

TECHNICAL CATALOGUE

SLIDING DOOR AND WINDOW SYSTEM
WITH THERMAL BREAK

E70

Q72

E75

Q60

E23000

E45

E85

E8000

E70

WINDOW AND DOOR SYSTEM WITH THERMAL BREAK

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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.

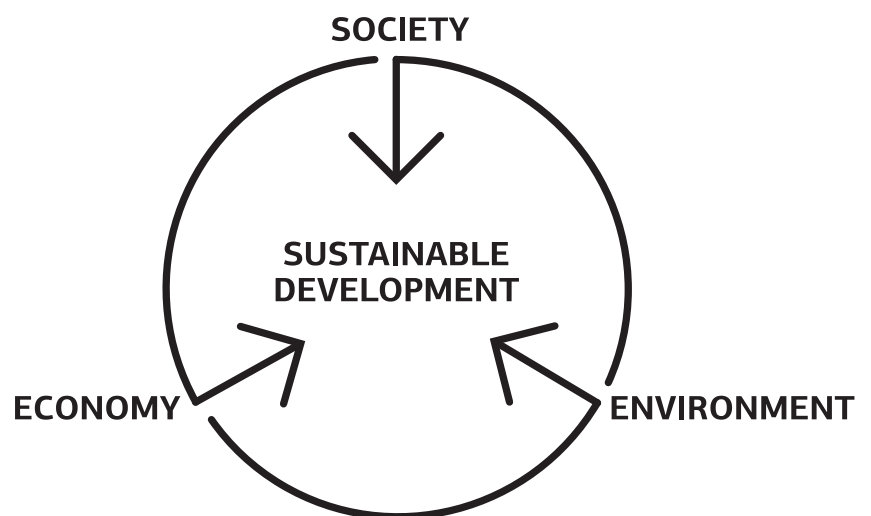
For us meeting this objective translates into the challenge of satisfying market demands at the lowest economic, social and environmental cost possible.

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



GENERAL INFORMATION

CONCEPT / ADVANTAGES / CERTIFICATES

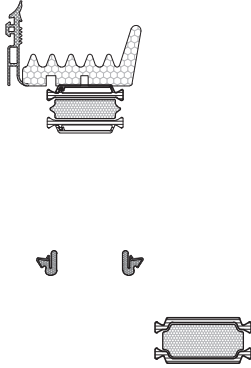
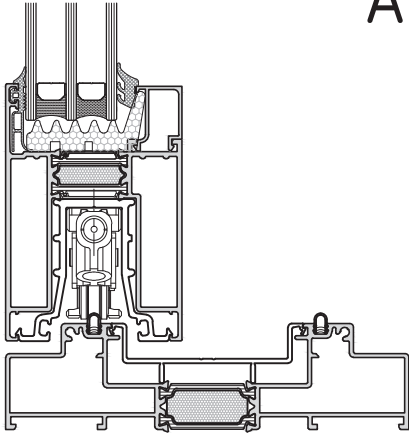


E70 WINDOW CONCEPT

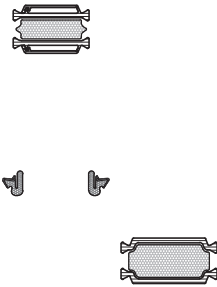
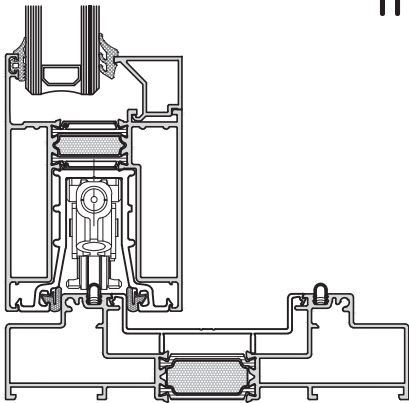
E70 IS A HIGH-END SLIDING WINDOW SYSTEM WITH THERMAL BREAK, SUITABLE FOR OPPOSED BALCONY DOORS AND WINDOWS WITH HIGH REQUIREMENTS FOR THERMAL INSULATION, FUNCTIONALITY AND AESTHETICS.

- Elegant straight design
- Excellent water-tightness and air-permeability
- High thermal insulation
- Glazing sash with 70.0 mm width allowing glass panel from 20.0 up to 50.0 mm
- Ability of minimum aluminium appearance (Less Frame) at the external side.
- Function ability by electric mechanism.
- Maximum weight per sash 400 kg.

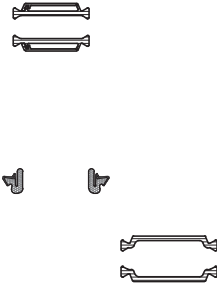
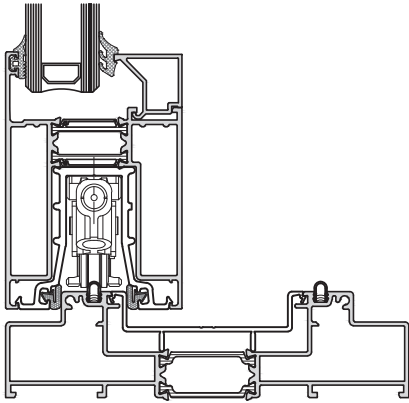
ADVANCED



IMPROVED



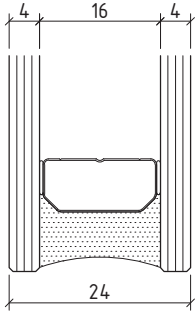
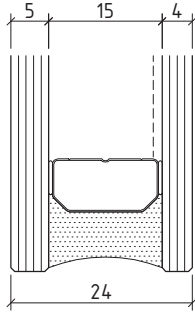
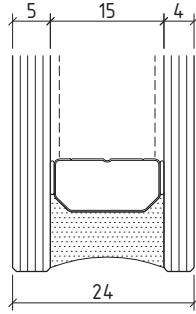
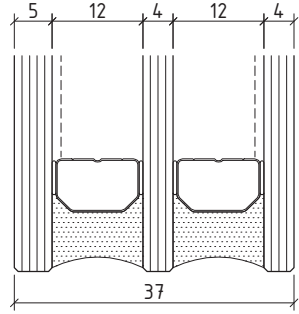
BASIC



ADVANTAGES AND COMBINATION

PERFORMANCE CHARACTERISTICS

Type of glazing

	Double Glazing	Double Glazing	Double Glazing	Triple Glazing
	4/16/4 Low Emission	5/15/4 Low Emission Argon	5sun guard/15/4 Low Emission	5sun guard/12/4/12/4 Low Emission
				
U _{glass}	1,4	1,1	1,0	0,6
U _{window} ¹	1,7	1,5	1,4	1,1
g value ²	0,6	0,6	0,5	0,46

ADVANTAGES

Energy Efficiency		*	**	***	****
Sound Insulation		*	**	***	****
Ventilation		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Daylight		****	***	**	*
Sunshading	E 66	*	**	***	****
Automation		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Safety and security		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Notes:

1. U_w value is calculating by using warm edge spacer for double vent window (exter. dimensions W4000 x H2500)

2. g value is calculating without external sunshading.

* good

** better

*** the best

****excellent

compatible

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 E70

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 C4	EN 12211 / EN 12210
Thermal transmittance	from 1,5 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 ($\leq 1/150$)		B ($\leq 1/200$)		C ($\leq 1/300$)					
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 (τ_v)	npd	Declared values									
Air permeability Max. test pressure (Pa) Reference air permeability at 100 Pa (m ³ /(h · m ²) or m ³ /(h · 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				4		
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. COMMERCIALY 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 AW 6063 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.

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.

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

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.

WIND LOAD

Wind action

The main influence over the facade is wind action, which depends mainly on the height of the curtain wall and location.

As a guideline, the wind pressure values with respect to the structure height are given in the table below:

Building Height	Wind Velocity	Wind Load		Wind Pressure		Wind Suction in a middle zone				Wind Suction in an edge zone	
		$q = \frac{V^2}{16}$		$Wp^* = 1.25 \times c_p \times q$		$h/b \leq 0.25$ $W_s = c_p \times q$ $c_p = 0.5$	$h/b \geq 0.5$ $W_s = c_p \times q$ $c_p = 0.7$	$b/8 \leq 2 \text{ m}$ $W_s = c_p \times q$ $c_p = 2.0$			
m	m/s	kg/m ²	kg/m ²	kg/m ²	kg/m ²	kg/m ²	kg/m ²	kg/m ²	kg/m ²	kg/m ²	kg/m ²
0 - 8	28.3	50	0.5	50	0.5	25	0.25	35	0.35	100	1.0
8 - 20	35.8	80	0.8	80	0.8	40	0.40	56	0.56	160	1.6
20 - 100	42.0	110	1.1	110	1.1	55	0.55	77	0.77	220	2.2
> 100	45.6	130	1.3	130	1.3	65	0.65	91	0.91	260	2.6

where:

h - building height, m

b - building width, m

v - wind velocity, m/s

q - wind load, kg/m² and kN/m²

$w_{p/s}$ - wind pressure / suction, kN/m²

c_p - correction factor

*Note: When calculating wind pressure w_p the load is increased with 25%

UNITS CONVERTER

1 m = 100 cm = 1000 mm

1 kg = 10 N

1 kN = 100 kg = 1000 N

1 kg/m² = 0.01 kN/m²

1 Pa = 1 N/m² = 0.1 kg/m²

1 kPa = 1000 Pa = 1 kN/m² = 100 kg/m²

1 MPa = 1000 kPa = 1 000 000 Pa

1 MPa = 1 N/mm² = 0.1 kN/cm² = 100 000 kg/m²

CALCULATION OF REQUIRED MOMENT OF INERTIA

* Wind load actions:

The required moment of inertia of a mullion due to the wind action is given by:

a) triangle load

$$\text{If } \frac{H}{c} \leq 1, J_{yc} \geq \frac{w \cdot (H/2) \cdot H^4 \cdot 10^8}{120 \cdot E_{al} \cdot f_{max}}, cm^4$$

or

b) trapezoid load

$$\text{If } \frac{H}{c} > 1, J_{yc} \geq \frac{w \cdot (c/2) \cdot H^4}{1920 \cdot E_{al} \cdot f_{max}} \cdot 10^8 \cdot \left[25 - 40 \cdot \frac{(c/2)^2}{H^2} + 16 \cdot \frac{(c/2)^4}{H^4} \right], cm^4$$

Use the same method to calculate J_{yd}

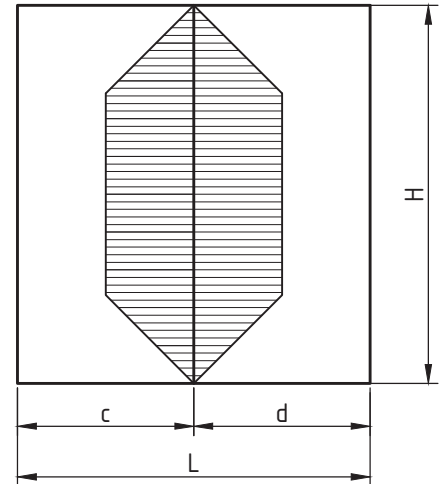
Total of required moment of inertia:

$$J_y = J_{yc} + J_{yd}, cm^4$$

where:

J_y	- Moment of inertia of a transom,	cm ⁴
w	- wind pressure,	kg/m ²
E_{al}	- Modulus of Elasticity of aluminium,	kg/m ²
f_{max}	- Maximum transom deflection,	m
H	- Length of a mullion,	m
a, b	- Distance between mullions,	m

Example:



Initial data:

$H = 3$ m	$w = 120$ kg/m ²
$c = 2,8$ m	$E_{al} = 7 \cdot 10^9$ kg/m ²
$d = 2,8$ m	

$$f = \frac{H}{200} = \frac{3}{200} = 0,015m \quad (\text{EN 14351-1})$$

$\Rightarrow f_{max} = 0,015m$ in the following formulas:

$$\frac{H}{c} = \frac{3}{2,8} = 1,07 > 1$$

$$\frac{H}{c} > 1, J_y = \frac{w \cdot (c/2) \cdot H^4}{1920 \cdot E_{al} \cdot f_{max}} \cdot 10^8 \cdot \left[25 - 40 \cdot \frac{(c/2)^2}{H^2} + 16 \cdot \frac{(c/2)^4}{H^4} \right], cm^4$$

Maximum transom deflection f_{max} by wind load:

$$f = \frac{H}{200}, m \text{ or } 0,015 m - \text{whichever is less (EN 14351-1)} \quad J_{yc} = \frac{120 \cdot (2,8/2) \cdot 3^4}{1920 \cdot 7 \cdot 10^9 \cdot 0,015} \cdot 10^8 \cdot \left[25 - 40 \cdot \frac{(2,8/2)^2}{3^2} + 16 \cdot \frac{(2,8/2)^4}{3^4} \right] \Rightarrow J_{yc} = 58,65 cm^4$$

Use ETEM Catalogue to choose the appropriate mullion with J_y exceeding or equal to the required J_y .

$$\frac{H}{d} = \frac{3}{2,8} = 1,07 > 1$$

Use ETEM Catalogue to choose the appropriate profile which characteristics exceed or are equal to both calculated values J_x and J_y .

$$J_{yd} = \frac{w \cdot (d/2) \cdot H^4}{1920 \cdot E_{al} \cdot f} \cdot 10^8 \cdot \left[25 - 40 \cdot \frac{(d/2)^2}{H^2} + 16 \cdot \frac{(d/2)^4}{H^4} \right], cm^4$$

$$J_{yd} = \frac{120 \cdot (2,8/2) \cdot 3^4}{1920 \cdot 7 \cdot 10^9 \cdot 0,015} \cdot 10^8 \cdot \left[25 - 40 \cdot \frac{(2,8/2)^2}{3^2} + 16 \cdot \frac{(2,8/2)^4}{3^4} \right] \Rightarrow J_{yd} = 58,7 cm^4$$

$$J_y = J_{yc} + J_{yd} = 58,65 + 58,6 = 117,3 cm^4$$

In this case the combined moment of inertia of sash E70201 + interlock E70603 + ET080186 must be

$$J_y \geq 117,3 cm^4$$

The moment of inertia of the combination is: $J_y = 121,9 cm^4$

CALCULATION OF GLASS PANE THICKNESS

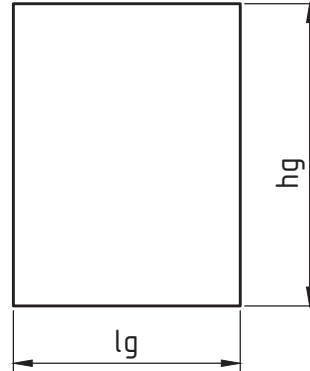
Glazing thickness:

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 $\frac{h_g}{l_g} > 3$, $t = \frac{l_g \cdot \sqrt{10 \cdot w}}{4,9}, mm$



where:

- t - Minimum theoretical glass thickness, mm
- w - Wind pressure, kg/m²
- l_g - The smallest dimension of the glass pane, m
- h_g - The largest dimension of the glass pane, m

Example:

Initial data:

l_g = 2,8 m

h_g = 3 m

w = 120 kg/m²

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

$$\frac{h_g}{l_g} = \frac{3}{2.8} = 1.07 \Rightarrow \frac{h_g}{l_g} \leq 3 \Rightarrow$$

$$t = \sqrt{\frac{10 \times l_g \times h_g \times w}{72}} = \sqrt{\frac{10 \times 2.8 \times 3 \times 120}{72}} \Rightarrow t = 11.8mm$$

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

For double glazing t_{req} = 1,5 x 11.8 = 18 mm

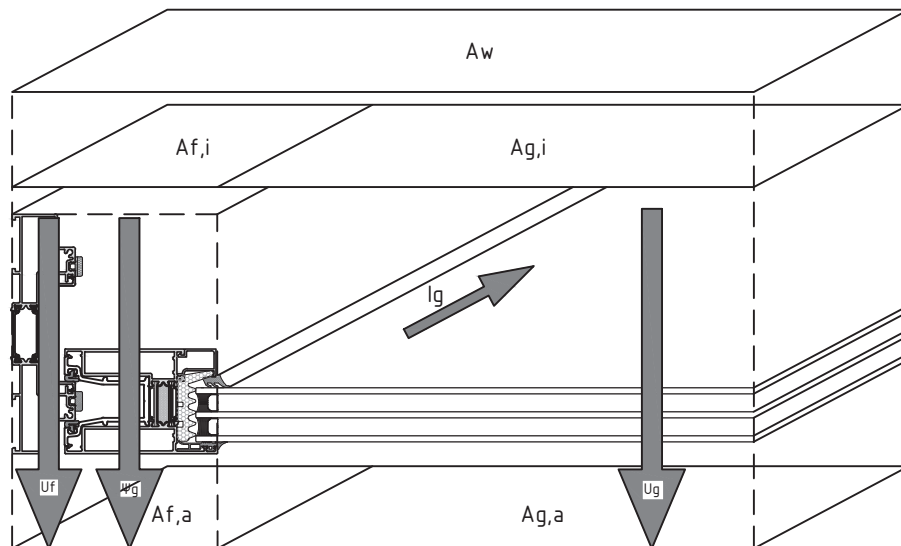
Always consult façade engineer or glazing manufacturer when calculating for required glazing thickness and maximum allowable dimensions.

We choose double glazing 10/spacer/4+4

Method for calculation according to EN ISO 10077-2

$$U_w = \frac{A_g \times U_g + A_f \times U_f + l_g \times \psi_g}{A_g + A_f}$$

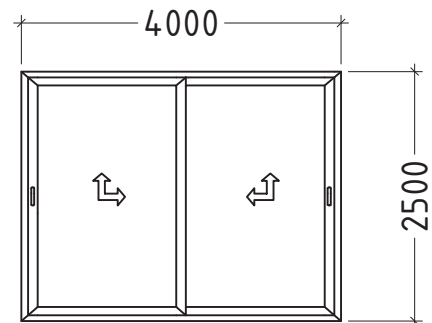
- U_w - thermo-transmittance coefficient of the whole structure
- U_g - glass thermo-transmittance coefficient
- U_f - thermo-transmittance coefficient of the aluminium frame (frame and sash)
- ψ_g - spacer linear thermal transmittance
- l_g - total length of the spacer
- A_g - glass area
- A_f - aluminium frame area (frame and sash)
- U_w - is calculated by formula (1)
- U_g - is given by the glass manufacturer
- U_f - is given by the manufacturer of the aluminium profiles



Example for calculating thermal transmission coefficient

frame:	E 70	U_f	2.29	W/(m ² K)
spacer:	Warm Edge	ψ_g	0.051	W/(mK)
glass:	triple insulated glass	U_g	1.00	W/(m ² K)

window width:	4.00 m
window height:	2.50 m
length of glass edge l_g :	16.0 m
window type:	double vent sliding

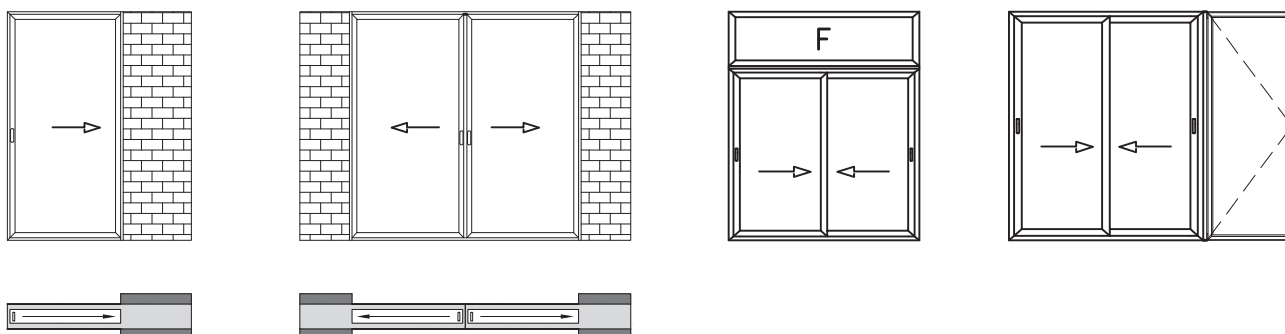
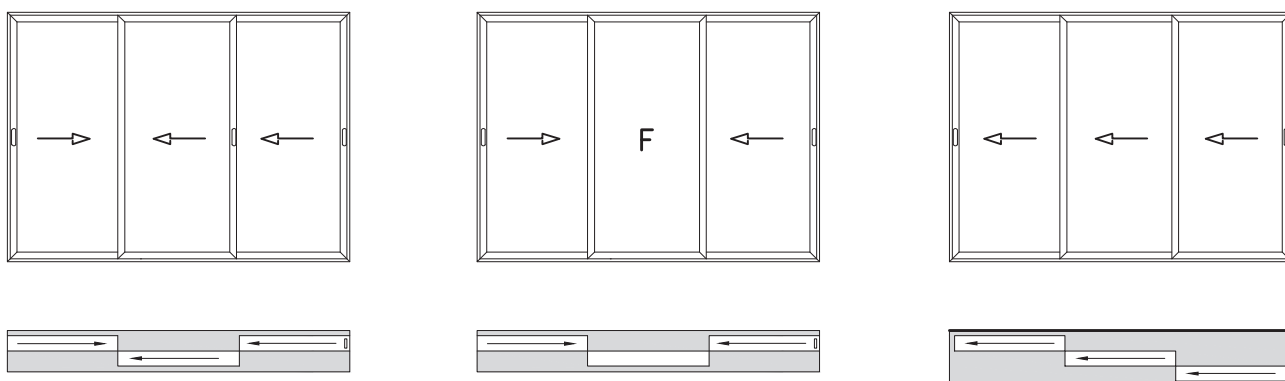
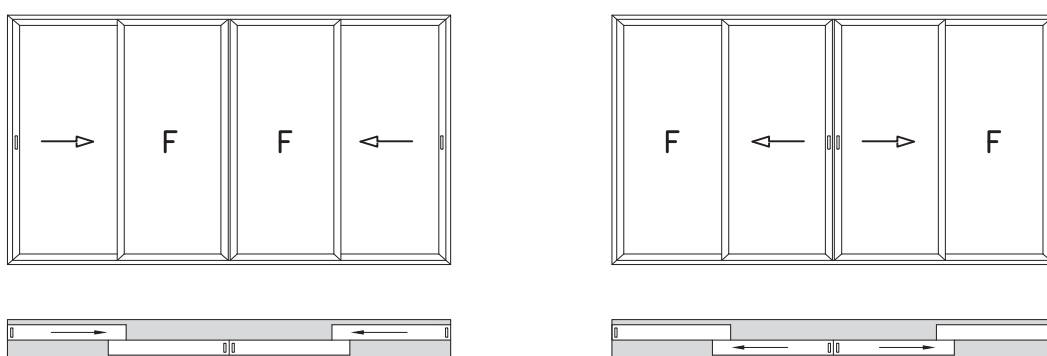
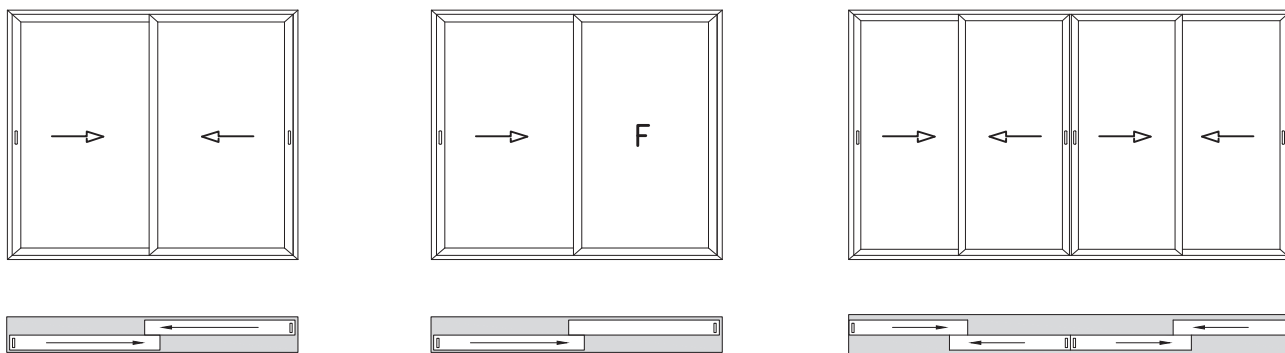


$$U_w = \frac{8.0 \times 1 + 2.0 \times 2.29 + 16 \times 0.051}{8.0 + 2}$$

$$U_w \approx 1,4 \text{ W/(m}^2\text{ K)}$$

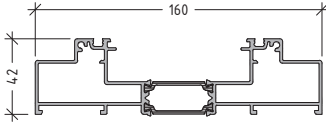
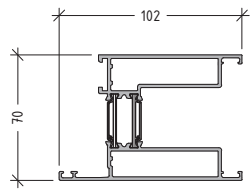
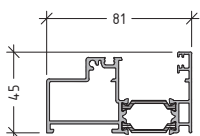
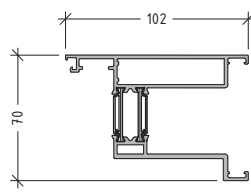
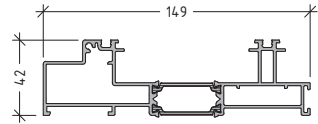
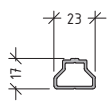
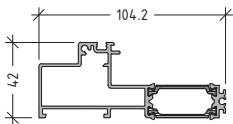
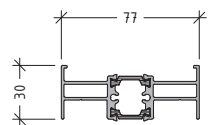
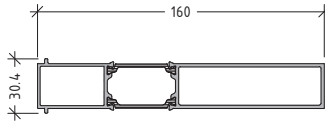
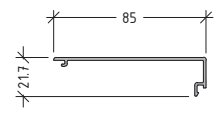
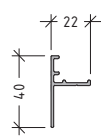
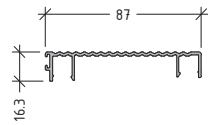
TABLES

TYPES / LIST OF PROFILES / CHARACTERISTICS



sliding system with thermal break

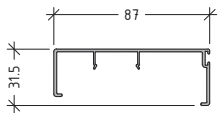
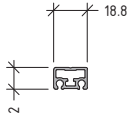
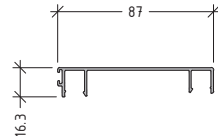
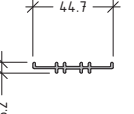
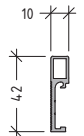
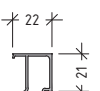
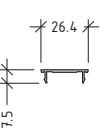

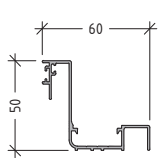
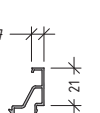
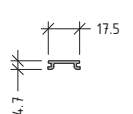
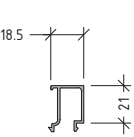
E70

code	profile	weight length moment of inertia	code	profile	weight length moment of inertia
E70101 Double rail		2300 g/m L=6.01 m	E70201 Sash		2313 g/m L=6.01 m Ix=59.7 cm ⁴ Iy=57.2 cm ⁴
E70102 Single rail		1500 g/m L=6.01 m	E70204 Sash for "Less Frame"		2105 g/m L=6.01 m Ix=45.6 cm ⁴ Iy=55.1 cm ⁴
E70103 Part of triple rail		2178 g/m L=6.01 m	E70602 Supplementary profil for upper rail		277 g/m L=6.01 m
E70104 Part of triple rail		1507 g/m L=6.01 m	E70551 Adjoining profile		1274 g/m L=6.01 m Ix=25.7 cm ⁴ Iy=3.1 cm ⁴
E70153 Indermidiate profile		1995 g/m L=6.01m Ix=177.6 cm ⁴ Iy=8.9 cm ⁴	E70603 Interlock profile		486 g/m L=6.01 m
E70601 Supplementary profil for rail		269 g/m L=6.01 m	E70604 Anodised cover for bottom rail		594 g/m L=6.01 m

L70-01

sliding system with thermal break

E70

code	profile	weight length moment of inertia	code	profile	weight length moment of inertia
E70605 Anodised cover for bottom rail		667 g/m L=6.01 m	E70651 Supplementary anodized profile for E70204		265 g/m L=6.01 m
E70606 Cover for jamb		569 g/m L=6.01 m	E70959 Anodized spacer for E70204		238 g/m L=6.01 m
E70607 Supplementary profil for frame		386 g/m L=6.01 m	E60222 Glazing bead		281 g/m L=6.01 m
E 19641 Cover for E70640		130 g/m L=4.80 m	E60107 Glazing bead		189 g/m L=6.01 m
E70640 Wall joining profile		597 g/m L=4.80 m	E60207 Glazing bead		205 g/m L=6.01 m
E70650 Supplementary anodized profile for E70204		103 g/m L=6.01 m	E60219 Glazing bead		270 g/m L=6.01 m

L70-02

sliding system with thermal break

E70

code		profile	weight length moment of inertia	code		profile	weight length moment of inertia
E60235 Glazing bead			322.1 g/m L=6.01 m	E60230 Glazing bead			304.5 g/m L=6.01 m
E60225 Glazing bead			289 g/m L=6.01 m	E60117 Glazing bead			284 g/m L=6.01 m
E60122 Glazing bead			308 g/m L=6.01 m	E60215 Glazing bead			238 g/m L=6.01 m
E60127 Glazing bead			381 g/m L=6.01 m				

L70-03

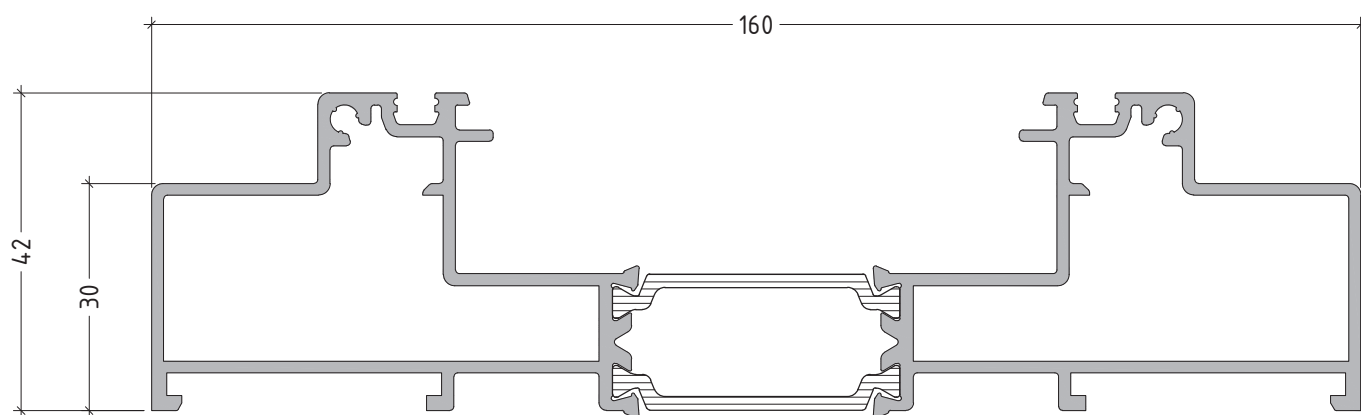
PROFILES

DRAWINGS / SCALE 1:1

E70101

Double rail

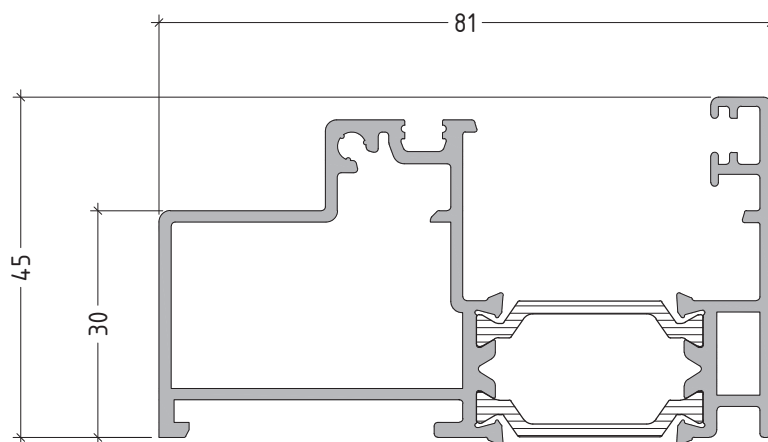
2300 gr/m



E70102

Single rail

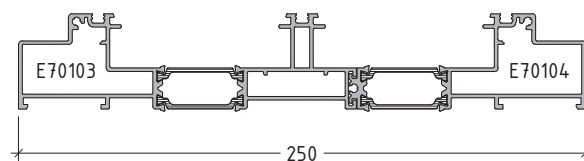
1500 gr/m



scale : 1:1

P.70-01

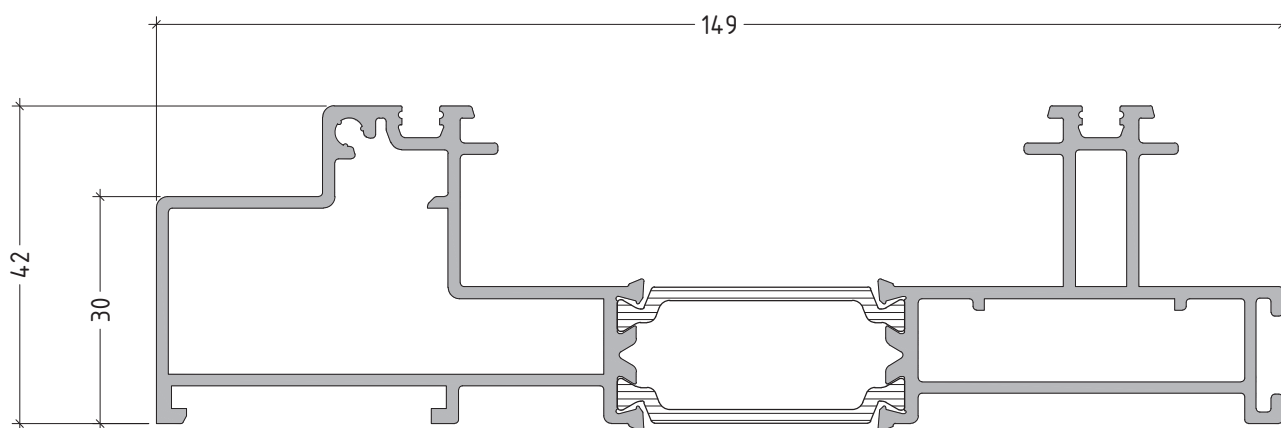
Triple rail = E70103 + E70104



E70103

Part of triple rail

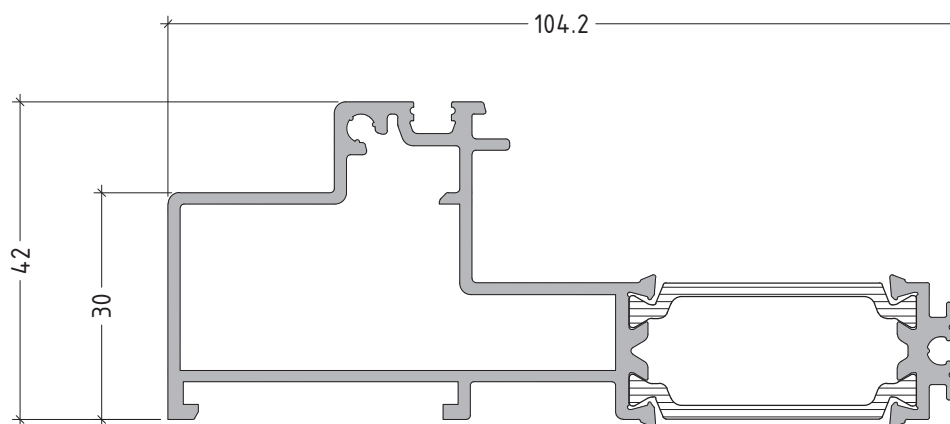
2178 gr/m



E70104

Part of triple rail

1507 gr/m



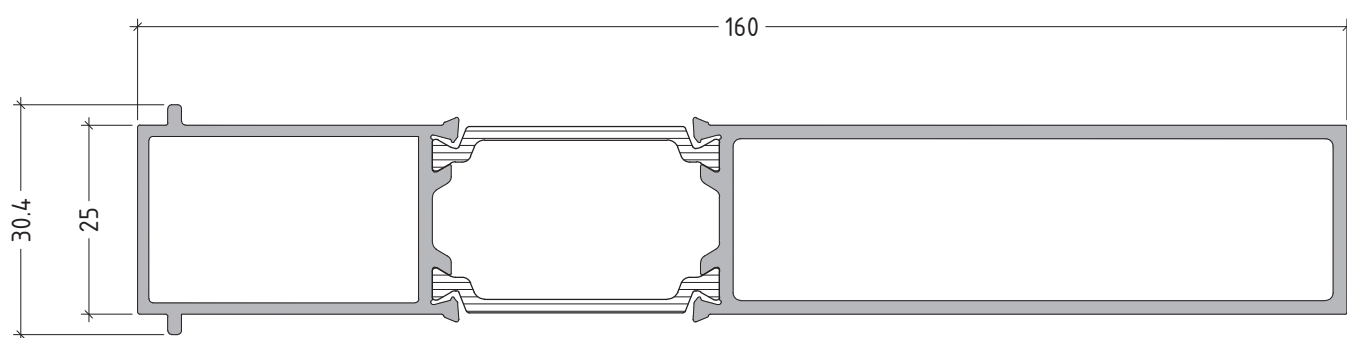
scale : 1:1

P70-02

E70153

Intermediate profile

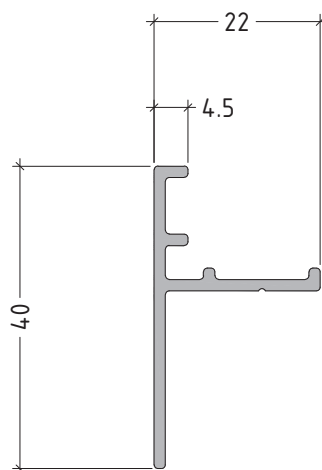
1995 gr/m



E70601

Supplementary
profile for rail

269 gr/m

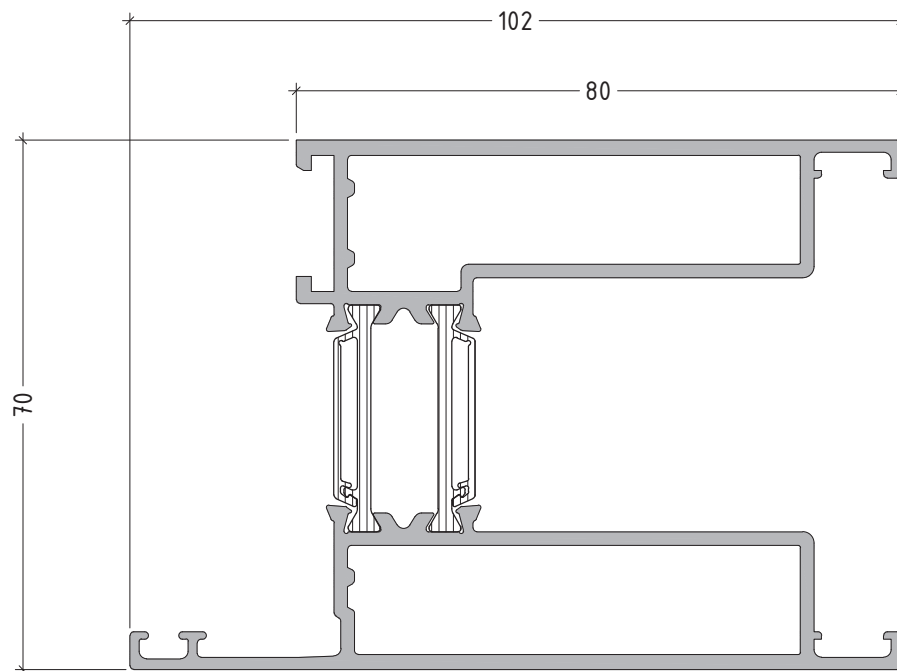


scale : 1:1

E70201

Sash

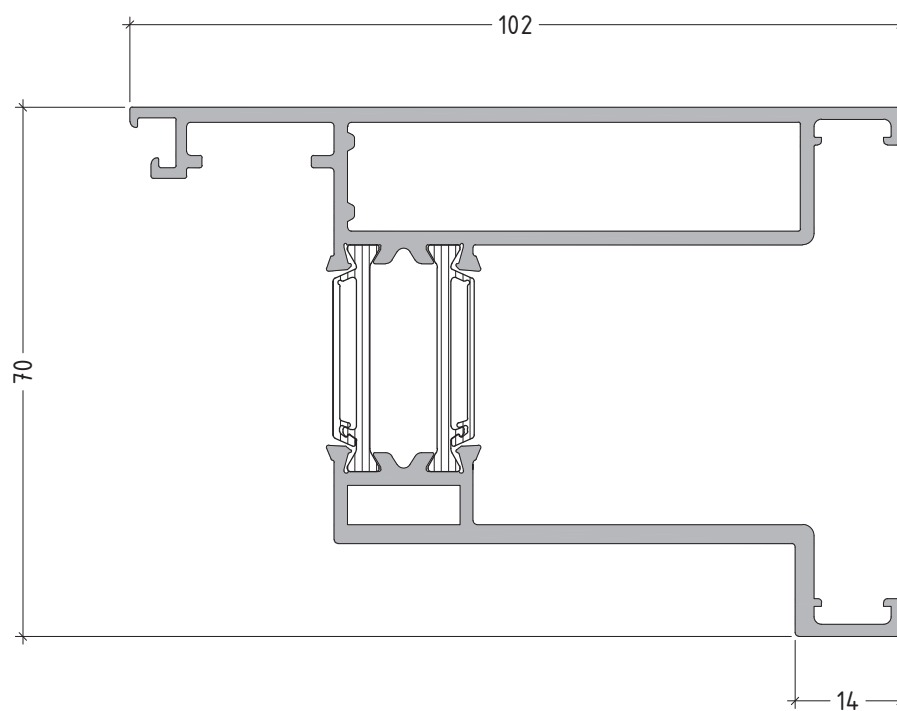
2313 gr/m



E70204

Sash for "Less Frame"

2105 gr/m



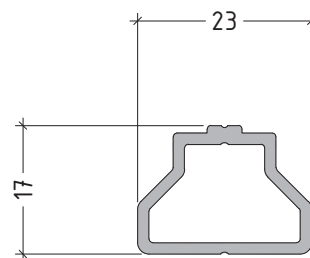
scale : 1:1

P70-04

E70602

Supplementary profile
for upper rail

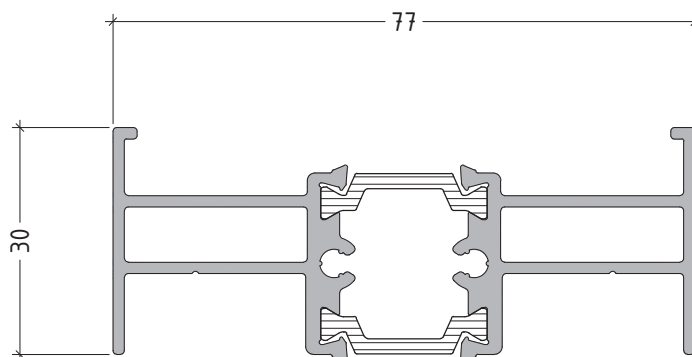
277 gr/m



E70551

Adjoining profile

1274 gr/m



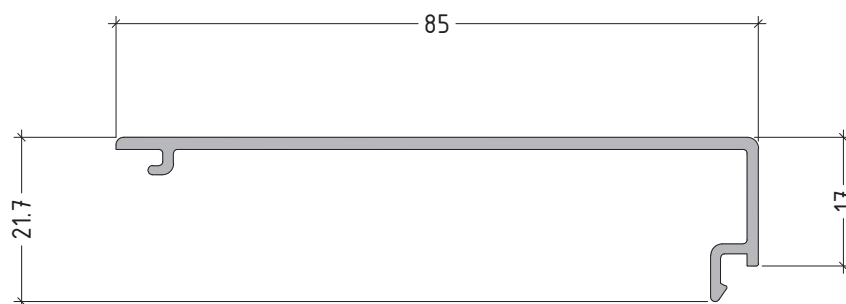
scale : 1:1

P.70-05

E70603

Interlock profile

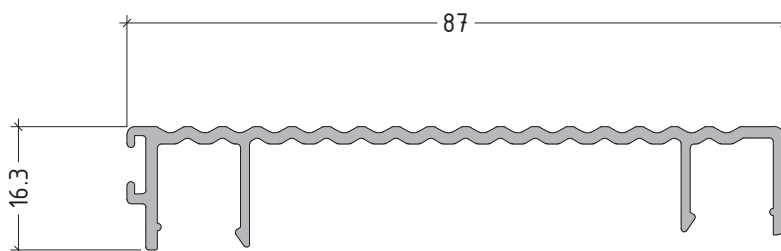
486 gr/m



E70604

Anodized cover
for bottom rail

594 gr/m



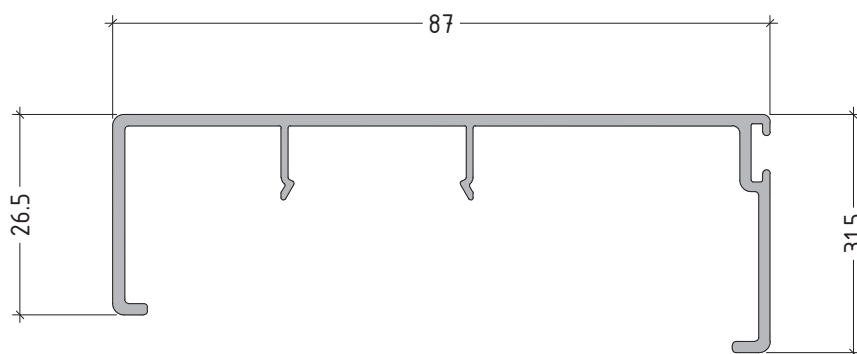
scale : 1:1

P.70-06

E70605

Anodized cover
for bottom rail

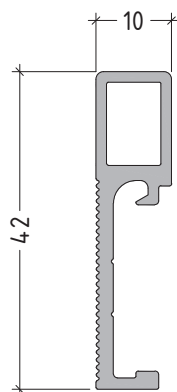
667 gr/m



E70607

Supplementary profile
for frame

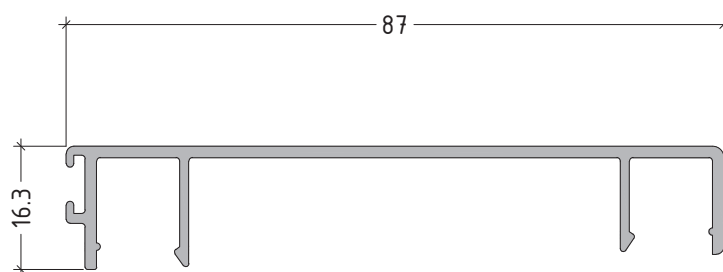
386 gr/m



E70606

Cover for jamb

569 gr/m



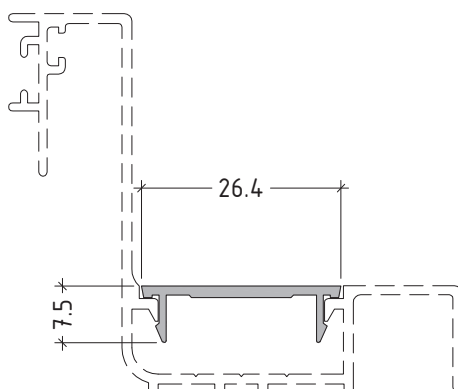
scale : 1:1

P.70-07

E19641

Cover for E70640

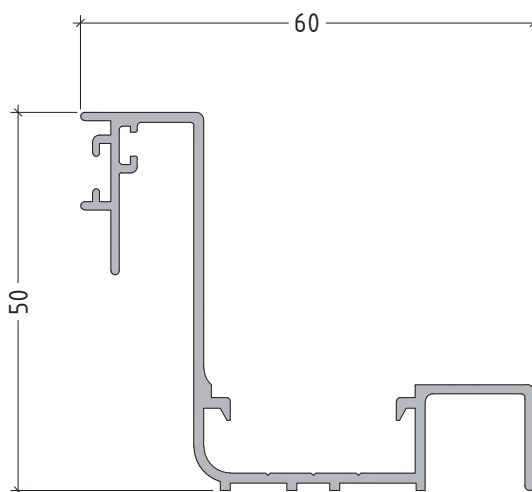
130 gr/m



E70640

Wall joining profile

597 gr/m



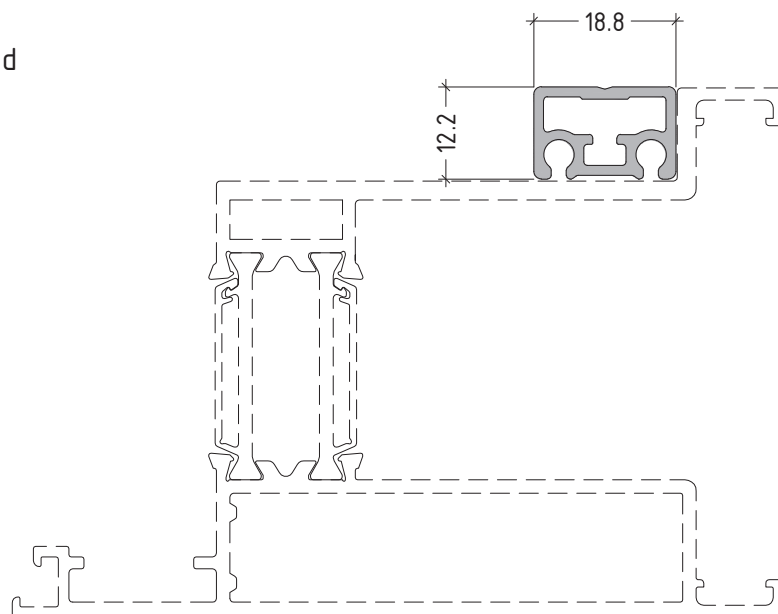
scale : 1:1

P70-08

E70651

Supplementary anodised
profile for E70204

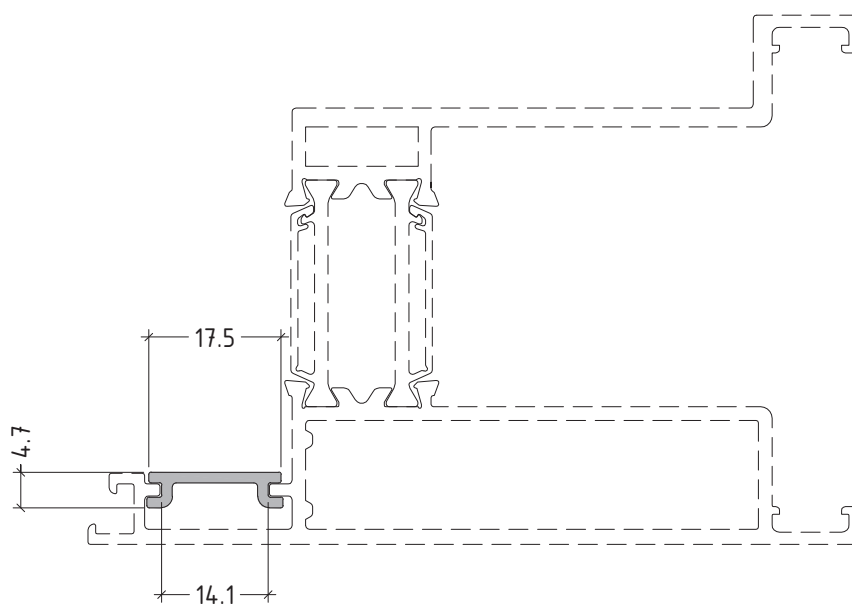
265 gr/m



E70650

Supplementary anodized
profile for E70204

103 gr/m



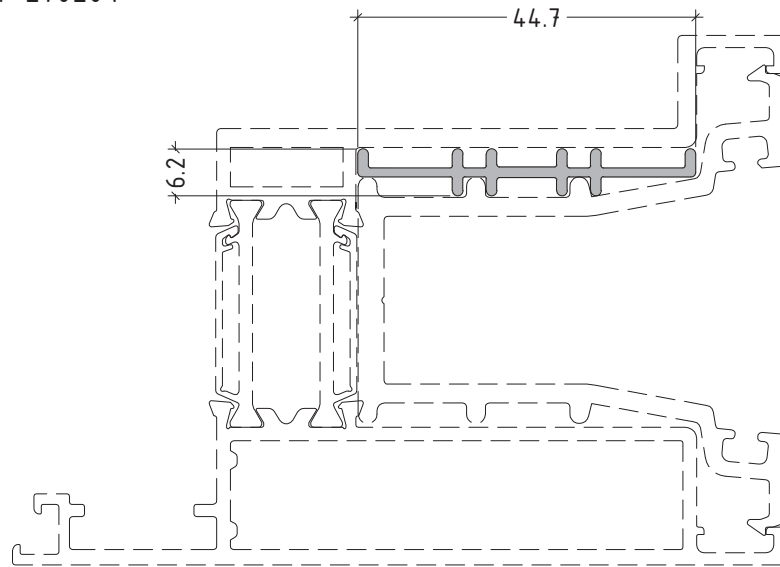
scale : 1:1

P.70-09

E70959

Anodized spacer for E70204

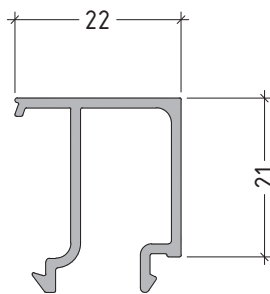
238 gr/m



E60222

Glazing bead

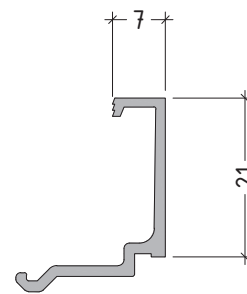
281 gr/m



E60107

Glazing bead

189 gr/m



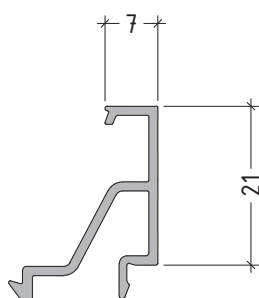
scale : 1:1

P70-10

E60207

Glazing bead

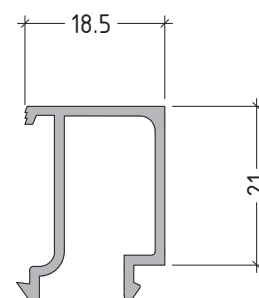
205 gr/m



E60219

Glazing bead

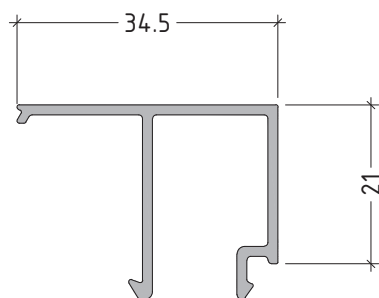
270 gr/m



E60235

Glazing bead

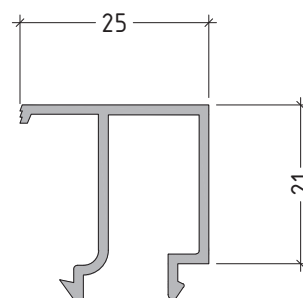
322.1 gr/m



E60225

Glazing bead

289 gr/m



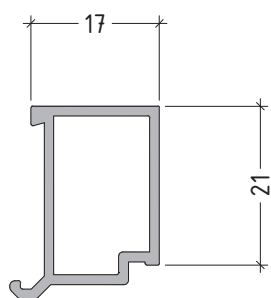
scale : 1:1

P.70-11

E60117

Glazing bead

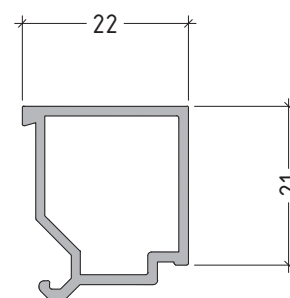
284 gr/m



E60122

Glazing bead

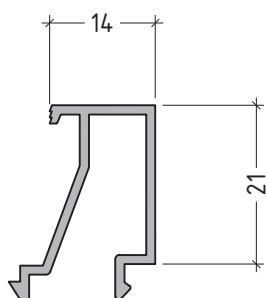
308 gr/m



E60215

Glazing bead

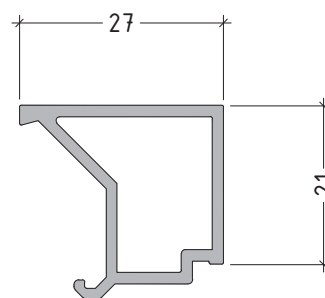
238 gr/m



E60127

Glazing bead

381 gr/m



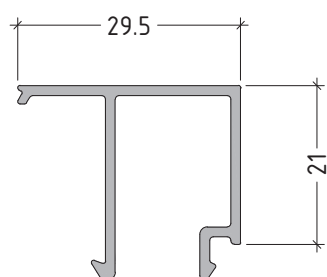
scale : 1:1

P70-12

E60230

Glazing bead

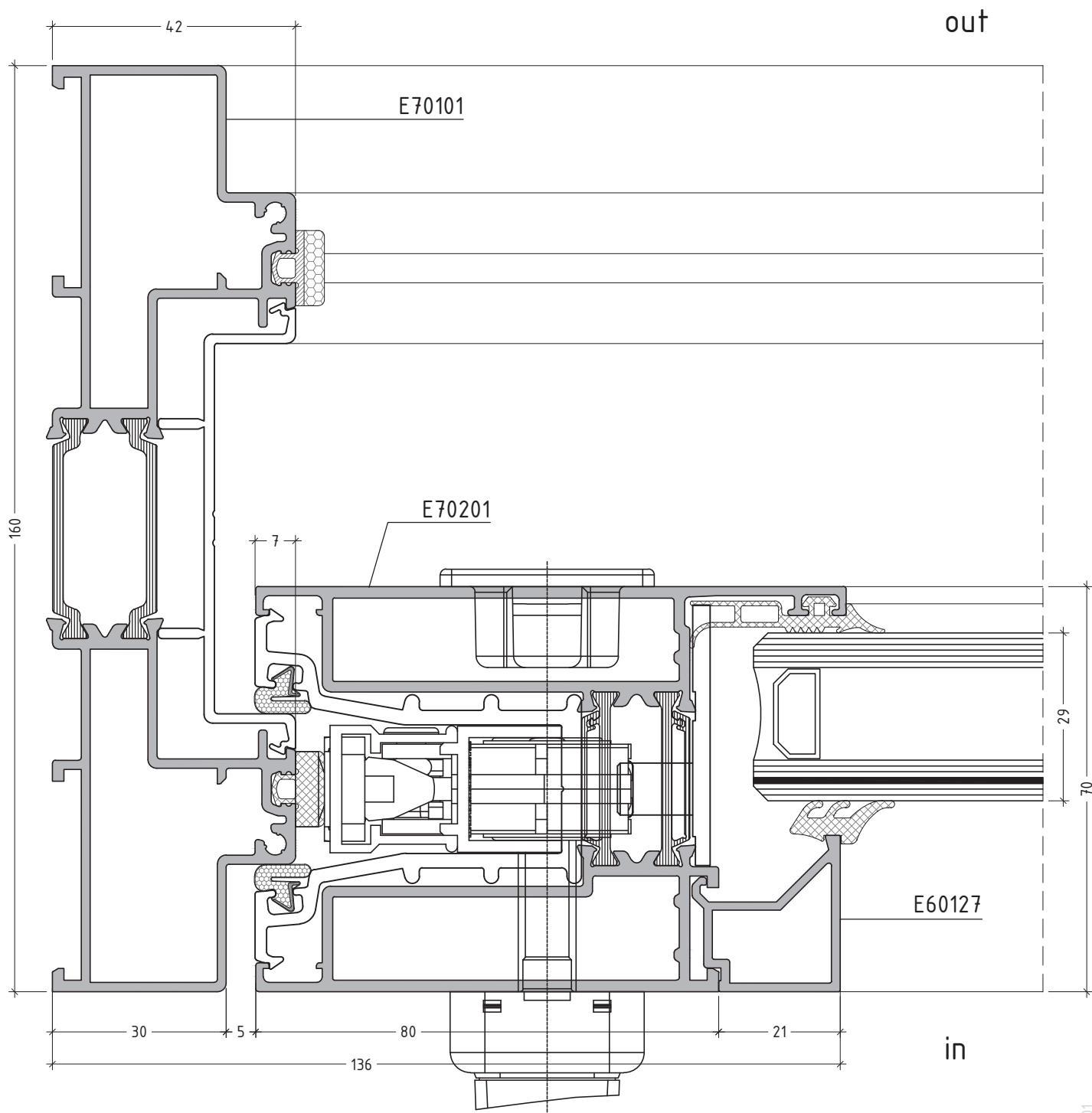
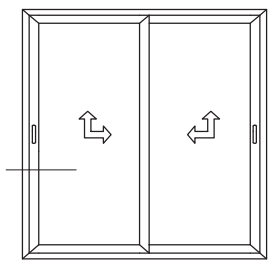
304.5 gr/m



scale : 1:1

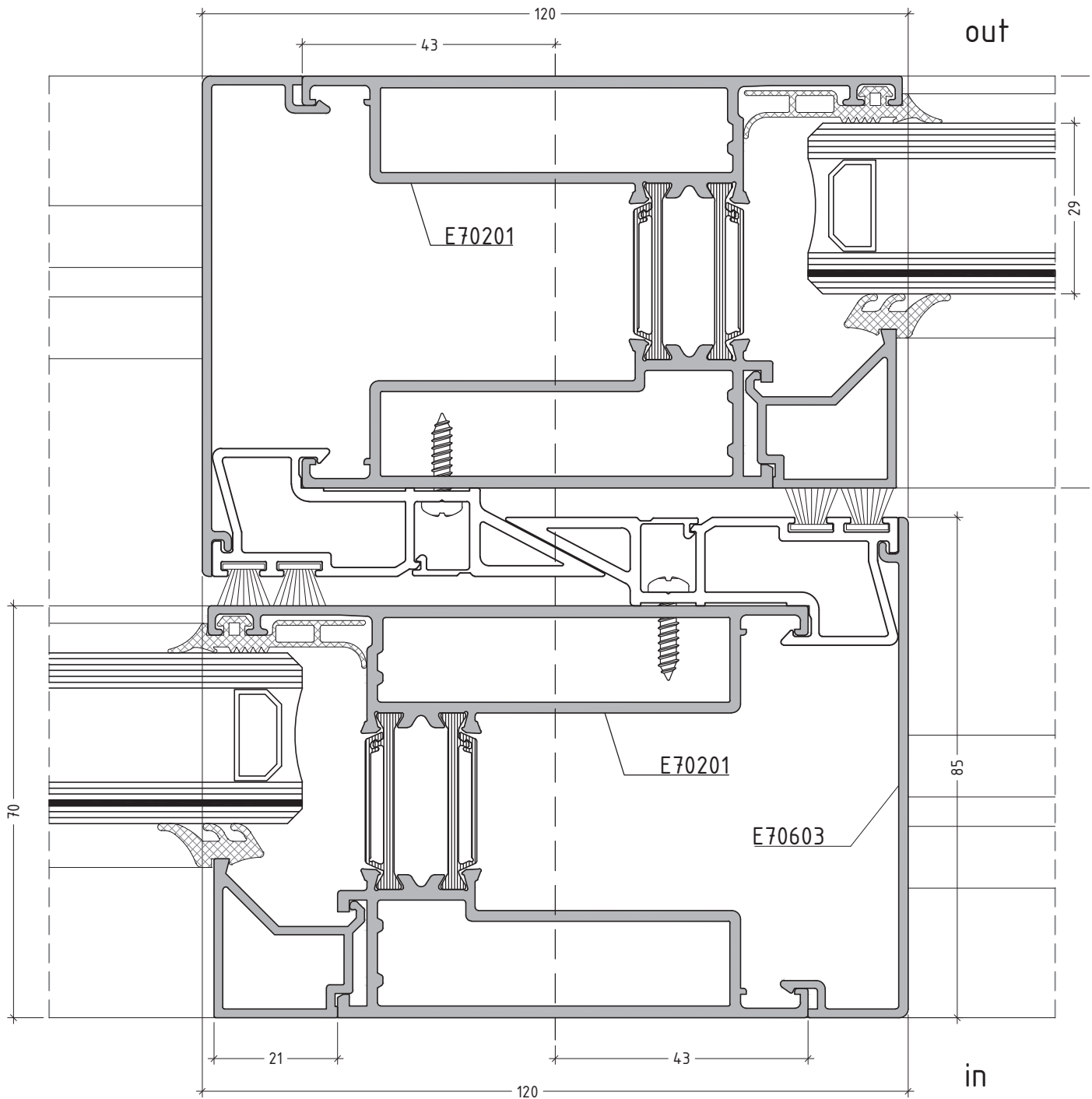
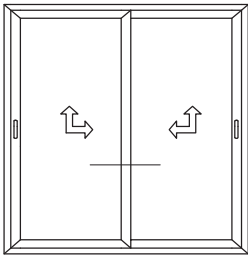
SECTIONS

