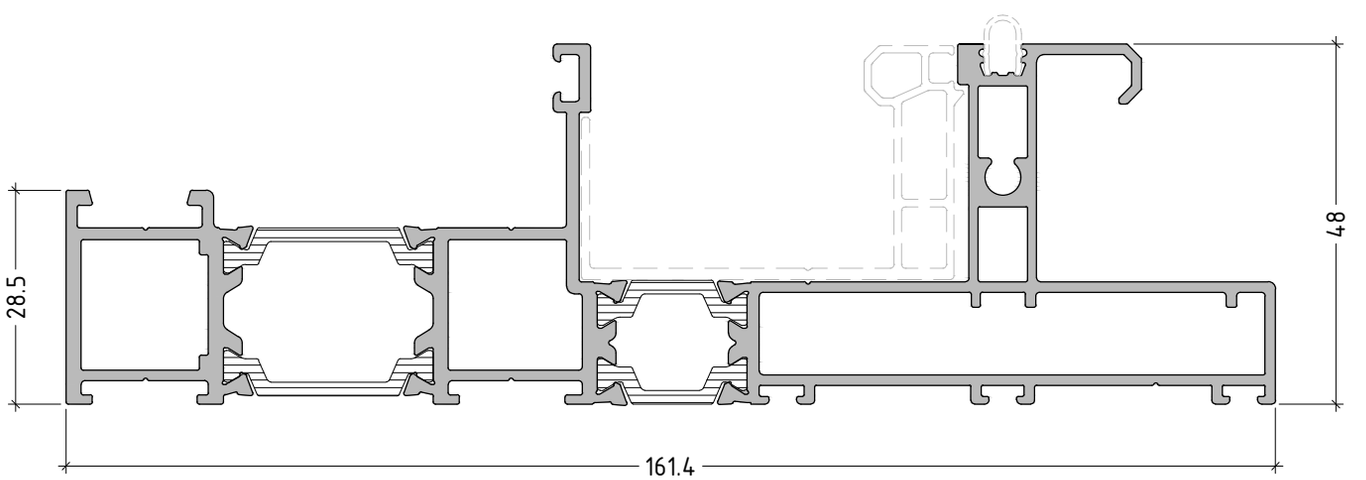
1510 gr/m



E6270150

Hotel type rail

2731 gr/m



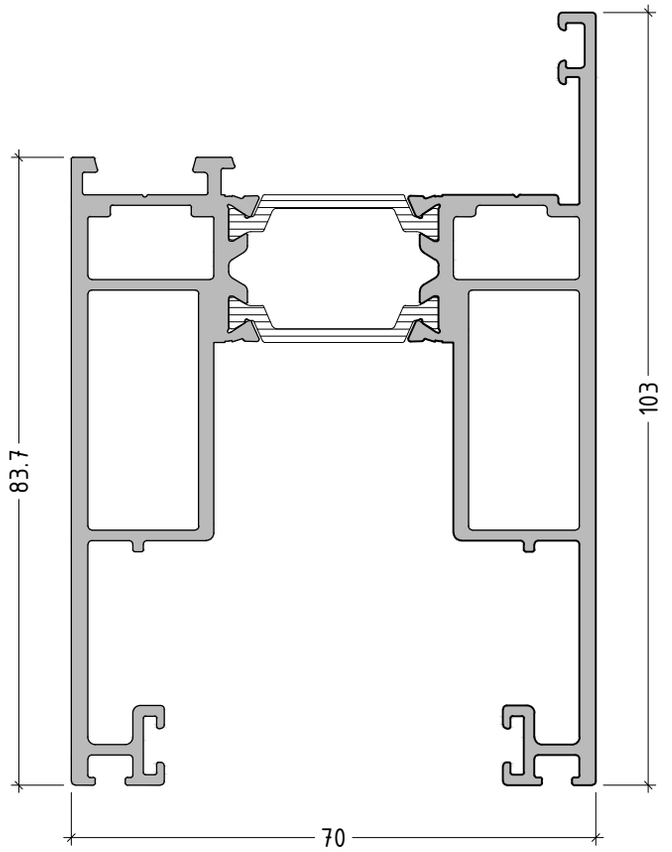
scale : 1:1

ES70.P-05

E6270201

Glazing sash

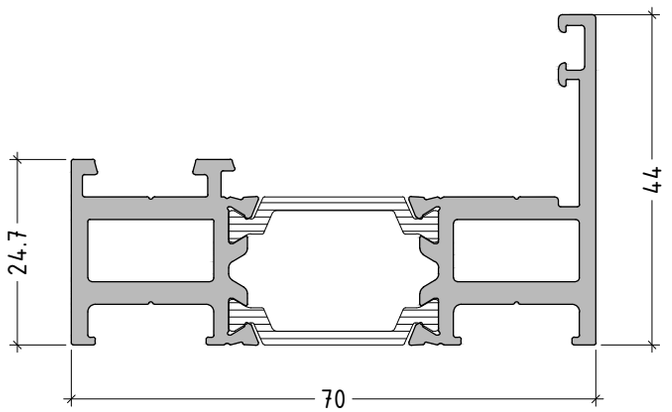
2676 gr/m



E6270250

Narrow sash interlock

1540 gr/m



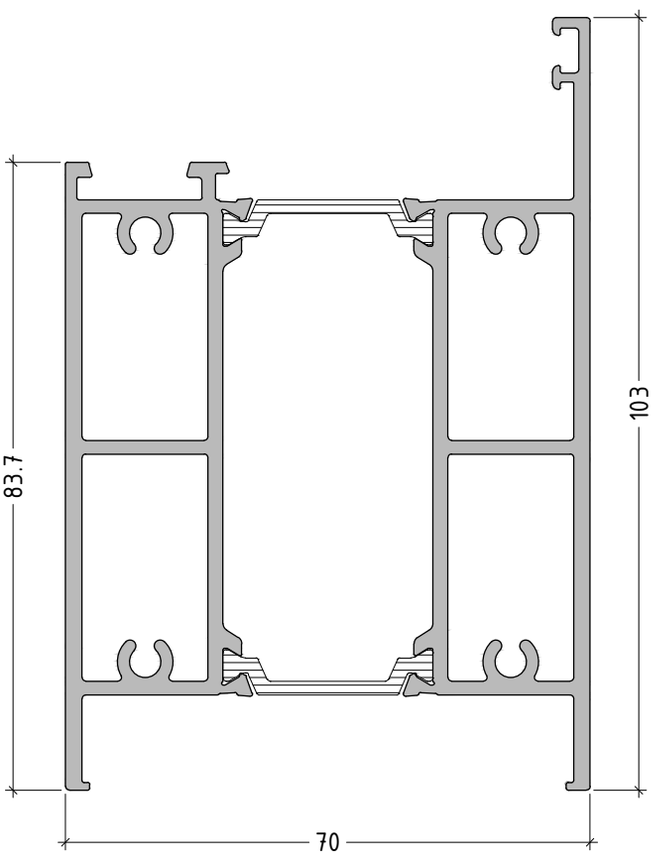
scale : 1:1

ES70P-06

E6270350

Hotel type mullion

3087 gr/m

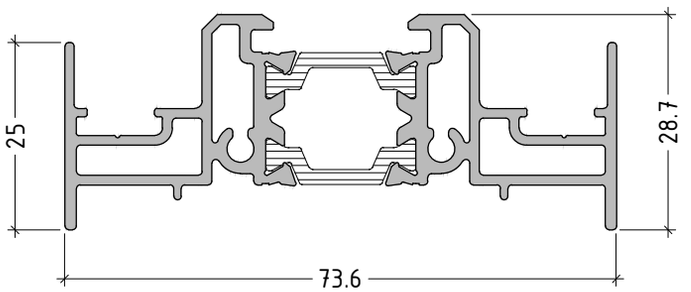


scale : 1:1

ES70.P-07

E6270510
Adjoining profile

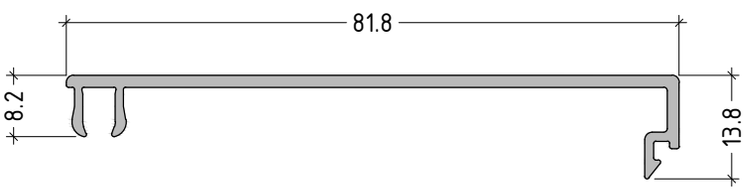
1250 gr/m



E6270501

Interlock profile

456 gr/m



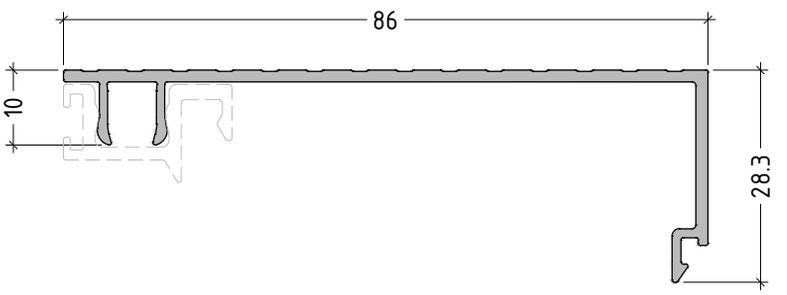
scale : 1:1

ES70P-08

E6270650

Hotel type cap

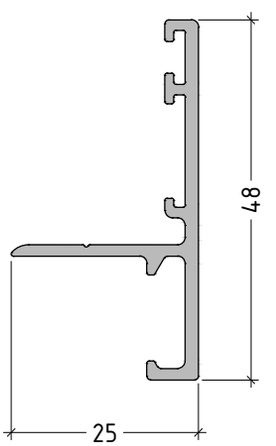
535 gr/m



E6270620

Drip profile

410 gr/m



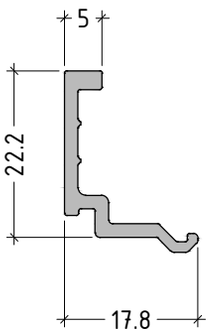
scale : 1:1

ES70.P-09

E6270680

Glazing bead

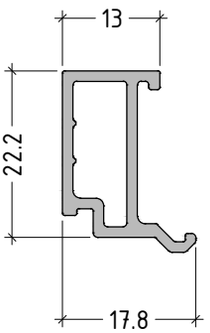
211 gr/m



E6270681

Glazing bead

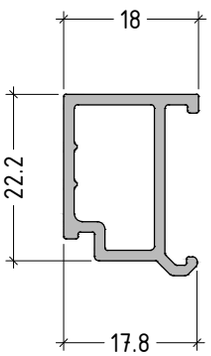
281 gr/m



E6270682

Glazing bead

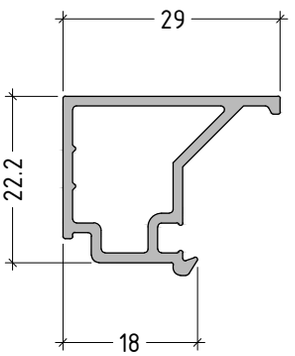
297 gr/m



E6270683

Glazing bead

340 gr/m



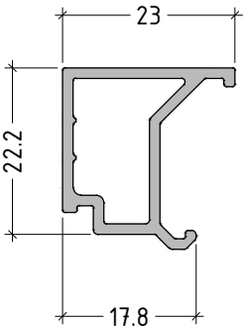
scale : 1:1

ES70.P.-010

E6270684

Glazing bead

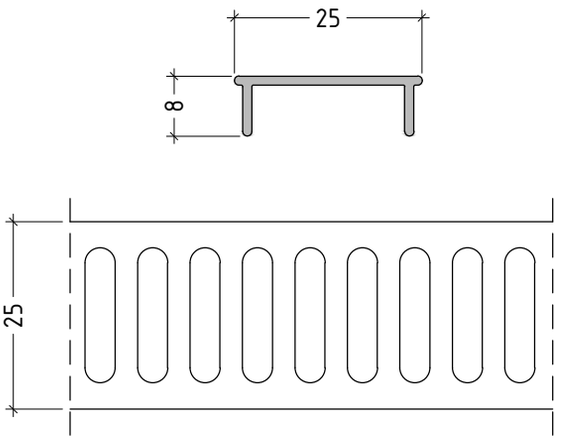
324 gr/m



E50901W1

Aluminium drainage grill
(available only perforated)

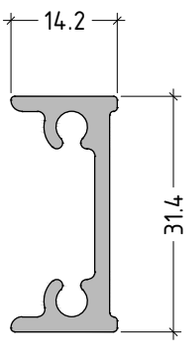
124 gr/m



E6270902

Connecting rod

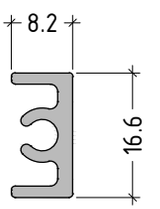
389 gr/m



E6270904

Connecting rod
(for narrow sash)

186 gr/m



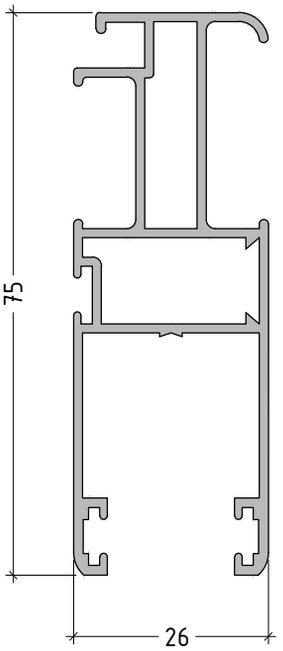
scale : 1:1

ES70.P-011

E22214

Fly-screen sash

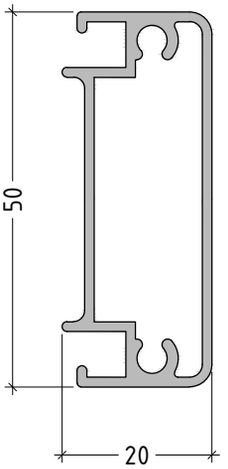
857 gr/m



E22215

"T" profile
for fly screen

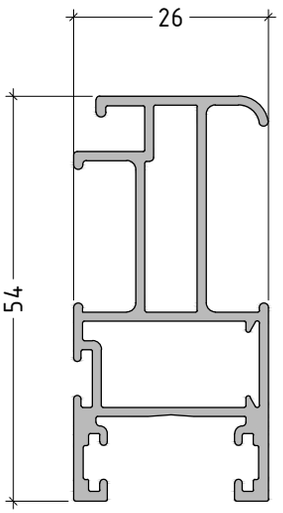
591 gr/m



E22216

Vertical screen sash

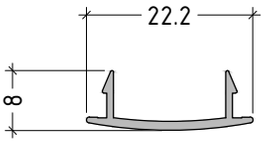
732 gr/m



E19651

Cover for fly screen

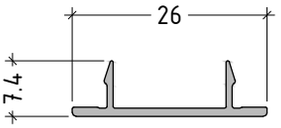
100 gr/m



E22616

Cover for fly screen

105 gr/m

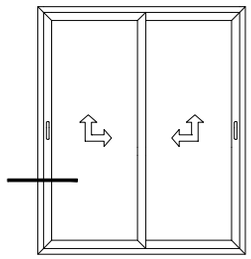


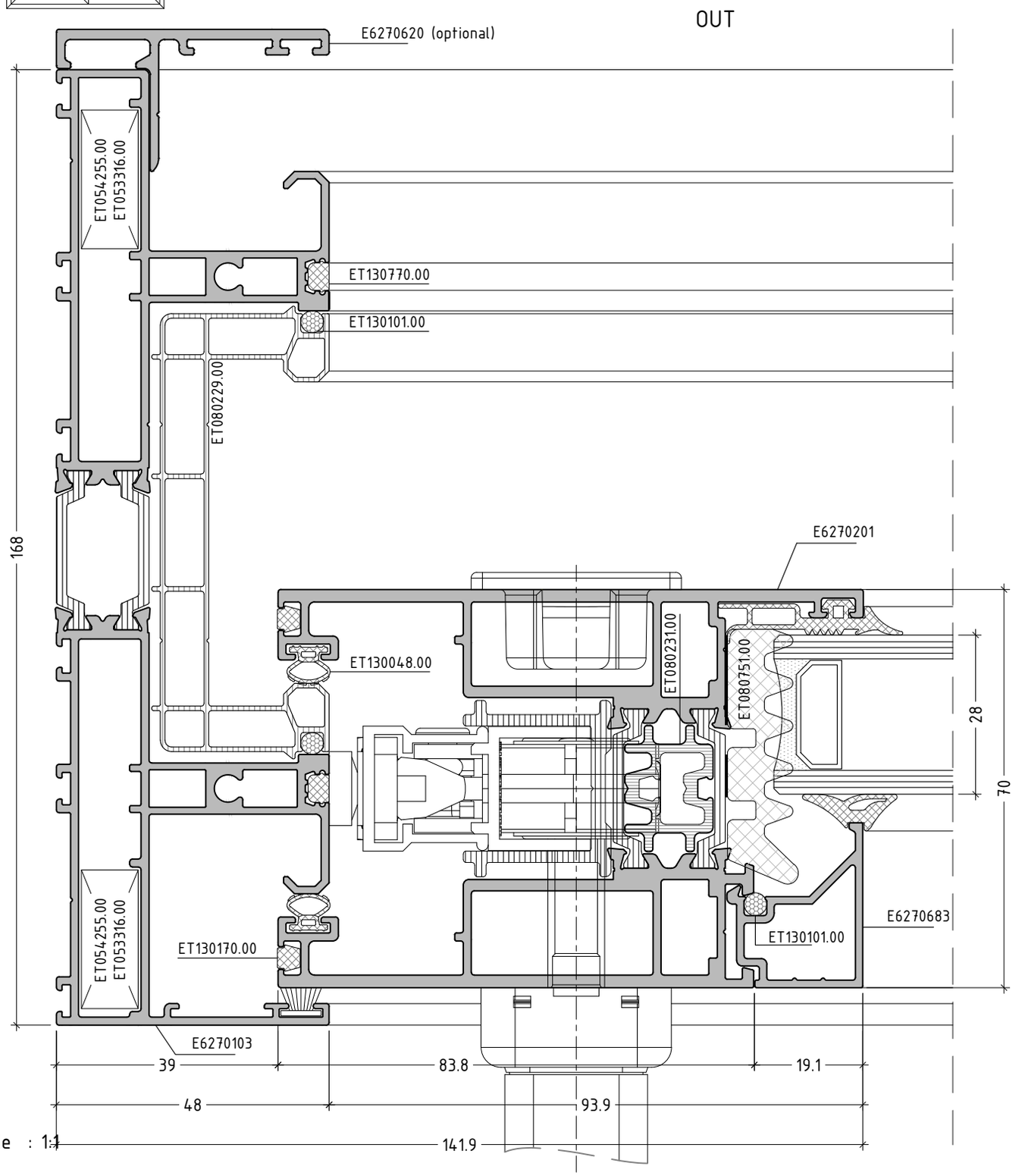
scale : 1:1

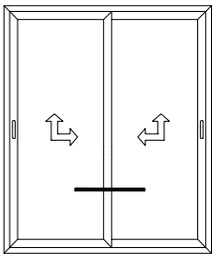
ES70.P.-012

SECTIONS

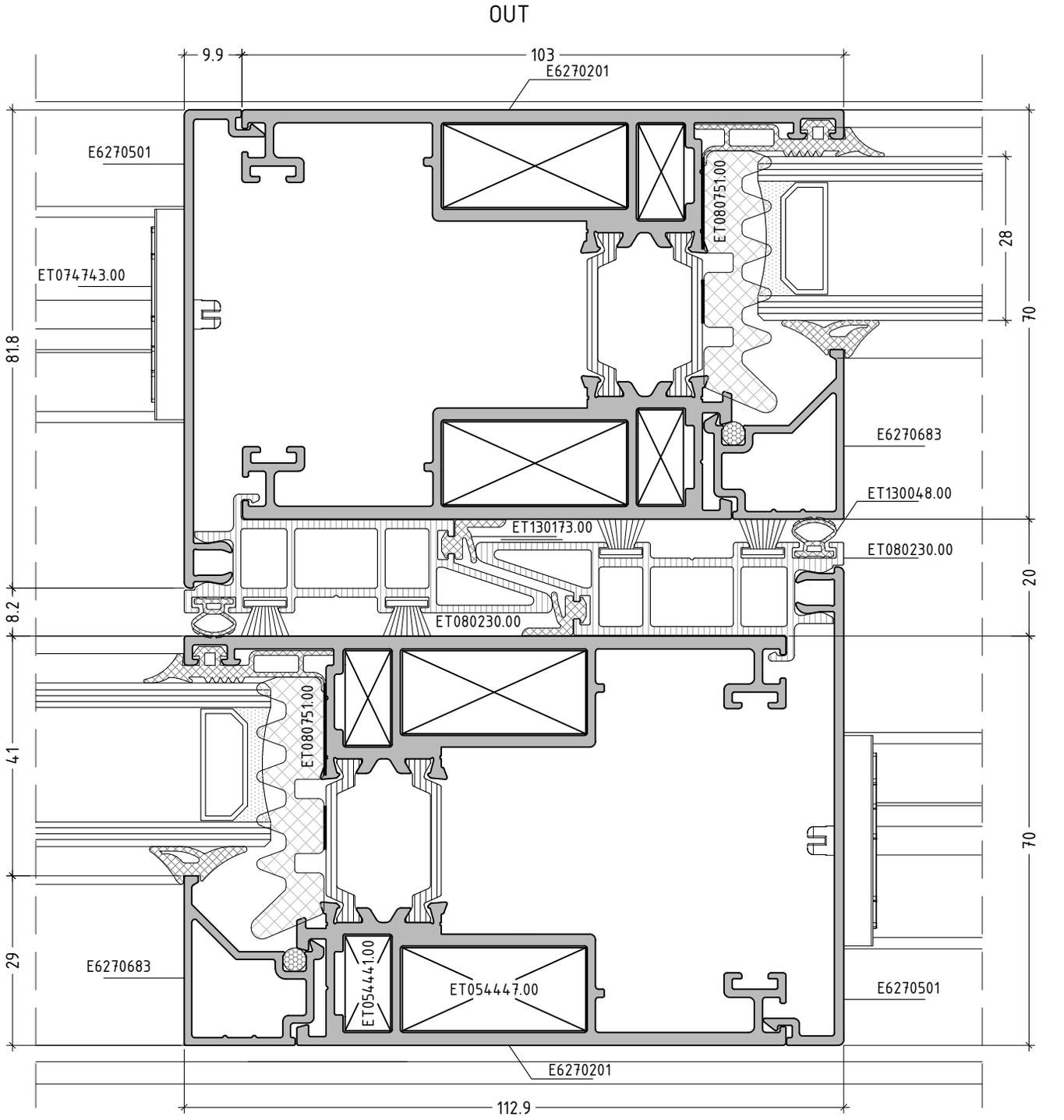
SECTIONS / DETAILS




OUT
E6270620 (optional)
ET054255.00
ET053316.00
ET130770.00
ET130101.00
ET080229.00
168
E6270201
ET130048.00
ET080231.00
ET080751.00
28
70
E6270683
ET130101.00
ET130170.00
ET054255.00
ET053316.00
E6270103
39
83.8
19.1
48
93.9
141.9
scale : 1:1
ES70.S-01

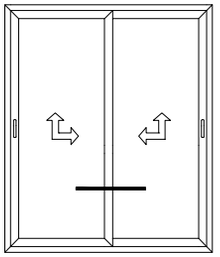


CLASSIC INTERLOCK

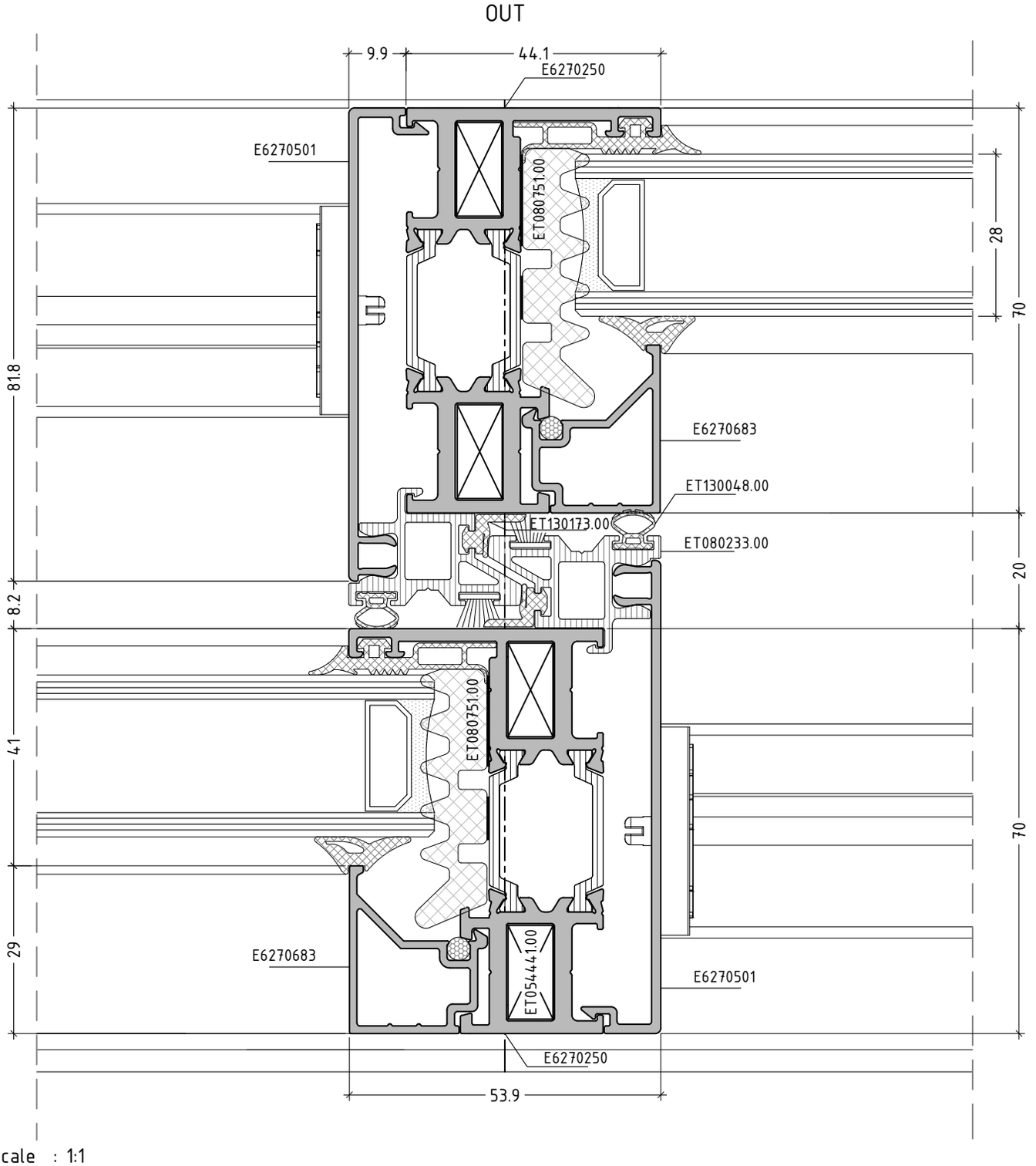


scale : 1:1

ES70 S-02

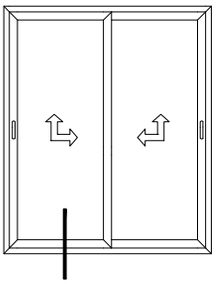


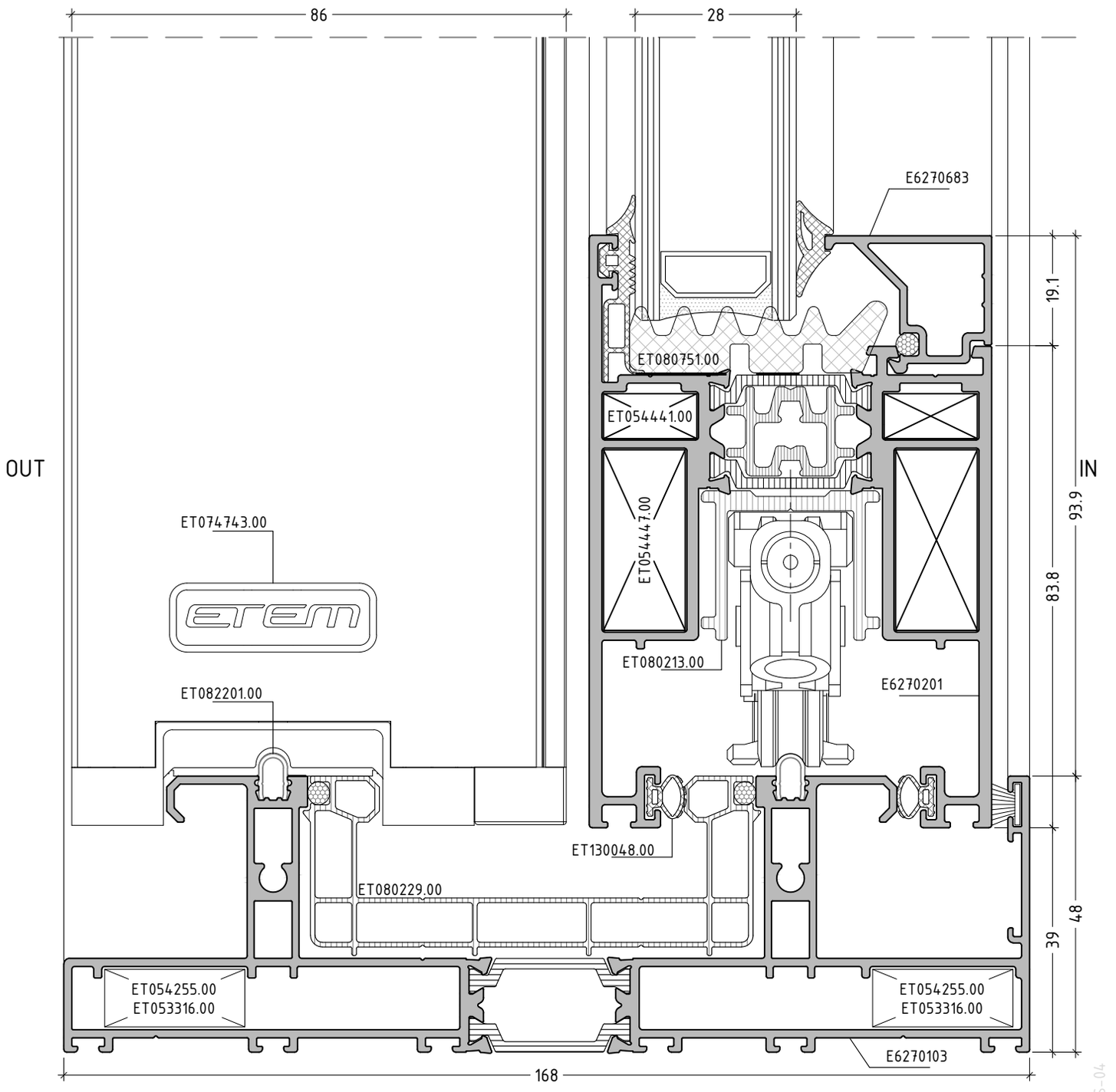
SLIM INTERLOCK



scale : 1:1

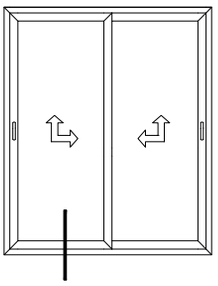
ES70.S-03



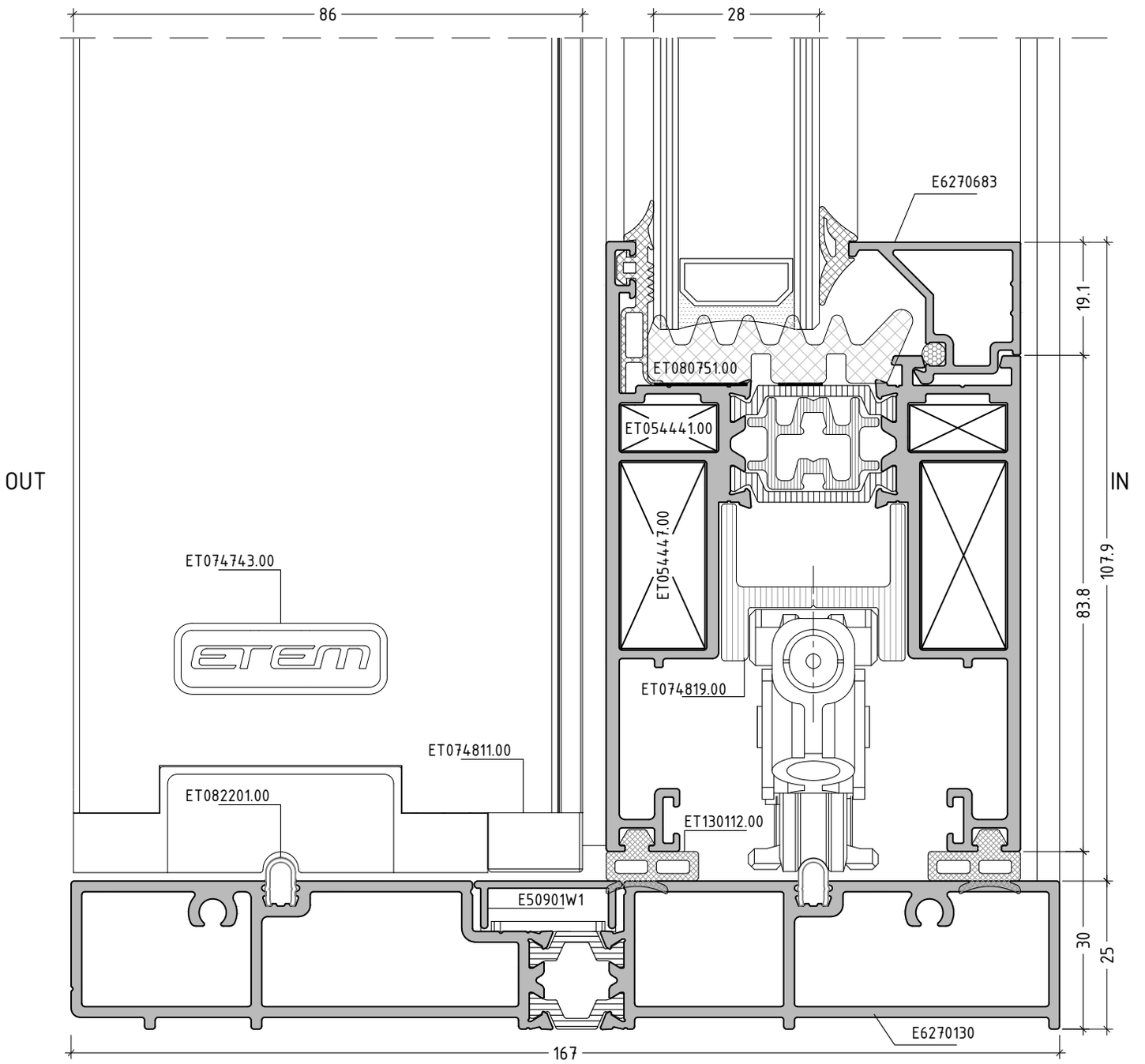


scale : 1:1

ES70 S-04

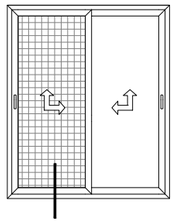


FLAT FRAME

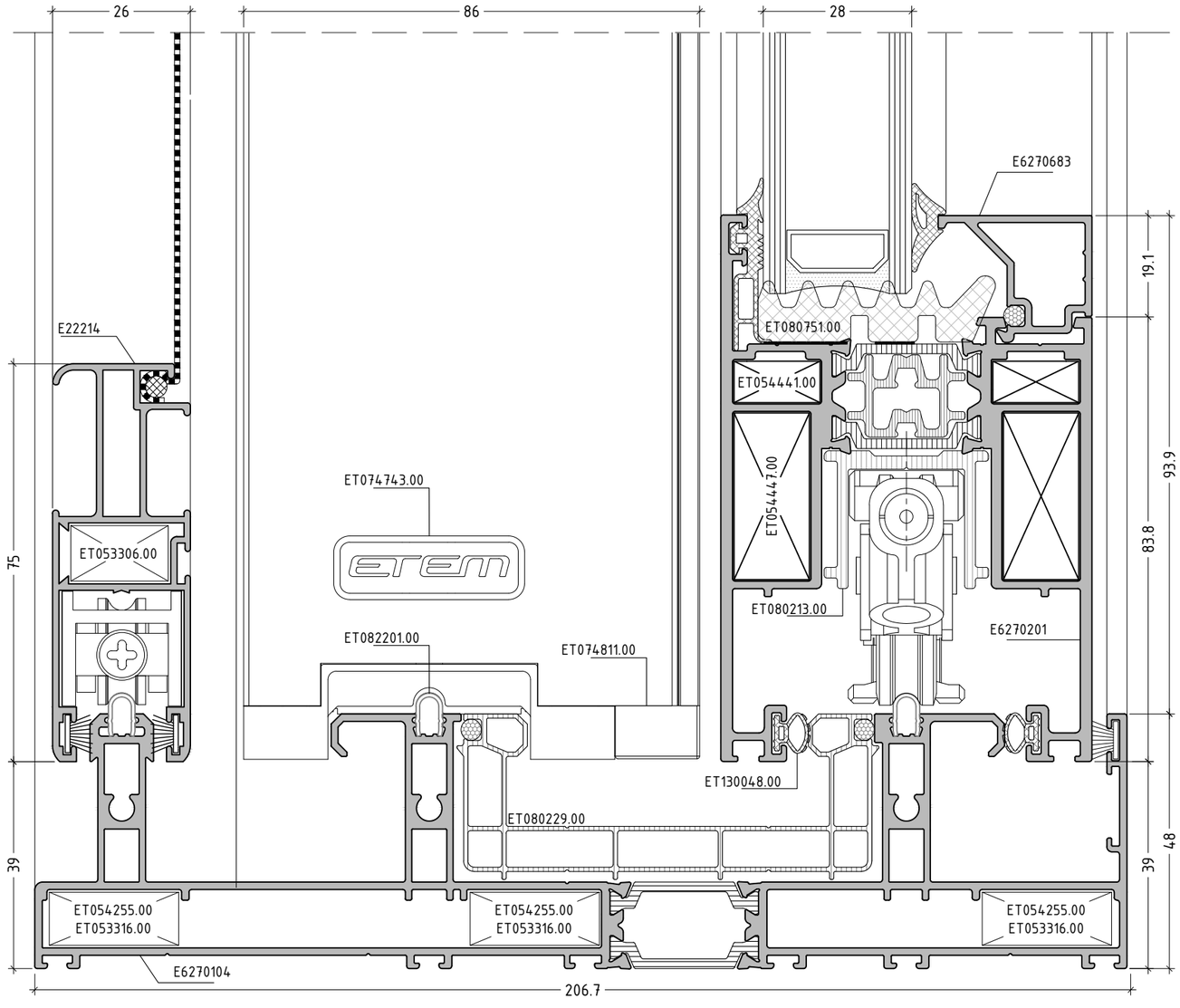


scale : 1:1

ES70.S-05



OUT

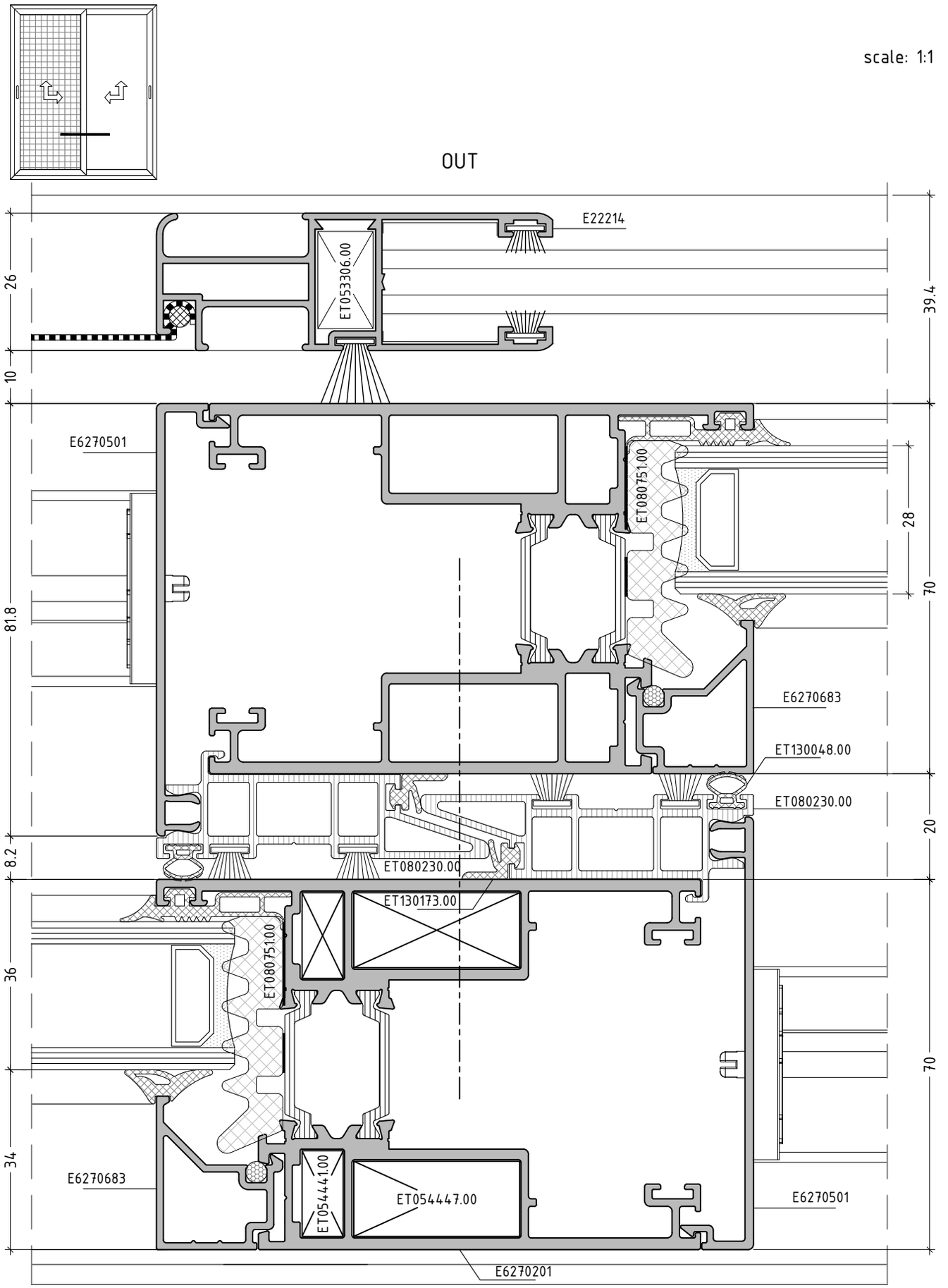


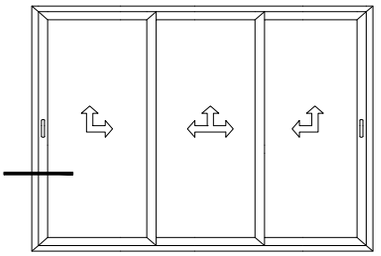
IN

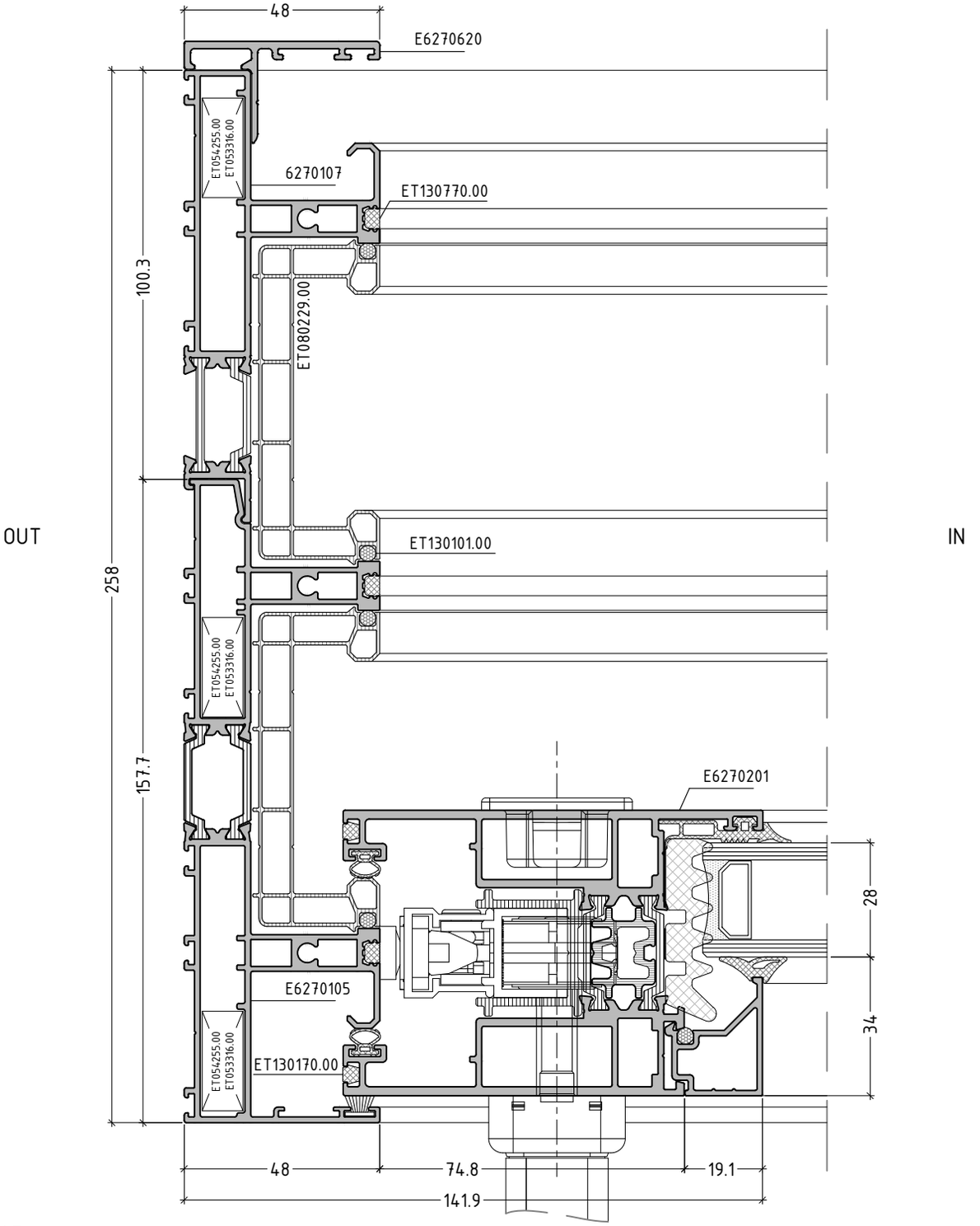
scale : 1:1

ES70.S-06

scale: 1:1

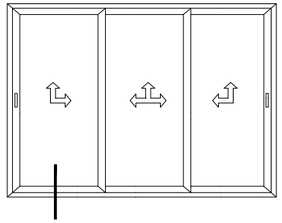

OUT
E22214
ET053306.00
26
10
39.4
E6270501
ET080751.00
28
70
81.8
E6270683
ET130048.00
ET080230.00
20
8.2
ET080230.00
ET130173.00
ET080751.00
36
70
34
E6270683
ET054441.00
ET054447.00
E6270501
E6270201