SECTIONS / DETAILS



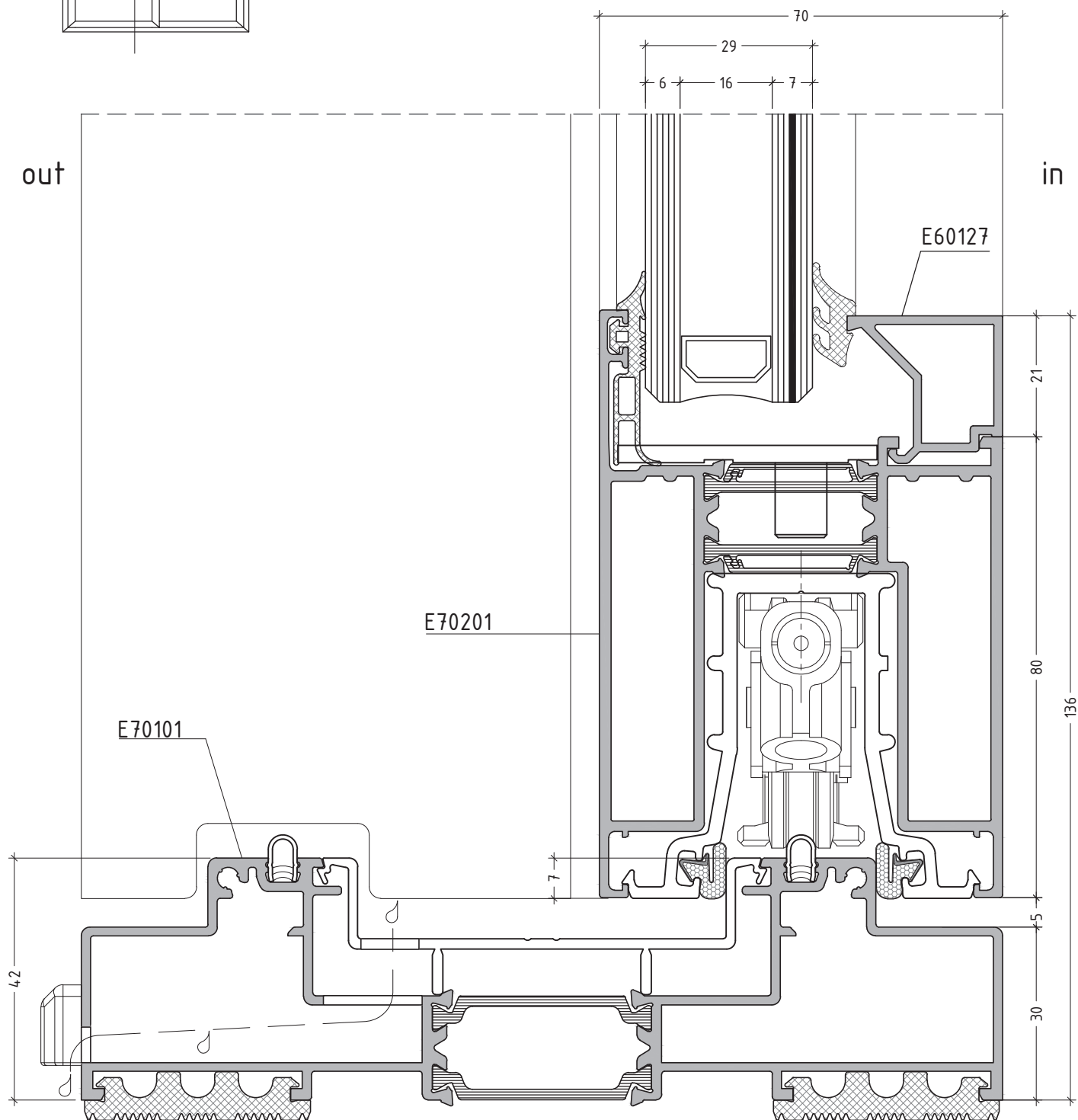
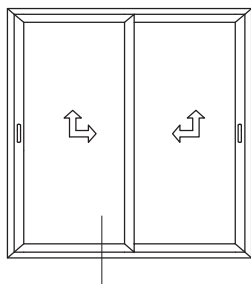
scale : 1:1

D70-01



scale : 1:1

D70-02

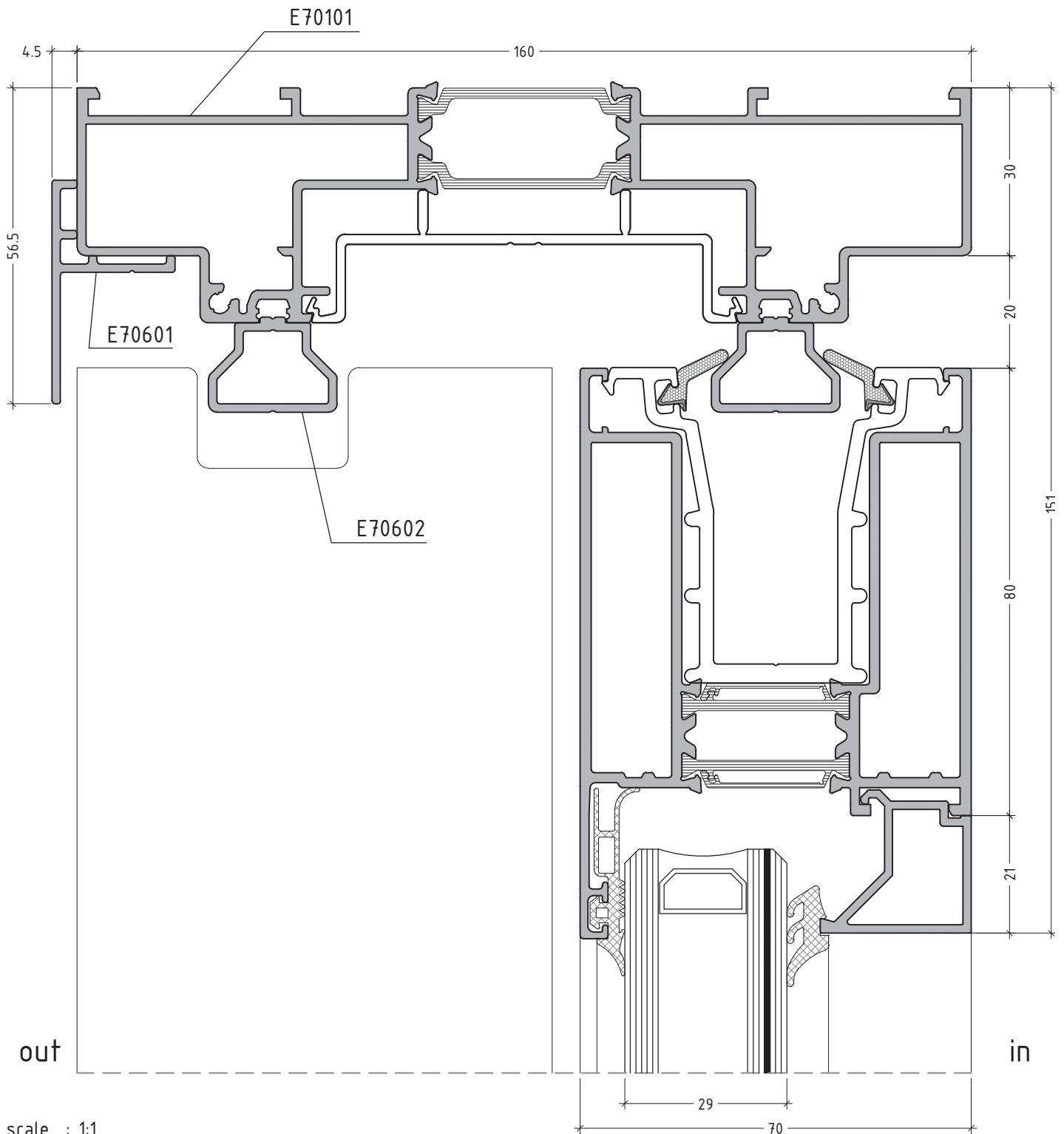
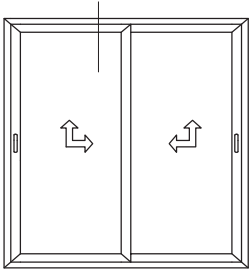


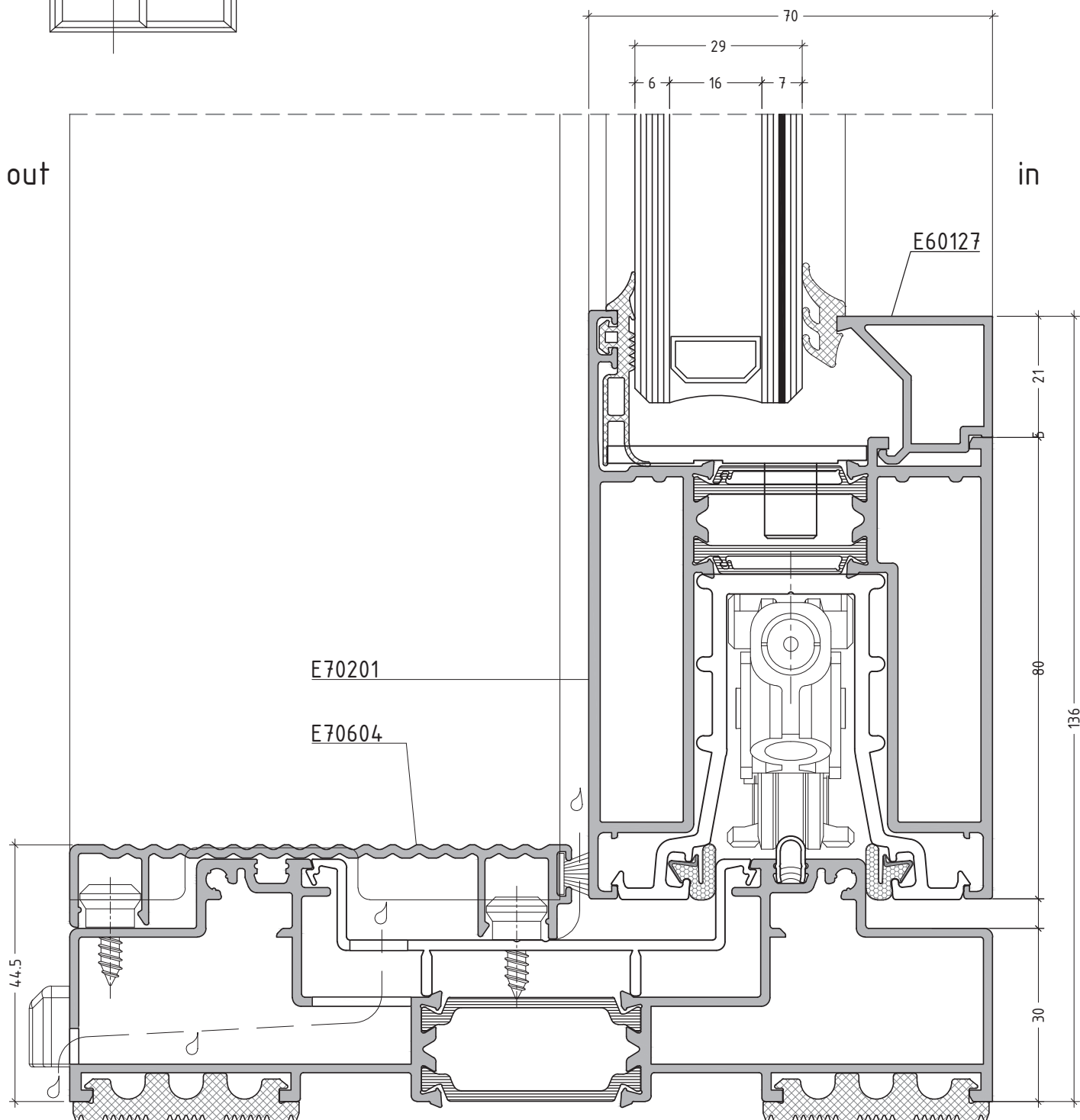
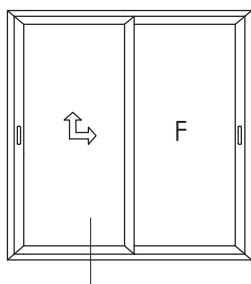
scale : 1:1

D70-03

sliding system with thermal break

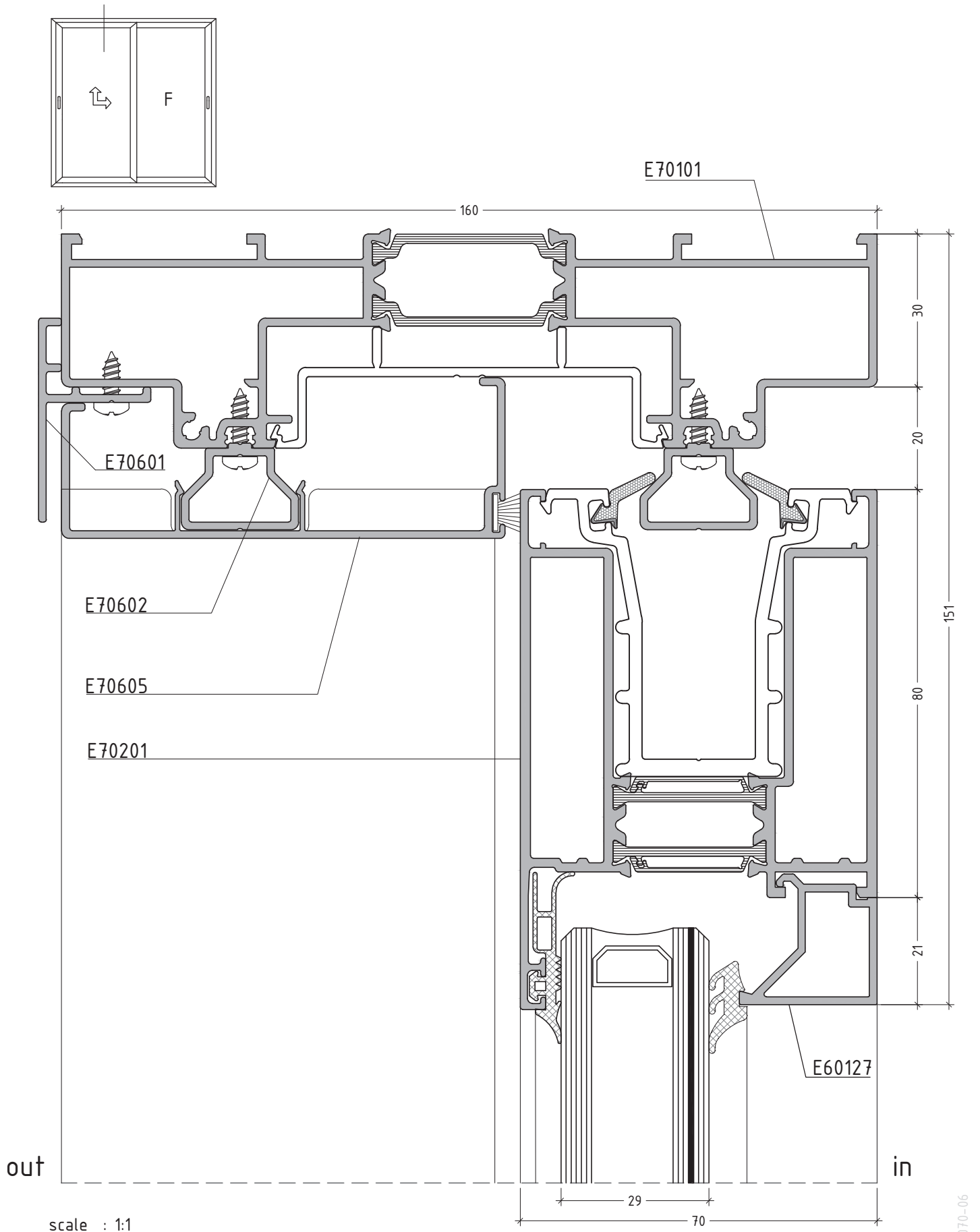
E70

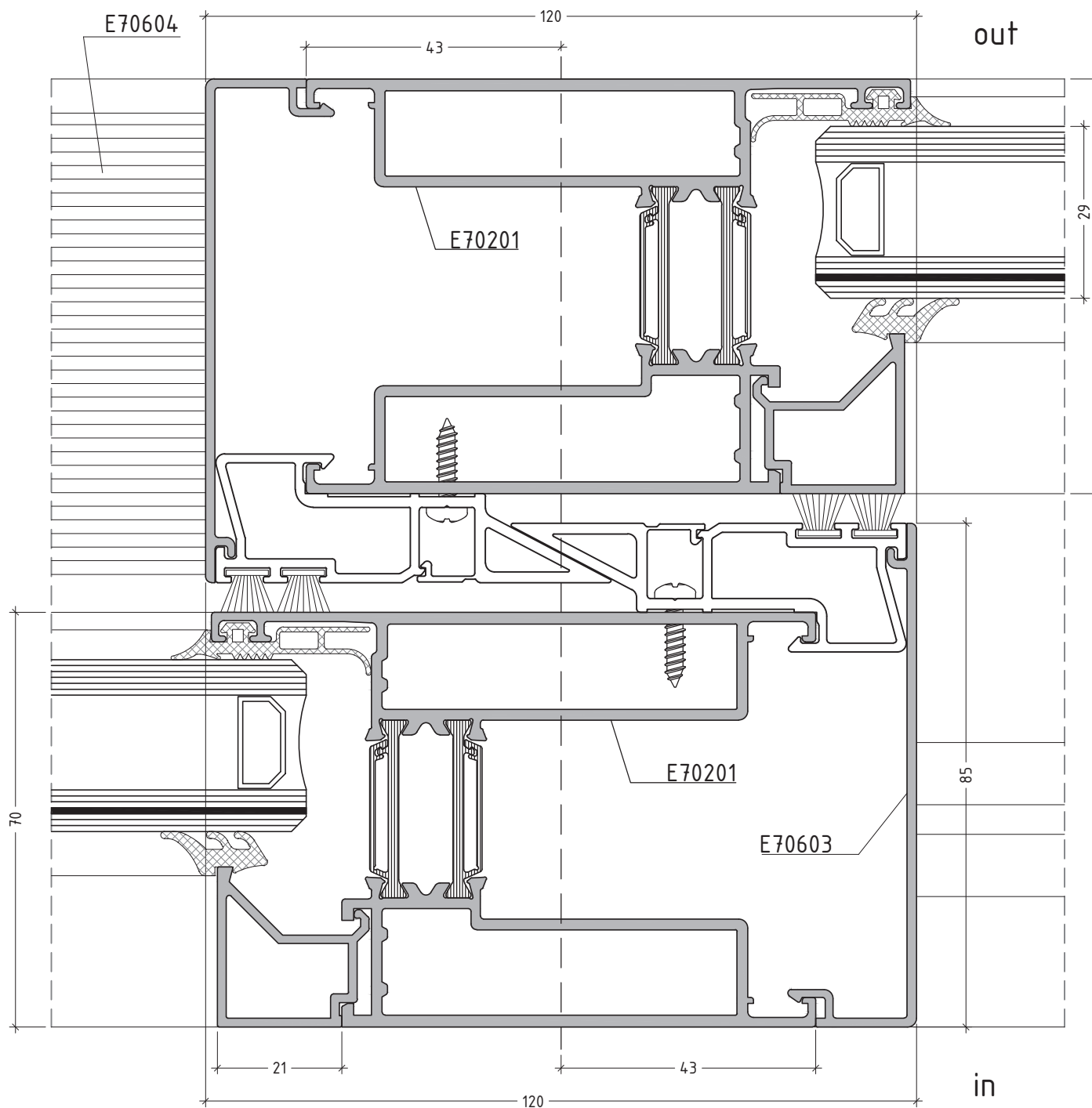
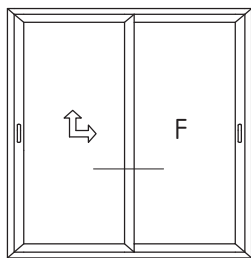




scale : 1:1

D70-05



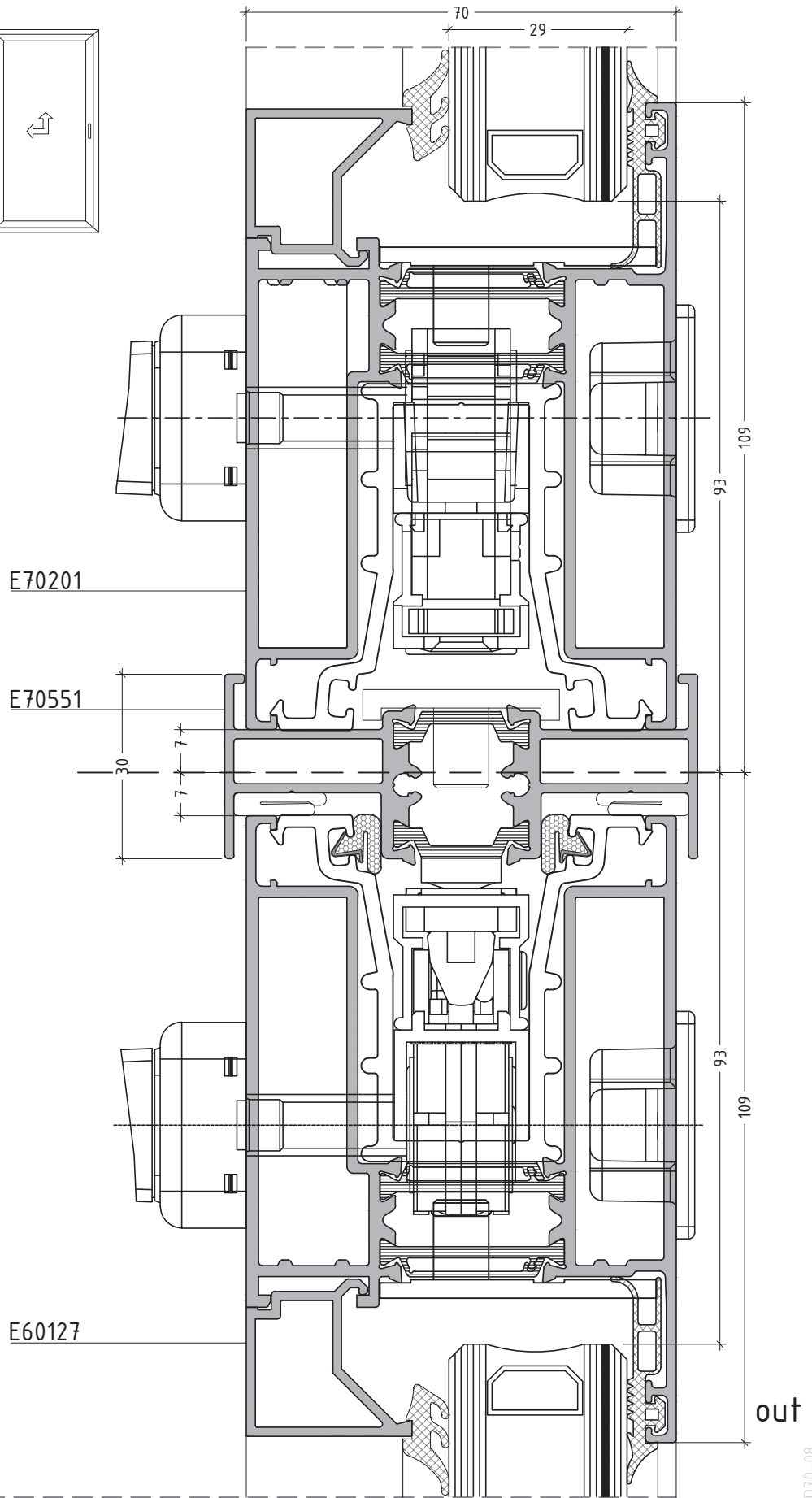
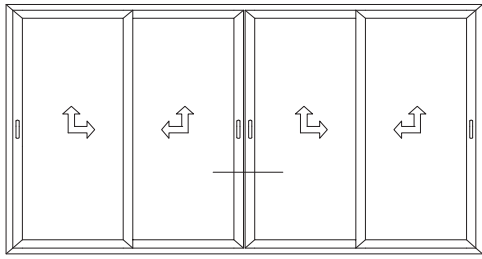


scale : 1:1

D70-07

sliding system with thermal break

E70

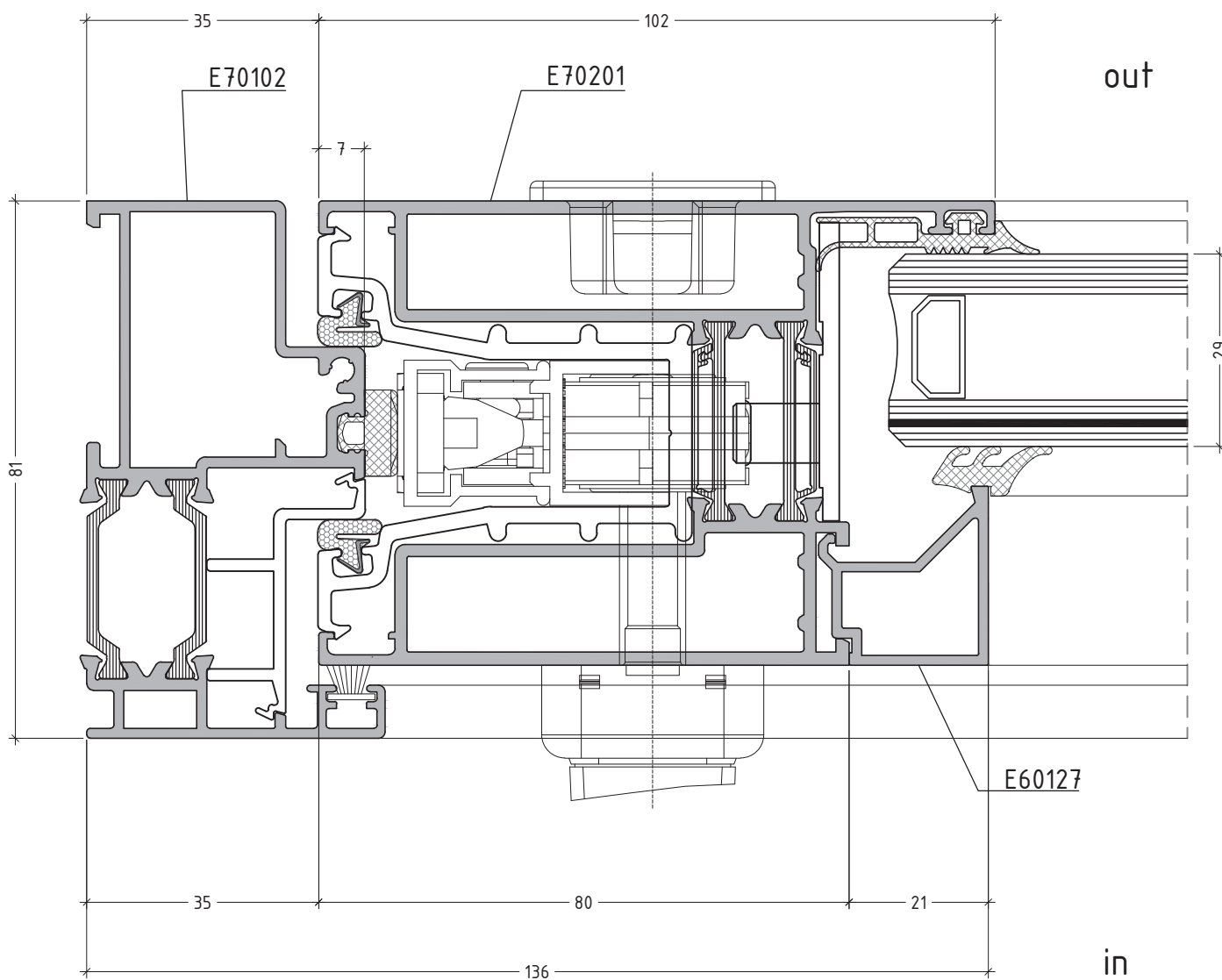
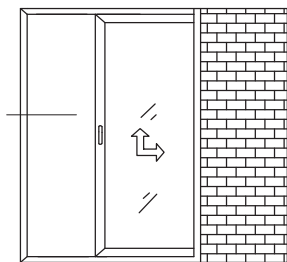


in

out

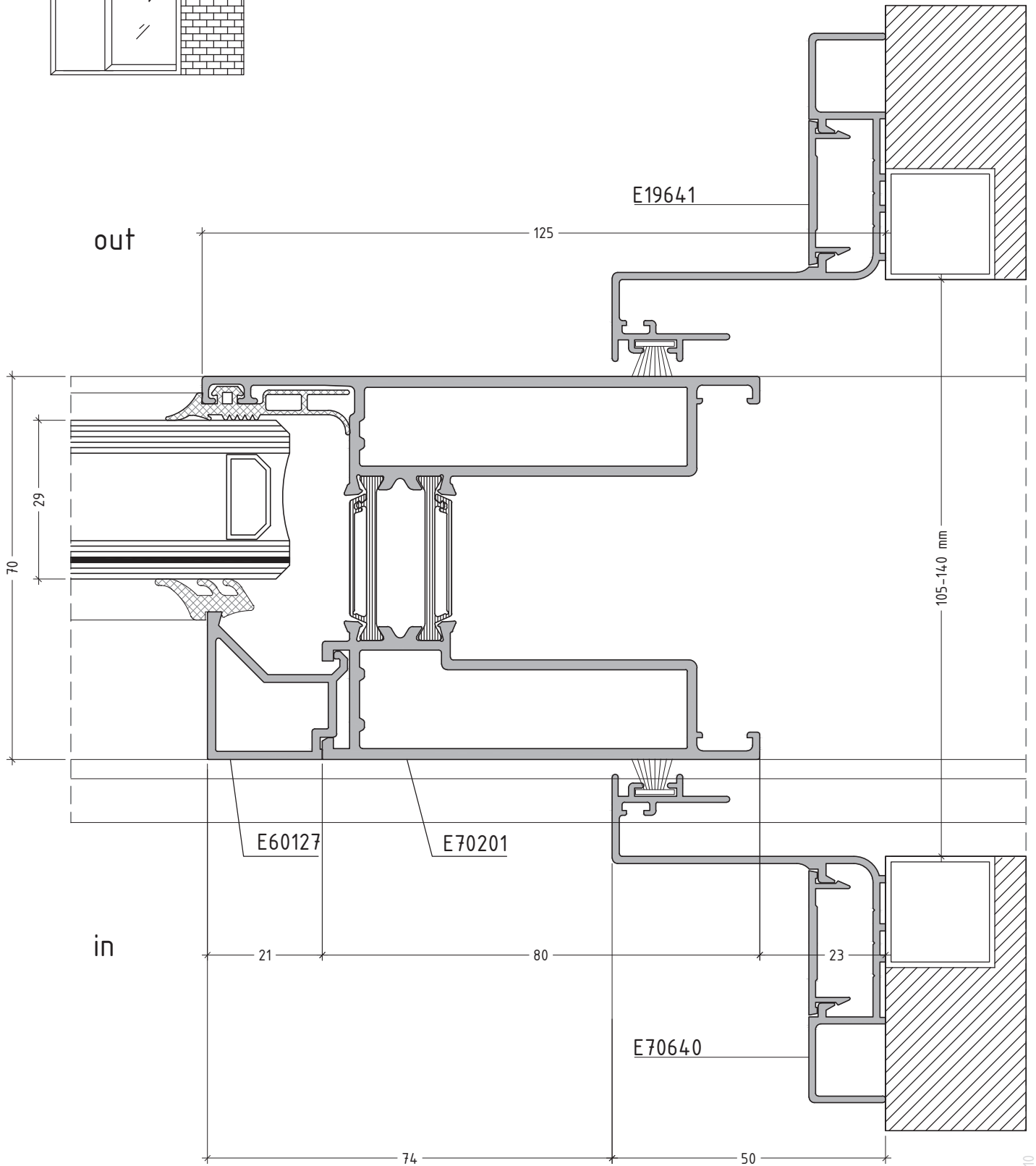
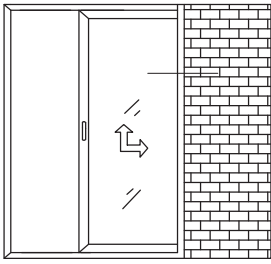
scale : 1:1 - 2:1

D70-08



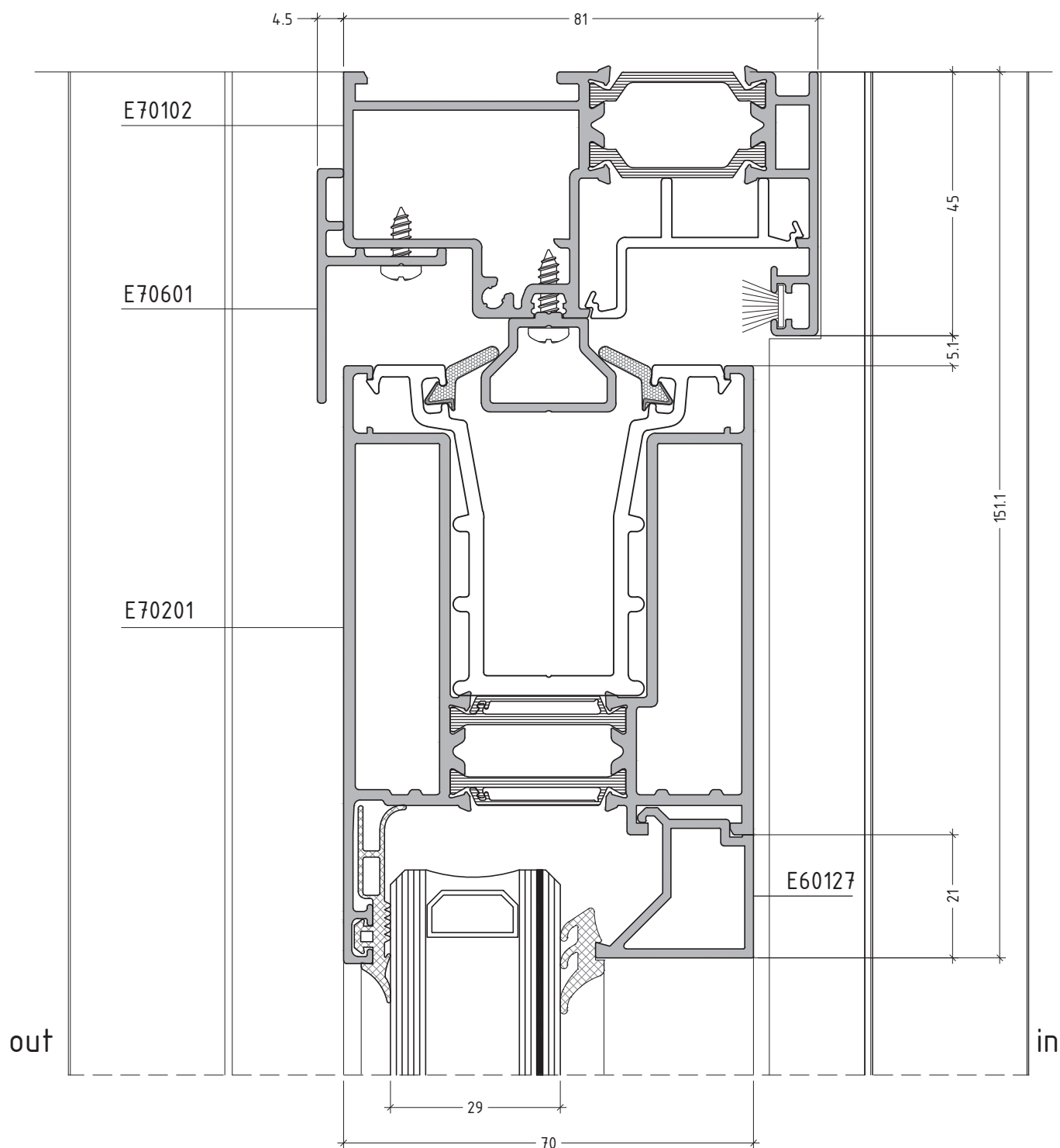
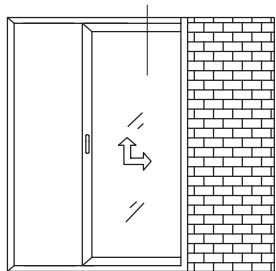
scale : 1:1

D70-09



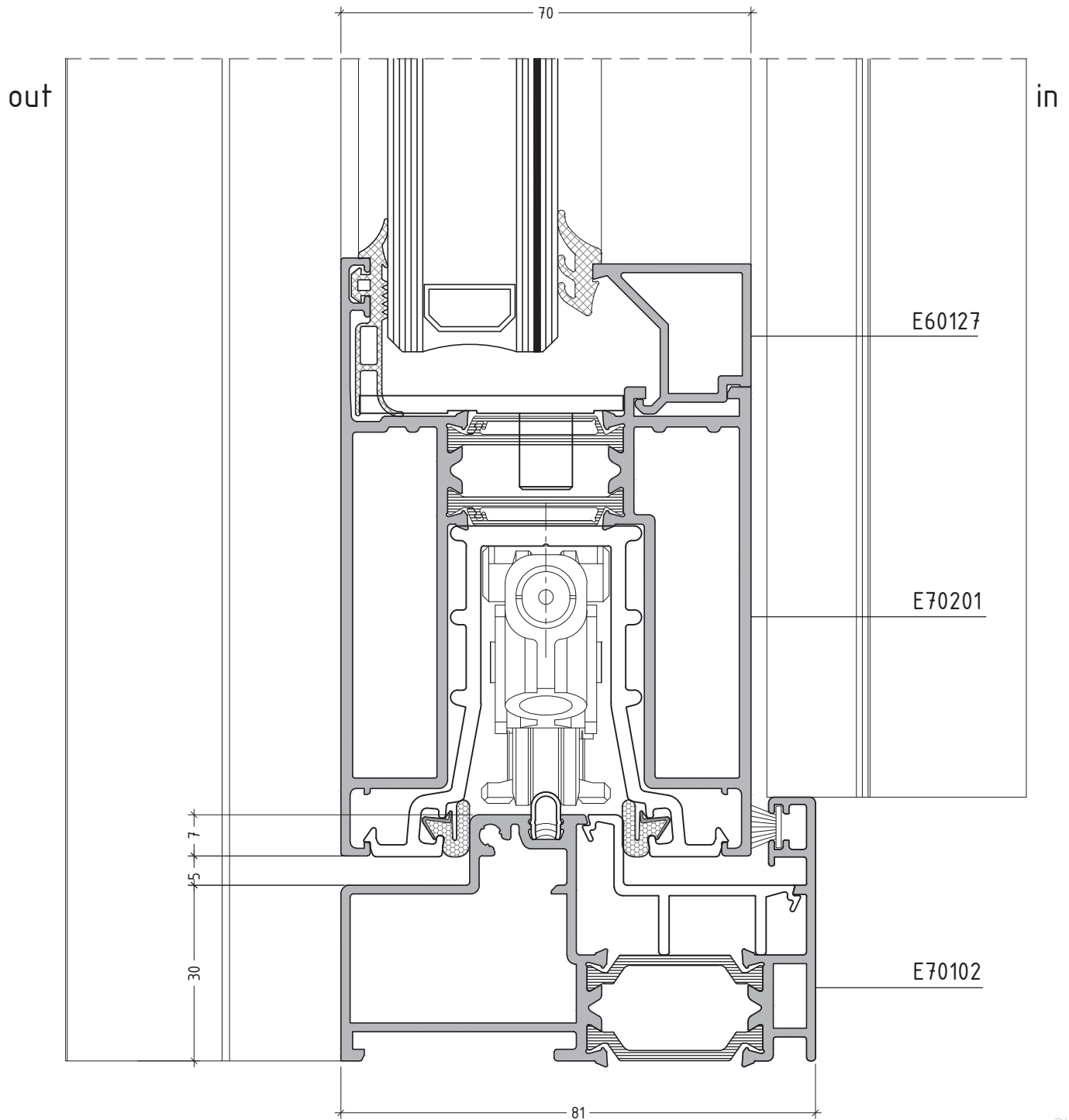
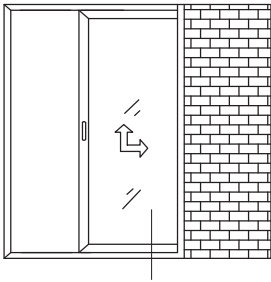
scale : 1:1

D75-10



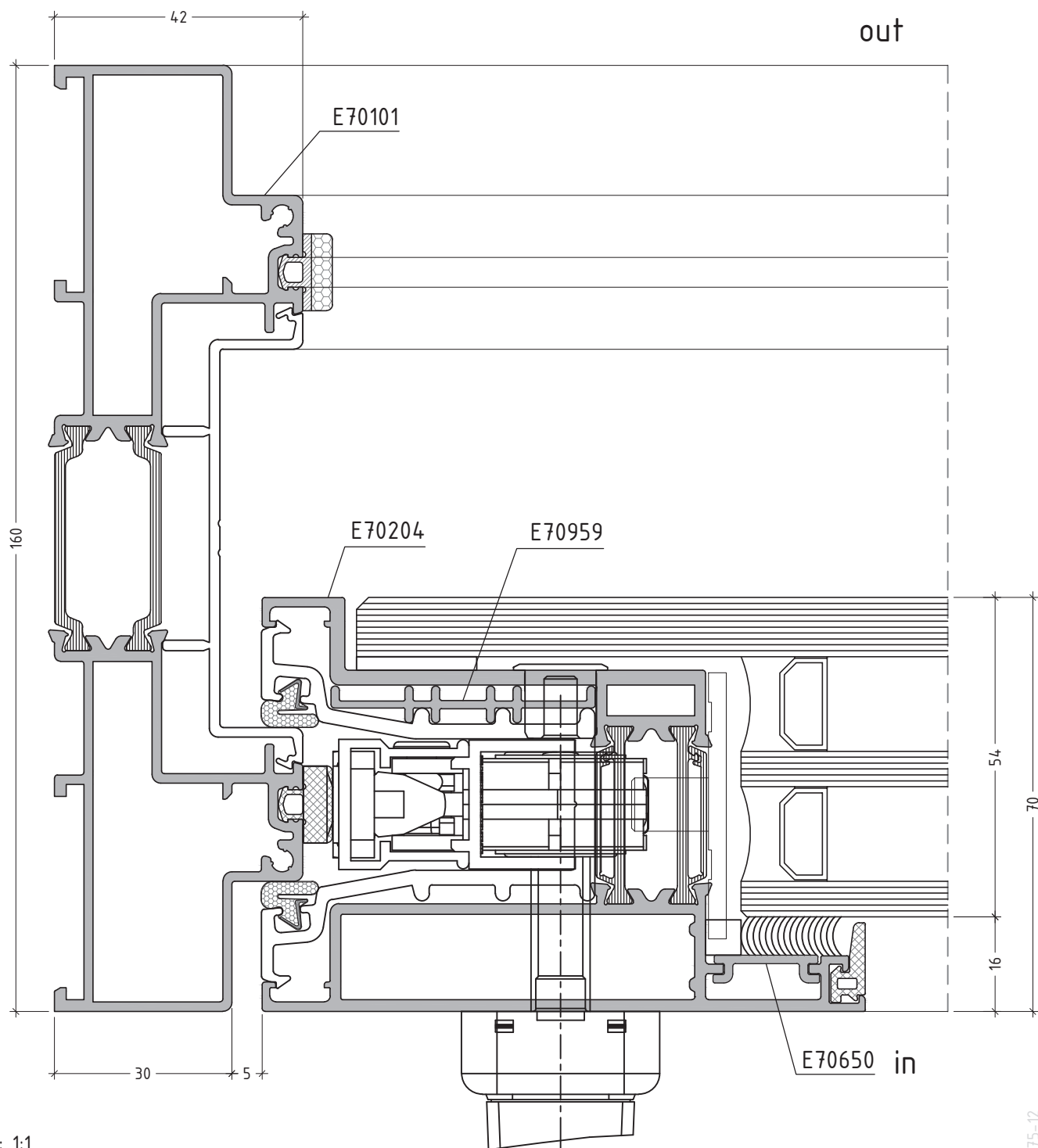
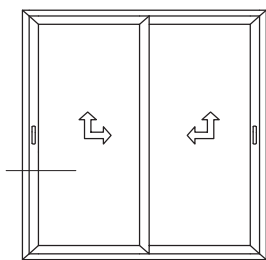
scale : 1:1

D75-11



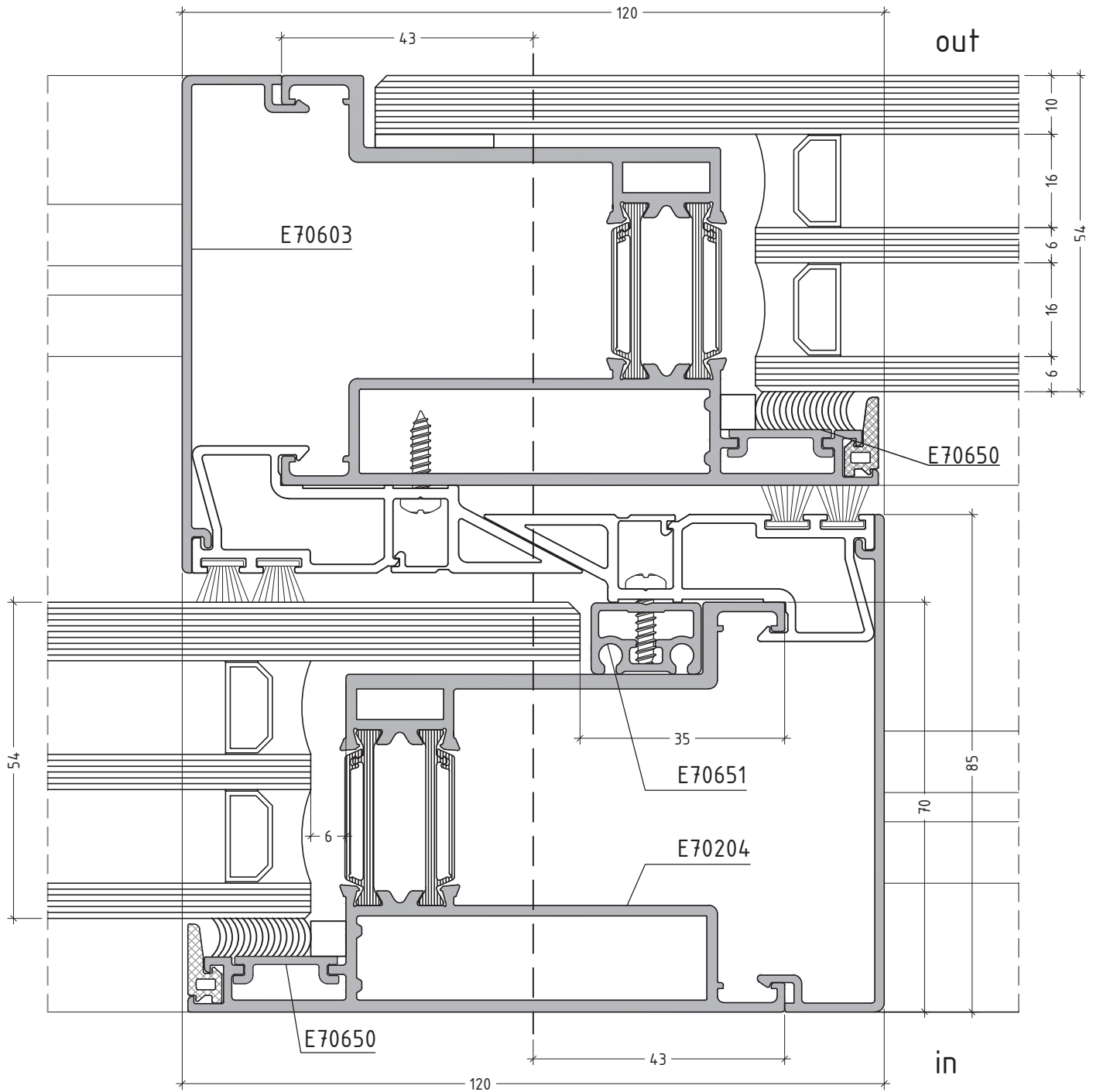
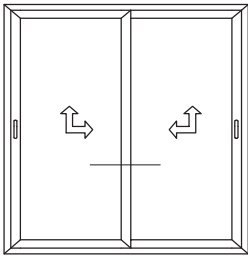
scale : 1:1

D75-12

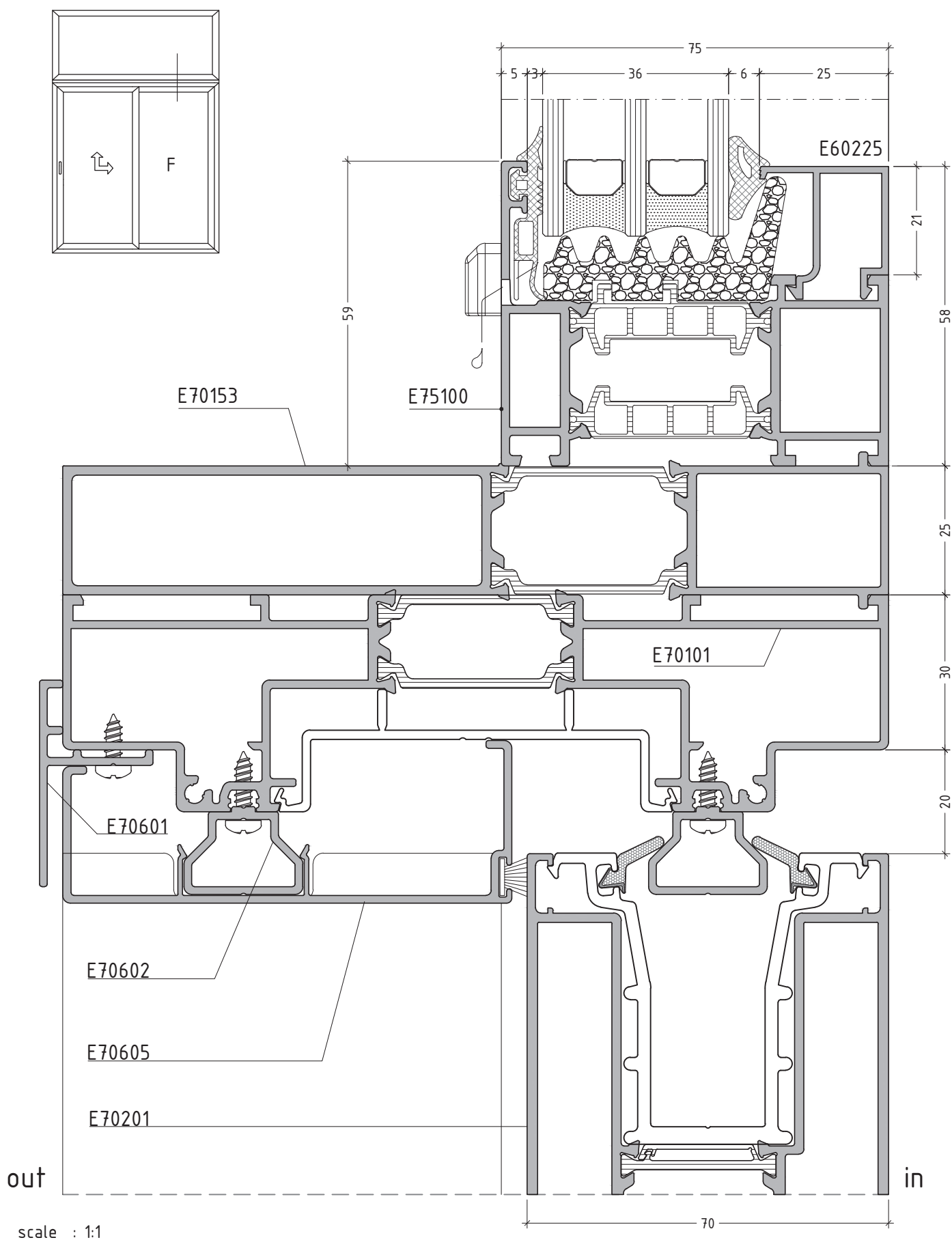


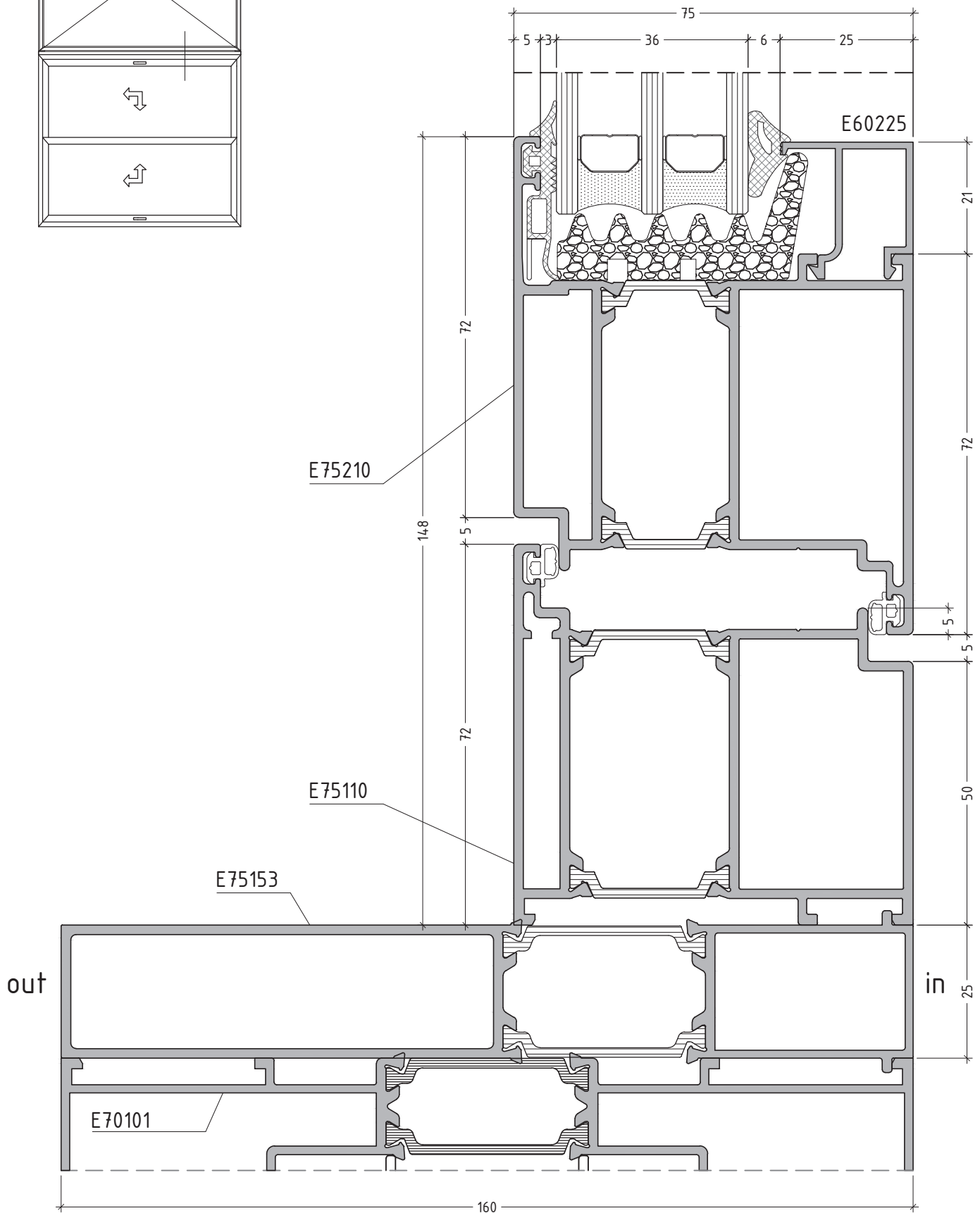
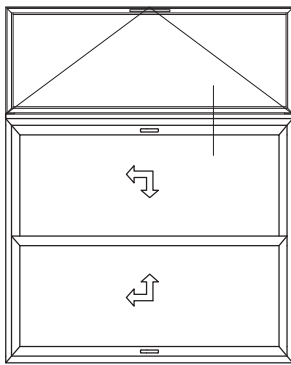
scale : 1:1

D75-12



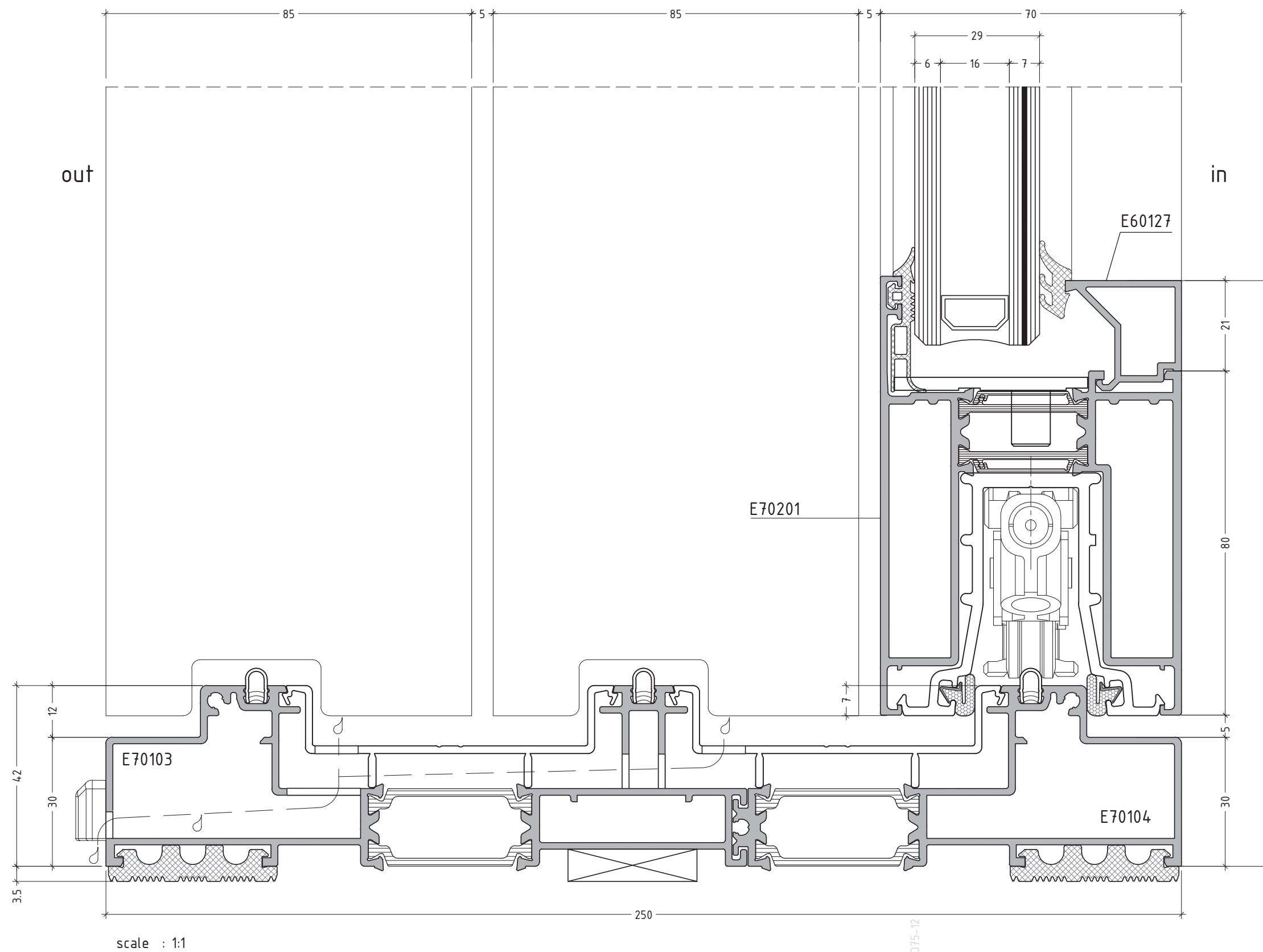
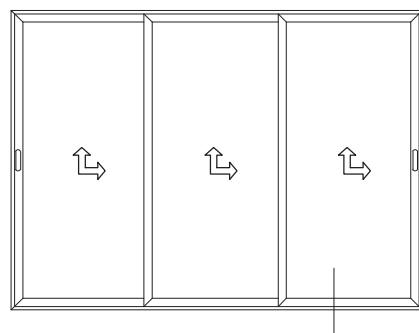
scale : 1:1



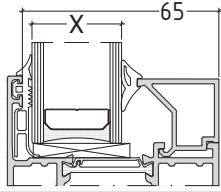

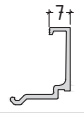
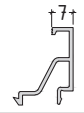

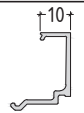
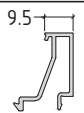
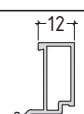
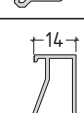
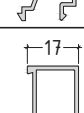
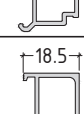
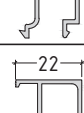

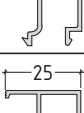
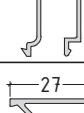
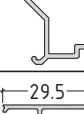
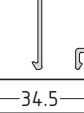


scale : 1:1

D75-12



GLAZING OPTIONS

		GLAZING OPTIONS							
external gaskets		INTERNAL GASKETS				GLAZING BEADS			
		5 - 6 mm 130176		7 - 8 mm 130177					
		5 mm 990619	6 mm 130207	7 mm 130207	8 mm 130208	1		2	
		X mm							
3 mm 130411						E60107		E60207	
3 mm 130402						old code E1114		old code E1144	
130411		50	49	48	47				
130402						E60110		E60210	
130411		47	46	45	44				
130402						E60112			
130411		45	44	43	42				
130402						old code E5317			
130411		43	42	41	40	E60215			
130402						old code E5324			
130411		40	39	38	37	E60117			
130402						old code E5311			
130411		38	37	36	35	E60219			
130402						old code E5304			
130411		35	34	33	32	E60222		E60122	
130402						old code E1113		old code E5312	
130411		32	31	30	29	E60225			
130402						old code E5307			
130411		30	29	28	27	E60127			
130402						old code E5325			
130411		27	26	25	24	E60230			
130402									
130411		22	21	20	19	E60235			
130402									

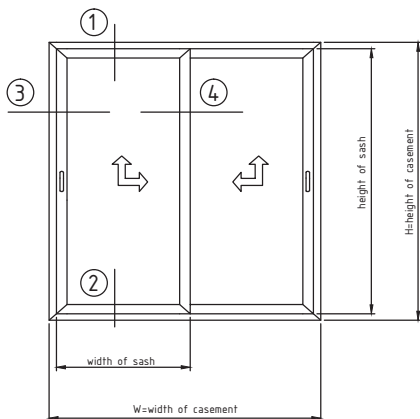
ETEM is stopping the production and distribution of profiles E5397, E5380, E5305 and E5393. Please see the revised glazing scheme above!