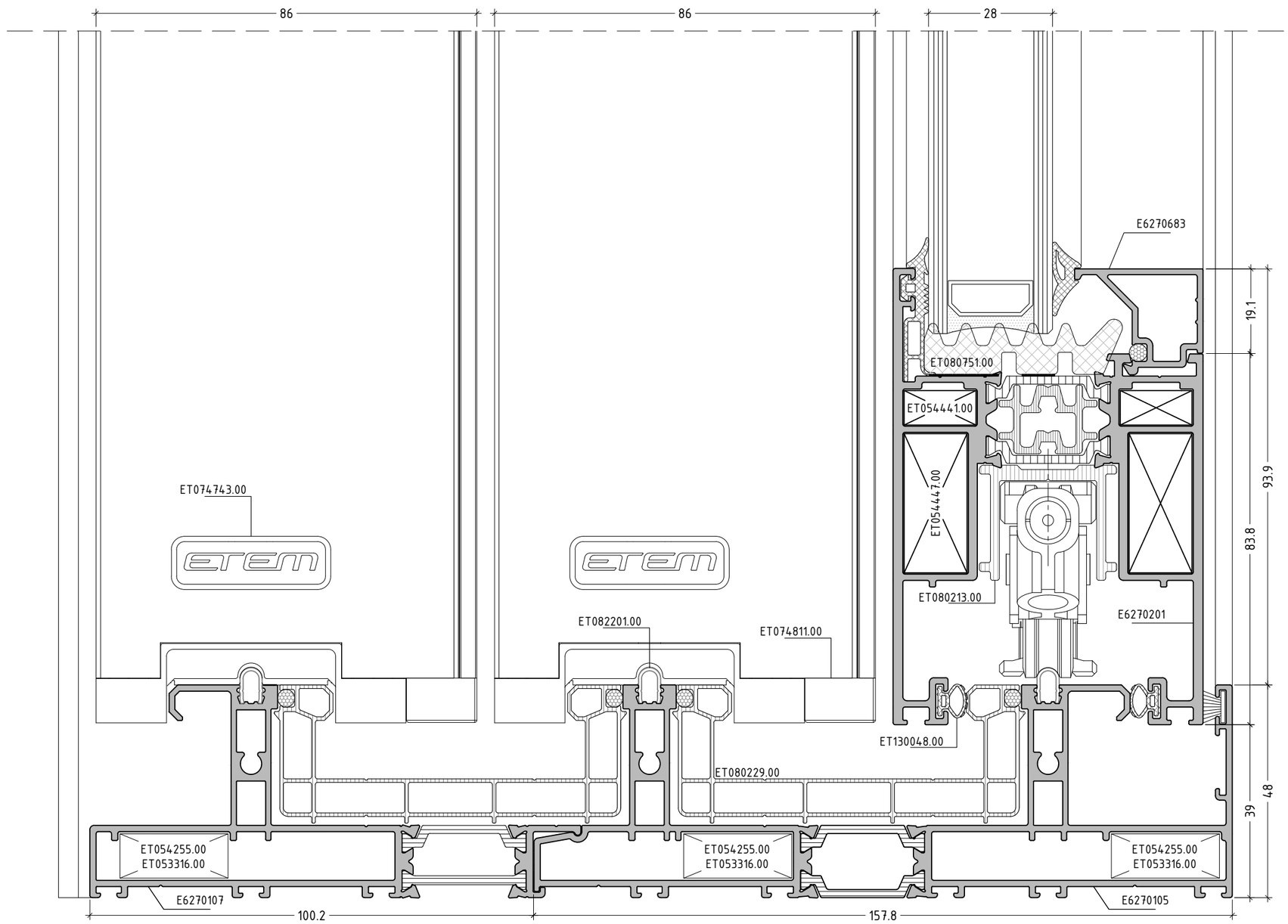




scale: 1:1.5

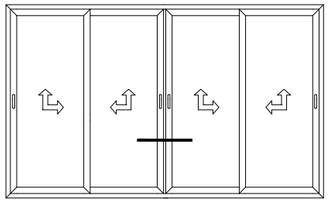
ES70.S-08

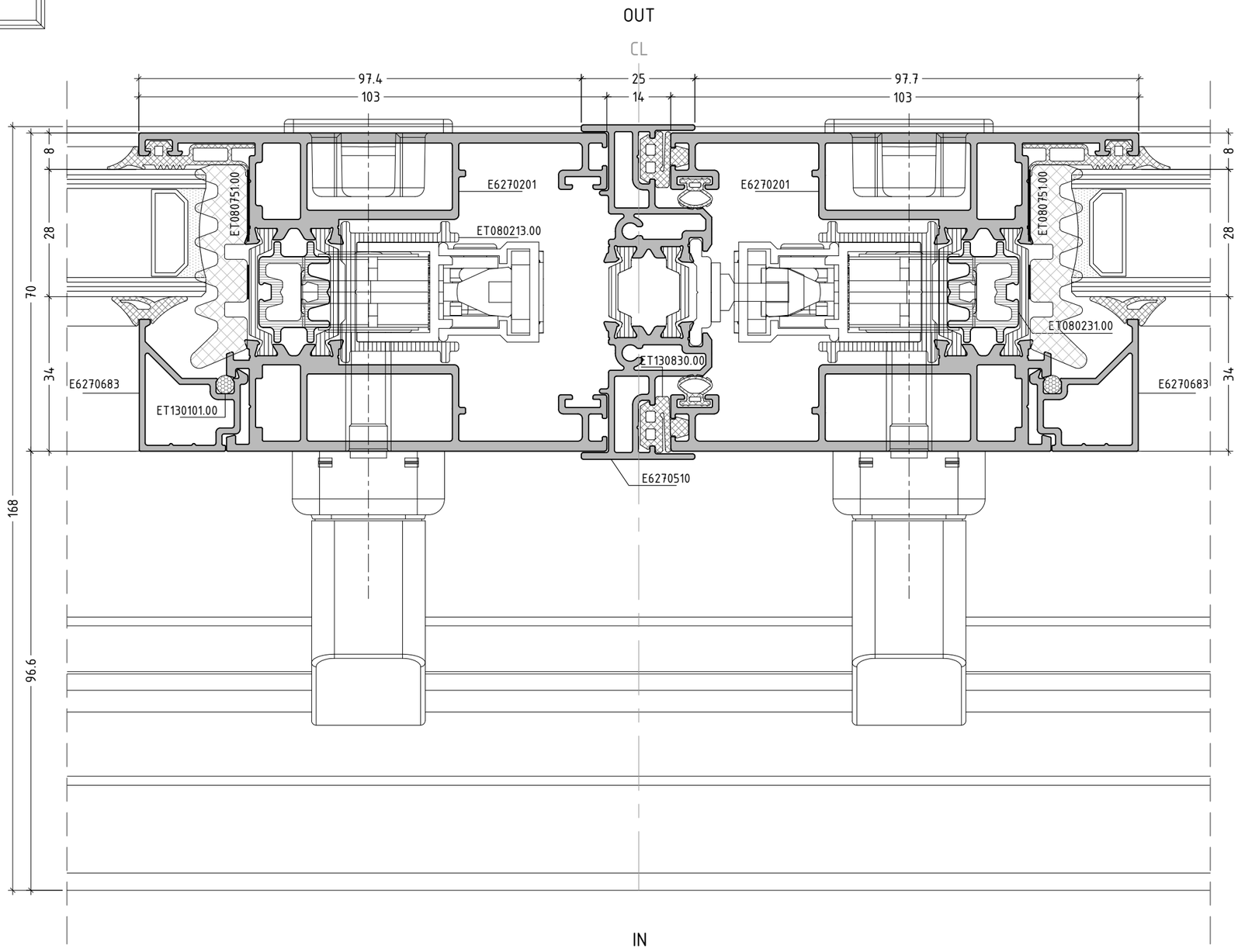




scale : 1:1

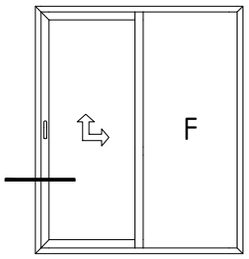
ES70.S-09



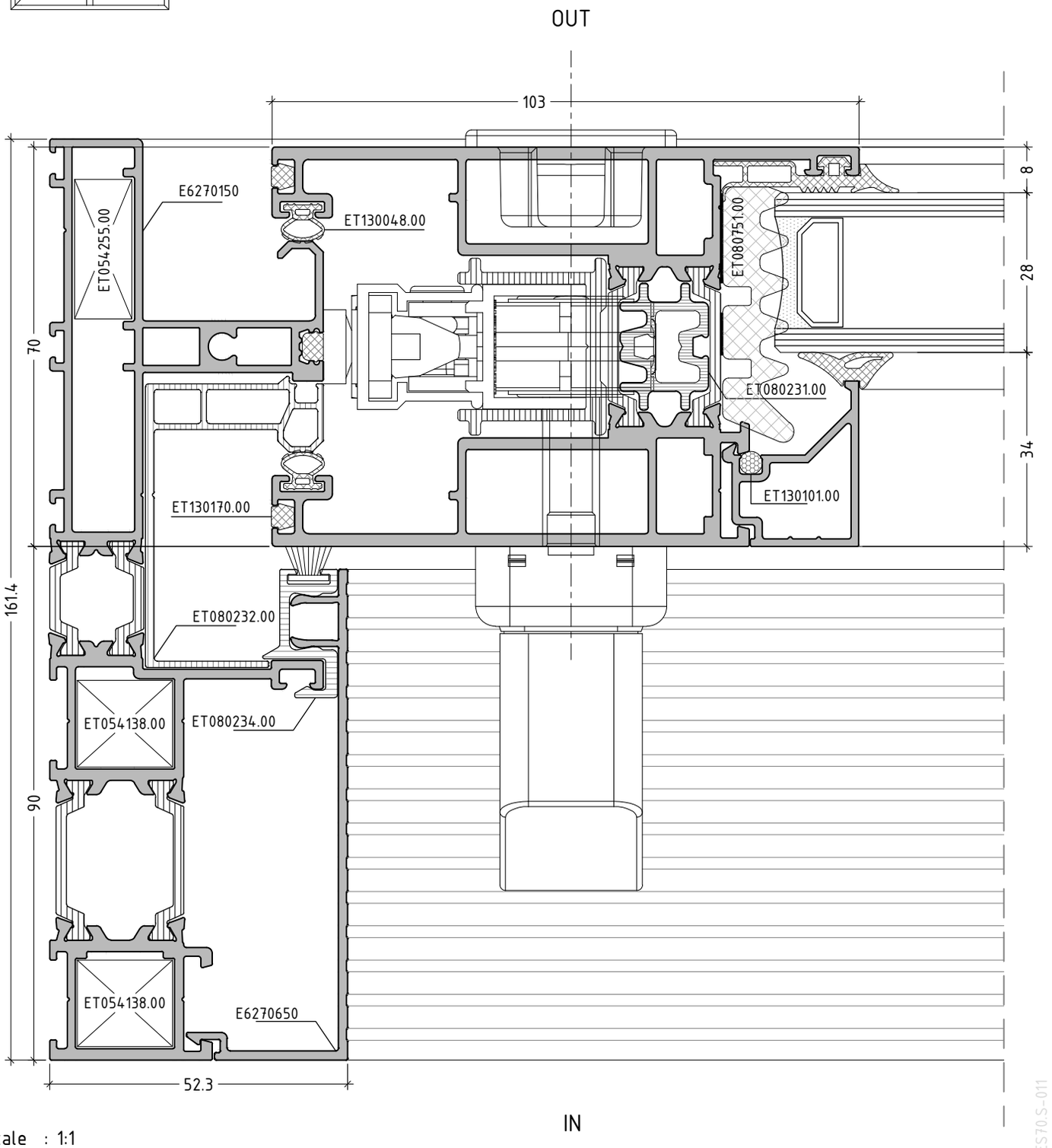


scale : 1:1

ES70.S-10

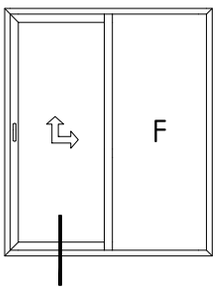


HOTEL TYPE

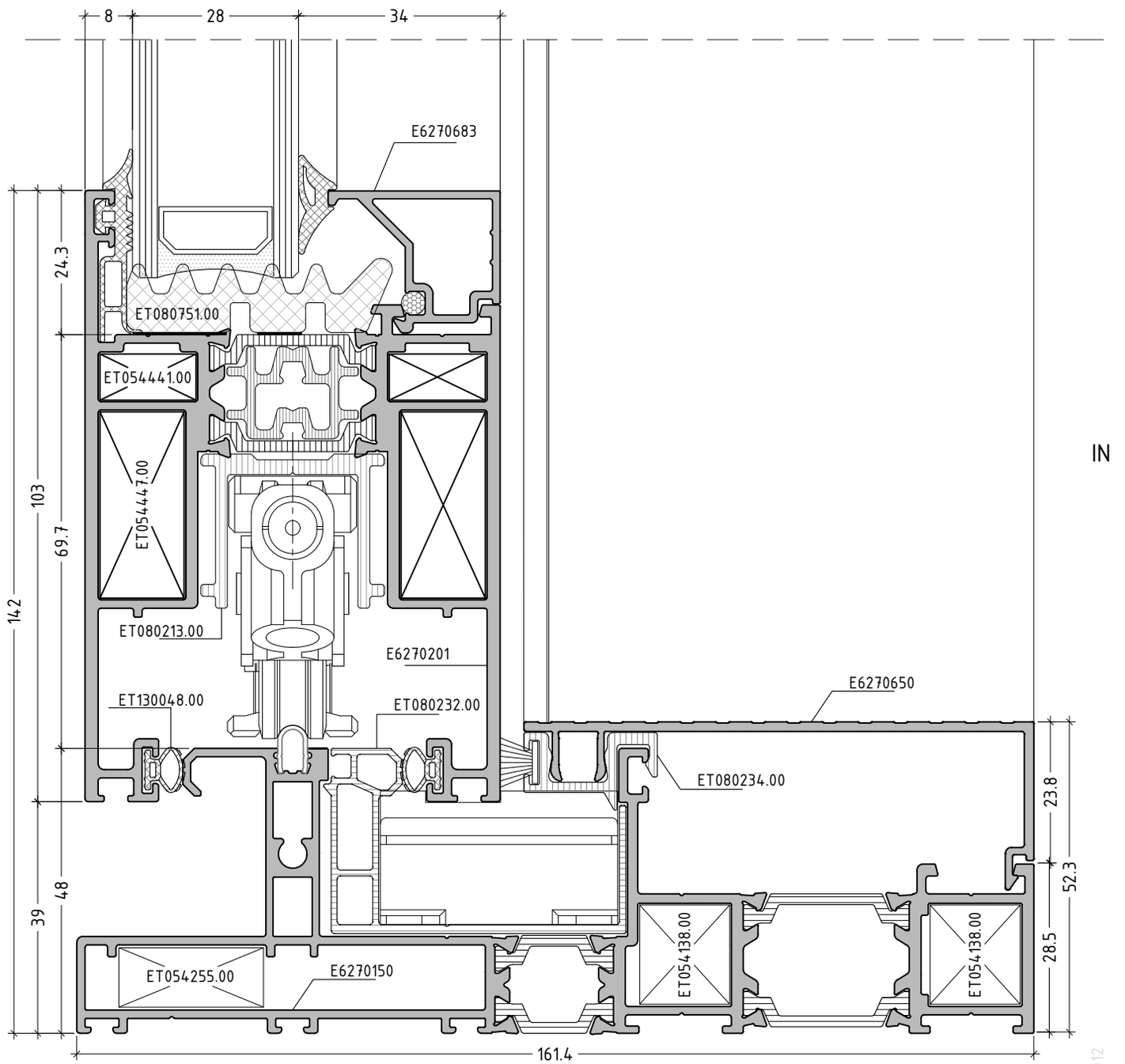


scale : 1:1

ES70.S-011

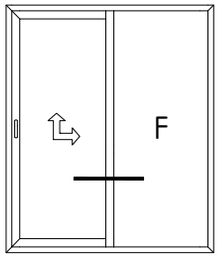


HOTEL TYPE



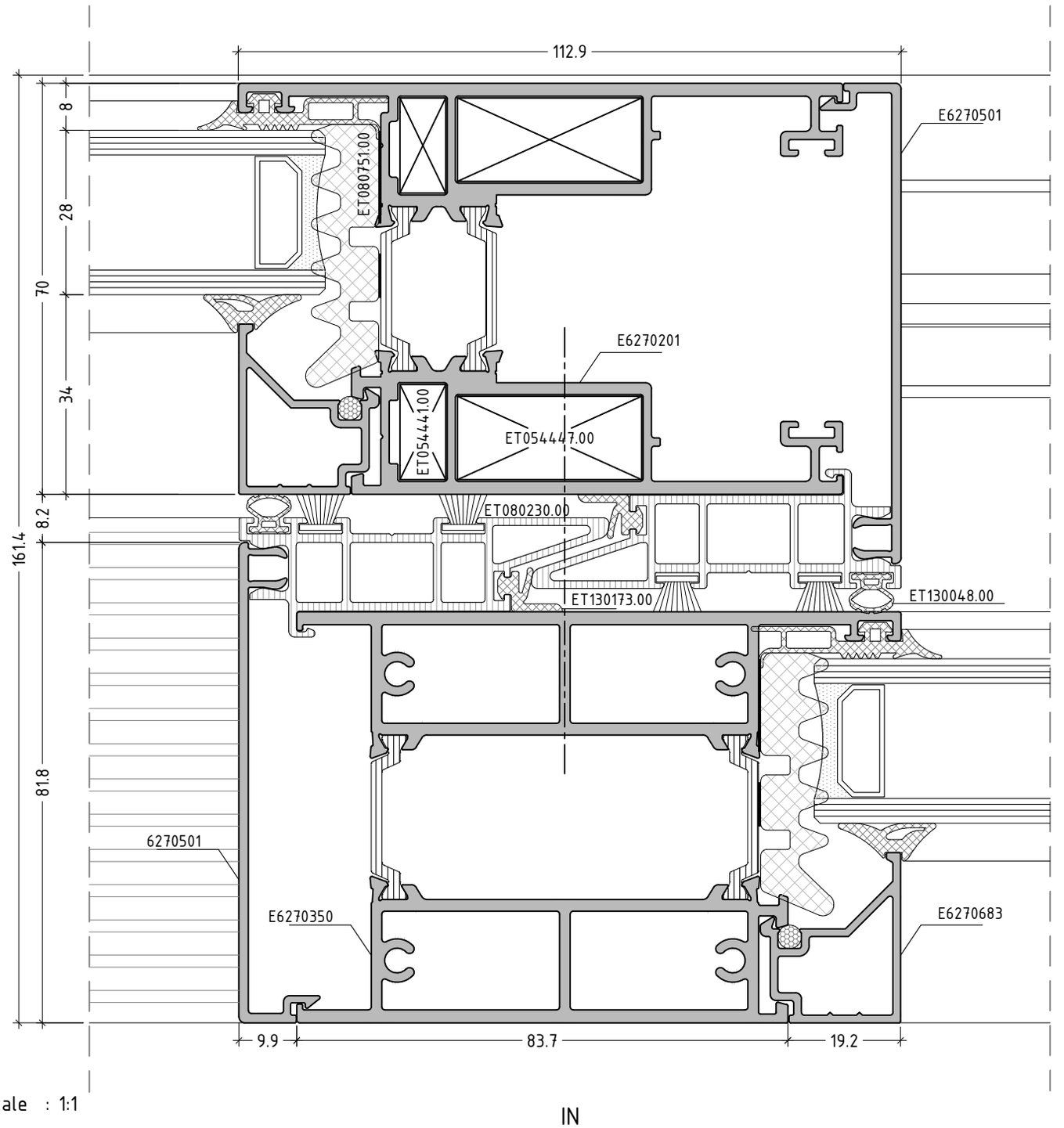
scale : 1:1

ES70.S-012



HOTEL TYPE

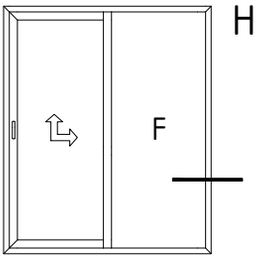
OUT



scale : 1:1

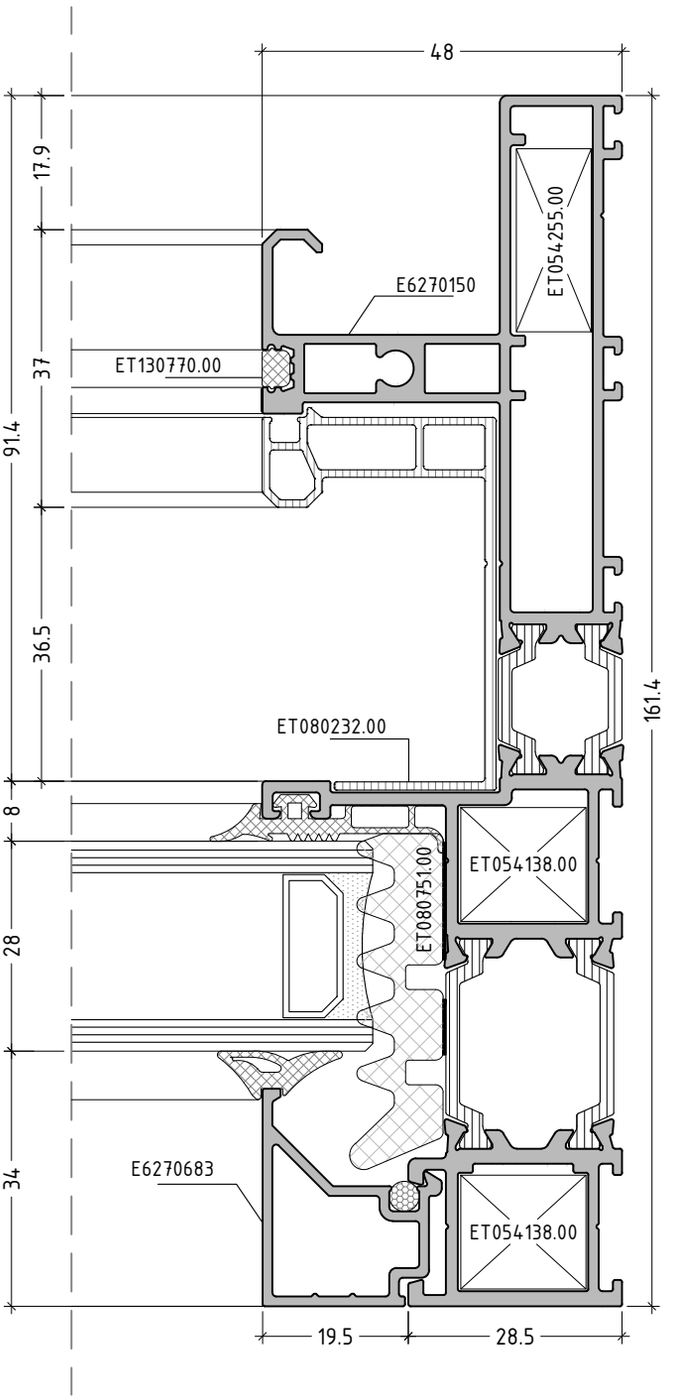
IN

ES70.S-013



HOTEL TYPE

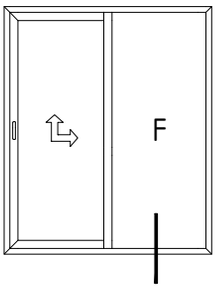
OUT



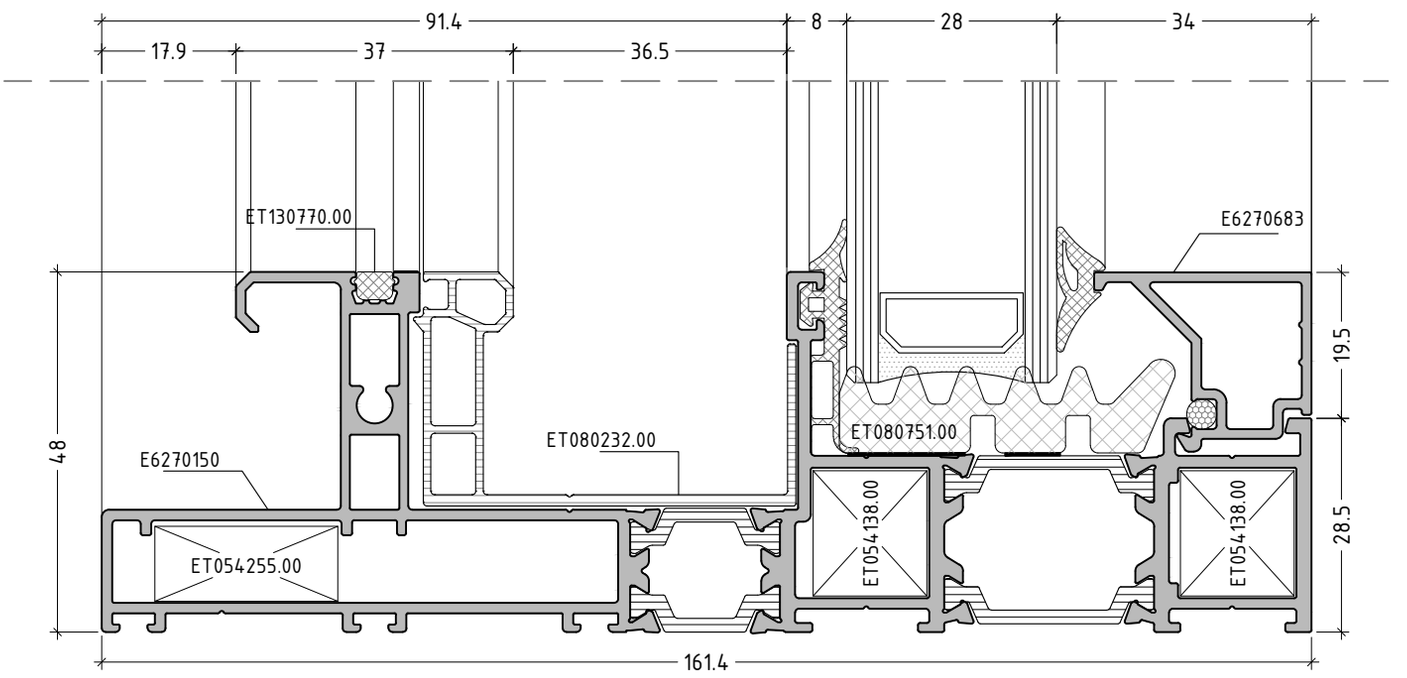
scale : 1:1

IN

ES70.S-014

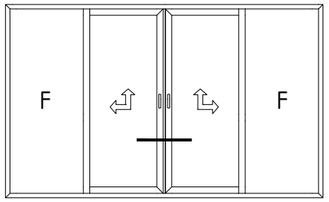


HOTEL TYPE



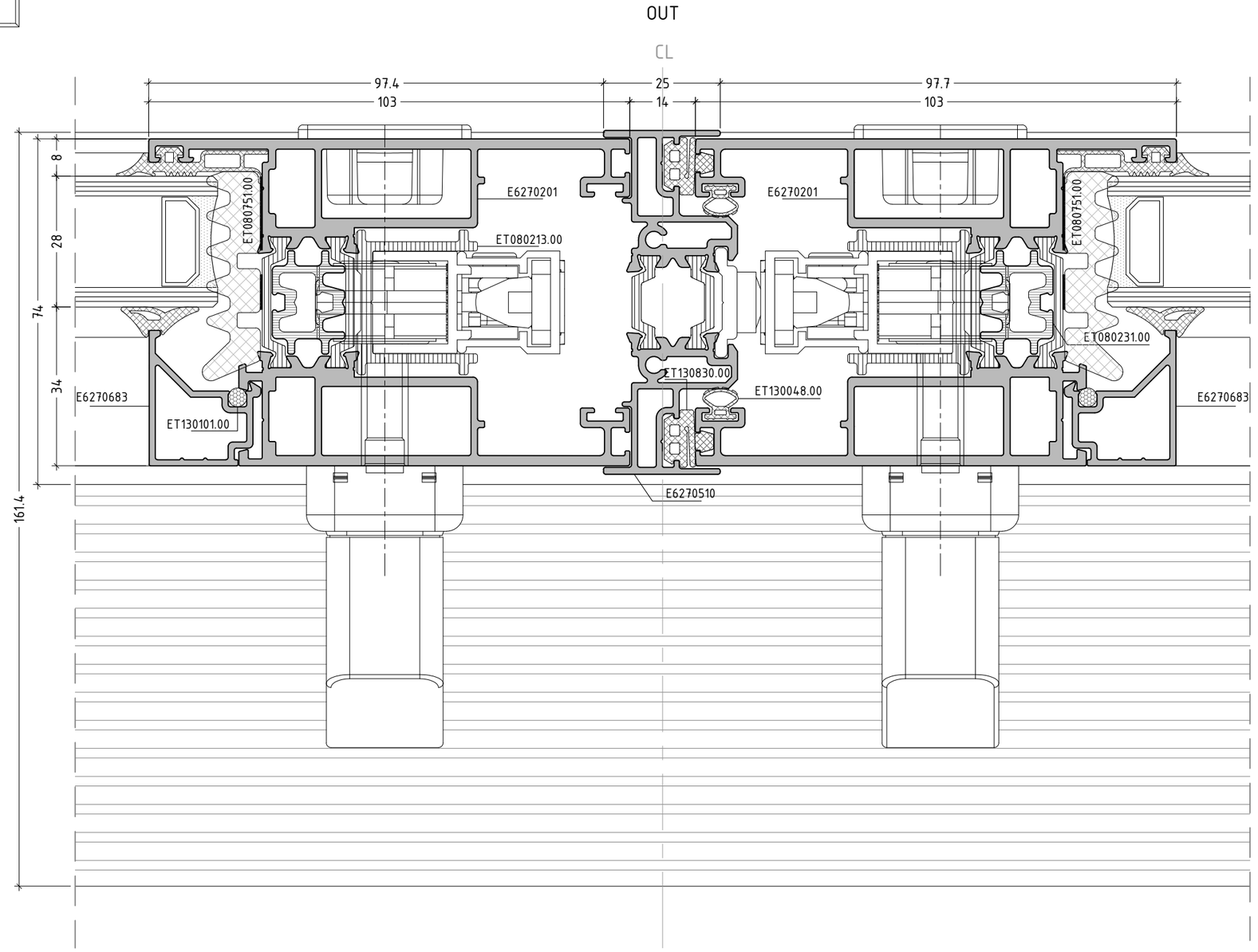
scale : 1:1

ES70.S-015



HOTEL TYPE

OUT

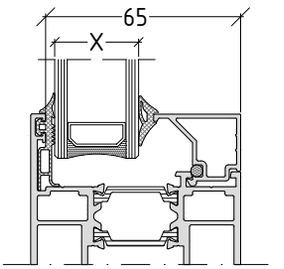
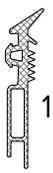
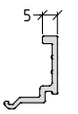
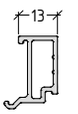
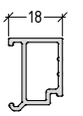
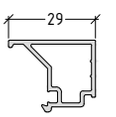
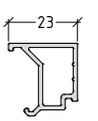


IN

scale : 1:1

ES70.S-016

GLAZING OPTIONS

GLAZING OPTIONS					
external gaskets	INTERNAL GASKETS				GLAZING BEADS
					
 3 mm 130402	5 mm 130205 	6 mm 130206 	7 mm 130207 	8 mm 130208 	
	X mm				
130402	52	51	50	49	E6270680 
130402	44	43	42	41	E6270681 
130402	39	38	37	36	E6270682 
130402	28	27	26	25	E6270683 
130402	34	33	32	31	E6270684 

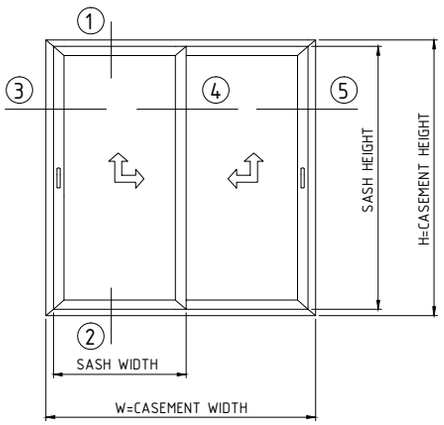
Note:
Tolerance in dimension chain ±0.5mm

ES70-01

CUTTING LISTS

DOUBLE LEAF SLIDING WINDOW

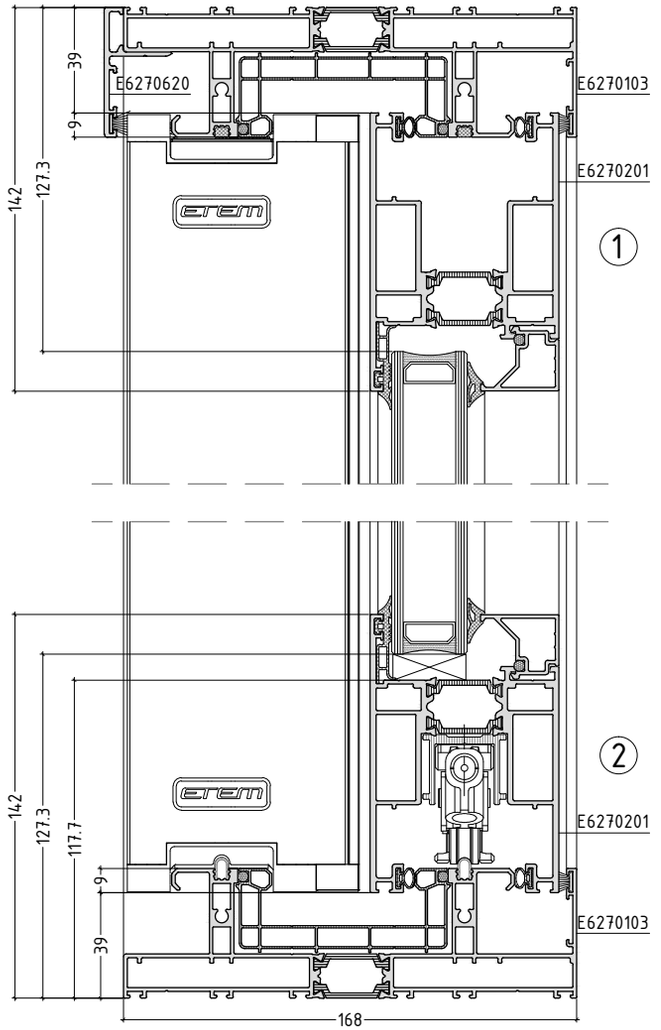
ES70.T-01



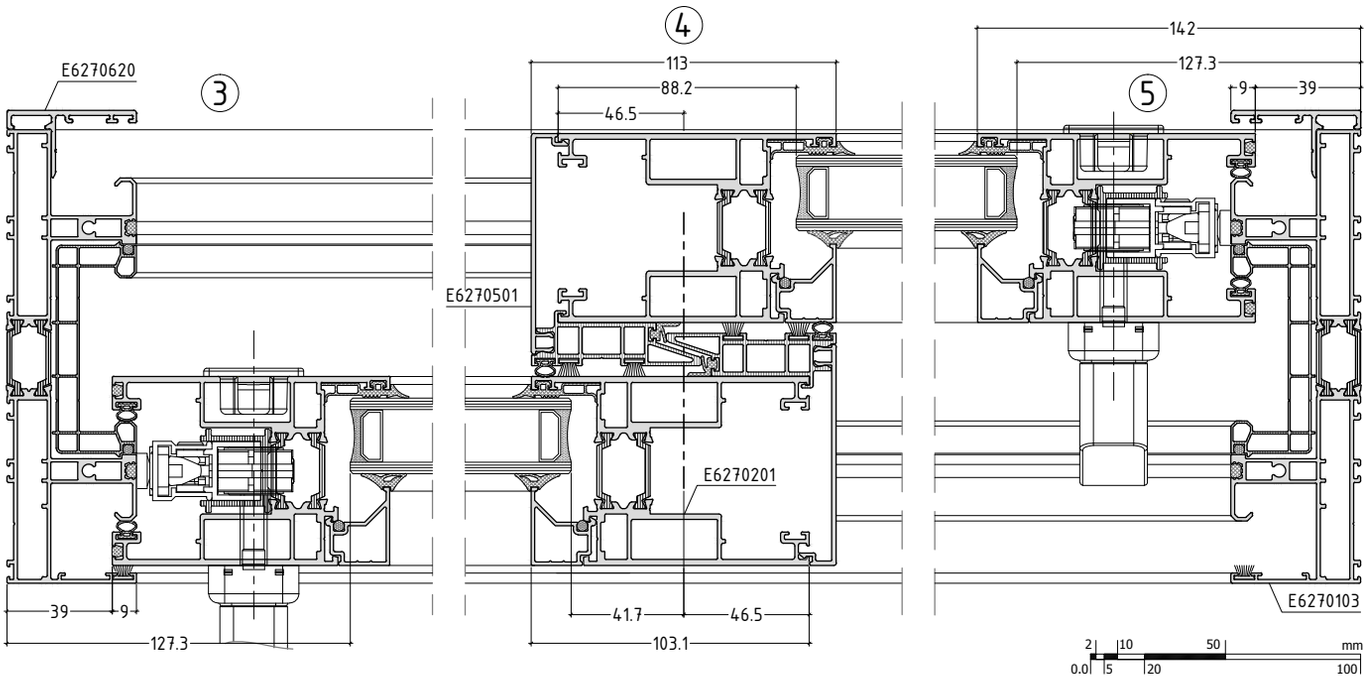
CUTTING LENGTHS

FRAME WIDTH	= W
FRAME HEIGHT	= H
SASH WIDTH	= (W+15)/2
SASH HEIGHT	= H - 78
INTERLOCKING HEIGHT	= H - 98

DIMENSIONS IN MILLIMETERS

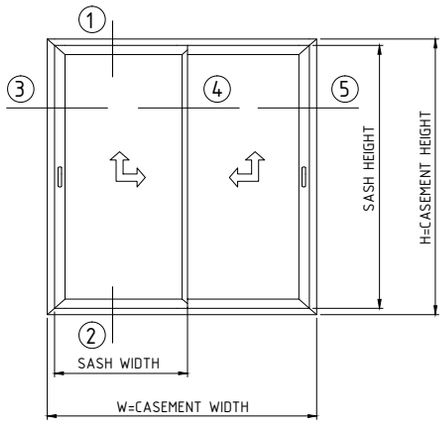


no scale



DOUBLE LEAF SLIDING WINDOW WITH SLIM INTERLOCK

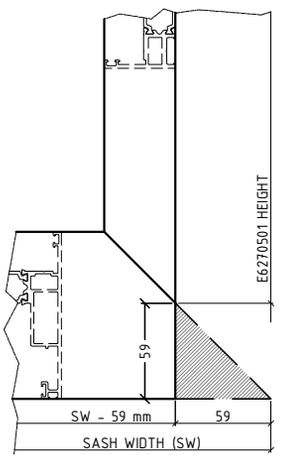
ES70.T-02

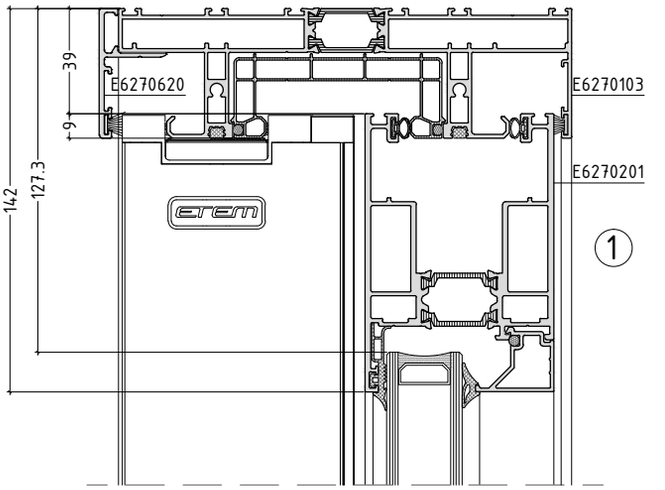


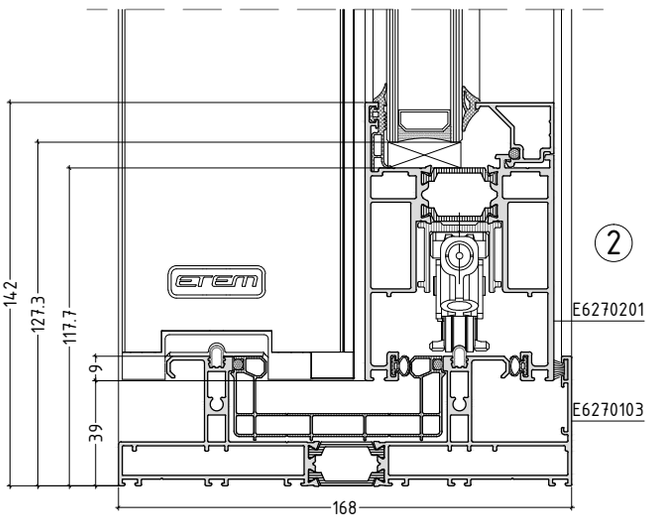
CUTTING LENGTHS

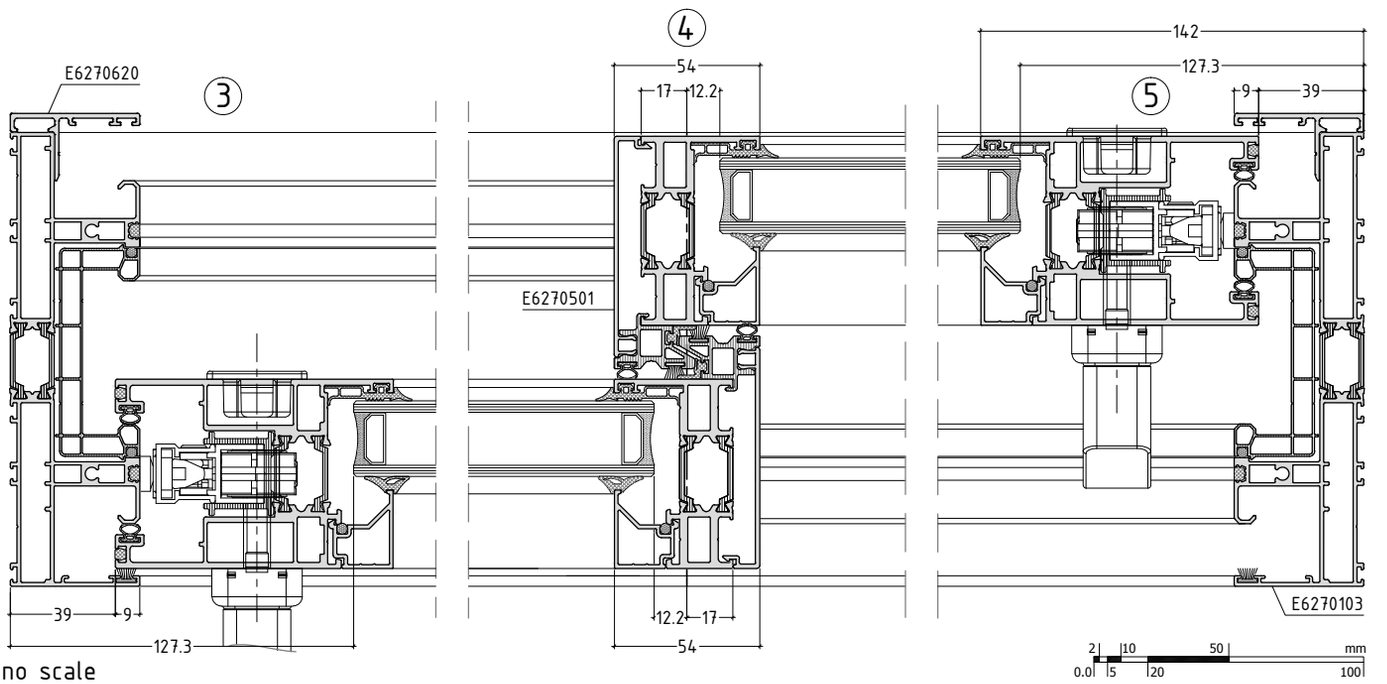
FRAME WIDTH	= W
FRAME HEIGHT	= H
SASH WIDTH (SW)	= (W+74) / 2
FINAL SASH WIDTH	= SW - 59
SASH HEIGHT	= H - 78
NARROW SASH HEIGHT (E6270501)	= H - 196
INTERLOCKING HEIGHT	= H - 98

DIMENSIONS IN MILLIMETERS





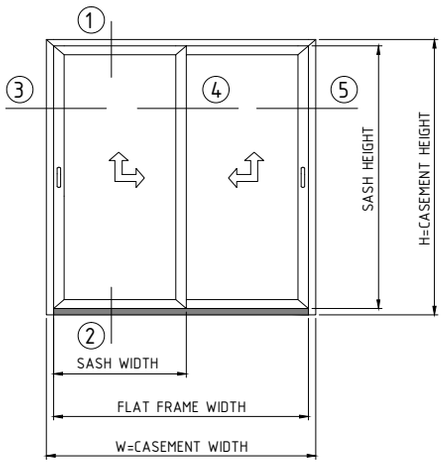


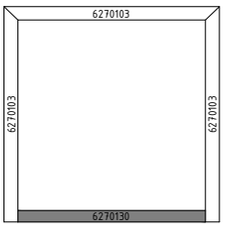


no scale

DOUBLE LEAF SLIDING WINDOW WITH FLAT FRAME

ES70.T-03

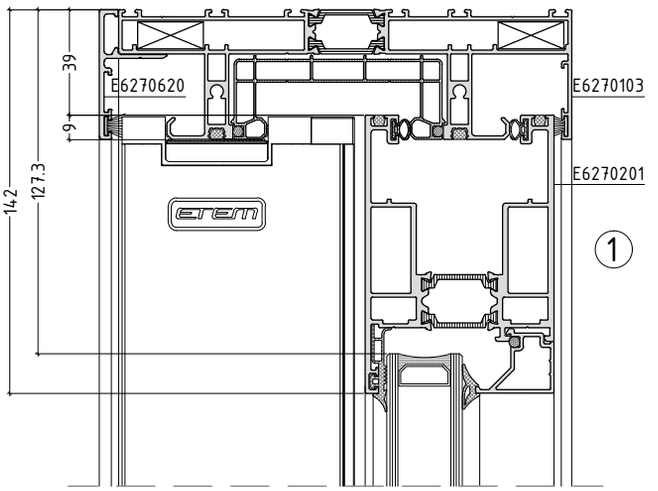


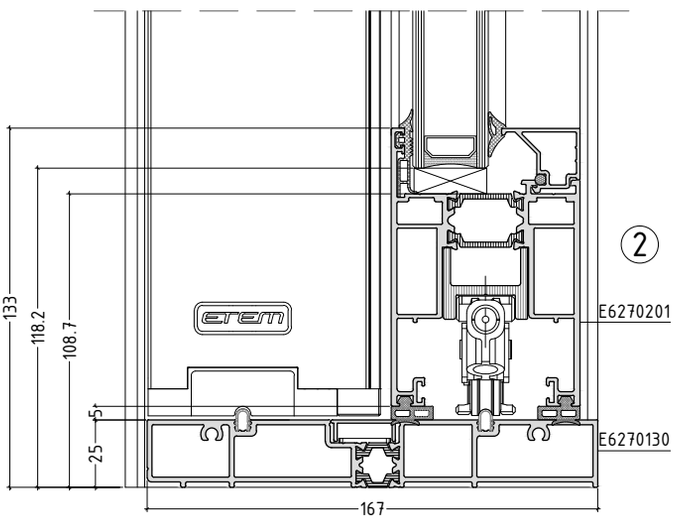


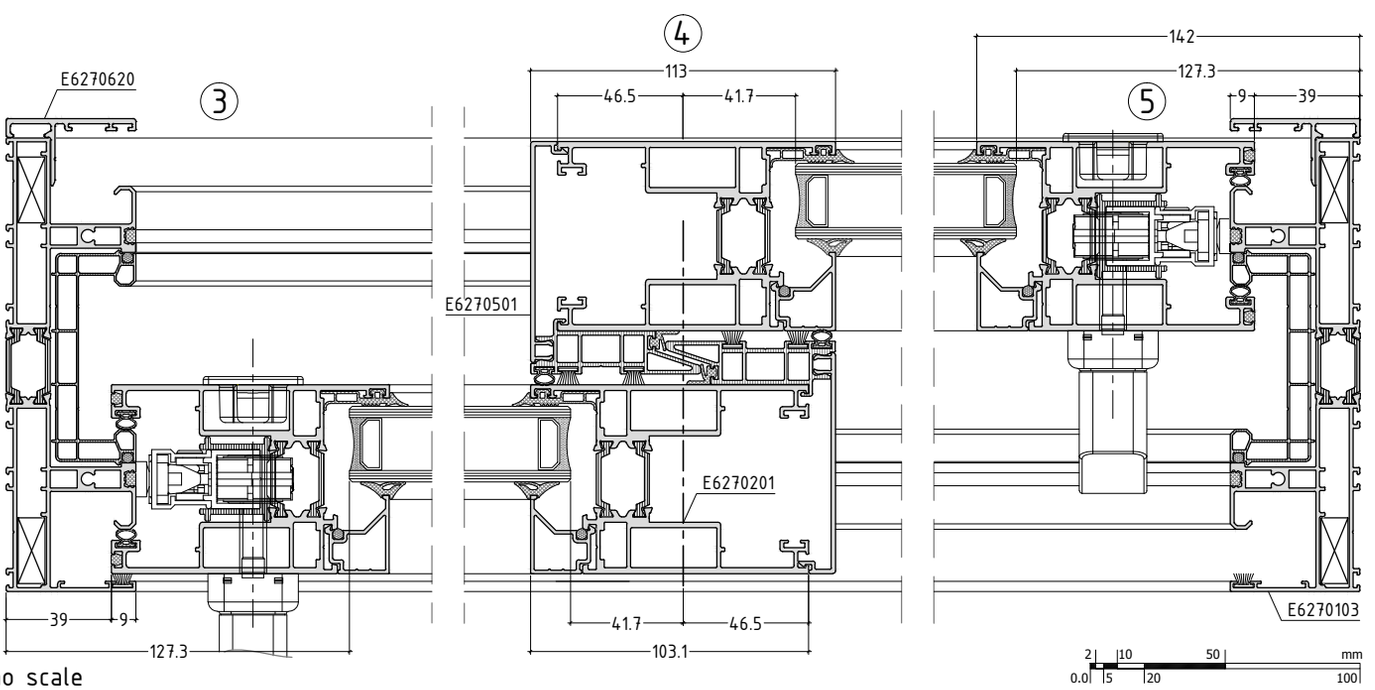
CUTTING LENGTHS

E6270103 FRAME WIDTH	= W
E6270130 FLAT FRAME WIDTH	= W-33
E6270103 FRAME HEIGHT	= H
SASH WIDTH	= (W+15)/2
SASH HEIGHT	= H - 69
INTERLOCKING HEIGHT	= H - 89

DIMENSIONS IN MILLIMETERS



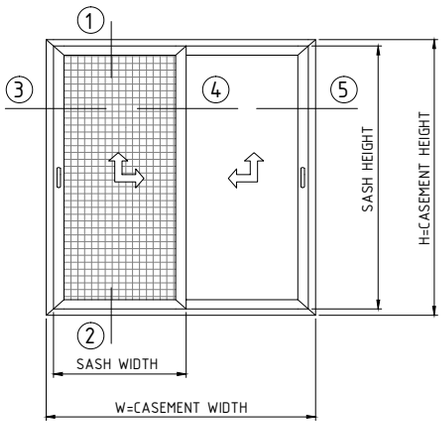




no scale

DOUBLE LEAF SLIDING WINDOW WITH FLYSCREEN

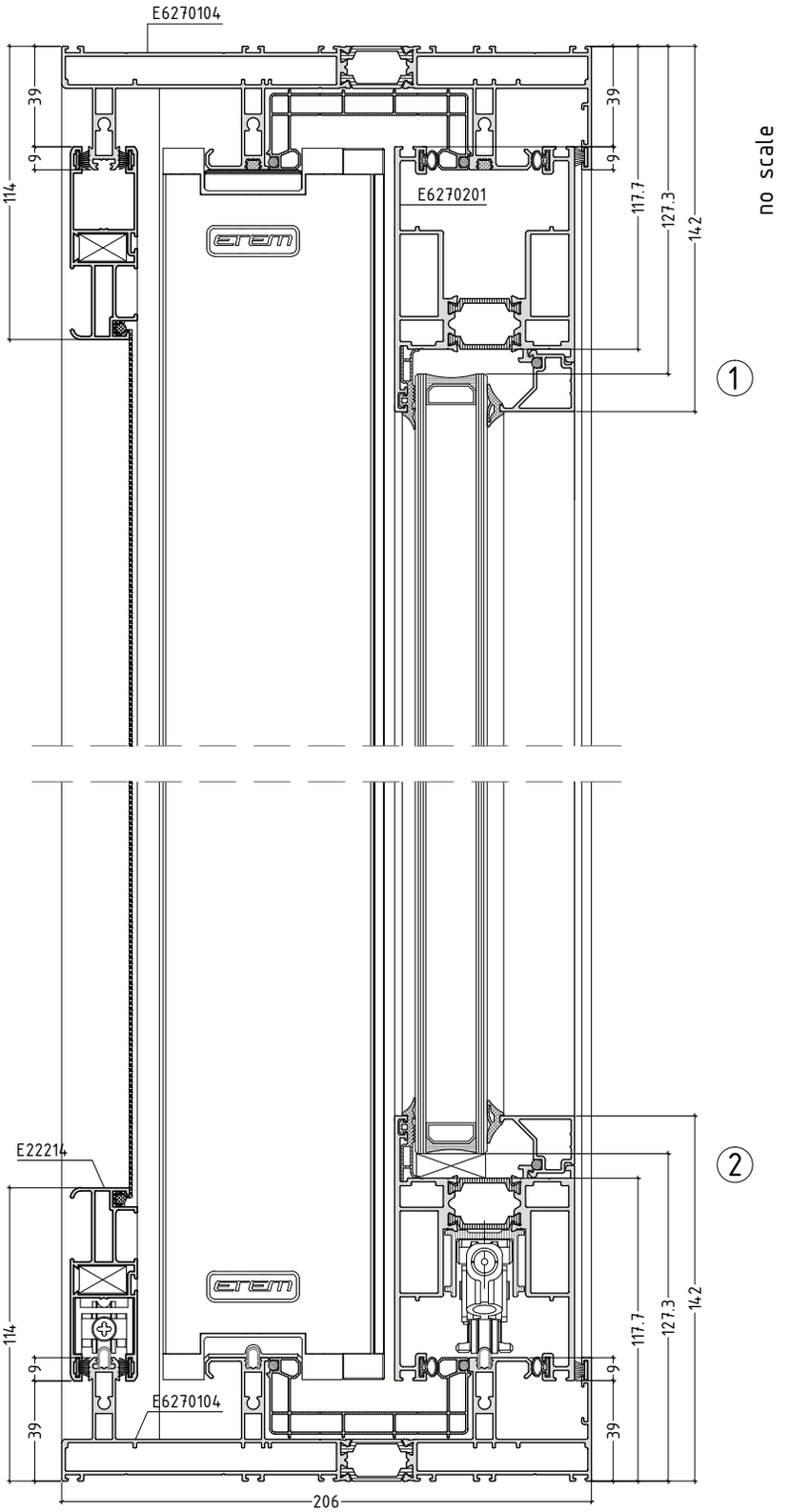
ES70.T-04

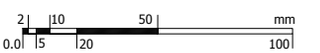


CUTTING LENGTHS

FRAME WIDTH	= W
FRAME HEIGHT	= H
SASH WIDTH	= (W+15) / 2
SASH HEIGHT	= H - 78
FLYSCREEN WIDTH	= (W-43) / 2
FLYSCREEN HEIGHT	= H - 78
INTERLOCKING HEIGHT	= H - 98

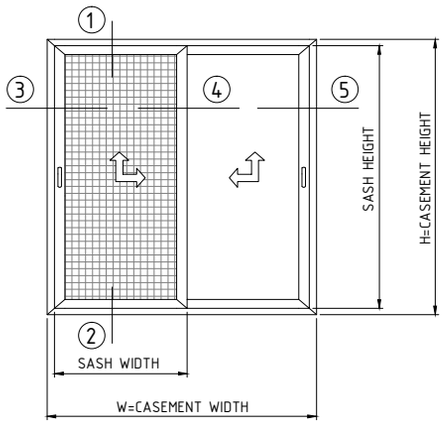
DIMENSIONS IN MILLIMETERS





DOUBLE LEAF SLIDING WINDOW WITH FLYSCREEN

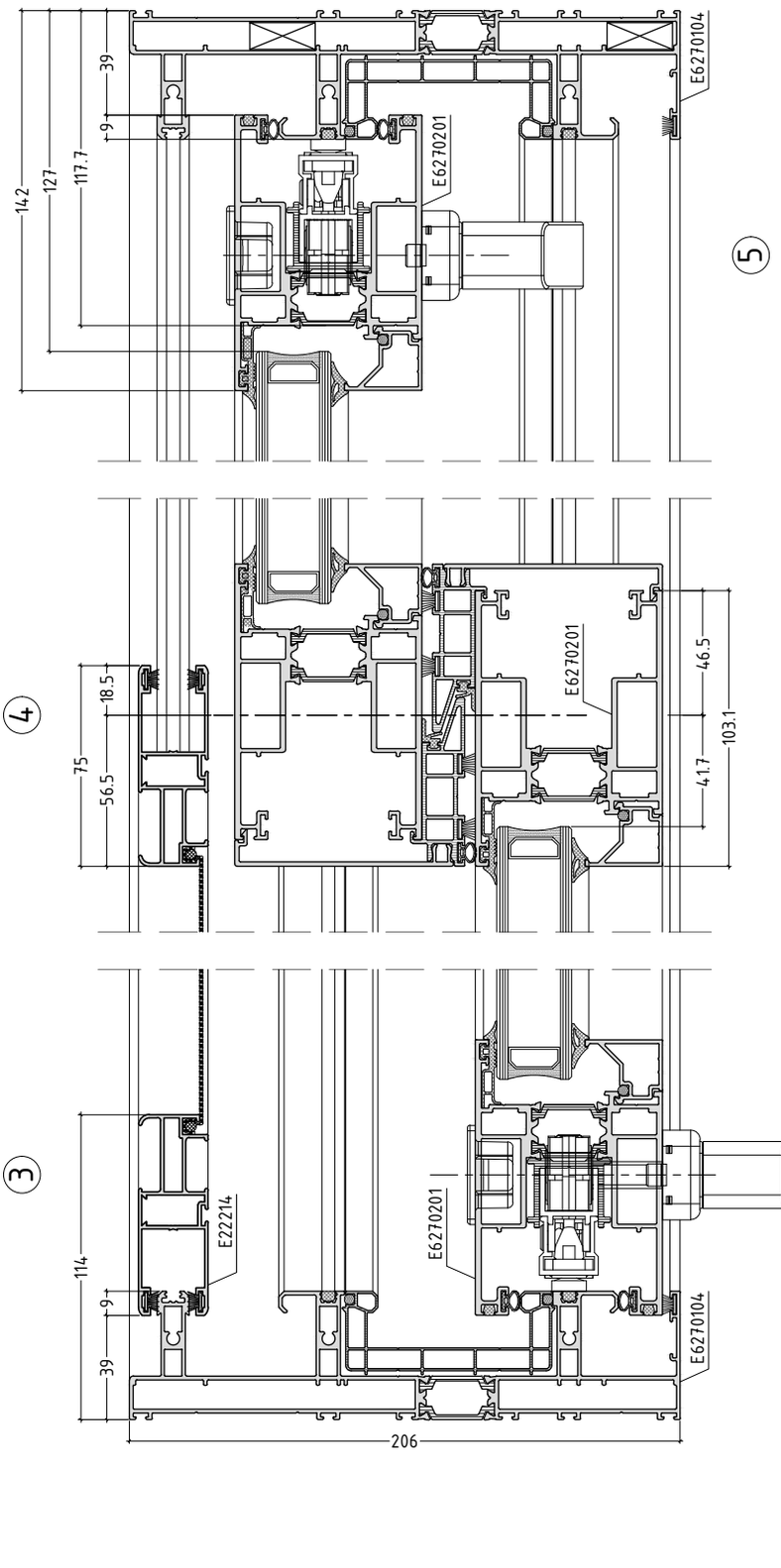
ES70.T-05



CUTTING LENGTHS

FRAME WIDTH	= W
FRAME HEIGHT	= H
SASH WIDTH	= (W+15)/2
SASH HEIGHT	= H - 78
FLYSCREEN WIDTH	= (W-43)/2
FLYSCREEN HEIGHT	= H - 78
INTERLOCKING HEIGHT	= H - 98

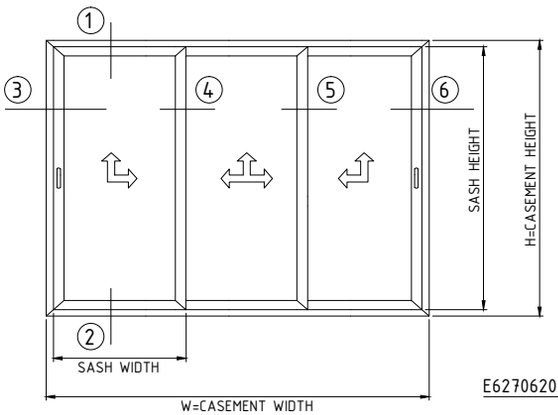
DIMENSIONS IN MILLIMETERS



no scale

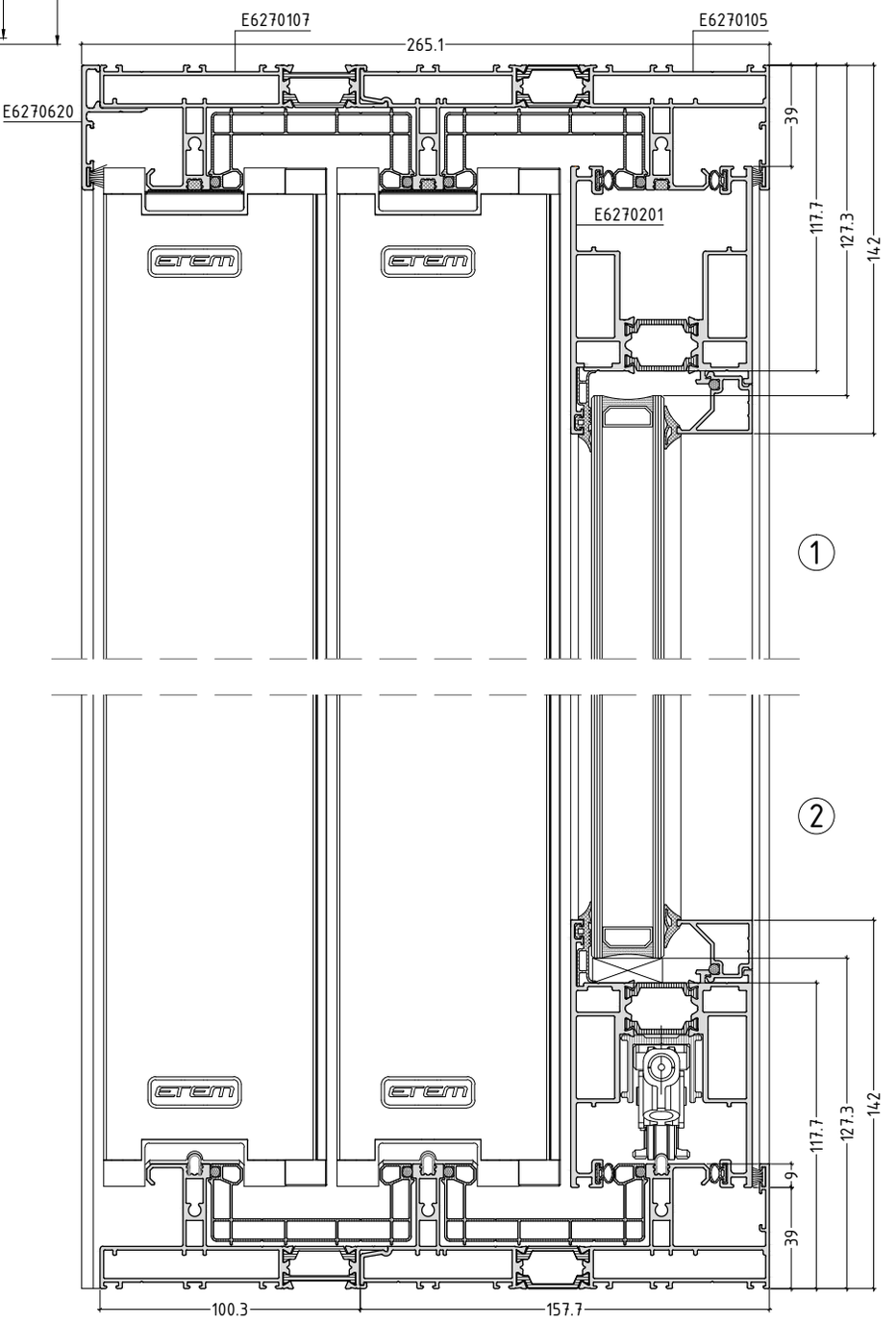
TRIPLE LEAF SLIDING WINDOW

ES70.T-06

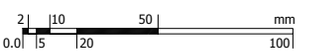


CUTTING LENGTHS	
FRAME WIDTH	= W
FRAME HEIGHT	= H
SASH WIDTH	= (W+108) / 3
SASH HEIGHT	= H - 78
INTERLOCKING HEIGHT	= H - 98

DIMENSIONS IN MILLIMETERS

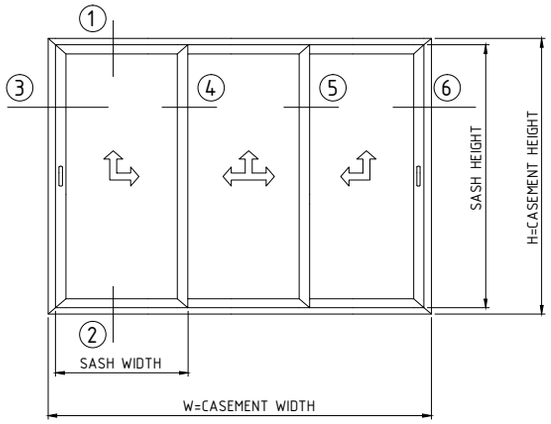


no scale



TRIPLE LEAF SLIDING WINDOW

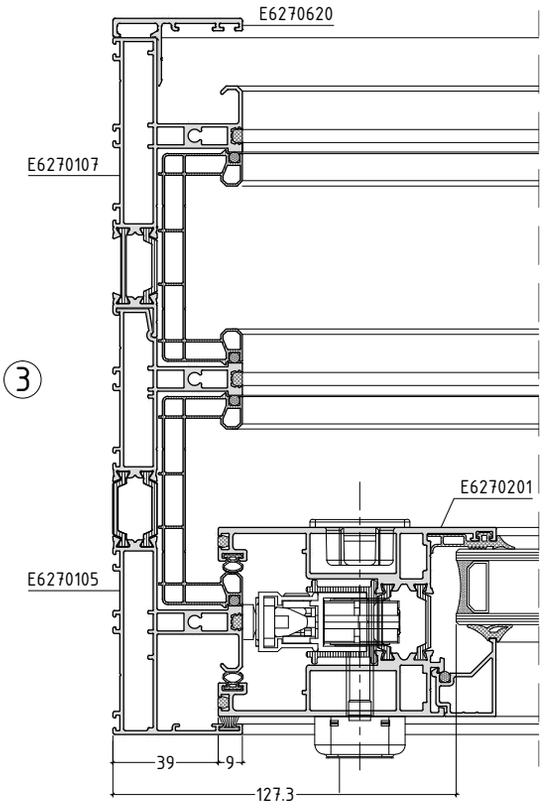
ES70.T-07

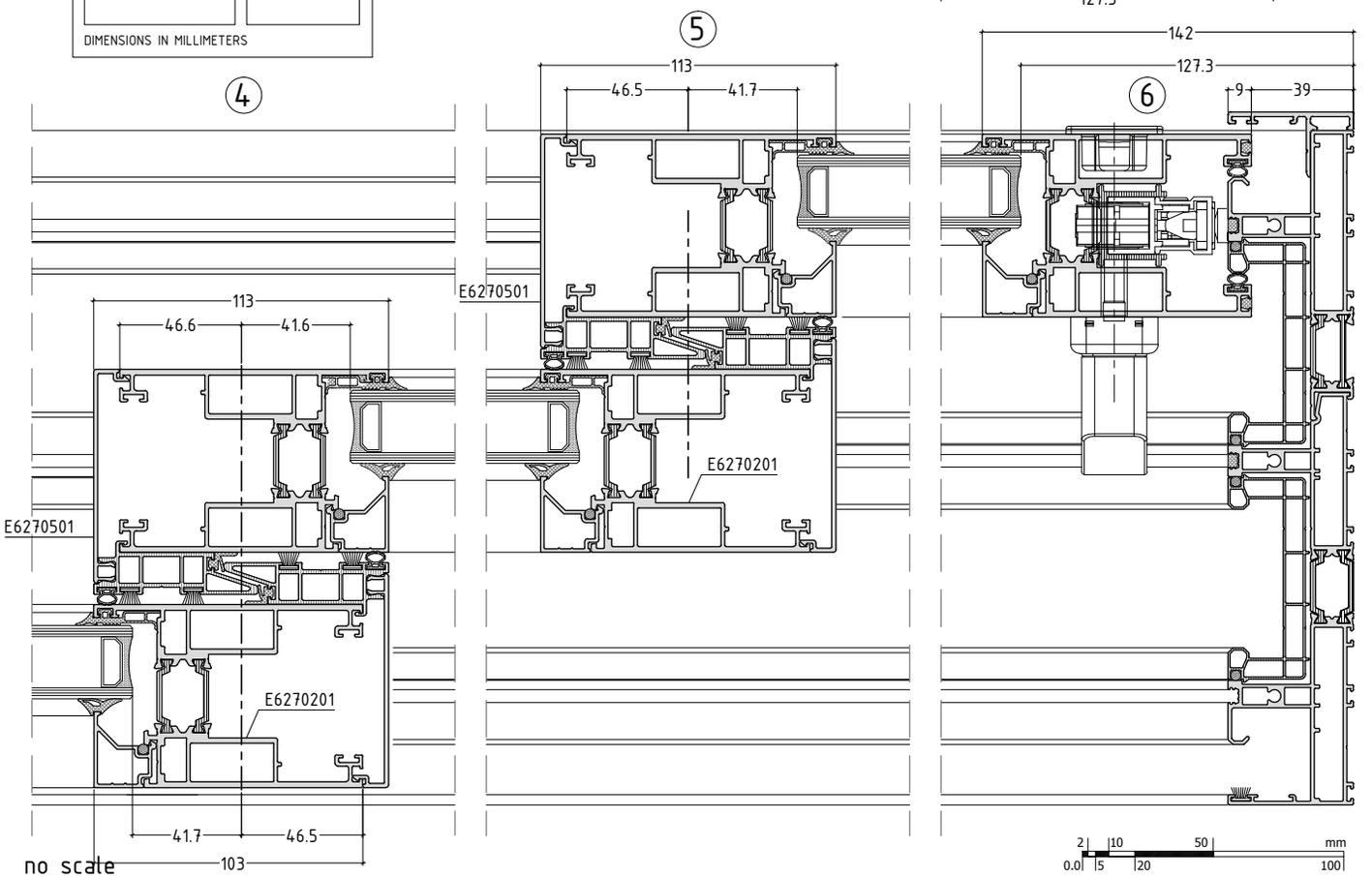


CUTTING LENGTHS

FRAME WIDTH	= W
FRAME HEIGHT	= H
SASH WIDTH	= (W+108) / 3
SASH HEIGHT	= H - 78
INTERLOCKING HEIGHT	= H - 98

DIMENSIONS IN MILLIMETERS

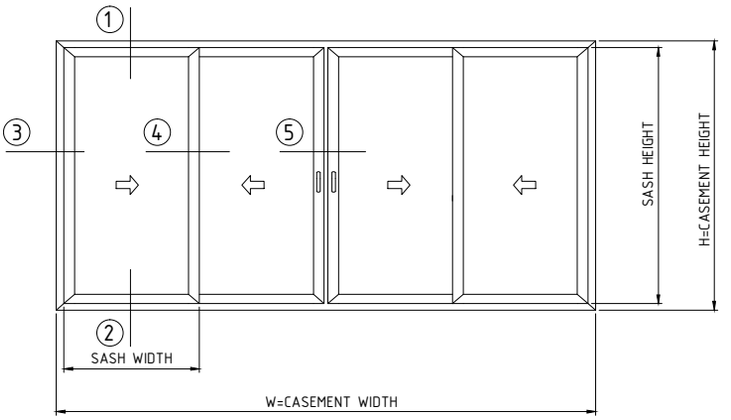




no scale

QUADRUPLE LEAF SLIDING WINDOW

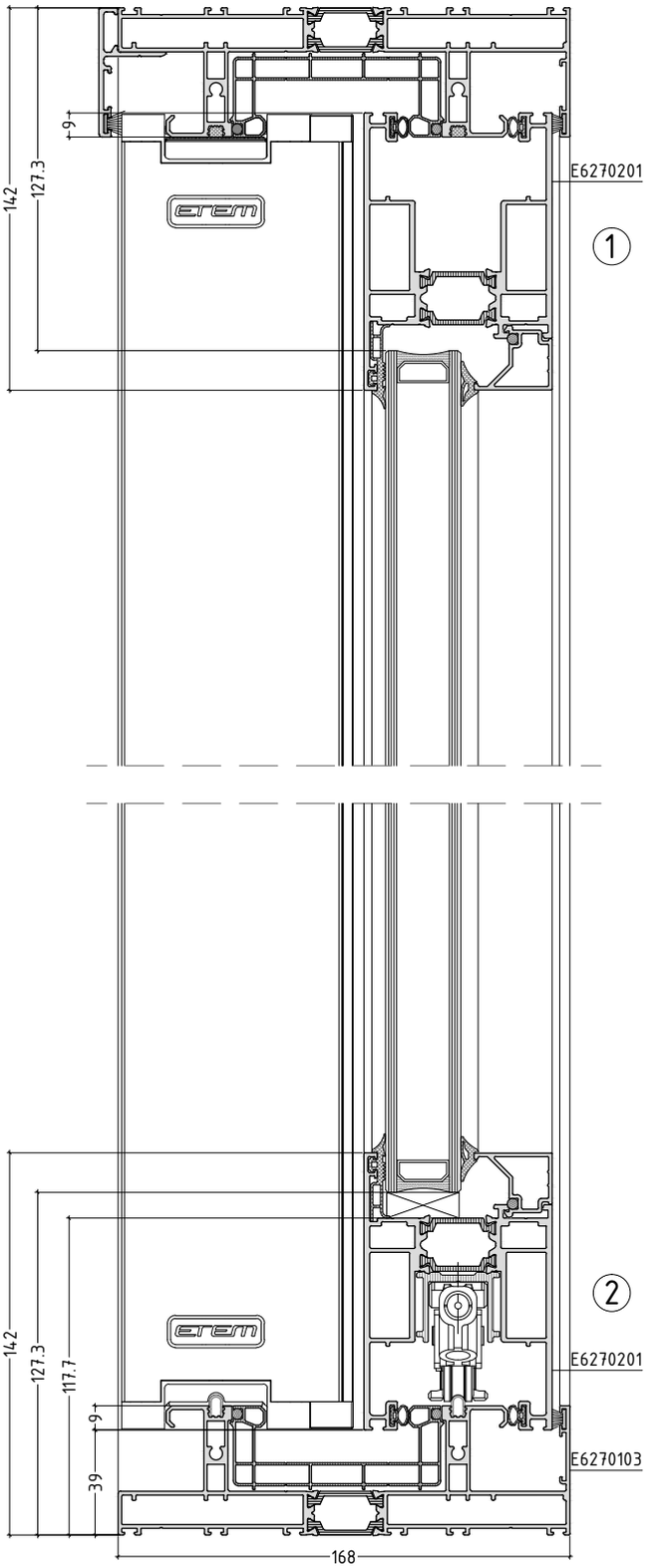
ES70.T-08



CUTTING LENGTHS

FRAME WIDTH	= W
FRAME HEIGHT	= H
SASH WIDTH	= $\frac{(W+94)}{4}$
SASH HEIGHT	= H - 78
ADJOINING HEIGHT	= H - 115
INTERLOCKING HEIGHT	= H - 98

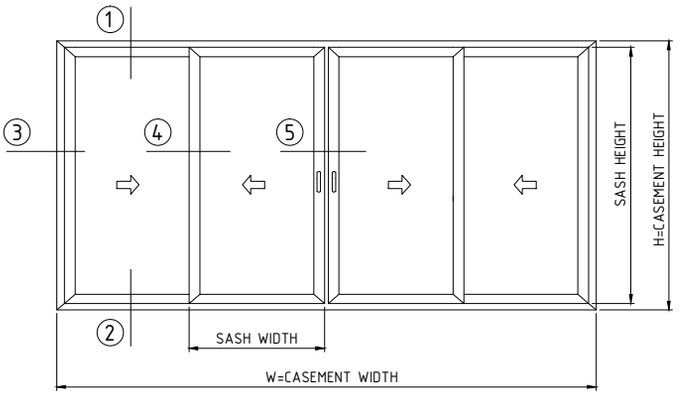
DIMENSIONS IN MILLIMETERS



no scale

ES70.T-09

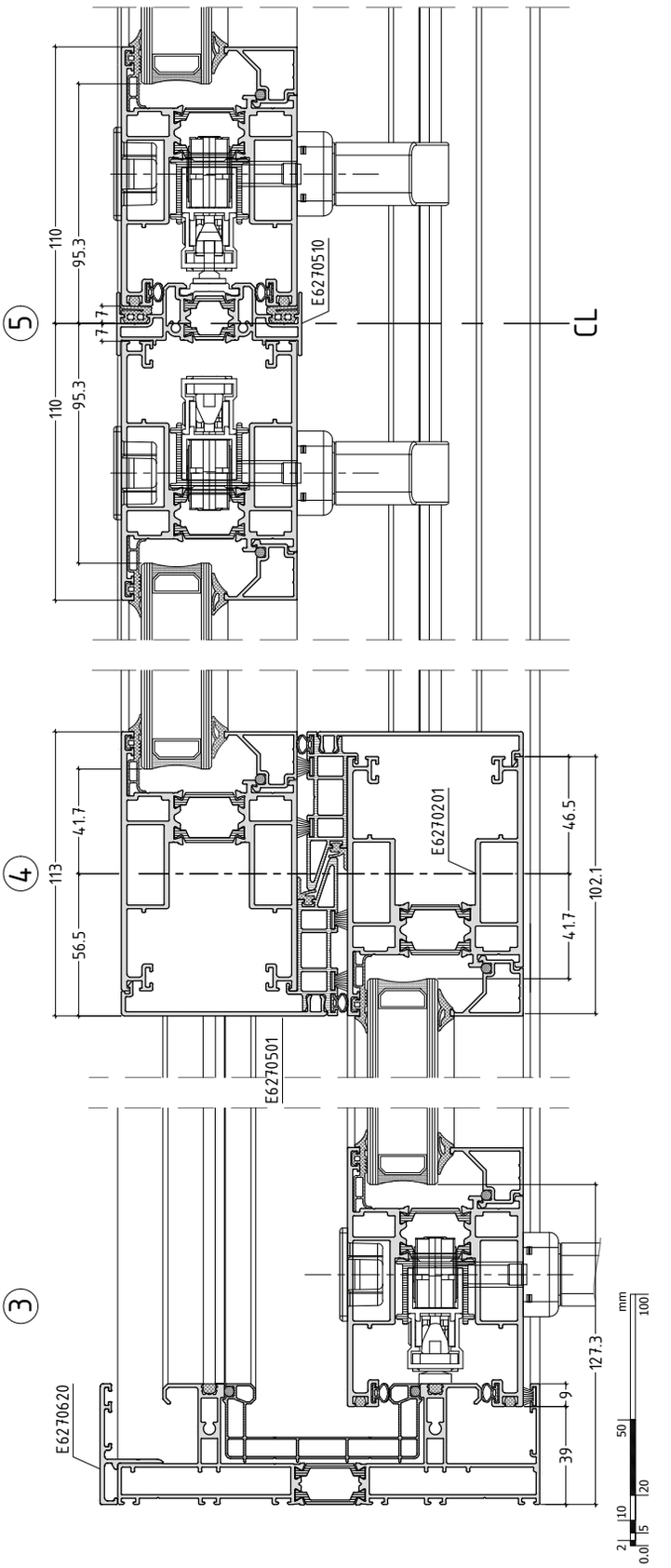
QUADRUPLE LEAF SLIDING WINDOW



CUTTING LENGTHS

FRAME WIDTH	= W
FRAME HEIGHT	= H
SASH WIDTH	= (W+94) / 4
SASH HEIGHT	= H - 78
ADJOINING HEIGHT	= H - 115
INTERLOCKING HEIGHT	= H - 98

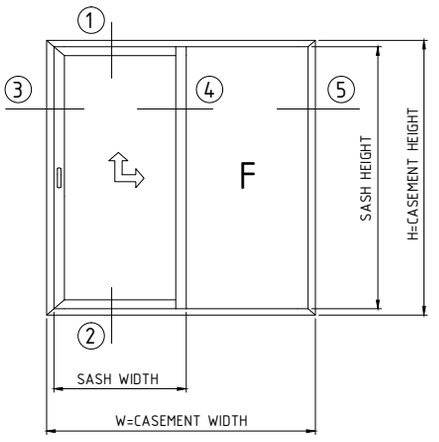
DIMENSIONS IN MILLIMETERS



no scale

HOTEL TYPE (CLASSIC INTERLOCK)
LIFTING & SLIDING WINDOW - FIXED

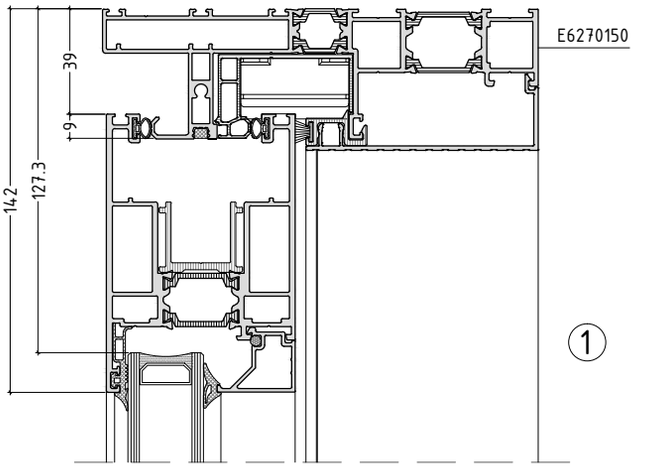
ES70.T-010

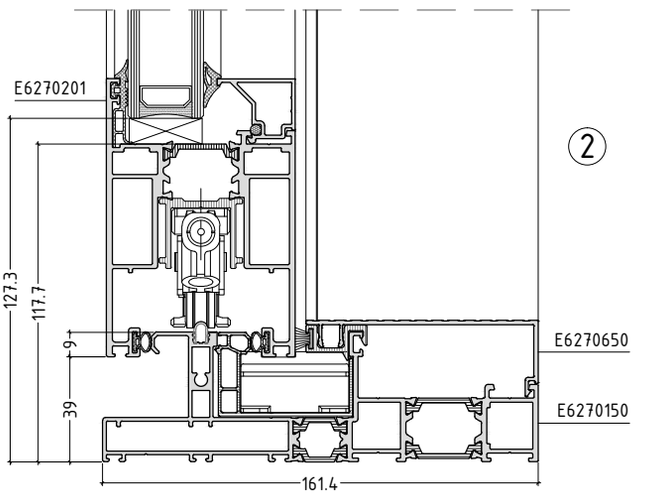


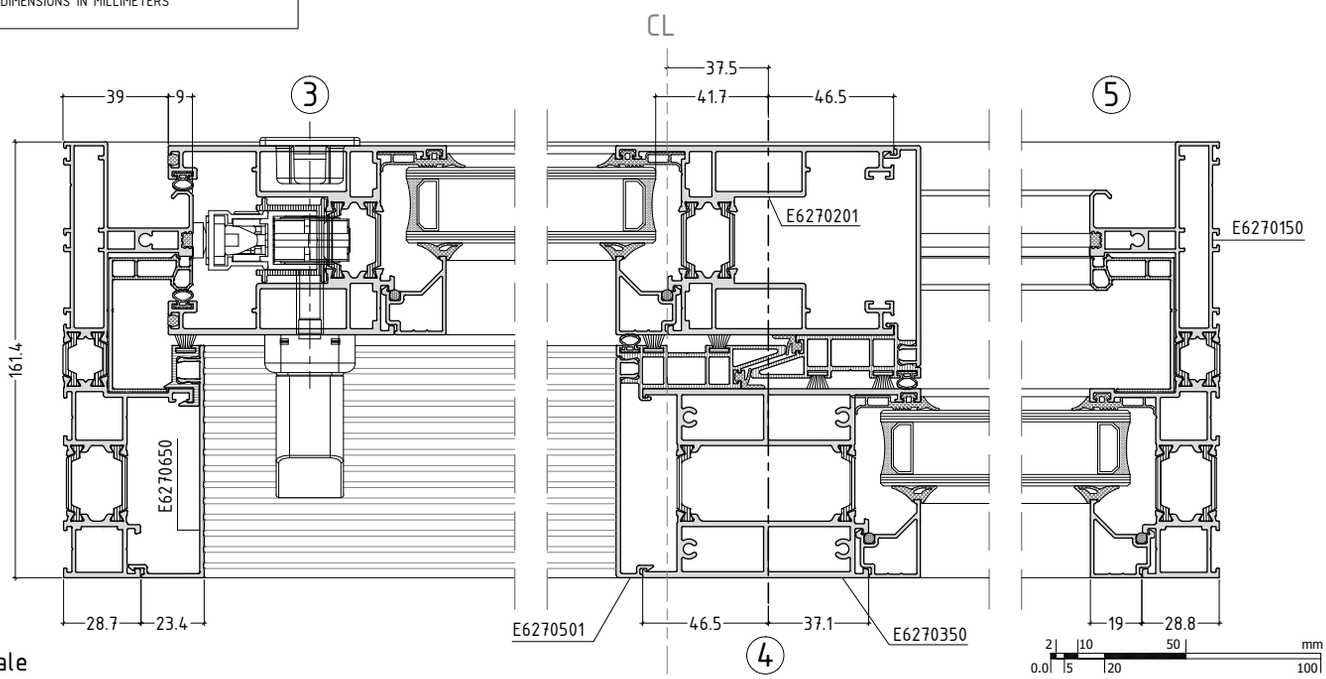
CUTTING LENGTHS

FRAME WIDTH	= W
FRAME HEIGHT	= H
SASH WIDTH	= $\frac{W}{2}$ + 45
SASH HEIGHT	= H - 78
6270350 MULLION HEIGHT	= H - 48
6270501 INTERLOCKING HEIGHT	= H - 98
6270501 (FOR FIXED) INTERLOCKING HEIGHT	= H - 57

DIMENSIONS IN MILLIMETERS



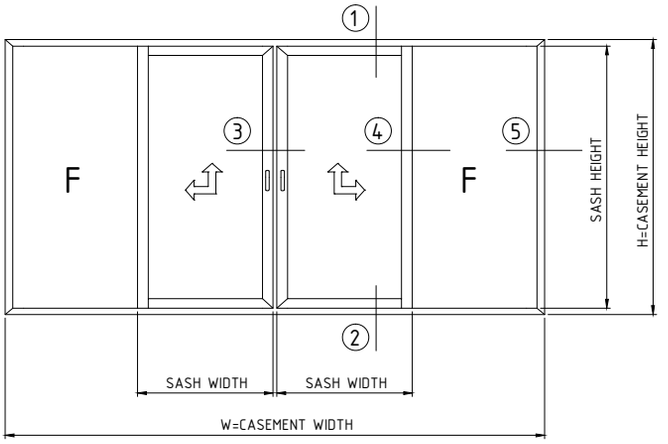




no scale

HOTEL TYPE (CLASSIC INTERLOCK) ES70.T-011

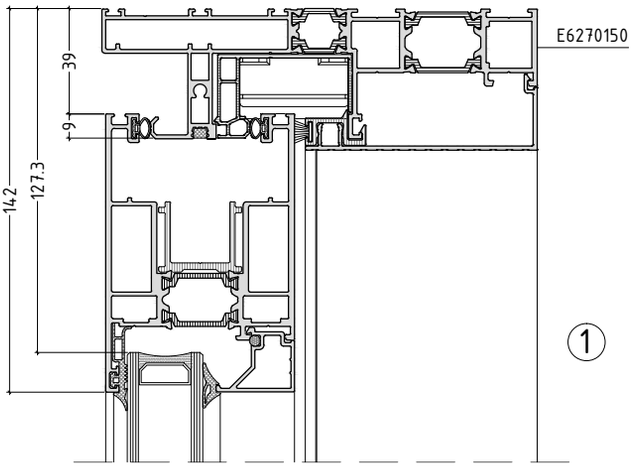
FIXED - MEETING DOUBLE SASH LIFTING & SLIDING WINDOW - FIXED

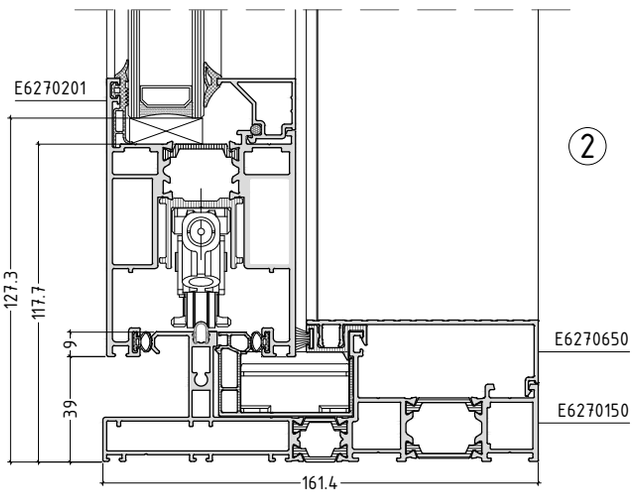


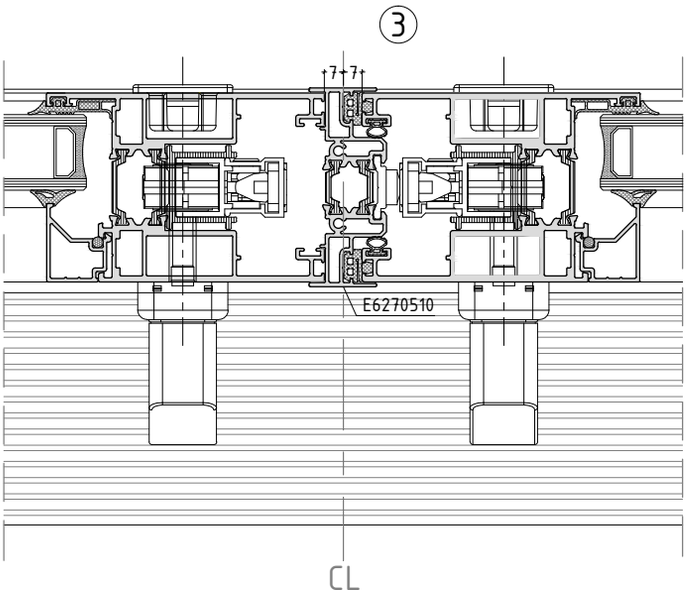
CUTTING LENGTHS

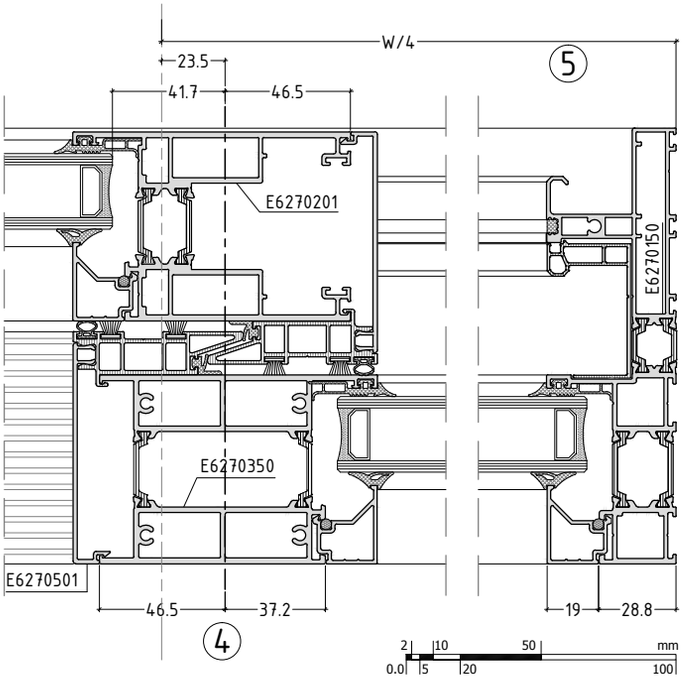
FRAME WIDTH	= W
FRAME HEIGHT	= H
SASH WIDTH	$= \frac{W}{4} + 63$
SASH HEIGHT	= H - 78
E6270350 MULLION HEIGHT	= H - 48
E6270501 INTERLOCKING HEIGHT	= H - 98
6270501 (FOR FIXED) INTERLOCKING HEIGHT	= H - 57