Note:
Tolerance in dimension chain $\pm 0.5\text{mm}$

CUTTING LISTS

DOUBLE LEAF WITH LIFT & SLIDE MECHANISM

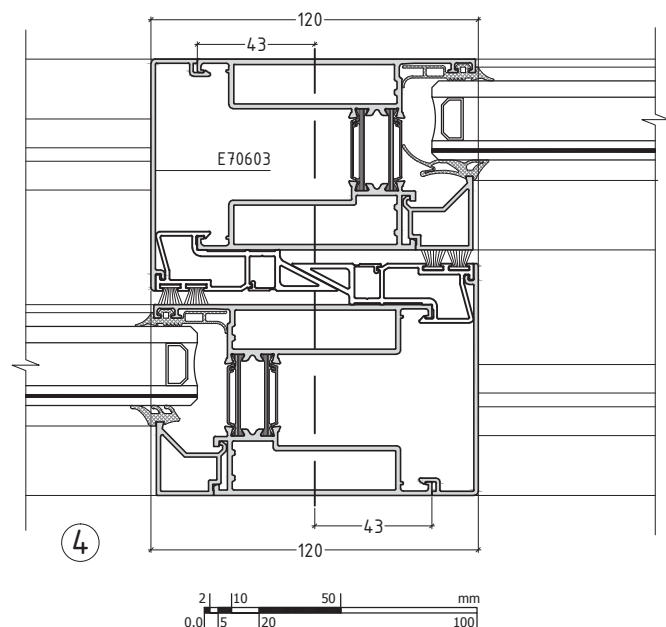
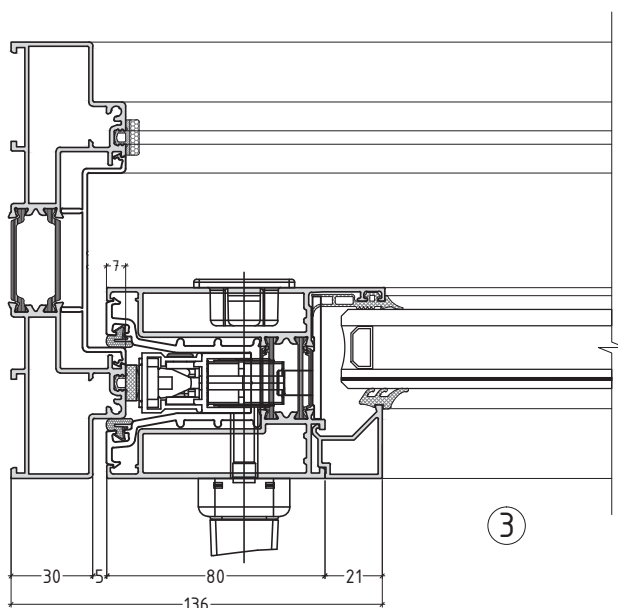
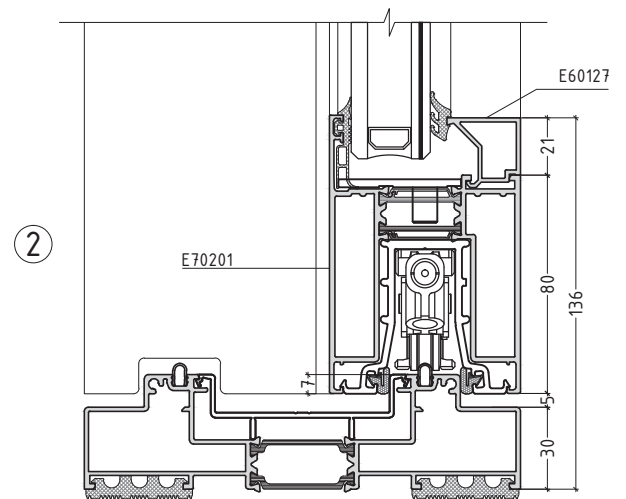
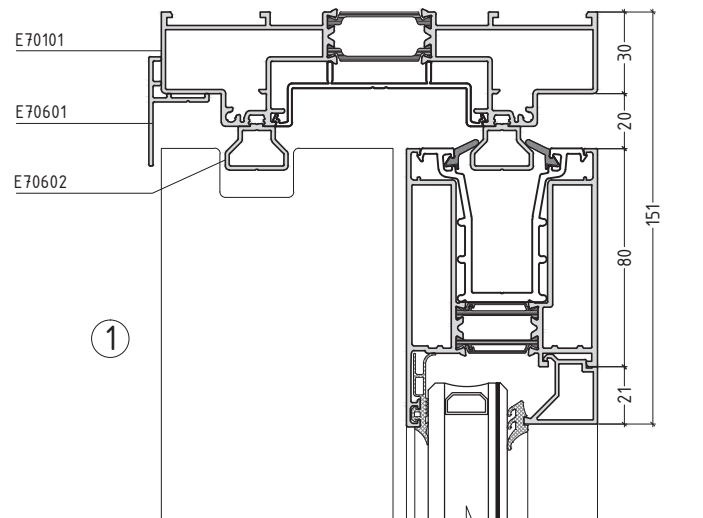
T70-01

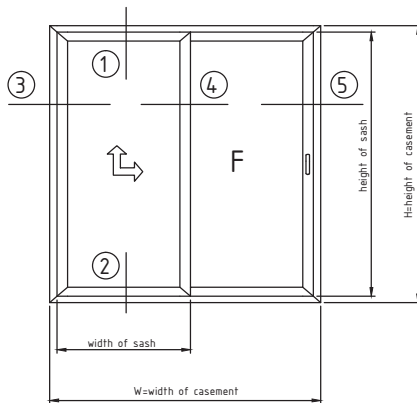


cutting lengths	
width of rail E70101	= W
height of frame E70101	= H
width E70601	= W
width E70602	= W - 85
width of sash E70201	= $\frac{(W+16)}{2}$
height of sash E70201	= H - 85
inter. profile height E70603	= H - 85

dimension in millimeters

all measurements are taken from the external side of the frame

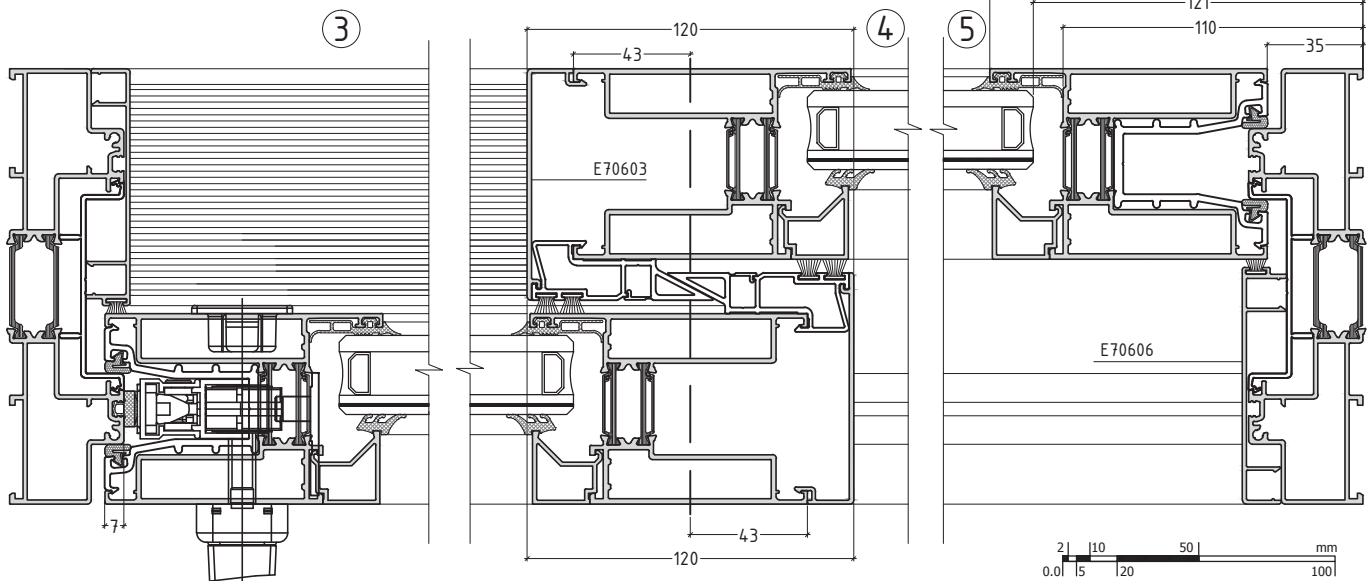
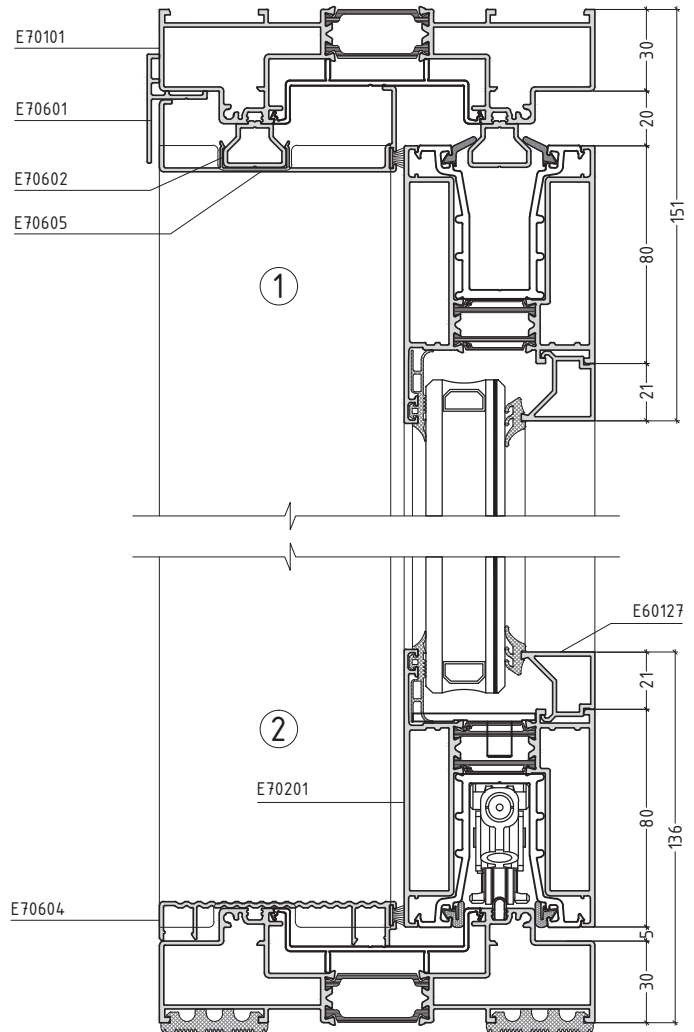




cutting lengths

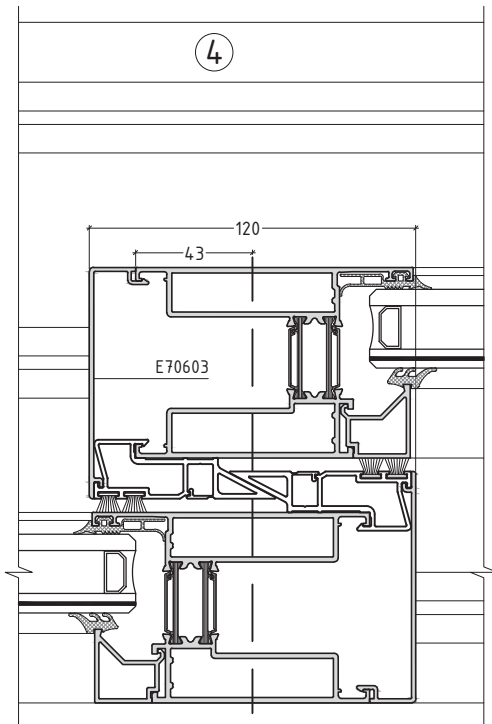
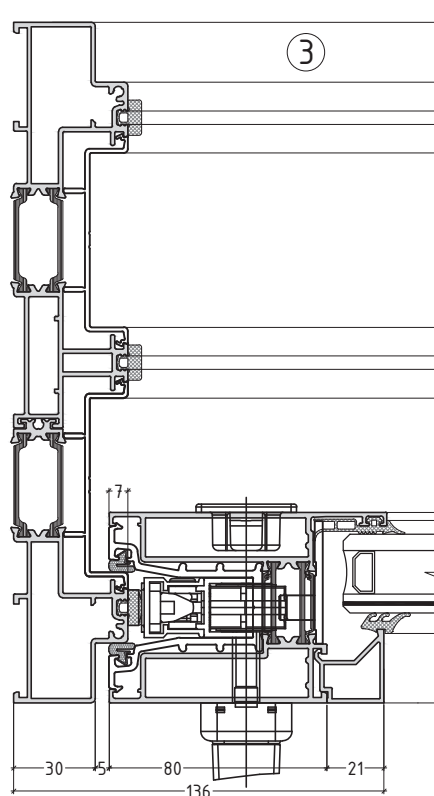
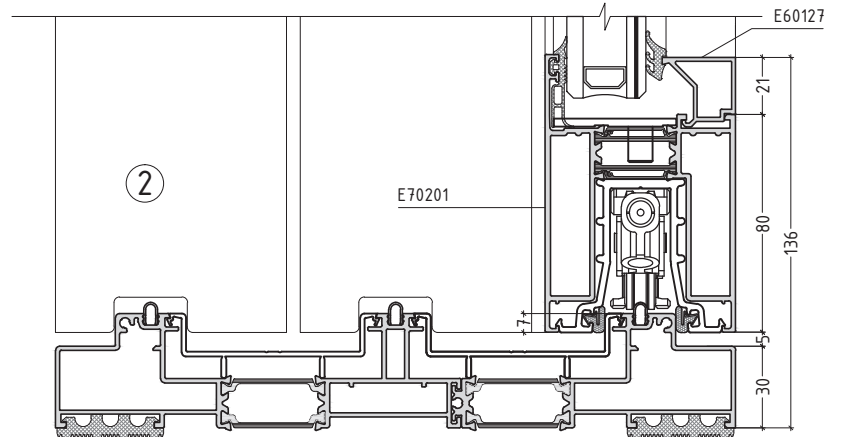
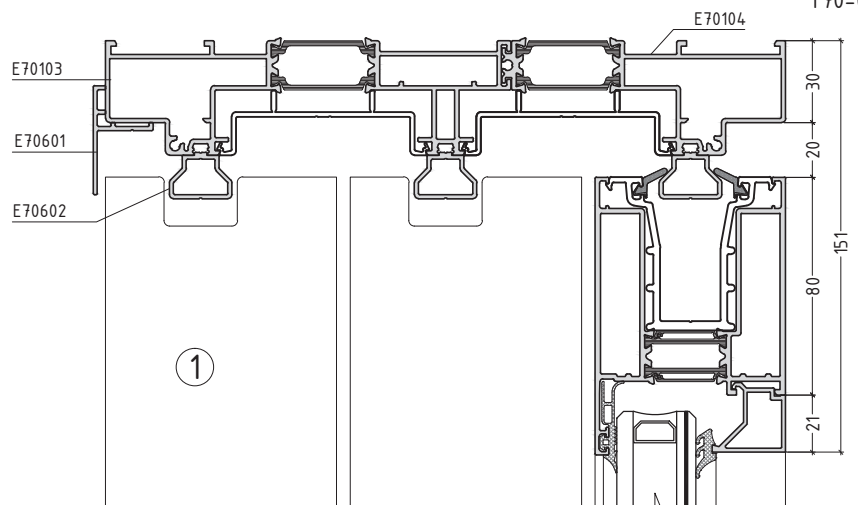
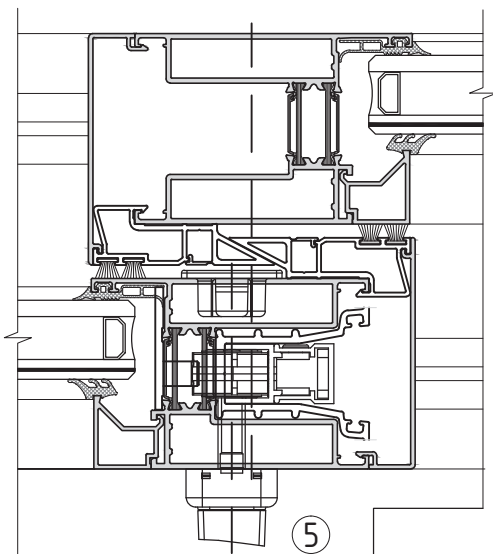
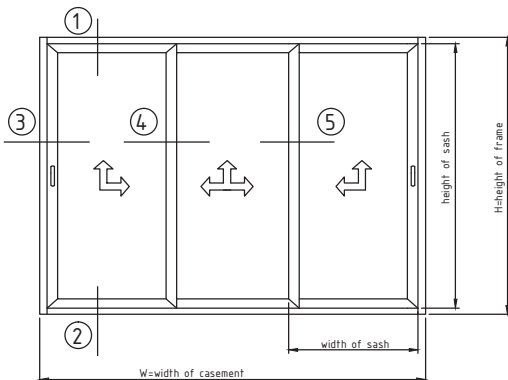
width of rail E70101	= W
height of frame E70101	= H
height E70601	= W
height E70602	= W - 85
width of sash E70201	= $\frac{W+16}{2}$
height of sash E70201	= H - 85
inter. profile height E70603	= H - 85
E70606	= H - 105
E70604	= $\frac{W}{2} - 91$
E70605	= $\frac{W}{2} - 91$

dimension in millimeters
all measurements are taken from the external side of the frame



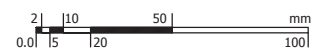
THREE LEAF WITH LIFT & SLIDE MECHANISM

T70-04



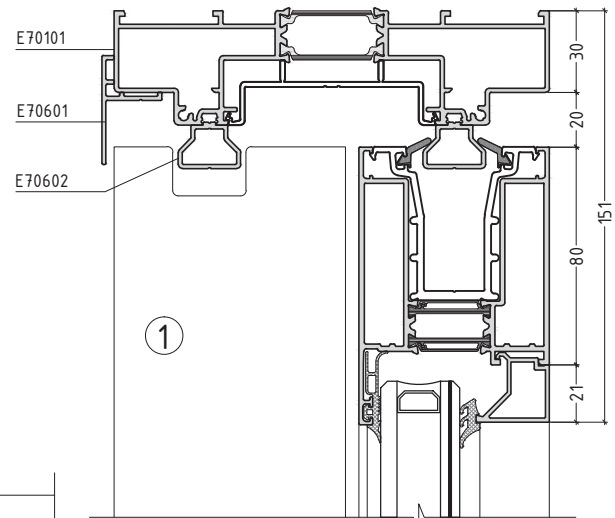
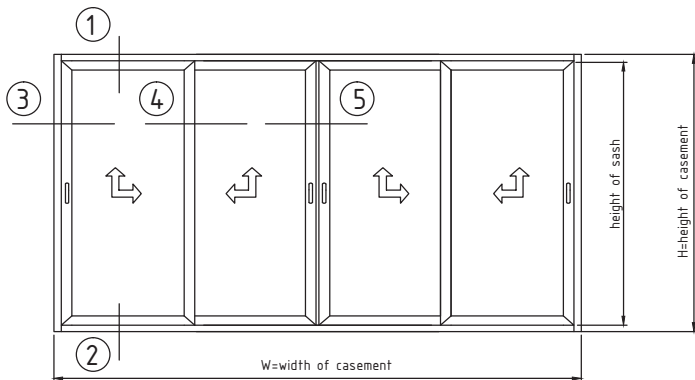
cutting lengths	
width of rail E70101	= W
height of frame E70101	= H
height E70601	= W
height E70602	= W - 85
width of sash E70201	= $\frac{W+102}{3}$
height of sash E70201	= H - 85
inter. profile height E70603	= H - 85

dimension in millimeters
all measurements are taken from the external side of the frame



FOUR LEAF WITH LIFT & SLIDE MECHANISM

T70-05

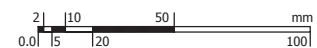
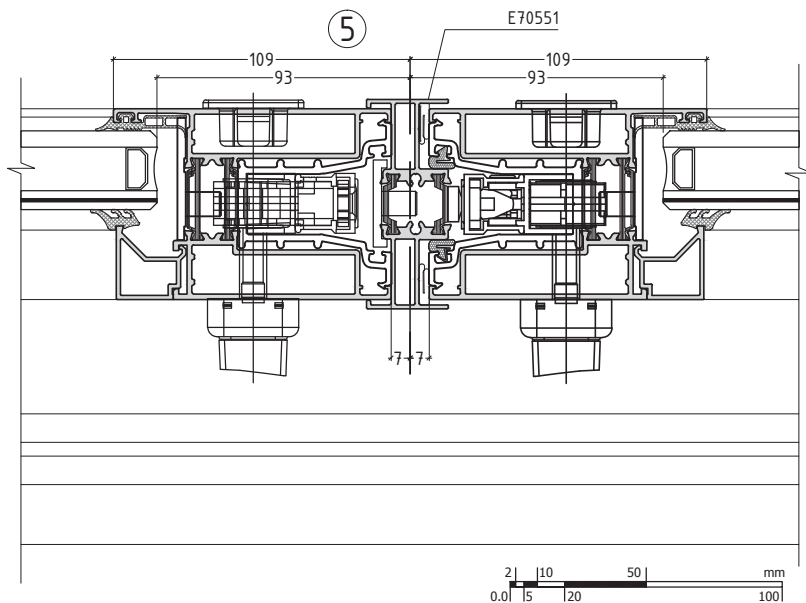
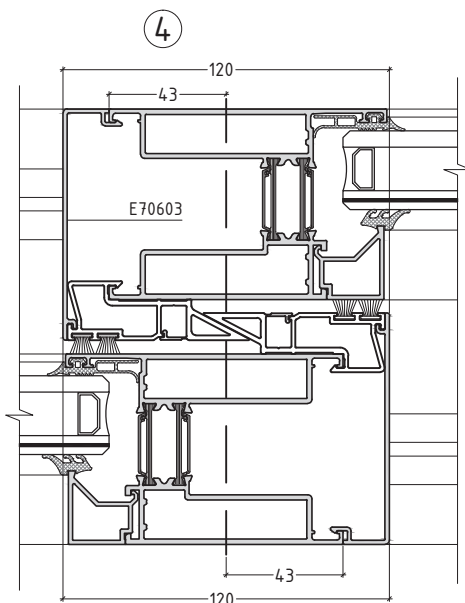
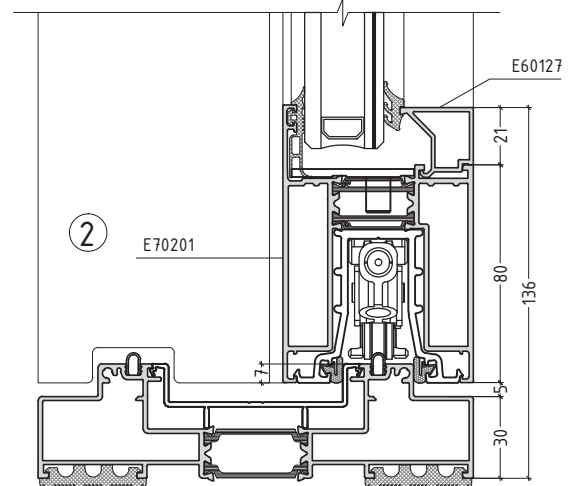
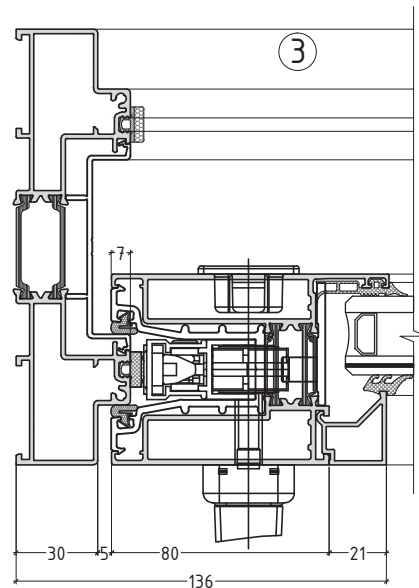


cutting lengths

width of rail E70101	= W
height of frame E70101	= H
height E70601	= W
height E70602	= W - 85
width of sash E70201	= $\frac{(W+88)}{4}$
height of sash E70201	= H - 85
sup. profile height E70551	= H - 128
inter. profile height E70603	= H - 85

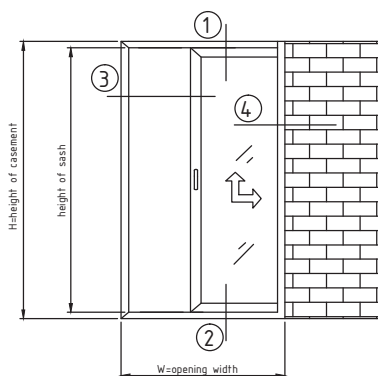
dimension in millimeters

all measurements are taken from the external side of the frame

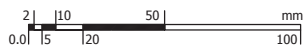
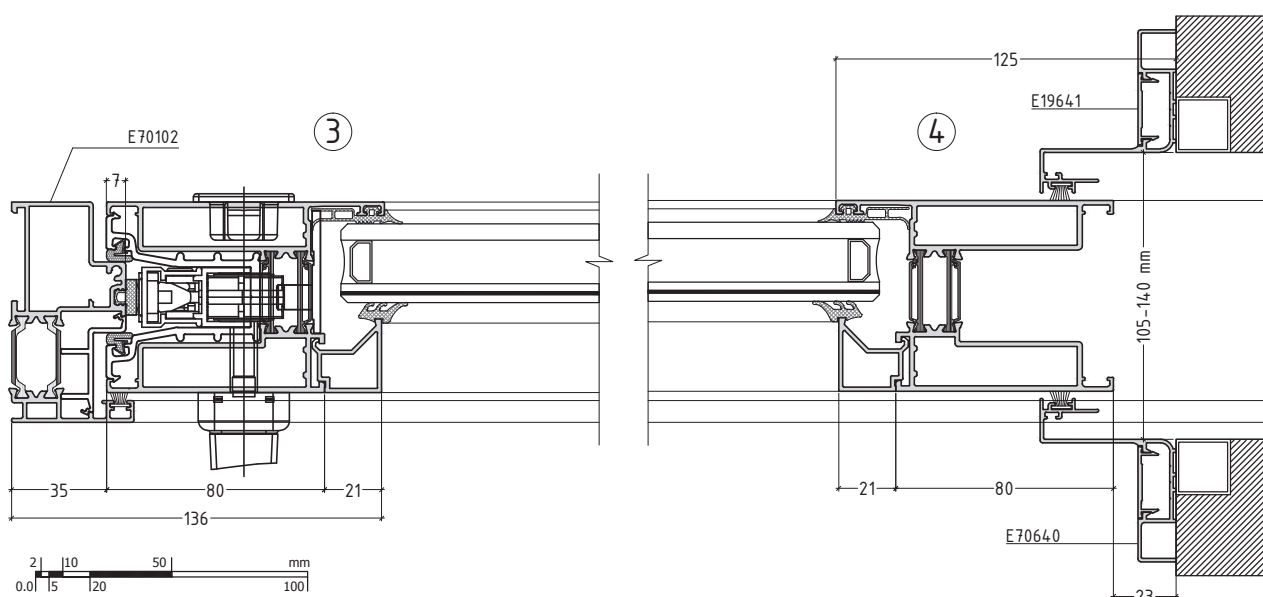
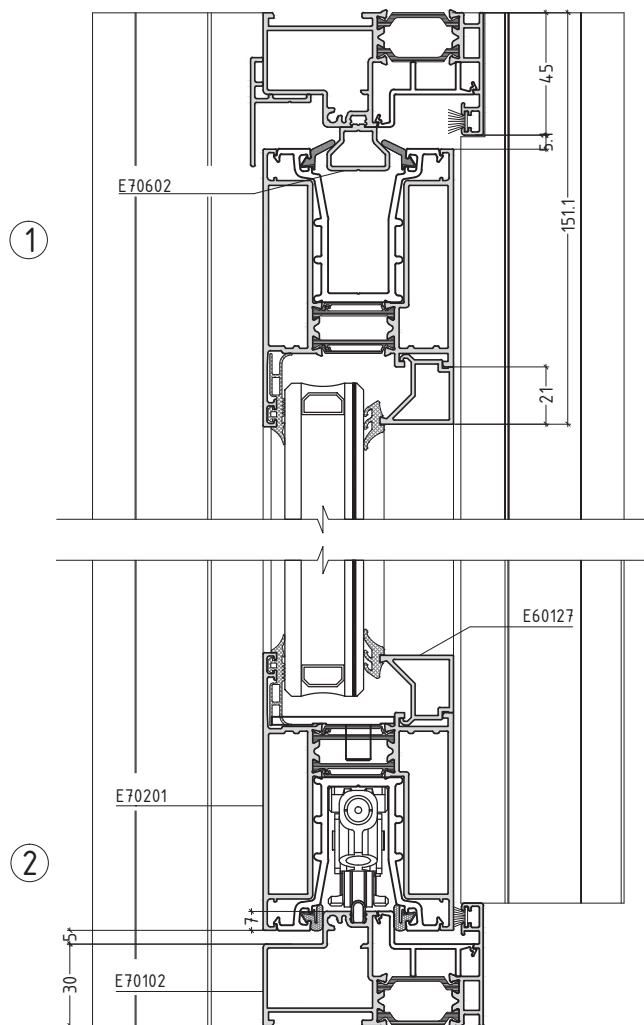


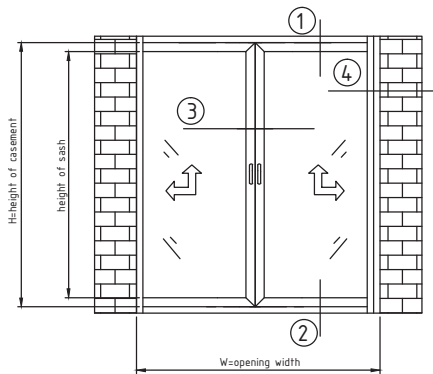
SINGLE LEAF WITH LIFT & SLIDE MECHANISM

T70-06



cutting lengths	
width of top rail E70102	= $W + 500$
width of bot. rail E70102	= $2W - 175$
height of frame E70102	= H
width E70601	= $W - 50$
width E70602	= $W + 500$
width of sash E70201	= $W - 58$
height of sash E70201	= $H - 85$
dimension in millimeters	
all measurements are taken from the external side of the frame	





cutting lengths

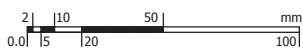
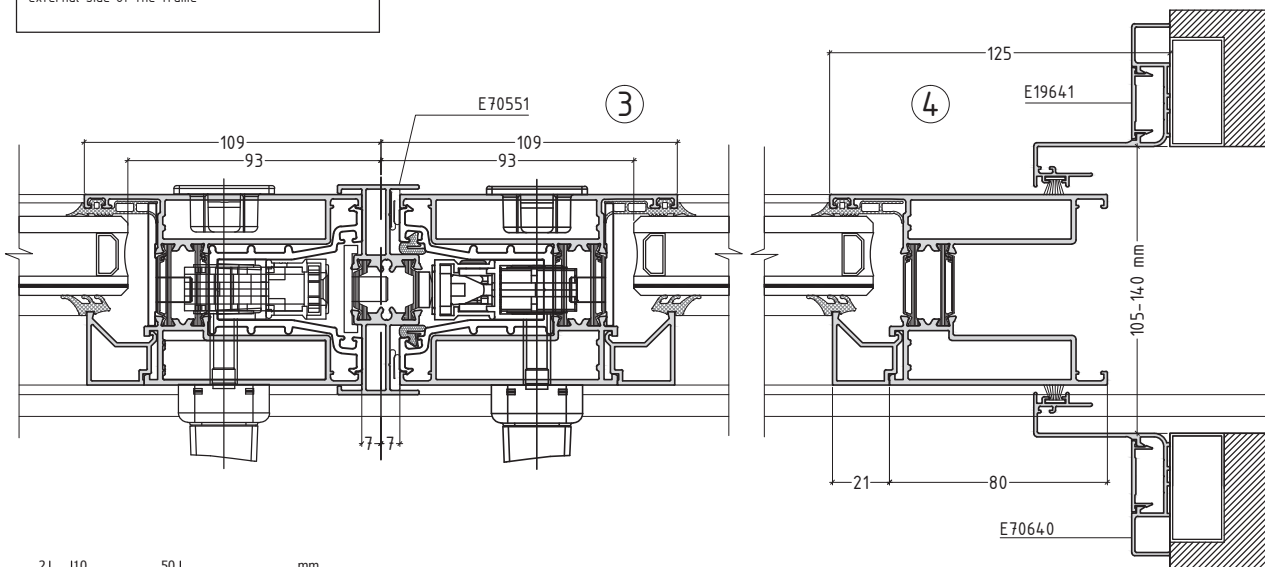
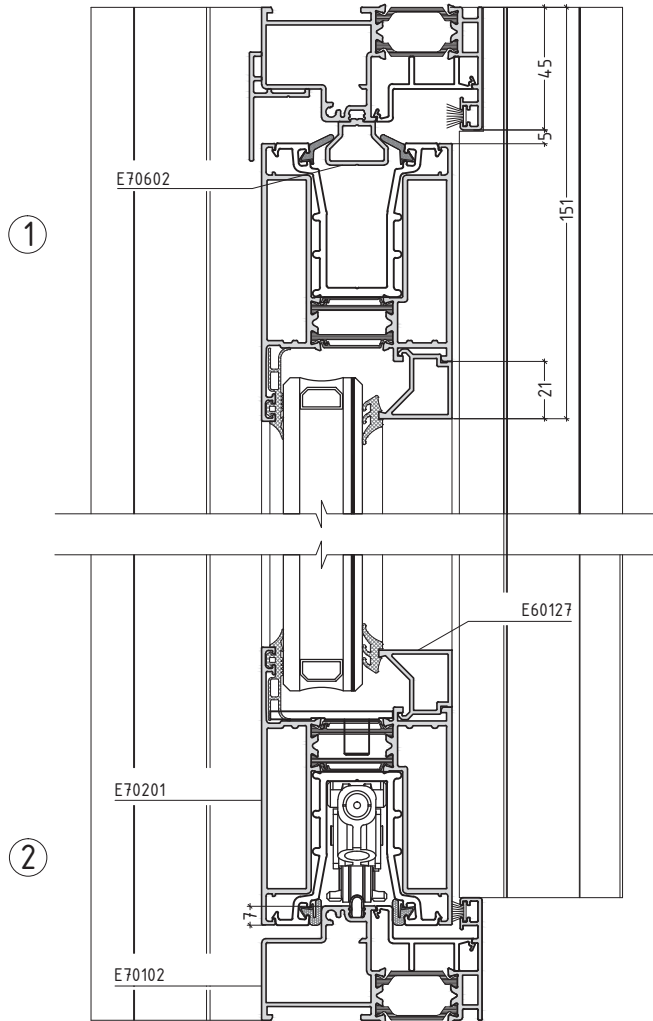
width of top rail E70102	= W + 1000
width of bot. rail E70102	= 2W - 300
height of frame E70102	= H
width E70601	= W - 100
width E70602	= W + 1000

width of sash E70201	= $\frac{W - 60}{2}$
height of sash E70201	= H - 85

sup. profile height E70551	= H - 128
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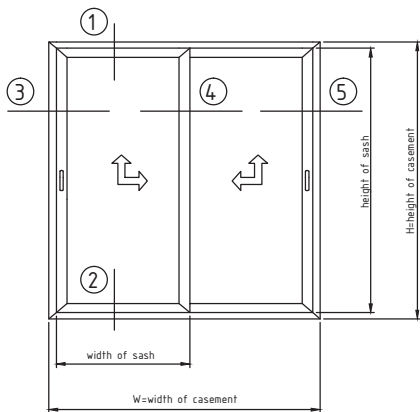
dimension in millimeters

all measurements are taken from the external side of the frame



DOUBLE LEAF WITH LIFT & SLIDE MECHANISM

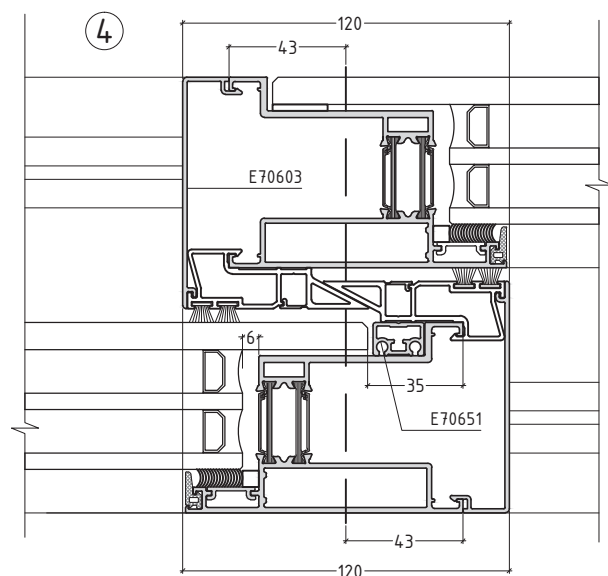
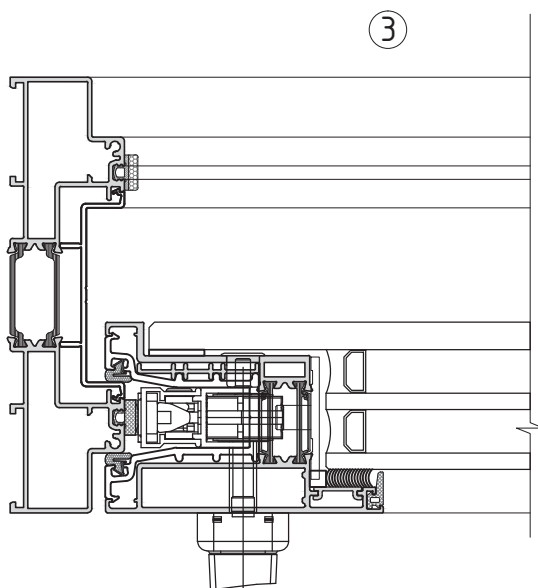
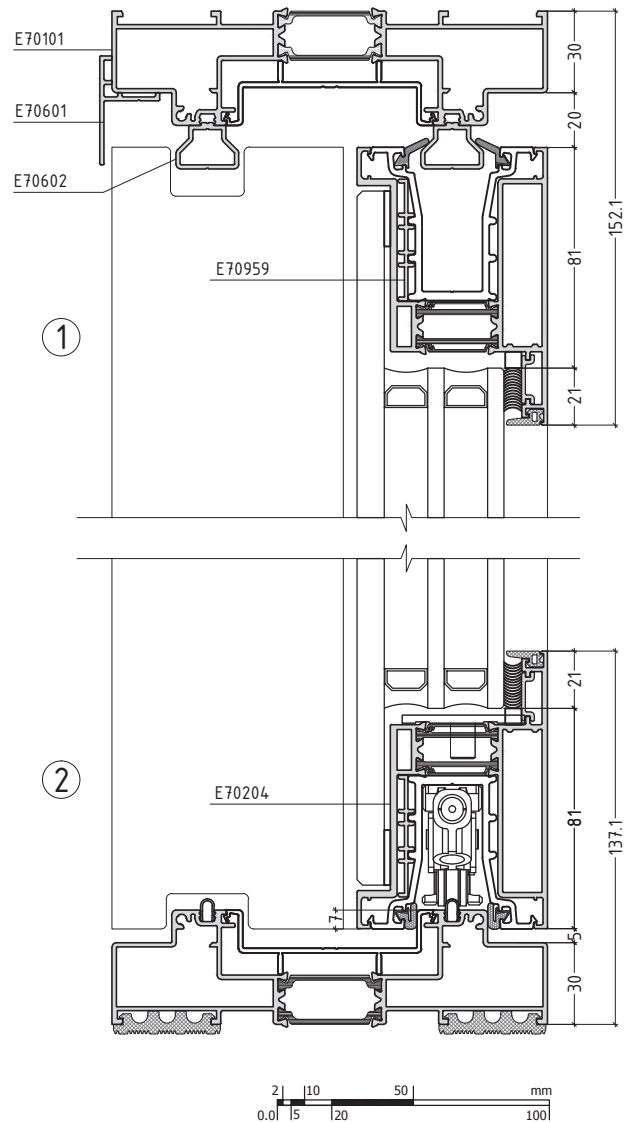
T70-11



cutting lengths	
width of rail E70101	= W
height of frame E70101	= H
width E70601	= W
width E70602	= W - 85
width of sash E70204	$= \frac{W+16}{2}$
height of sash E70204	= H - 85
inter. profile height E70603	= H - 85

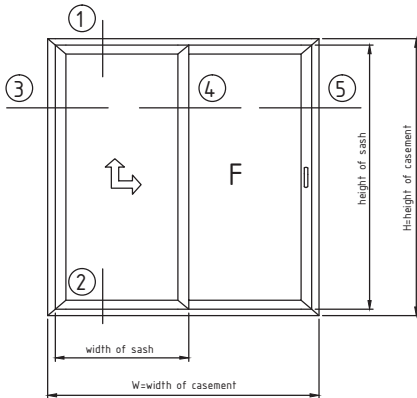
dimension in millimeters

all measurements are taken from the external side of the frame



DOUBLE LEAF WITH LIFT & SLIDE MECHANISM AND FIXED SASH

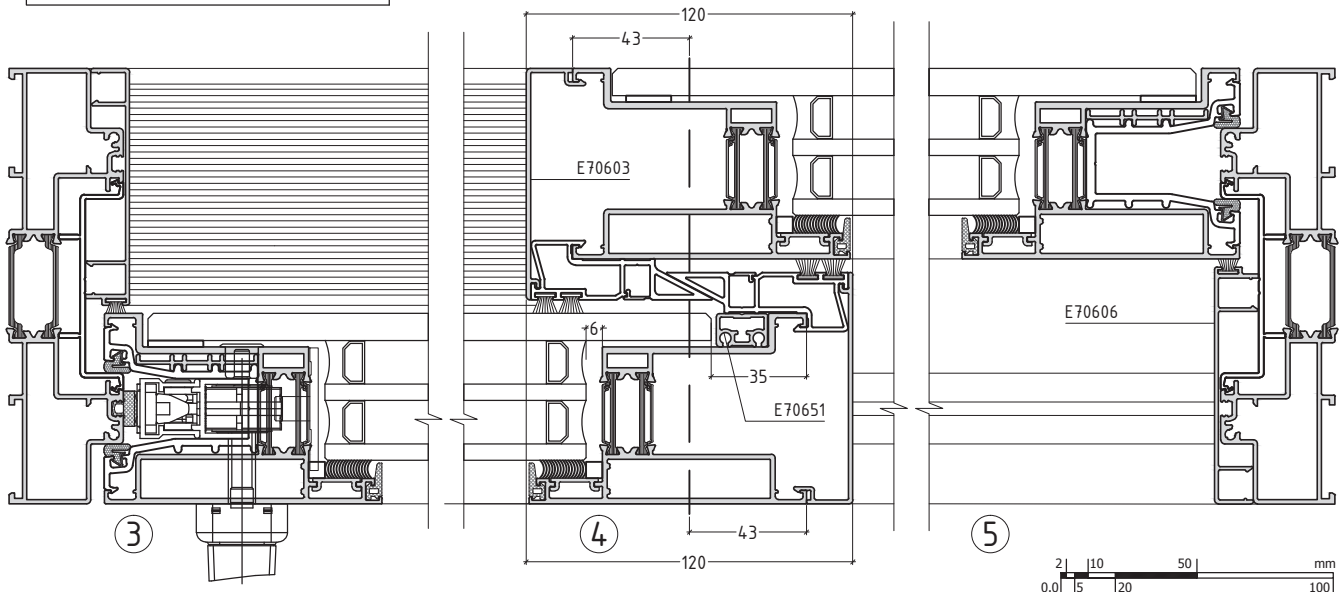
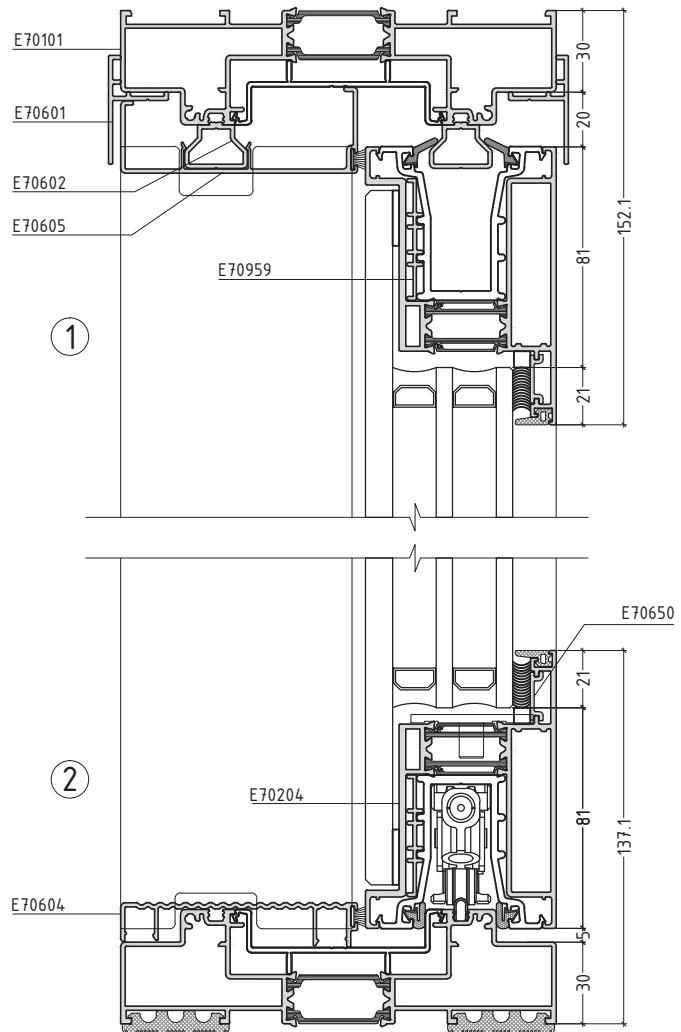
T70-13



cutting lengths

width of rail E70101	= W
height of frame E70101	= H
width E70601	= W
width E70602	= W - 85
width of sash E70204	= $\frac{W+16}{2}$
height of sash E70204	= H - 85
inter. profile height E70603	= H - 85
E70606	= H - 105
E70604	= $\frac{W}{2} - 91$
E70605	= $\frac{W}{2} - 91$

dimension in millimeters
all measurements are taken from the external side of the frame

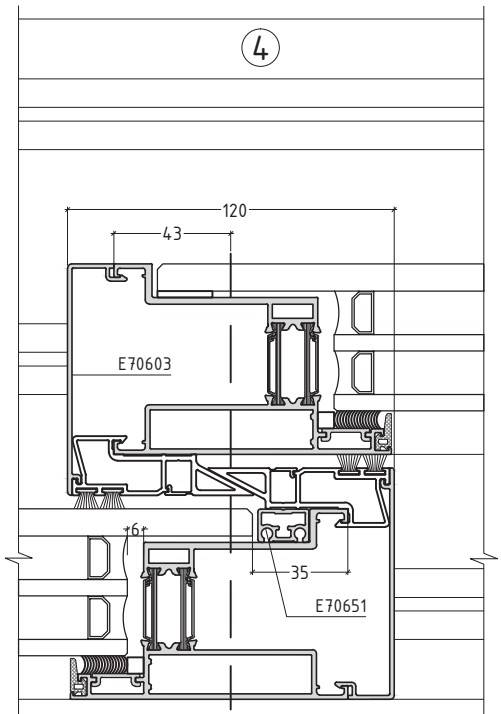
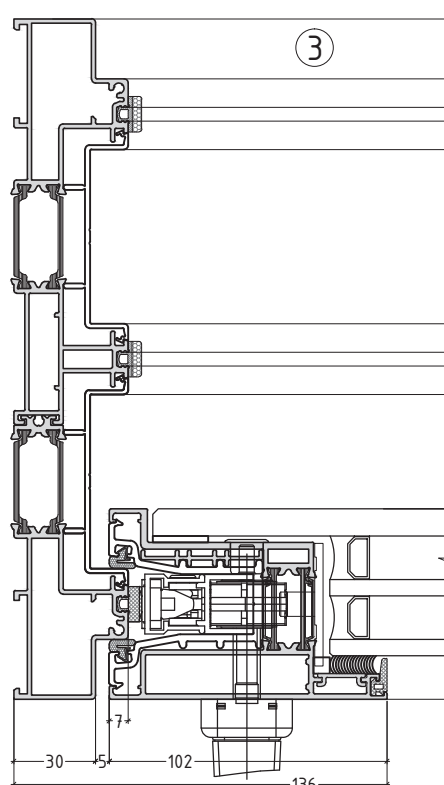
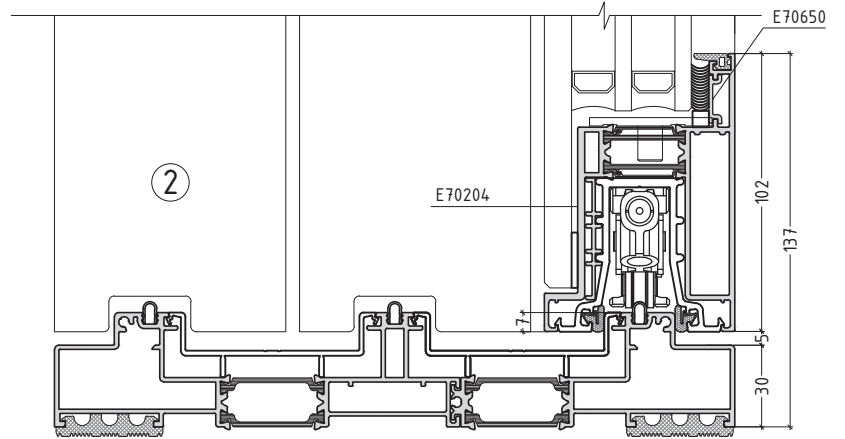
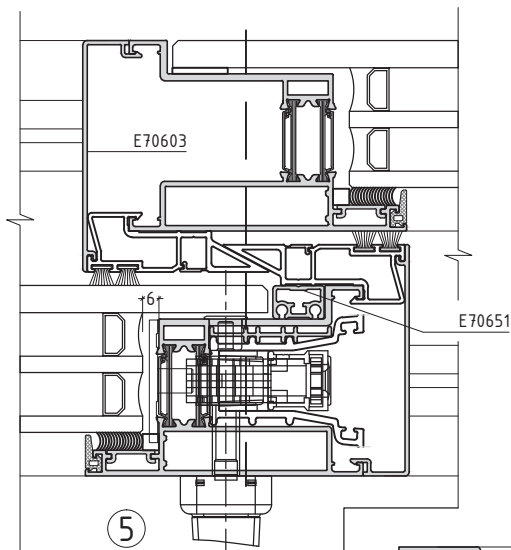
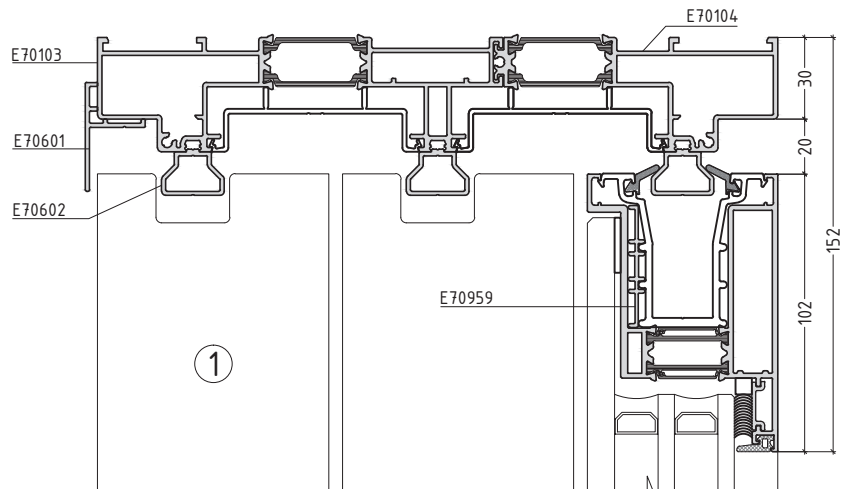
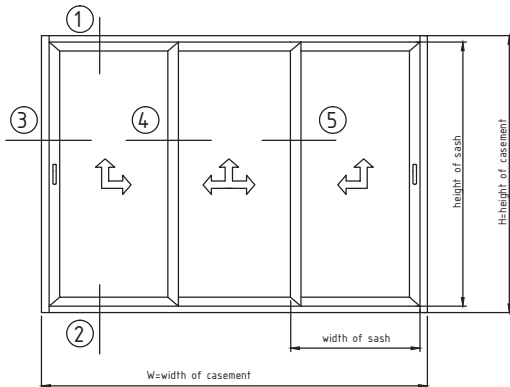


sliding system with thermal break

E70

THREE LEAF WITH LIFT & SLIDE MECHANISM

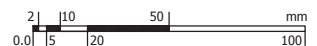
T70-14



cutting lengths	
width of rail E70101	= W
height of frame E70101	= H
height E70601	= W
height E70602	= W - 85
width of sash E70204	= $\frac{(W+102)}{3}$
height of sash E70204	= H - 85
infer. profile height E70603	= H - 85