DIMENSIONS IN MILLIMETERS





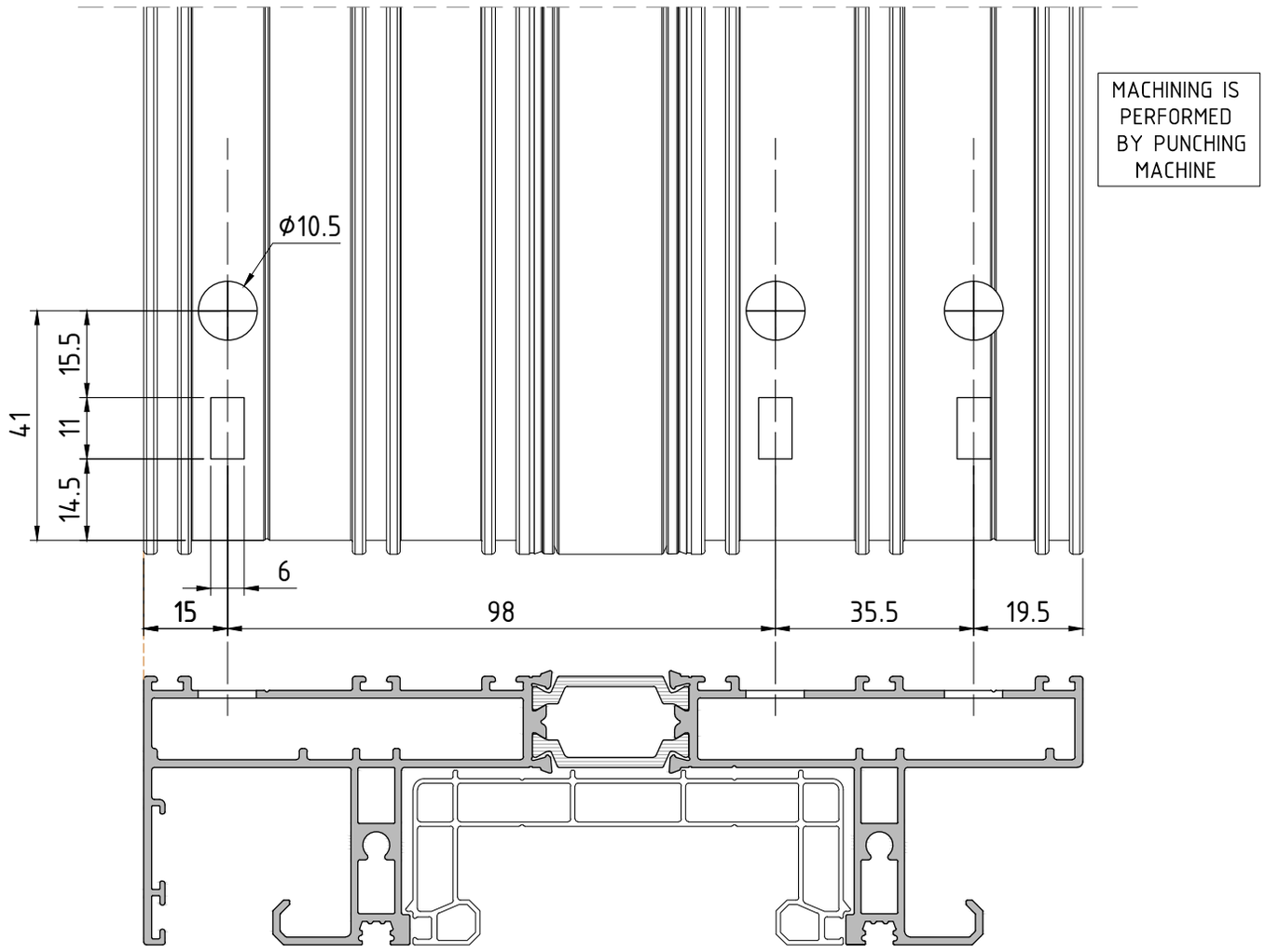


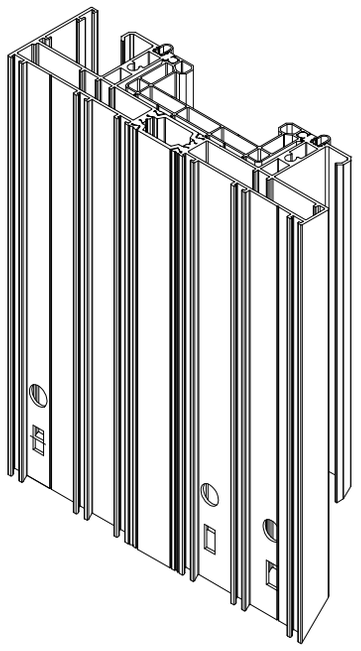


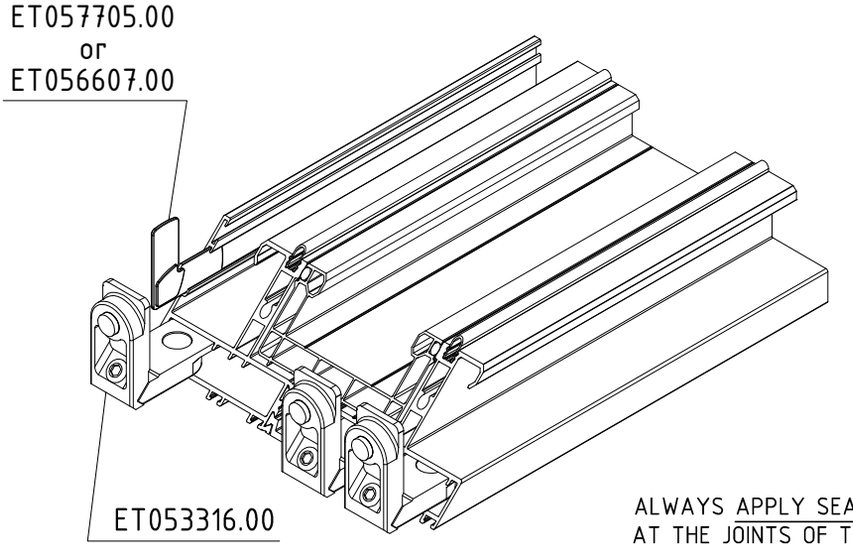
no scale

MACHINING

MACHINING ON RAIL FOR FIXING WITH DIE CAST JOINT CORNER BRACKETS ES70.M-01

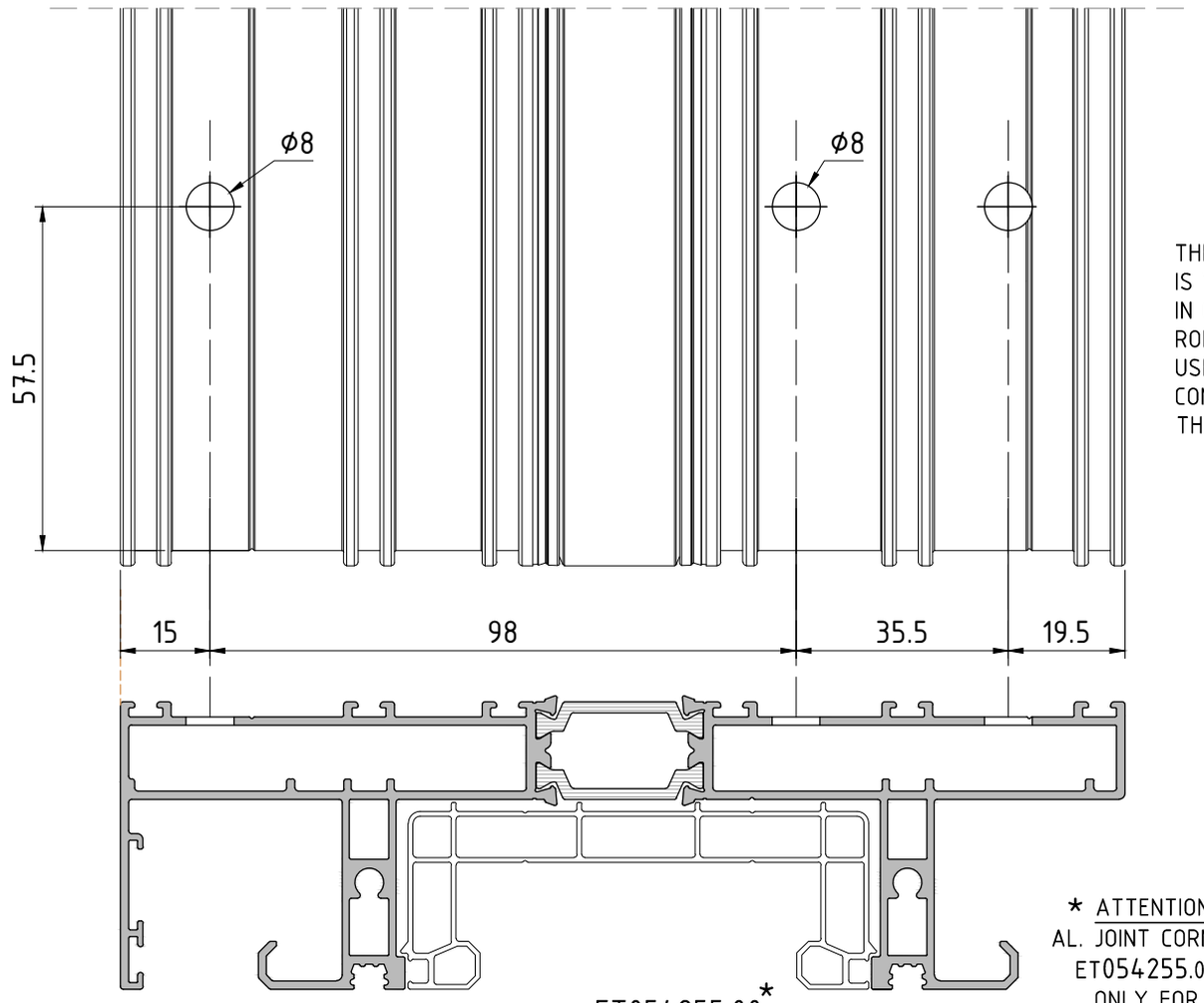






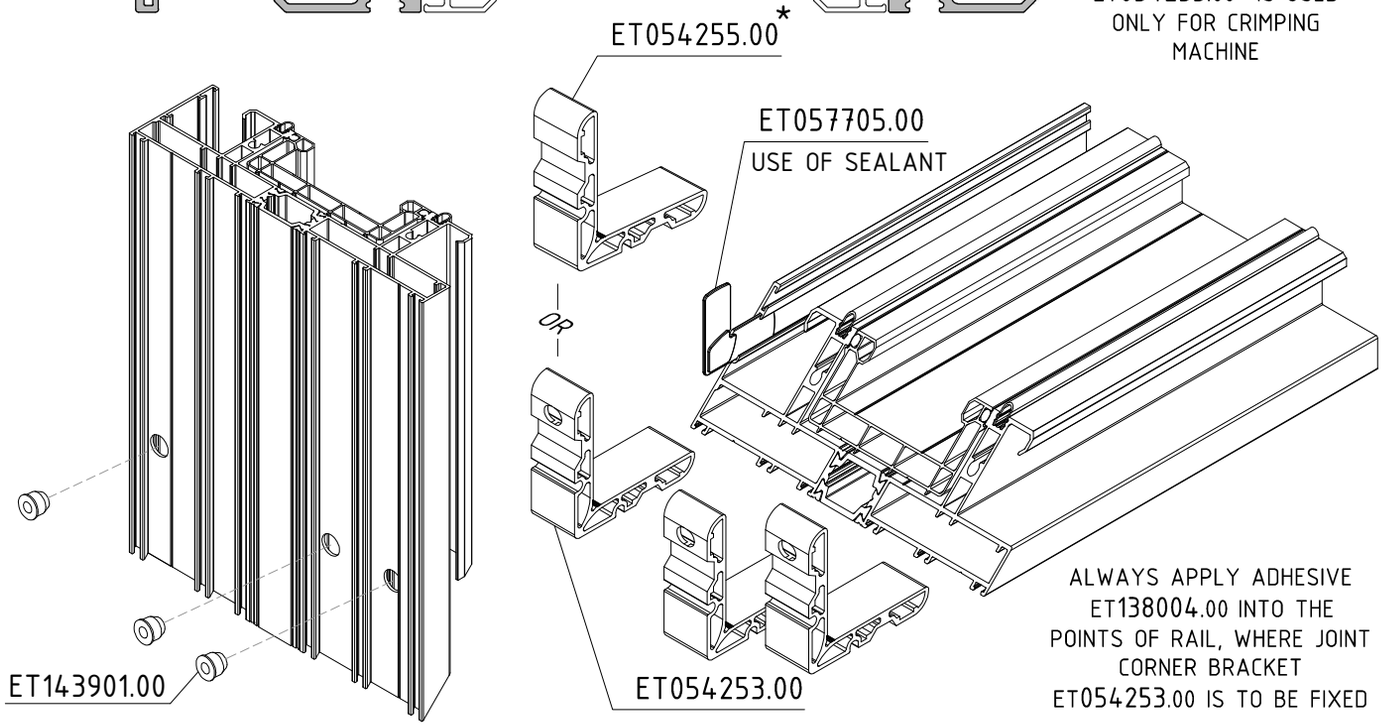
ALWAYS APPLY SEALANT AT THE JOINTS OF THE FRAME COMPONENTS

MACHINING ON RAIL FOR FIXING WITH EXTRUDED ALUM. JOINT CORNER BRACKETS ES70.M-02



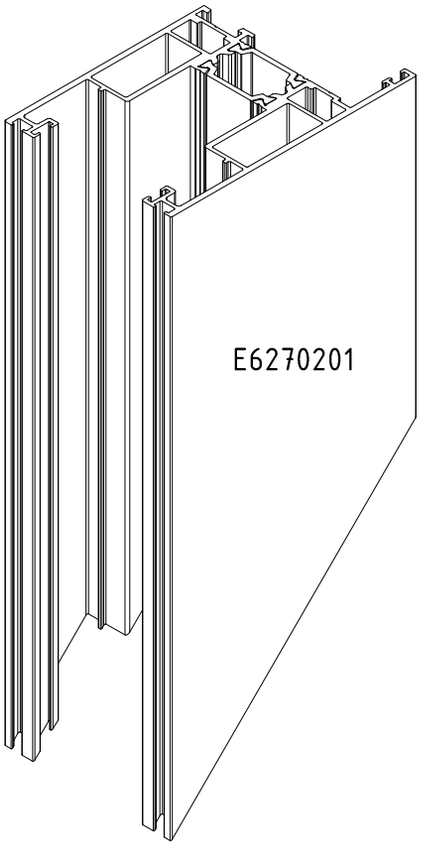
THE DRAWING IS VALID ONLY IN CASE THAT ROLL PINS ARE USED FOR THE CONNECTION OF THE RAIL

* ATTENTION: EXTRUDED AL. JOINT CORNER BRACKET ET054255.00 IS USED ONLY FOR CRIMPING MACHINE



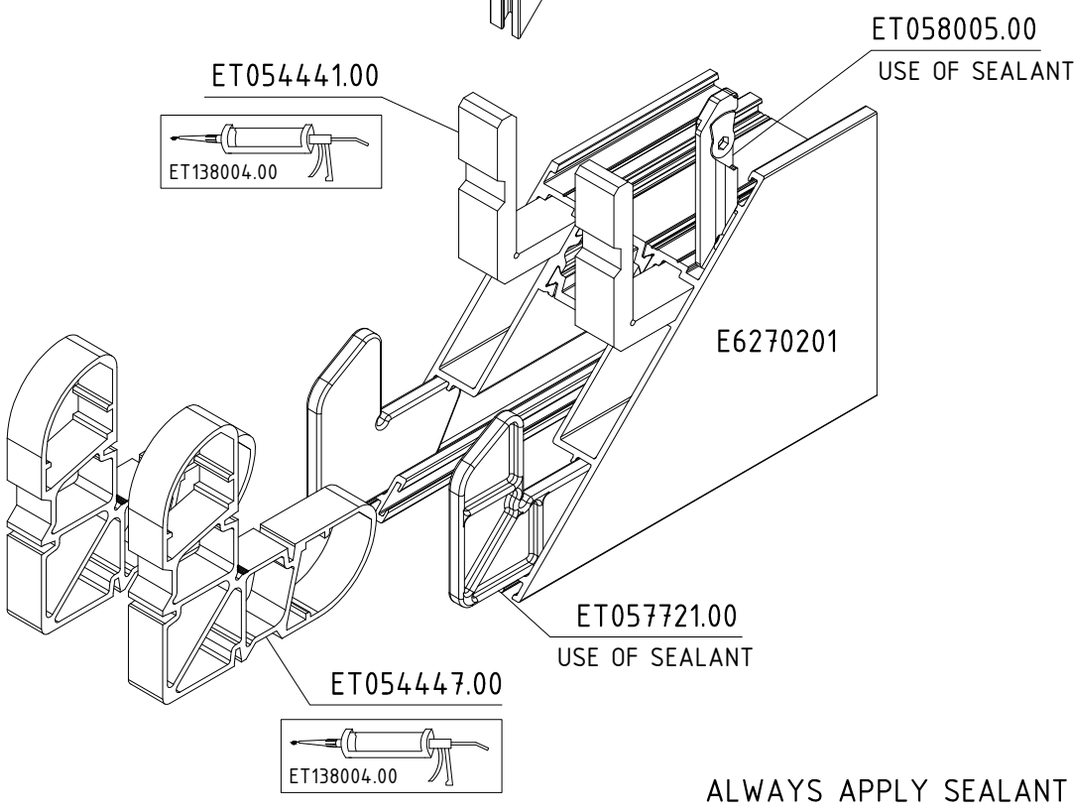
ALWAYS APPLY ADHESIVE ET138004.00 INTO THE POINTS OF RAIL, WHERE JOINT CORNER BRACKET ET054253.00 IS TO BE FIXED

FIXING SASH FRAME WITH EXTRUDED ALUM. JOINT CORNER BRACKETS ES70.M-03



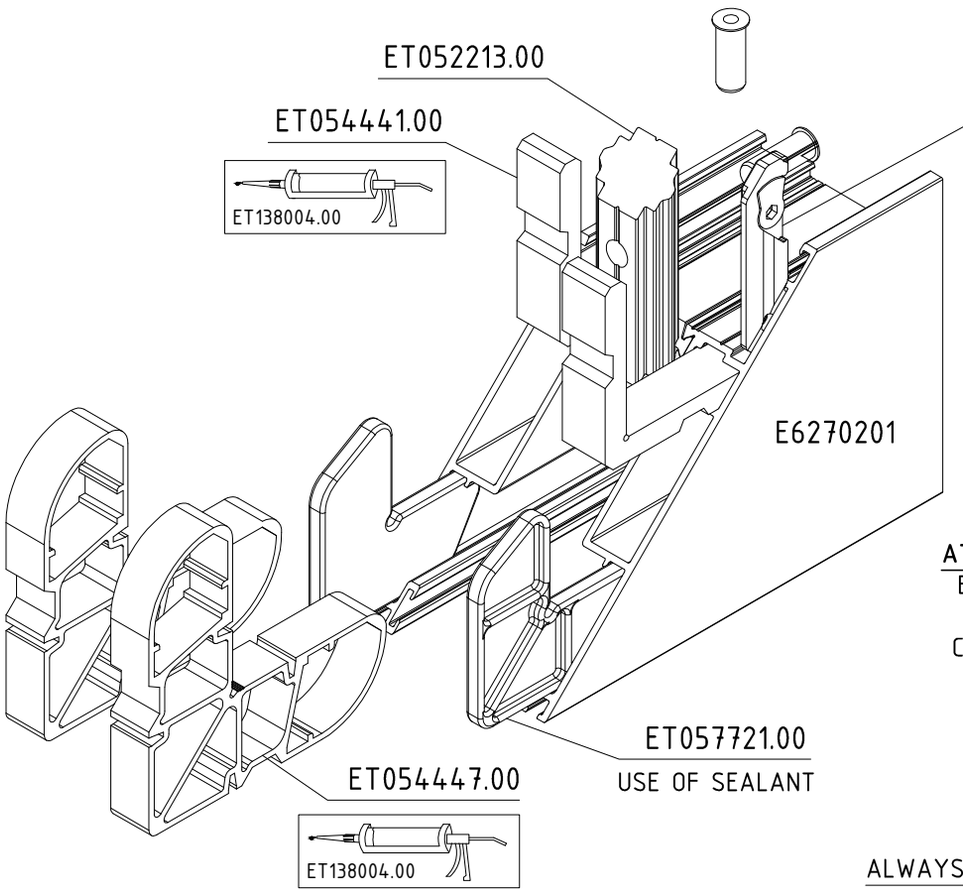
ATTENTION: EXTRUDED AL. JOINT CORNER BRACKET ET054447.00 IS USED FOR CRIMPING MACHINE

ALWAYS APPLY ADHESIVE ET.138004.00



ALWAYS APPLY SEALANT AT THE JOINTS OF THE SASH FRAME

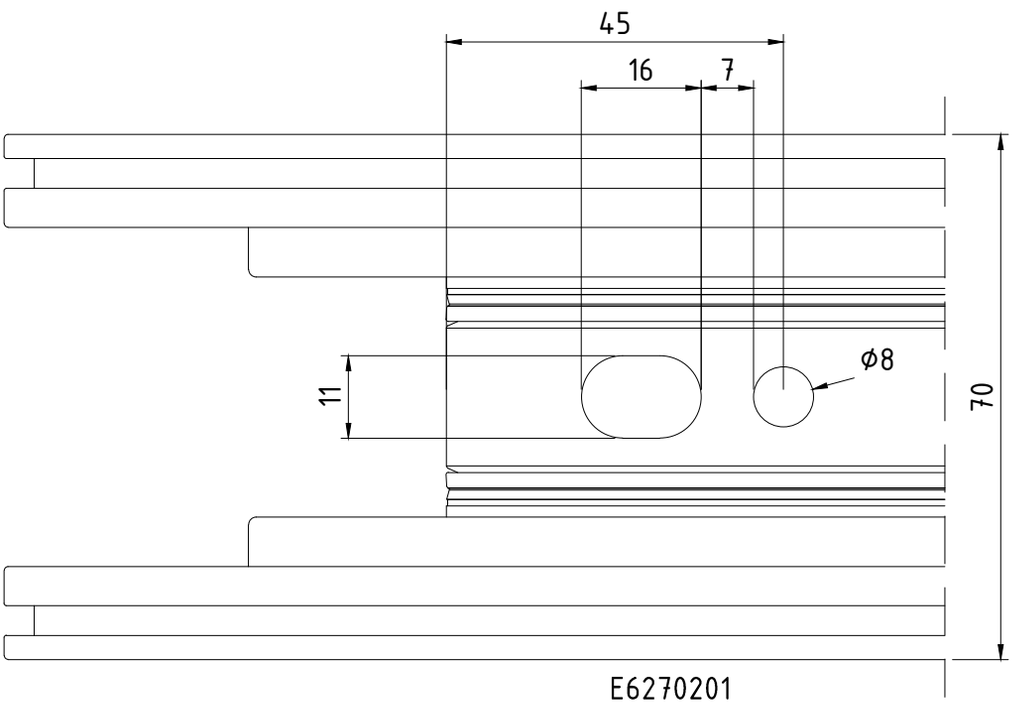
MACHINING ON SASH PROFILE FOR FIXING WITH DIE CAST JOINT CORNER BRACKET ES70.M-04

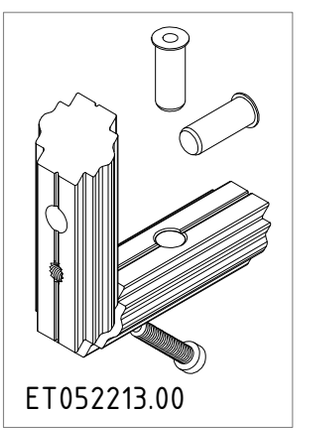


ATTENTION: JOINT CORNER BRACKET ET.052213.00 IS ALWAYS FIXED TO THE SASH ALONG WITH JOINT CORNER BRACKETS ET.054447.00 & ET.054441.00.

ALWAYS APPLY ADHESIVE ET.138004.00

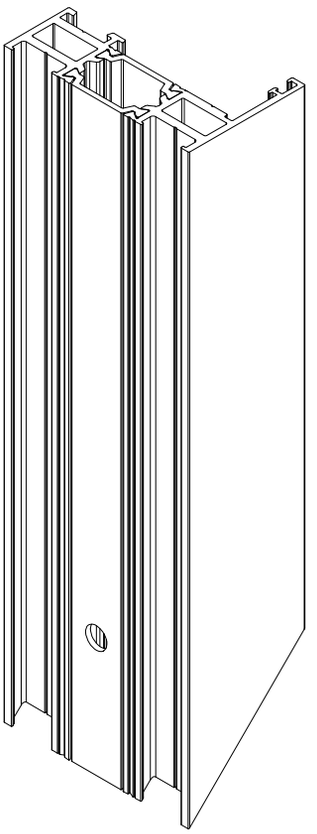
ALWAYS APPLY SEALANT AT THE JOINTS OF THE SASH FRAME



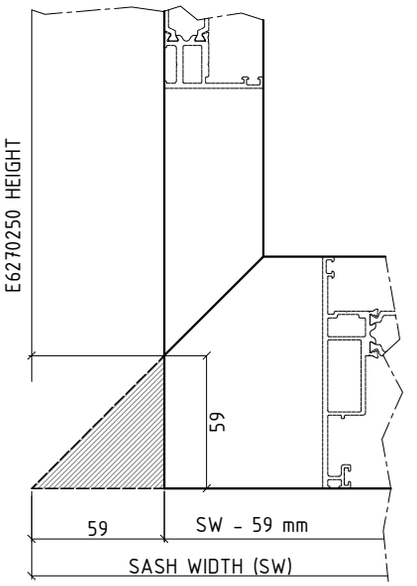


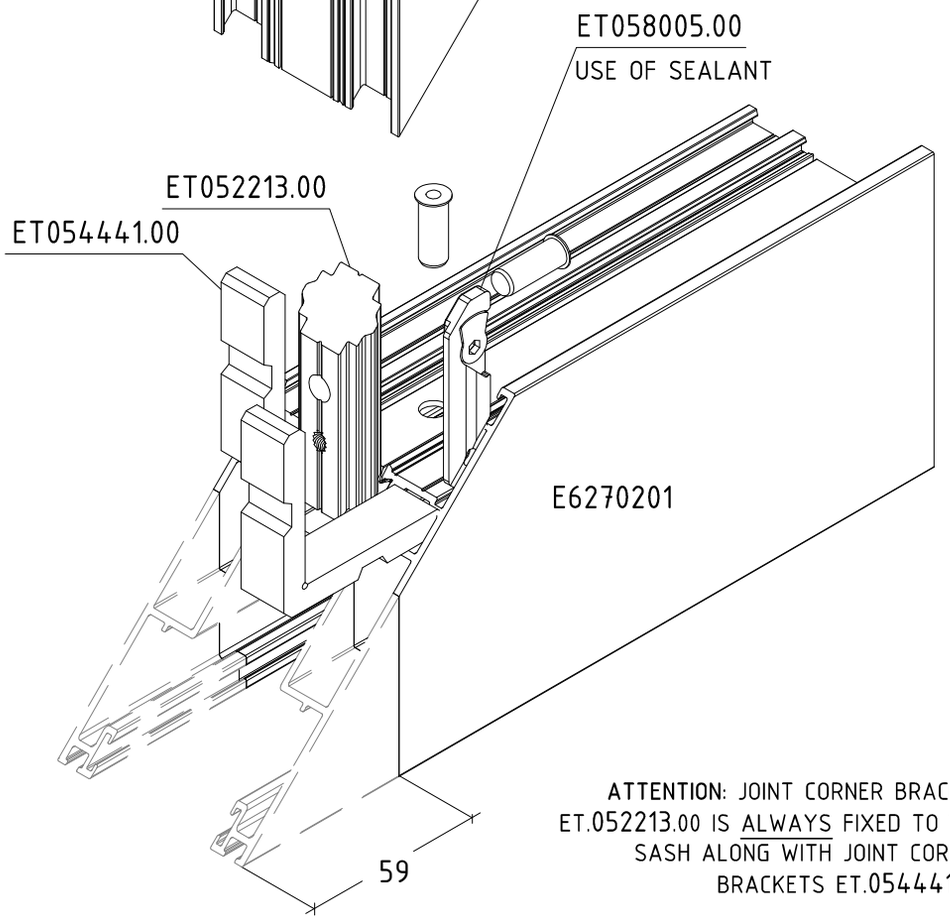
MACHINING IS PERFORMED BY PUNCHING MACHINE

MACHINING ON HORIZ. SASH E6270201 FOR CONNECTION WITH NARROW SASH E6270250 ES70.M-05



E6270250



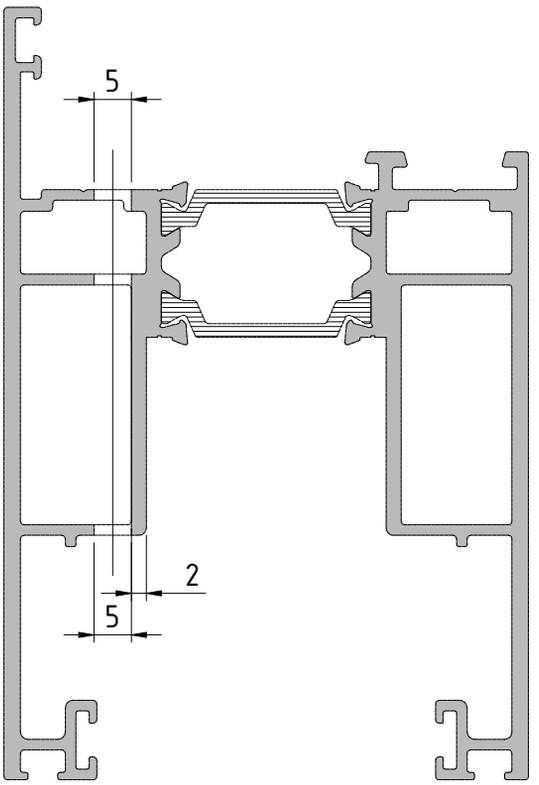


ATTENTION: JOINT CORNER BRACKET ET.052213.00 IS ALWAYS FIXED TO THE SASH ALONG WITH JOINT CORNER BRACKETS ET.054441.00.

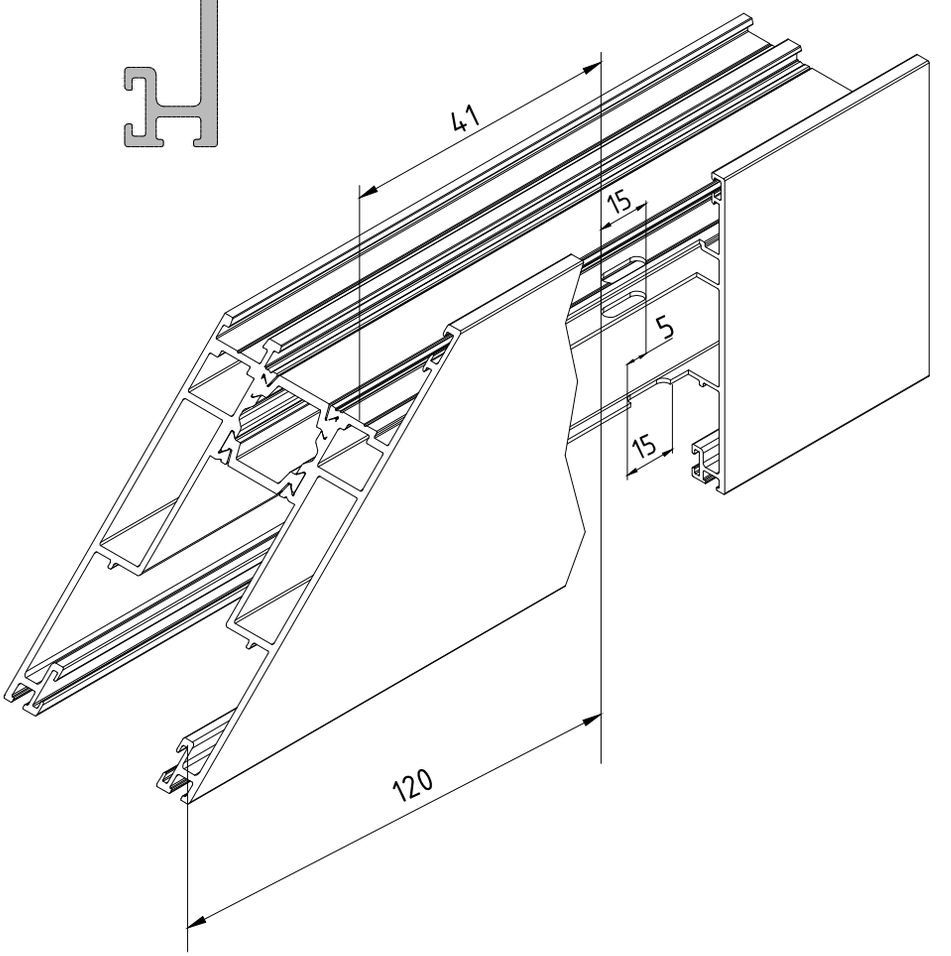
ALWAYS APPLY ADHESIVE ET.138004.00

MACHINING ON SASH PROFILE FOR DRAIN HOLES

ES70.M-06

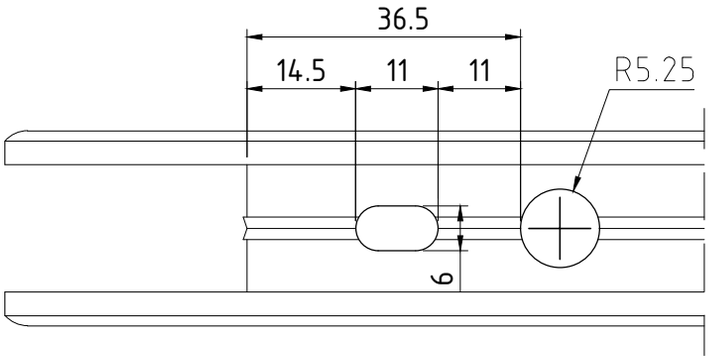


THE DRAIN HOLES ARE OPENED
AT THE PUNCHING MACHINE

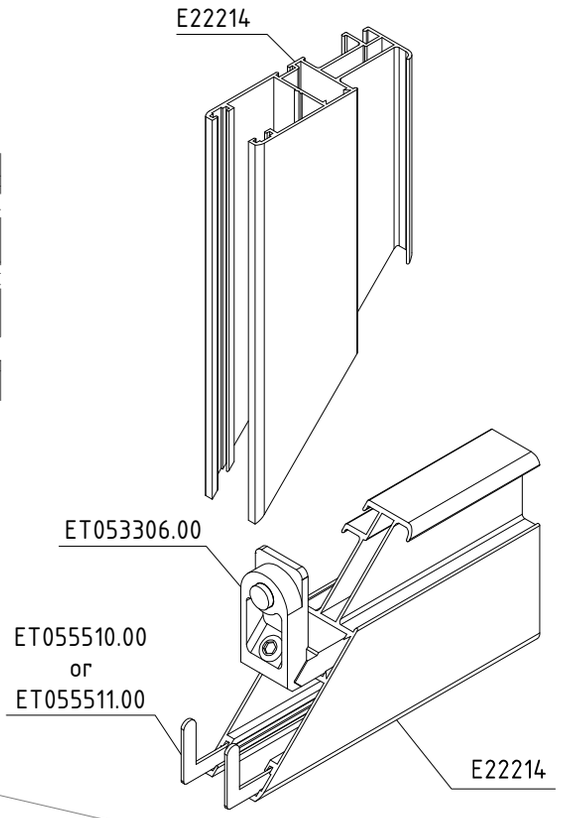


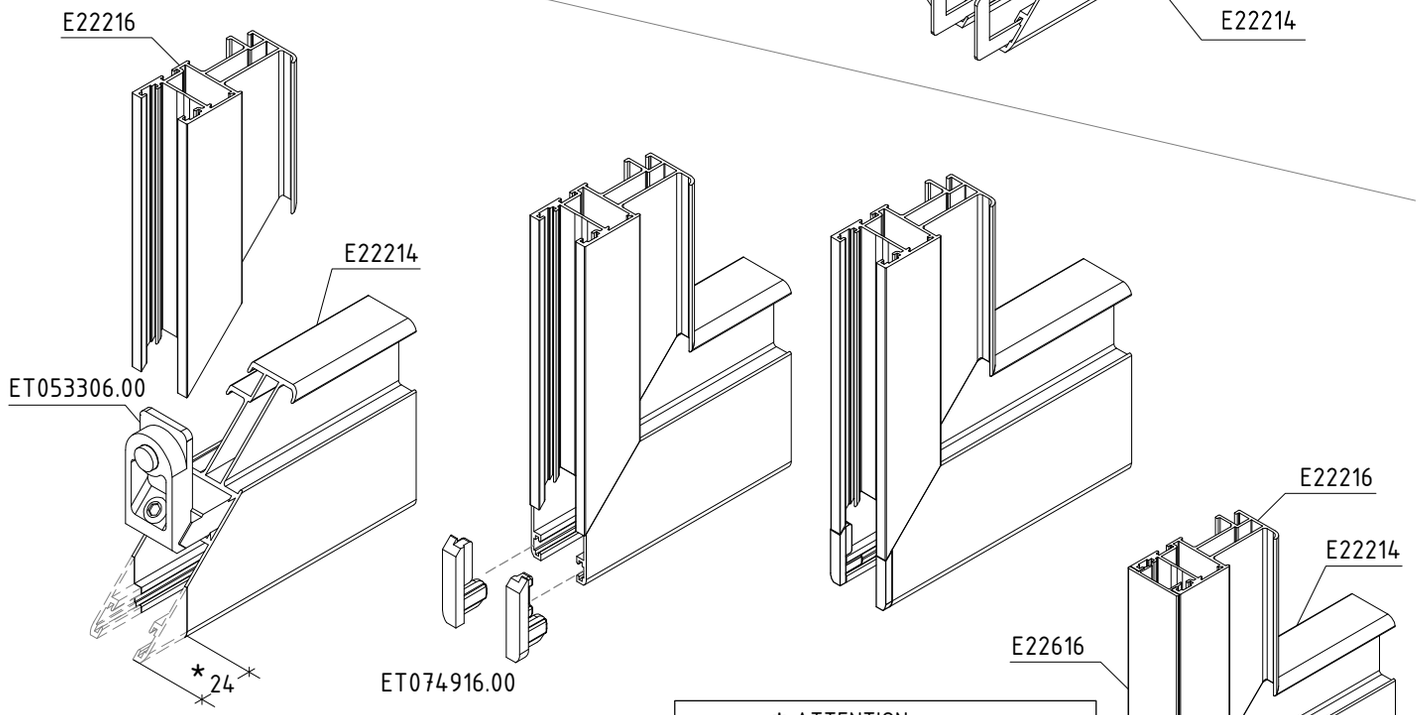
MACHINING ON FLY SCREEN FOR FIXING WITH DIE CAST JOINT CORNER BRACKET & INSTRUCTIONS FOR CONNECTION WITH NARROW FLY SCREEN E22216

ES70.M-07



MACHINING IS PERFORMED BY PUNCHING MACHINE
OPTIONAL





HORIZONTAL SASH E22214 MUST BE CUT 45° & THEN REMOVE 24mm WITH 90° CUT

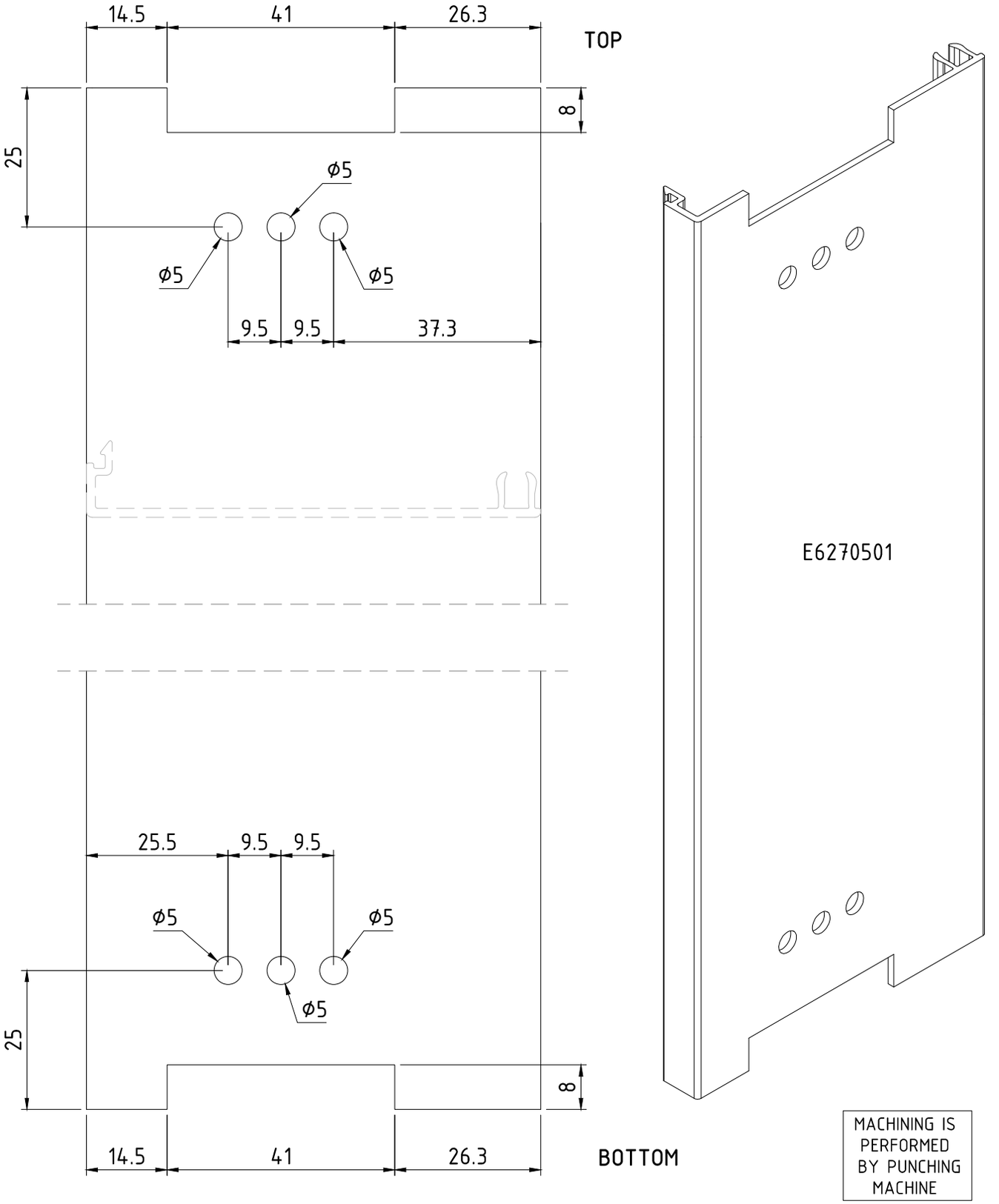
MACHINING FOR E22616 IS PERFORMED BY PUNCHING MACHINE
OPTIONAL

* ATTENTION

IF COVER PROFILE E22616 IS SELECTED (INSTEAD OF THE PLUGS), THEN YOU HAVE TO REMOVE 21mm (90° CUT) FROM THE HORIZONTAL SASH E22214 AND NOT 24mm (AS WE DO FOR PLUGS ET.074916.00)