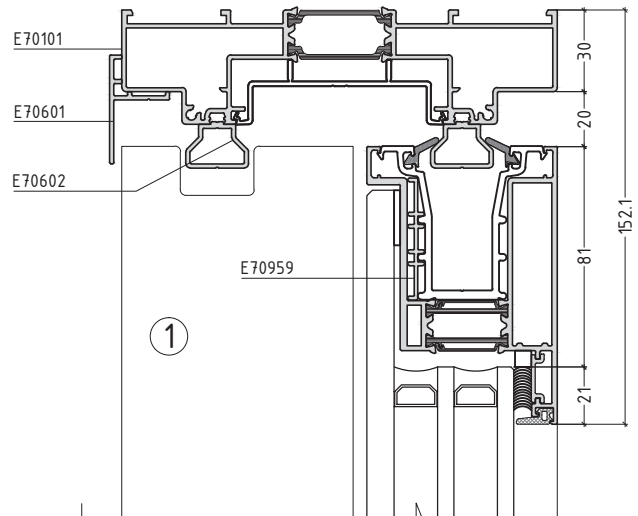
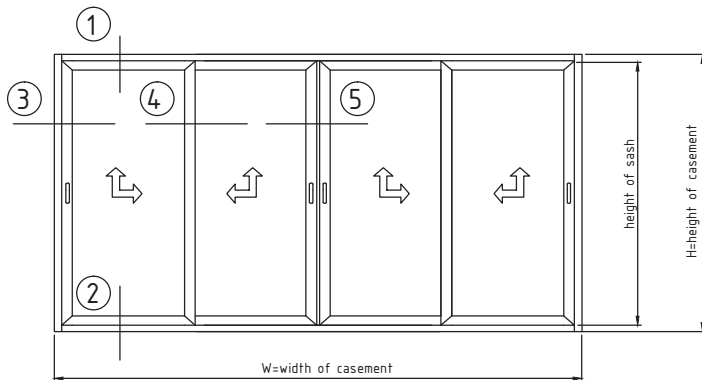
dimension in millimeters
all measurements are taken from the external side of the frame

no scale



FOUR LEAF WITH LIFT & SLIDE MECHANISM

T70-15

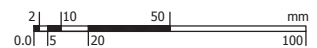
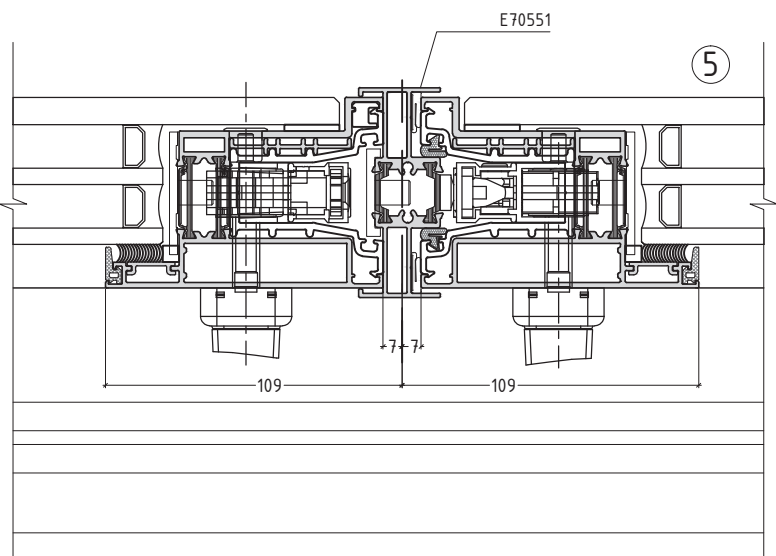
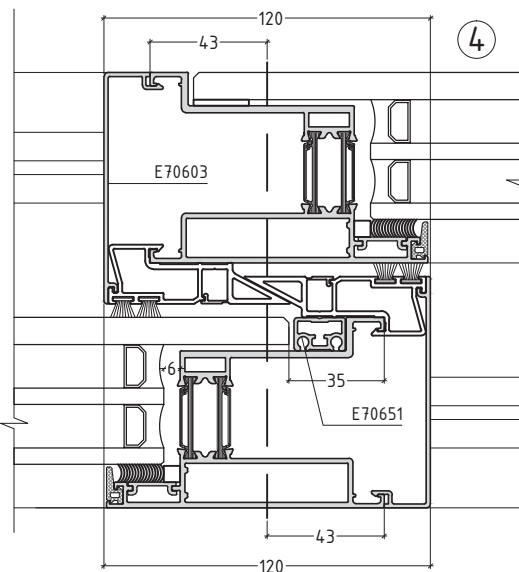
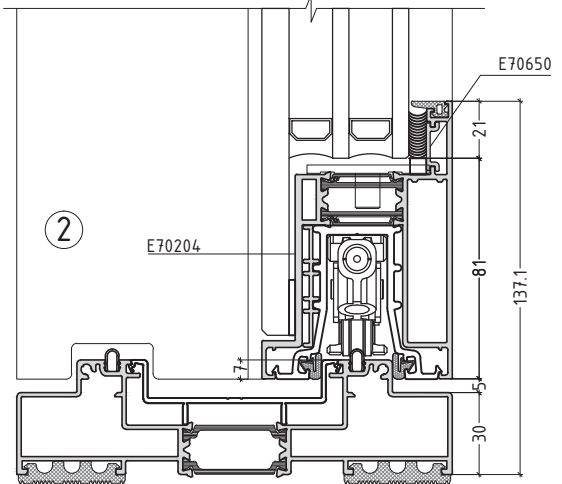
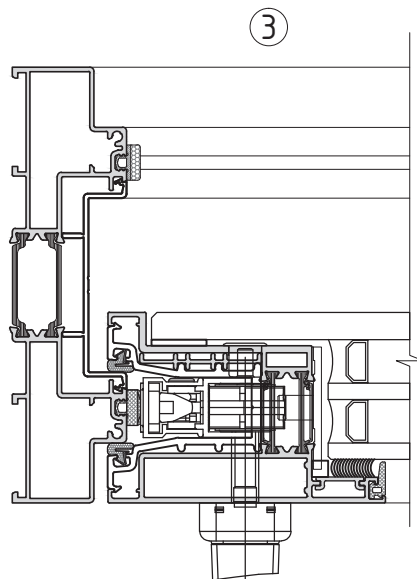


cutting lengths

width of rail E70101	= W
height of frame E70101	= H
width E70601	= W
width E70602	= W - 85
width of sash E70201	= $\frac{(W+88)}{4}$
height of sash E70201	= H - 85
sup. profile height E70551	= H - 128
inter. profile height E70603	= H - 85

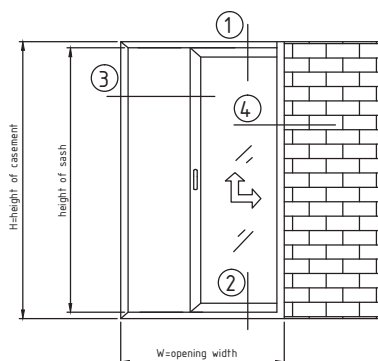
dimensions in millimeters

all measurements are taken from the external side of the frame



SINGLE LEAF WITH LIFT & SLIDE MECHANISM

T70-16



cutting lengths

width of top rail E70102 = $W + 500$

width of bot. rail E70102 = $2W - 175$

height of frame E70102 = H

width E70601 = $W - 50$

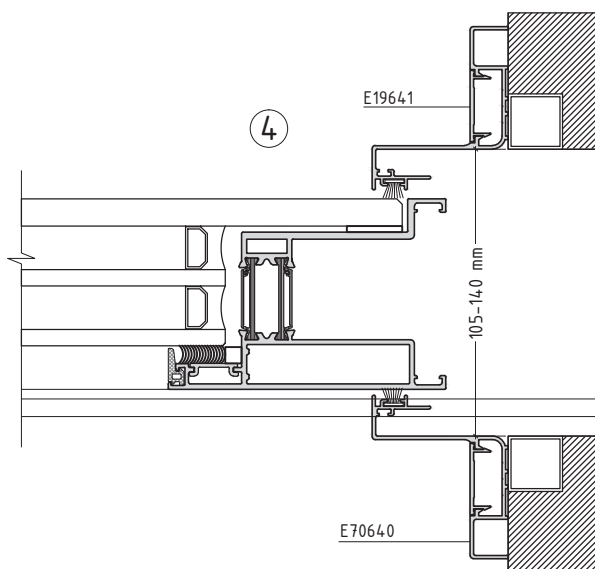
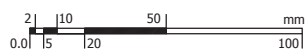
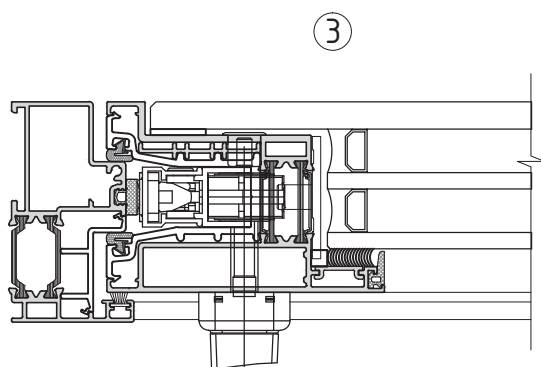
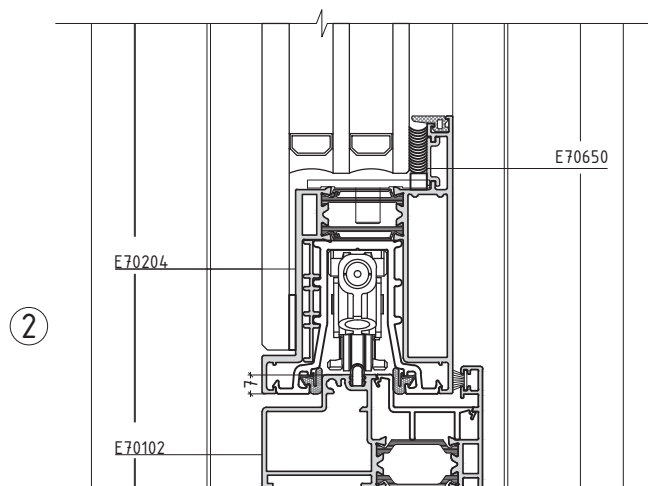
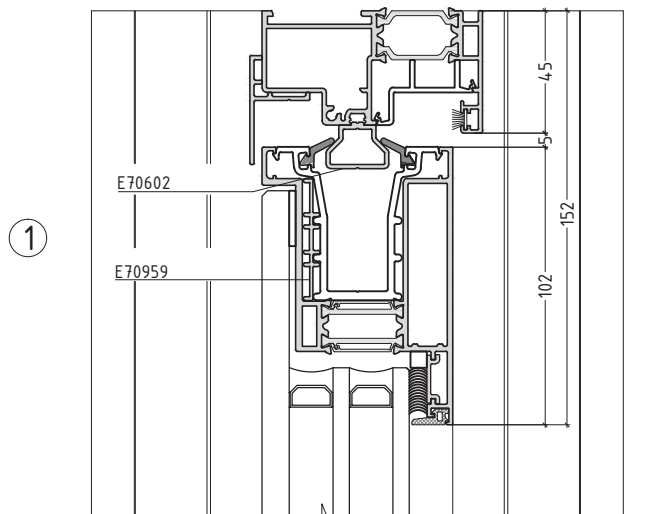
width E70602 = $W + 500$

width of sash E70204 = $W - 58$

height of sash E70204 = $H - 85$

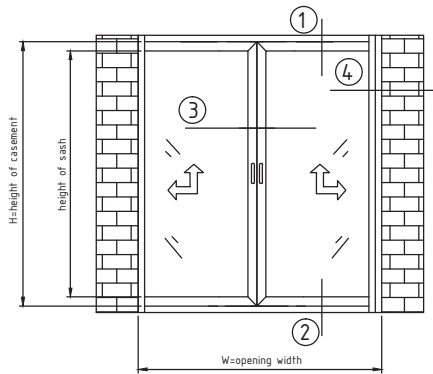
dimension in millimeters

all measurements are taken from the external side of the frame



DOUBLE LEAF WITH LIFT & SLIDE MECHANISM

T70-17



cutting lengths

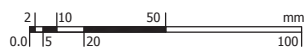
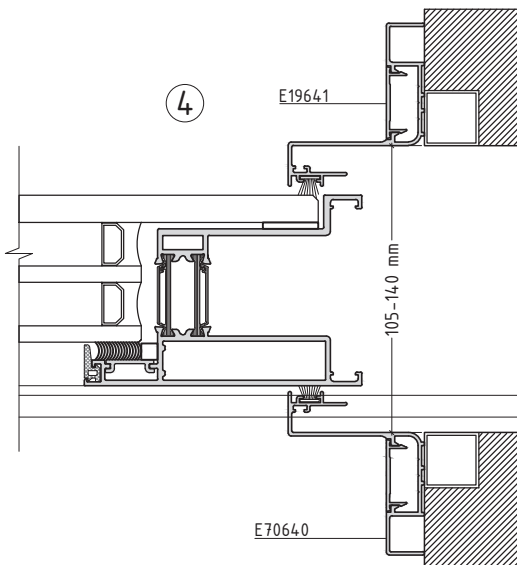
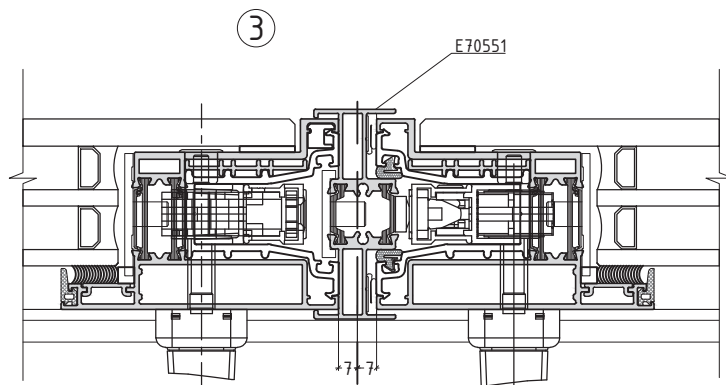
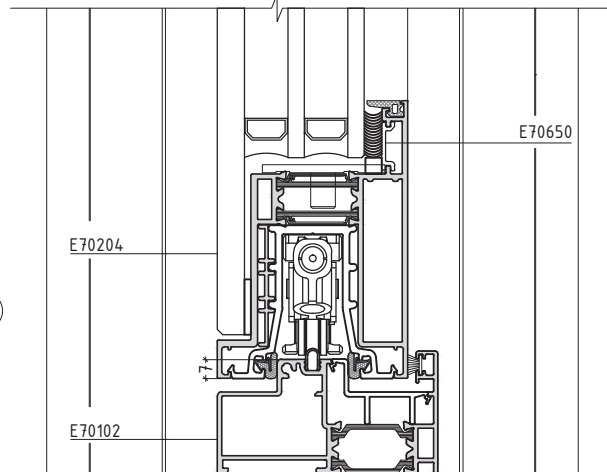
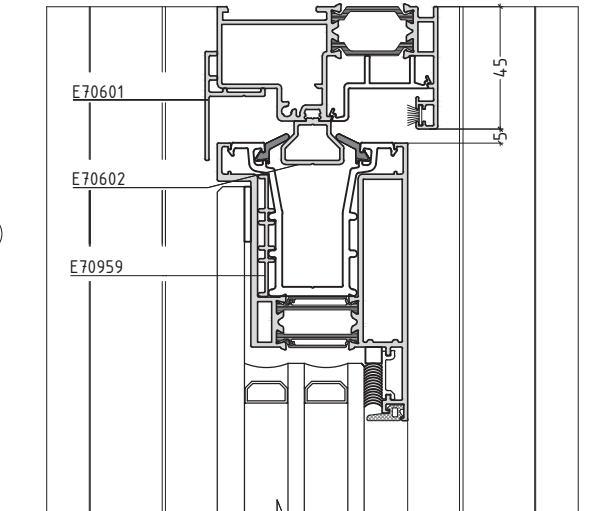
width of top rail	= $W + 1000$
width of bottom rail	= $2W - 300$
height of frame	= H
width E70601	= $W - 100$
width E70602	= $W + 1000$

width of sash E70204	= $\frac{W - 60}{2}$
height of sash E70204	= $H - 85$

sup. profile height E70551	= $H - 128$
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dimension in millimeters

all measurements are taken from the external side of the frame

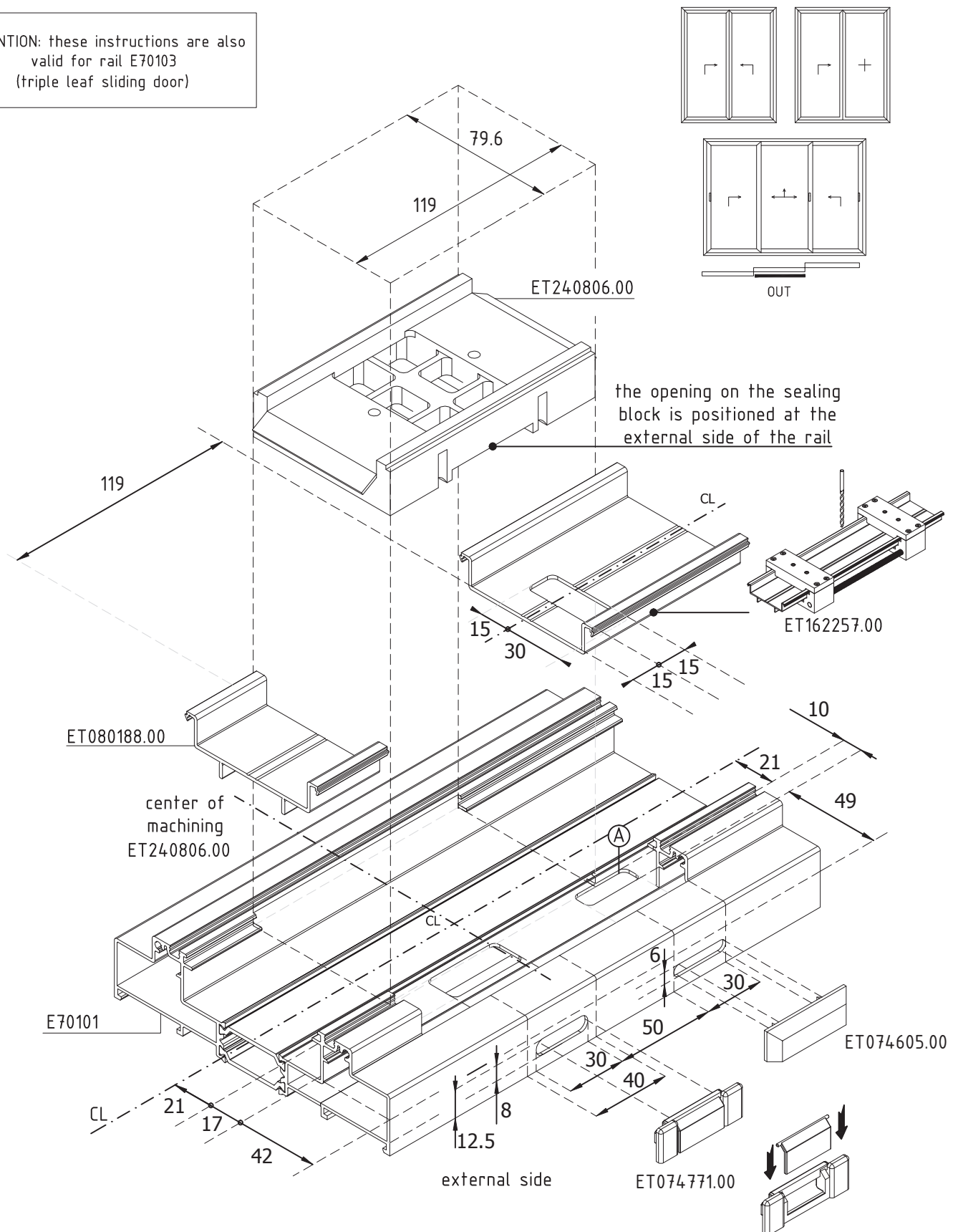


MACHINING

MACHINING ON E70101 FOR WATER DRAINAGE

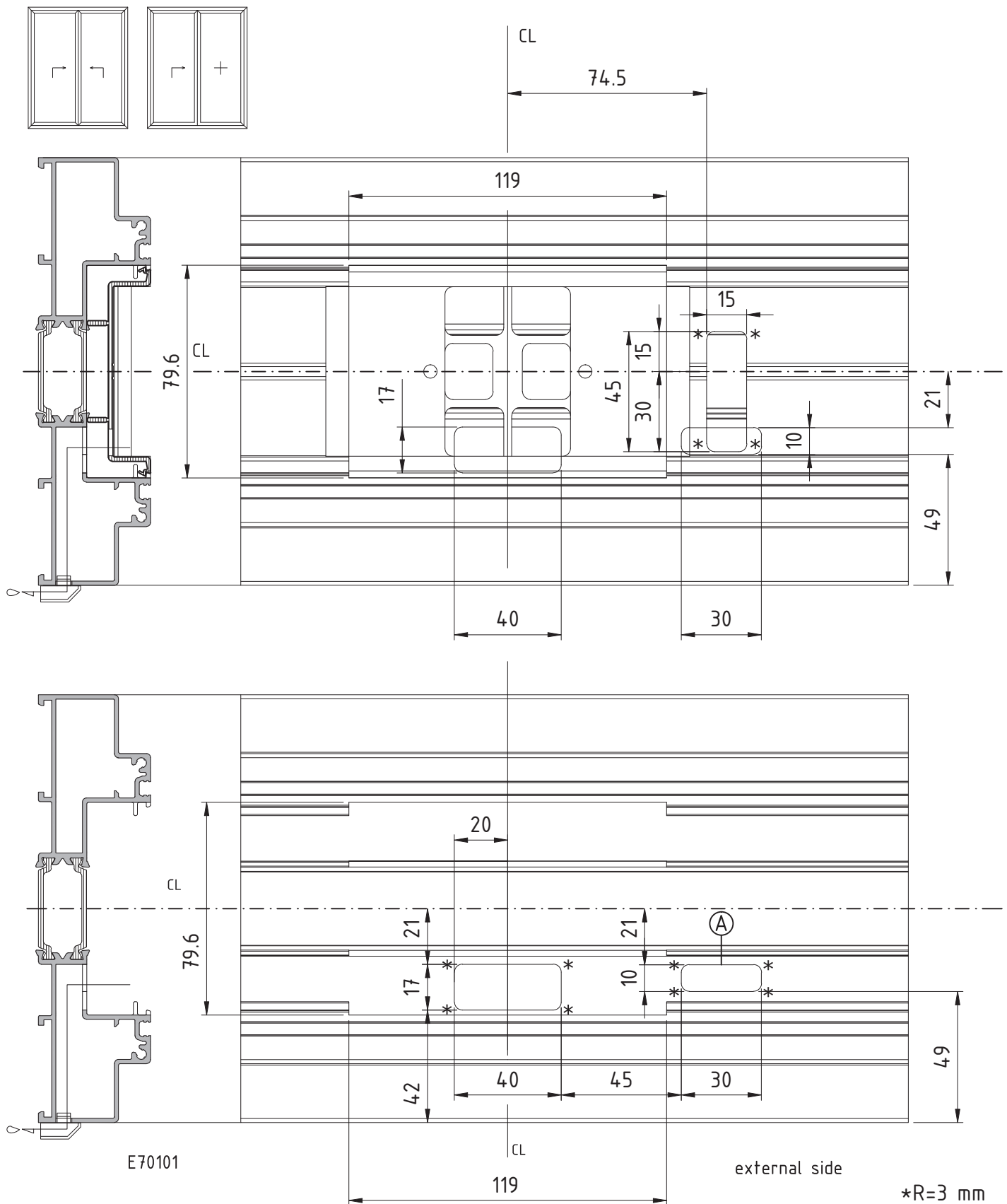
M70-01

ATTENTION: these instructions are also valid for rail E70103 (triple leaf sliding door)



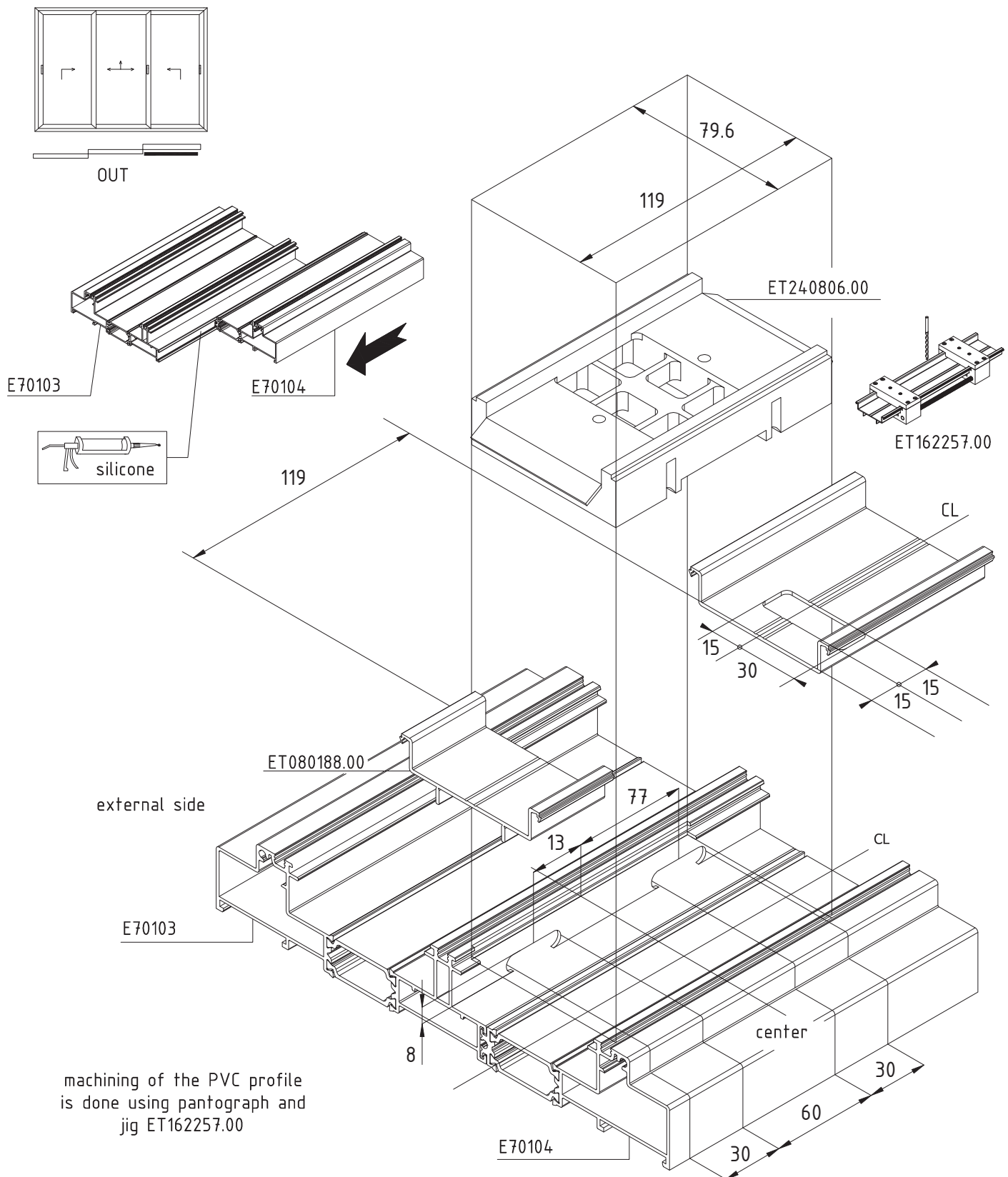
MACHINING ON E70101 FOR DRAINAGE

M70-03



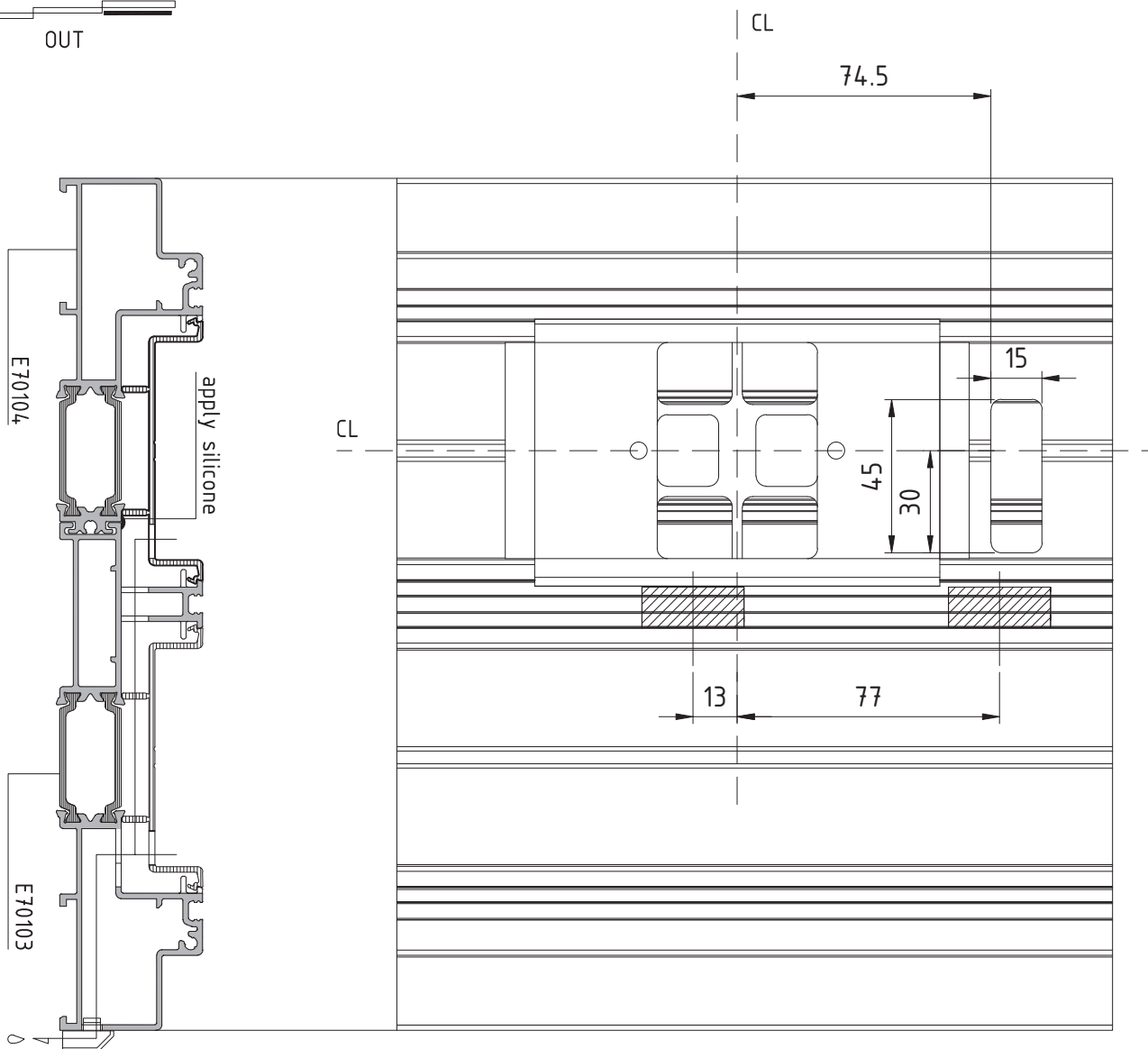
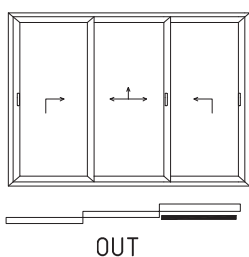
MACHINING ON E70103 & E70104 FOR DRAINAGE

M70-04



MACHINING ON E70103 & E70104 FOR DRAINAGE

M70-05

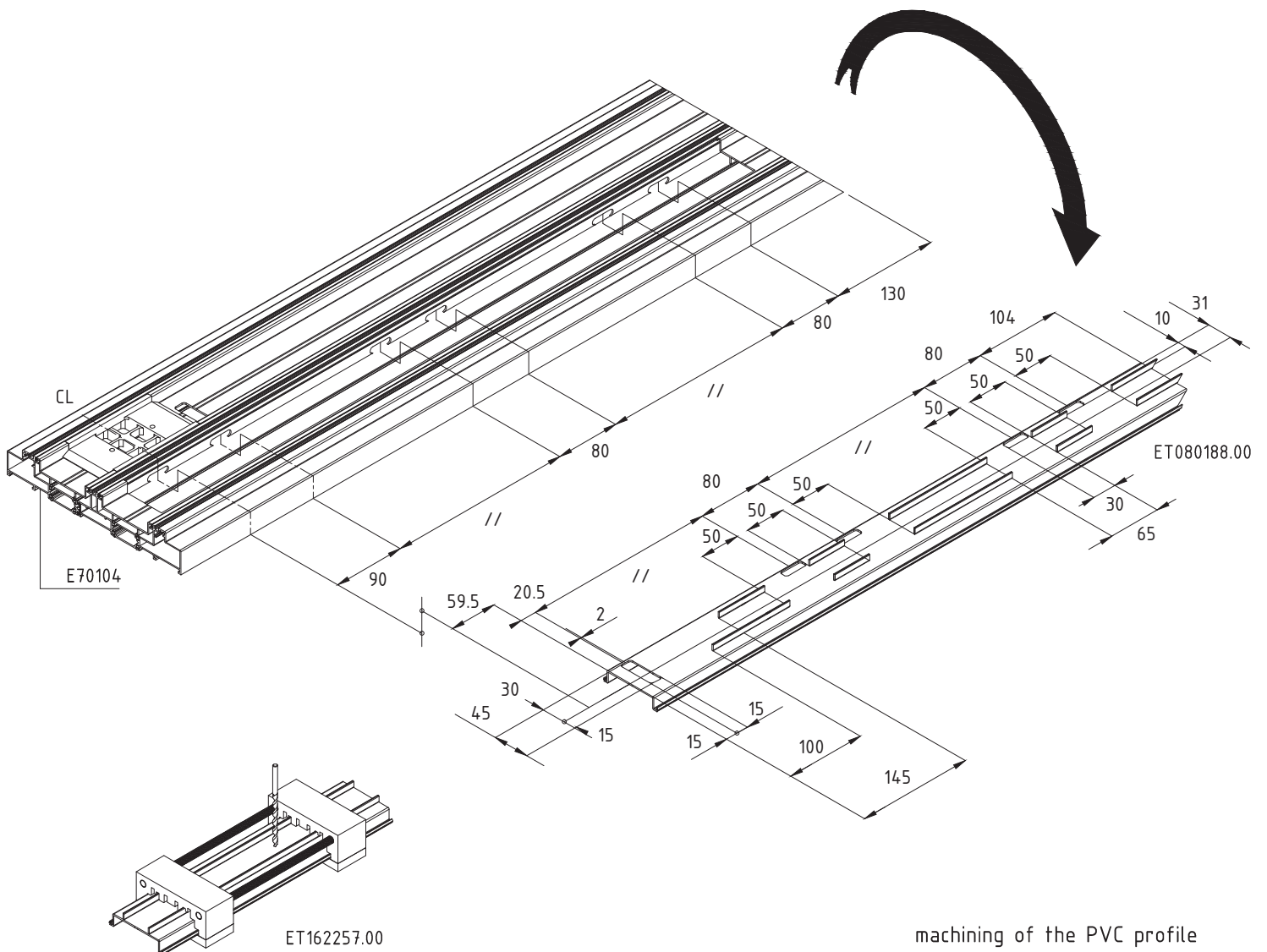
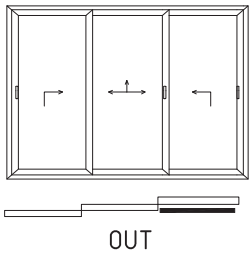


external side

ATTENTION: the machining performed on rail E70103 is the same performed on rail E70101 (double leaf sliding door)

MACHINING ON RAIL E70104 FOR DRAINAGE

M70-06

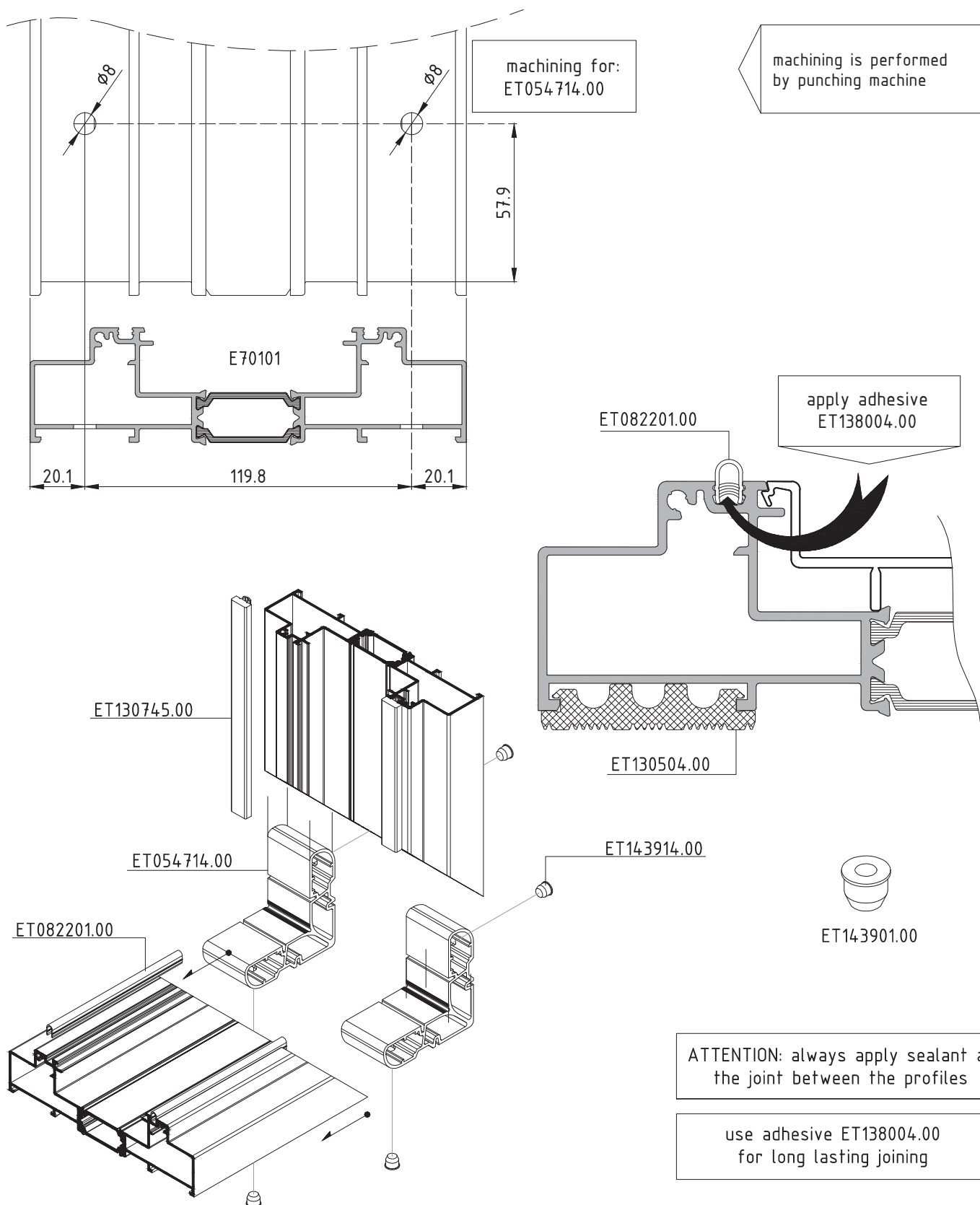


machining of the PVC profile is done using pantograph and jig ET162257.00

ATTENTION: the machining performed on rail E70103 is the same performed on rail E70101 (double leaf sliding door)

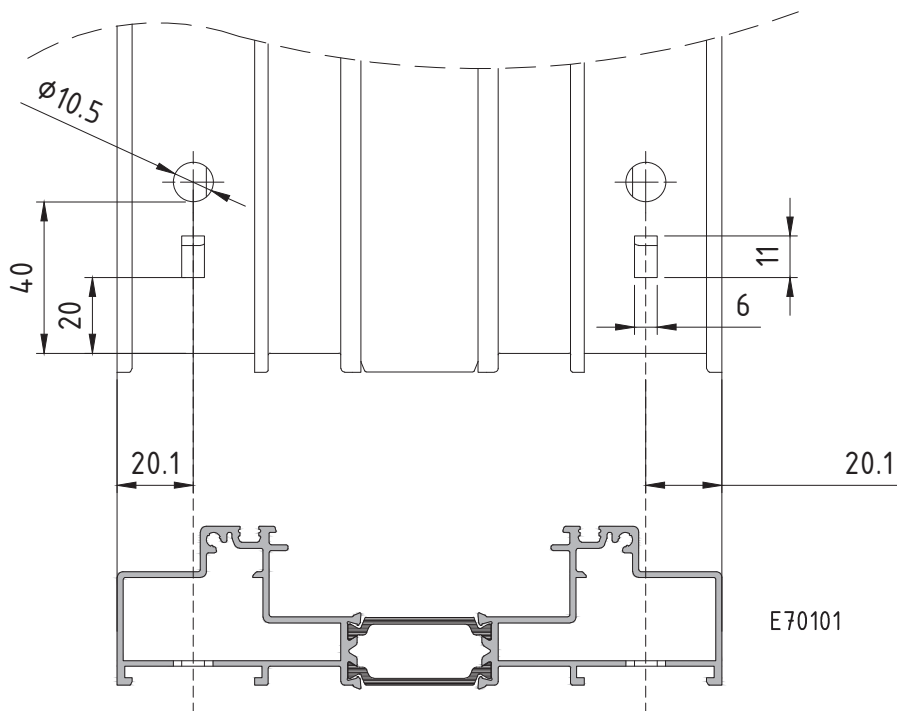
MACHINING REQUIRED FOR CONNECTION OF RAIL USING ROLL PINS

M70-07



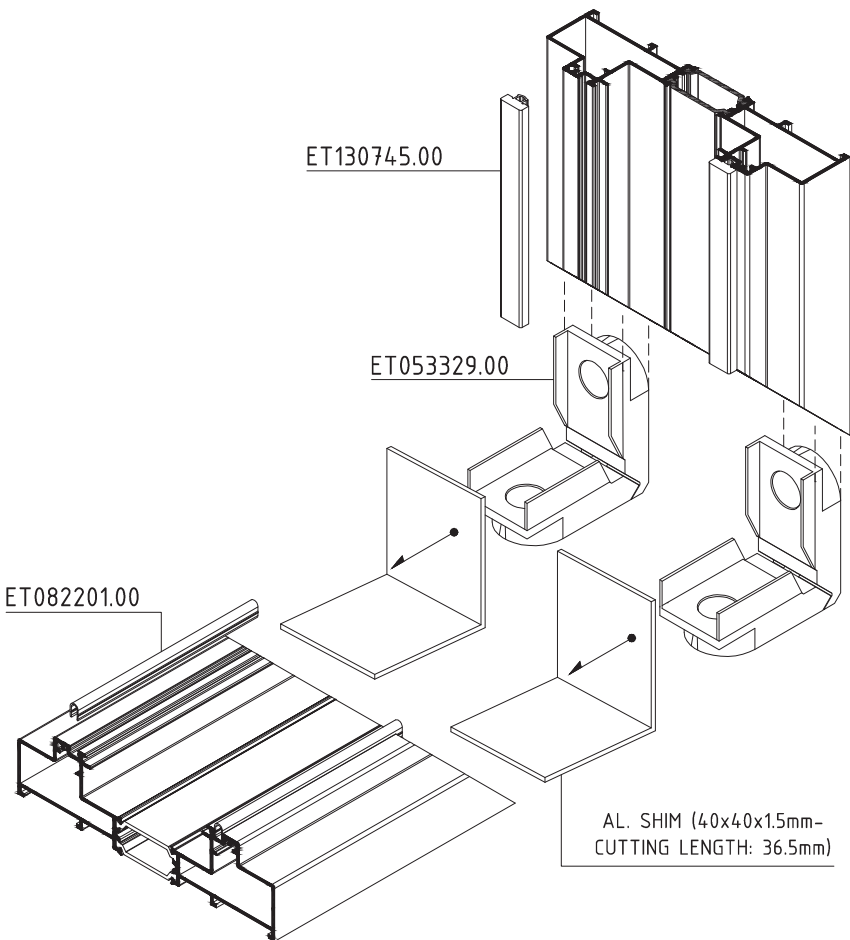
MACHINING REQUIRED FOR CONNECTION OF RAIL USING DIE CAST CORNERS

M70-08



machining is performed by punching machine

machining for:
ET053329.00

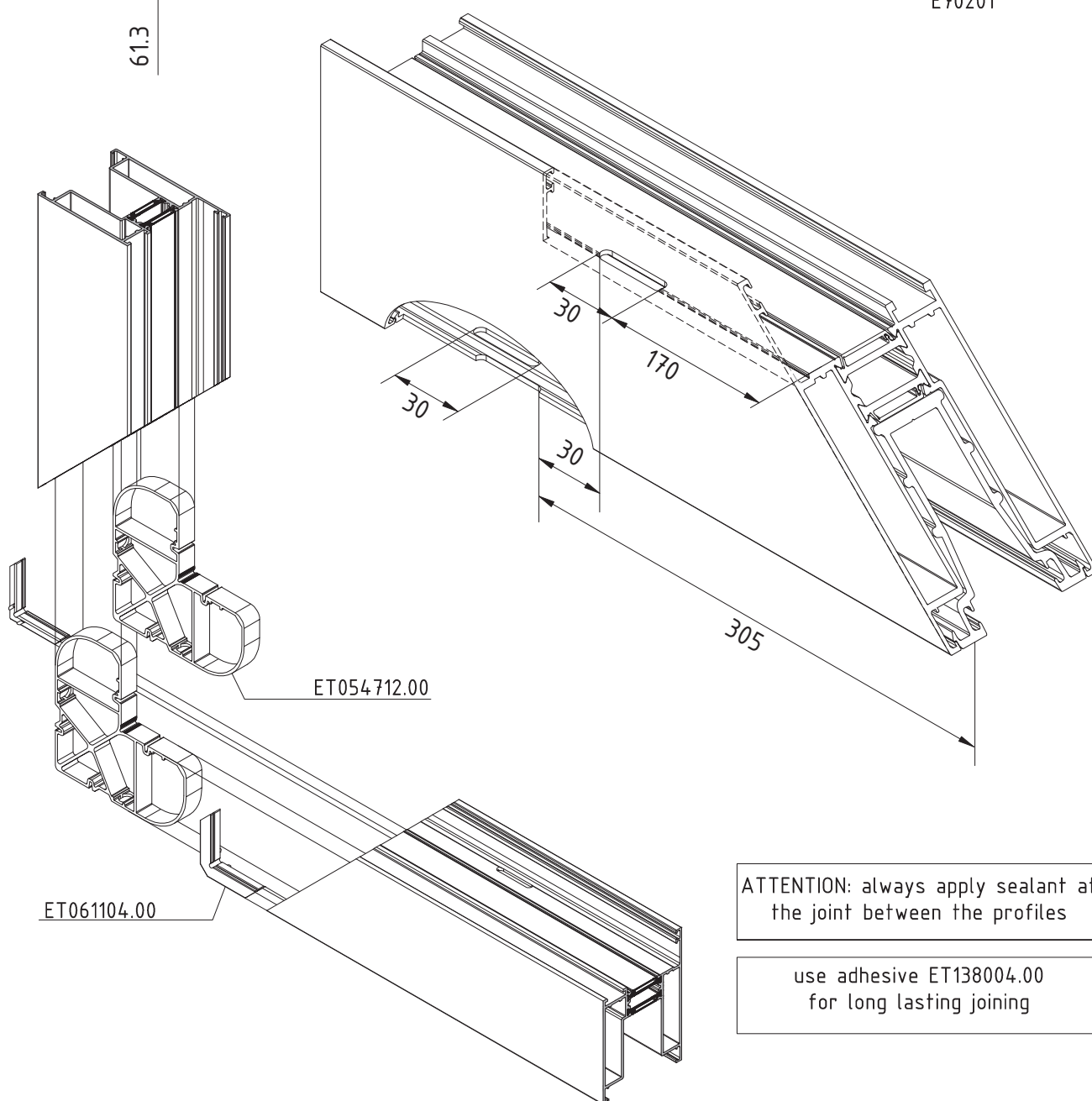
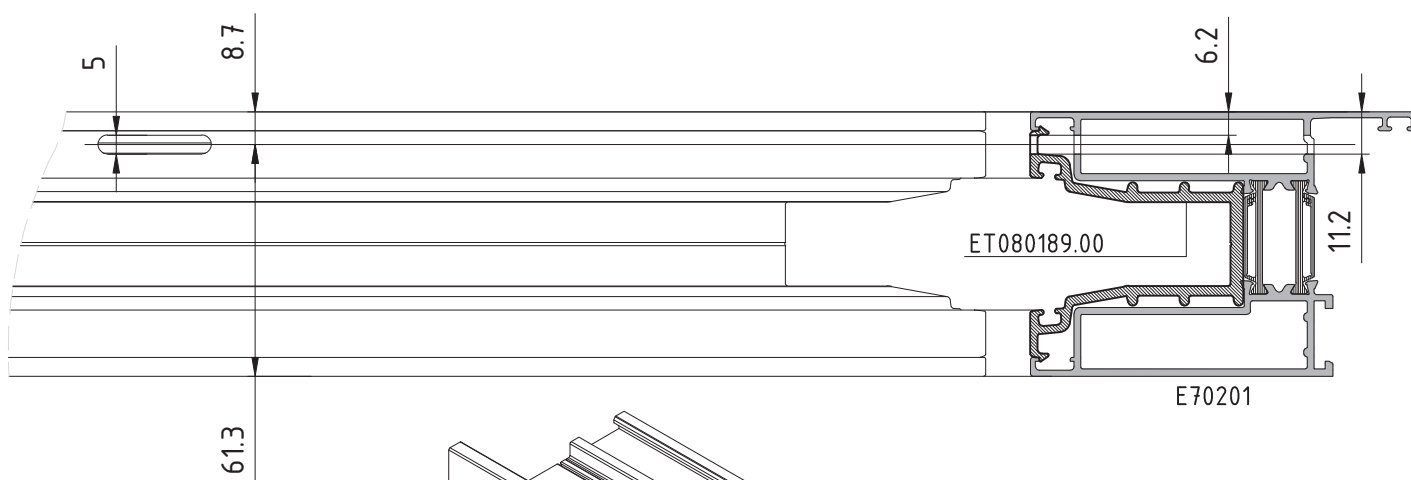


ATTENTION: always apply sealant at the joint between the profiles

use adhesive ET138004.00 for long lasting joining

MACHINING REQUIRED FOR CONNECTION & DRAINAGE OF E70201

M70-09

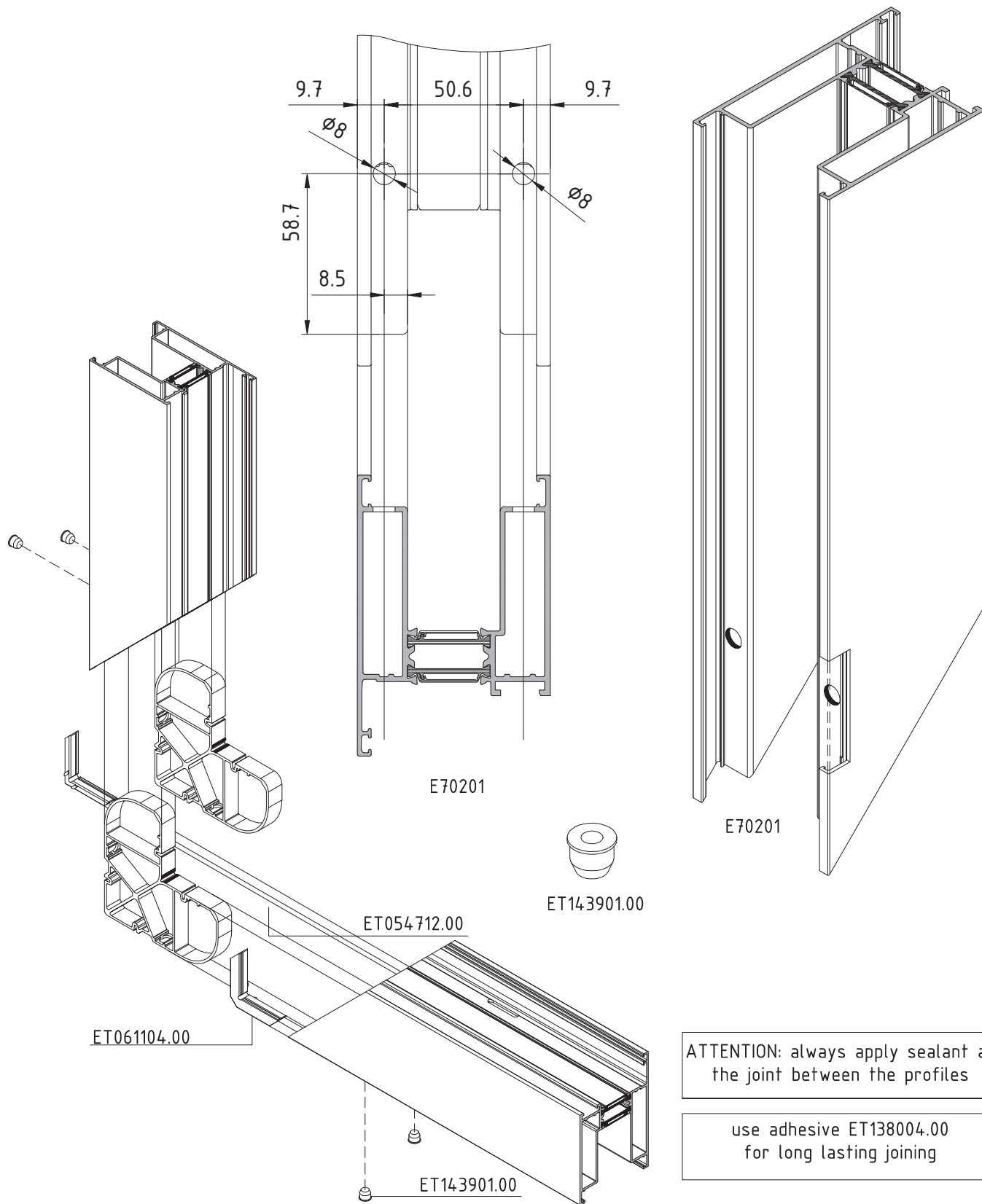


ATTENTION: always apply sealant at the joint between the profiles

use adhesive ET138004.00 for long lasting joining

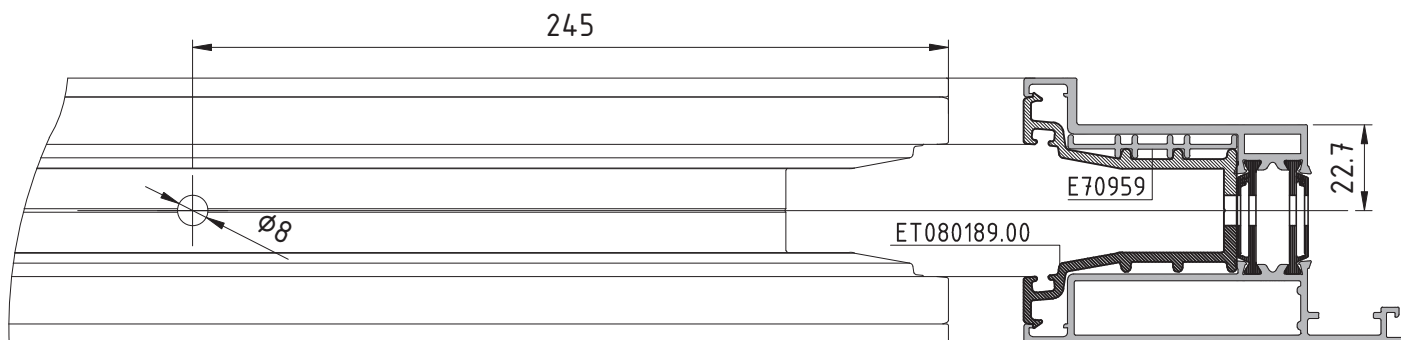
MACHINING REQUIRED FOR CONNECTION OF E70201 USING ROLL PINS