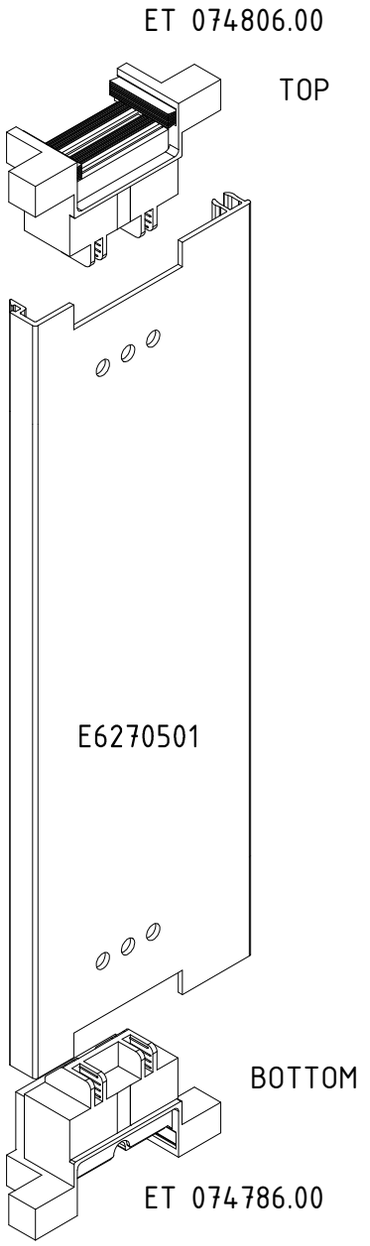
MACHINING OF INTERLOCK PROFILE E6270501

ES70.M-08

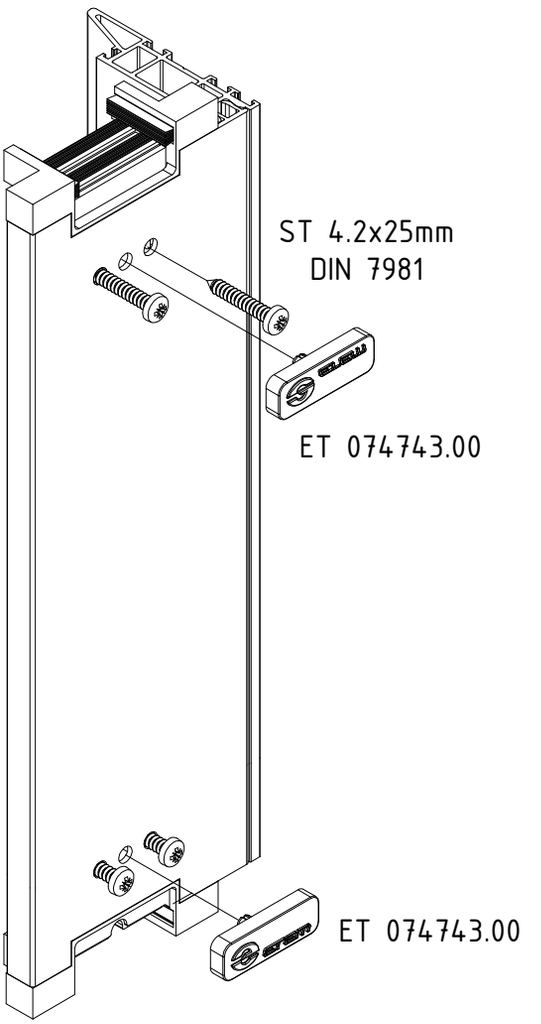


FIXING INTERLOCK PROFILE E6270501

ES70.M-09



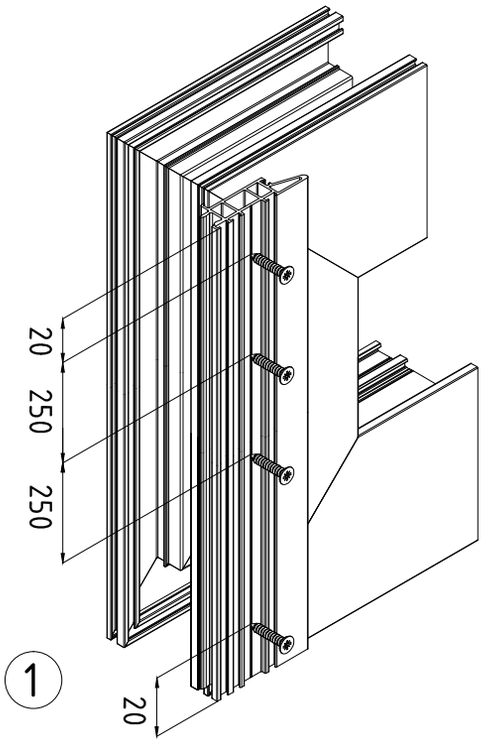
PLUG ET.074786**00** IS FIXED ONTO THE BOTTOM SIDE OF INTERLOCK PROFILE E6270501, WHILST PLUG ET.074806.00 IS FIXED ONTO THE TOP SIDE

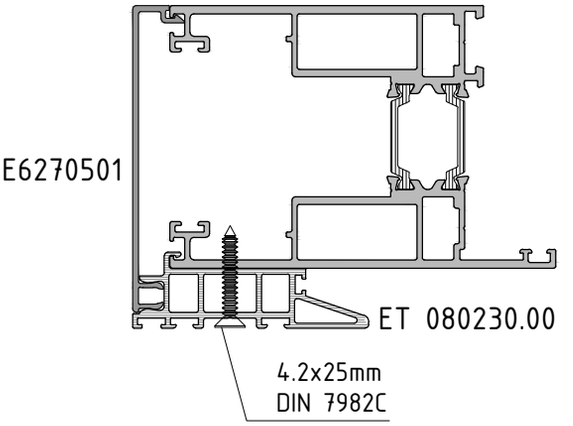


PLUGS ARE FIXED ONTO THE INTERLOCK PROFILE USING SHEET METAL SCREWS 4.2x25mm DIN 7981. COVER THE HEADS OF THE SCREWS BY FIXING PLUG ET.074743.00

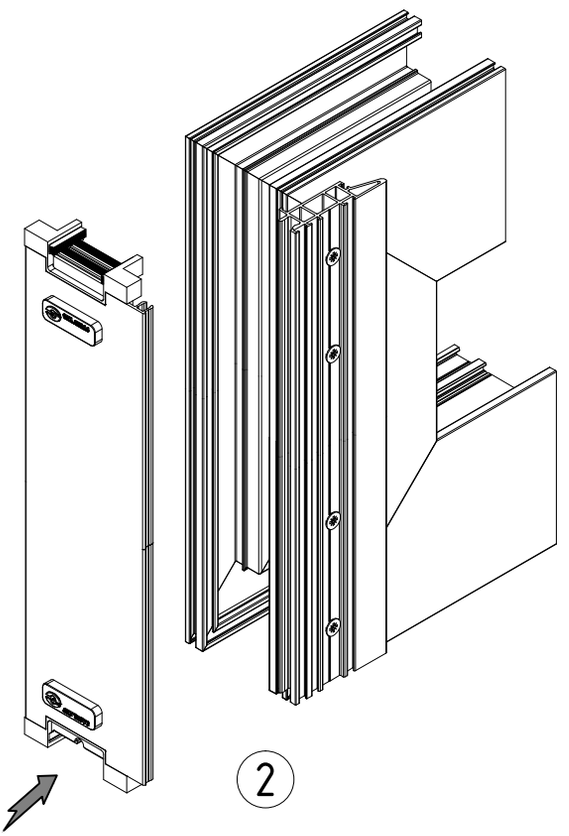
FIXING INTERLOCK PROFILE ONTO THE SASH FRAME

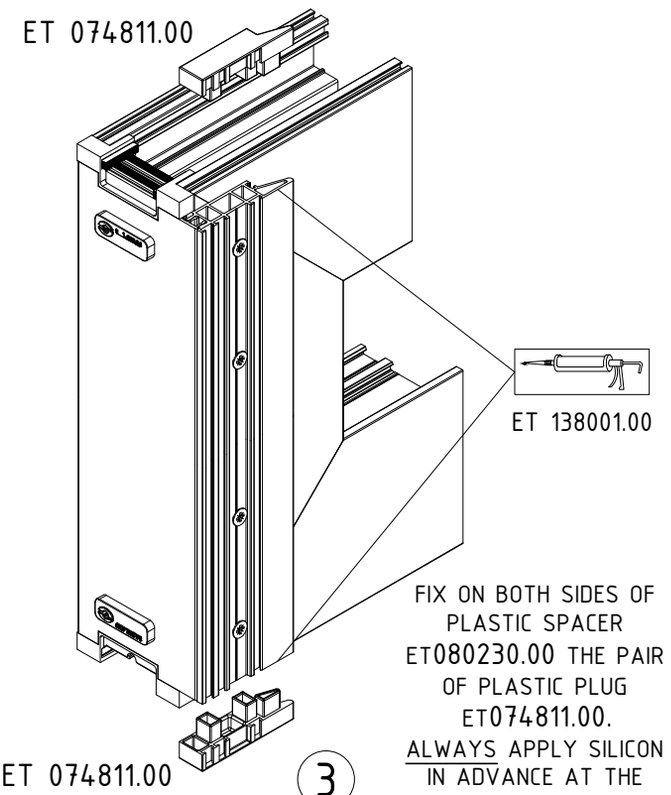
ES70.M-010





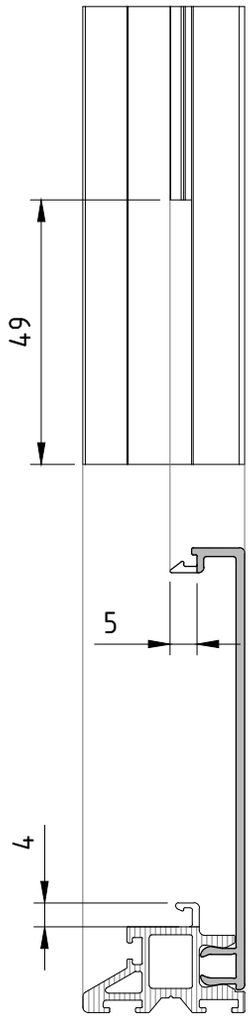
PLASTIC SPACER ET080230.00 IS FIXED ONTO THE SASH FRAME USING SHEET METAL SCREWS 4.2x25mm DIN 7982C. THE FIRST SCREW IS FIXED AT A DISTANCE OF 20mm, MEASURED FOR THE ENDS OF PROFILE E6270501, AND THE CENTER TO CENTER DISTANCE BETWEEN THE NEXT SCREWS MUST BE APPROXIMATELY 250mm.

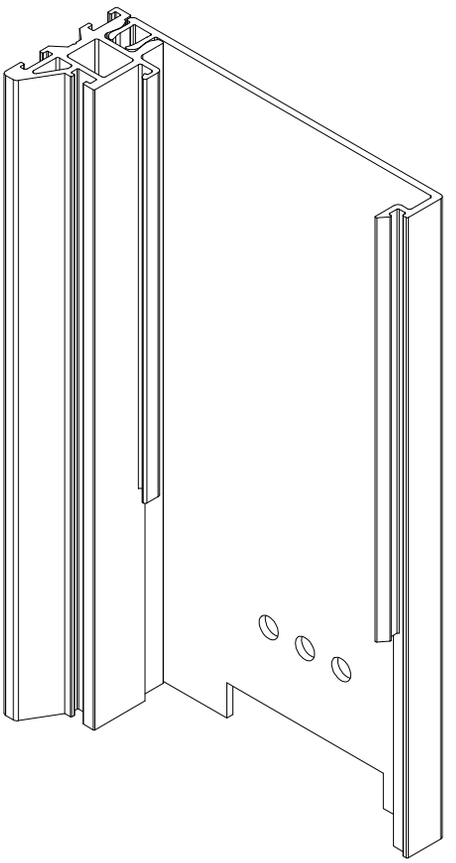


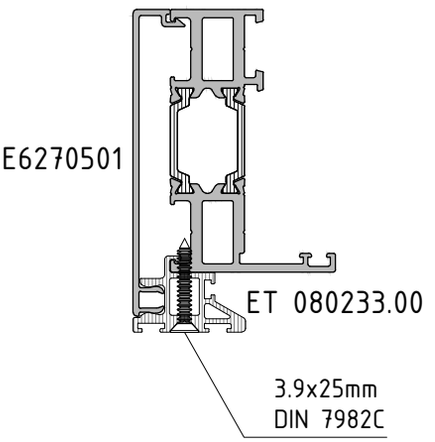


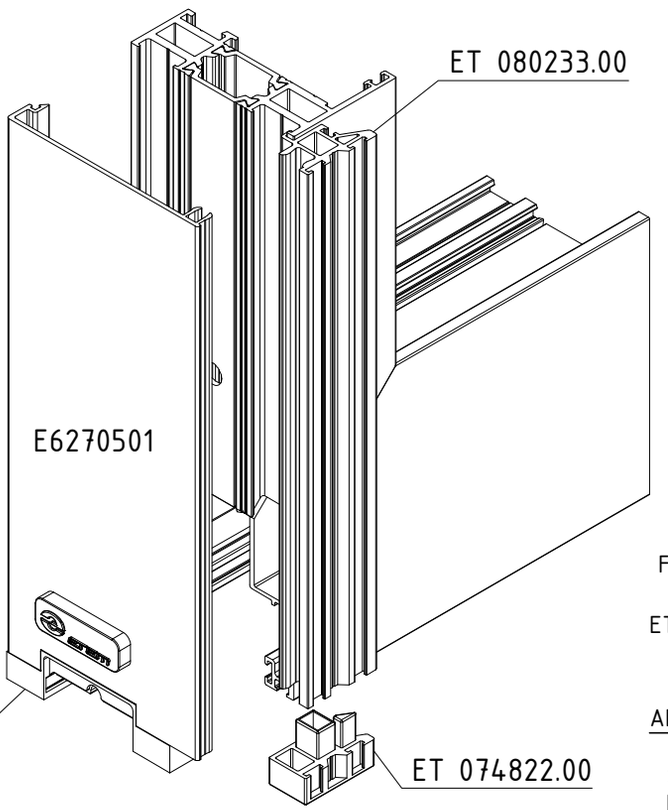
FIX ON BOTH SIDES OF PLASTIC SPACER ET080230.00 THE PAIR OF PLASTIC PLUG ET074811.00.
ALWAYS APPLY SILICON IN ADVANCE AT THE SURFACE WHERE THE PLUG IS TO BE FIXED

MACHINING OF INTERLOCK PROFILE FOR NARROW SASH FRAME ES70.M-011







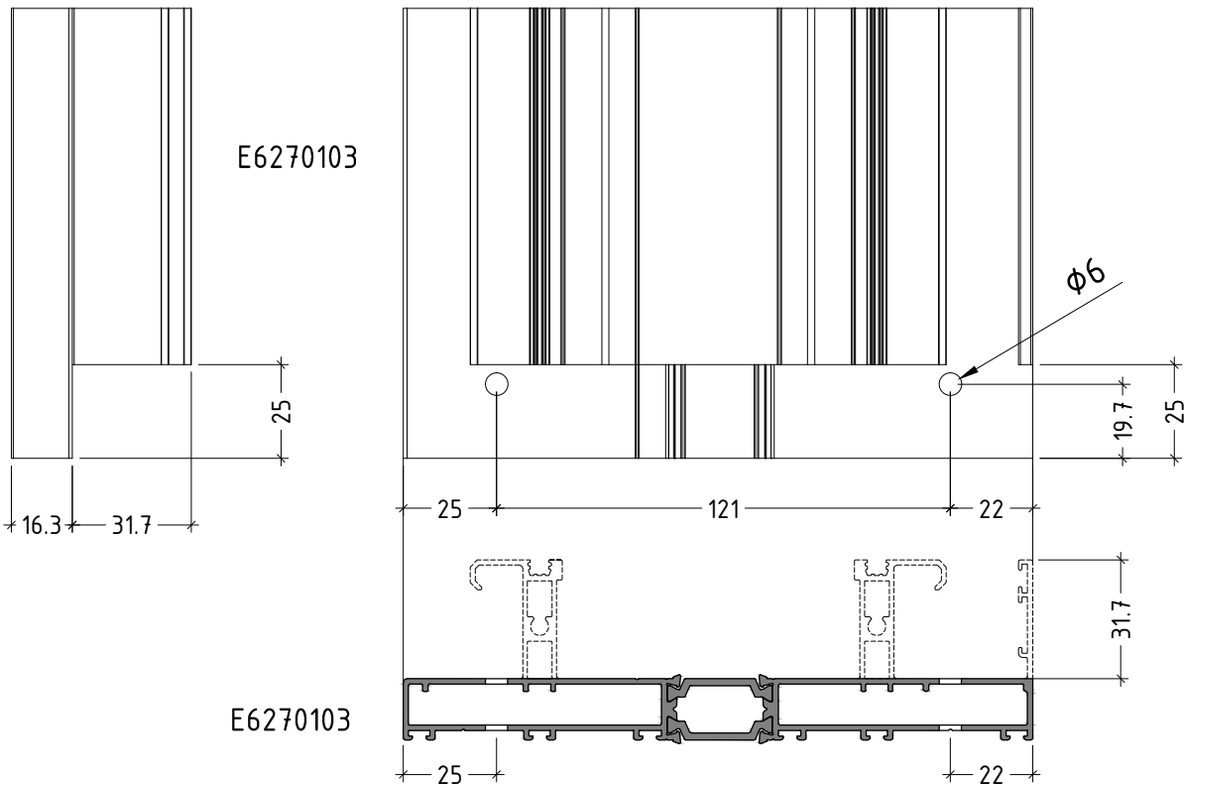


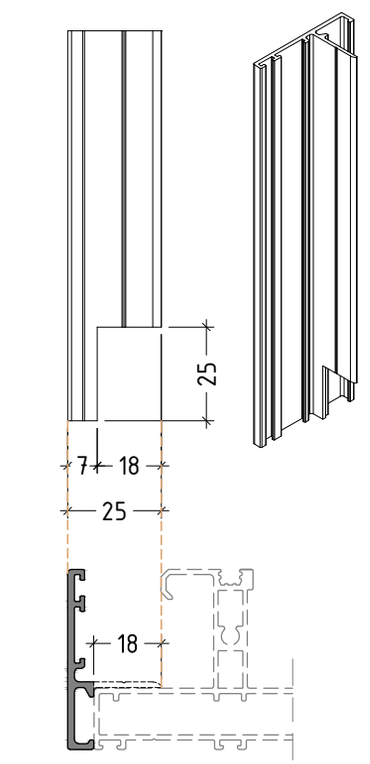
PLUG ET.074786.00 IS FIXED ONTO THE BOTTOM SIDE OF INTERLOCK PROFILE, WHILST PLUG ET.074806.00 IS FIXED ONTO THE TOP SIDE

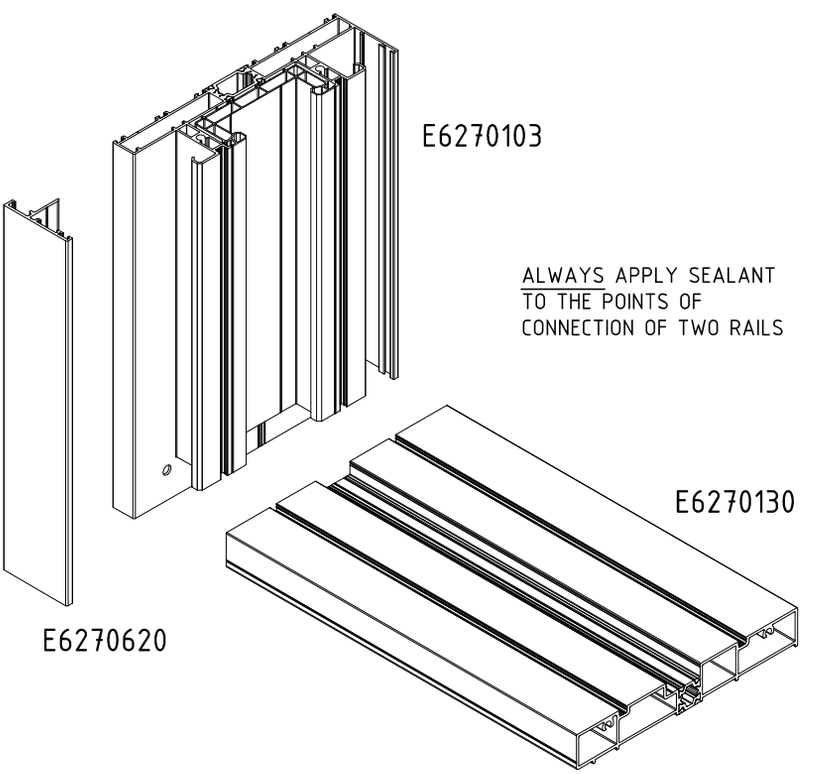
FIX ON BOTH SIDES OF PLASTIC SPACER ET080233.00 THE PAIR OF PLASTIC PLUG ET074822.00. ALWAYS APPLY SILICON IN ADVANCE AT THE SURFACE WHERE THE PLUG IS TO BE FIXED

MACHINING REQUIRED FOR 90° CONNECTION OF RAILS

ES70.M-012

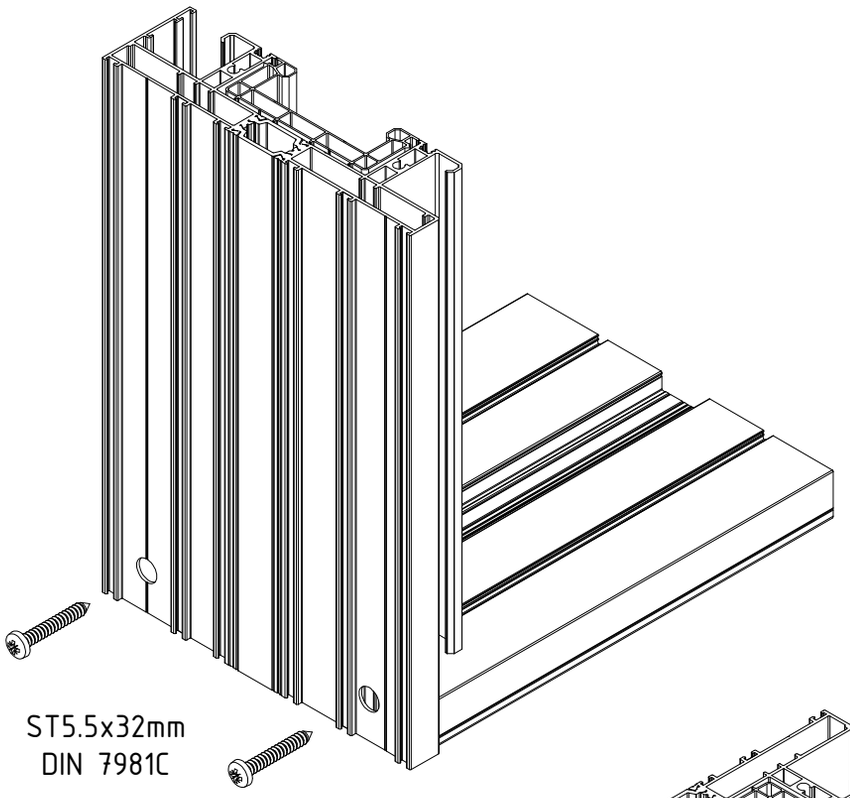


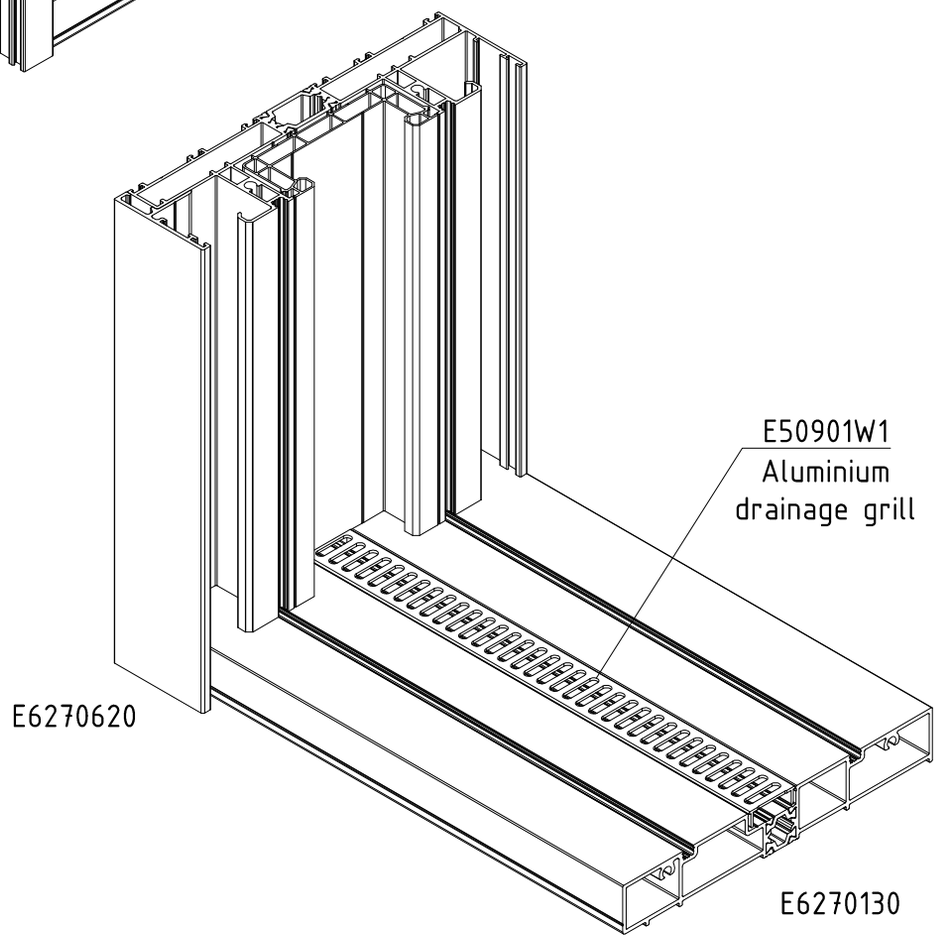




MACHINING REQUIRED FOR 90° CONNECTION OF RAILS

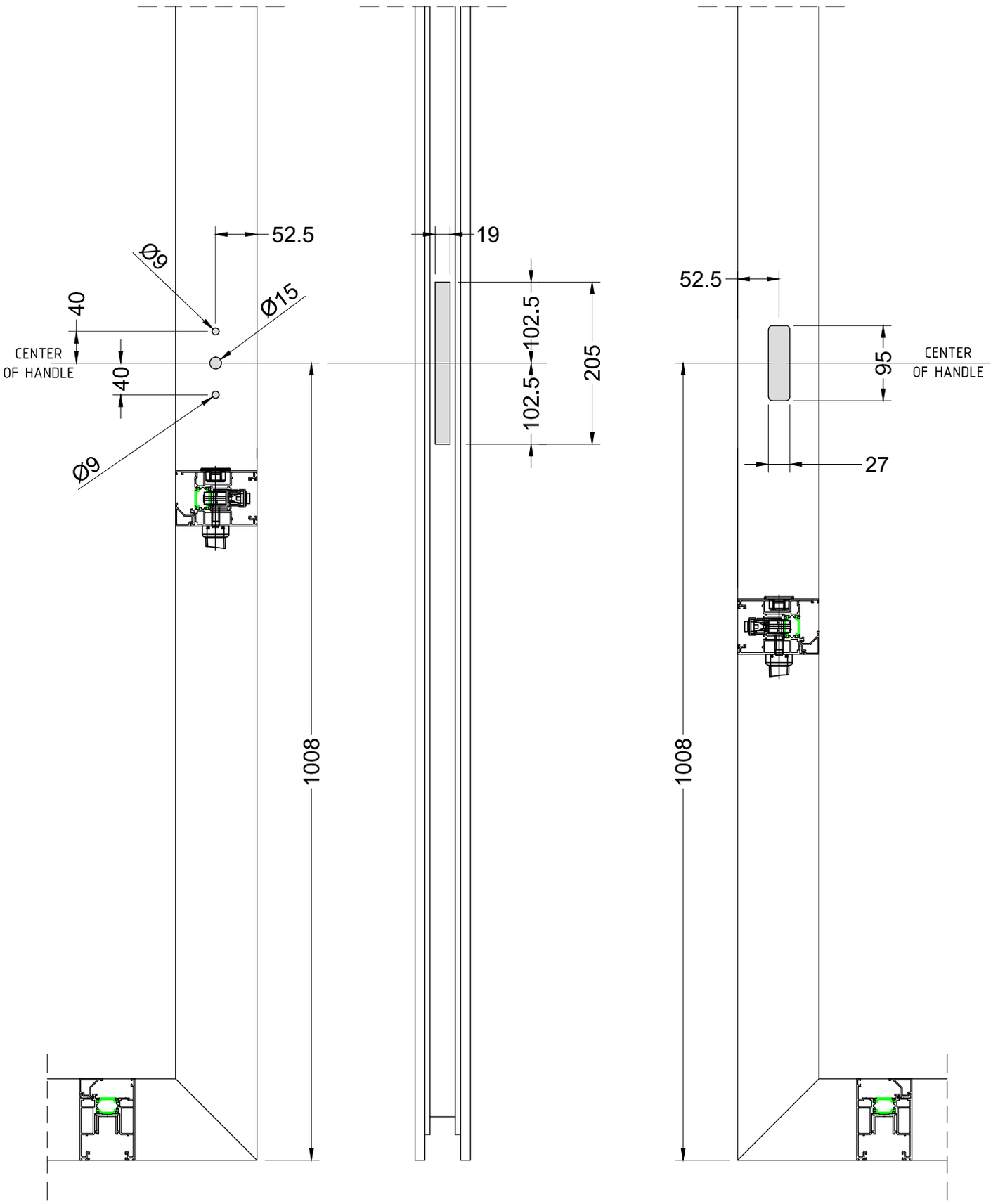
ES70.M-013





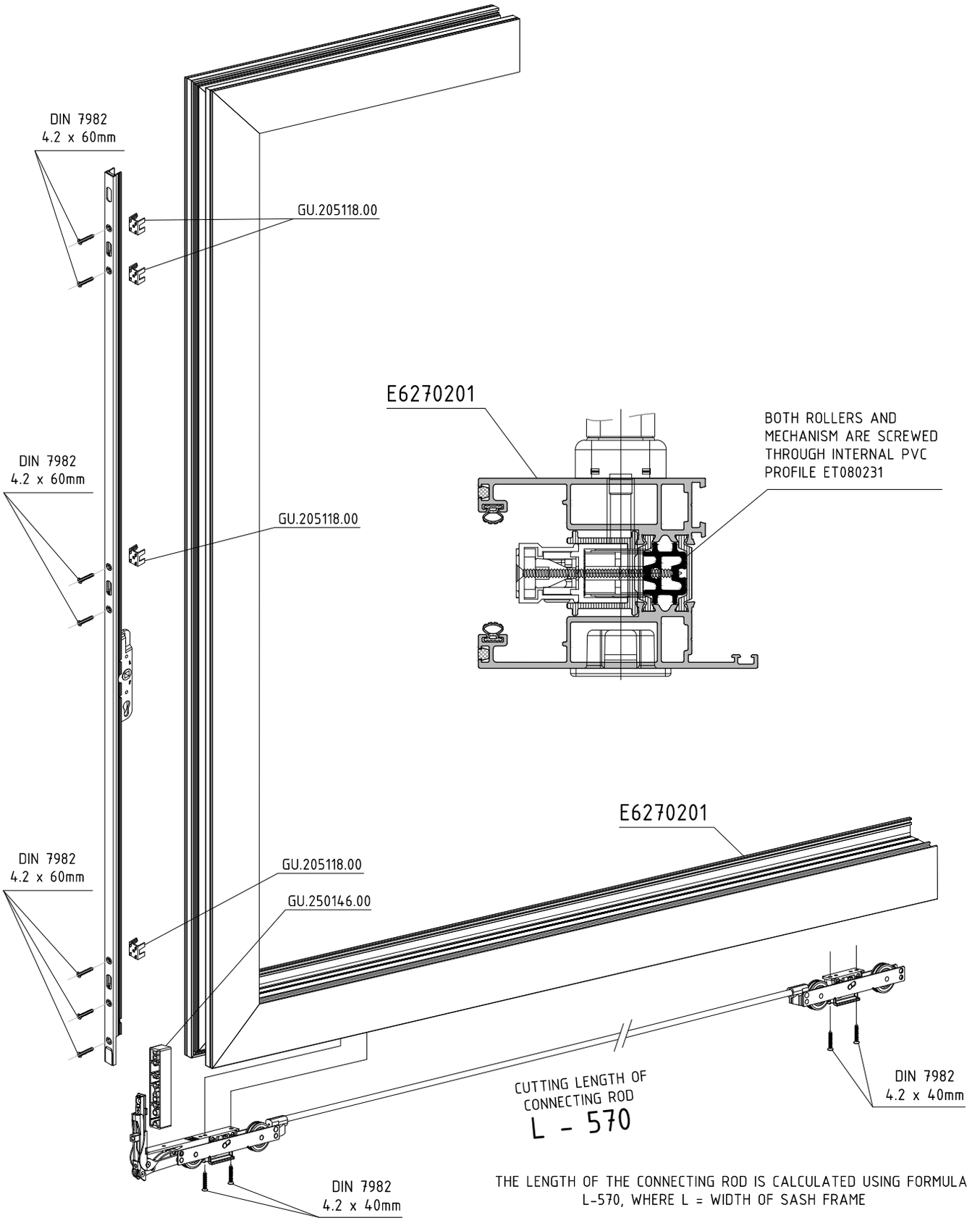
HANDLE MACHINING FOR SASH E6270201 (GU HARDWARE)

ES70.M-014



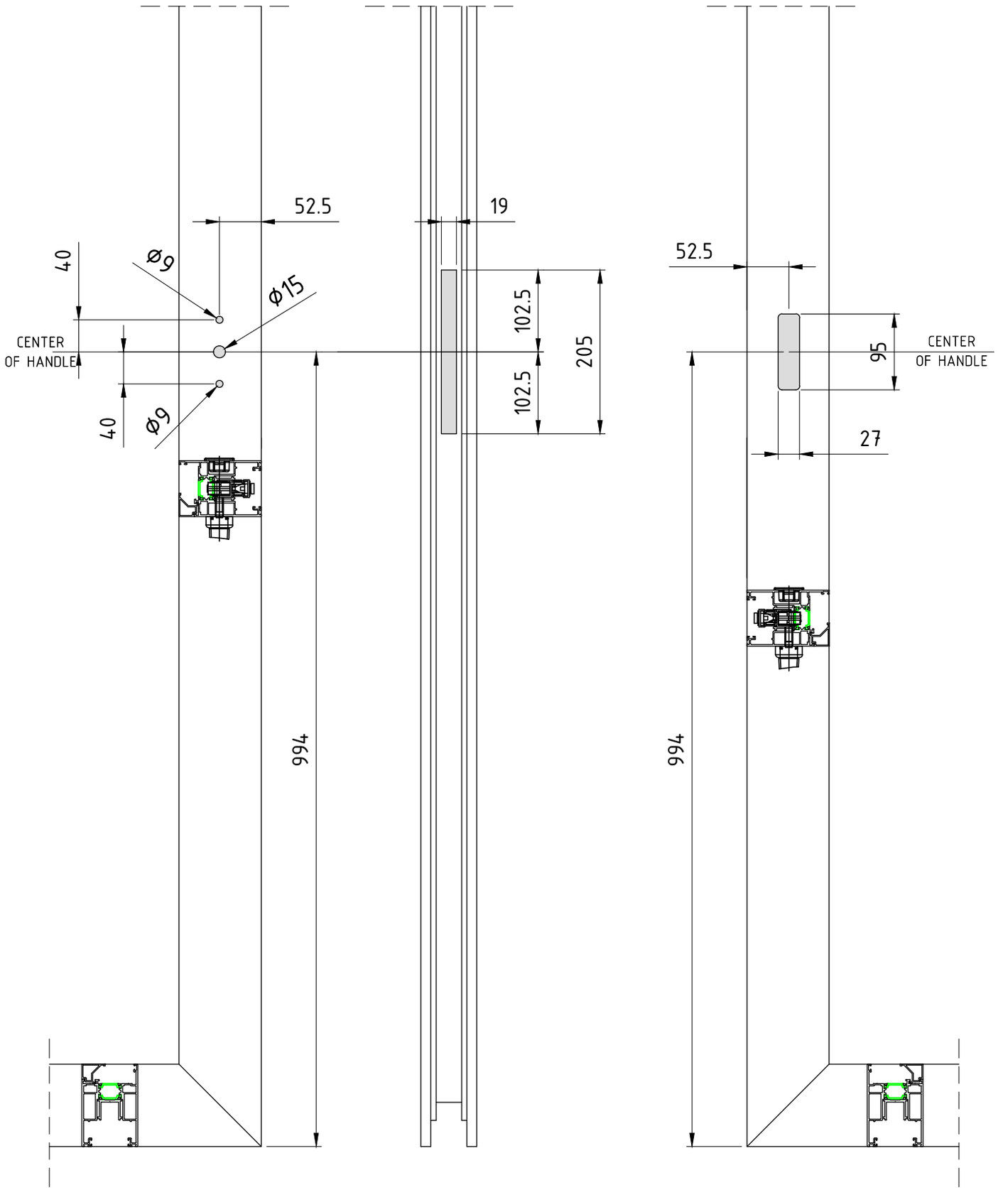
LIFT & SLIDE MECHANISM INSTALLATION ON SASH E6270201

ES70.M-015



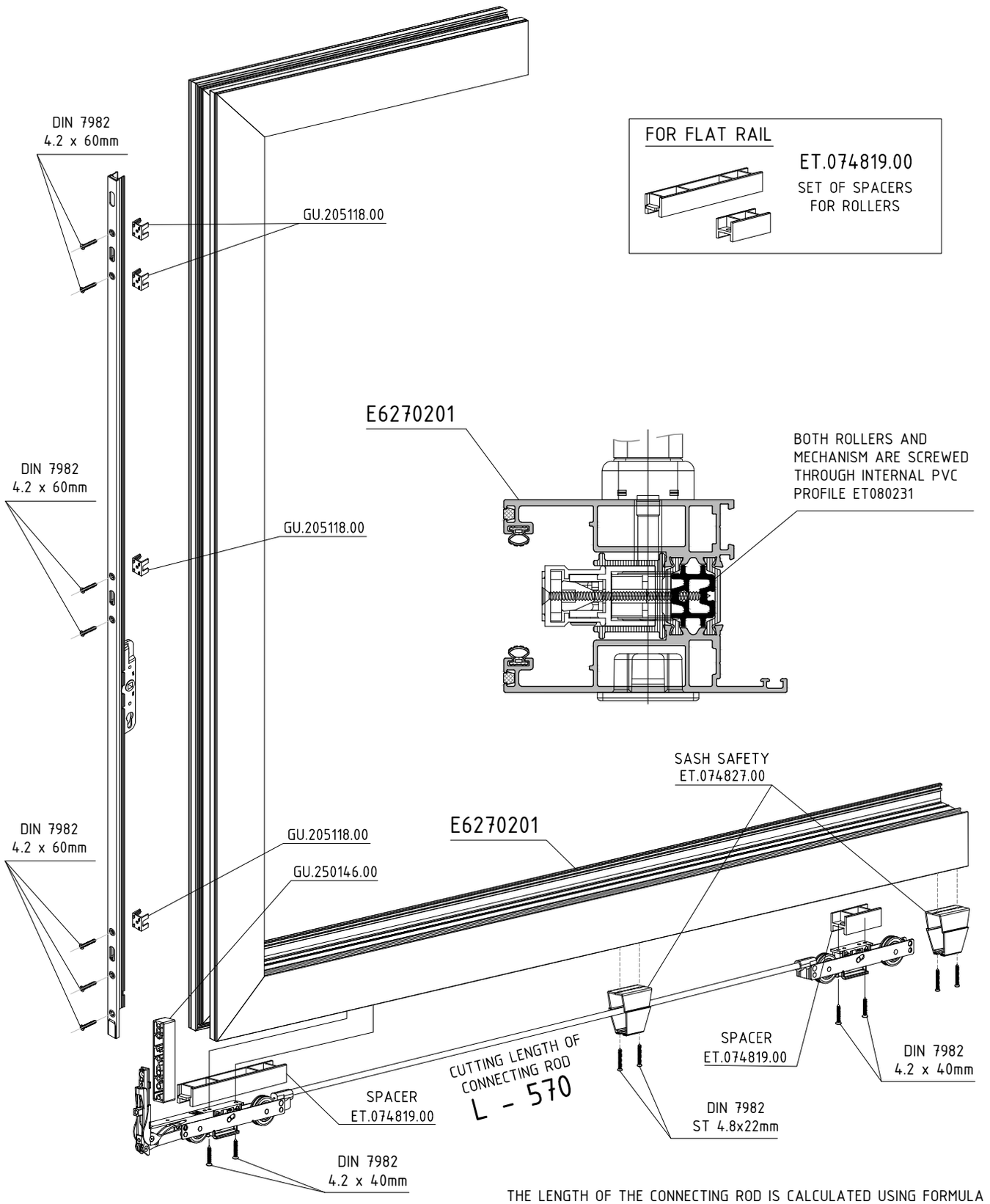
HANDLE MACHINING FOR SASH E6270201 (GU HARDWARE) - ONLY FOR FLAT RAIL

ES70.M-016



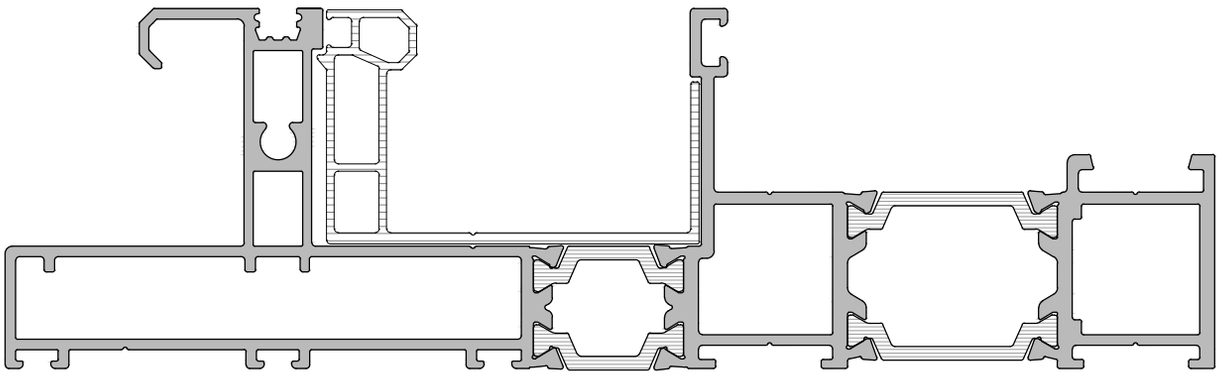
LIFT & SLIDE MECHANISM INSTALLATION ON SASH E6270201 - ONLY FOR FLAT RAIL

ES70.M-017

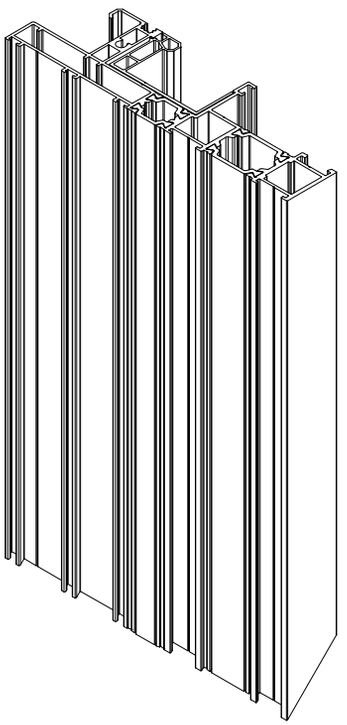


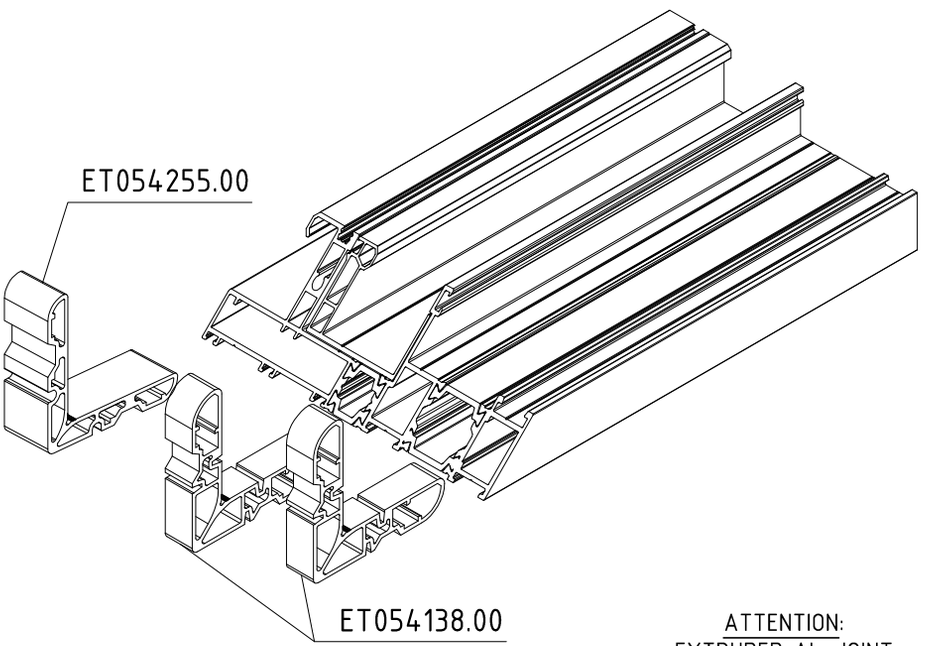
THE LENGTH OF THE CONNECTING ROD IS CALCULATED USING FORMULA L-570, WHERE L = WIDTH OF SASH FRAME