M70-10

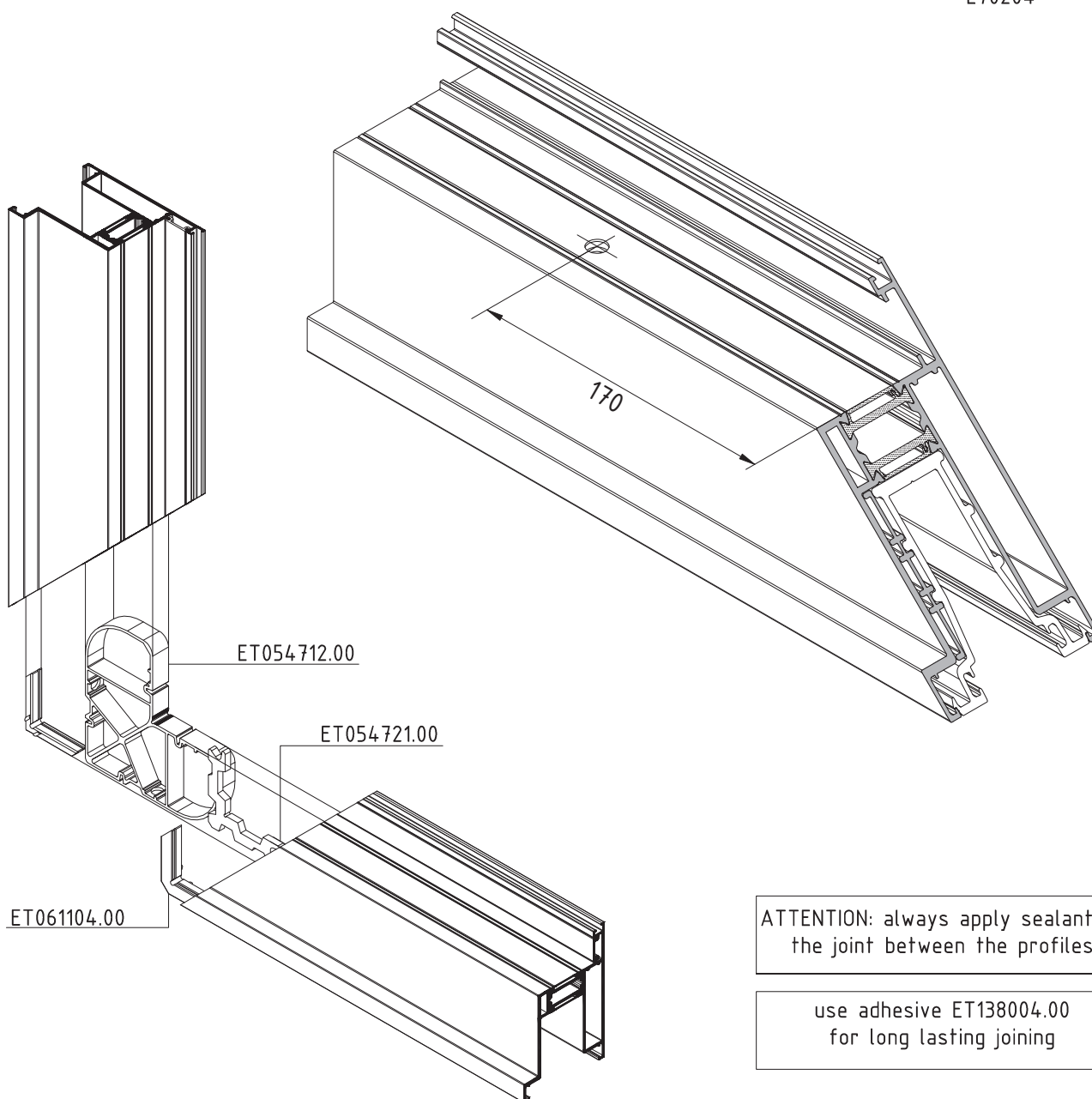


MACHINING REQUIRED FOR CONNECTION & DRAINAGE OF E70204

M70-11



E70204

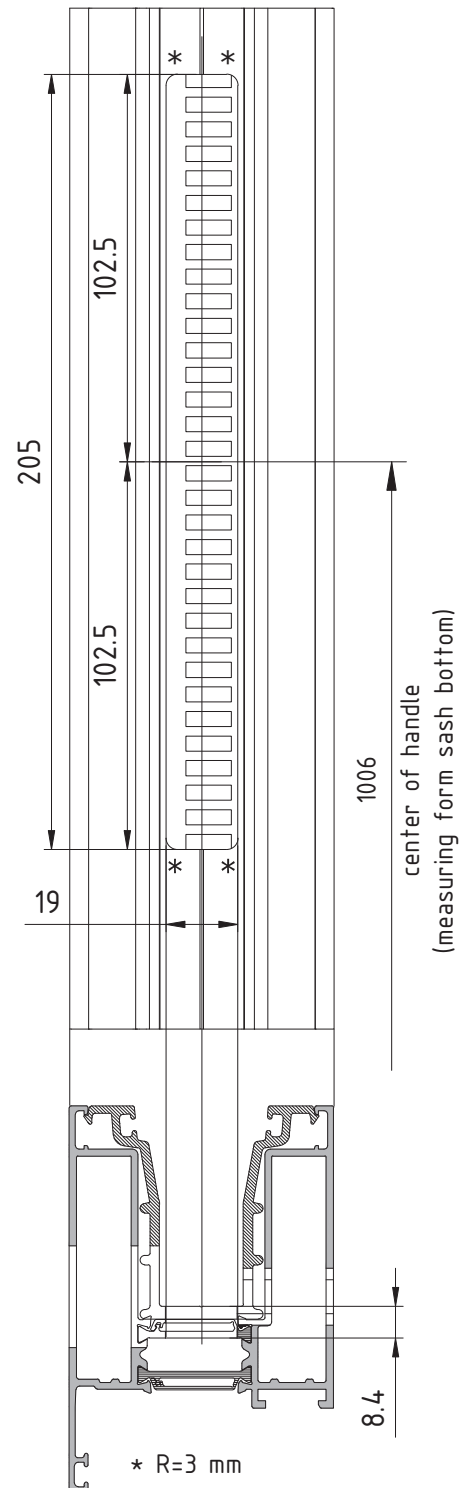
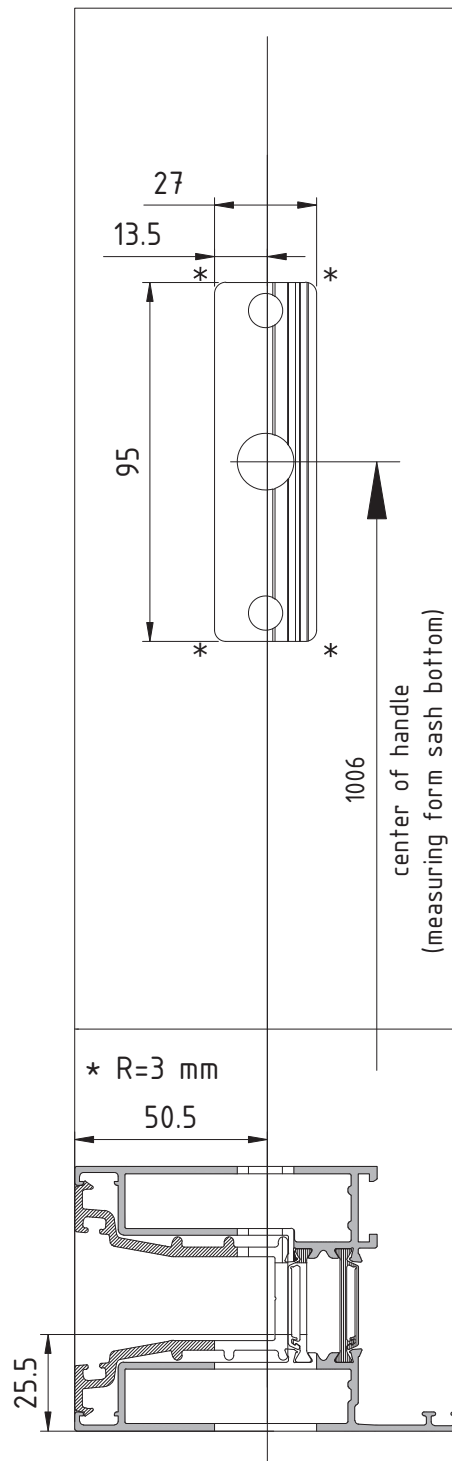
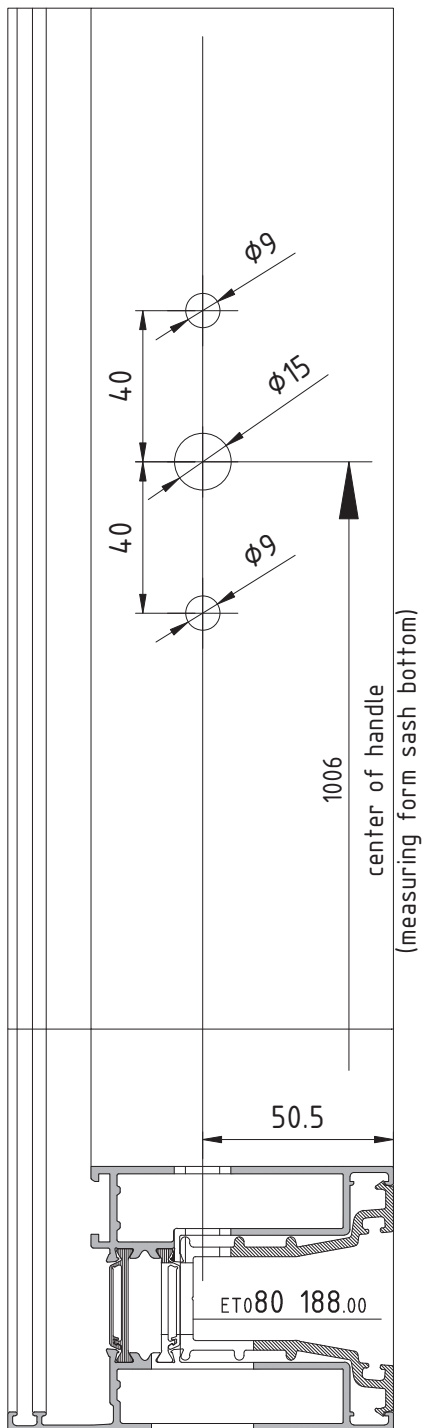


ATTENTION: always apply sealant at the joint between the profiles

use adhesive ET138004.00 for long lasting joining

MACHINING REQUIRED FIXING THE HANDLE & HARDWARE ON E70201

M70-12

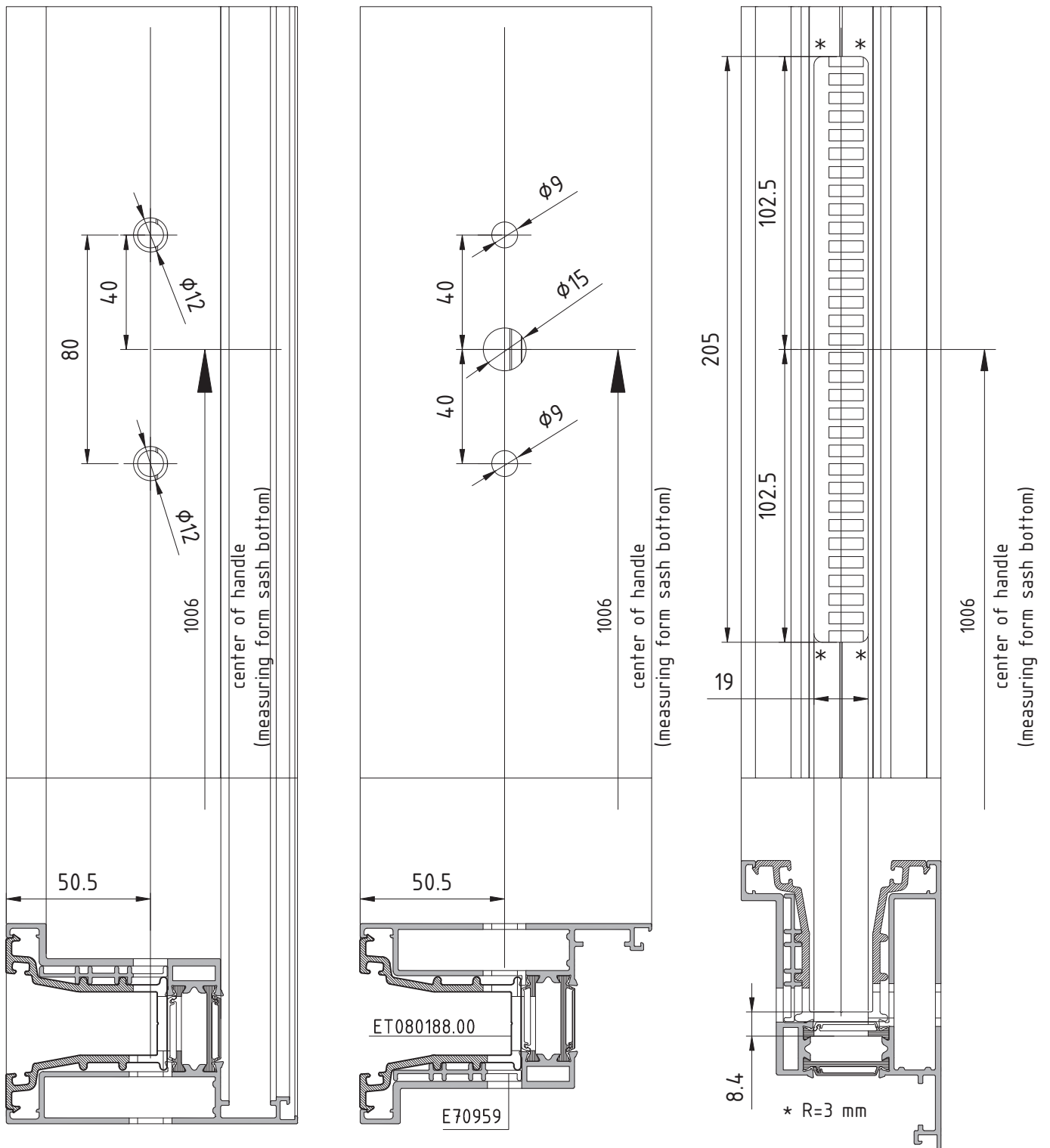


ATTENTION: all the above are valid for 250 kg lift & slide hardware

ATTENTION: the center of the hardware is valid only for doors

MACHINING REQUIRED FIXING THE HANDLE & HARDWARE ON E70204

M70-13

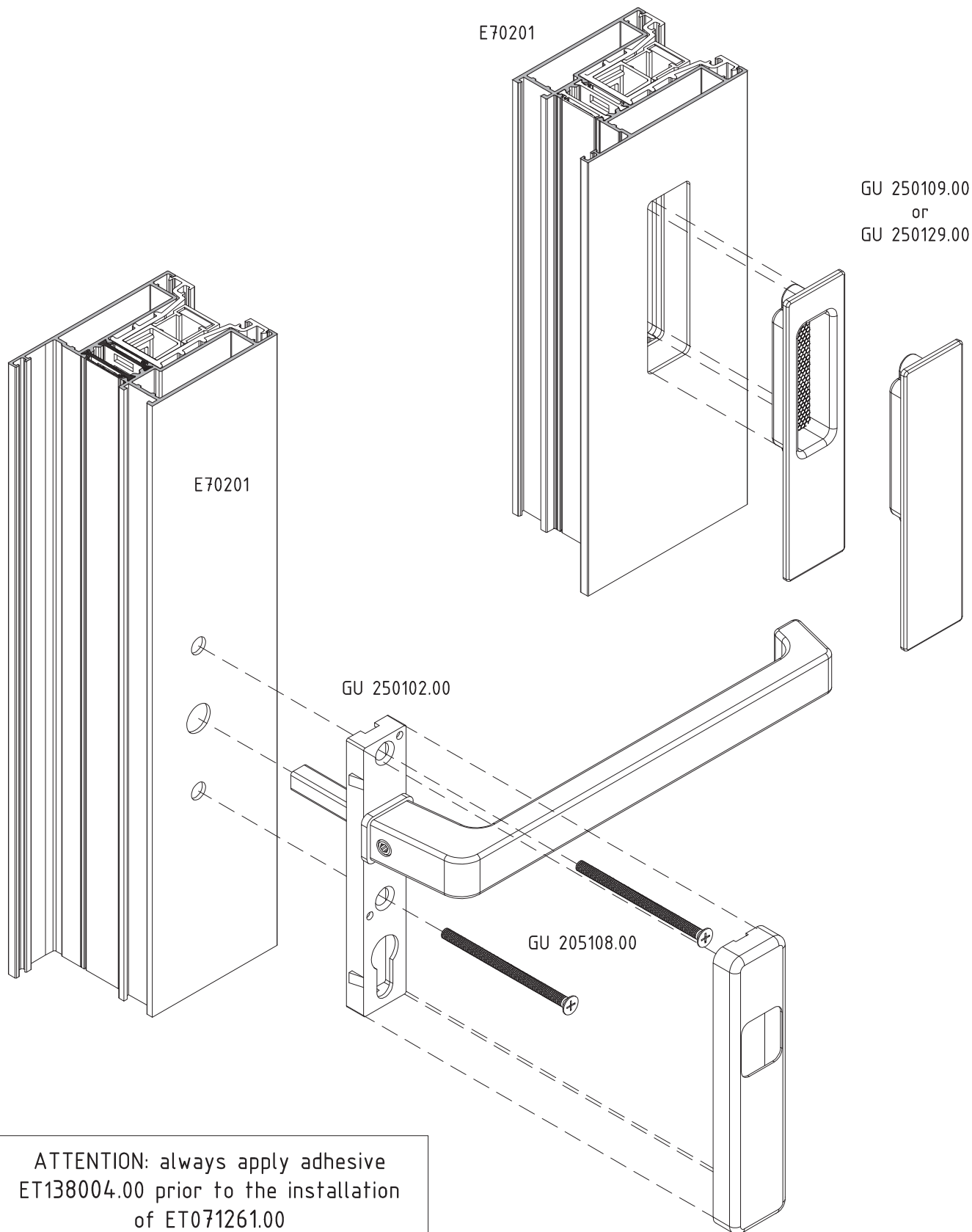


ATTENTION: the center of the hardware is valid only for doors

ATTENTION: all the above are valid for 250 kg lift & slide hardware

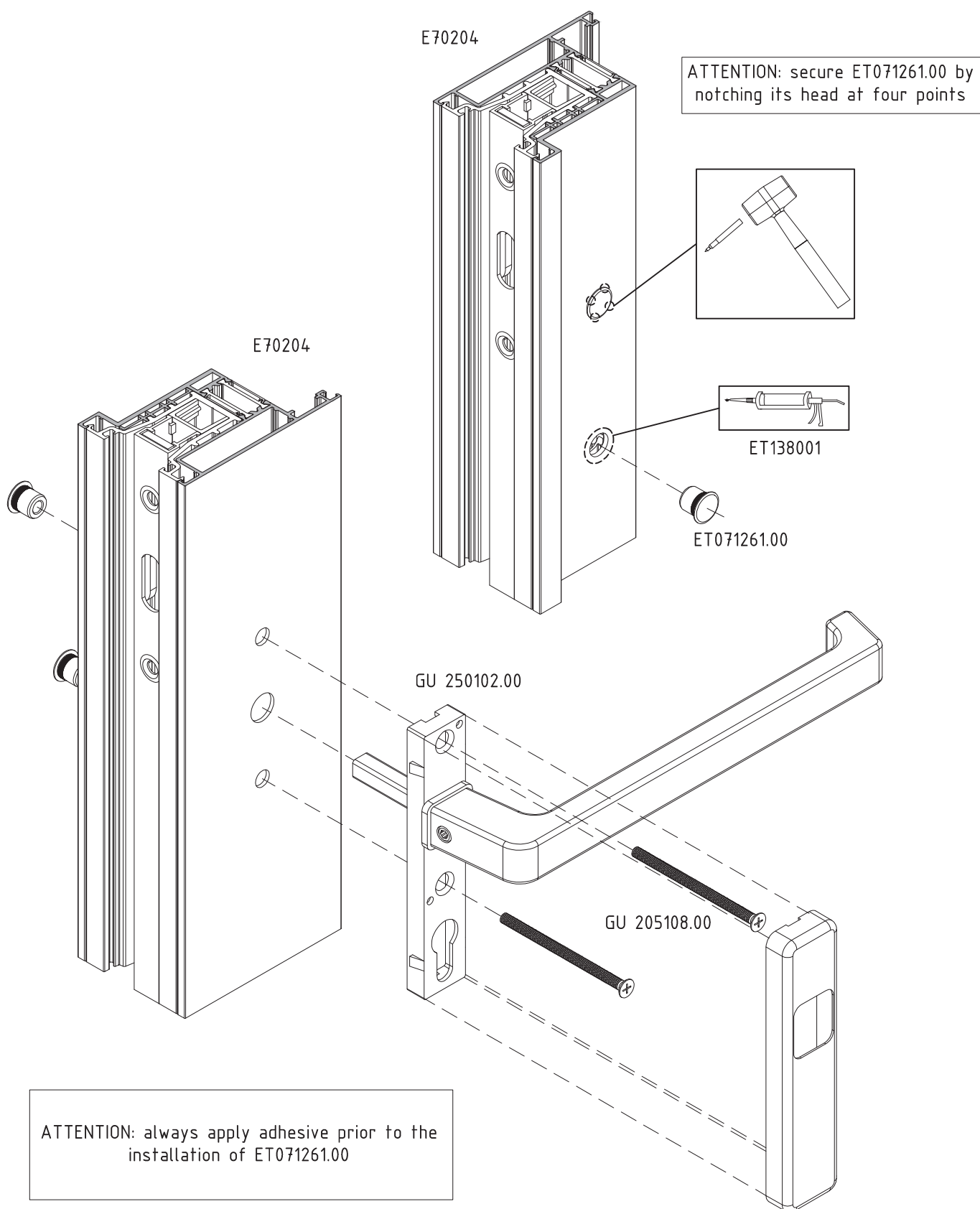
FIXING THE HANDLE OF HARDWARE G.U. 934 ON SASH E70201

M70-14



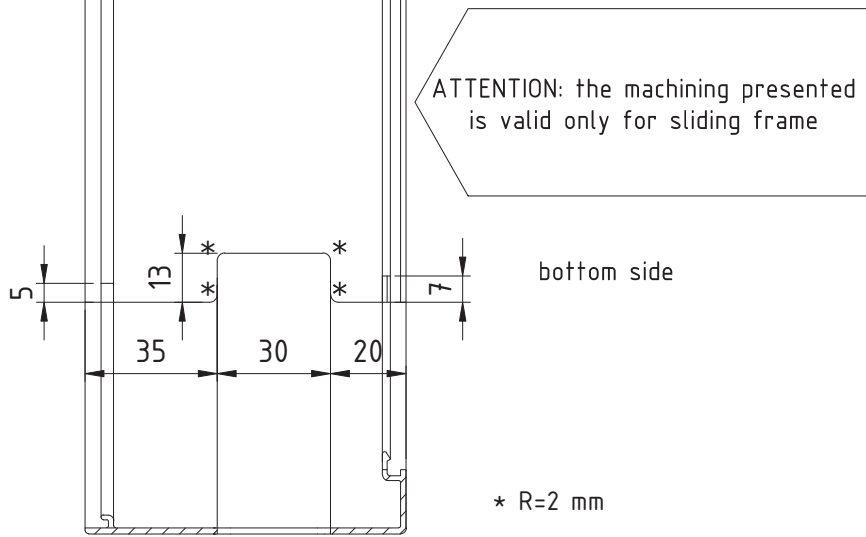
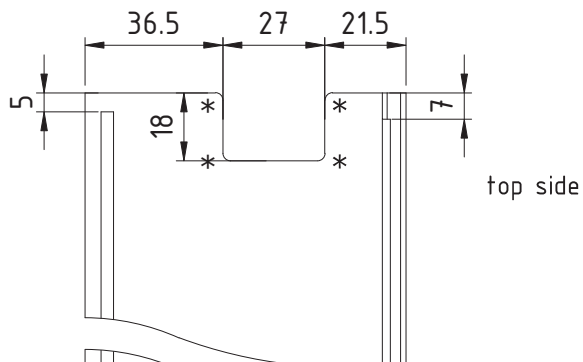
FIXING THE HANDLE OF HARDWARE G.U. 934 ON SASH E70204

M70-15



MACHINING ON INTERLOCK PROFILES E70603 & ET080186.00 FOR SLIDING FRAME

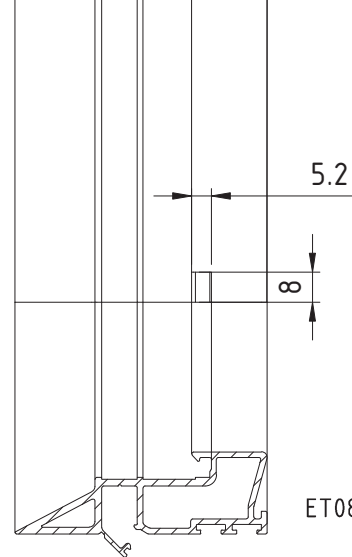
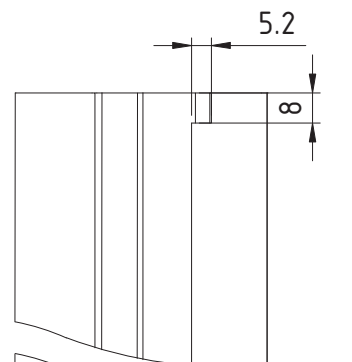
M70-16



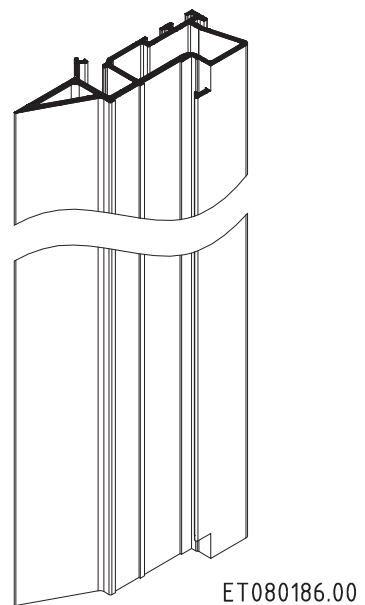
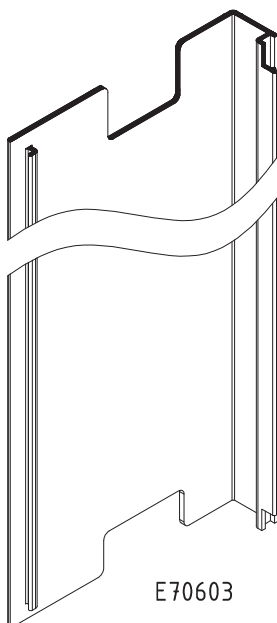
ATTENTION: the machining presented is valid only for sliding frame

* R=2 mm

E70603

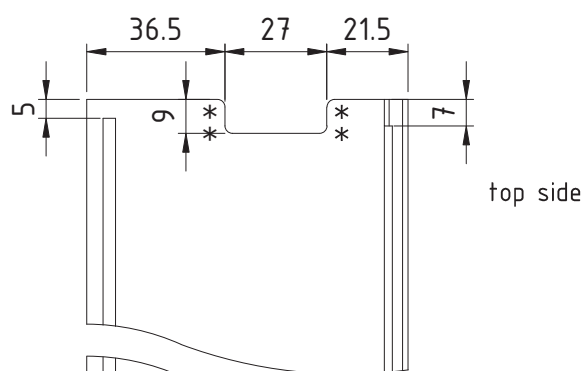


ET080186.00

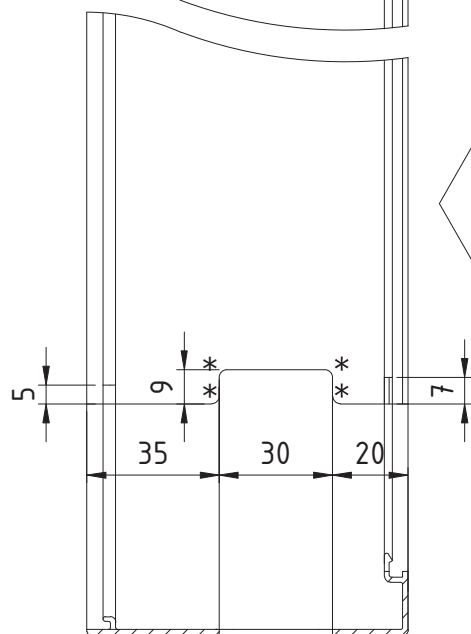


MACHINING ON INTERLOCK PROFILES E70603 & ET080186.00 FOR FIXED FRAME

M70-17



top side

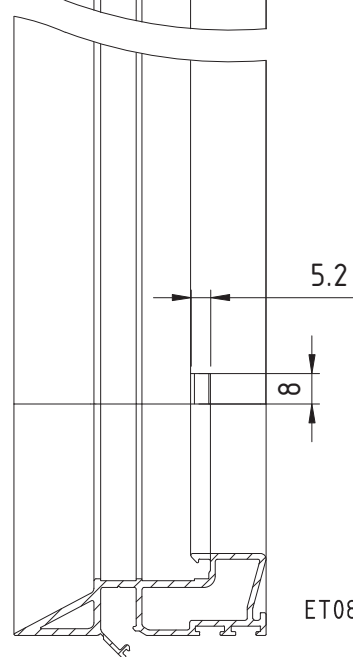
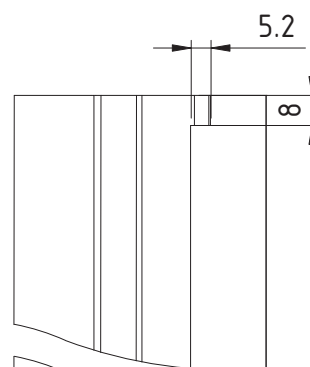


bottom side

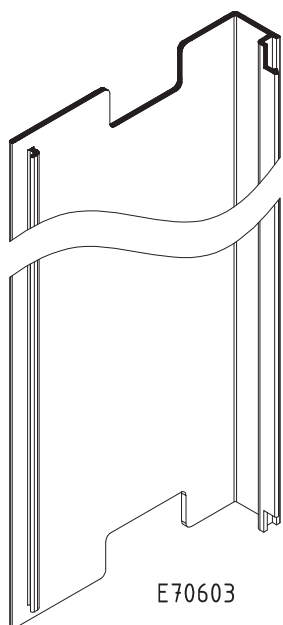
ATTENTION: the machining presented is valid only for fixed frame

* R=2 mm

E70603

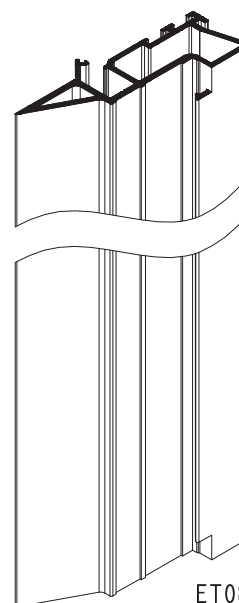


ET080186.00



E70603

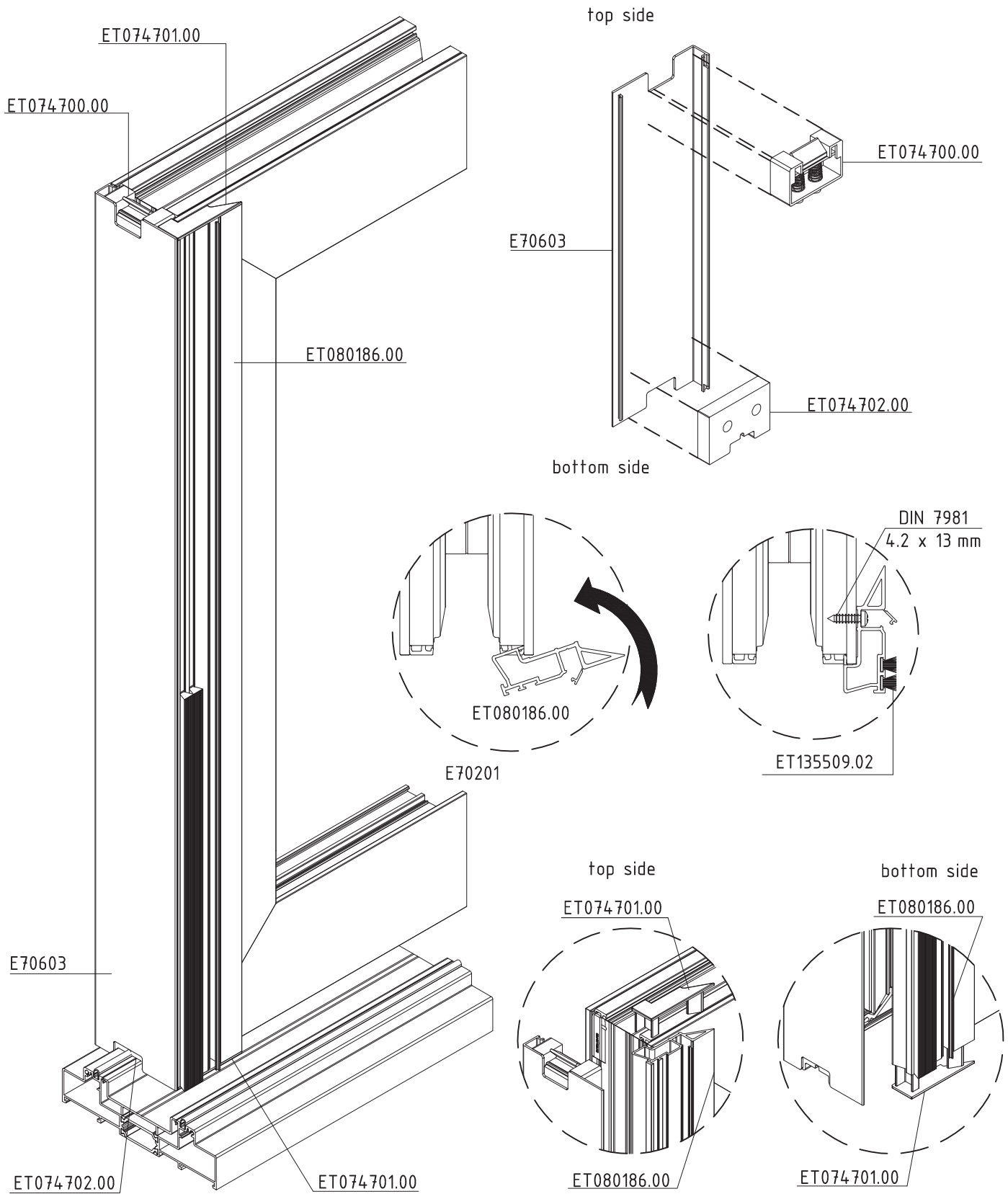
ATTENTION: profile E70603 is fixed once the sash has been placed onto the frame



ET080186.00

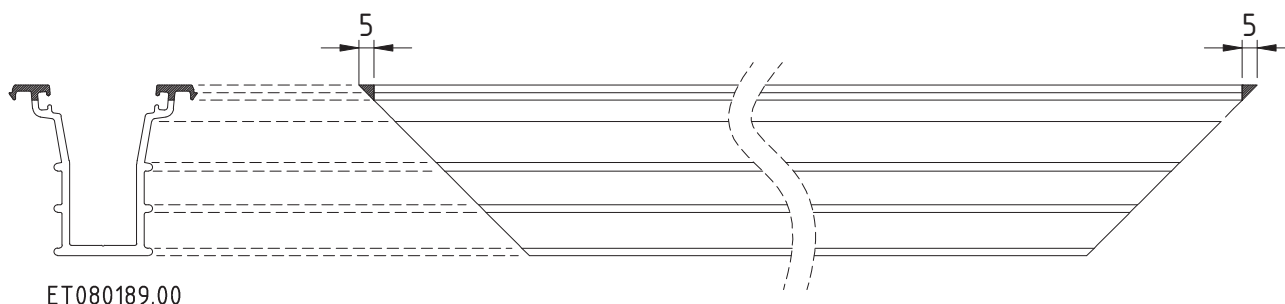
FIXING INTERLOCK PROFILES E70603 & ET080186.00 ONTO SASH E70201

M70-18

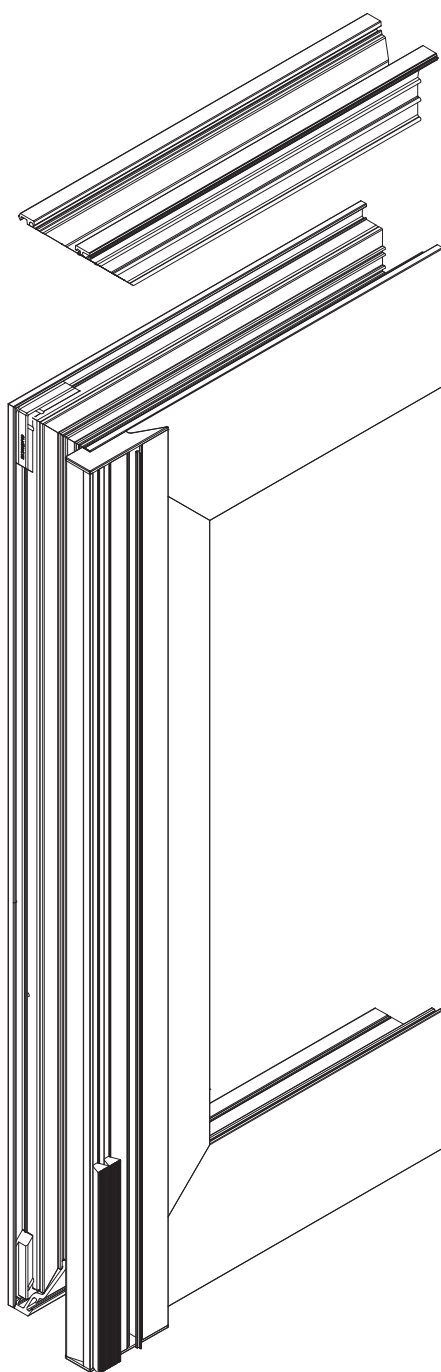


MACHINING ON PLASTIC PROFILE ET080189.00 FOR UPPER SIDE OF SLIDING FRAME

M70-19



ET080189.00

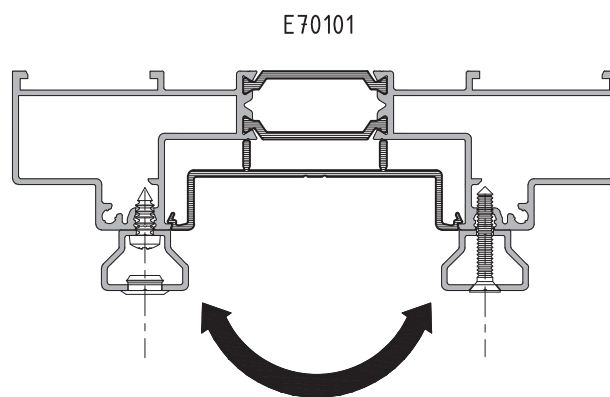
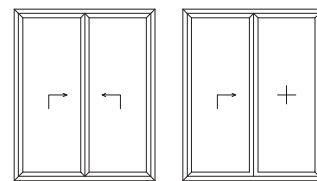
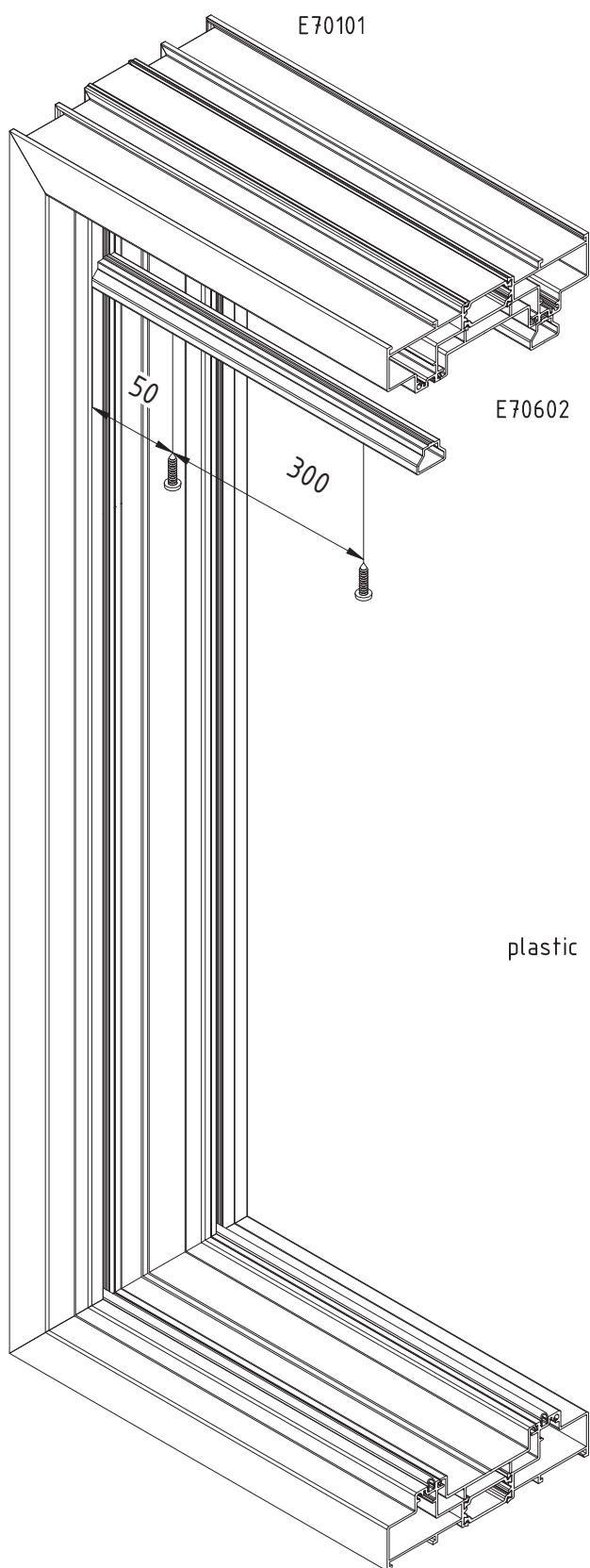


ET080189.00

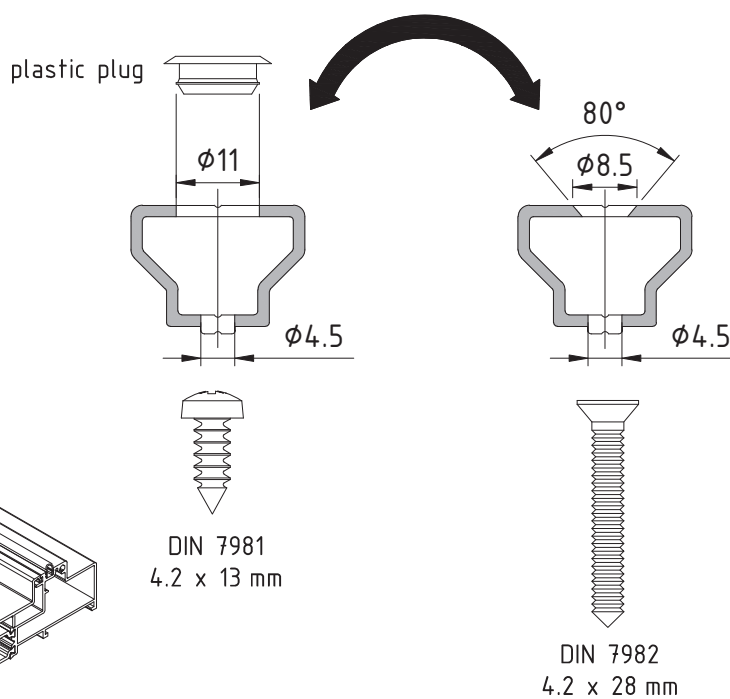
ATTENTION: machining of ET080189.00 is performed only at the part that will be fixed on the top side of the frame

MACHINING ON E70602

M70-20

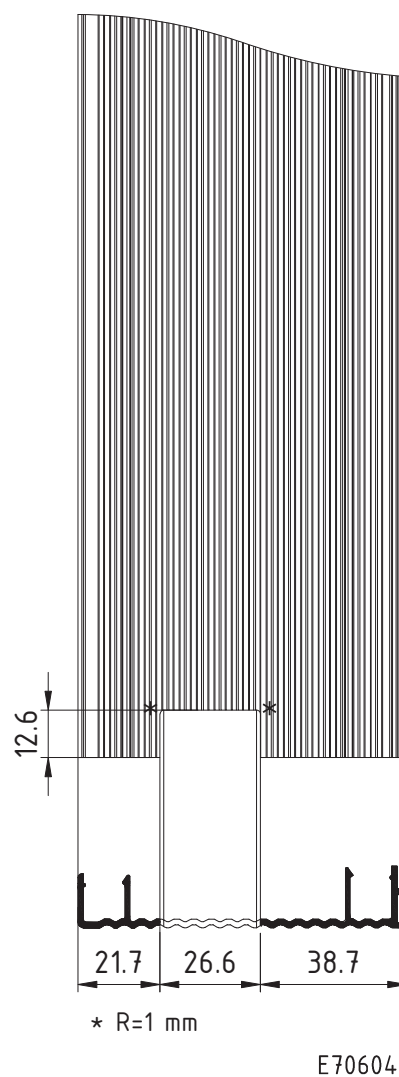
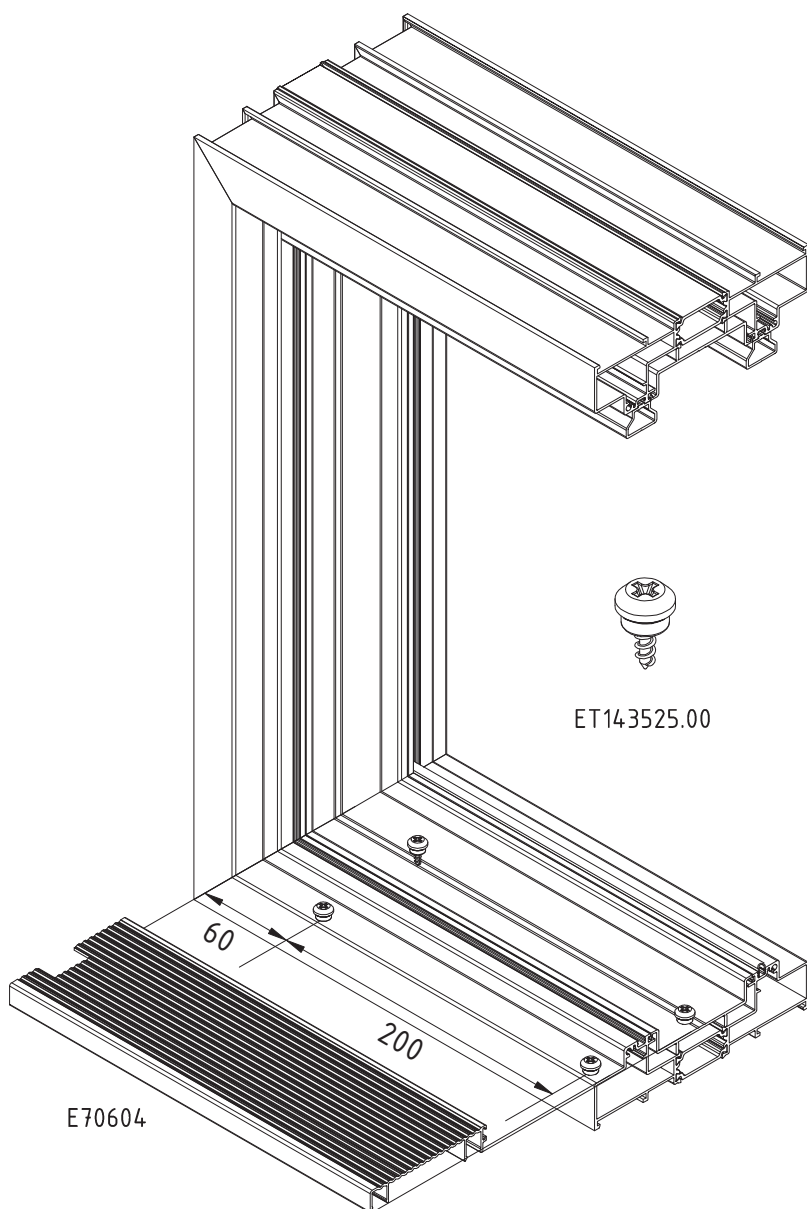
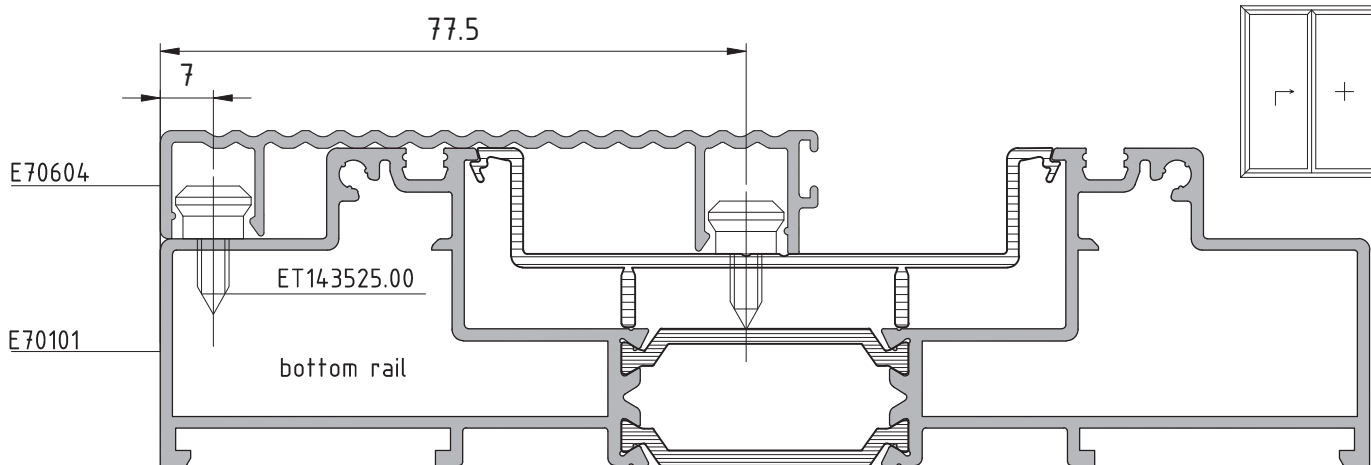


ALTERNATIVE methods for fixing supplementary profile E70602 onto rail E70101



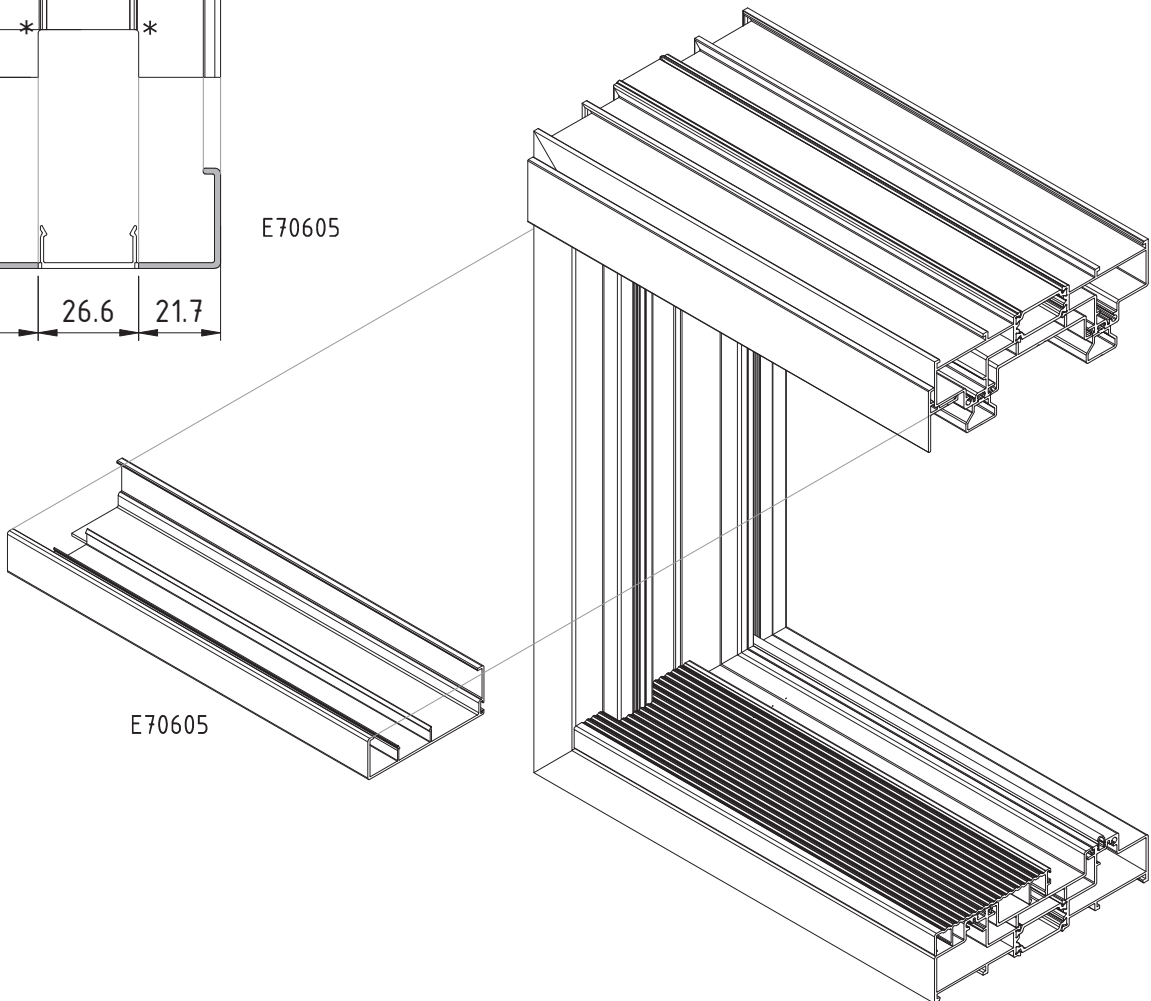
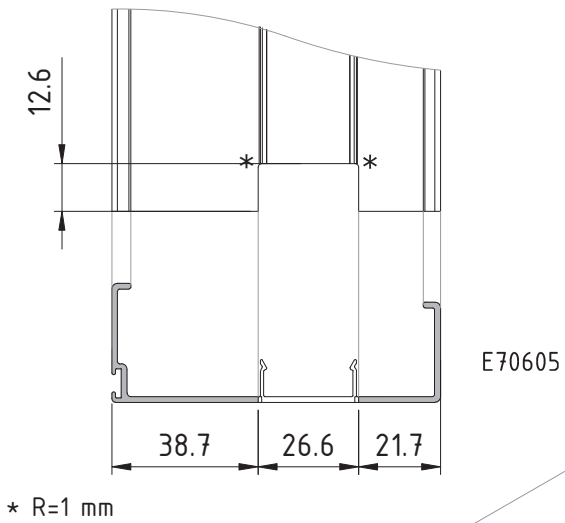
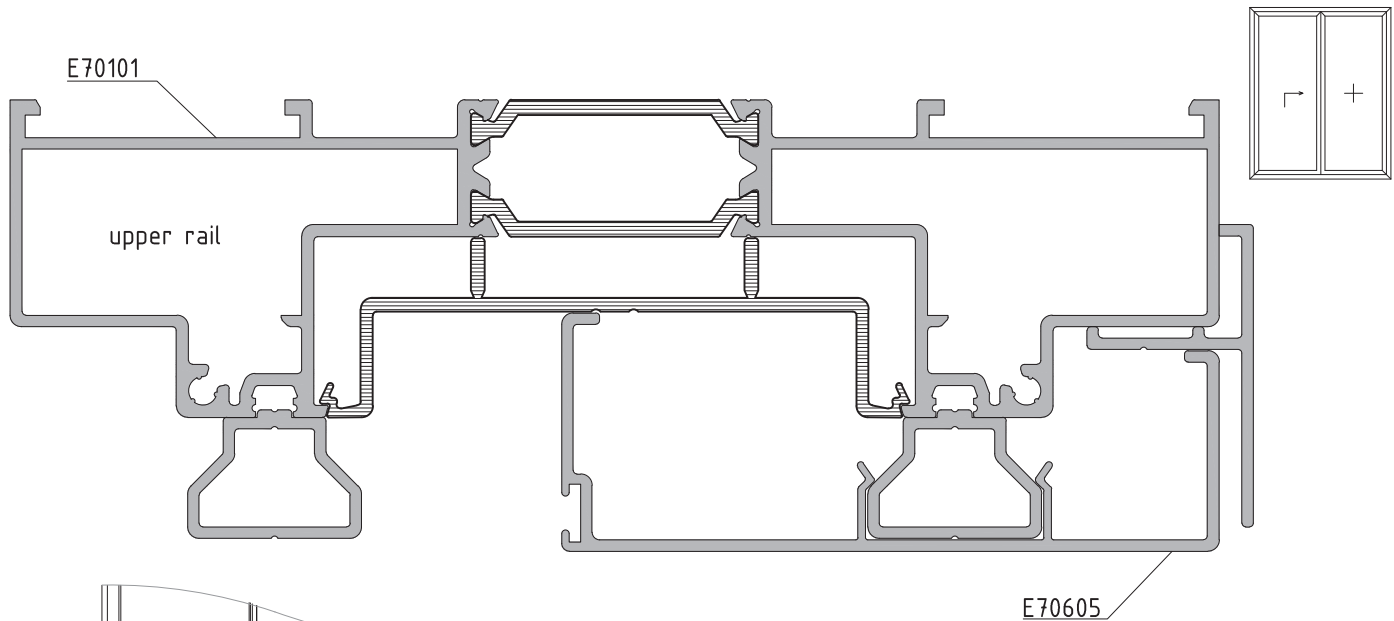
MACHINING ON COVER PROFILE E70604

M70-21



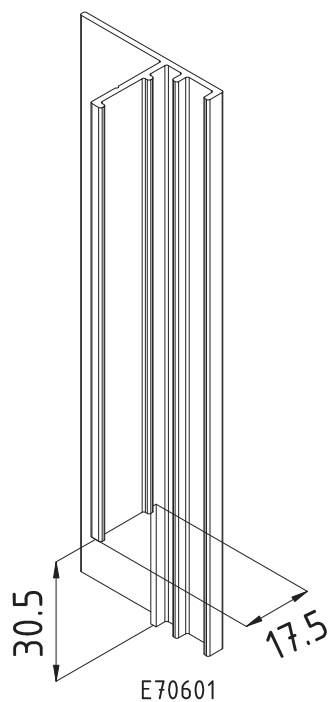
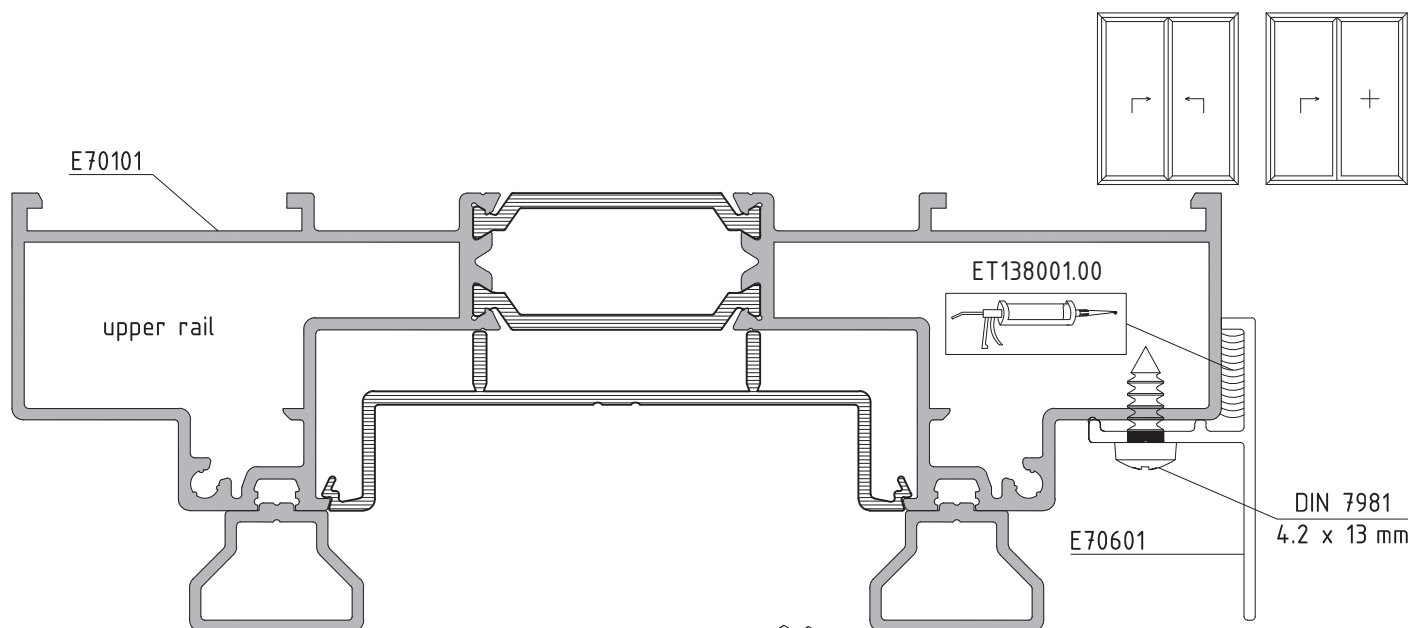
MACHINING ON COVER PROFILE E70605