FIXING RAIL WITH EXTRUDED ALUM. JOINT CORNER BRACKETS - HOTEL TYPE ES70.M-018

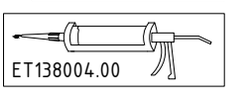


E6270150



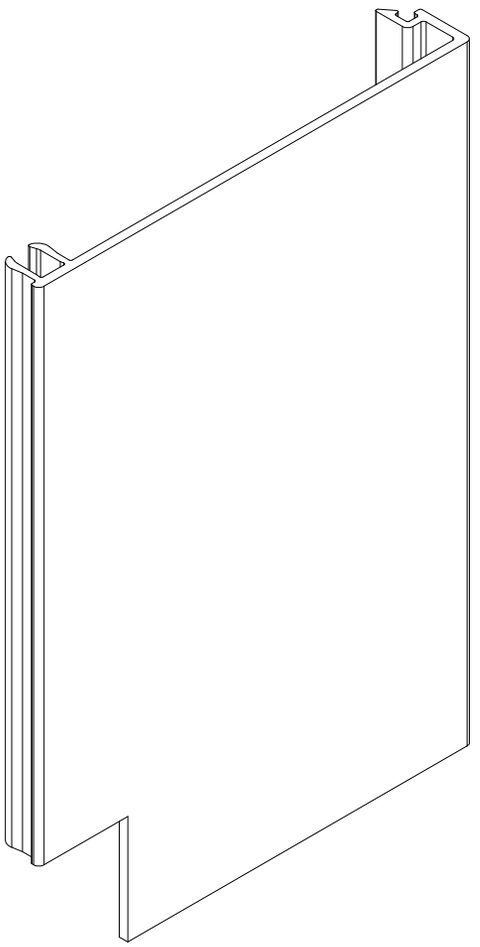


ALWAYS APPLY ADHESIVE ET138004.00 INTO THE POINTS OF RAIL, WHERE JOINT CORNER BRACKETS ARE TO BE FIXED

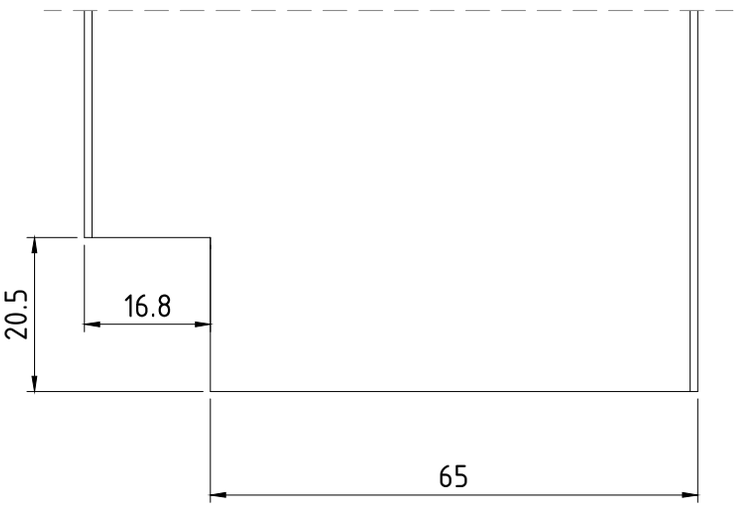


ATTENTION:
EXTRUDED AL. JOINT CORNER BRACKETS ARE USED ONLY FOR CRIMPING MACHINE

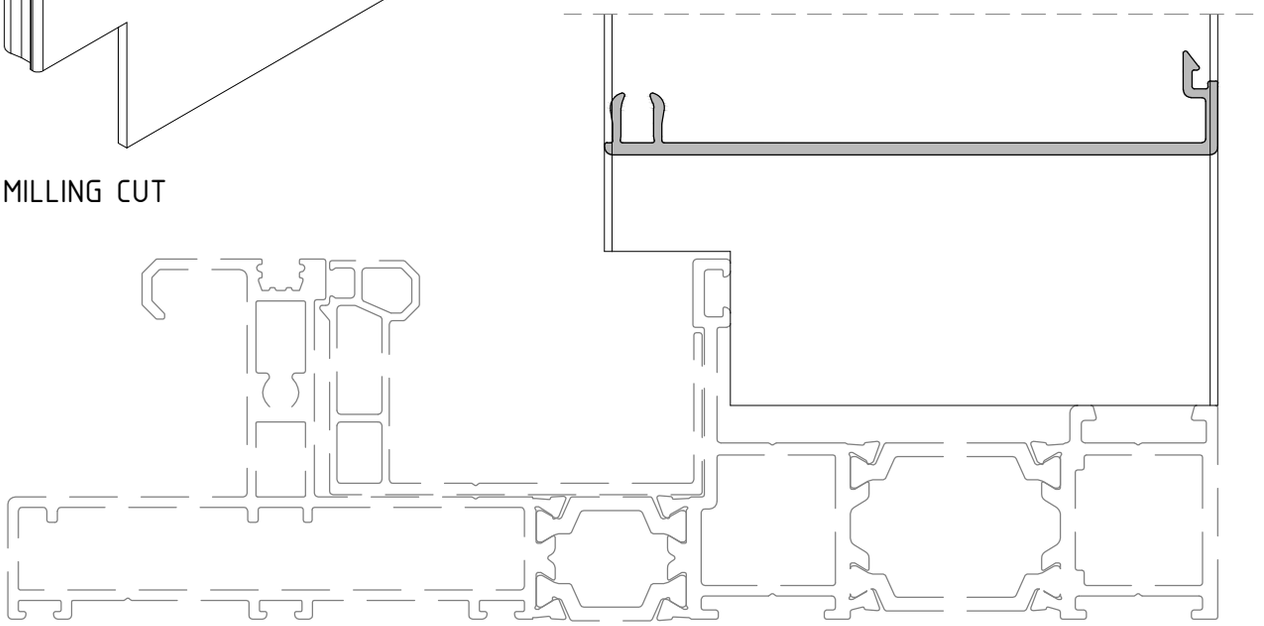
MACHINING ON INTERLOCK PROFILE E6270501 - HOTEL TYPE ES70.M-019



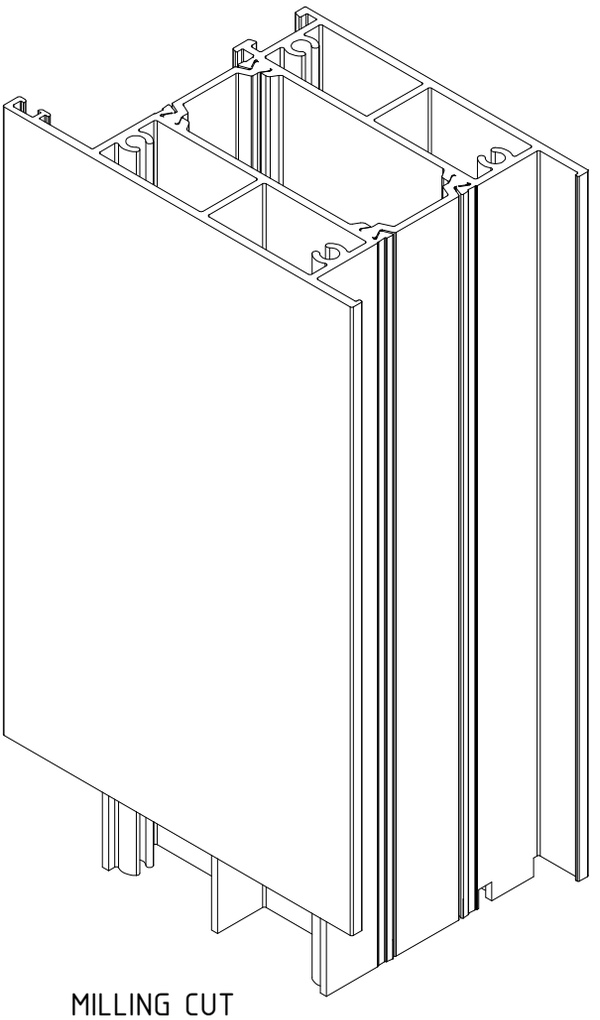
MILLING CUT



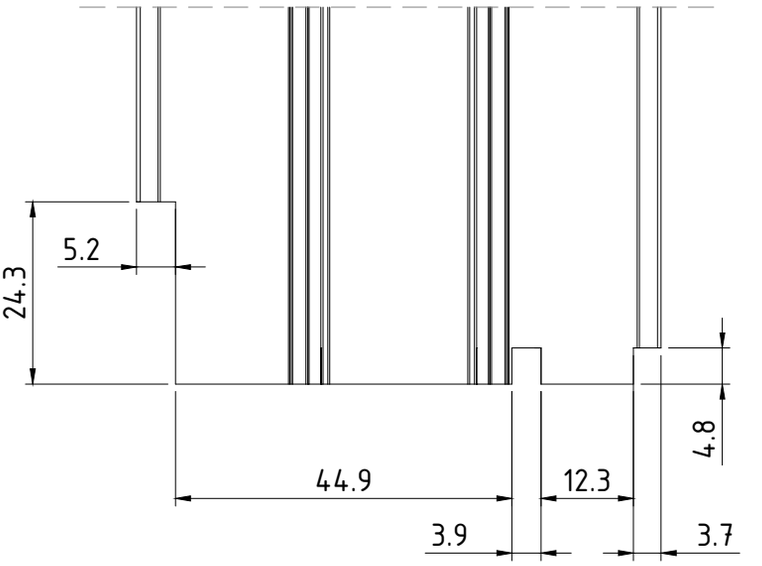
Interlock Machining



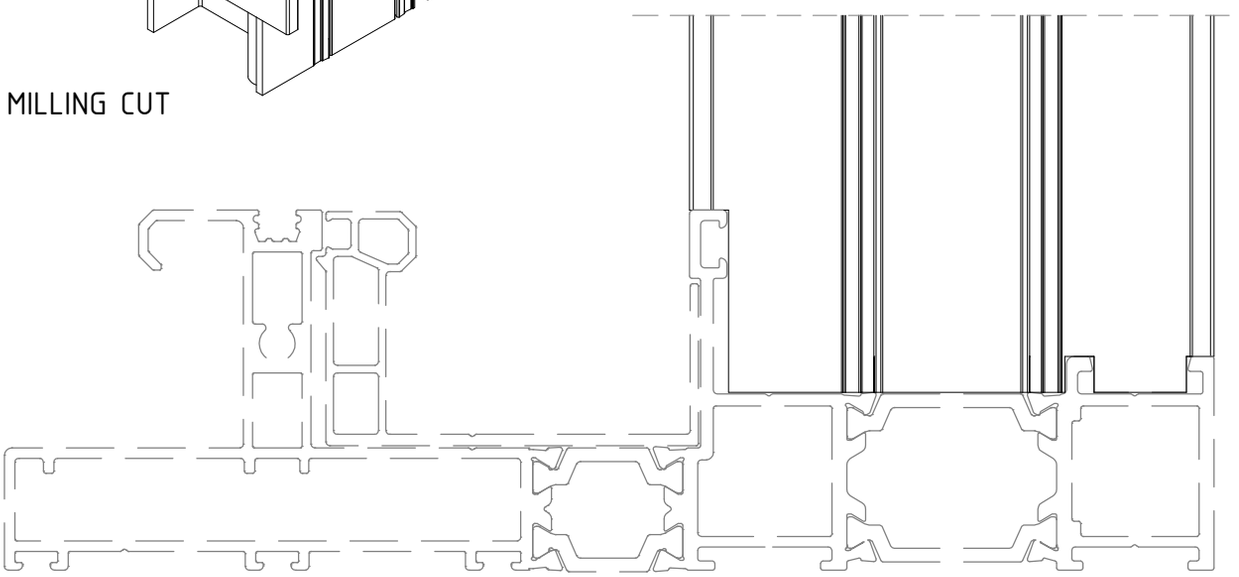
MACHINING ON MULLION E6270350 - HOTEL TYPE ES70.M-020



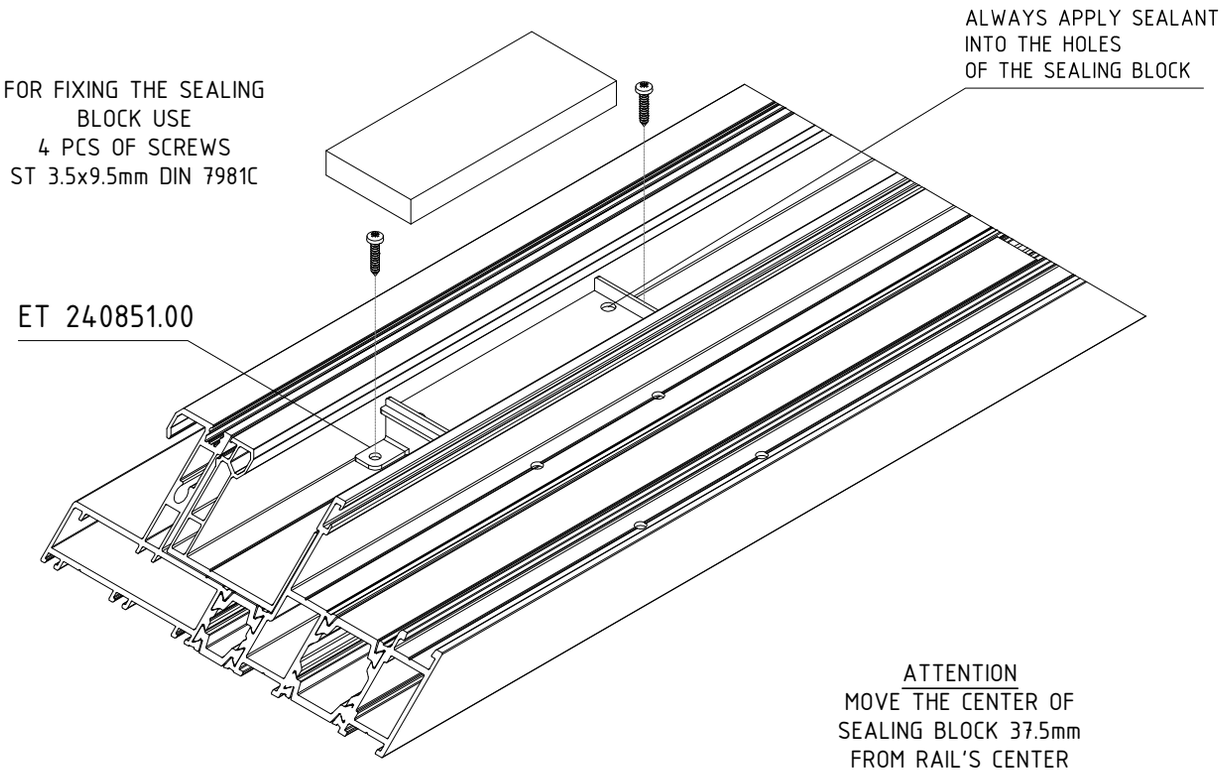
MILLING CUT



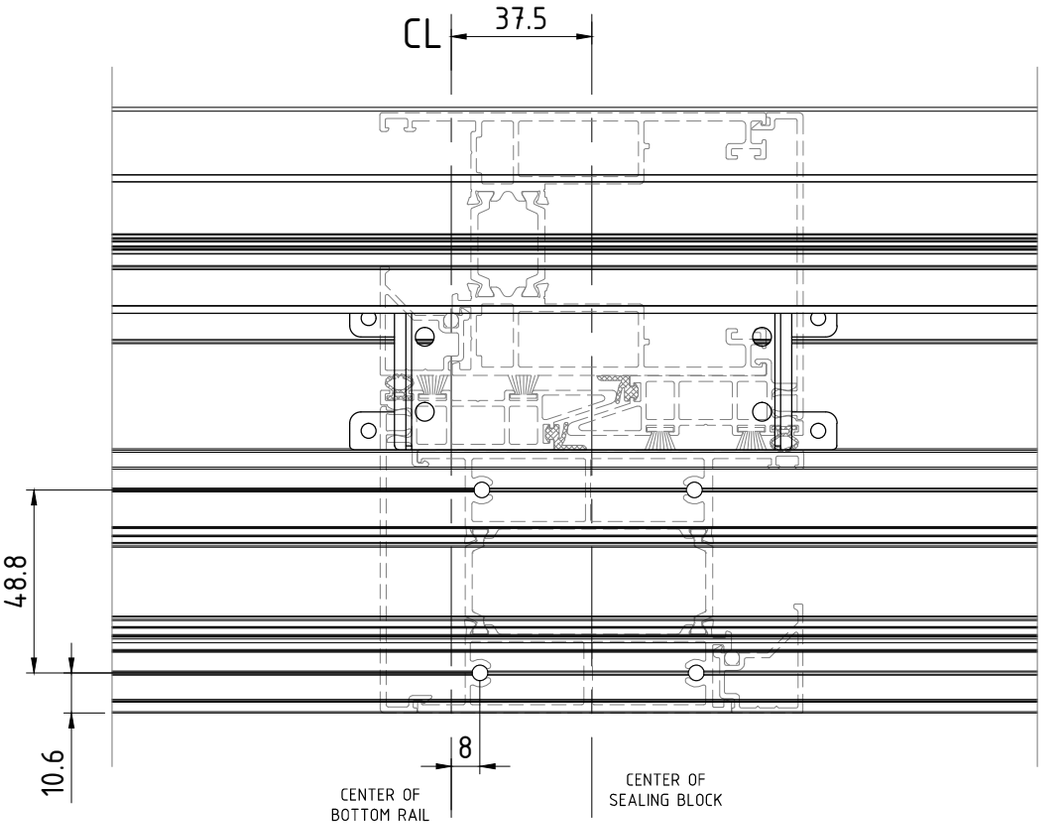
Mullion Machining



INSTRUCTIONS FOR FITTING SEALING BLOCK - **HOTEL TYPE** ES70.M-021

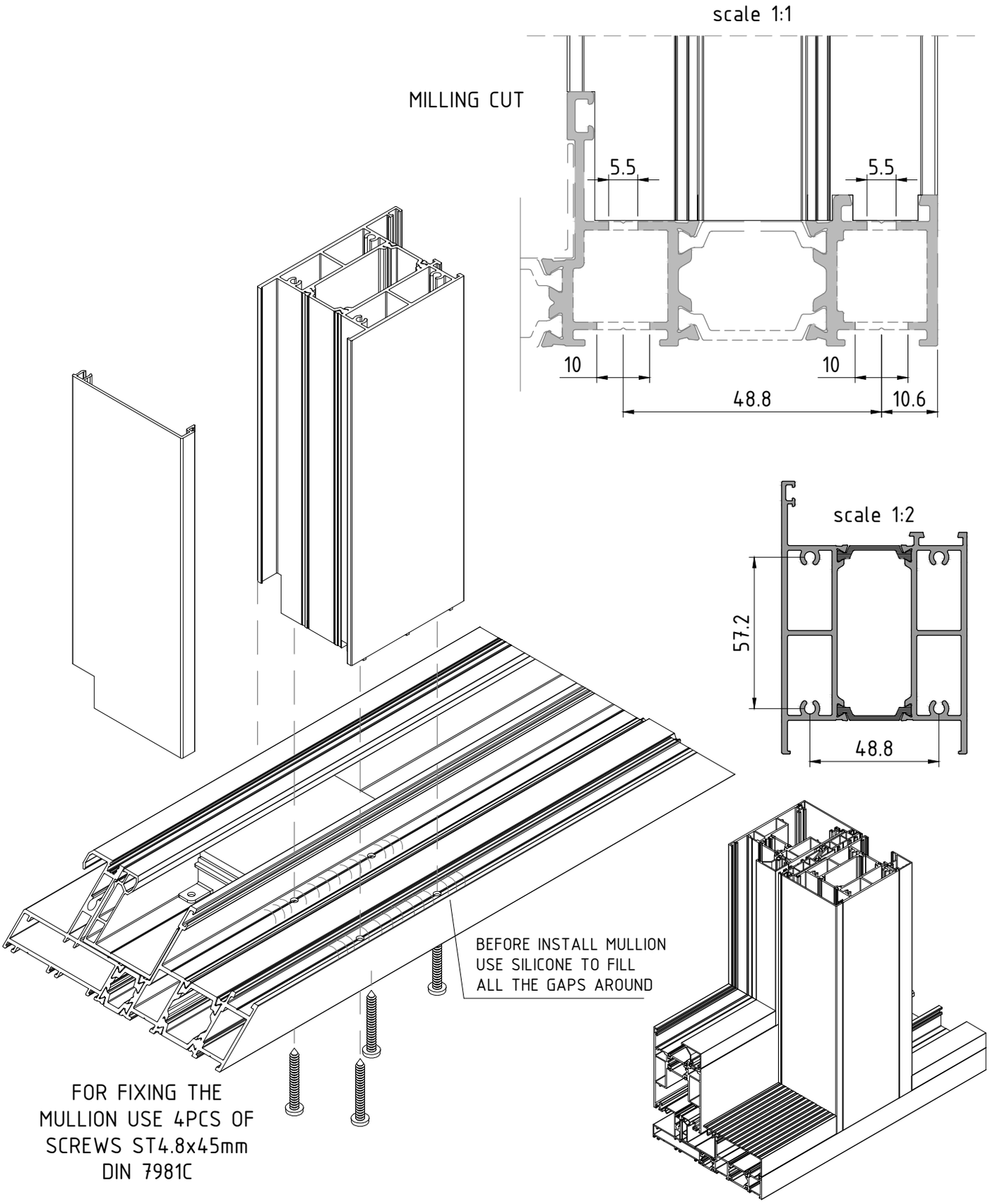


ATTENTION
MOVE THE CENTER OF
SEALING BLOCK 37.5mm
FROM RAIL'S CENTER



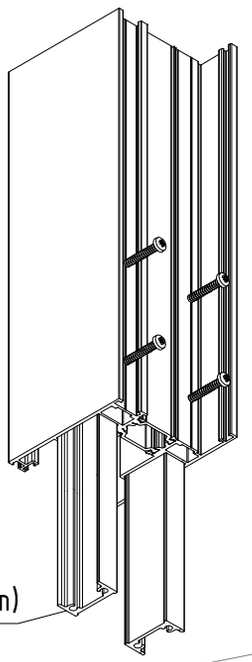
FIXING MULLION E6270350 – HOTEL TYPE

ES70.M-022



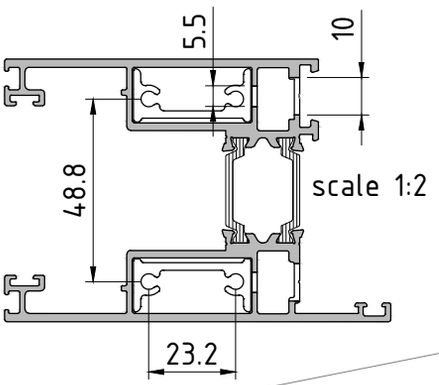
FIXING SASH PROFILE E6270201 AS MULLION - HOTEL TYPE

ES70.M-023

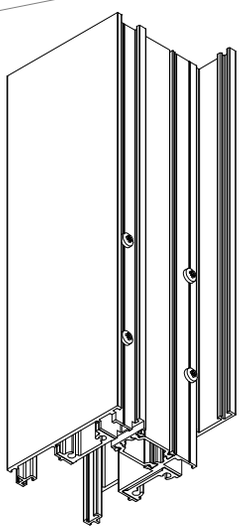


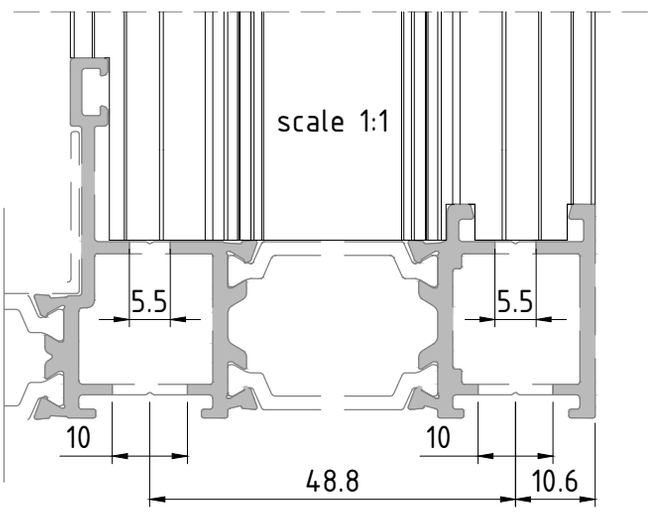
E6270902
(2PCS of 300mm)

1st STEP:
INSERT 2 PCS OF
PROFILE E6270902 INTO
THE SASH.
FOR FIXING THEM, USE
4PCS OF SCREWS
ST4.8x32mm
DIN 7981C or DIN7982C

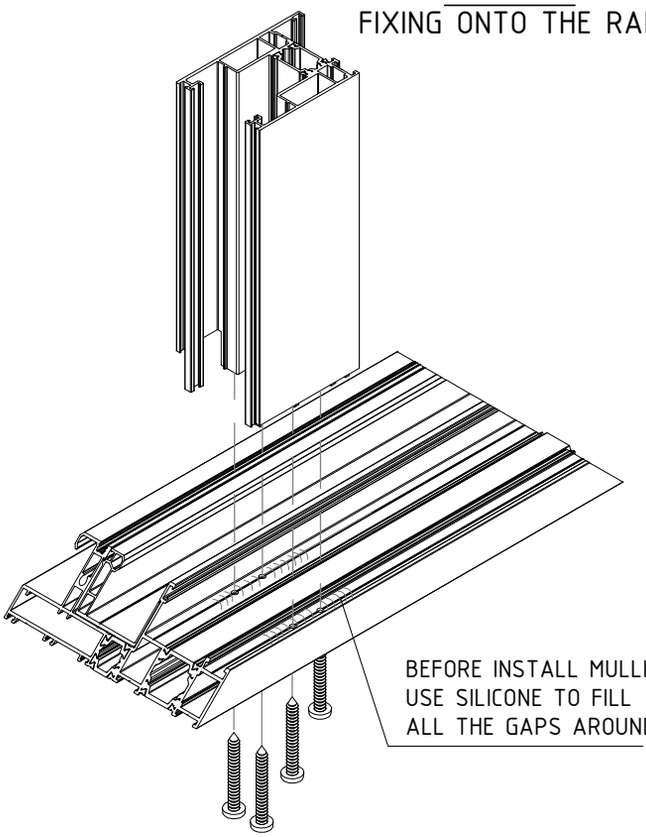


2nd STEP:
MILLING CUT





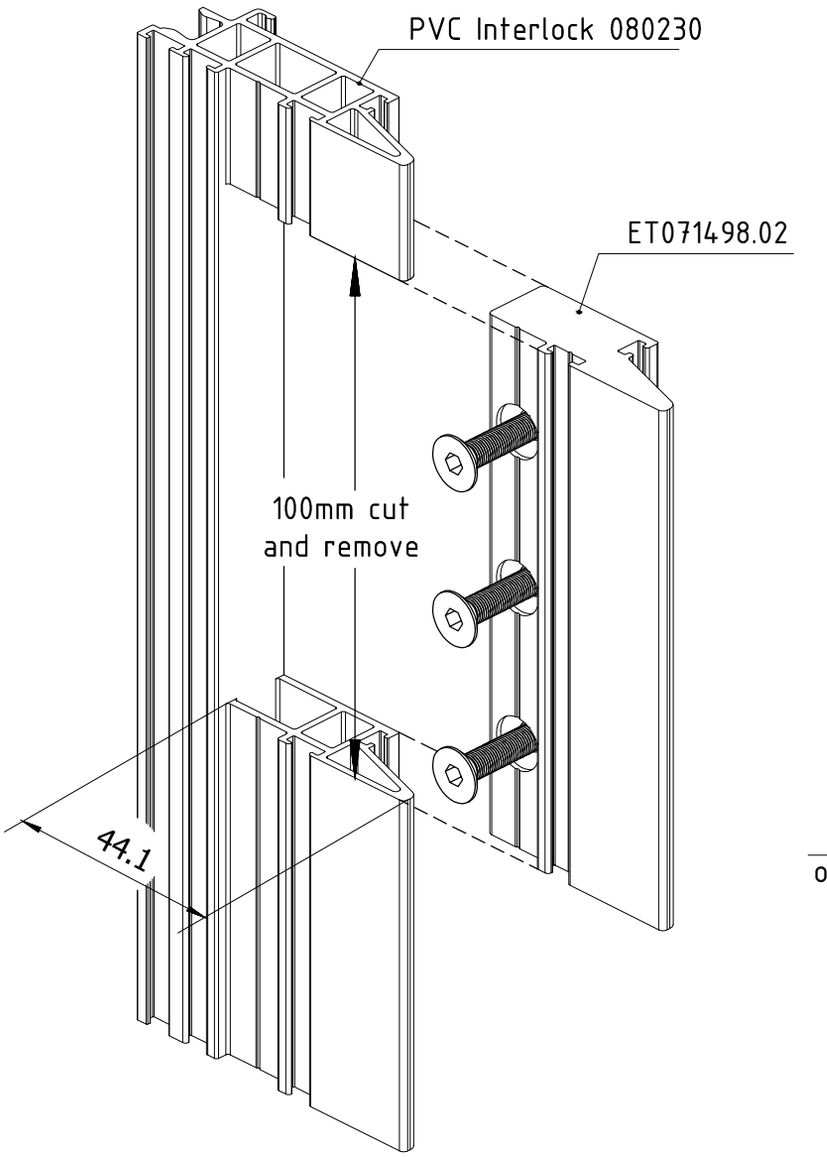
3nd STEP:
FIXING ONTO THE RAIL

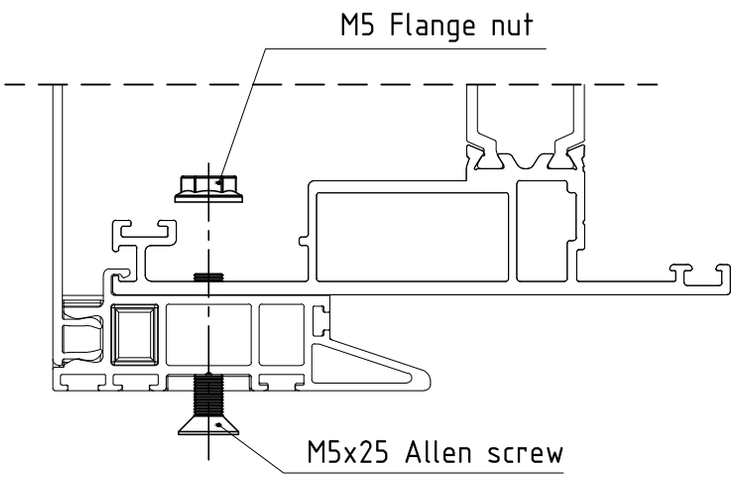


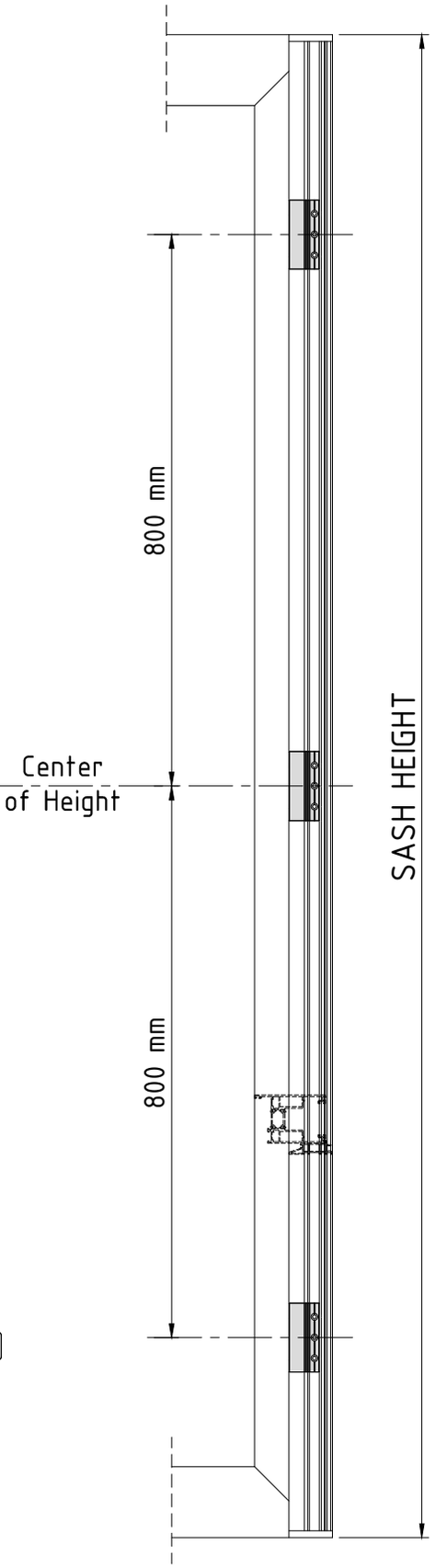
BEFORE INSTALL MULLION
USE SILICONE TO FILL
ALL THE GAPS AROUND

FOR FIXING, USE 4PCS
OF SCREWS ST4.8x45mm
DIN 7981C

PVC INTERLOCK REINFORCEMENT APPLICATION ES70.M-024

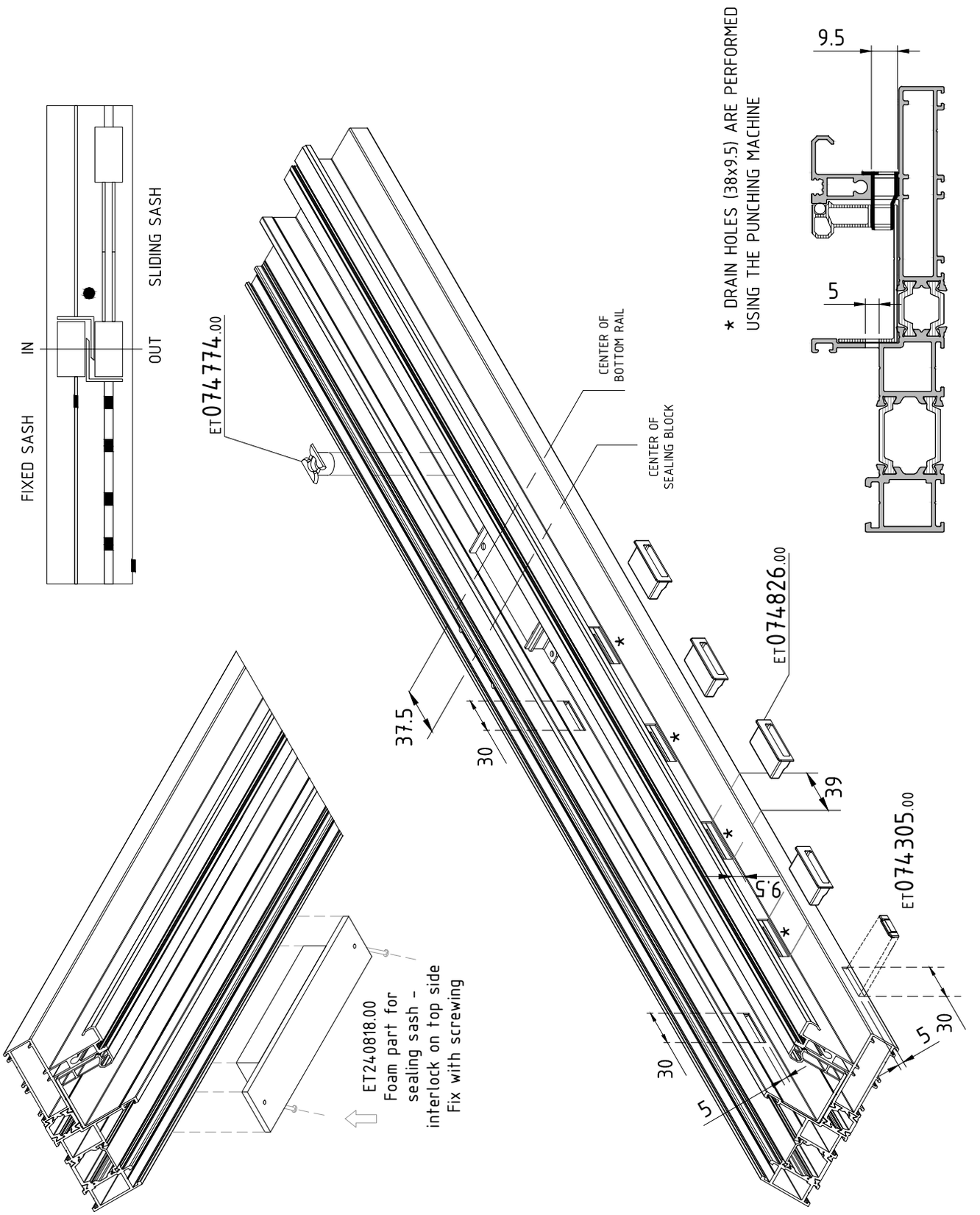






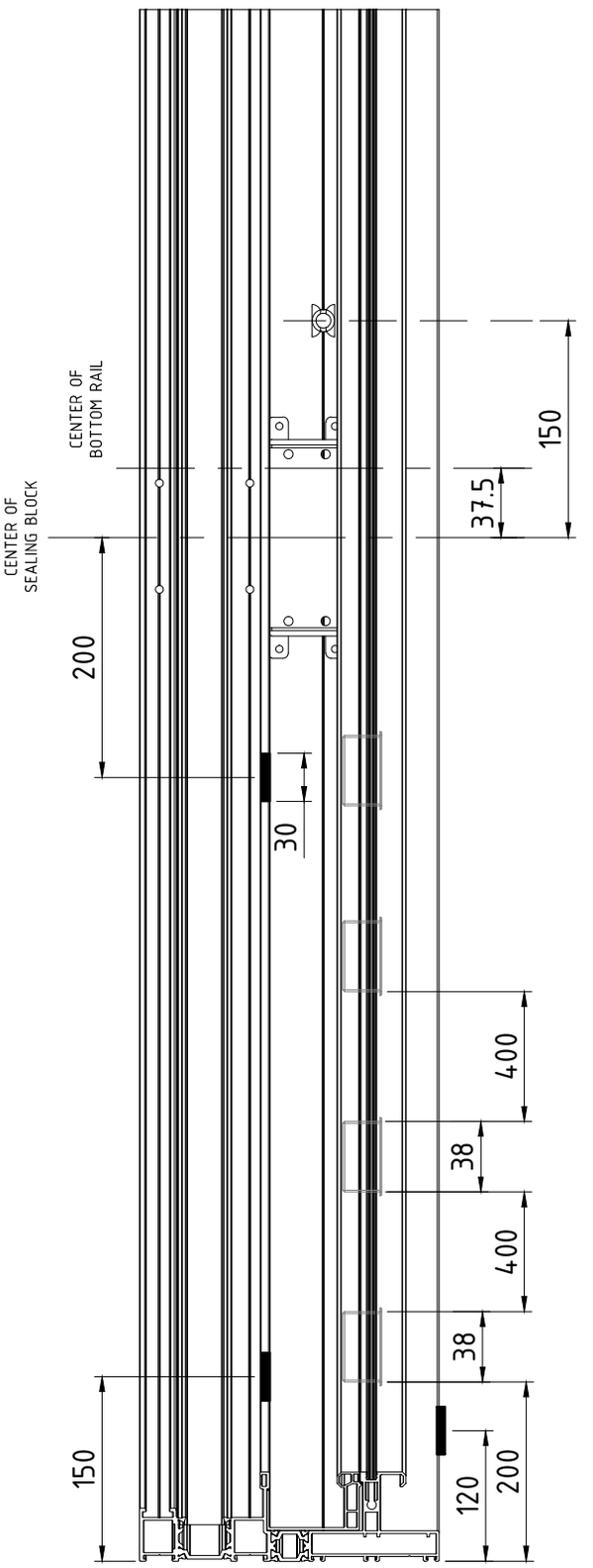
INSTRUCTIONS FOR WATER DRAINAGE - HOTEL TYPE

ES70.M-025

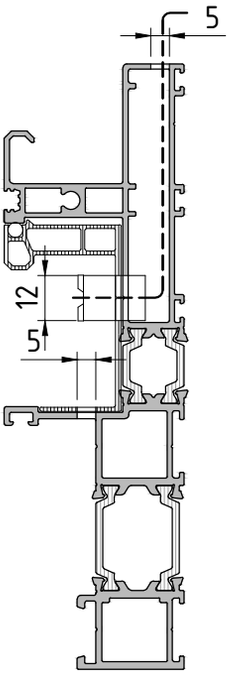


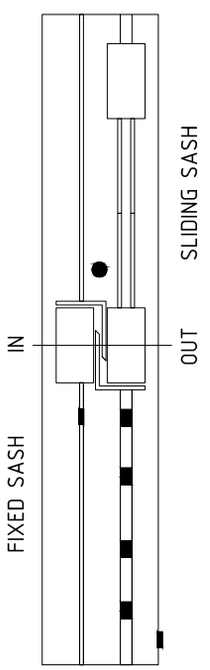
INSTRUCTIONS FOR WATER DRAINAGE - HOTEL TYPE

ES70.M-026



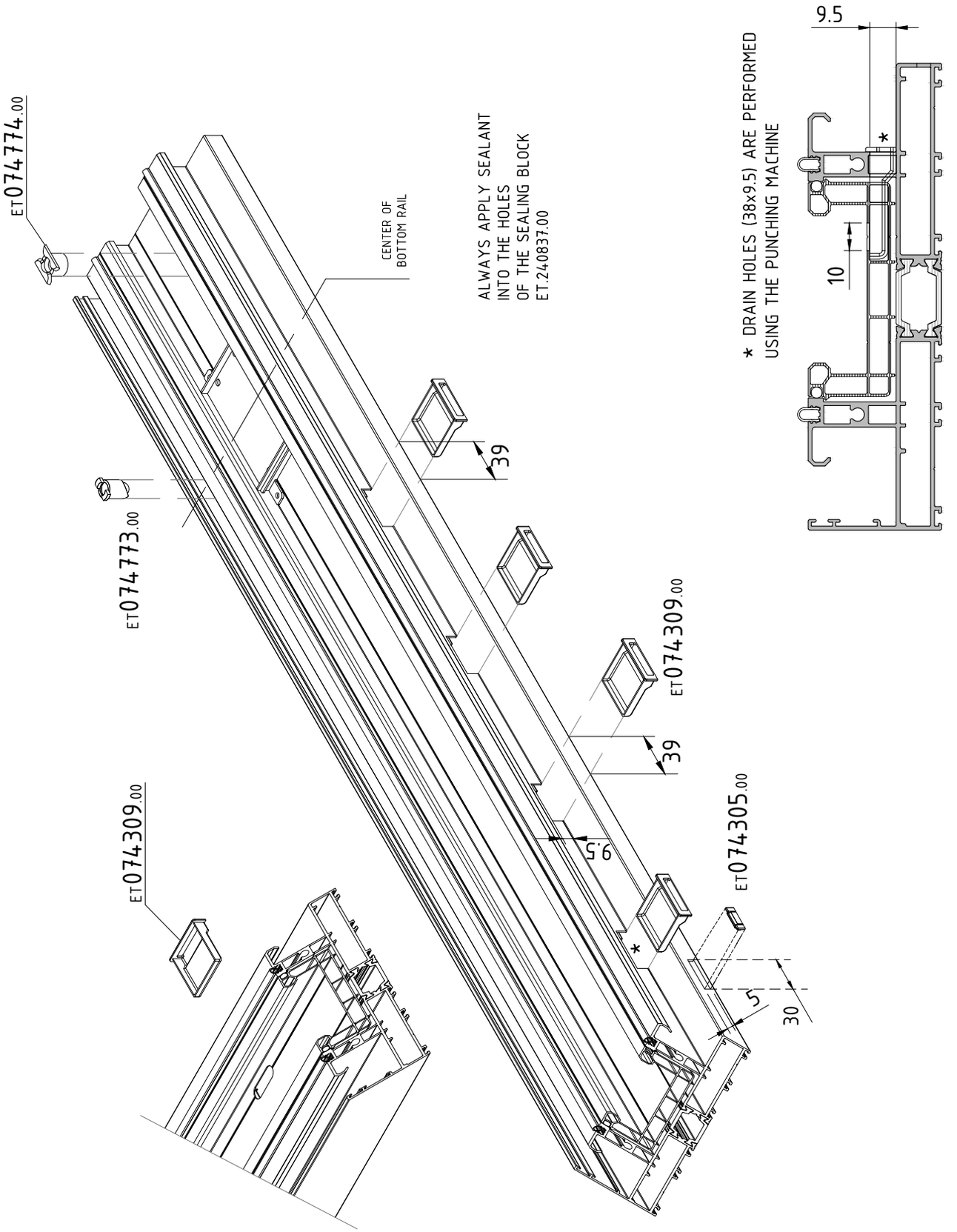
* THE DRAIN HOLE (30x5) IS PERFORMED
USING THE PUNCHING MACHINE