M70-22

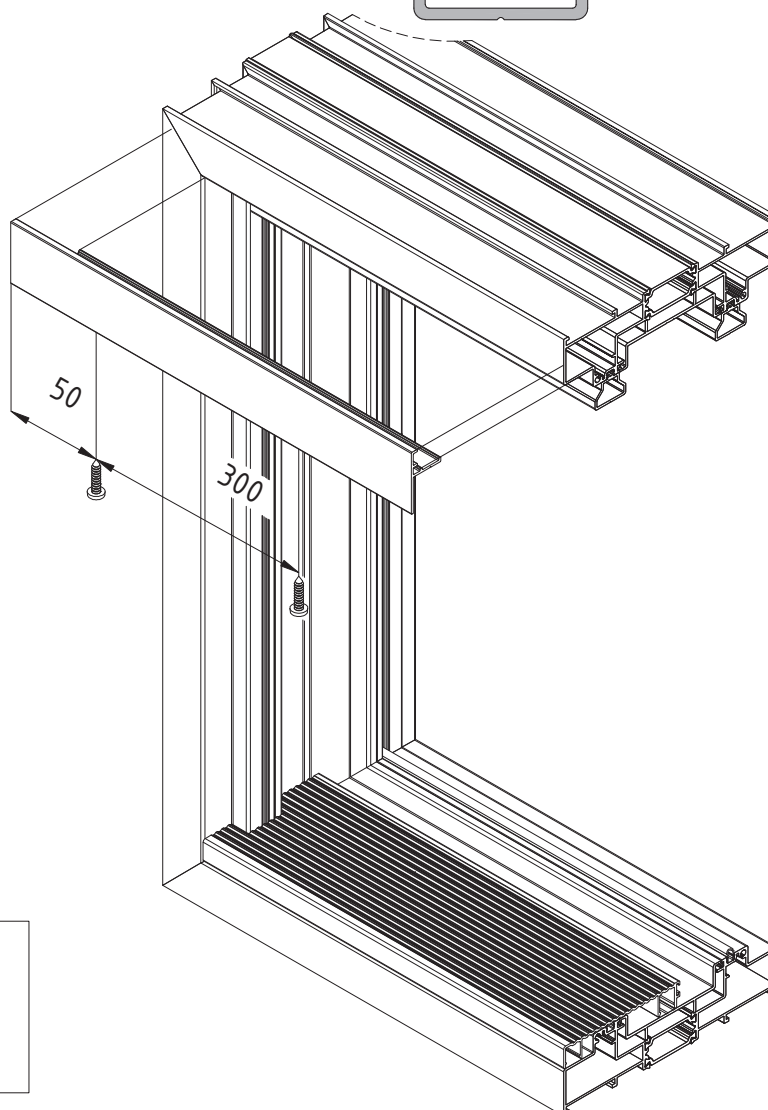


MACHINING ON COVER PROFILE E70601

M70-23



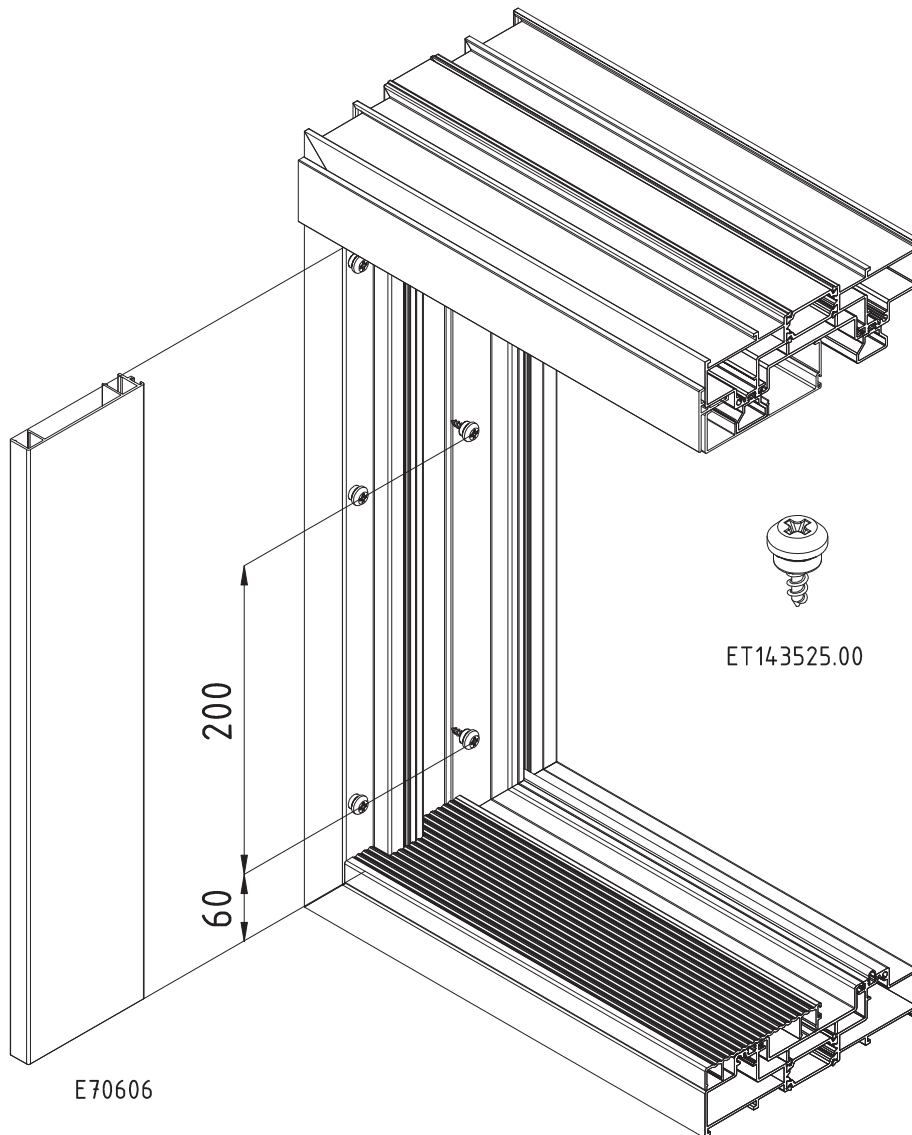
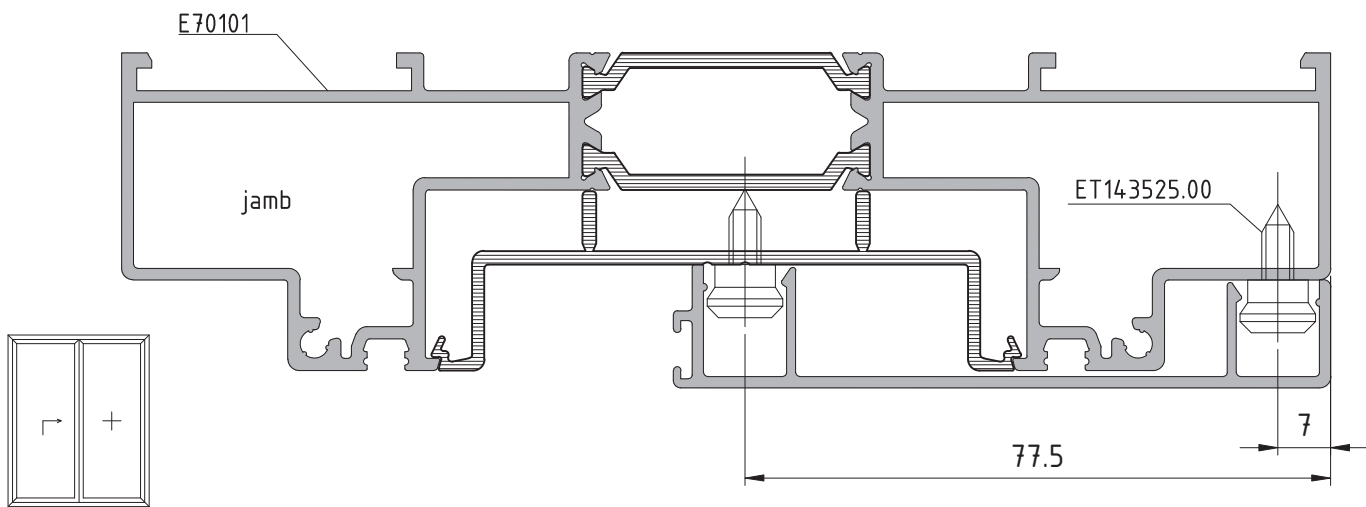
E70601



ATTENTION: both ends of profile E70601 are machined

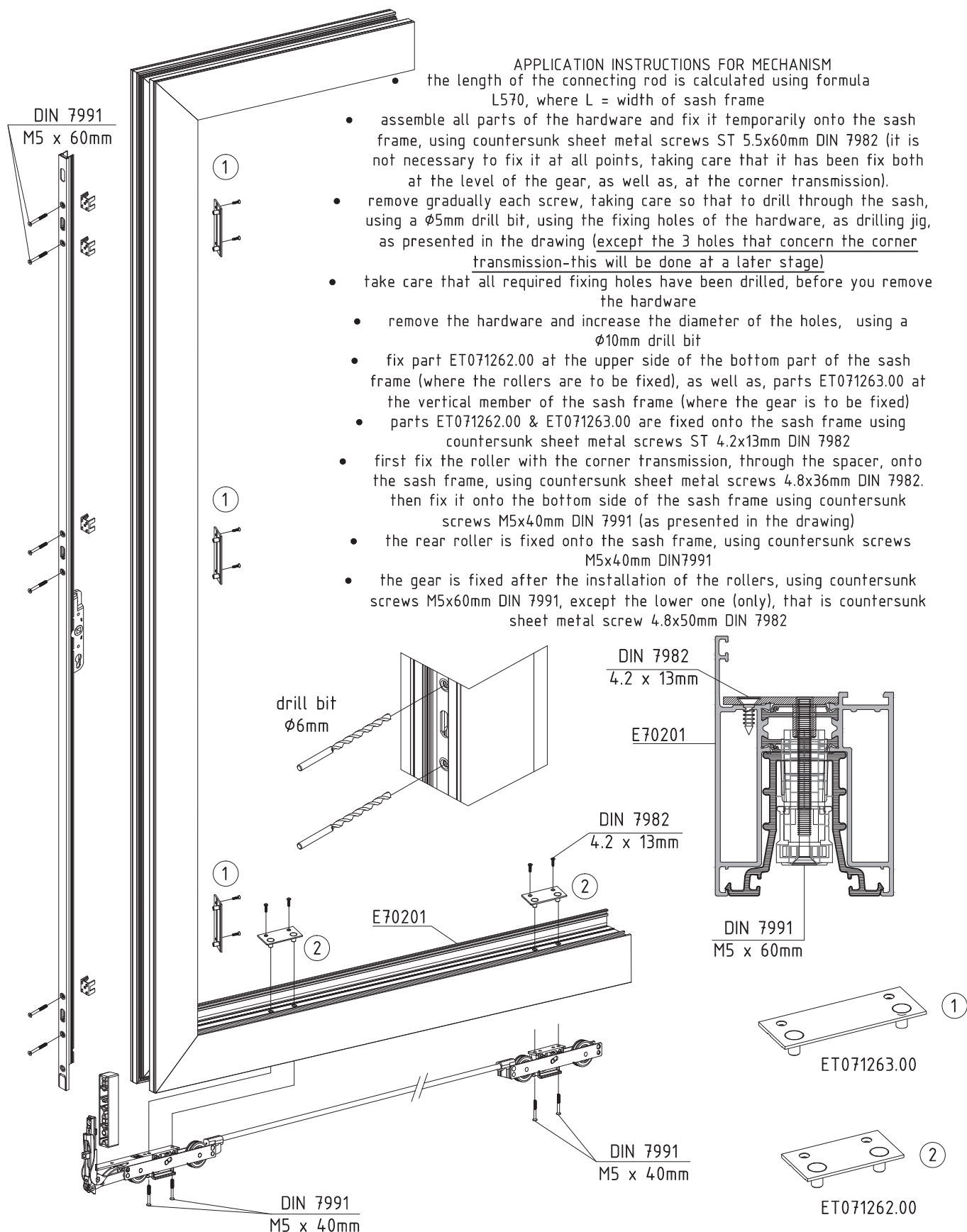
FIXING COVER PROFILE E70606 ONTO RAIL E70101

M70-24



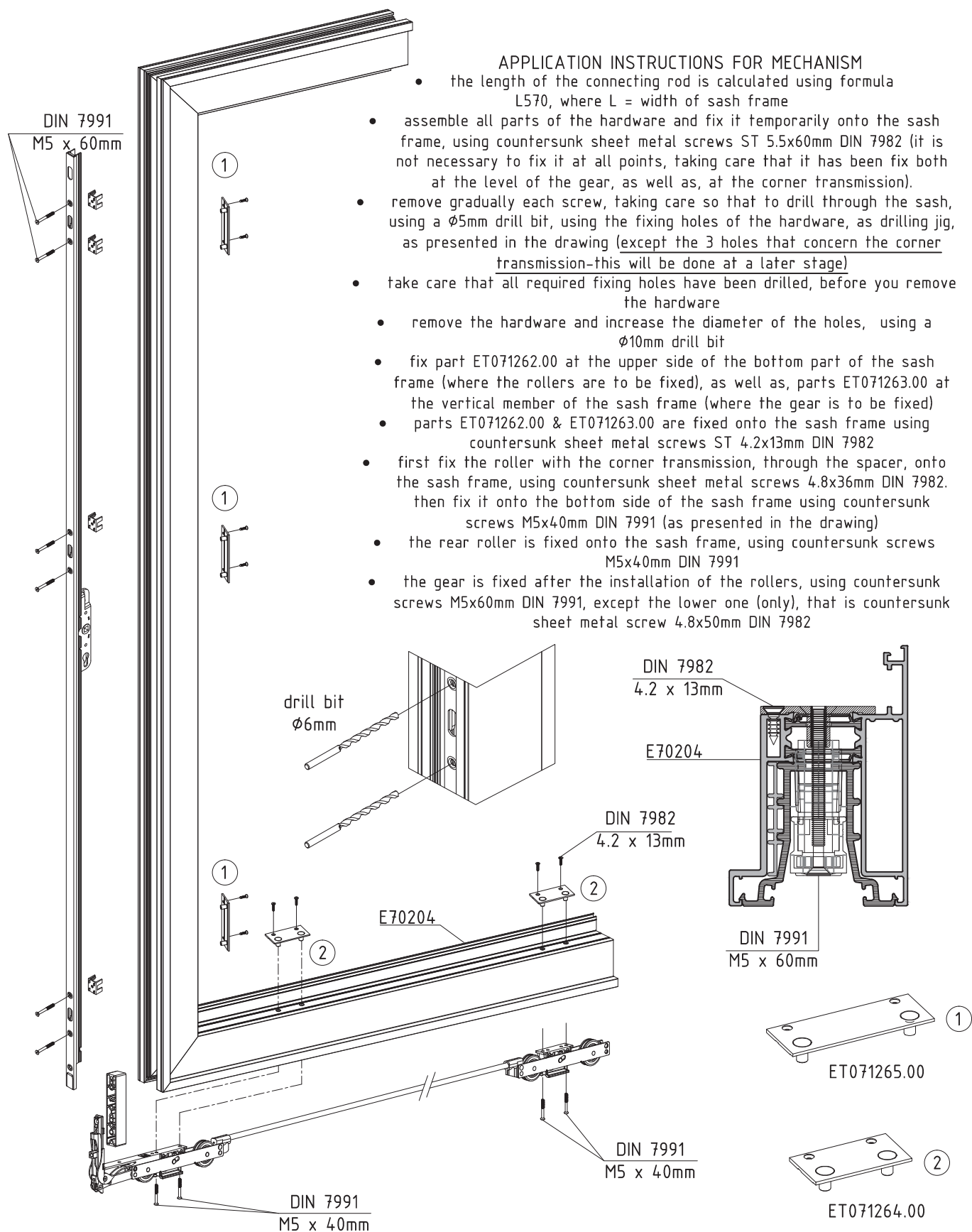
FIXING HARDWARE ONTO SASH E70201

M70-33



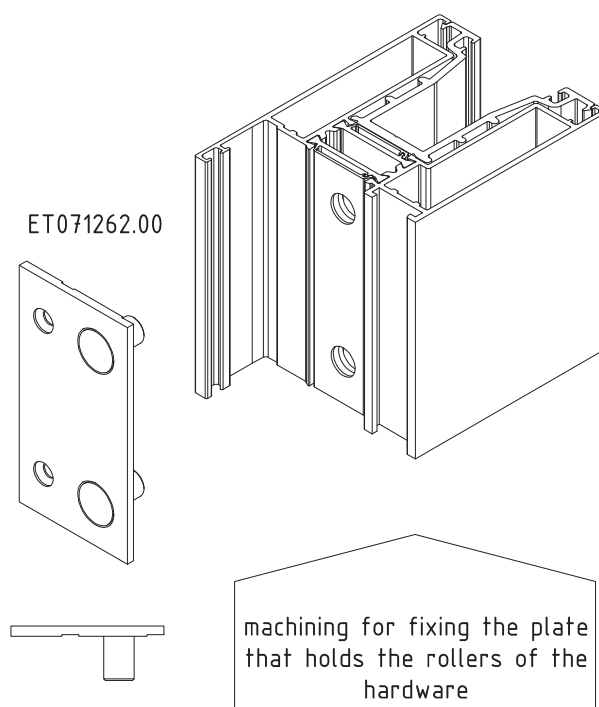
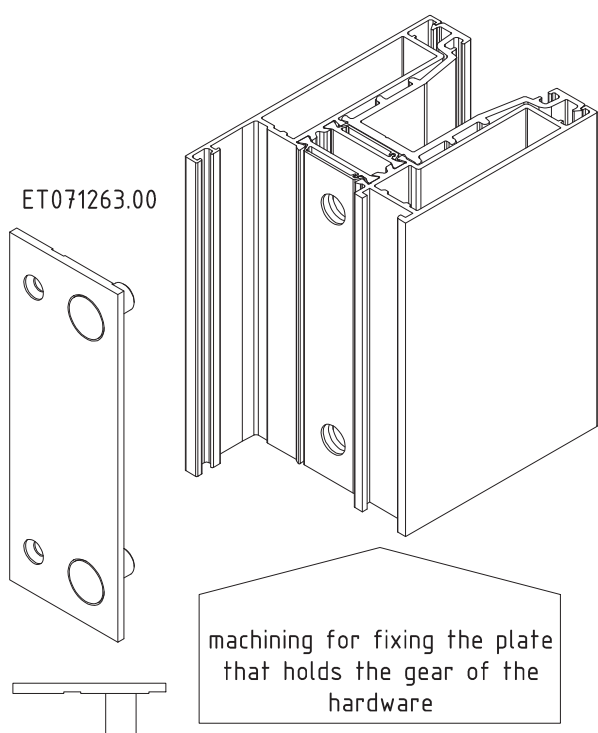
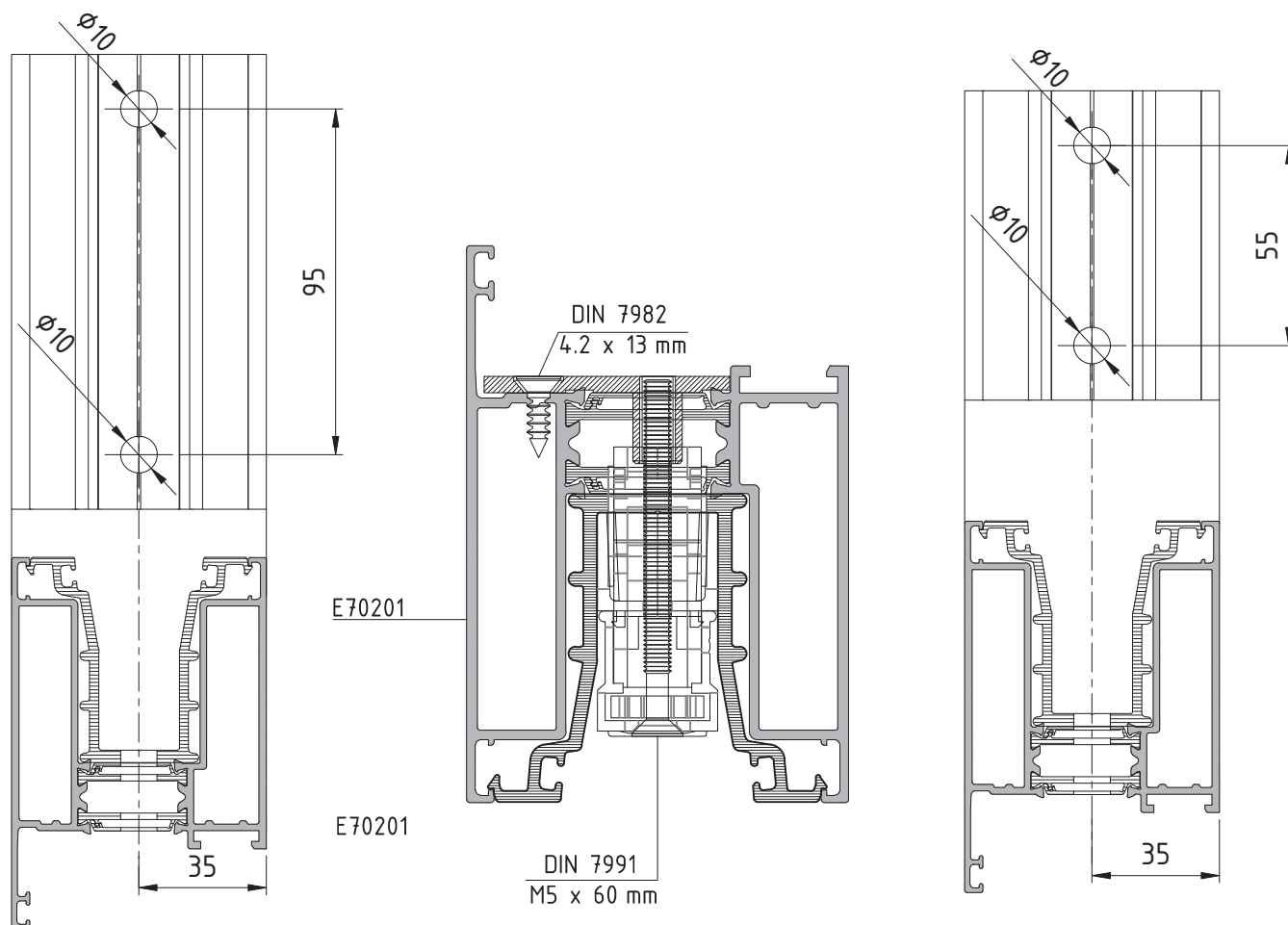
FIXING HARDWARE ONTO SASH E70204

M70-34



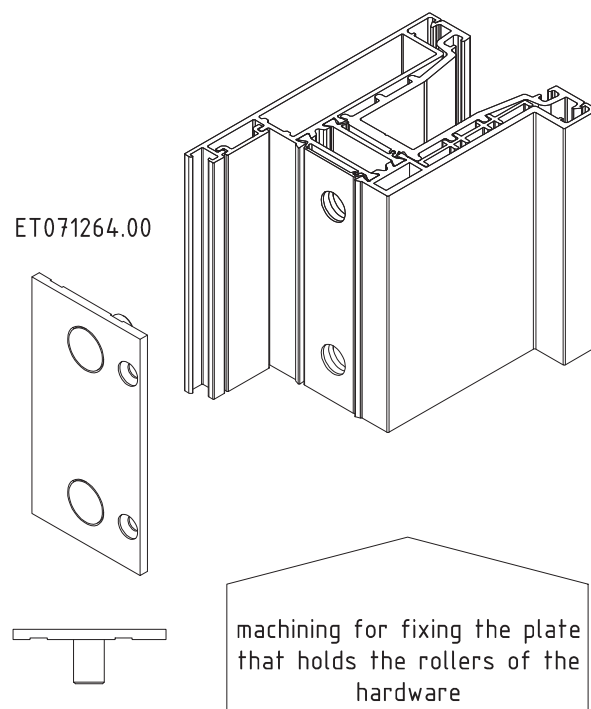
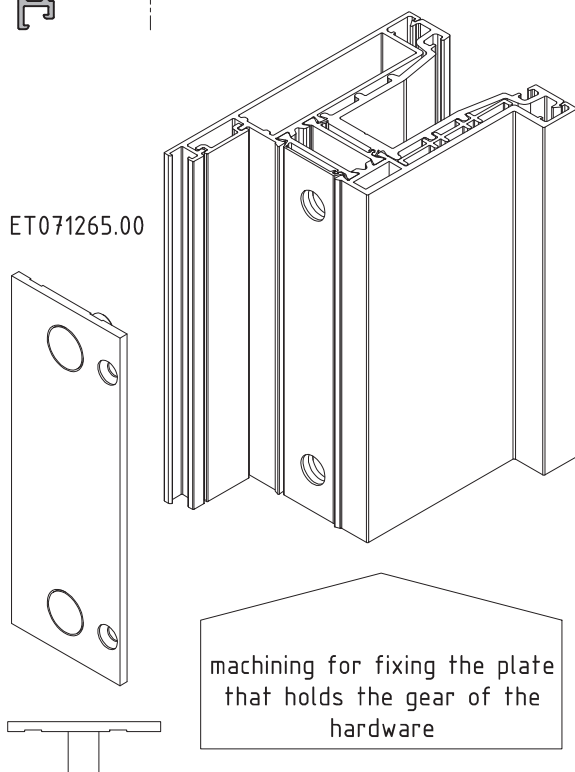
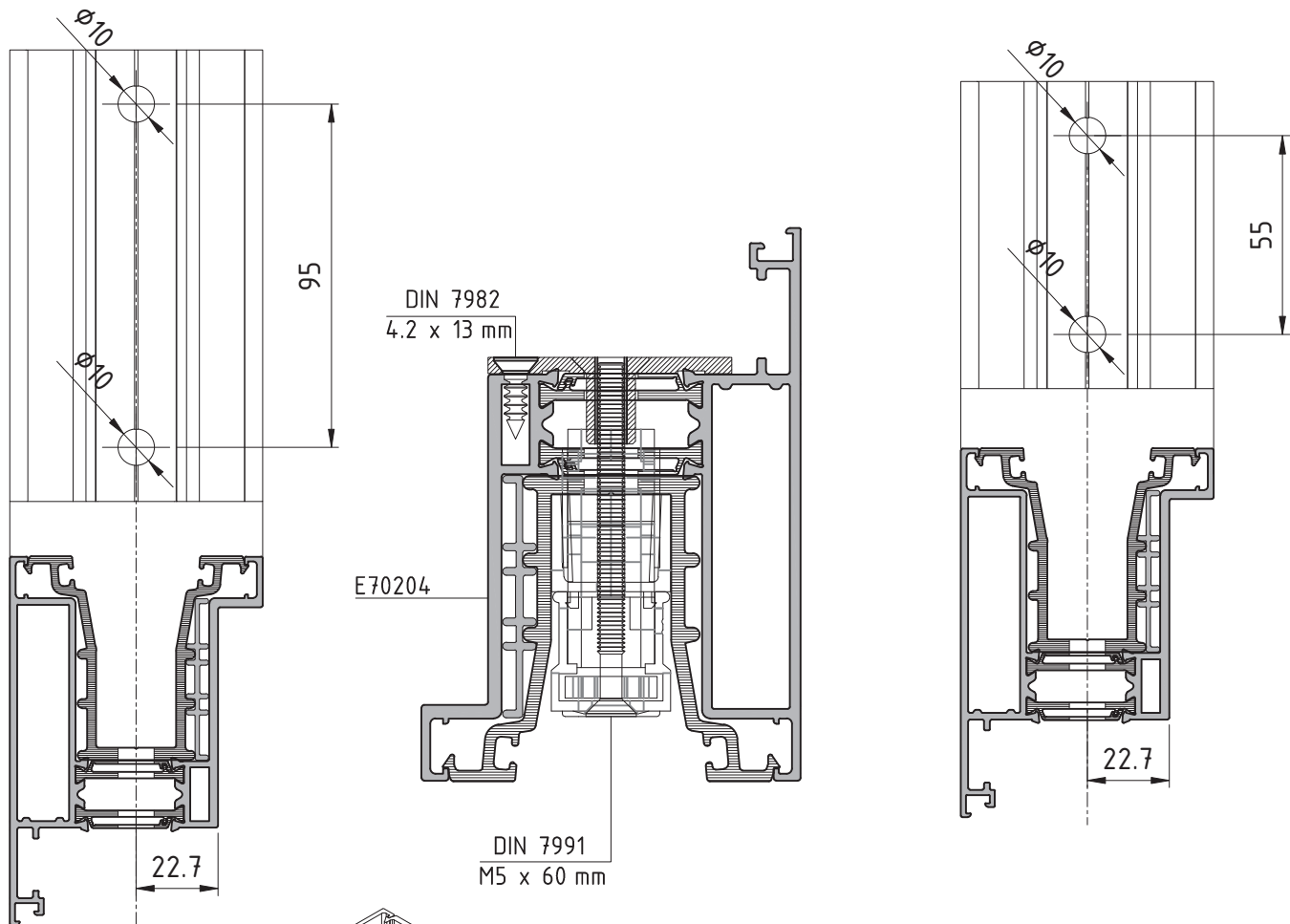
FIXING HOLES ON SASH E70201 FOR THE HARDWARE

M70-27



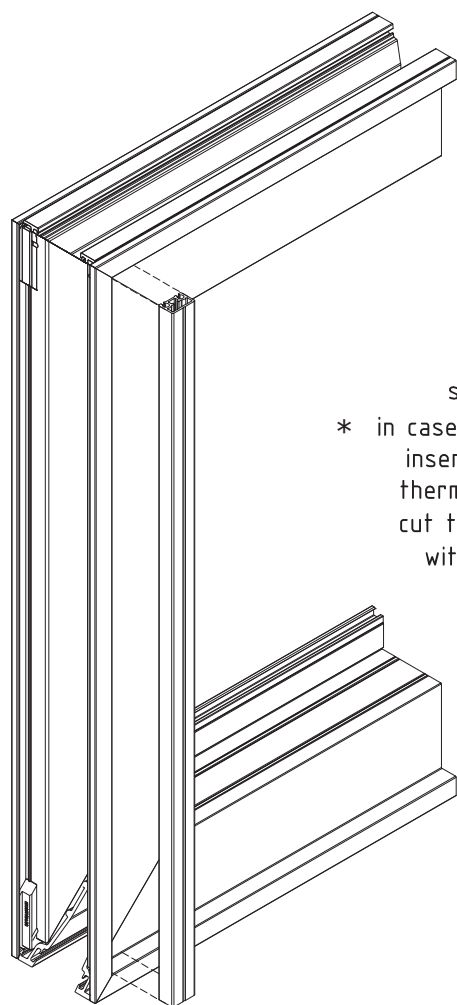
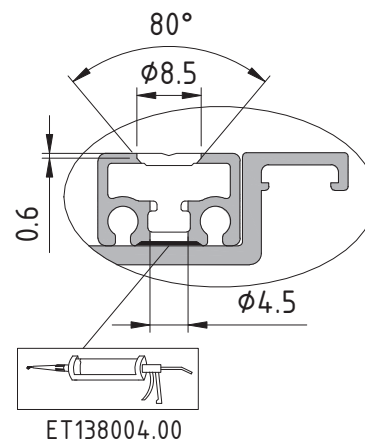
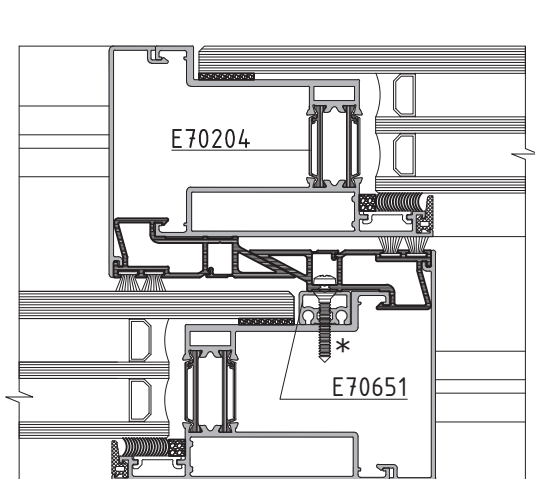
FIXING HOLES ON SASH E70204 FOR THE HARDWARE

M70-28

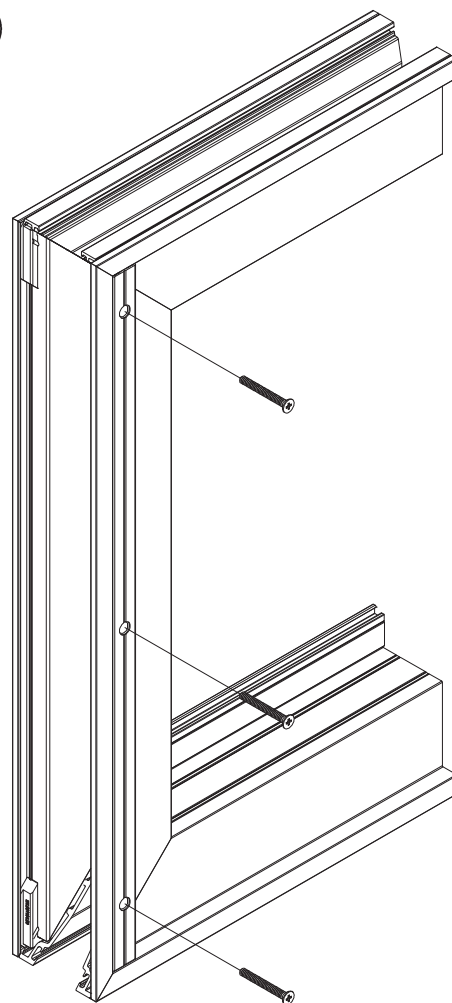


FIXING SUPPLEMENTARY PROFILE E70651 ON SASH E70204

M70-30

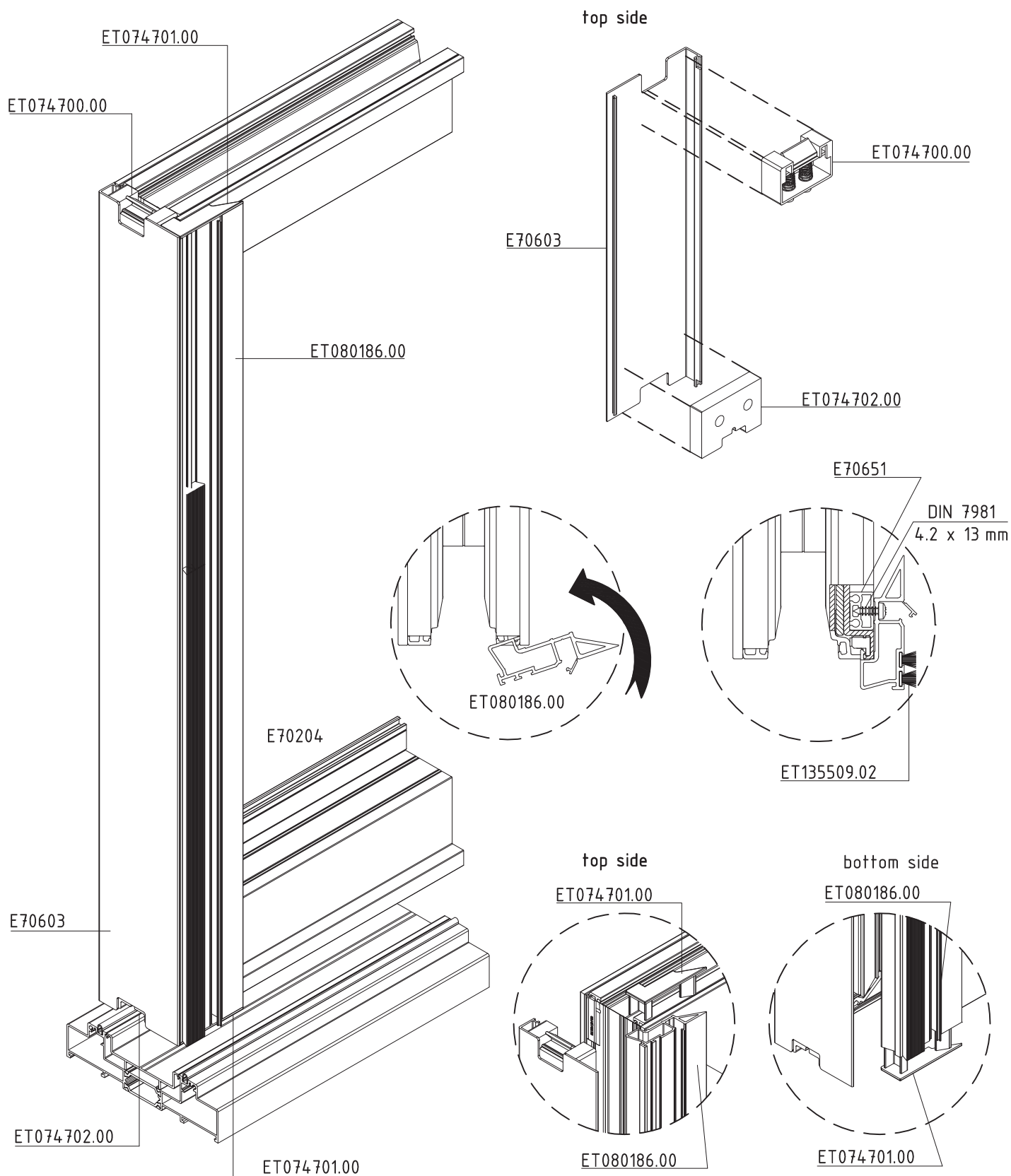


- profile E70651 is fixed only at the inner sash (E70204) of a double leaf door/window E70 less frame
 - profile E70651 is machined as presented, so that the head of the countersunk screw is aligned to the external side of the profile
 - to E70651 is fixed onto sash E70204, using adhesive ET138004.00 (see figure), as well as, countersunk sheet metal screws DIN 7982 4.2x25mm
- * in case that is necessary to use foam insert ET080506.00, for additional thermal insulation, is necessary to cut the part of the screw (marked with the color) that protrudes in the cavity



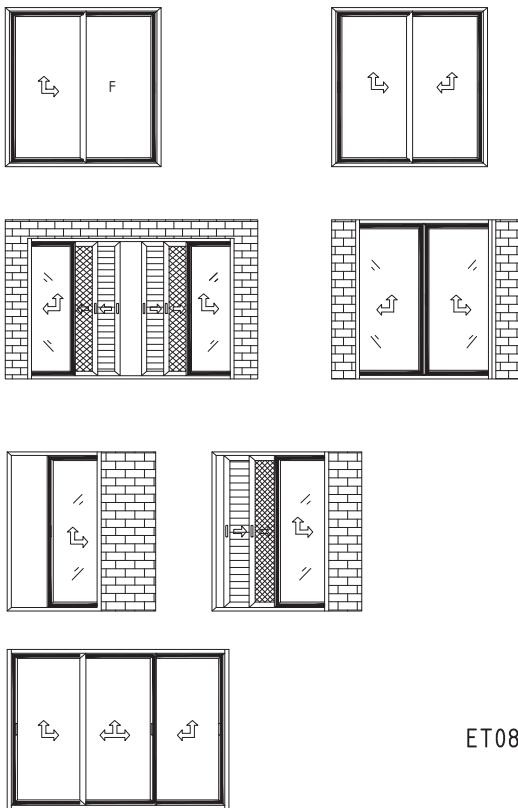
FIXING INTERLOCK PROFILES E70603 & ET080186.00 ON TO E70204

M70-31



FIXING PVC PROFILE ET080189.00 ON TO E70201

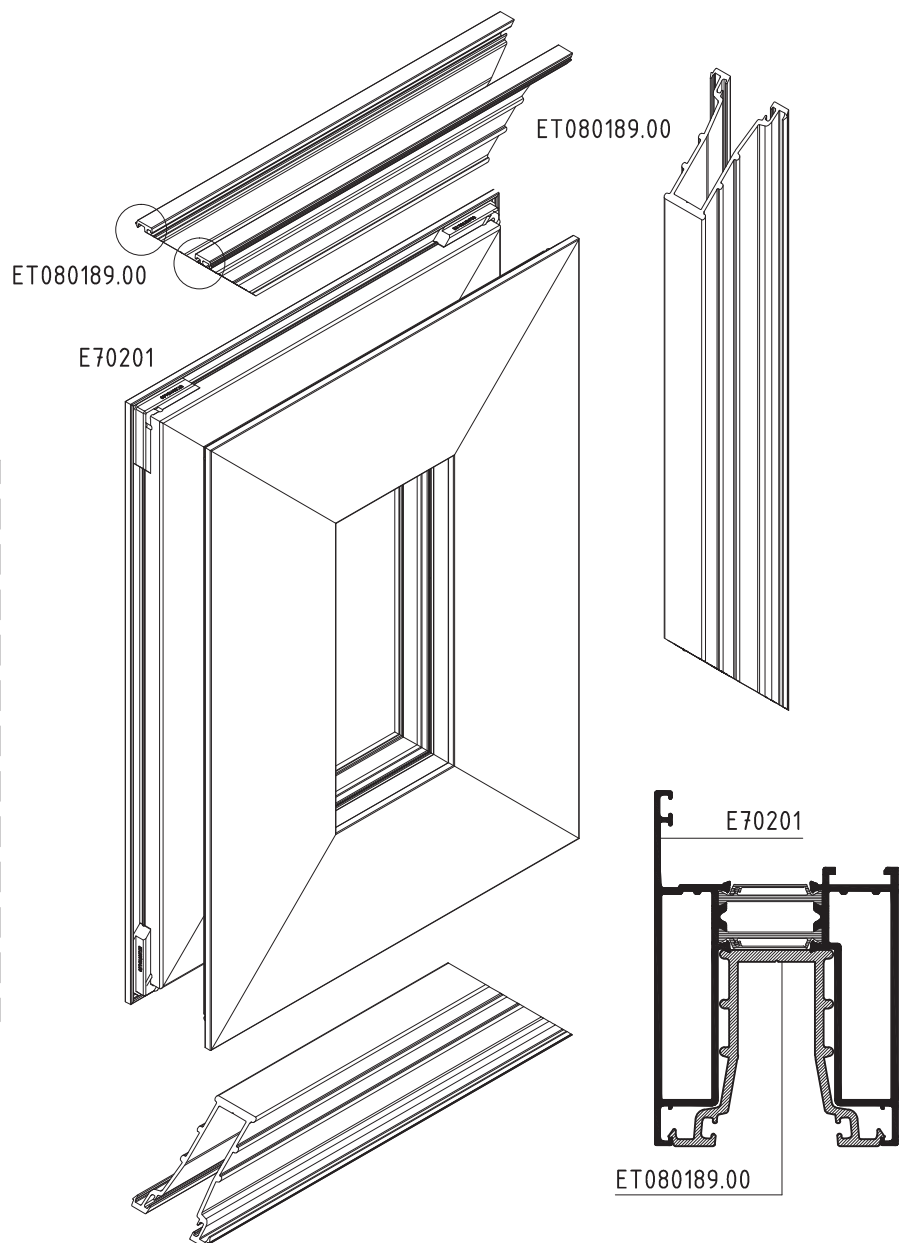
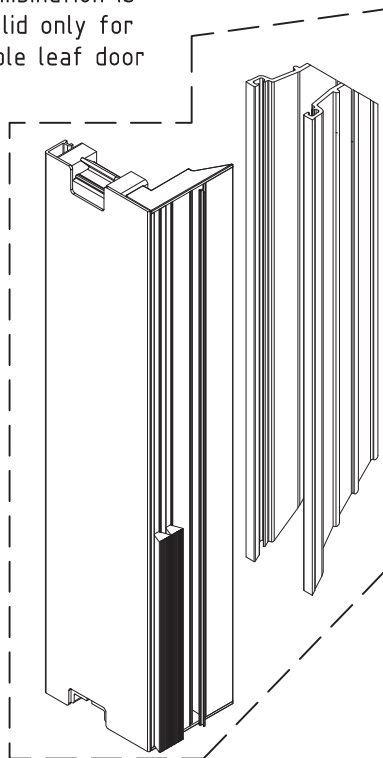
M70-32



- plastic profile ET080189.00 is fixed on sash, as presented in the drawings
- attention: the plastic profile must not be fixed at the side of the sash, where the interlock is fixed, as well as, at the side of the sash that is positioned in the wall
- attention: the plastic profile ET080189.00 must be machined at the top side, as presented in page M70-19

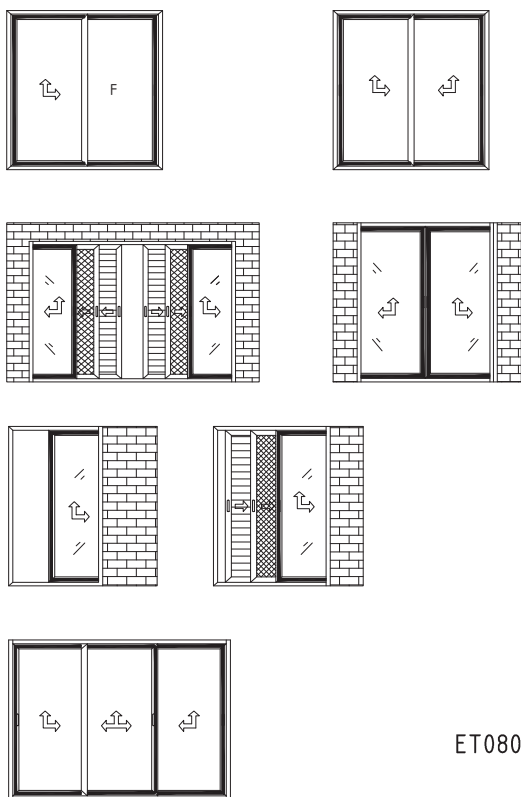
it is suggested to fix plastic profile ET080189.00 ON TO the sash and cut them together at the triple vent sliding the plastic profile ET080189.00 is fixed at the side of the interlock, where the lift & slide hardware is to be fixed. machining is performed, as presented in page M70-34

ATTENTION: the combination is valid only for triple leaf door



FIXING PVC PROFILE ET080189.00 ON TO E70204

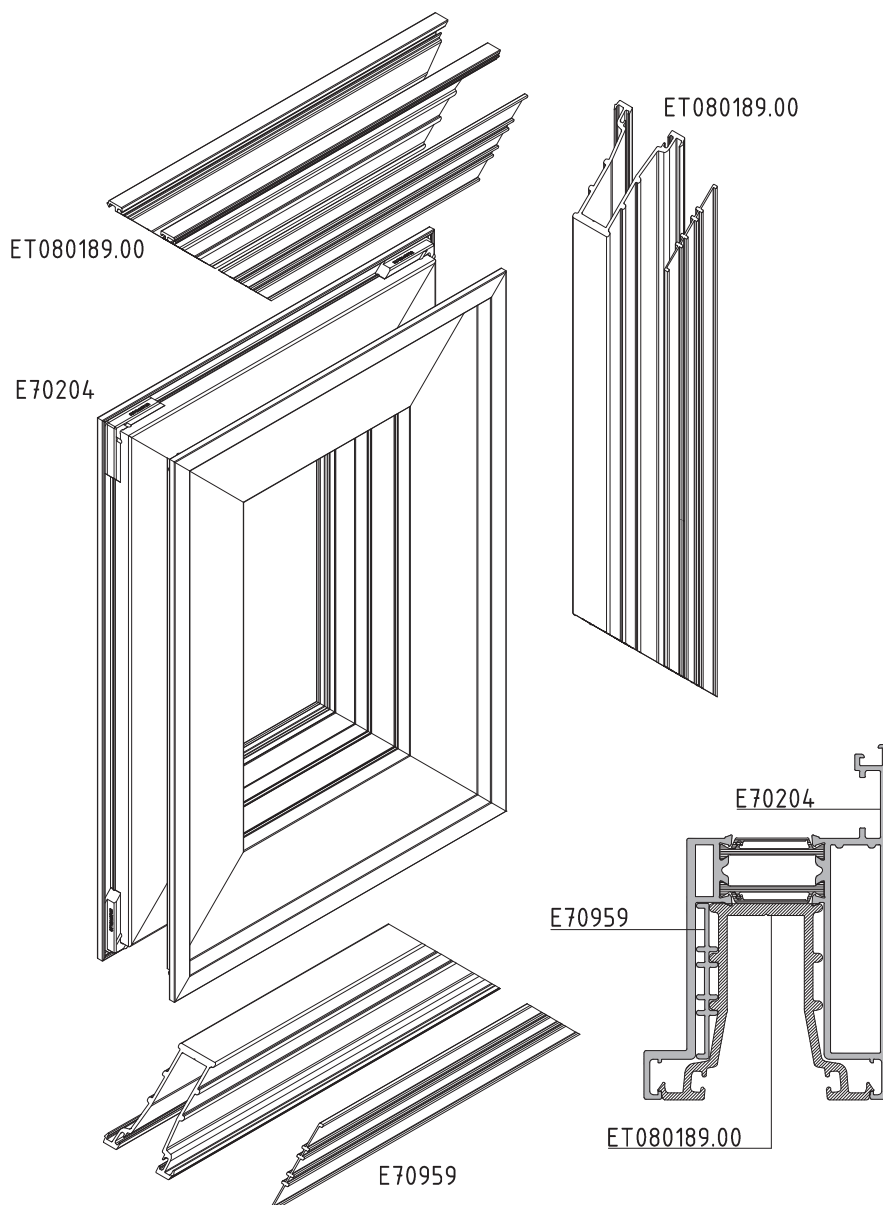
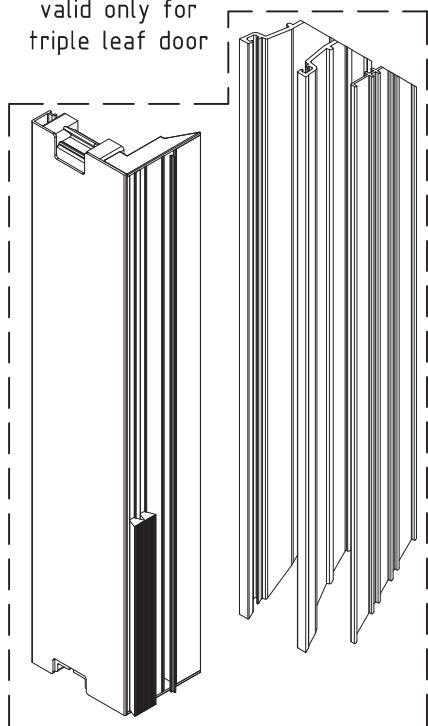
M70-33



- plastic profile ET080189.00 is fixed on sash, as presented in the drawings
- ATTENTION: the plastic profile must not be fixed at the side of the sash, where the interlock is fixed, as well as, at the side of the sash that is positioned in the wall
- attention: the plastic profile ET080189.00 must be machined at the top side, as presented in page M70-19

it is suggested to fix plastic profile ET080189.00 on to the sash and cut them together at the triple vent sliding the plastic profile ET080189.00 is fixed at the side of the interlock, where the lift & slide hardware is to be fixed. machining is performed, as presented in page M70-32

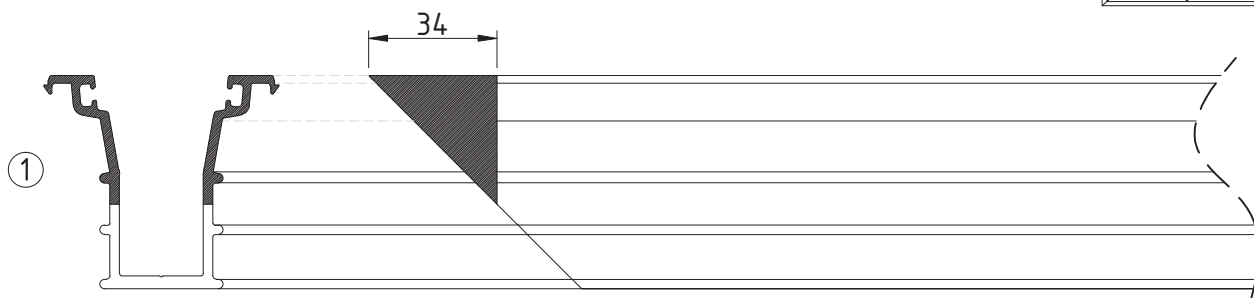
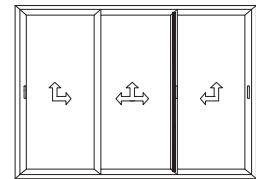
ATTENTION: the combination is valid only for triple leaf door



MACHINING ON PLASTIC PROFILE ET080189.00 FOR TRIPLE SLIDING DOOR

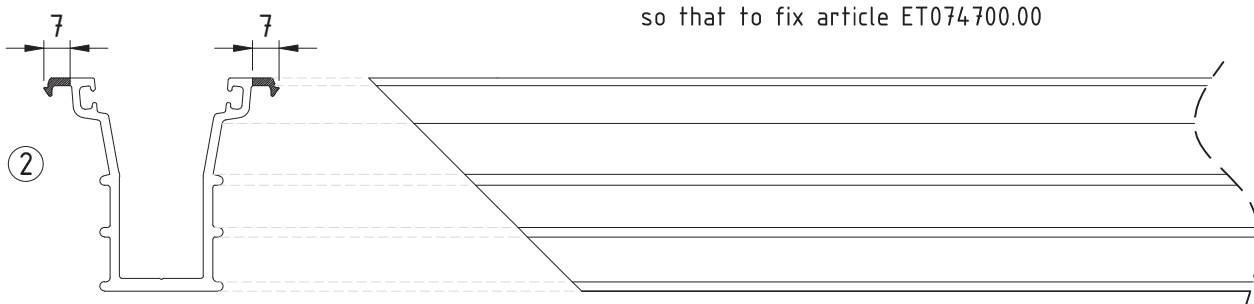
M70-34

ATTENTION: machining (as presented below) is performed on plastic profile ET080189.00, that is fixed on the side of the interlock profile (this is valid only for triple sliding door)

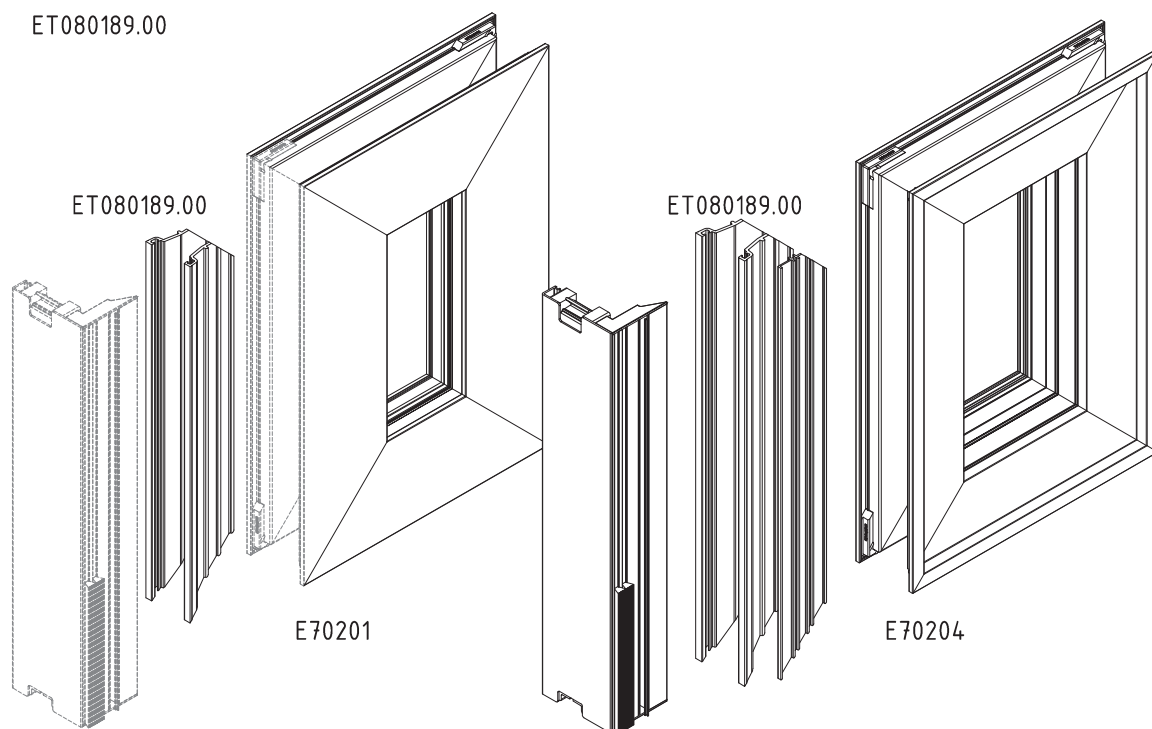


ET080189.00

the side of ET080189.00, where the edge is cut (34 mm), is placed on the top side of the vertical member of the sash frame (where the interlock profile is fixed) so that to fix article ET074700.00



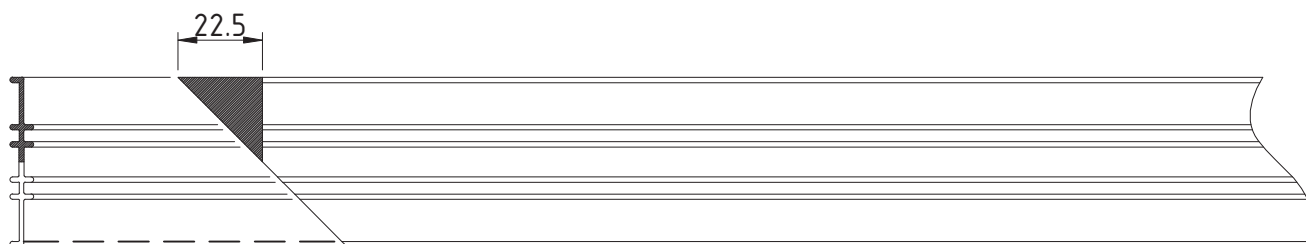
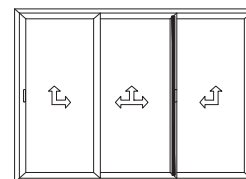
ET080189.00



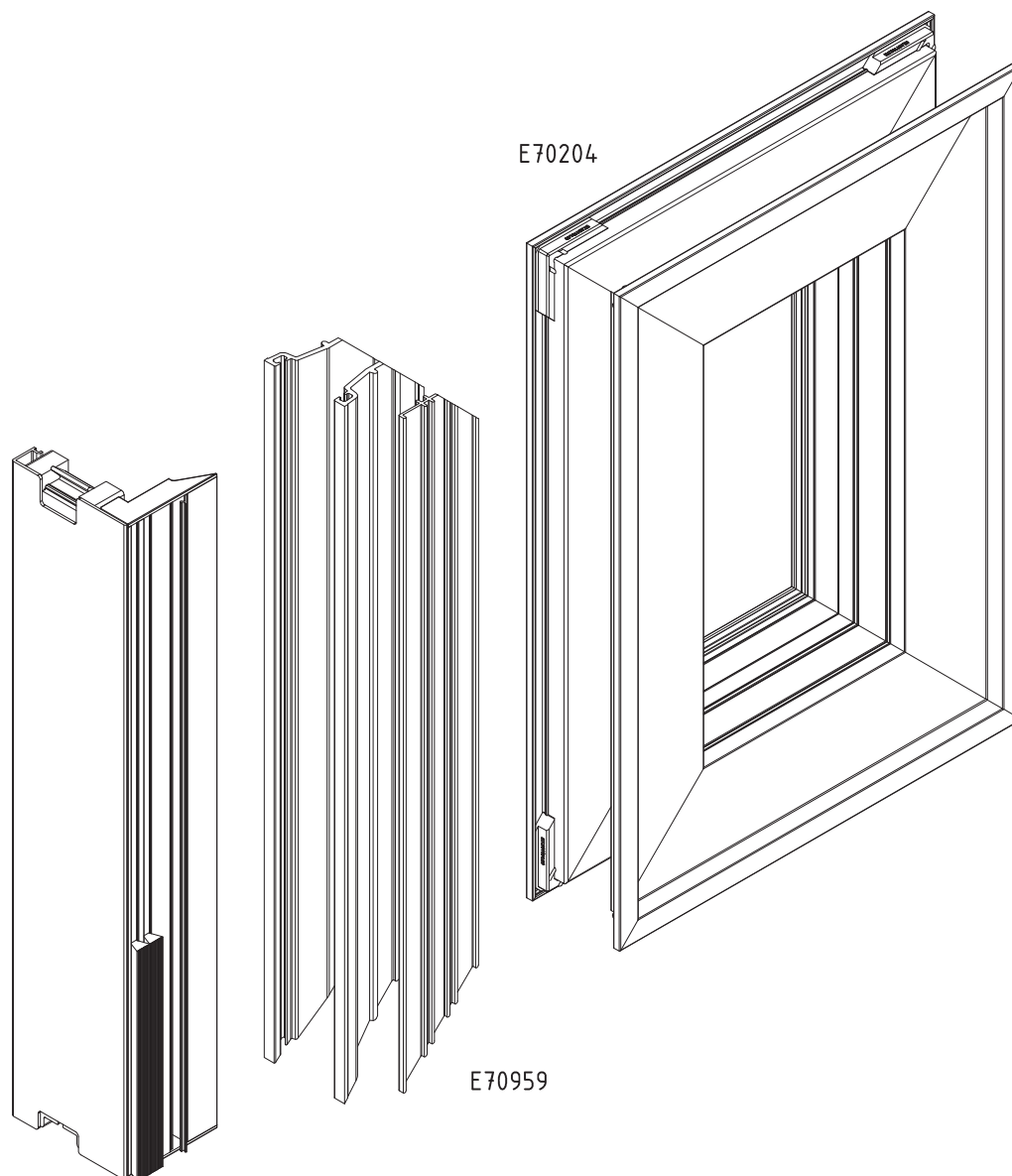
MACHINING ON PROFILE E70959 FOR TRIPLE SLIDING DOOR (LESS FRAME)

M70-35

the side of E70959, where the edge is cut (22.5 mm), is placed on the top side of the vertical member of the sash frame (where the interlock profile is fixed)



E70959

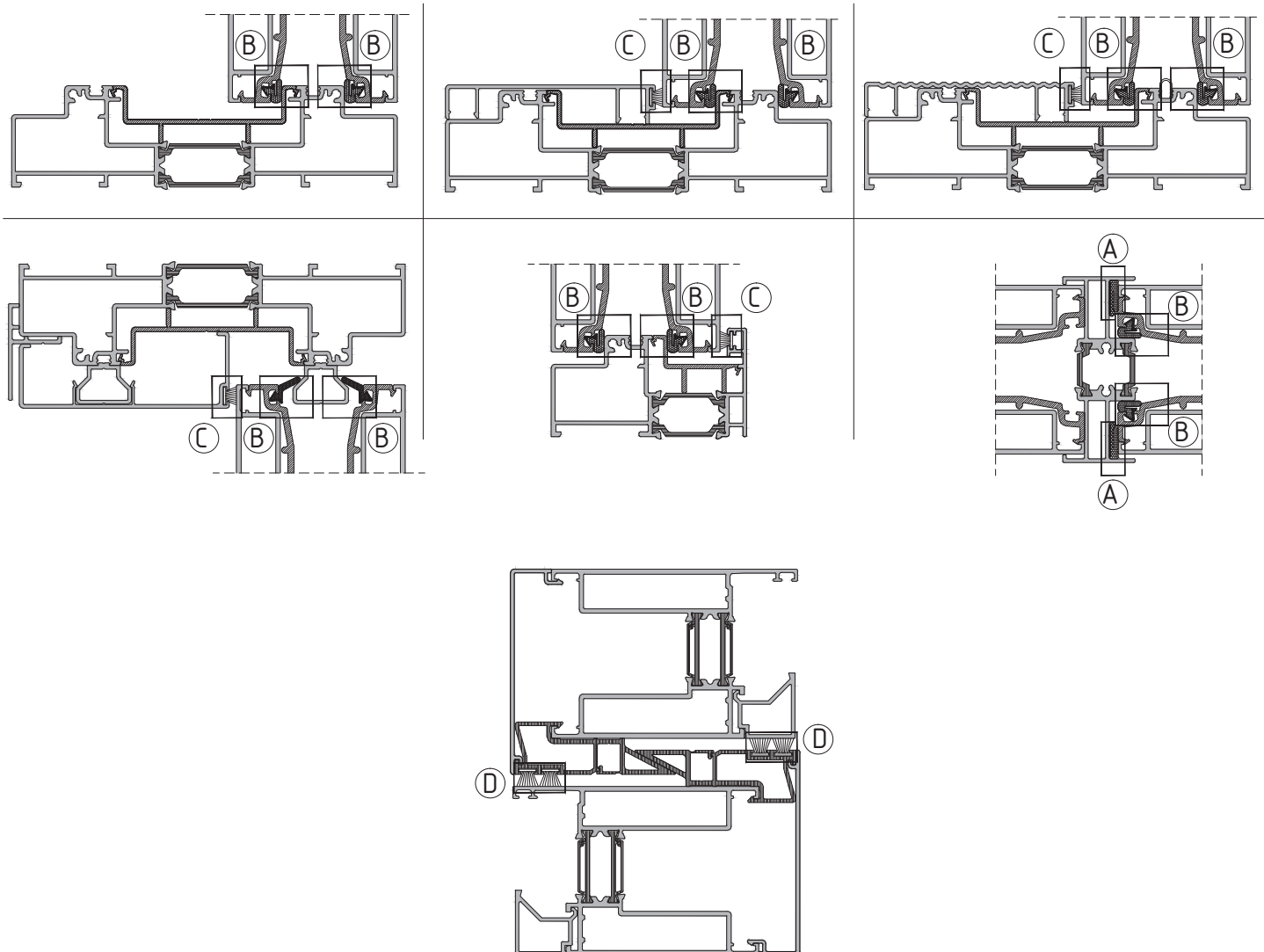






E70204

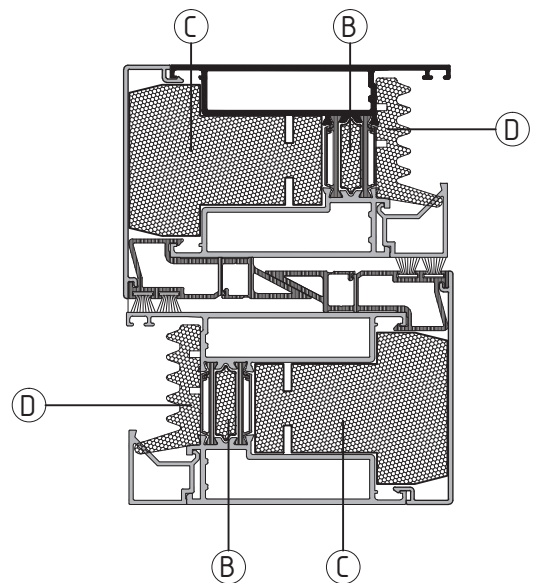
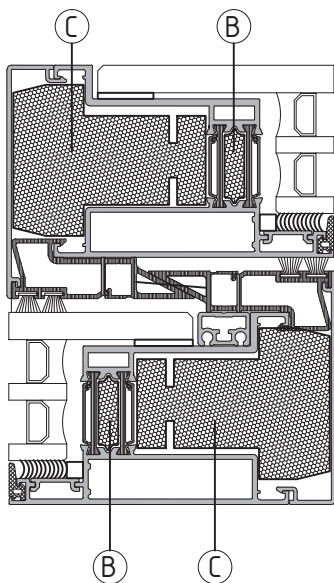
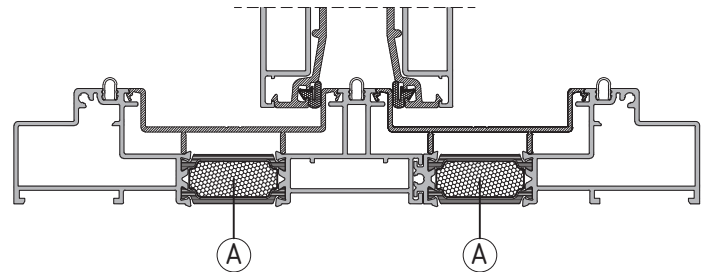
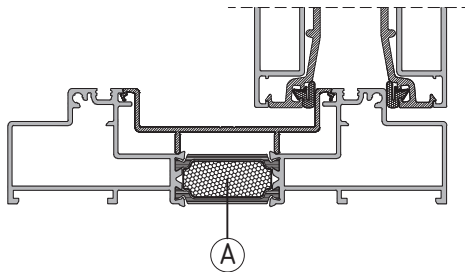
E70959



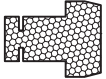

SELECTION OF APPROPRIATE WEATHERSEAL

M70-44



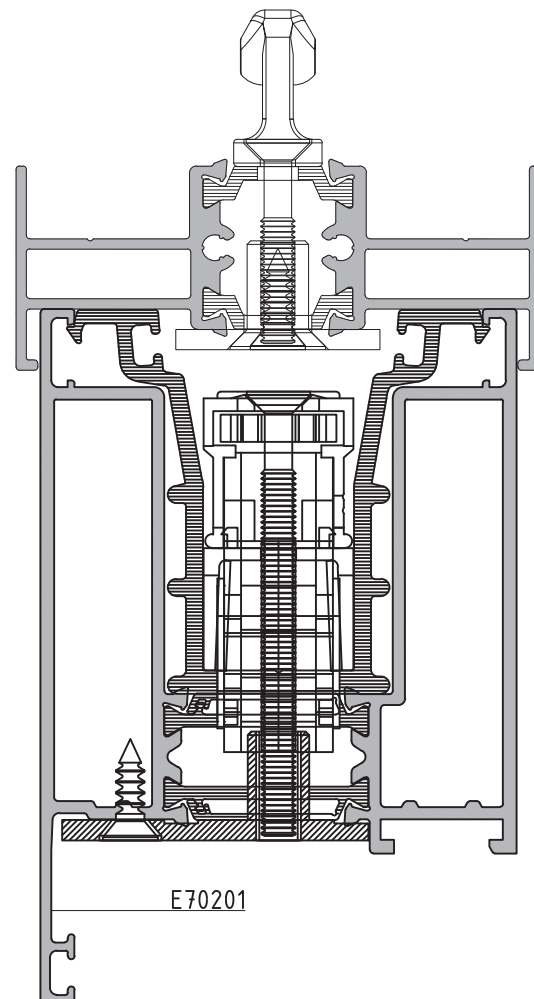
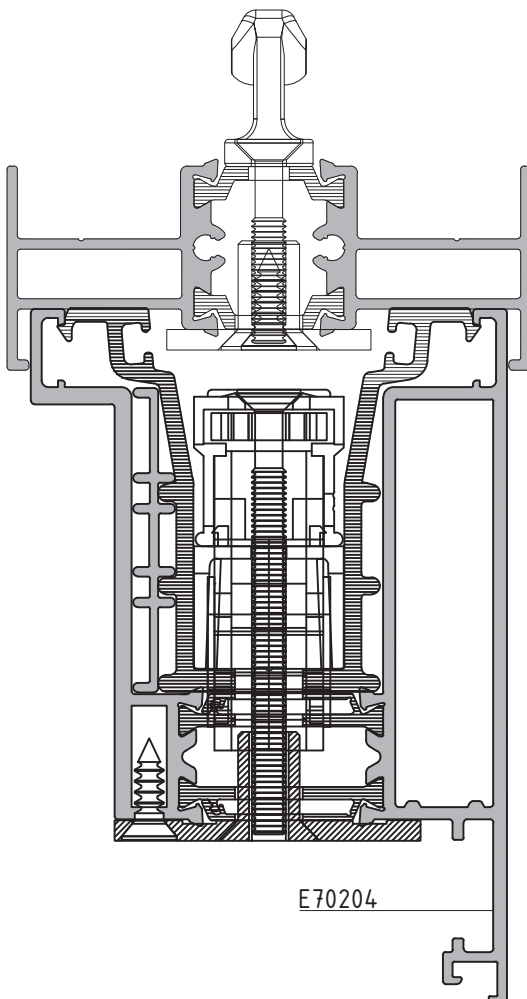
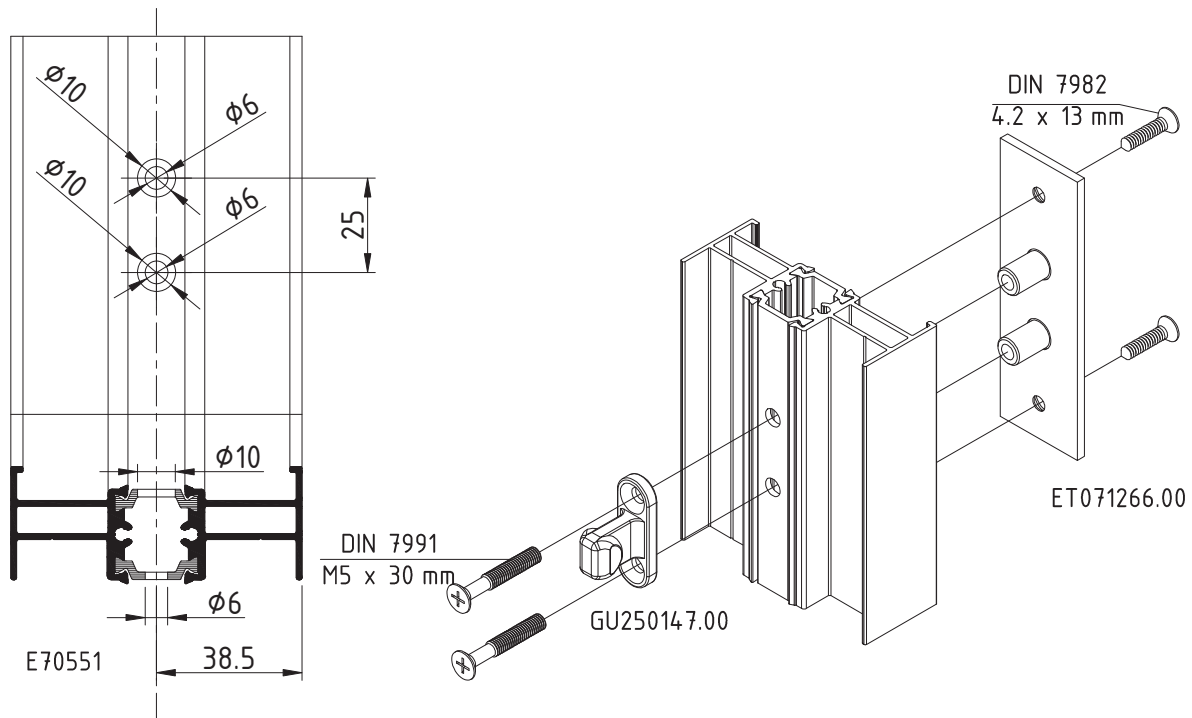
A			ET133010	composite weather seal for E70551
B			ET133011	composite weather seal for sash E70
C		7 mm	ET135507	pile weather seal FP 7 mm
D		9 mm	ET135509	pile weather seal FP 9 mm



A		ET970101.00	foamed insert for rail E70
B		ET970201.00	foamed insert for ET080188, E70201, E70204
C		ET970603.00	foamed insert for sash (fixed at interlock side)
D		ET080523.00	foamed insert for filling the gap between glass pane - sash

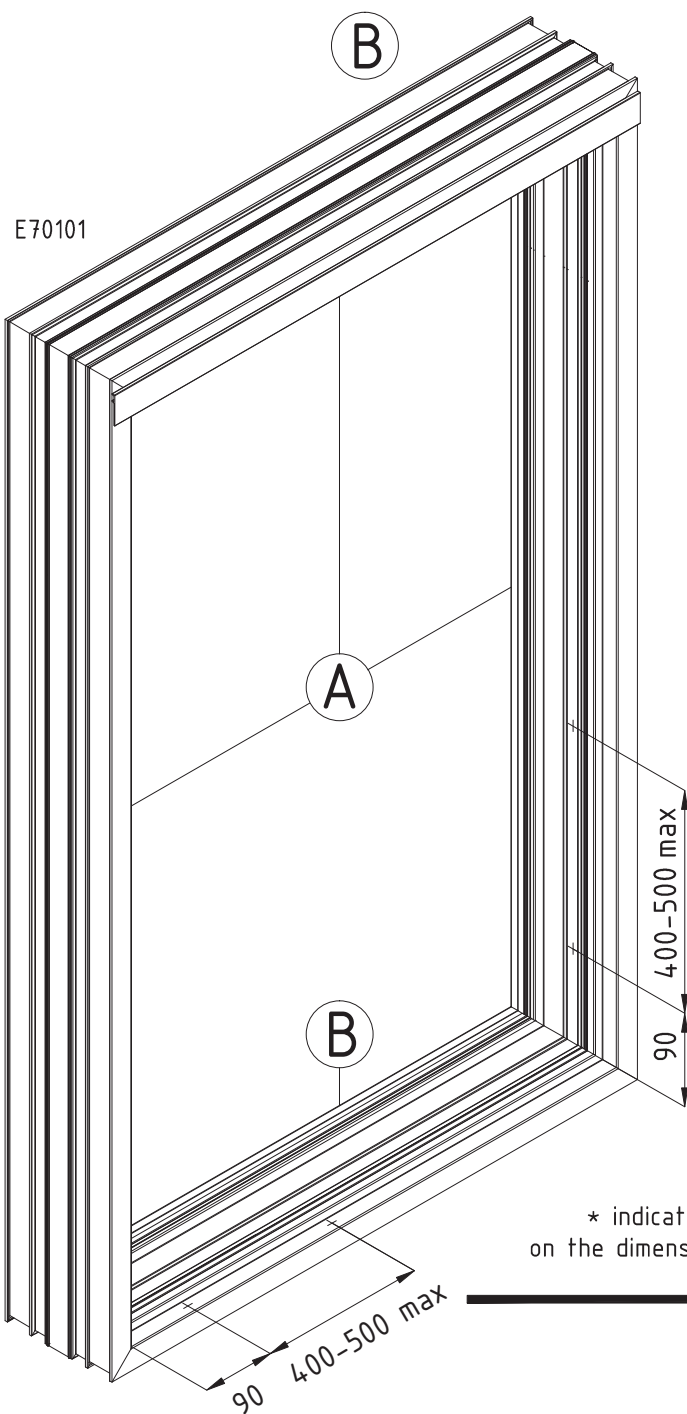
MACHINING ON E70551 FOR FIXING THE STRIKERS OF THE HARDWARE

M70-38



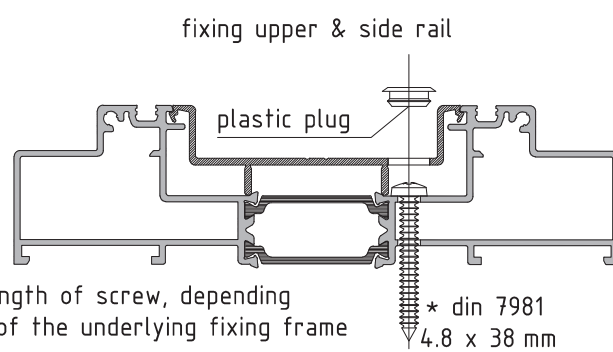
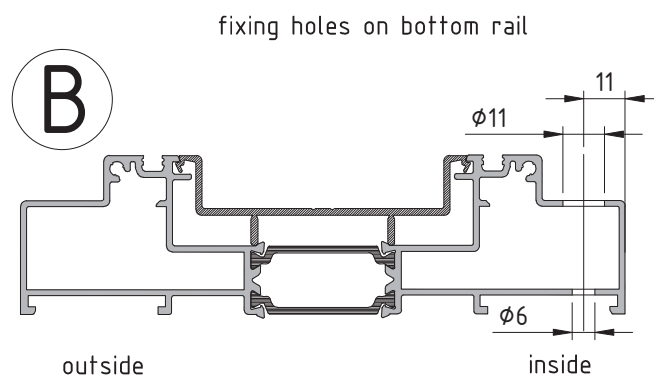
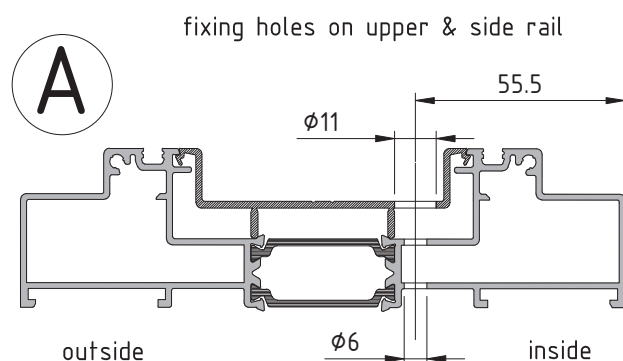
INSTALLATION OF FRAME E70101

M70-39



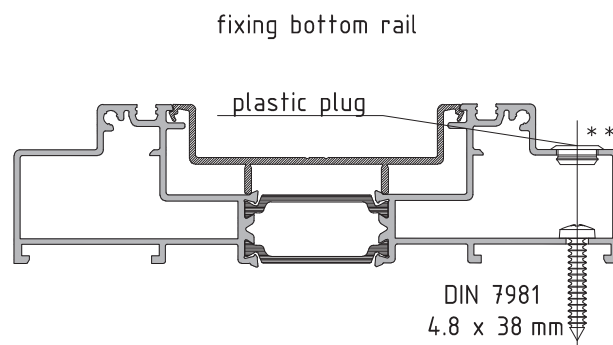
**

ATTENTION: do not fix plastic plugs on bottom rail in case of use of cover profile E70604



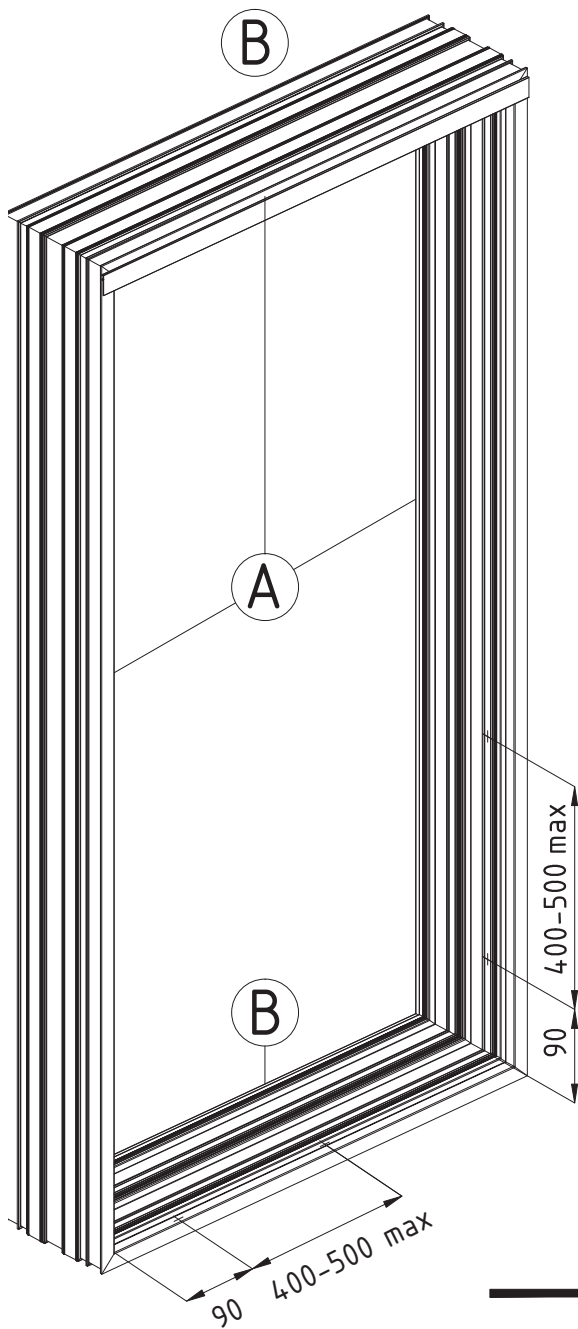
* indicative length of screw, depending on the dimensions of the underlying fixing frame

* din 7981
4.8 x 38 mm

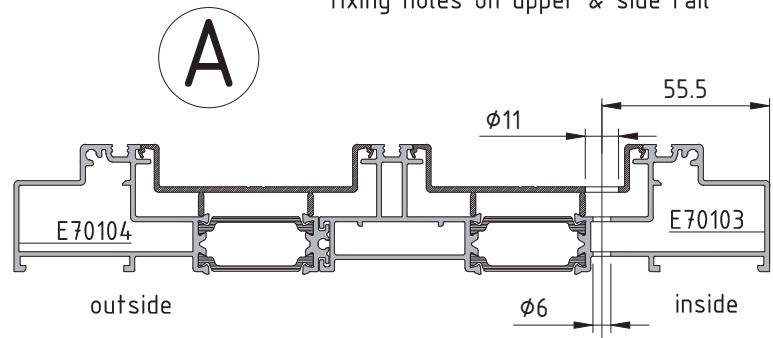


INSTALLATION OF FRAME E70103 & E70104

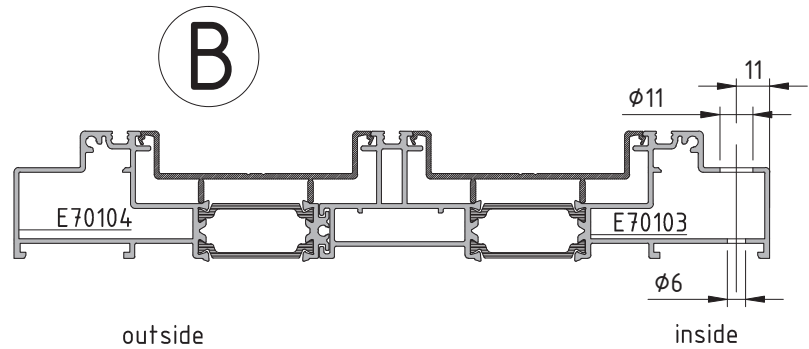
M70-40



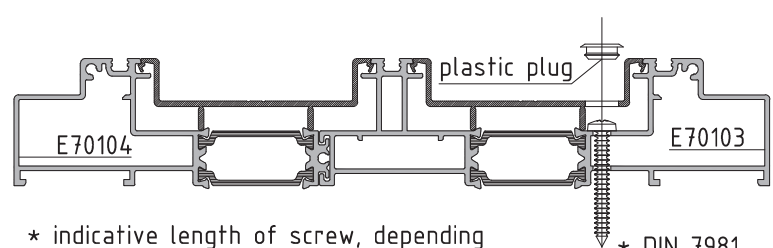
fixing holes on upper & side rail



fixing holes on bottom rail



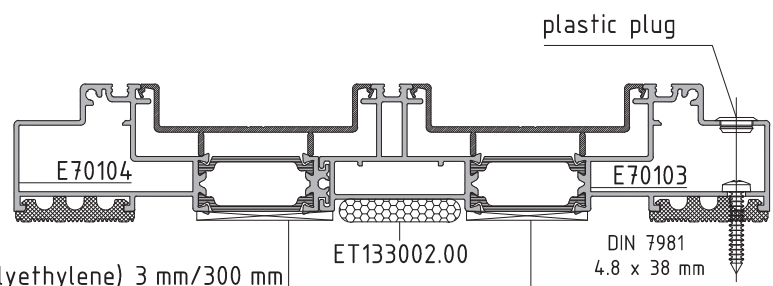
fixing holes upper & side rail



* indicative length of screw, depending on the dimensions of the underlying fixing frame

* DIN 7981
4.8 x 38 mm

fixing holes bottom rail



support block (polyethylene) 3 mm/300 mm

ET133002.00

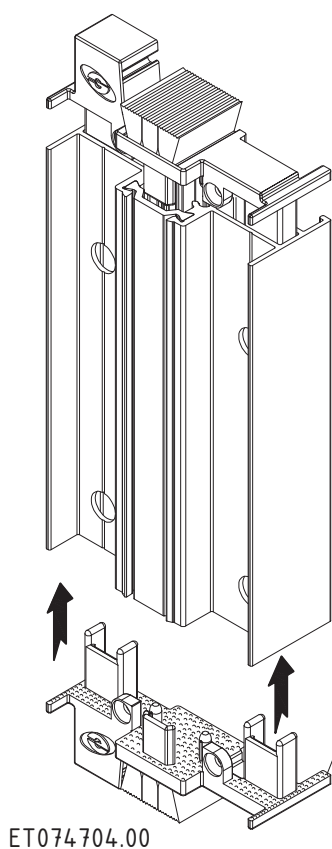
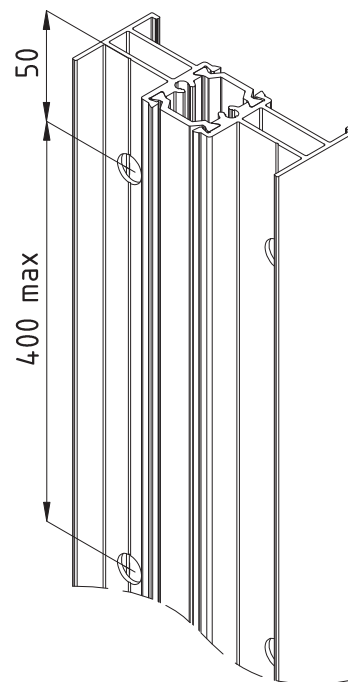
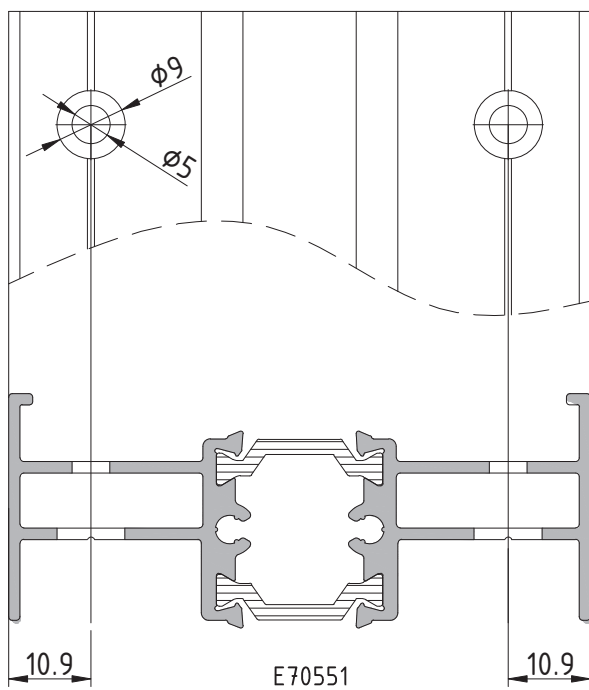
DIN 7981
4.8 x 38 mm

no scale

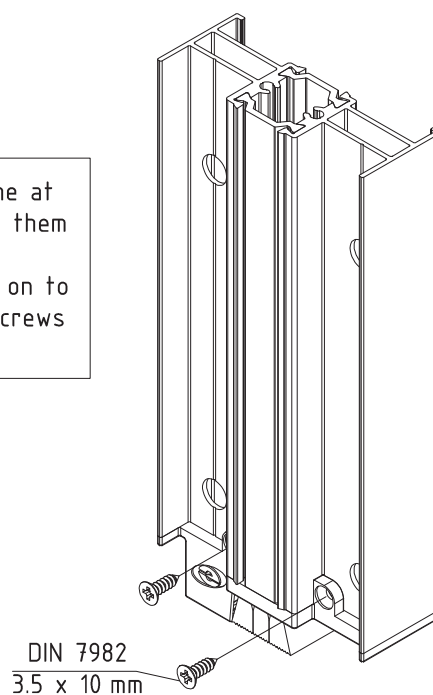
FIXING E70551 ON TO THE SASH FRAME

M70-41

fixing holes on E70551 so that to fix it on to the sash frame

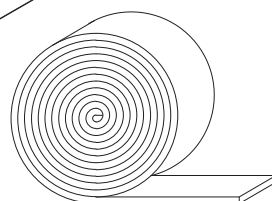
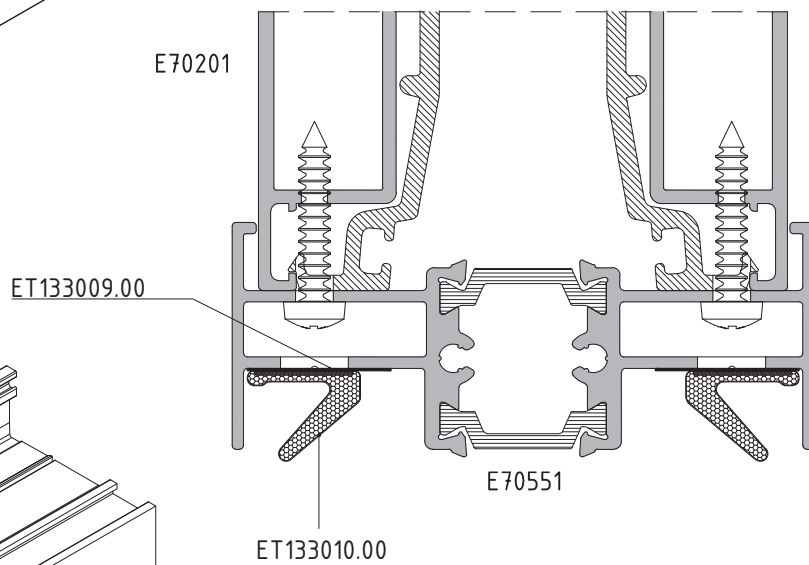
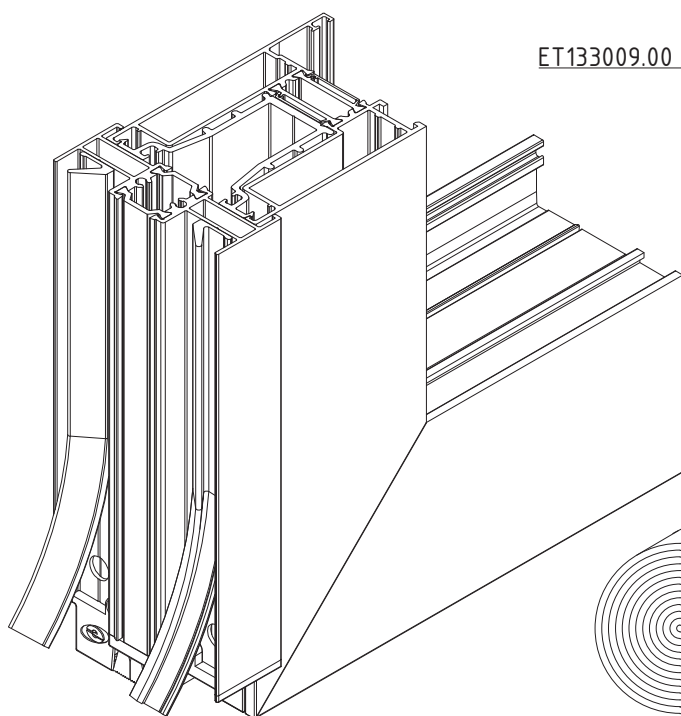
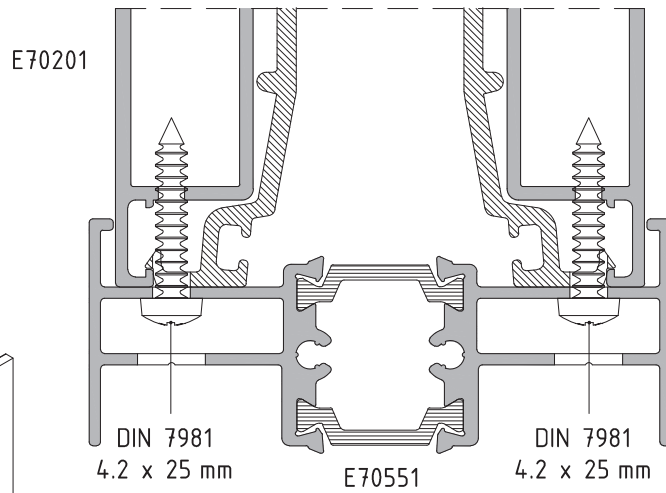
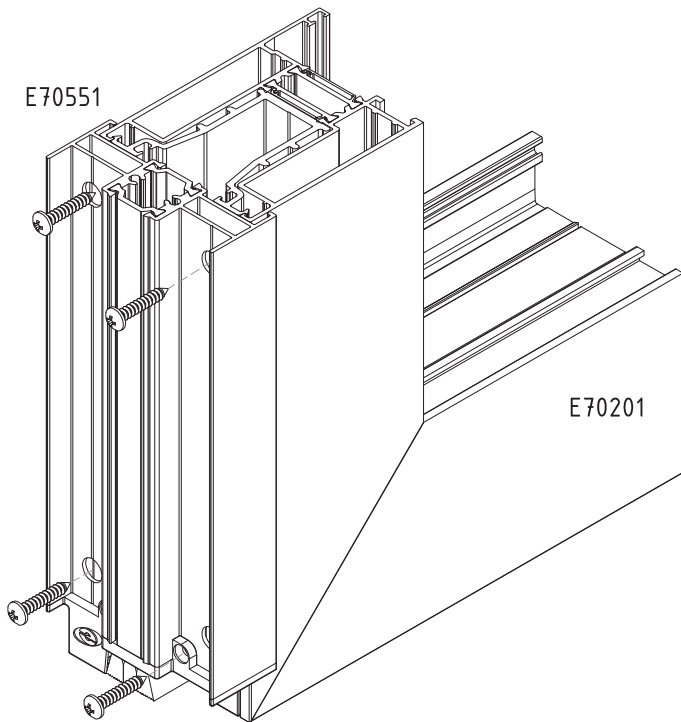
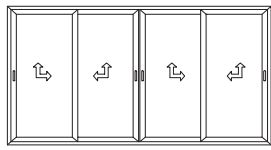
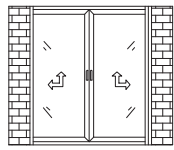


ATTENTION: always apply silicone at the plastics plugs before fixing them on to the ends on the adjoining profile. the plugs are fastened on to the profile using sheet metal screws DIN 7982 3.5x10 mm



FIXING E70551 ON TO SASH FRAME MADE OF E70201

M70-42



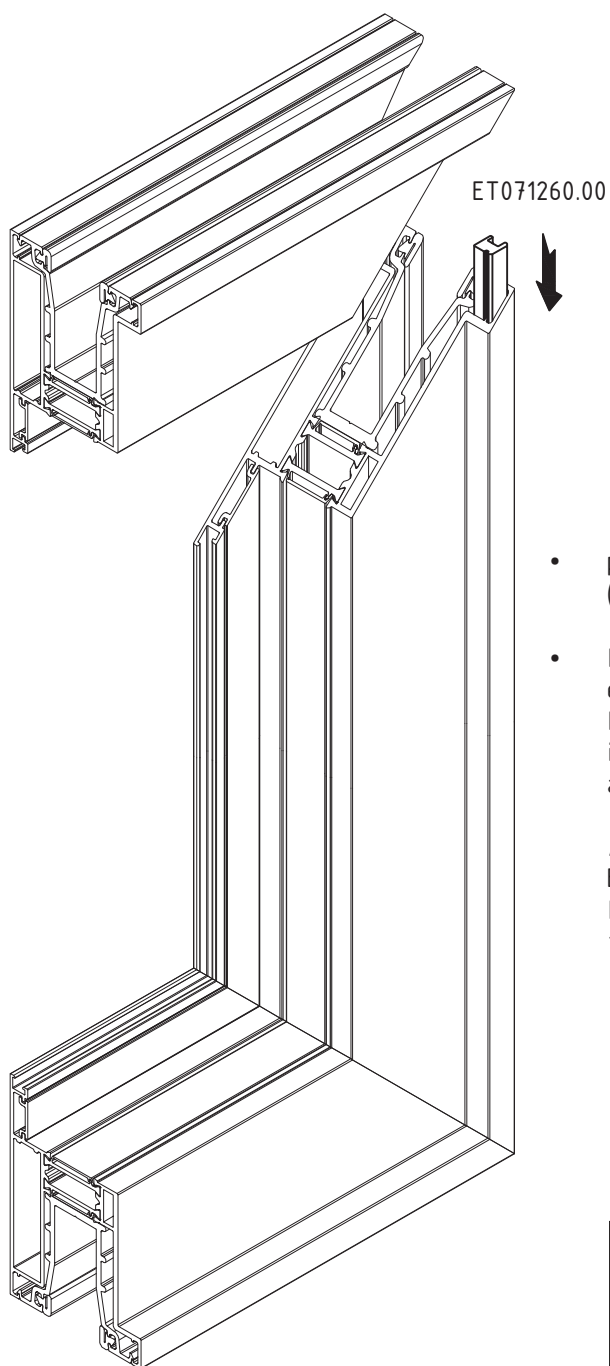
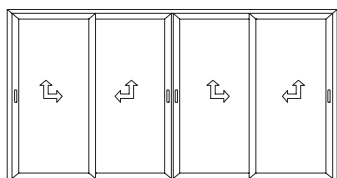
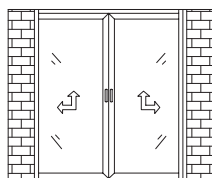
ATTENTION: foam gasket ET133010.00 is fixed on to E70551 using double coated tape ET133009.00

ET133010.00
no scale

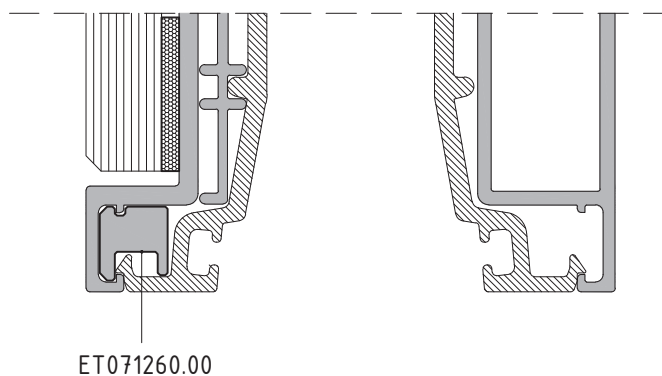
ET133009.00

FIXING ET 071260.00 ON TO SASH FRAME MADE OF E70204

M70-43



E70204



- part ET071260.00 is cut according to the formula $S.H - 30\text{mm}$ (where S.H = sash height)
- ET071260.00 is inserted into the groove formed between the external part of E70204 and the the PVC profile ET080189.00. it is placed only at the side of the sash frame, at which the adjoining profile E70551 is to be fixed.

ATTENTION:

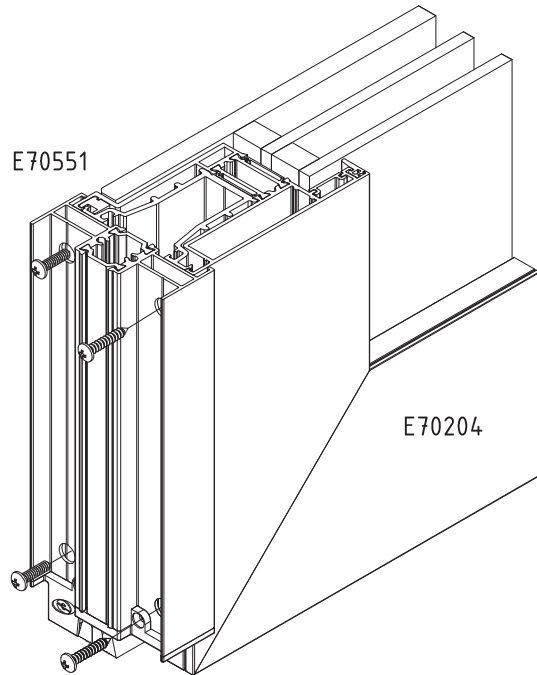
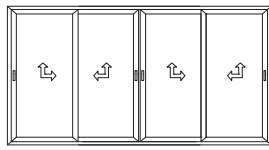
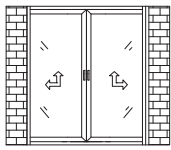
ET071260.00 is inserted into the sash profile before pressing the joint corner brackets at the crimping machine.

ATTENTION:
part ET071260.00 is fixed only at profile E70204

scale : 1:1

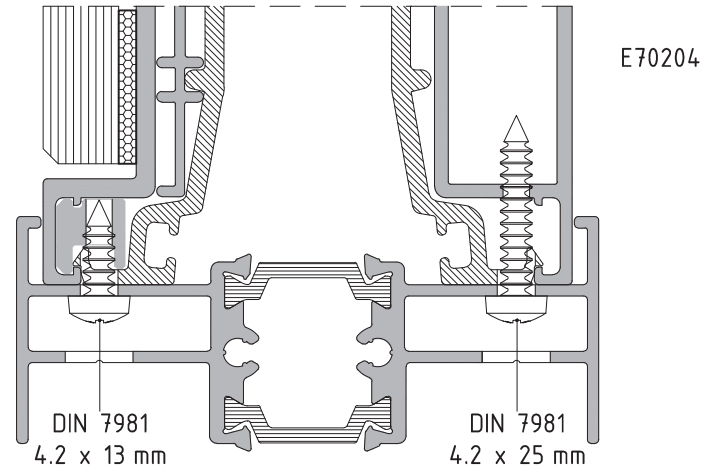
FIXING E70551 ON TO SASH FRAME MADE OF E70204

M70-44



E70551

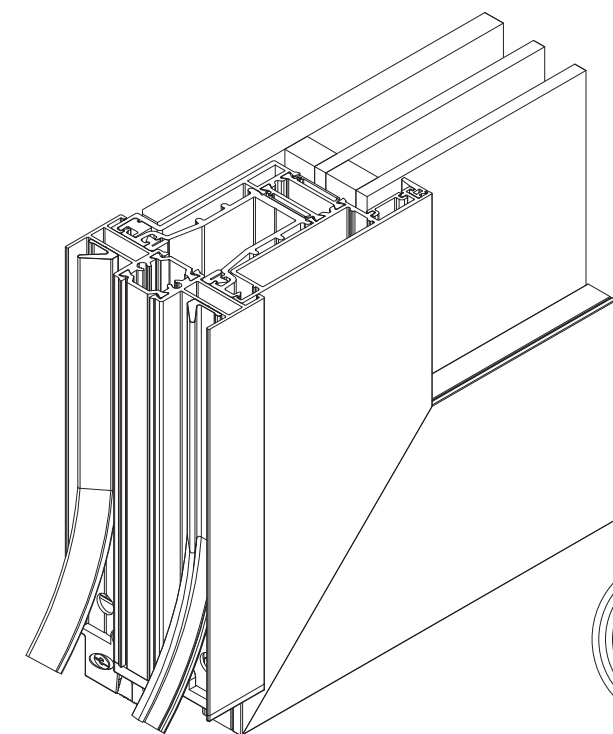
E70204



E70204

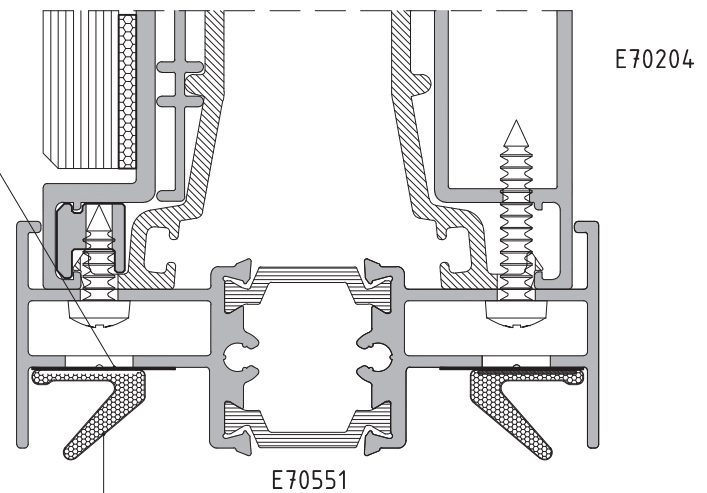
DIN 7981
4.2 x 13 mm

DIN 7981
4.2 x 25 mm



ET133010.00

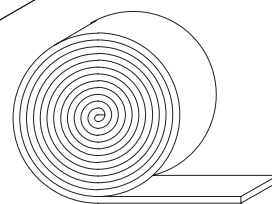
ET133009.00



E70204

E70551

ET133010.00

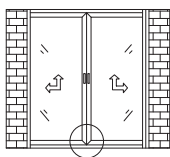


ET133009.00

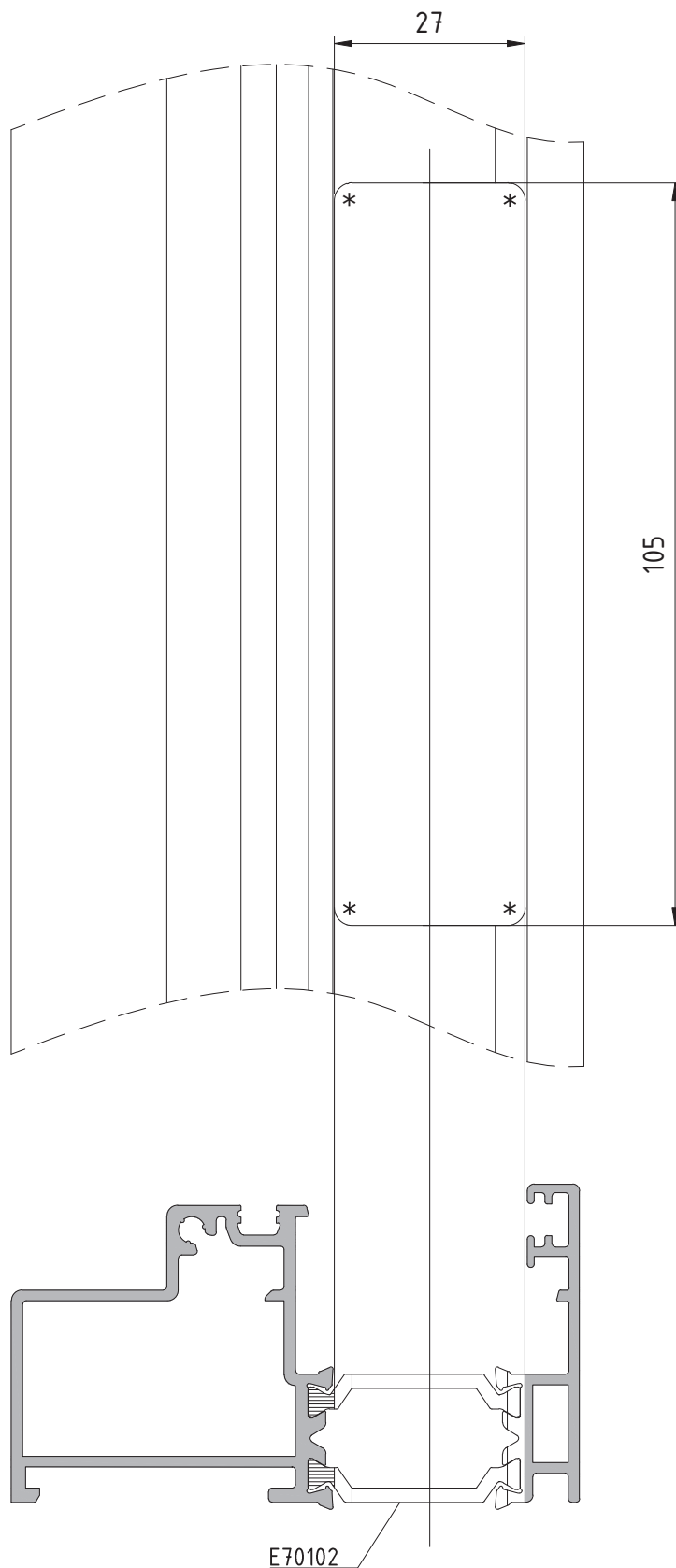
ATTENTION: foam gasket ET133010.00 is fixed on to E70551 using double coated tape ET133009.00

MACHINING ON BOTTOM RAIL E70102 FOR DOUBLE VENT SLIDING DOOR

M70-45



machining on E70102
for ET240626.00

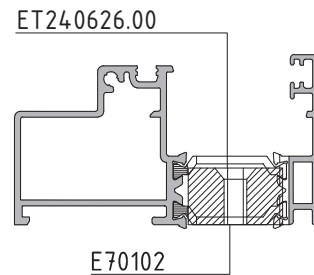
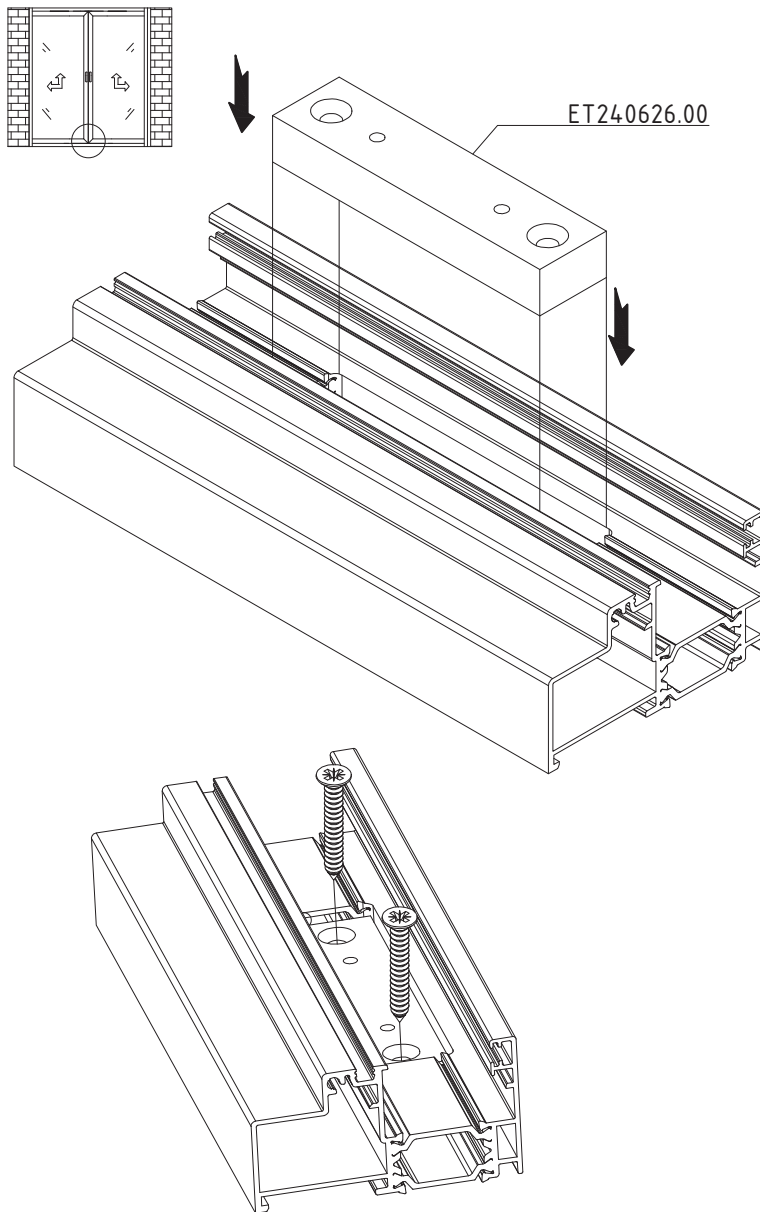


*R=3 mm

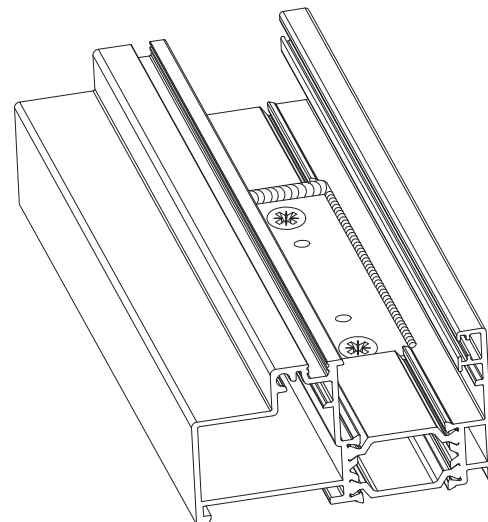
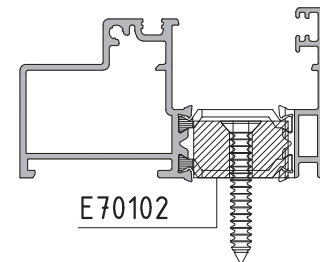
scale : 1:1

FIXING ET240626.00 ON THE LOWER SIDE OF A DOUBLE VENT POCKETSLIDING DOOR

M70-46



ET240626.00 is placed into the groove that has been formed on to rail E70102

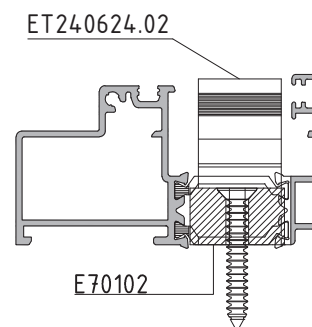
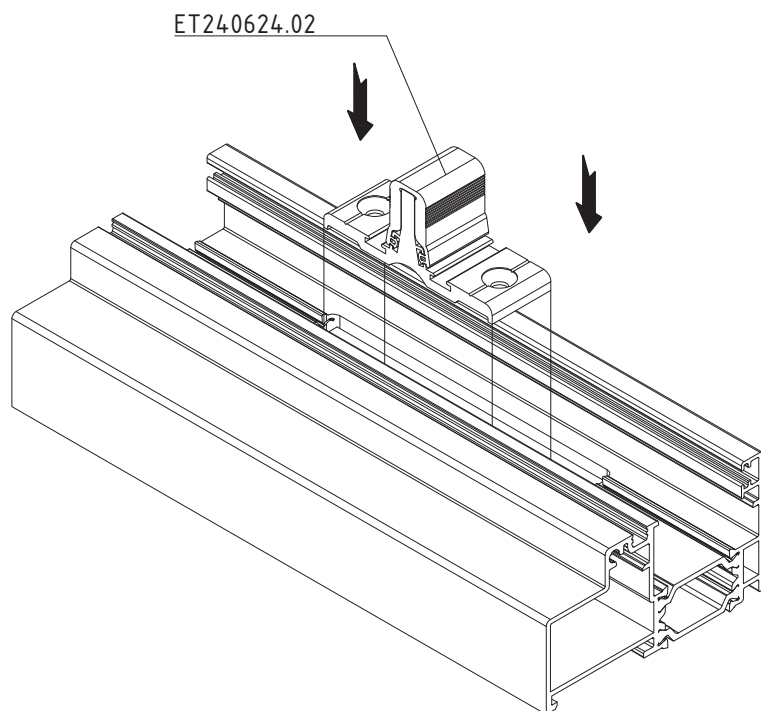
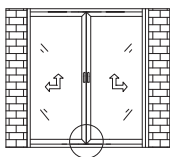


using part ET240626.00 as jig, drill fixing holes (for sheet metal screws 5.5x50 mm) on to the threshold. remove part temporarily, so that to fix the plastic plugs. place the part and fix it on place using countersunk head sheet metal screws 5.5x50 mm DIN 7982

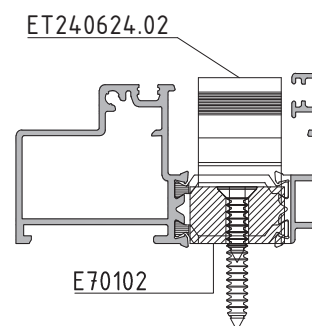
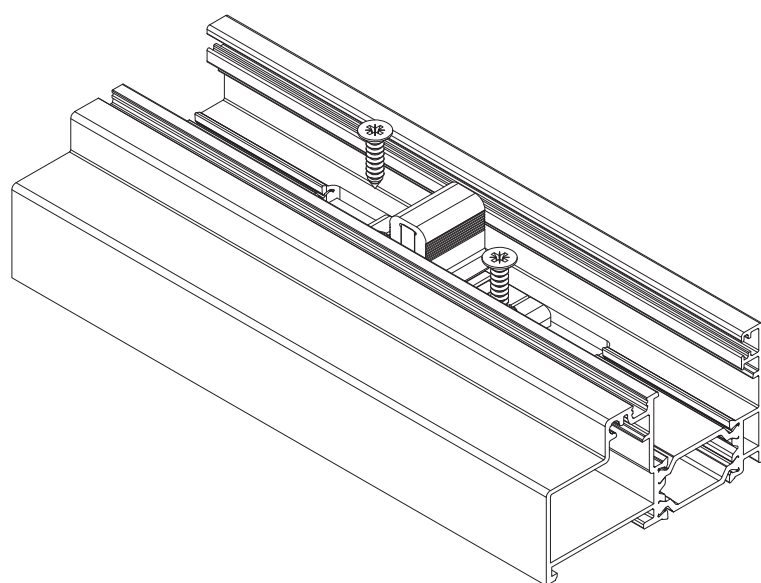
the gap between ET240626.00 and rail E70102 is filled with silicone ET138001.00

FIXING ET240624.00 ON THE LOWER SIDE OF A DOUBLE VENT POCKETSLIDING DOOR

M70-47



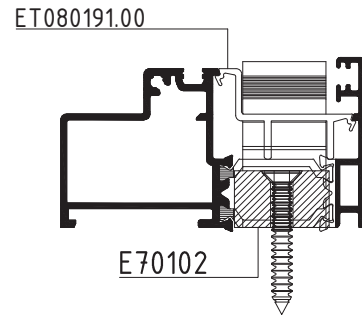
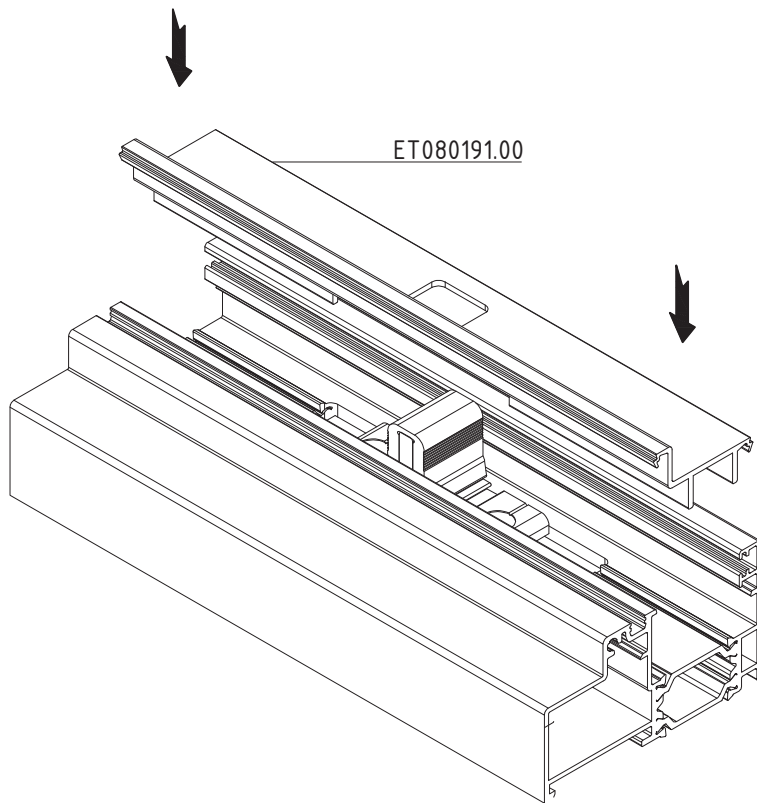
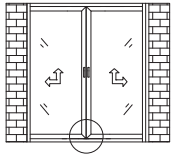
place stop ET240624.02 on to ET240626.00
taking care so that the fixing holes are
aligned



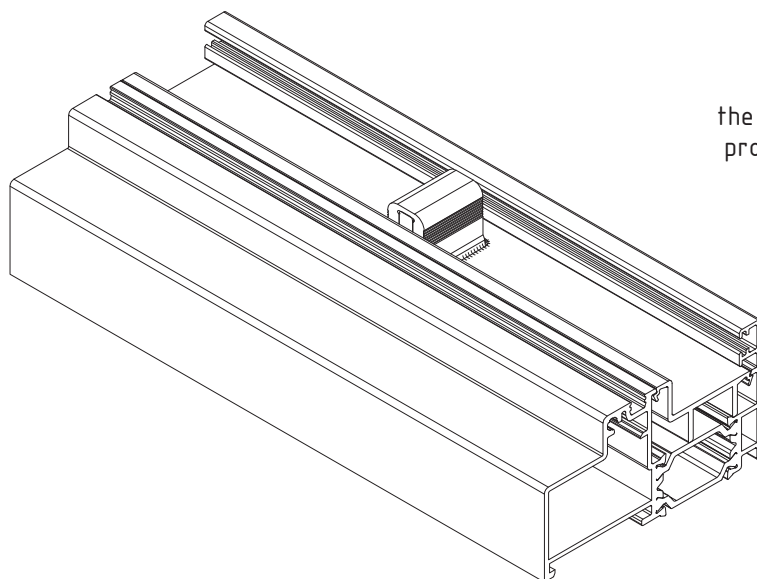
stop ET240624.02 is fixed on to
ET240626.00 using sheet metal screws
4.8x20 mm DIN 7982