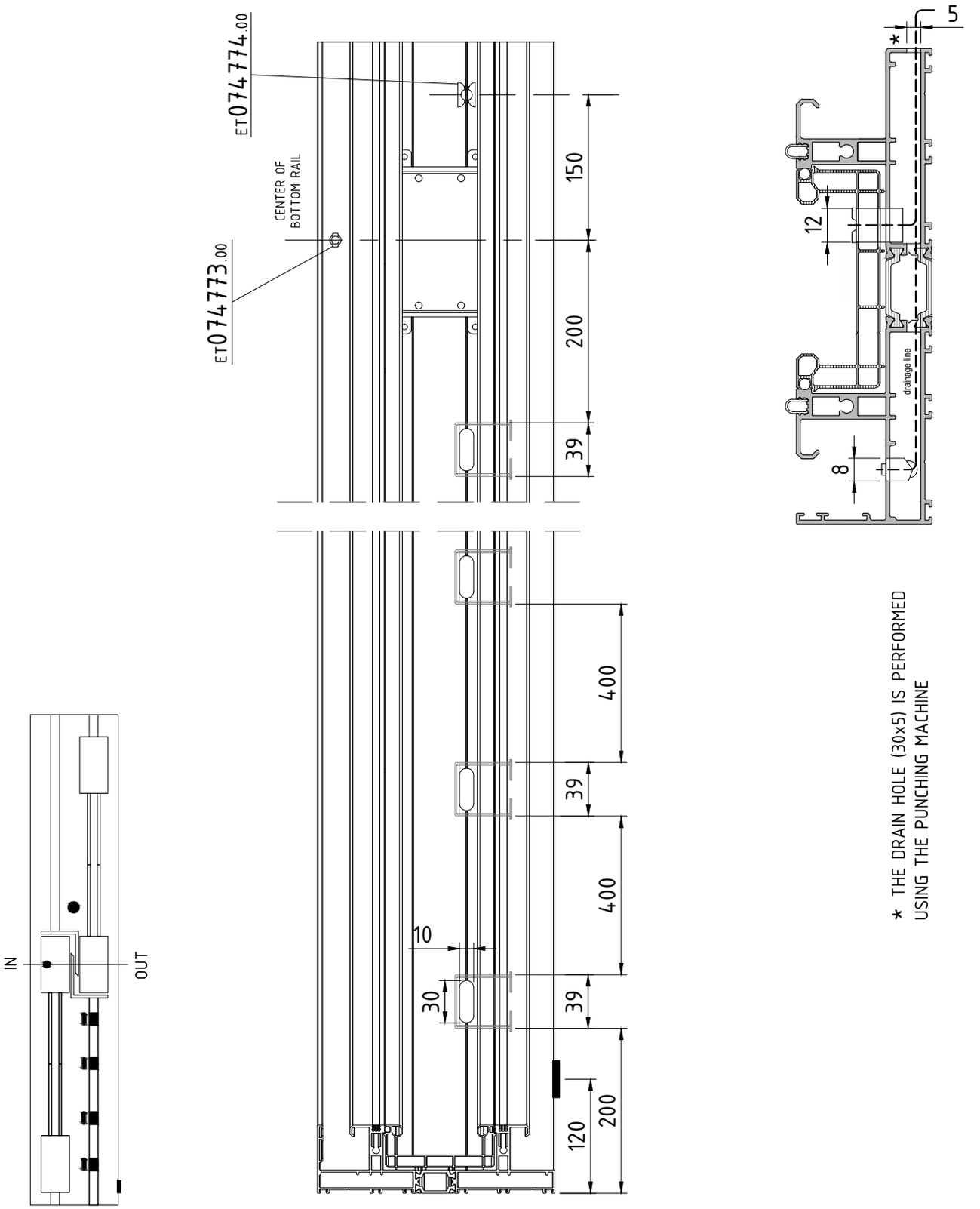


MACHINING ON DOUBLE RAIL E6270103 FOR DRAINAGE

ES70.M-027

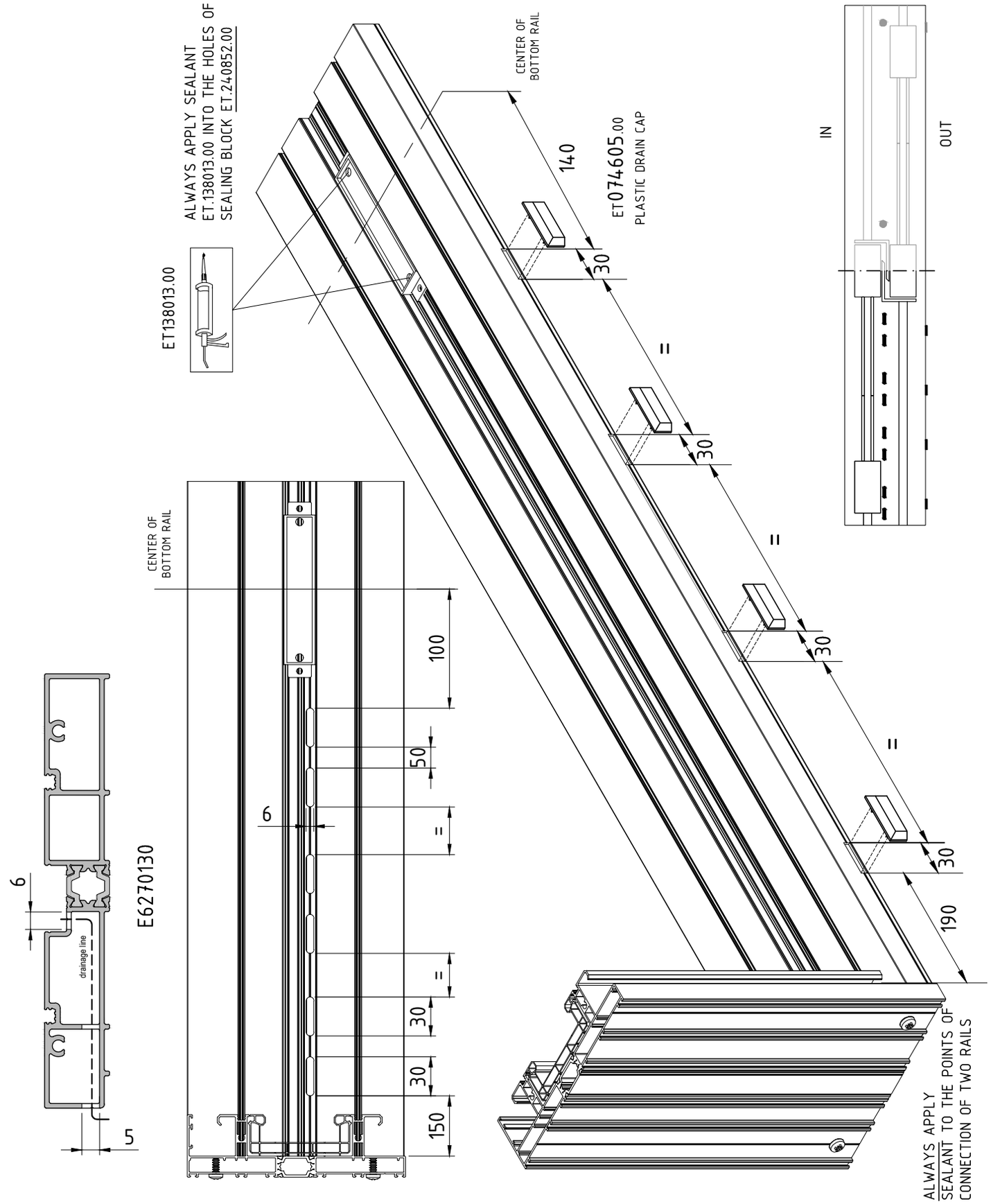


MACHINING ON DOUBLE RAIL E6270103 FOR DRAINAGE (REQUIRED FOR HIGH PERFORMANCES) ES70.M-028



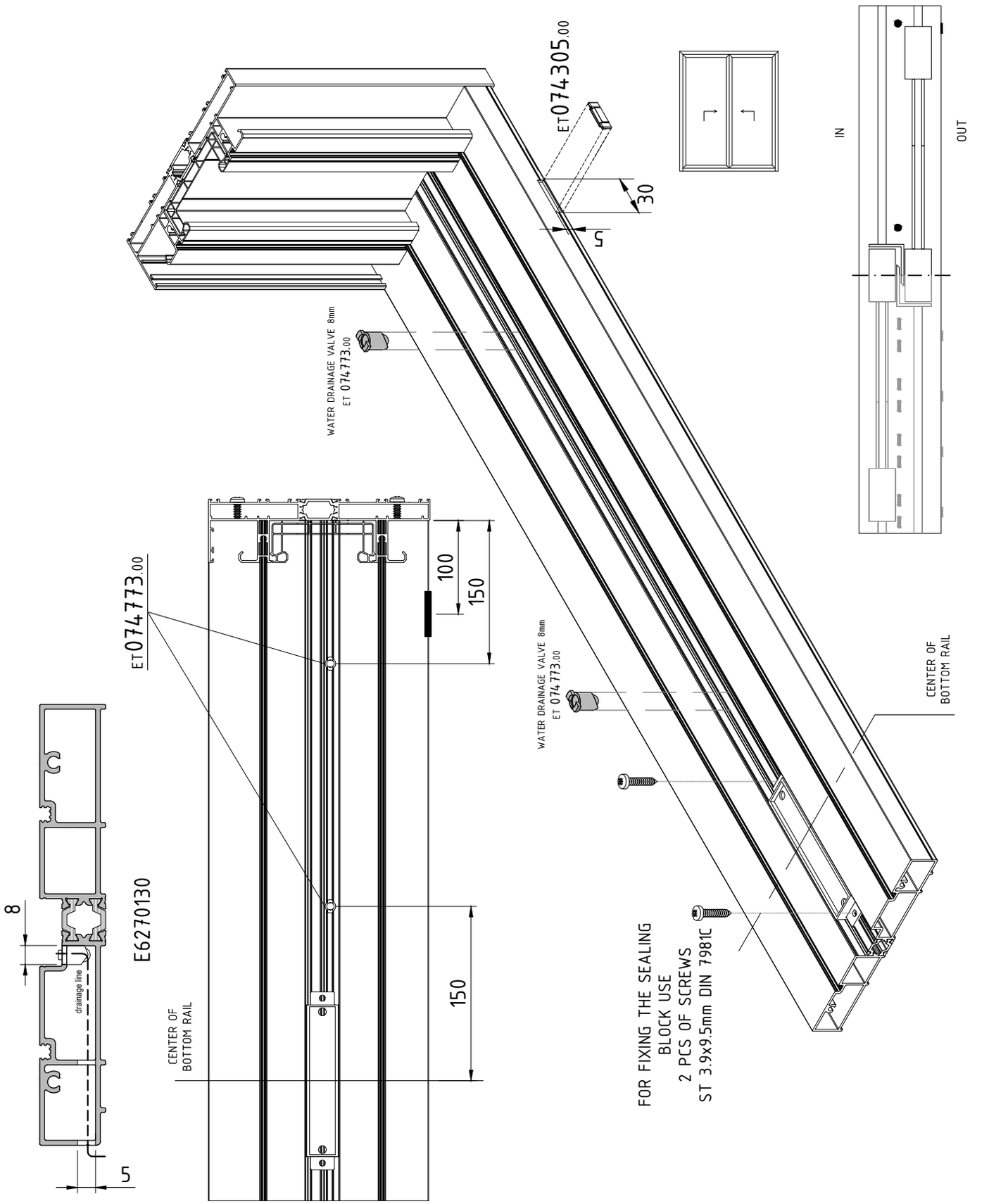
MACHINING ON FLAT RAIL E6270130 FOR DRAINAGE

ES70.M-029



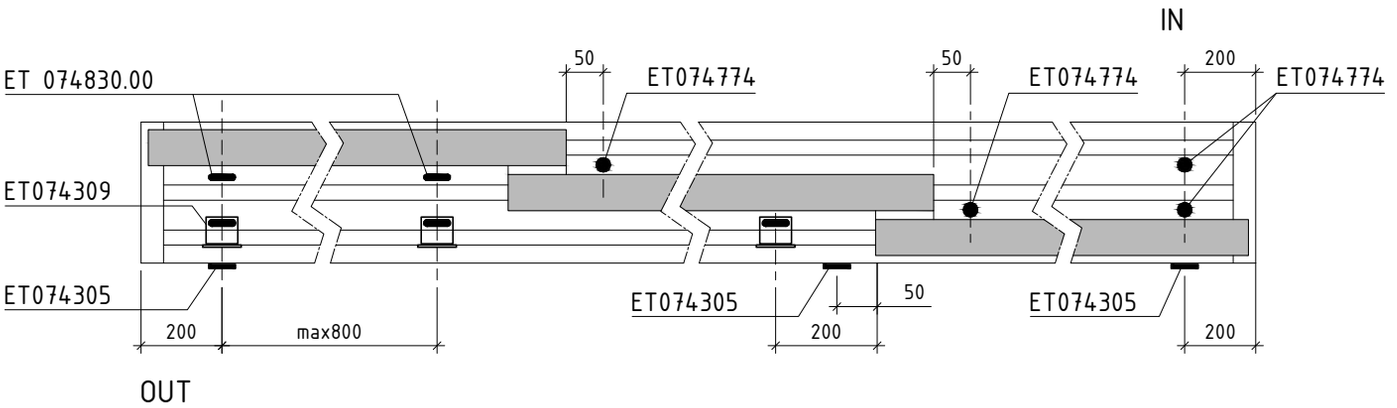
MACHINING ON FLAT RAIL E6270130 FOR DRAINAGE

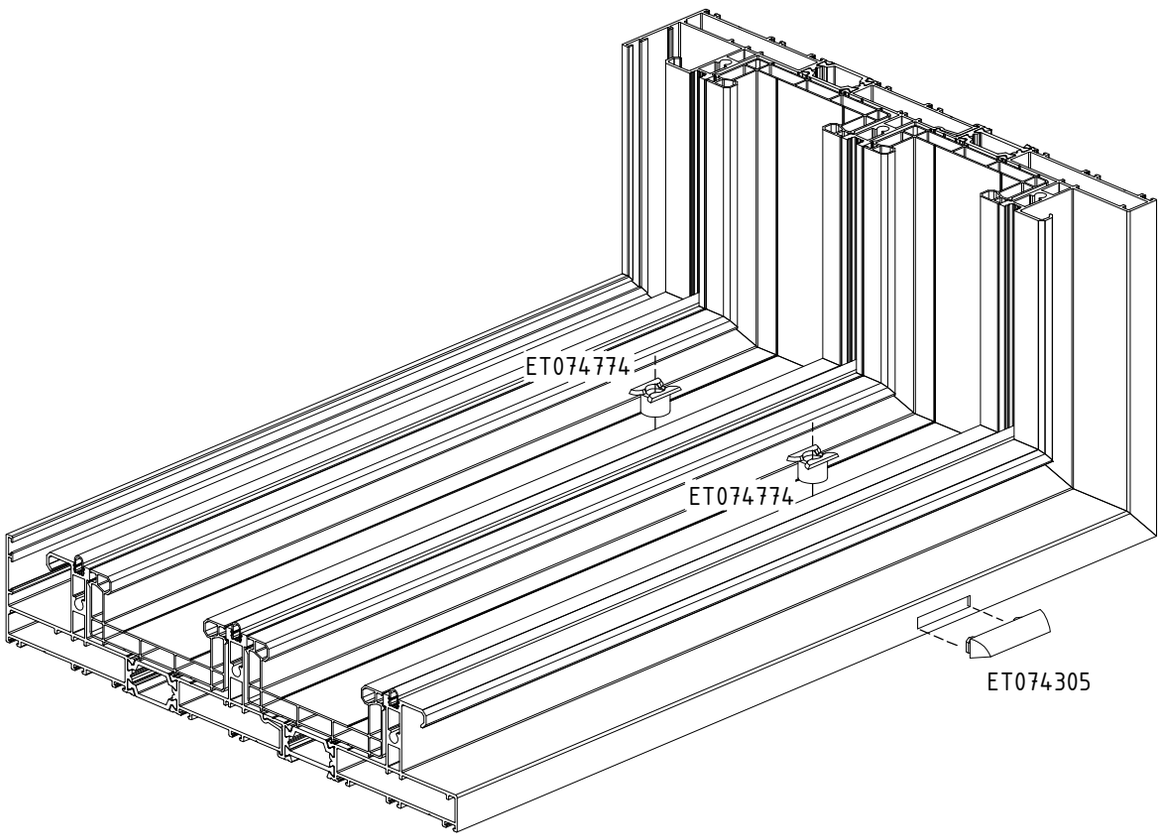
ES70.M-030

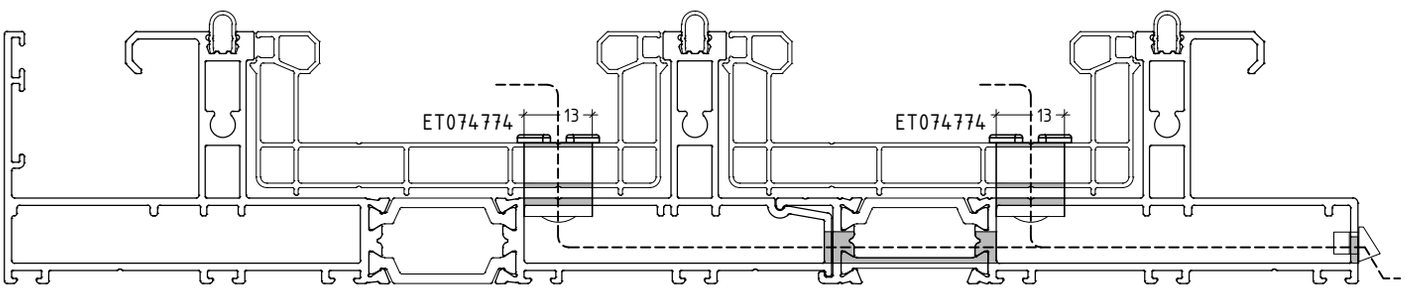


DRAINAGE MACHINING FOR TRIPLE & MULTIPLE RAIL

ES70.M-031



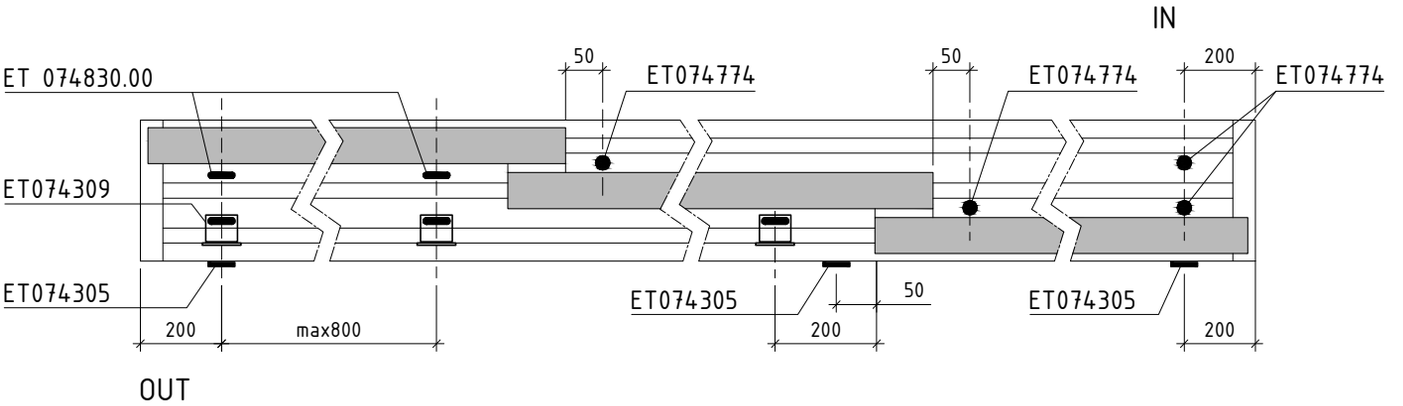


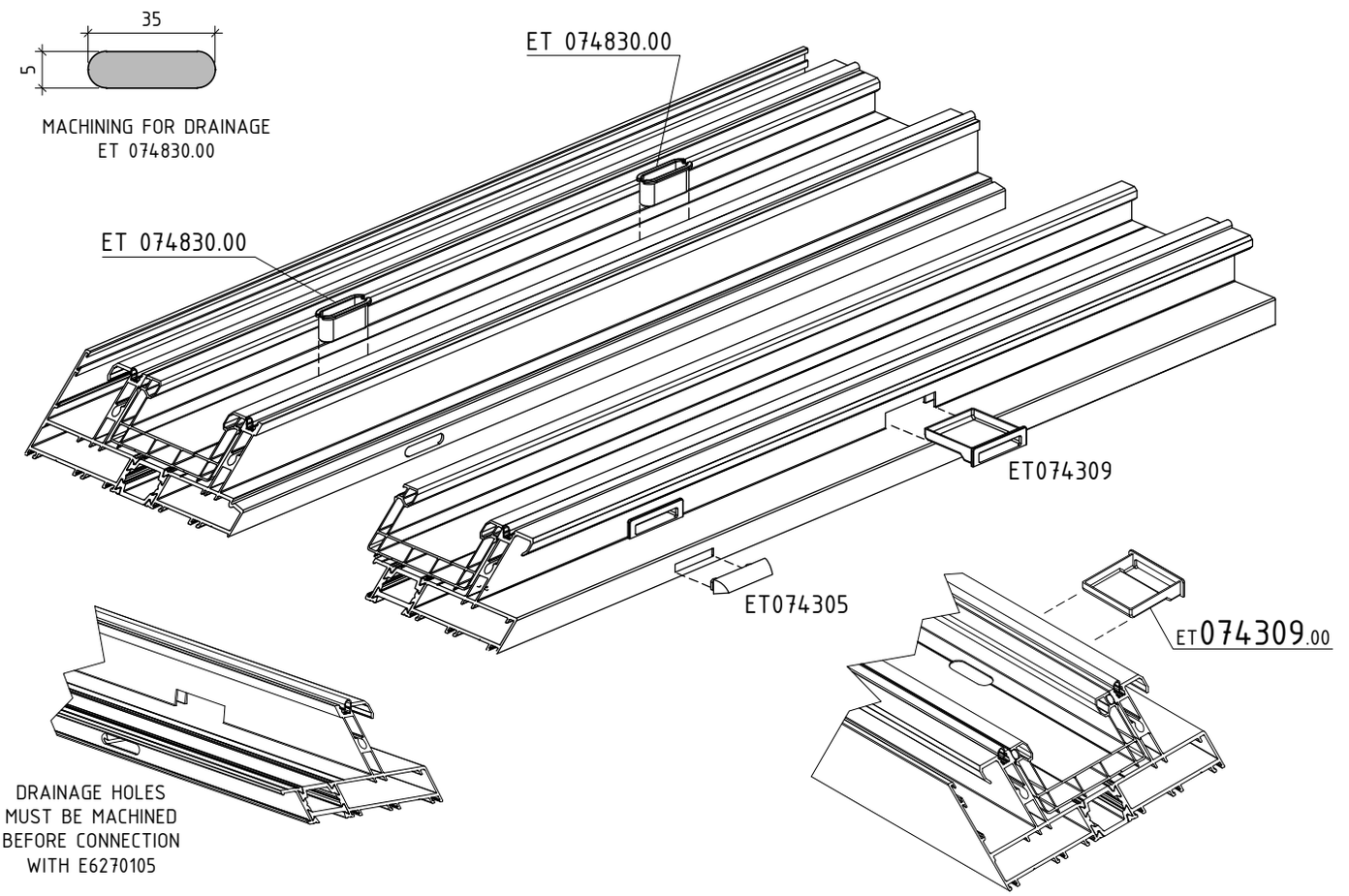


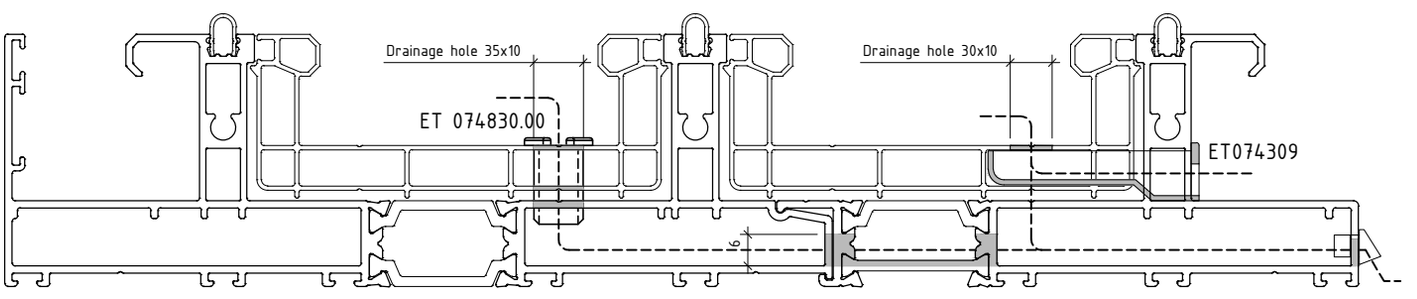
INSIDE AREA DRAINAGE LINE

DRAINAGE MACHINING FOR TRIPLE & MULTIPLE RAIL

ES70.M-032



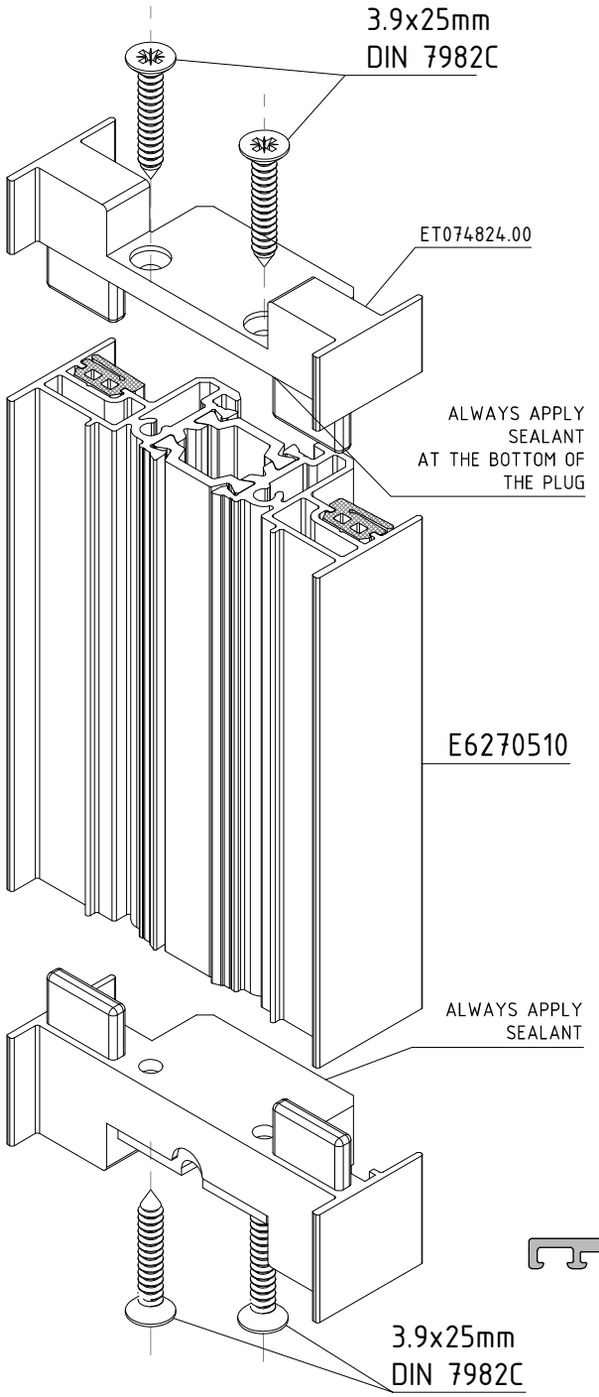




OUTSIDE AREA DRAINAGE LINE

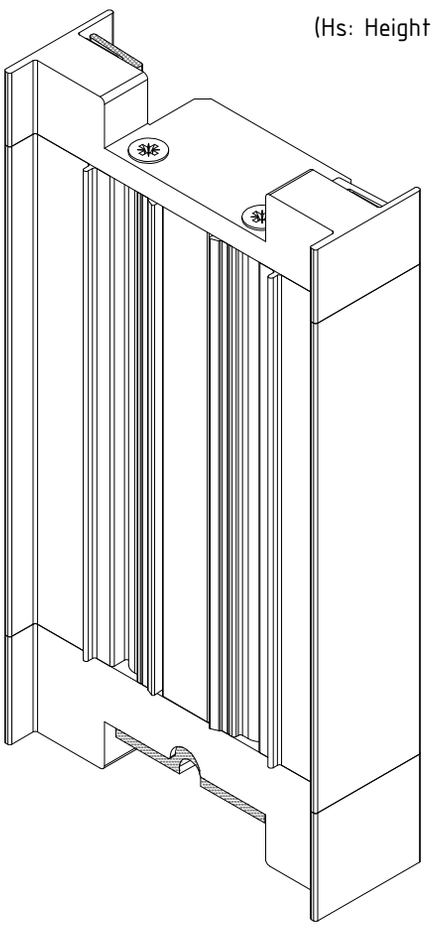
FIXING ADJOINING PROFILE E6270510

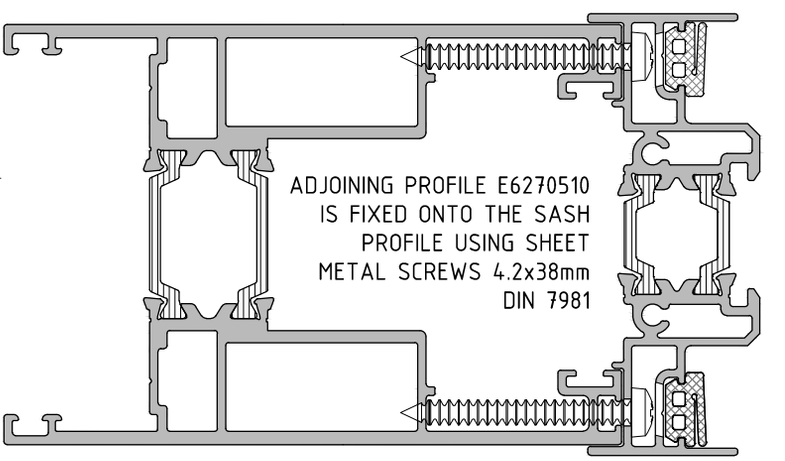
ES70.M-033



Cutting length for E6270510
Hs - 37

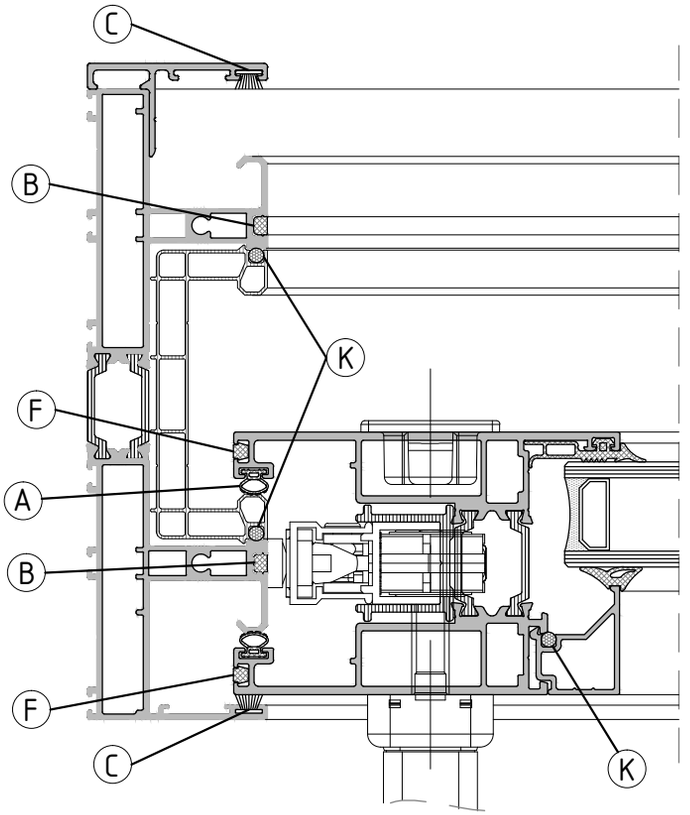
(Hs: Height of sash)

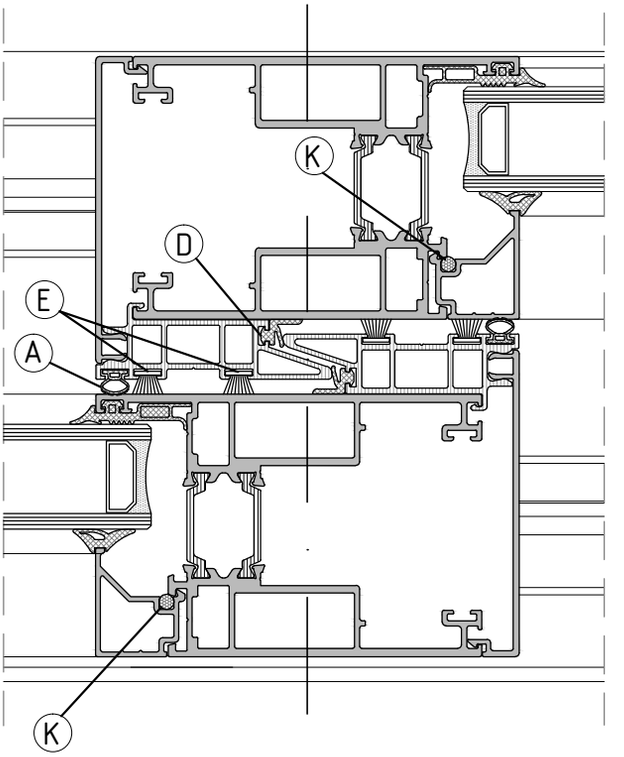


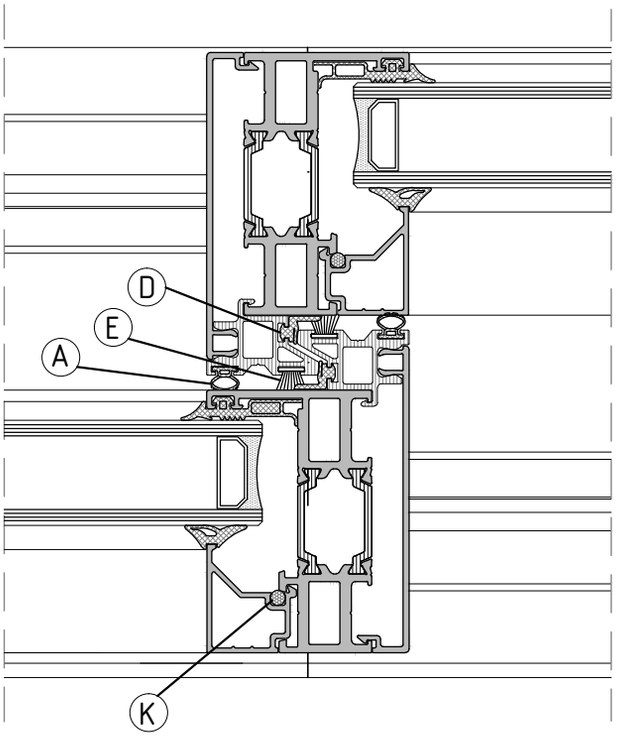


SELECTION OF GASKET & BRUSHES FOR ES70

ES70.M-034



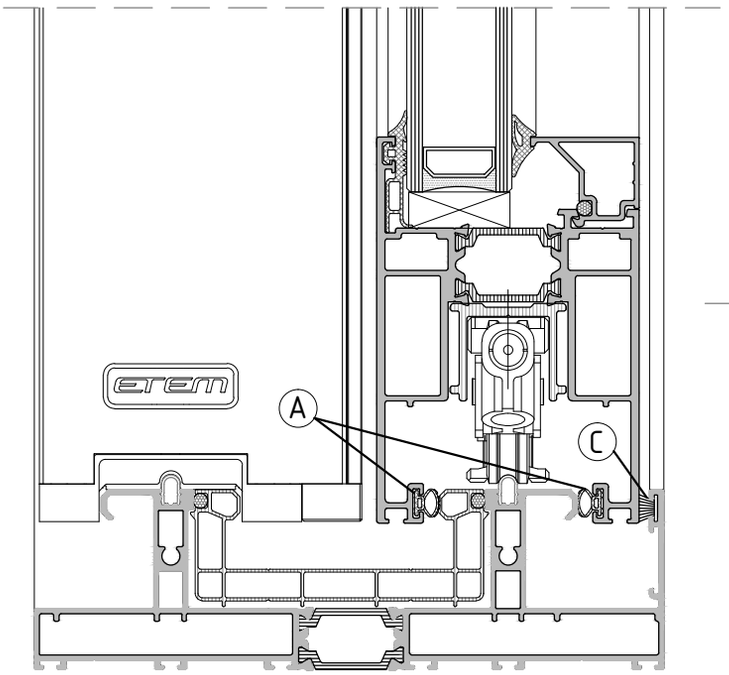


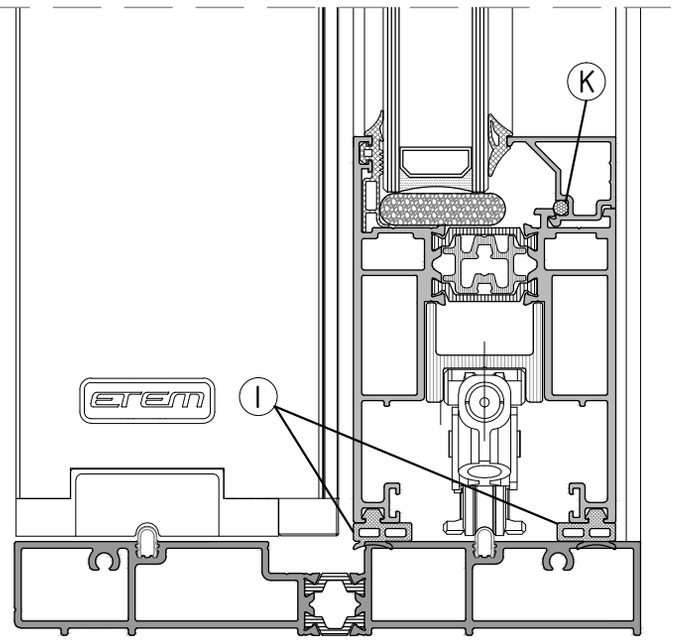


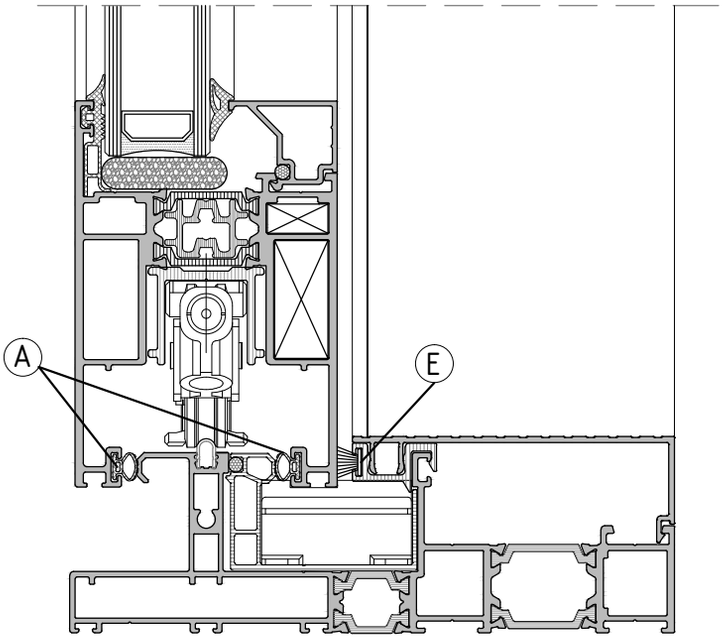
A	ET 130048	
B	ET 130770	
C	ET 135506	6.0mm
D	ET 130173	
E	ET 135508	8.0mm
F	ET 130170	
G	ET 135514	14.0mm
H	ET 130830	
I	ET 130112	
K	ET 130101	

SELECTION OF GASKET & BRUSHES FOR ES70

ES70.M-035



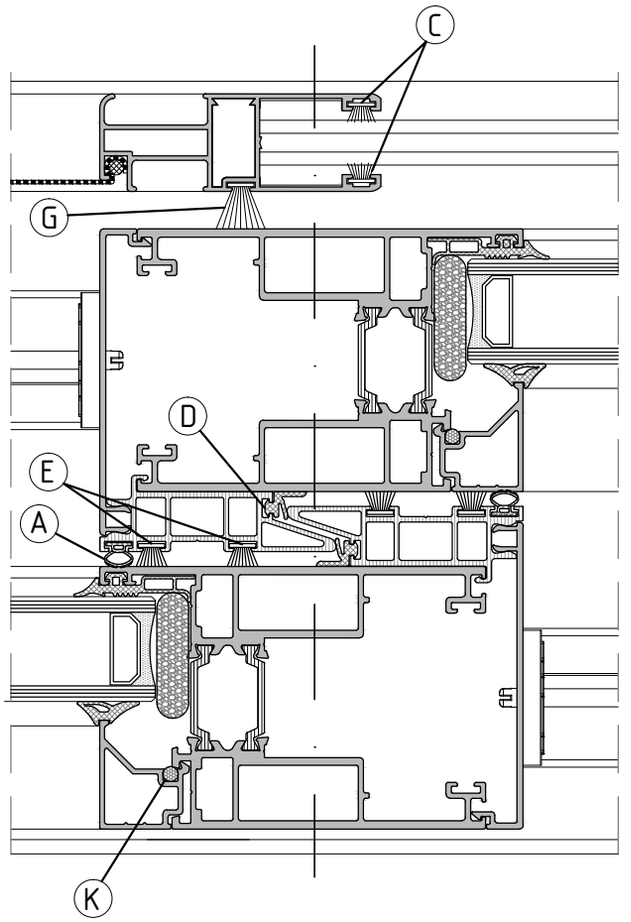


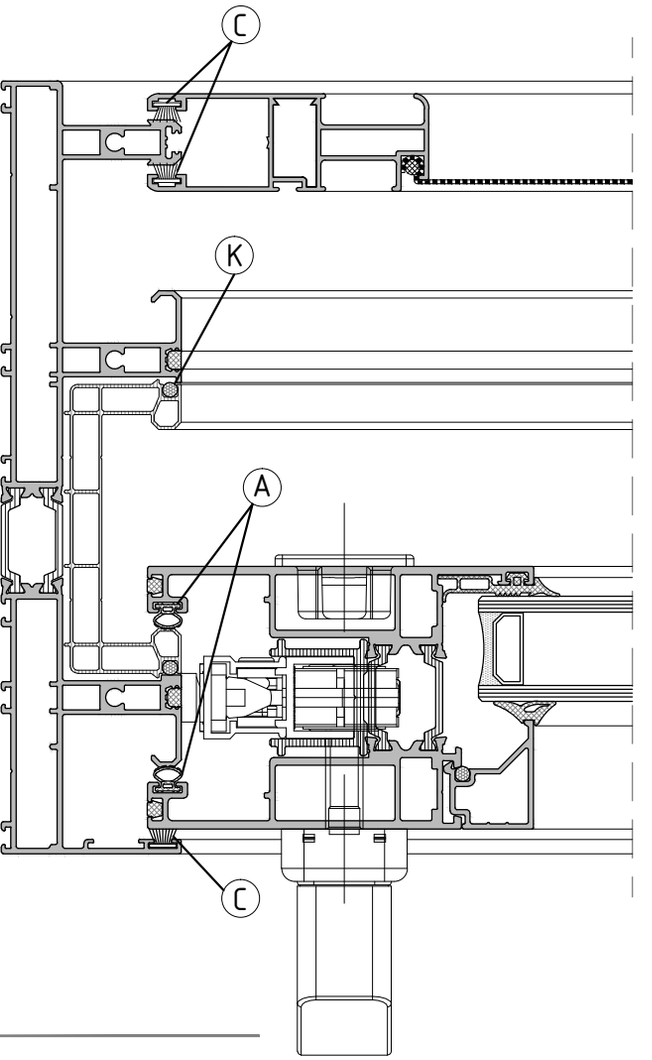


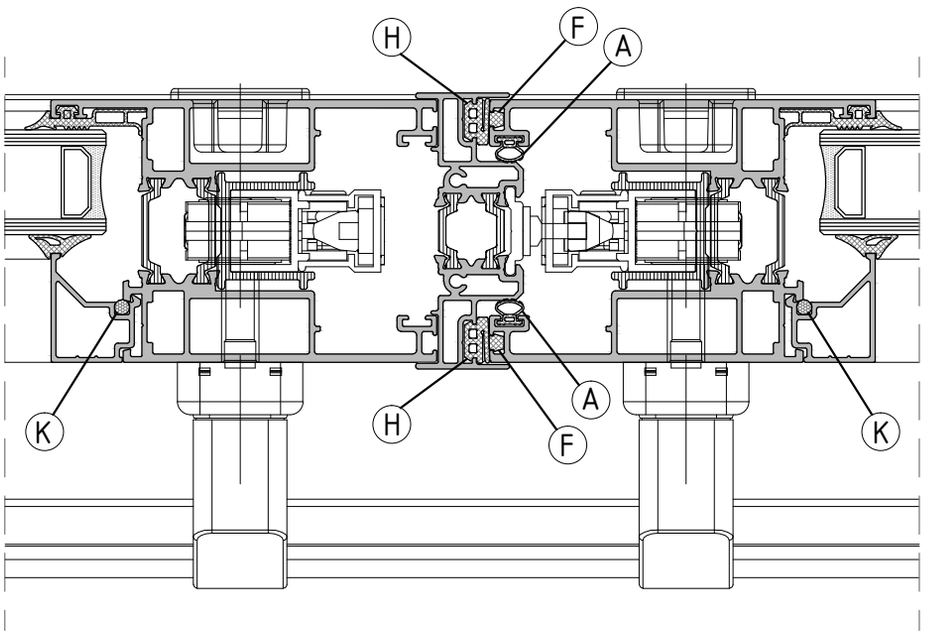
A	ET 130048	
B	ET 130770	
C	ET 135506	6.0mm
D	ET 130173	
E	ET 135508	8.0mm
F	ET 130170	
G	ET 135514	14.0mm
H	ET 130830	
I	ET 130112	
K	ET 130101	

SELECTION OF GASKET & BRUSHES FOR ES70

ES70.M-036

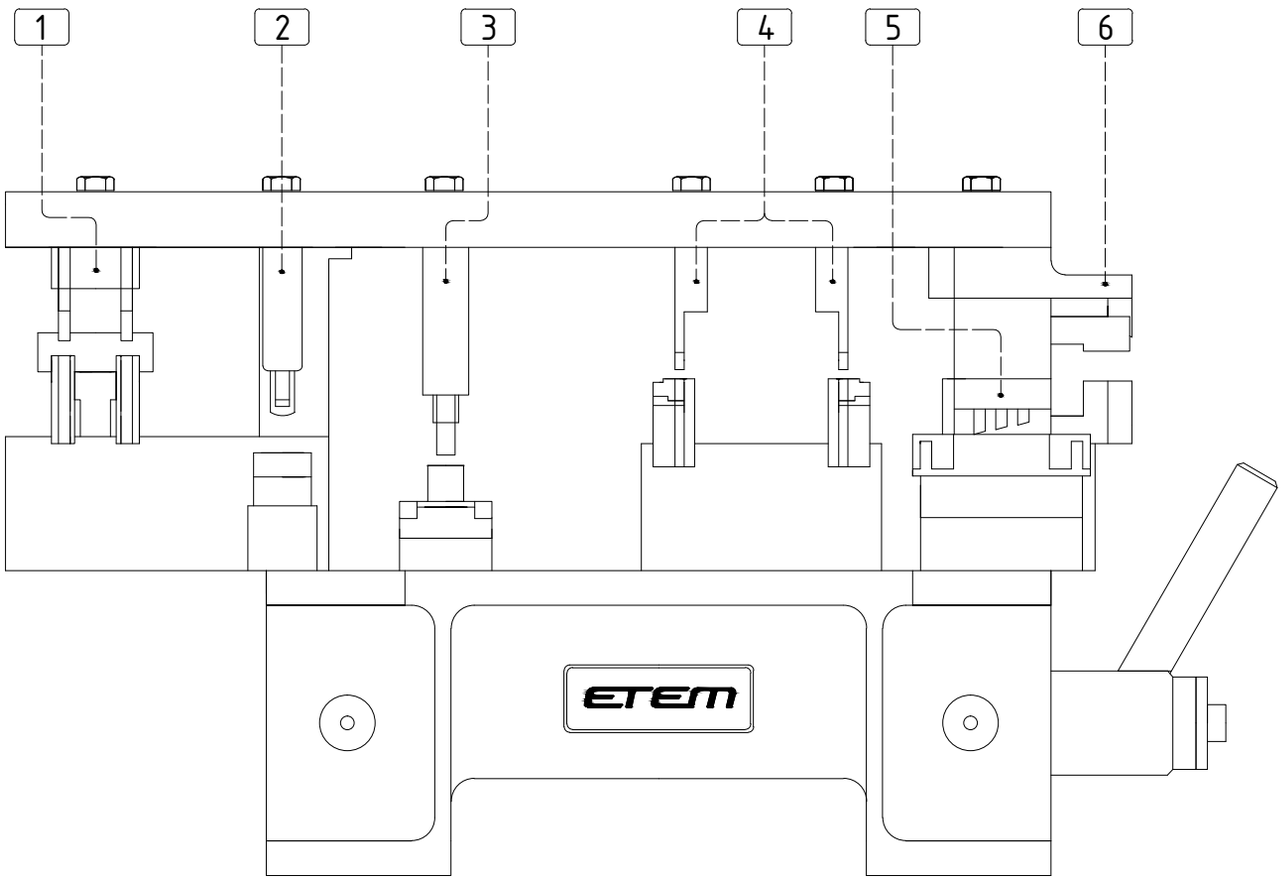






A	ET 130048	
B	ET 130770	
C	ET 135506	6.0mm
D	ET 130173	
E	ET 135508	8.0mm
F	ET 130170	
G	ET 135514	14.0mm
H	ET 130830	
I	ET 130112	
K	ET 130101	

PUNCHING MACHINE FOR ES70 PROFILES, CODE No ET162269.00 ES70PR-01



1 Machining for water drainage for rails 5x30mm (Machining ES70.M-25 & ES70.M-27)

2 Machining for rails corner joint (Machining ES70.M-01)

3 Machining for corner joint bracket ET052213 for E6270201 (Machining ES70.M-04)

4 Machining on sash for glass panel drainage - ventilation (Machining ES70.M-06)

5 Machining of interlock (up & bottom) (Machining ES70.M-08 & ES70.M-09)

6 Machining of rails for water drainage 9.5x39 mm (Machining ES70.M-25 & ES70.M-27)

ACCESSORIES

code/description	package/pcs	colour
ET 130205.00		●

Glazing EPDM gasket
press-in 5.0 mm

code/description	package/pcs	colour
ET 130206.00		●

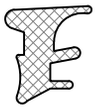
Glazing EPDM gasket
press-in 6.0 mm

code/description	package/pcs	colour
ET 130207.00		●

Glazing EPDM gasket
press-in 7.0 mm

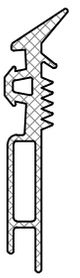
code/description	package/pcs	colour
ET 130208.00		●

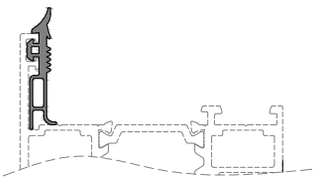
Glazing EPDM gasket
press-in 8.0 mm



code/description	package/pcs	colour
ET 130402.00		●

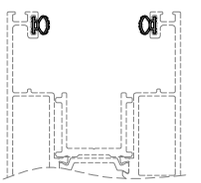
Elongated glazing EPDM gasket 3.0mm





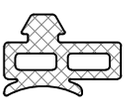
ET 130048.00		●

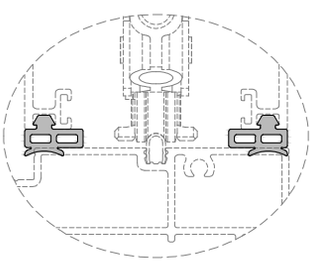
Frame gasket for sash



ET 130112.00		●

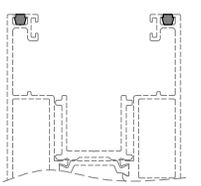
Sash gasket for low rail





ET 130170.00		●

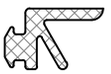
Groove cover gasket for ES6270201

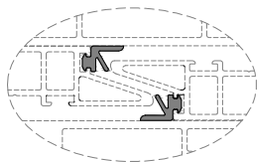


ES70.A-02

code/description	package/pcs	colour
ET 130173.00		●

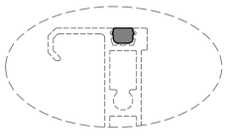
Stopper gasket for interlock PVC ES70





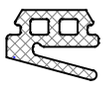
code/description	package/pcs	colour
ET 130770.00		●

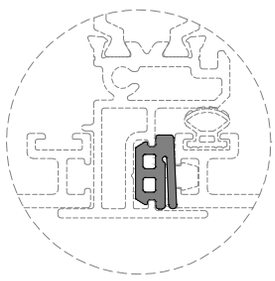
EPDM gasket for rail groove covering



code/description	package/pcs	colour
ET 130830.00		●

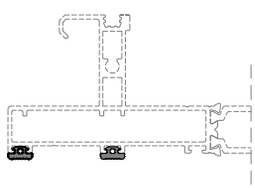
EPDM gasket for adjoining profile





code/description	package/pcs	colour
ET 130831.00		●

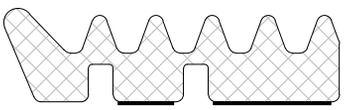
Wall-joining EPDM external gasket for straight fixed frame



ES70A-03

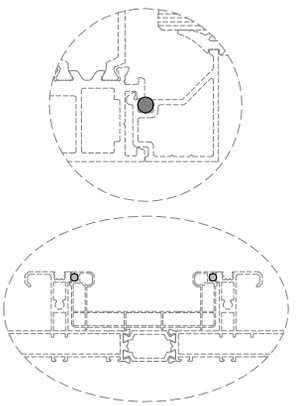
code/description	package/pcs	colour
ET 080751.00		●

Additional insulator for sash



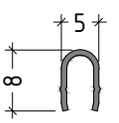
ET 130101.00		●

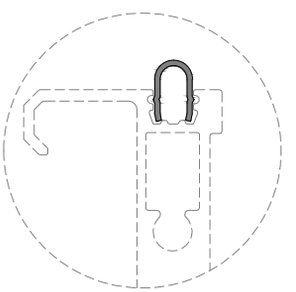
EPDM foam gasket ϕ4mm



ET 082201.00		●

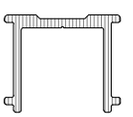
Stainless steel rail (E36, E50, ES70)

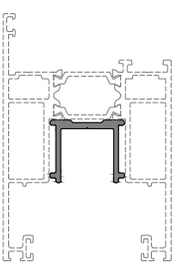




ET 080213.00		●

Plastic profile (PVC) for sash 6070201

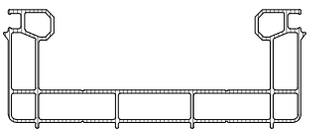


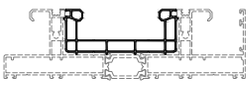


ES70.A-04

code/description	package/pcs	colour
ET 080229.00		●

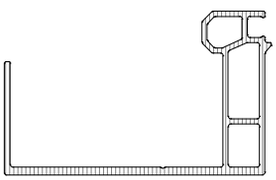
Plastic profile (PVC) for rail
6270103

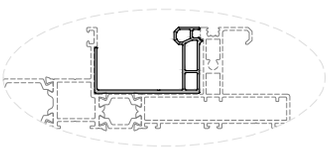




ET 080232.00		●

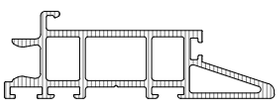
Plastic profile (PVC) for
hotel type rail

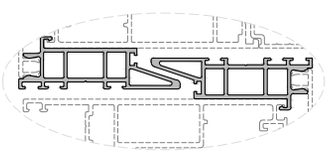




ET 080230.00		

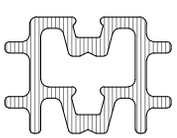
Plastic spacer for interlock
for ES70

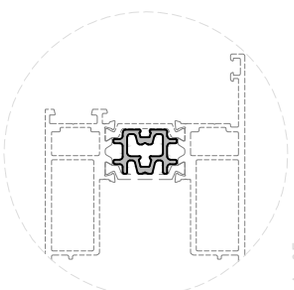




ET 080231.00		

Glazing sash internal PVC

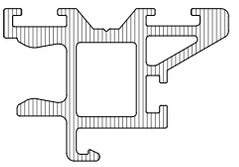


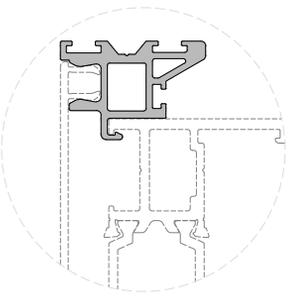


ES70A-05

code/description	package/pcs	colour
ET 080233.00		●

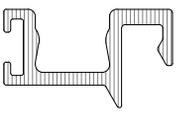
Plastic profile (PVC) for slim interlock





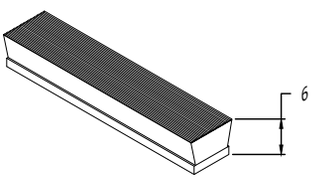
ET 080234.00		●

Plastic profile (PVC) for hotel type rail cover



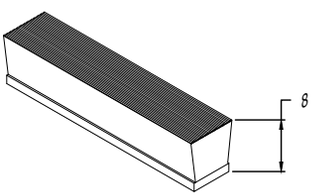
ET 135406.01		○
ET 135406.02		●
ET 135406.04		◐

Pile weatherseal
4P 6.0mm



ET 135408.01		○
ET 135408.02		●
ET 135408.04		◐

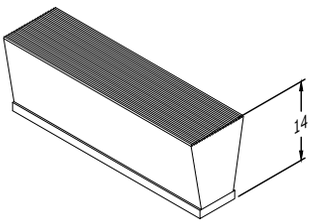
Pile weatherseal
4P 8.0mm



ES70.A-06

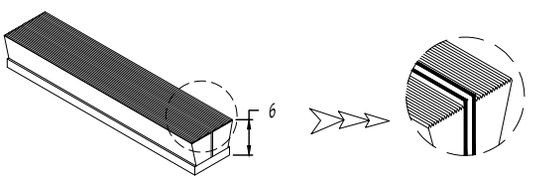
code/description	package/pcs	colour
ET 135414.01		○
ET 135414.02		●
ET 135414.04		○

Pile weatherseal
4P 14.0 mm



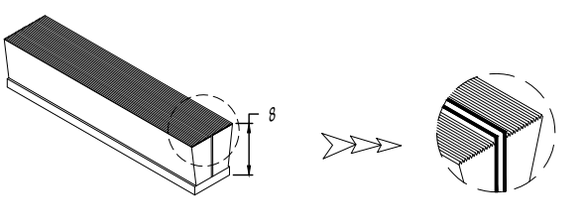
ET 135506.01		○
ET 135506.02		●
ET 135506.04		○

Pile weatherseal
FP 6.0mm



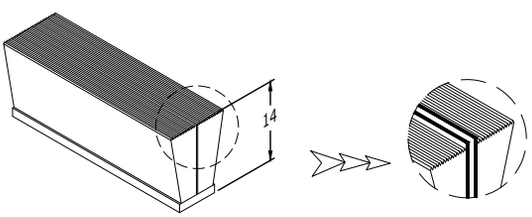
ET 135508.01		○
ET 135508.02		●
ET 135508.04		○

Pile weatherseal
FP 8.0mm



ET 135514.01		○
ET 135514.02		●
ET 135514.04		○

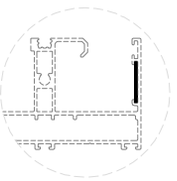
Pile weatherseal
FP 14.0 mm



ES70 A - 07

code/description	package/pcs	colour
ET 056607.00		inox
ET 057705.00		polyamid 6.6

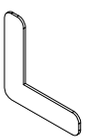
Alignment square for
ES70, E19, E22, E50, E52



6270103

ET 055510.00		galv.steel
ET 055511.00		inox

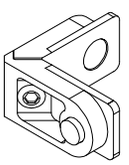
Alignment square for sash
E22214, E 19215

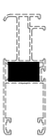


E22214

ET 053306.00		silver

Die cast aluminium corner
joint bracket for E19, E22

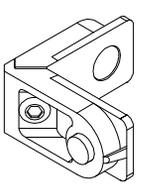




E22214

ET 053316.00		silver

Die cast aluminium corner
joint bracket

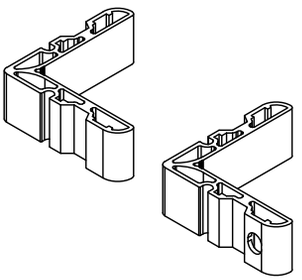


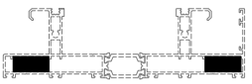
6270103

ES70.A-08

code/description	package/pcs	colour
ET 054255.00	200	MF
ET 054253.00	200	MF

Extruded aluminium joint
corner bracket – 24.7mm
without hole/with hole



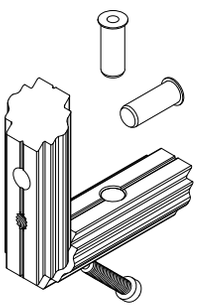


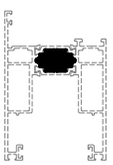
6270103

attention
always use epoxy resin
for long lasting joining

code/description	package/pcs	colour
ET 052213.00		MF

Extruded aluminium corner
joint for sash

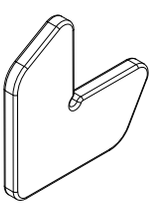


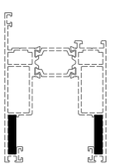


6270201

code/description	package/pcs	colour
ET 057721.00		

Alignment corner for sash

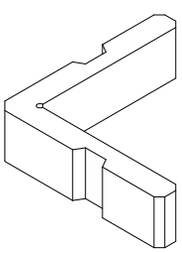


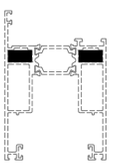


6270201

code/description	package/pcs	colour
ET 054441.00		MF

Assembly corner for glazing
sash



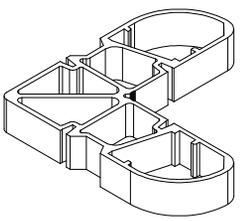


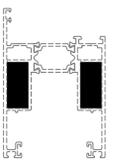
6270201

ES70 A - 09

code/description	package/pcs	colour
ET 054447.00		MF

Extruded aluminium corner joint for sash

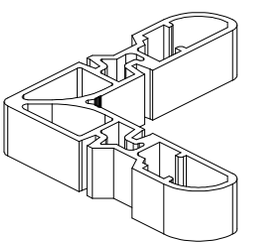


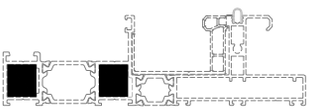


6270201

code/description	package/pcs	colour
ET 054138.00		MF

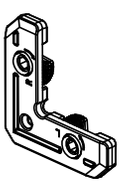
Extruded aluminium corner joint for hotel type

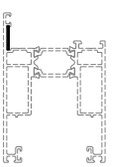




code/description	package/pcs	colour
ET 058005.00		MF

Alignment corner for sash

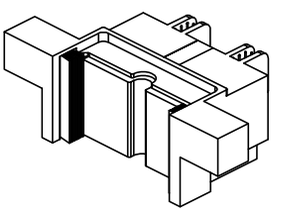




6270201

code/description	package/pcs	colour
ET 074786.00		●

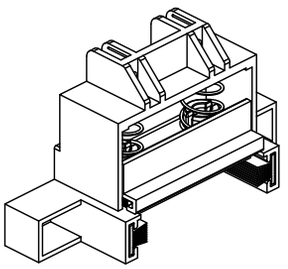
Plastic bottom plug for interlock



ES70.A-010

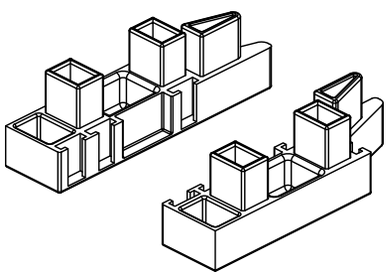
code/description	package/pcs	colour
ET 074806.00		●

Plastic top plug for interlock



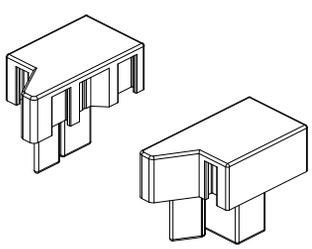
ET 074811.00		●

Pair of plastic plugs for interlock (left & right)



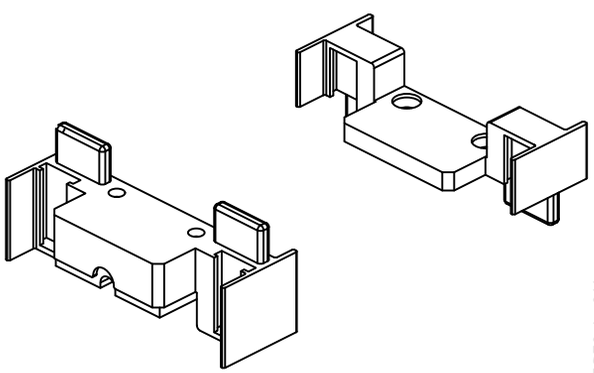
ET 074822.00		●

Plastic cap for PVC profile of slim interlock (left & right)



ET 074824.00		●

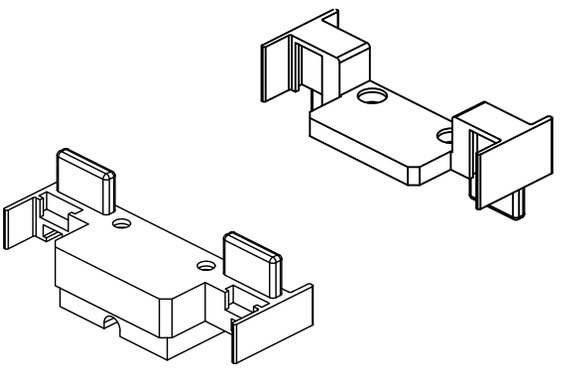
Central sealing plugs for opposed sashes (pair)



ES70 A - 011

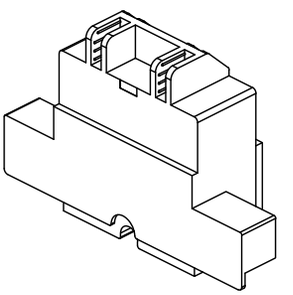
code/description	package/pcs	colour
ET 074825.00		●

Central sealing plugs for opposed sashes with flat rail (pair)



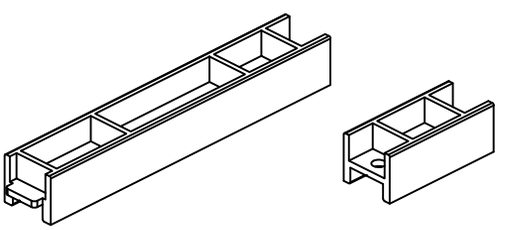
code/description	package/pcs	colour
ET 074471.00		●

Bottom interlock plug for flat rail



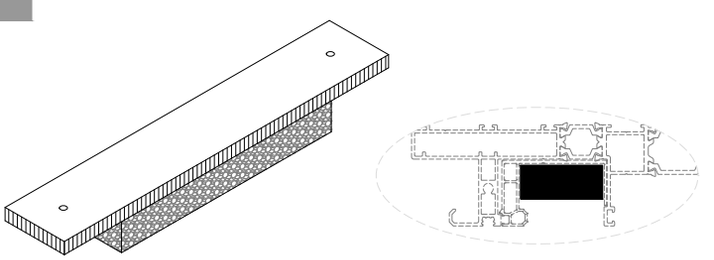
code/description	package/pcs	colour
ET 074819.00		●

Roller spacers kit for low rail



code/description	package/pcs	colour
ET 240818.00		

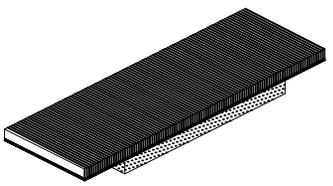
Foam part for sealing sash - interlock on top for ES70 hotel type

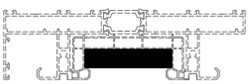


ES70.A-012

code/description	package/pcs	colour
ET 240835.00		

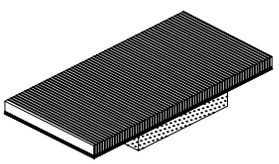
Top foam part for sealing
ES70 sash – interlock

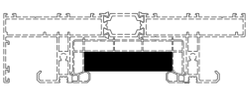




ET 240836.00		

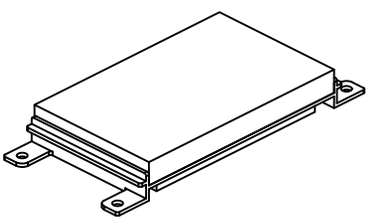
Top foam part for sealing
ES70 sash – Slim interlock

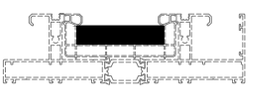




ET 240837.00		

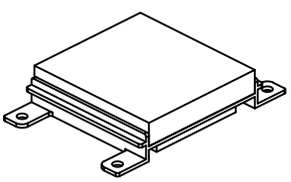
Central bottom sealing block
for ES70 interlock





ET 240838.00		

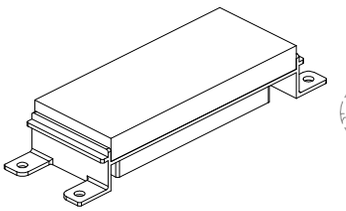
Central bottom sealing block
for ES70 Slim interlock

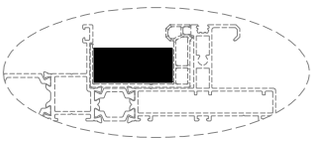


ES70 A - 013

code/description	package/pcs	colour
ET 240851.00		

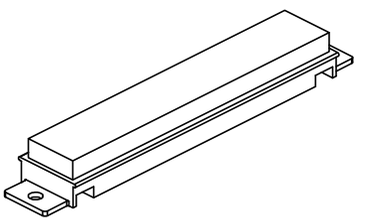
Central bottom sealing block for ES70 hotel type





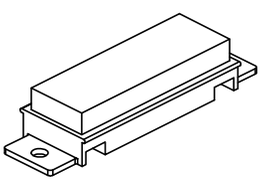
code/description	package/pcs	colour
ET 240852.00		

Bottom central sealing for flat rail



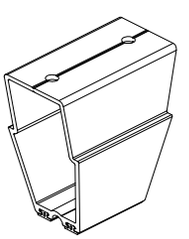
code/description	package/pcs	colour
ET 240853.00		

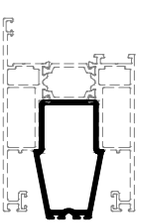
Bottom central sealing for flat rail (for slim interlock)



code/description	package/pcs	colour
ET 074827.00		

Glazing sash safety for flat rail



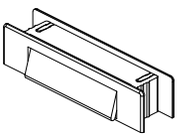


6270201

ES70.A-014

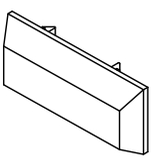
code/description	package/pcs	colour
ET 074308.00		●

Drainage cap for fly screen rail



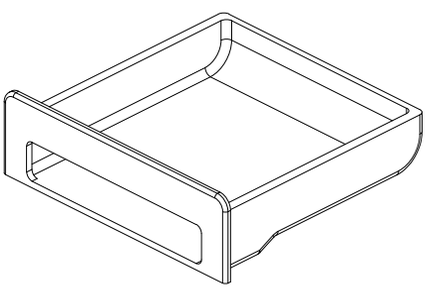
ET 074605.00		●

Plastic drainage cap 30x6mm



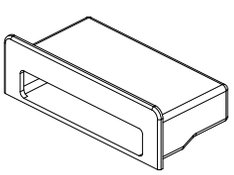
ET 074309.00		●

Open drainage plug for rails E6270103 & E6270104



ET 074826.00		●

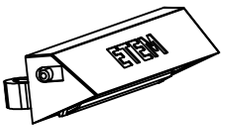
Open drainage plug for Hotel type rail



ES70 A - 015

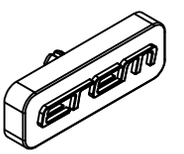
code/description	package/pcs	colour
ET 074305.00		●

Drainage cap with flap



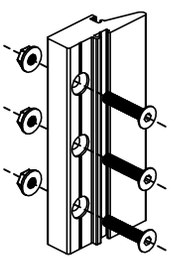
ET 074743.00		●

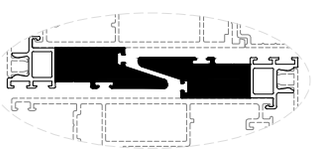
Plastic plug for fixing hole covering



ET 071498.02		●

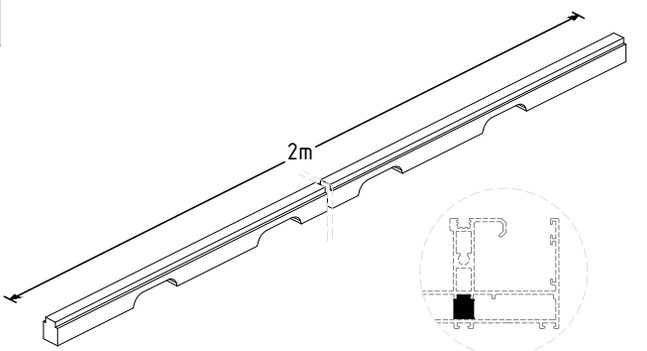
Aluminium reinforcement for pvc interlock





ET 074828.00		MF

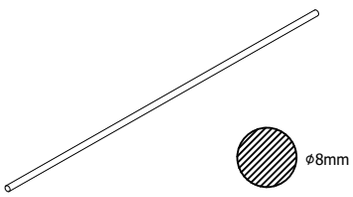
Aluminium rail reinforcement



ES70.A-016

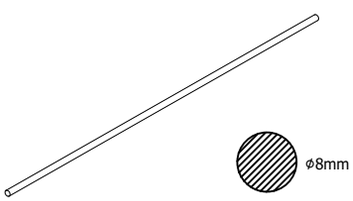
code/description	package/pcs	colour
GU 201055.00	1	MF

Connecting rod 8 mm
(for Sash W. 700 - 1600 mm)



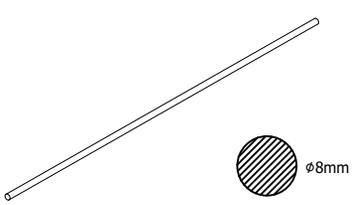
GU 201058.00	1	MF

Connecting rod 8 mm
(for Sash W. 1601 - 1850 mm)



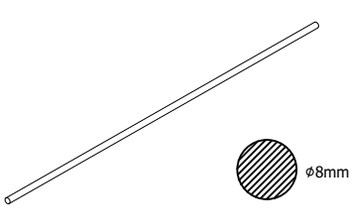
GU 201059.00	1	MF

Connecting rod 8 mm
(for Sash W. 1851 - 2350 mm)



GU 201056.00	1	MF

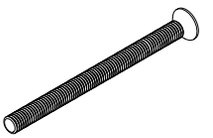
Connecting rod 8 mm
(for Sash W. 2351 - 3300 mm)



ES70 A-017

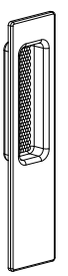
code/description	package/pcs	colour
GU 205108.00	1	MF

Screw M6x75 mm, DIN 965



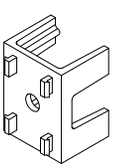
GU 205109.01	1	○
GU 205109.03	1	brown
GU 205109.11	1	silver

Flush pull 934



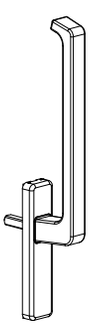
GU 205118.00	1	

Additional part for GU 934
18 mm



GU 250100.01	1	○
GU 250100.03	1	brown
GU 250100.11	1	silver

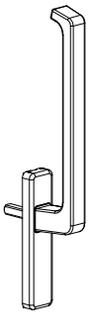
Flush pull 934 without
cylinder bore with screw
base plate



ES70.A-018

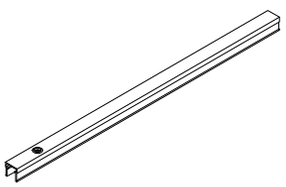
code/description	package/pcs	colour
GU 250102.01	1	○
GU 250102.02	1	●
GU 250102.03	1	brown
GU 250102.11	1	silver

Flush pull 934 without cylinder bore



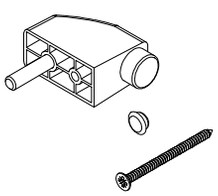
GU 250111.01	1	

Cover rail extension for gear GU 934, 500 mm



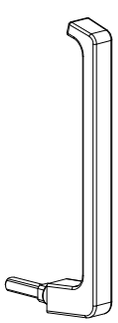
GU 250114.01	1	○
GU 250114.02	1	●
GU 250114.11	1	silver

Sash stopper for GU934/937



GU 250181.01	1	○
GU 250181.03	1	brown
GU 250181.11	1	silver

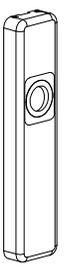
Removable handle 934



ES70.A-019

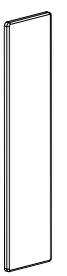
code/description	package/pcs	colour
GU 250125.01	1	○
GU 250125.03	1	brown
GU 250125.11	1	silver

Rosette for 934 handle
without cylinder bore



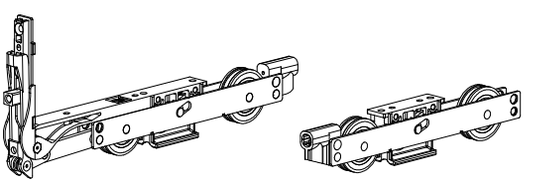
GU 250129.00	1	

Outer rosette for 934
handle



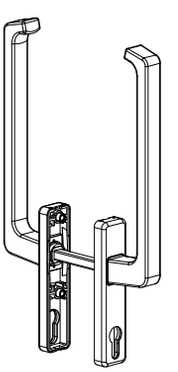
GU 250134.00	1	
GU 250101.00	1	

Rollers GU 934



GU 250140.01	1	○
GU 250140.03	1	brown
GU 250140.11	1	silver

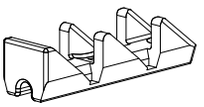
Both side handle 934,
with cylinder hole



ES70.A-020

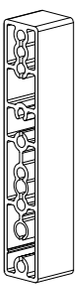
code/description	package/pcs	colour
GU 250119.00	1	

Ventilation striker for
hardware 934



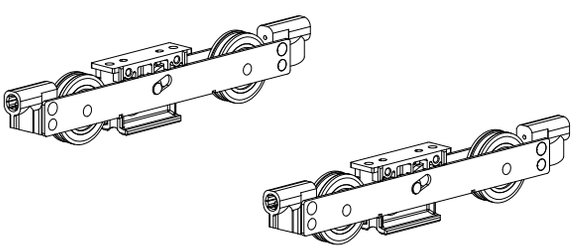
GU 250146.00	1	

Bottom spacer 18 mm
for GU 934



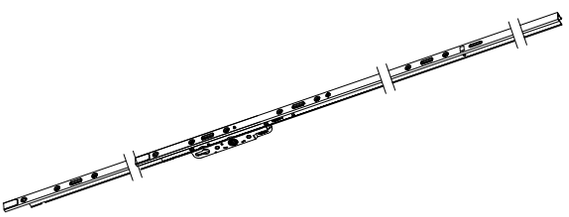
GU 250148.00	1	

Additional rollers basic kit
for GU 934



GU 250145.11	1	

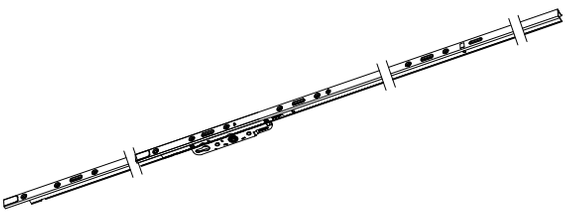
Gear for GU 934 Silver
for height 1865 – 2365 mm



ES70.A-021

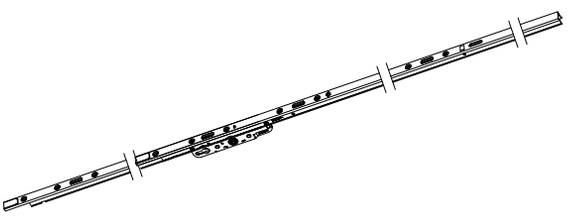
code/description	package/pcs	colour
GU 250149.11	1	

Gear for GU 934 Silver
for height 865 - 1285 mm



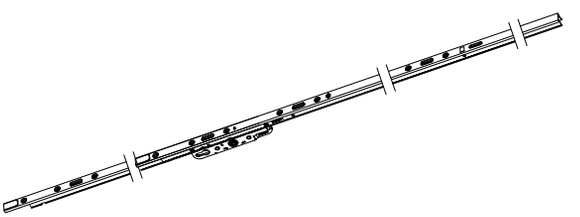
code/description	package/pcs	colour
GU 250150.11	1	

Gear for GU 934 Silver
for height 1235 - 1865 mm



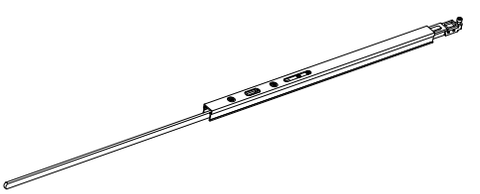
code/description	package/pcs	colour
GU 250151.11	1	

Gear for GU 934 Silver
for height 2155 - 2765 mm



code/description	package/pcs	colour
GU 250696.00	1	

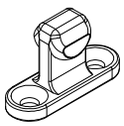
Gear extension with locking
point EV1



ES70.A-022

code/description	package/pcs	colour
GU 250147.00	1	

Frame striker for GU 934

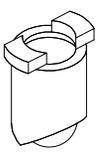


GU 250900.00	1	

Elastic interlock stopper
for GU 934

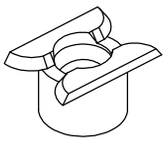
ET 074773.00		

Water drainage valve
ϕ8.0 mm



ET 074774.00		

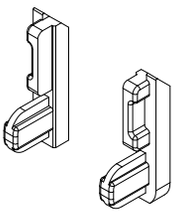
Water drainage valve
ϕ12.0 mm



ES70.A-023

code/description	package/pcs	colour
ET 074916.00		

Pair of plastic plugs
for E22214

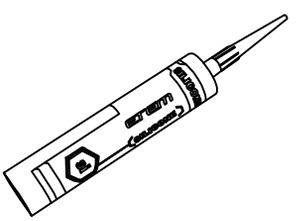


ET 074830.00		

Open drainage 35x10mm
for triple & multiple rails

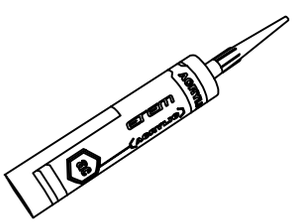
ET 138001.00		transparent
ET 138001.01		white
ET 138001.02		black
ET 138001.03		brown
ET 138001.04		grey

Silicone for general use 280ml



ET 138000.01		

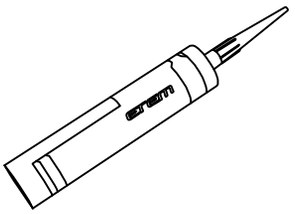
Acrylic putty 280ml



ES70.A-024

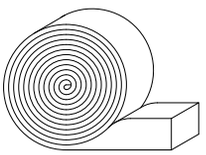
code/description	package/pcs	colour
ET 138004.00		

One part adhesive (for crimping machine)
with a rapid vulcanisation 290ml



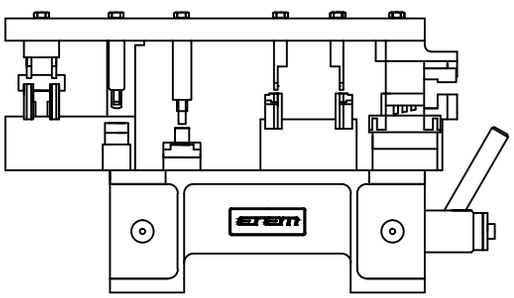
ET 133002.00		

Self-adhesive, self-expand tape
'SUPERSEAL 80' for watertightness
and sound insulation (4/20x20)



ET 162269.00		

Punching machine for ES70



ES70.A-025

CE MARKING

STANDARDS / PERFORMANCE CHARACTERISTICS

CE MARKING

WHAT DOES THE SIGN CE MEAN?

It is an abbreviation of the French "Conformite Europeene"– i.e. European Conformity. By placing the CE marking the manufacturer declares that the product complies with the general safety requirements set out in the Construction Product Regulation 305/2011.

WHAT IS THE PURPOSE OF CE MARKING?

The CE marking represents "the European passport" of the product, its main objectives are:

CE is a declaration by the manufacturer that the product meets the essential requirements of relevant European legislation relating to health, safety and environmental protection;

CE indicates to officials in relevant ministries and departments that the product can be put on the market lawfully in the country;

CE ensures free movement of goods within the EU and the European Free Trade Association (EFTA);

CE permits the withdrawal of products that do not meet the standards by monitoring and custom authorities;
marking with the CE mark is necessary in cases where the product is distributed within the internal market.

WHAT ARE THE REQUIREMENTS FOR THE CE MARKING?

Doors, windows and gates (except those intended to be used for internal communication only, for fire/smoke compartmentation and on escape routes) are covered by System 3 of assessment and verification of constancy of performance.
According to the Construction Product Regulation 305/2011, this system sets the following duties:

Tasks to be performed by the manufacturer	Tasks to be performed by Notified testing laboratory	Conformity accessment (the basis for CE marking, which is set by the final producer)
factory production control – FPC	Determination of the product type on the basis of type testing, type calculation, tabulated values, etc.	Declaration of performance issued by the manufacturer or his authorized representative based on test results.

LEGAL ACTS

- Construction Products Regulation (305/2011/EU – CPR) – replacing the Construction Products Directive (89/106/EEC – CPD)
- EN 14351-1:2006+A1:2010 – Windows and doors – Product standard, performance characteristics – Part 1: Windows and external pedestrian doorsets without resistance to fire and/or smoke leakage characteristics

MAIN METHODS FOR OBTAINING TEST RESULTS BY THE MANUFACTURER

According to the Construction Product Regulation 305/2011 there are three main options for the manufacturers of windows and doors to obtain test results.

1

THE MANUFACTURER SELECTS A SAMPLE FOR TESTING AND CARRIES OUT FACTORY PRODUCTION CONTROL

↓

NOTIFIED TESTING LABORATORY TESTS THE SAMPLE

↓

THE MANUFACTURER OWNS THE TEST REPORT

↓

MANUFACTURER ISSUES DECLARATION OF PERFORMANCE AND AFFIXES CE MARKING

2

PARTNER (SECOND MANUFACTURER PRODUCING PRODUCT WITH CORRESPONDING PRODUCT-TYPE) SELECTS A SAMPLE FOR TESTING AND CARRIES OUT FACTORY PRODUCTION CONTROL

↓

NOTIFIED TESTING LABORATORY TESTS THE SAMPLE

↓

THE PARTNER OWNS THE TEST REPORT

↓

THE MANUFACTURER CARRIES OUT FACTORY PRODUCTION CONTROL AND IS ALLOWED TO USE THE TEST RESULTS OF HIS PARTNER AFTER OBTAINING PARTNER'S AUTHORIZATION

↓

MANUFACTURER ISSUES DECLARATION OF PERFORMANCE AND AFFIXES CE MARKING

3

THE SYSTEM PROVIDER SELECTS SAMPLES FOR TESTING

↓

NOTIFIED TESTING LABORATORY TESTS THE SAMPLE

↓

THE SYSTEM PROVIDER OWNS THE TEST REPORT

↓

THE MANUFACTURER CARRIES OUT FACTORY PRODUCTION CONTROL AND IS ALLOWED TO USE THE TEST RESULTS OF THE SYSTEM PROVIDER AFTER OBTAINING SYSTEM PROVIDER'S AUTHORIZATION

↓

AGREEMENT BETWEEN THE MANUFACTURER AND THE SYSTEM PROVIDER

- INSTRUCTIONS FOR ASSEMBLING AND INSTALLATION OF THE SYSTEM PROVIDER RELEVANT FOR FPC OF THE MANUFACTURER
- NO REDUCTION OF PERFORMANCE LEVEL OF THE PRODUCT

↓

MANUFACTURER ISSUES DECLARATION OF PERFORMANCE AND AFFIXES CE MARKING

STANDARDS

GENERAL

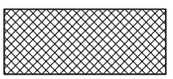
- EN 12020 (1÷2) – ALUMINIUM AND ALUMINIUM ALLOYS – EXTRUDED PRECISION PROFILES IN ALLOYS EN AW-6060 AND EN AW-6063
- EN 755 (1÷9)– ALUMINIUM AND ALUMINIUM ALLOYS – EXTRUDED ROD/BAR, TUBE AND PROFILES
- EN 573 (1÷3) – ALUMINIUM AND ALUMINIUM ALLOYS – CHEMICAL COMPOSITION AND FORM OF WROUGHT PRODUCTS
- EN 1990 EUROCODE – BASIS OF STRUCTURAL DESIGN
- EN 1991 EUROCODE 1 – ACTIONS ON STRUCTURES
- EN 1998 EUROCODE 8 – DESIGN OF STRUCTURES FOR EARTHQUAKE RESISTANCE
- EN 1999 EUROCODE 9 – DESIGN OF ALUMINIUM STRUCTURES

WINDOWS AND DOORS

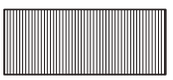
1. EN 14351 – WINDOWS AND DOORS – PRODUCT STANDARD, PERFORMANCE CHARACTERISTICS
2. EN 12519 – WINDOWS AND PEDESTRIAN DOORS – TERMINOLOGY
3. EN 12207 – WINDOWS AND DOORS – AIR PERMEABILITY – CLASSIFICATION
4. EN 1026 – WINDOWS AND DOORS – AIR PERMEABILITY – TEST METHOD
5. EN 12208 – WINDOWS AND DOORS – WATERTIGHTNESS – CLASSIFICATION
6. EN 1027 – WINDOWS AND DOORS – WATERTIGHTNESS – TEST METHOD
7. EN 12210 – WINDOWS AND DOORS – RESISTANCE TO WIND LOAD – CLASSIFICATION
8. EN 12211 – WINDOWS AND DOORS – RESISTANCE TO WIND LOAD – TEST METHOD
9. EN 1191 – WINDOWS AND DOORS – RESISTANCE TO REPEATED OPENING AND CLOSING – TEST METHOD
10. EN ISO 10077 (1÷2) – THERMAL PERFORMANCE OF WINDOWS, DOORS AND SHUTTERS – CALCULATION OF THERMAL TRANSMITTANCE
11. EN 12412-2 – THERMAL PERFORMANCE OF WINDOWS, DOORS AND SHUTTERS – DETERMINATION OF THERMAL TRANSMITTANCE BY HOT BOX METHOD – PART 2: FRAMES
12. EN 13115 – WINDOWS – CLASSIFICATION OF MECHANICAL PROPERTIES – RACKING, TORSION AND OPERATING FORCES
13. EN 1627 – WINDOWS, DOORS, SHUTTERS – BURGLAR RESISTANCE – REQUIREMENTS AND CLASSIFICATION
14. EN 1628 – WINDOWS, DOORS, SHUTTERS – BURGLAR RESISTANCE – TEST METHOD FOR THE DETERMINATION OF RESISTANCE UNDER STATIC LOADING
15. EN 1629 – WINDOWS, DOORS, SHUTTERS – BURGLAR RESISTANCE – TEST METHOD FOR THE DETERMINATION OF RESISTANCE UNDER DYNAMIC LOADING
16. EN 1630 – WINDOWS, DOORS, SHUTTERS – BURGLAR RESISTANCE – TEST METHOD FOR THE DETERMINATION OF RESISTANCE TO MANUAL BURGLARY ATTEMPTS
17. EN ISO 717-1 – ACOUSTICS – RATING OF SOUND INSULATION IN BUILDINGS AND OF BUILDING ELEMENTS – PART 1: AIRBORNE SOUND INSULATION
18. EN ISO 10140 – ACOUSTICS – LABORATORY MEASUREMENT OF SOUND INSULATION OF BUILDING ELEMENTS

HATCHES

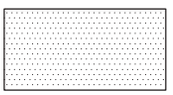
Hatches for different materials



EPDM

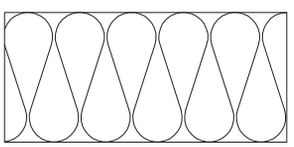


PVC

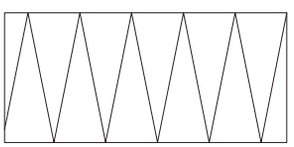


gypsum board

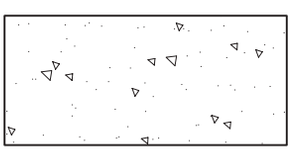
silicone seal



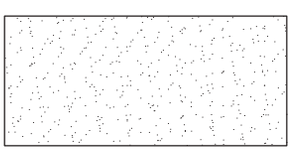
Insulation soft



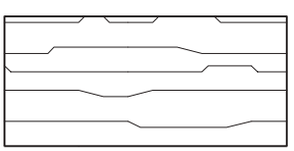
Insulation hard



concrete wall



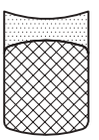
plaster



wood

butyl seal

membrane



silicone seal

backer rod

PVC spacer

etalbond

sheet aluminium

glass

aluminium profile

steel

LIABILITY

The stated data and calculating methods are provided by ETEM as a guideline only.
The information given in this catalogue does not substitute of all applicable regulations – Eurocodes, harmonized European standards, national or regional building codes.

The specific conditions and technical details of every particular project have to be taken into consideration.

The right choice of all elements as well as any special requirements regarding stability of the structure must always be considered by the structural/façade engineer, responsible for the project.

The solutions presented in these pages are indicative and can not cover all possible project cases. Because of that every single project has to be evaluated by the structural/facade engineer in charge taking into consideration the specific features, such as climate conditions, location, orientation, etc.

ETEM is not liable for any calculations and conclusions made on the basis of the stated information. All calculations and specifications must be estimated, endorsed and guaranteed by architect, engineer, professional or legal entity authorized by law for such activities.

COPYRIGHT

DISCLAIMER

ETEM is not responsible for any typographical errors, technical inaccuracies and following changes of the content of this catalogue.
Before starting manufacturing process, it is highly recommended to contact ETEM R&D department in order to provide you with updated information.

WWW.ETEM.COM

ETEM

P.02.20