FIXING ET080191.00 ON THE bottom SIDE OF A DOUBLE VENT POCKETSLIDING DOOR

M70-48



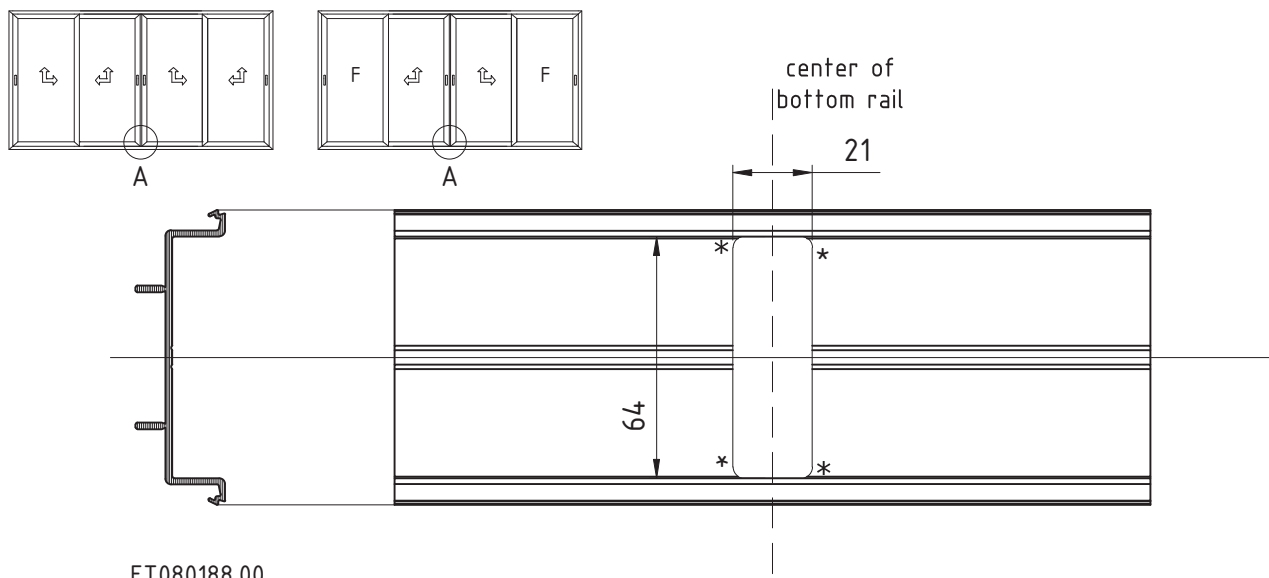
fix machined plastic profile
ET080191.00 on to the rail



the gap between ET240624.02 and plastic
profile ET080191.00 is filled with silicone
ET138001.02

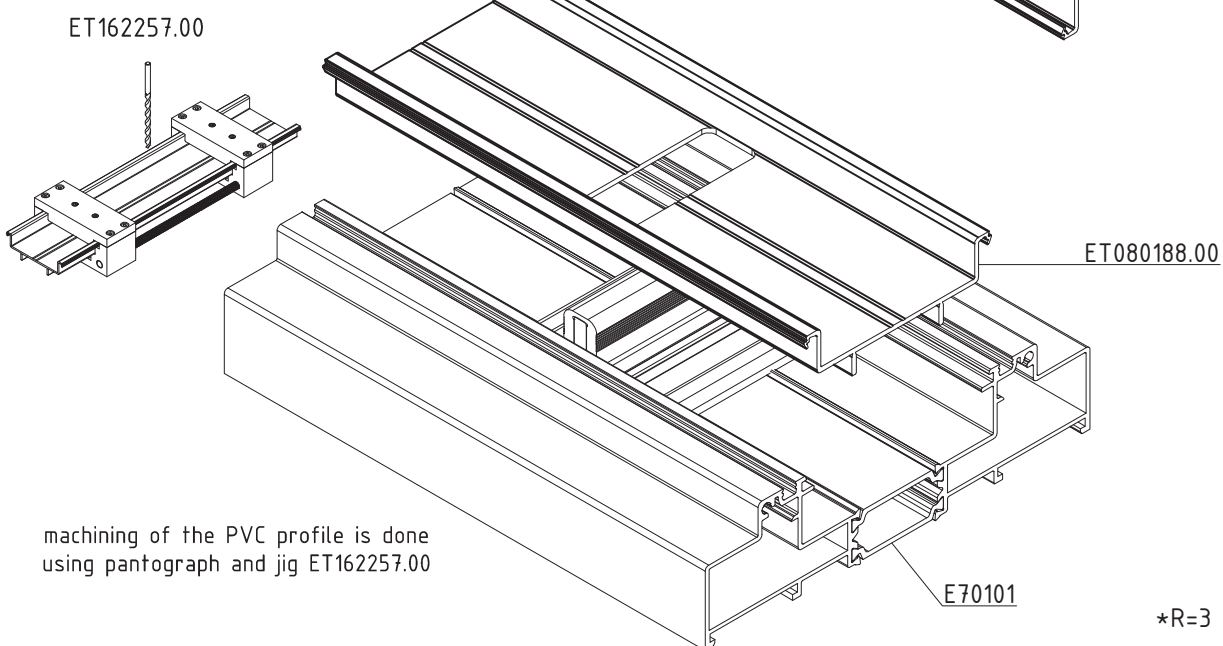
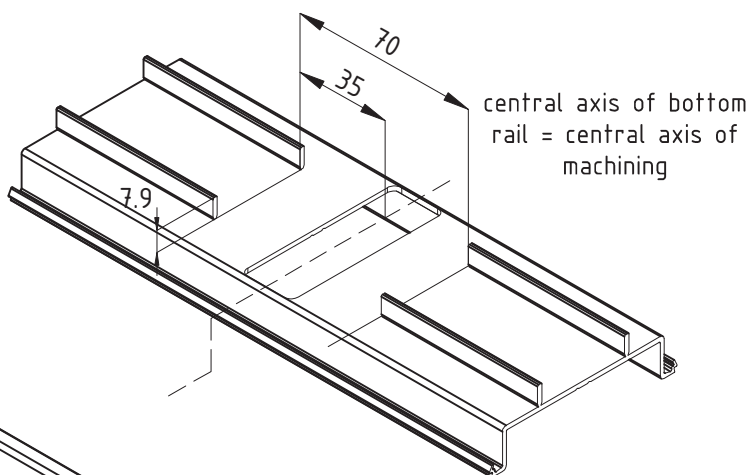
MACHINING ON ET080188 FOR FOUR SASHES SLIDING DOOR FOR bottom RAIL E70101

M70-49



ET080188.00

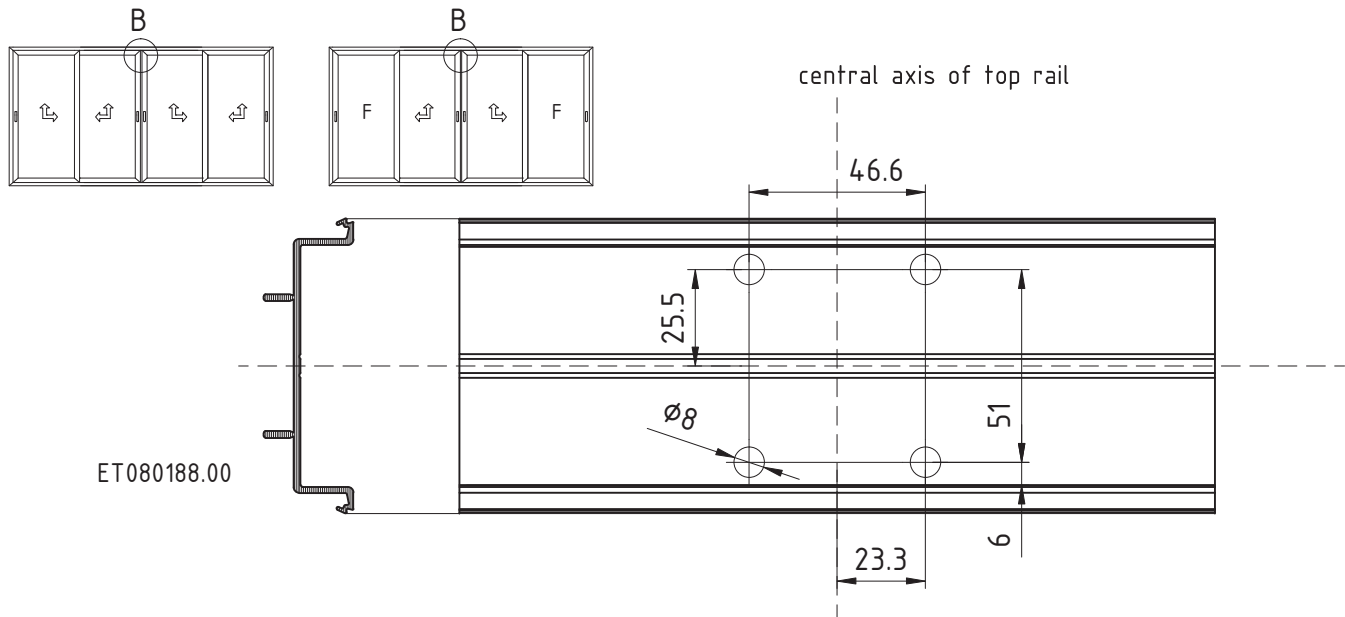
machining on ET080188.00
for bottom rail E70101 (valid only for four
sashes sliding door)



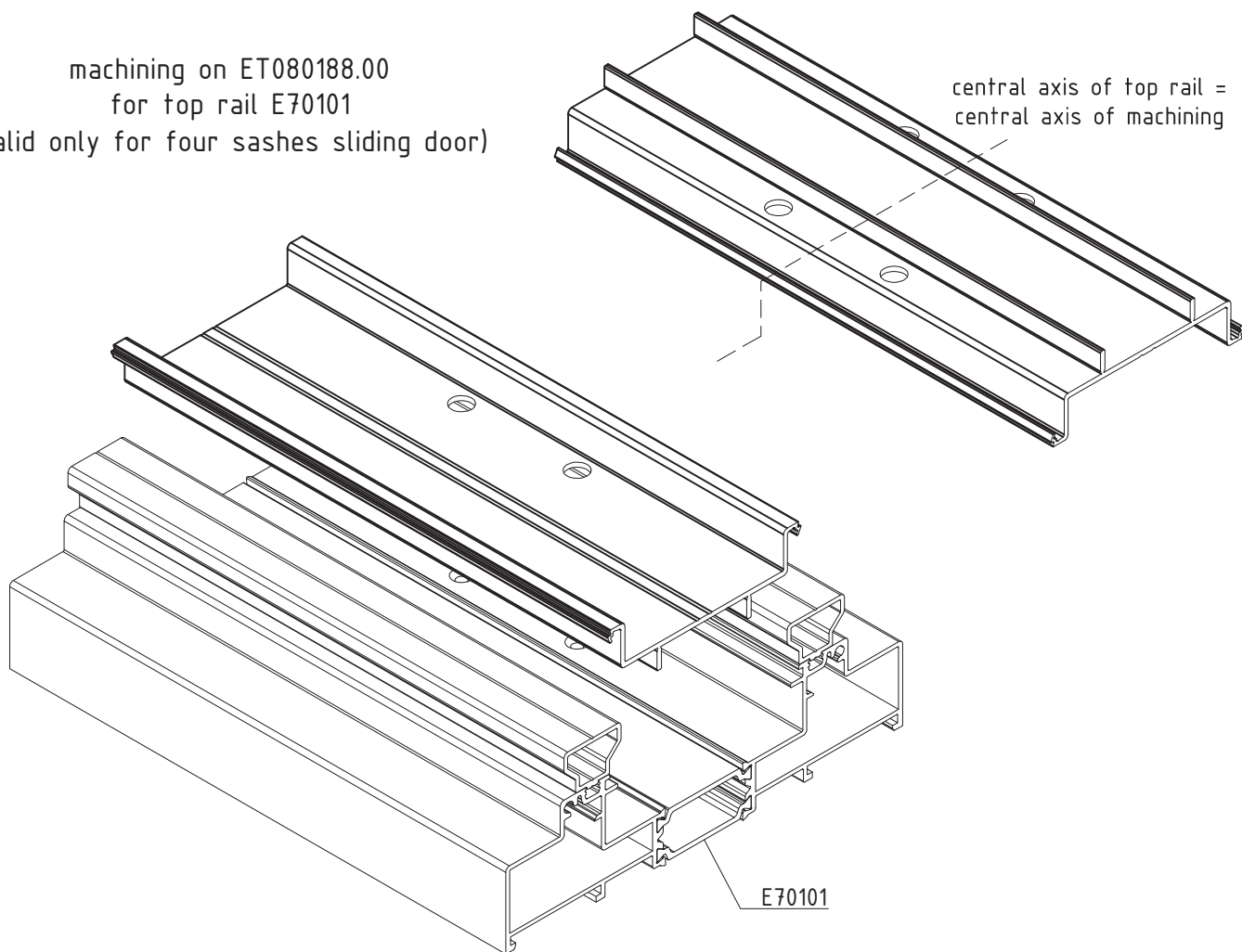
*R=3 mm

MACHINING ON ET080188 FOR FOUR SASHES SLIDING DOOR FOR TOP RAIL E70101

M70-50

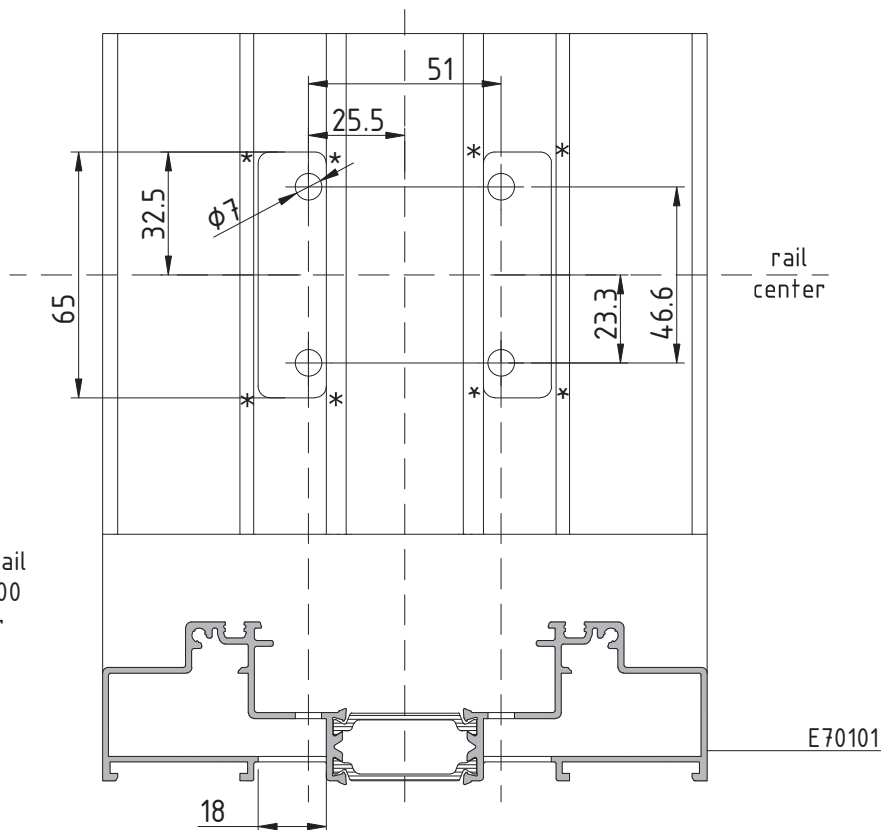
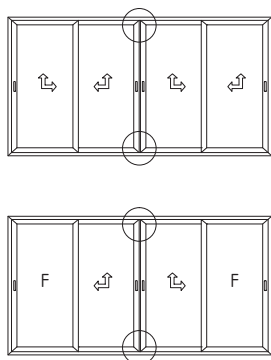


machining on ET080188.00
for top rail E70101
(valid only for four sashes sliding door)



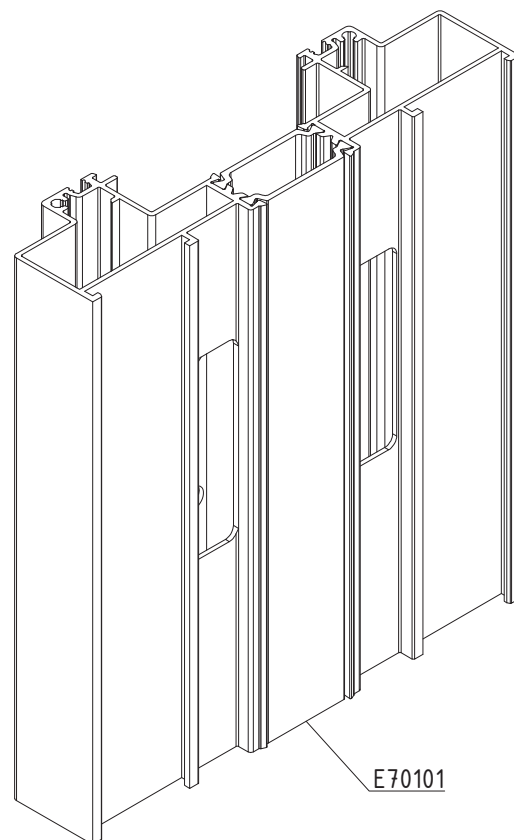
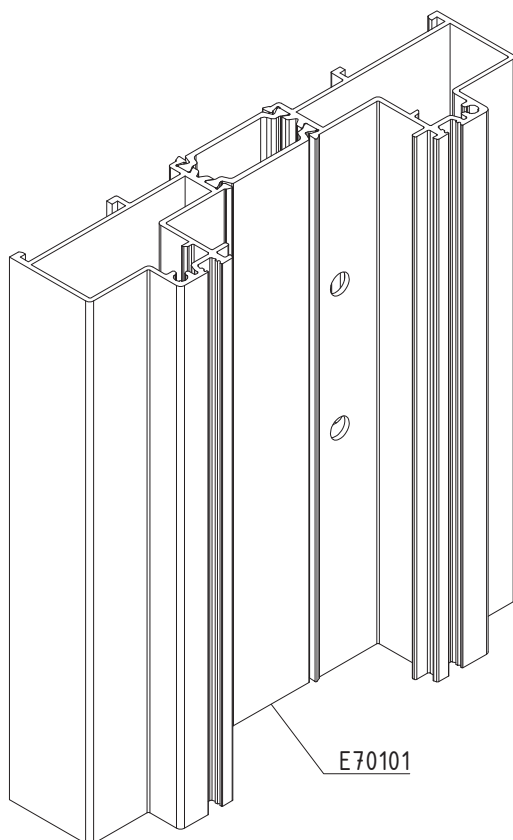
MACHINING ON TOP & BOTTOM RAIL E70101 FOR FOUR SASHES SLIDING DOOR

M70-51



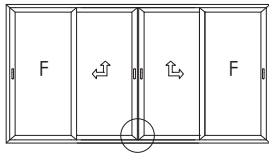
machining on top and bottom rail E70101 so that to fix ET24.0625.00 on to a four sashes sliding door

*R=3 mm

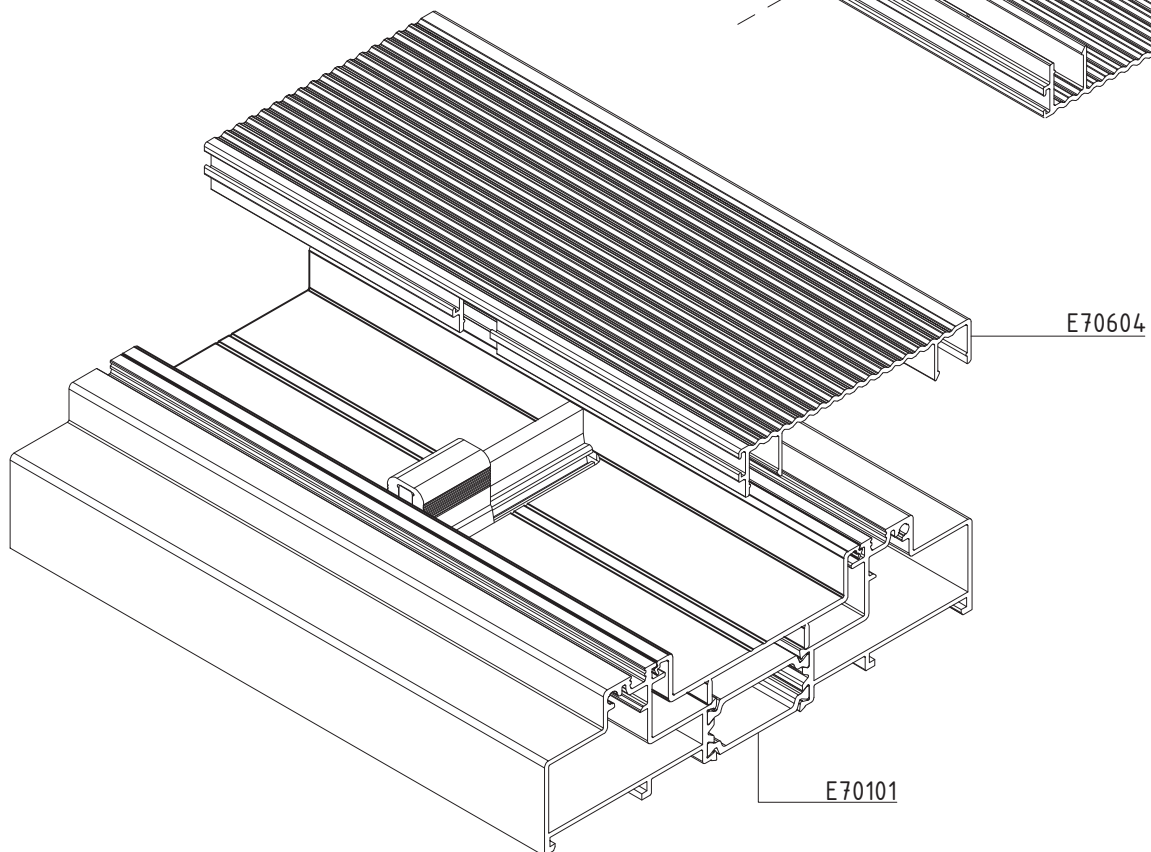
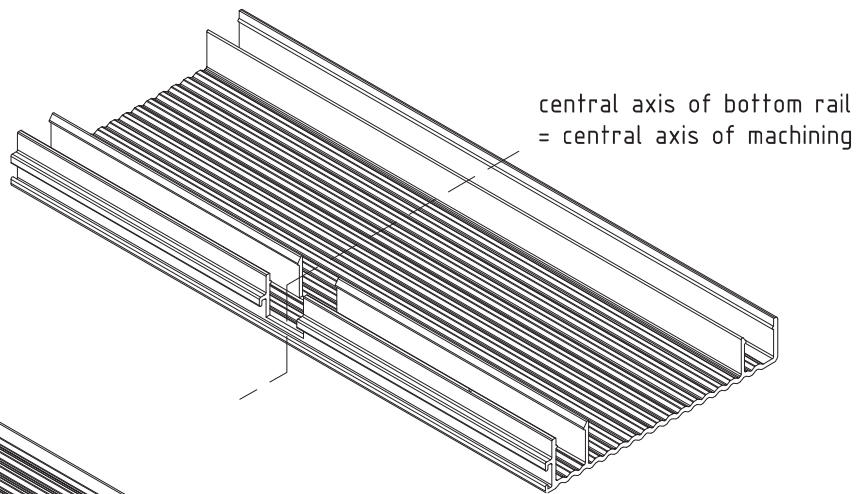
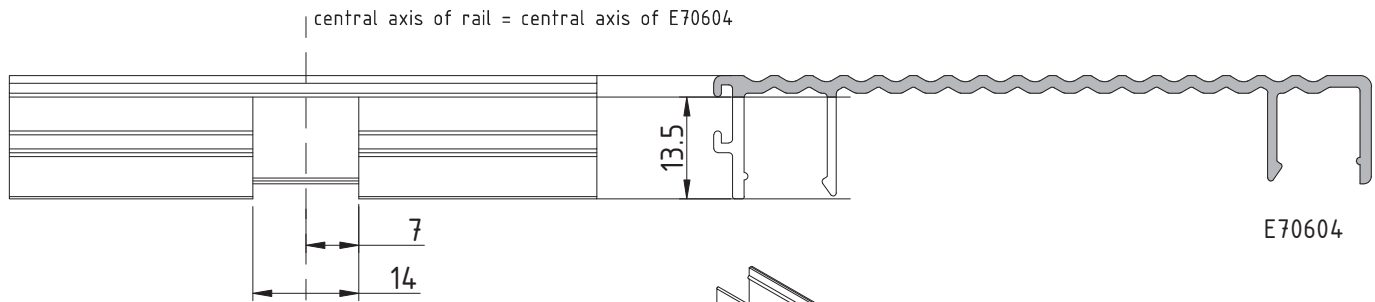


MACHINING ON COVER PROFILE E-70604 FOR FOUR SASHES SLIDING DOOR

M70-52

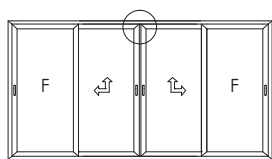


machining on E70604 in order to fix it on to the bottom rail E70101 of a four sashes sliding door

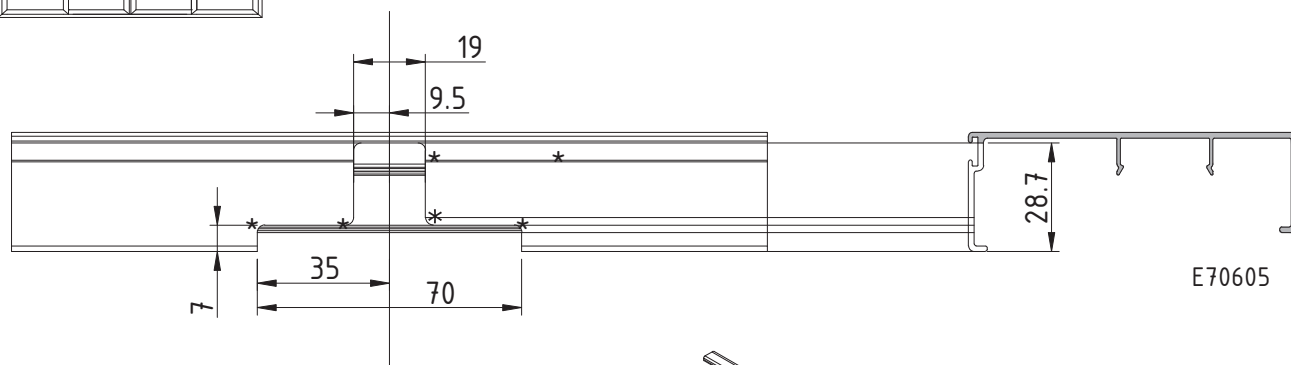


MACHINING ON COVER PROFILE E70605 FOR FOUR SASHES SLIDING DOOR

M70-53



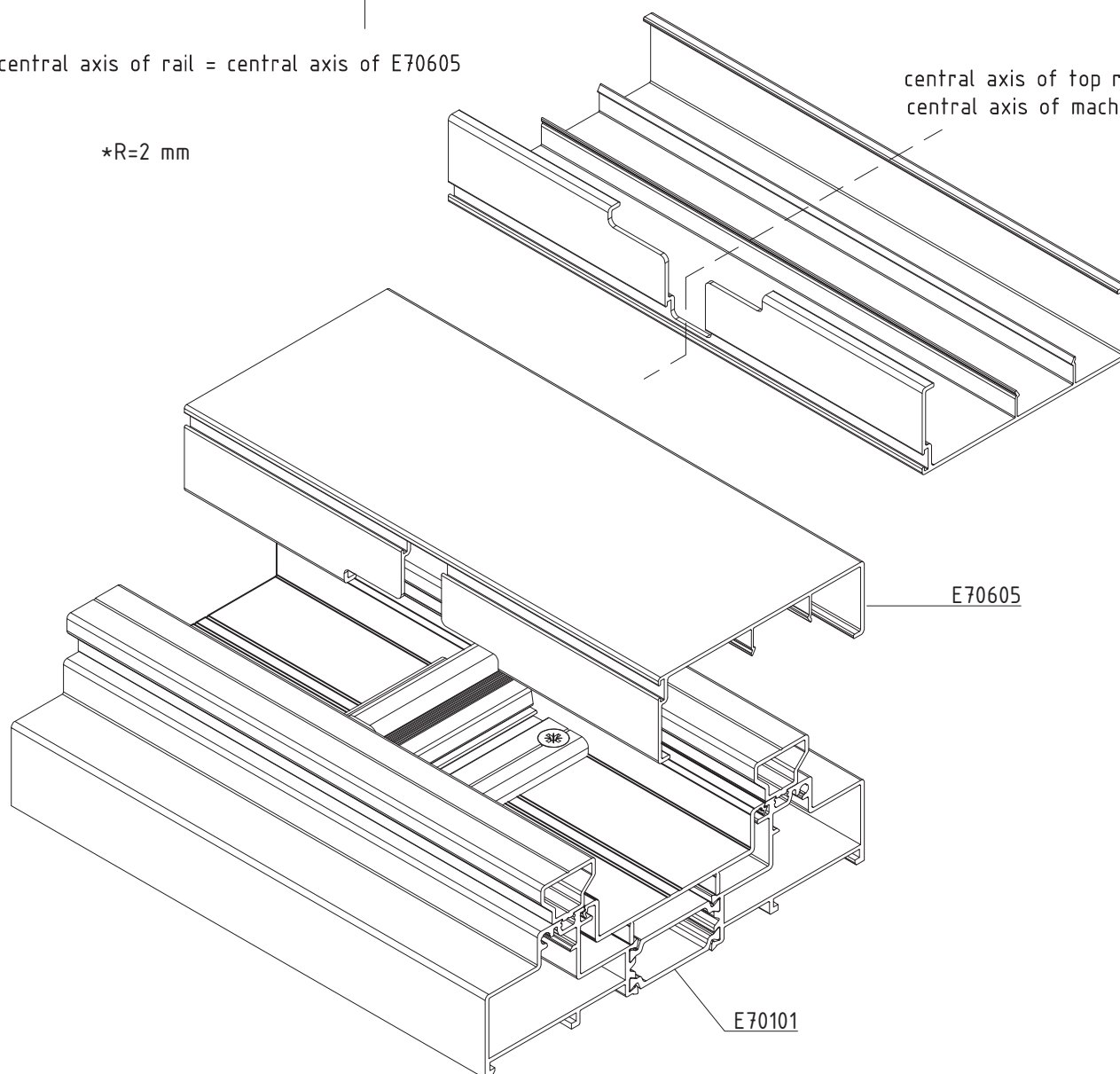
machining on E70605 in order to fix it on to the top rail E70101 of a four sashes sliding door



central axis of rail = central axis of E70605

*R=2 mm

central axis of top rail = central axis of machining

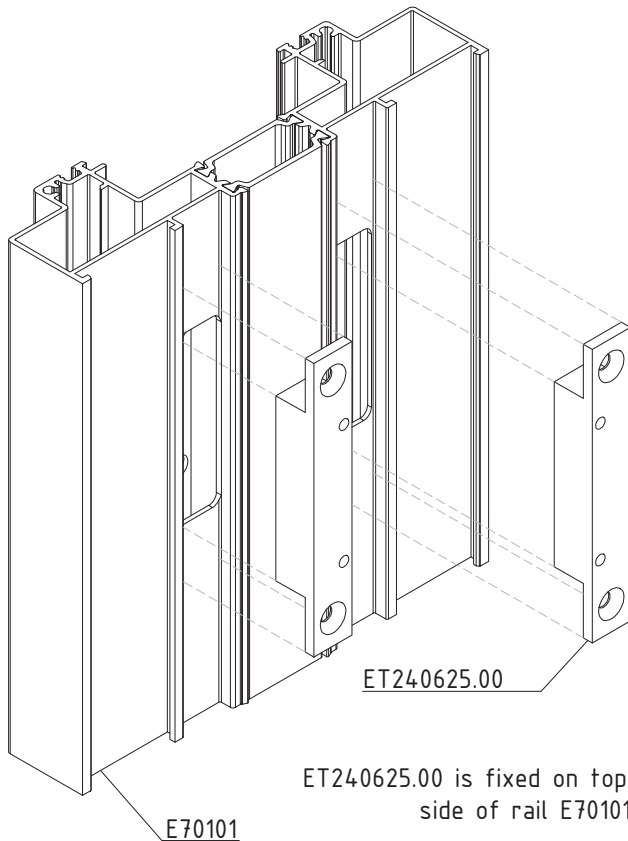
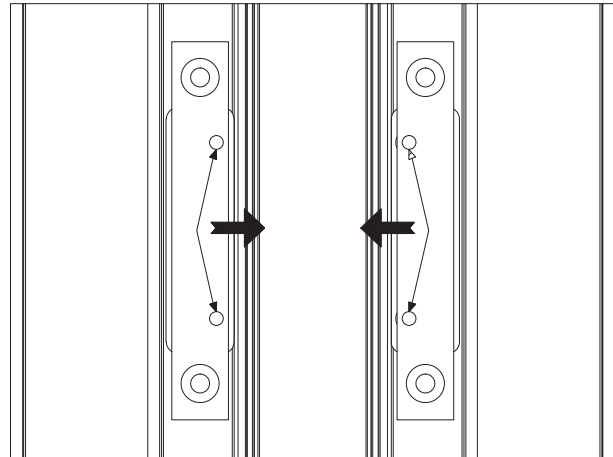
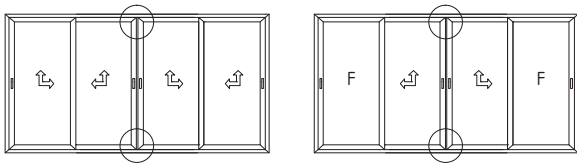


E70605

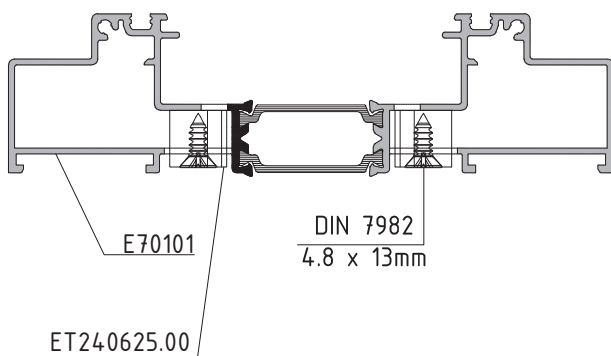
E70101

FIXING ET240625 ONTO E70101 (VALID ONLY FOR FOUR SASHES SLIDING DOOR)

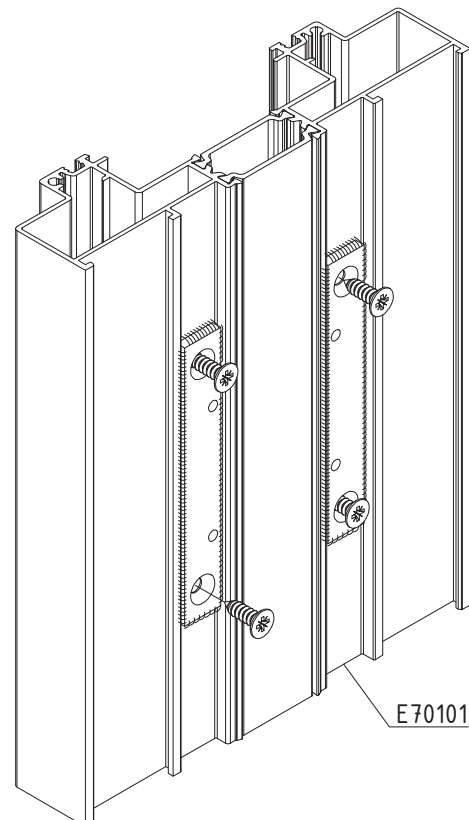
M70-54



ET240625.00 is placed into the grooves formed at the back side of profile E70101, taking care so that the fixing holes of ET240625.00 (for the stop) are placed at the side of the polyamide, as presented in the drawing above

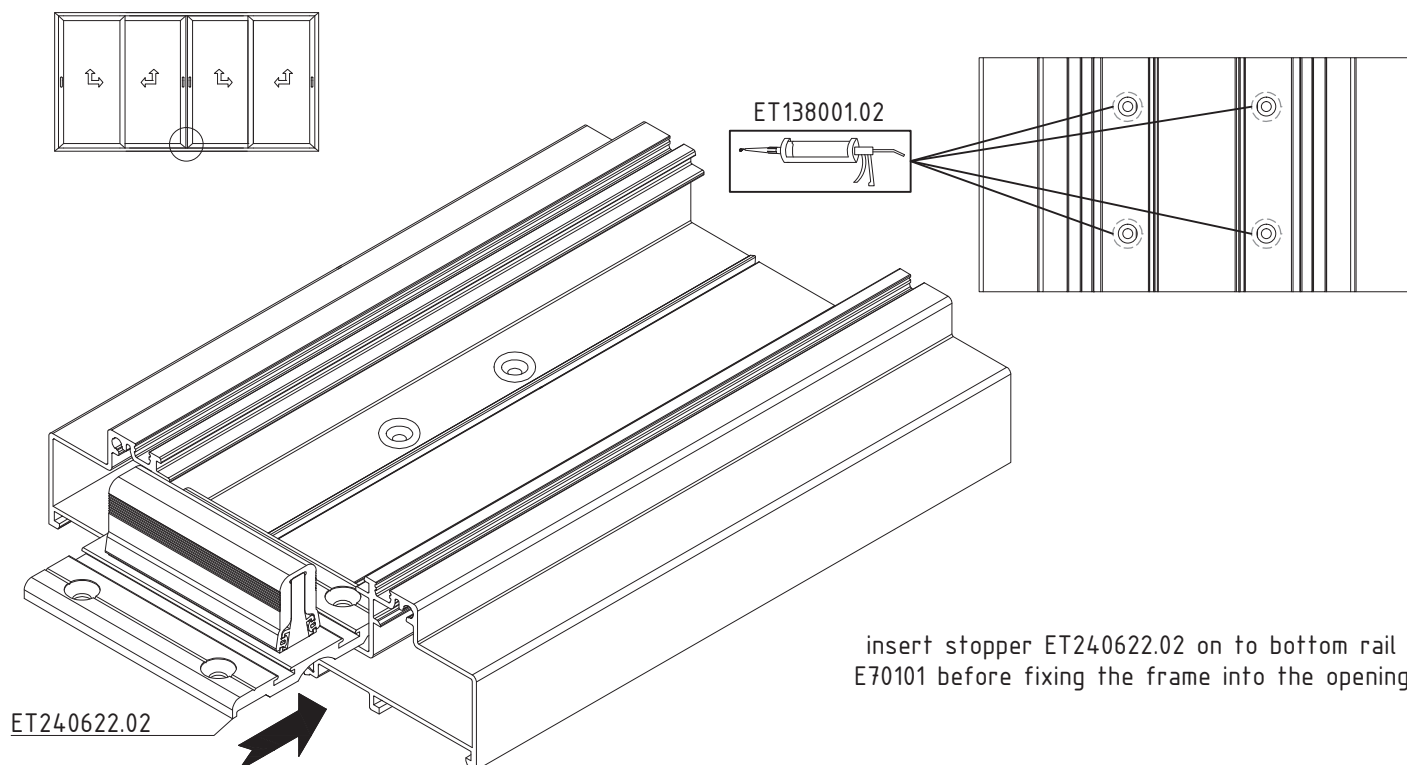


ET240625.00 is fixed on to rail E70101, using countersunk head sheet metal screws ST 4.8x13 mm DIN 7982. the gap between ET240625.00 and E70101 is sealed with silicone ET138001

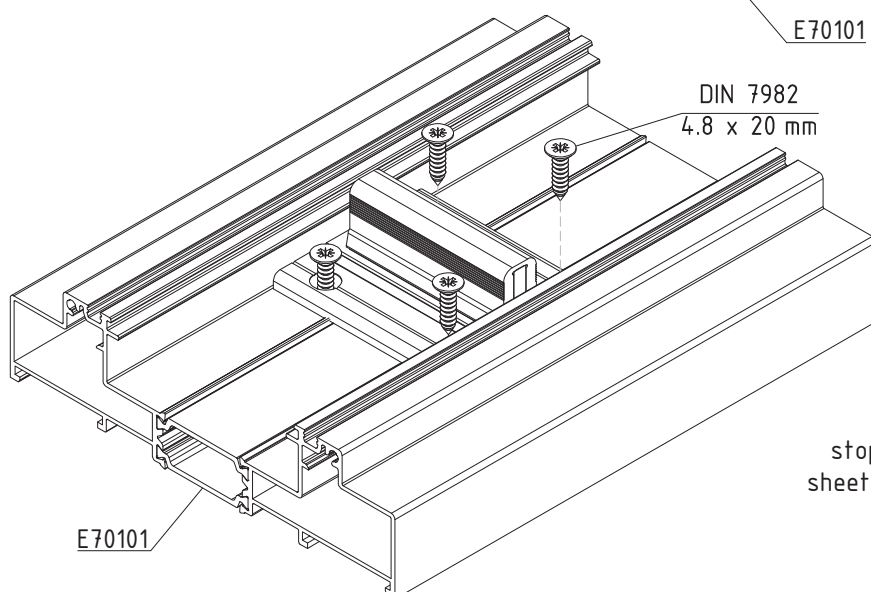
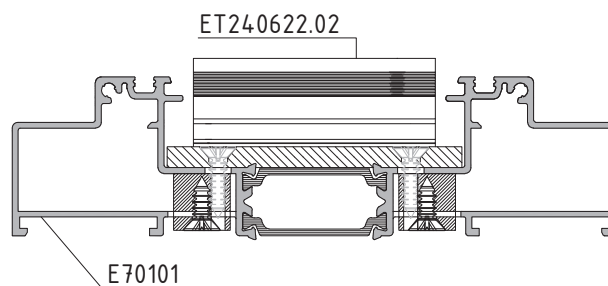


FIXING ET240622.02 ON THE LOWER SIDE OF A FOUR SASHES SLIDING DOOR

M70-55



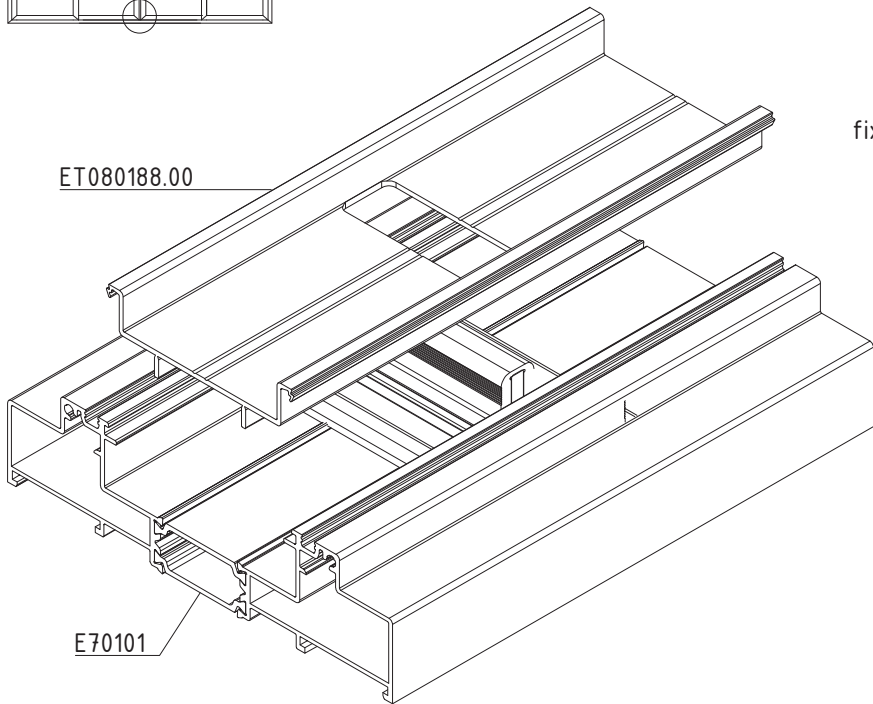
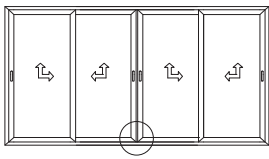
after fixing the rail into the opening apply silicone along the perimeter of each hole drilled on to rail E70101, as presented in the figure. move up the stopper, so that not to spread the silicone and move it until the fixing holes are aligned, then press the stopper against the rail



stopper ET240624.02 is fixed using sheet metal screws 4.8x20 mm DIN 7982

FIXING ET080188.00 ON THE bottom SIDE OF A FOUR LEAF SLIDING DOOR

M70-56

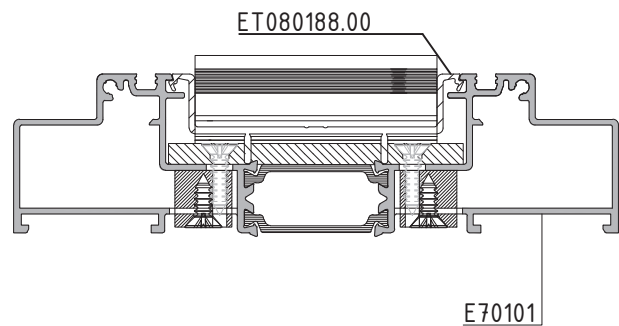


ET080188.00

E70101

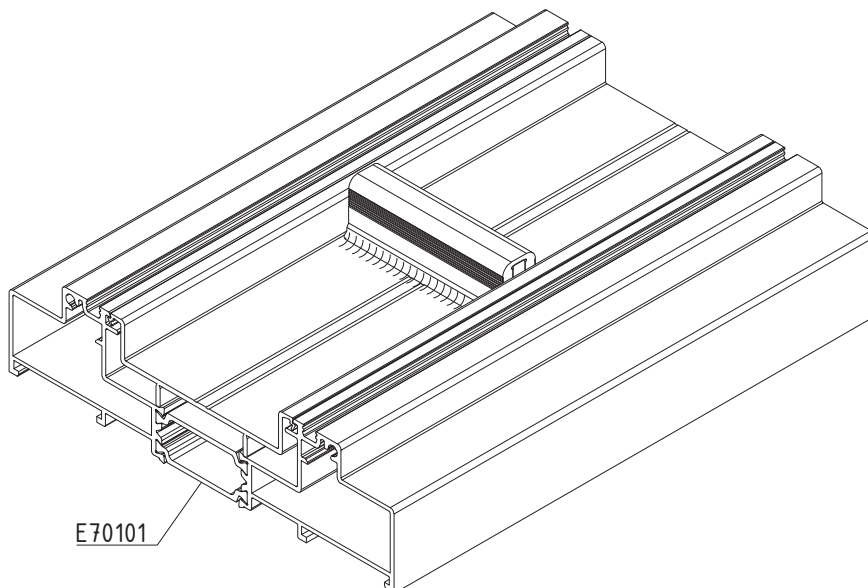
fix machined plastic profile ET080188.00 on to the rail

the gap between ET240622.02 and plastic profile ET080188.00 is filled with silicone ET138001.02



ET080188.00

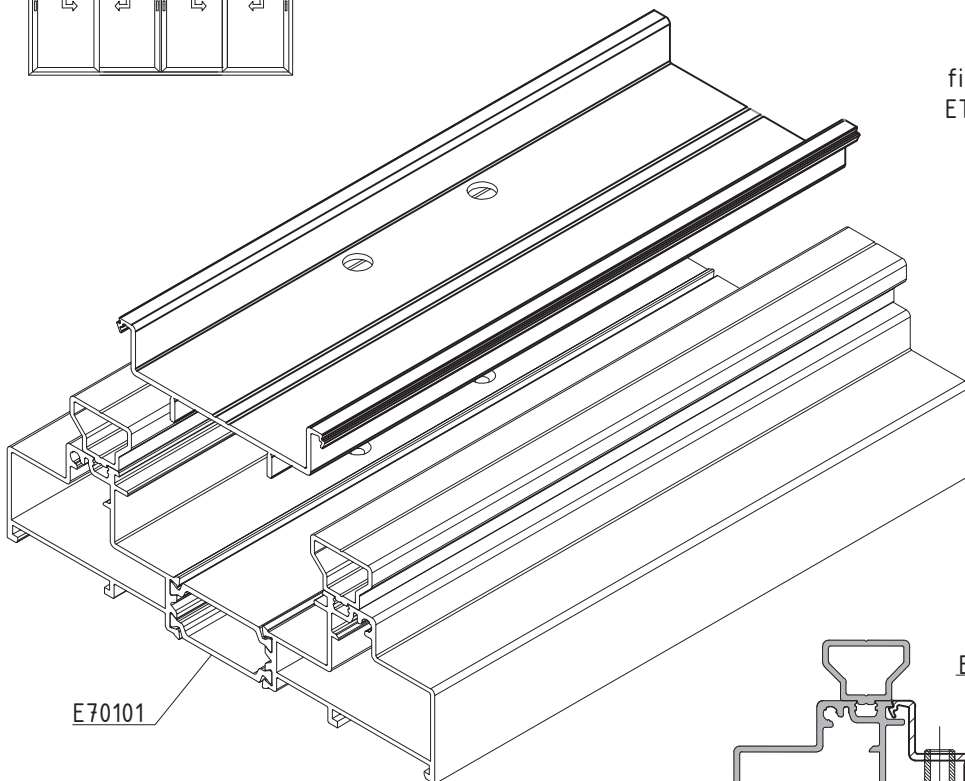
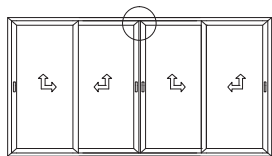
E70101



E70101

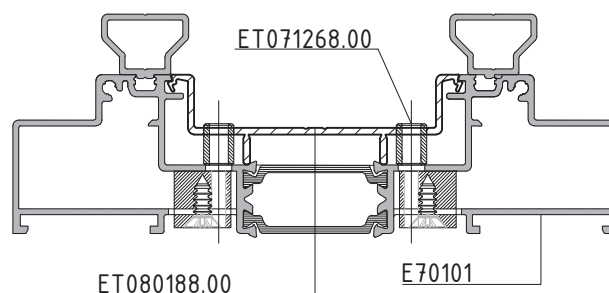
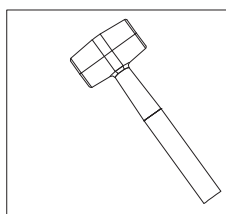
FIXING ET080188.00 ON THE TOP SIDE OF A FOUR LEAF SLIDING DOOR

M70-57



fix machined plastic profile
ET080188.00 on to the rail

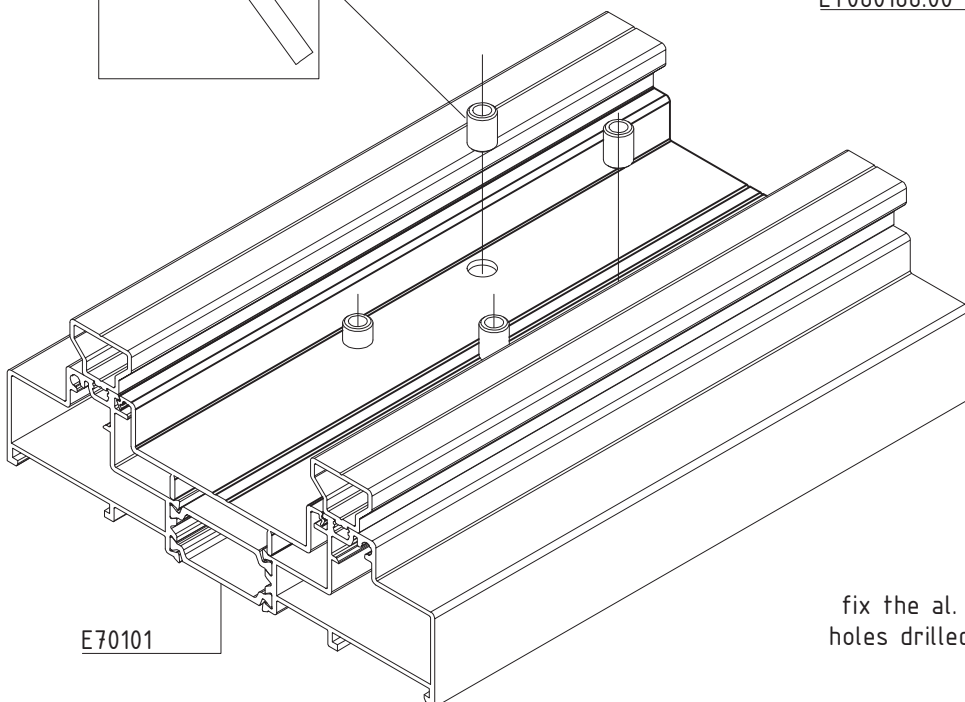
E70101



ET080188.00

ET071268.00

E70101

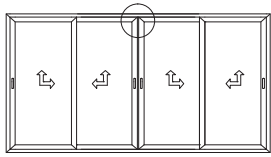


E70101

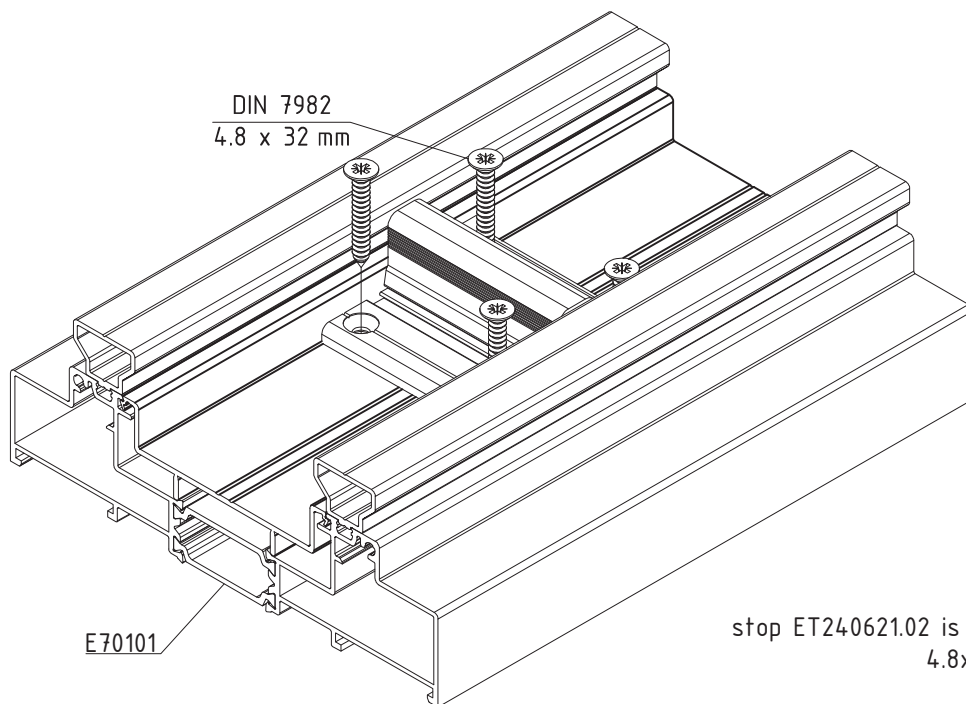
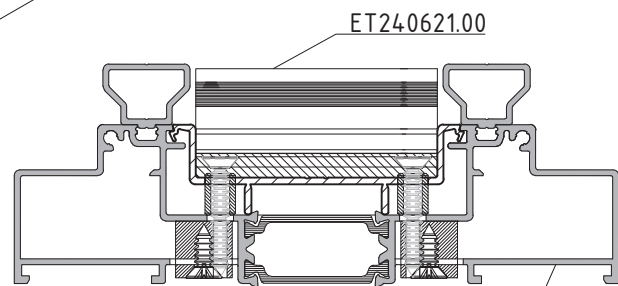
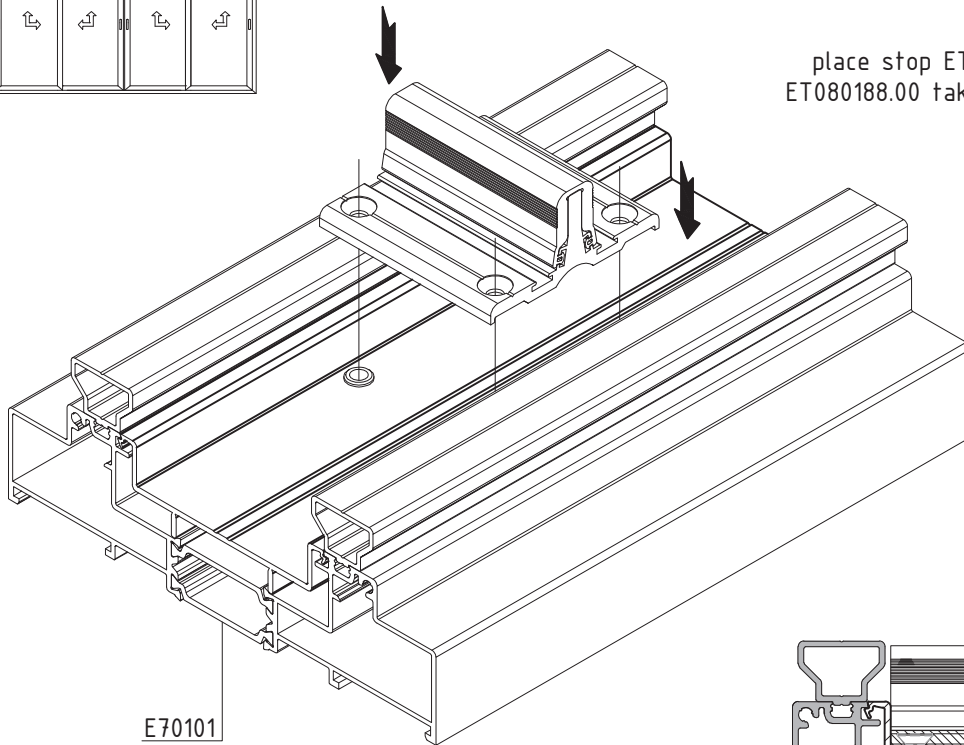
fix the al. spacer ET071268.00 into each of the
holes drilled on to plastic drain profile 080188.00

FIXING ET240621.02 ON THE TOP SIDE OF A FOUR SASHES SLIDING DOOR

M70-58



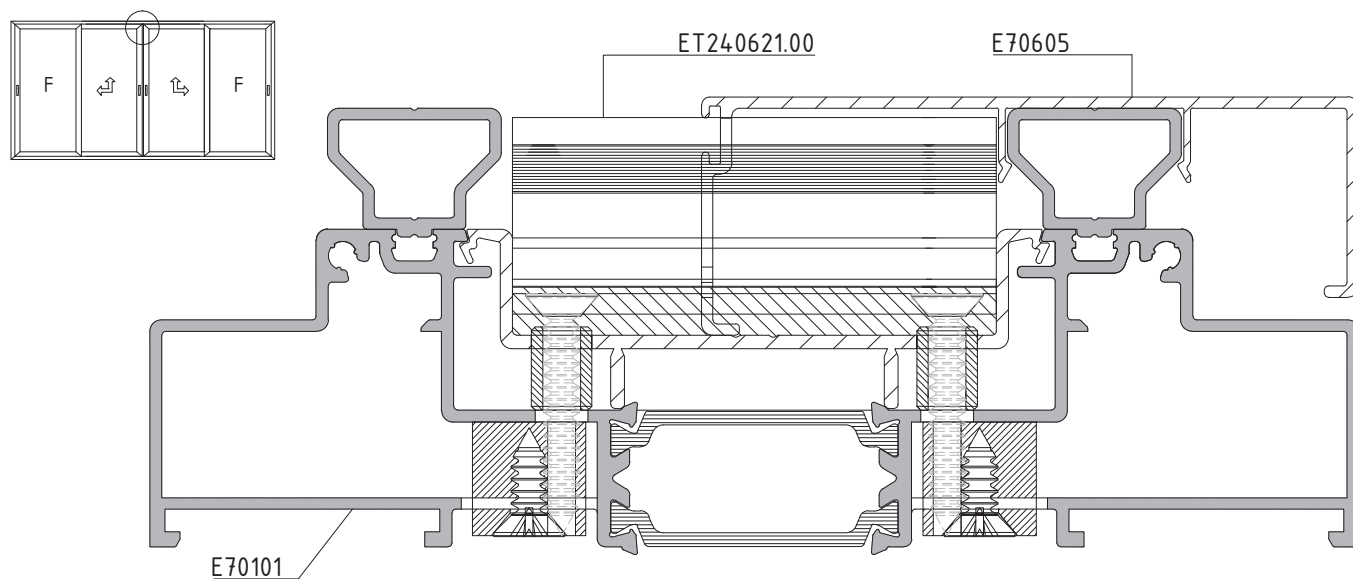
place stop ET240621.02 on to plastic profile ET080188.00 taking care so that the fixing holes are aligned



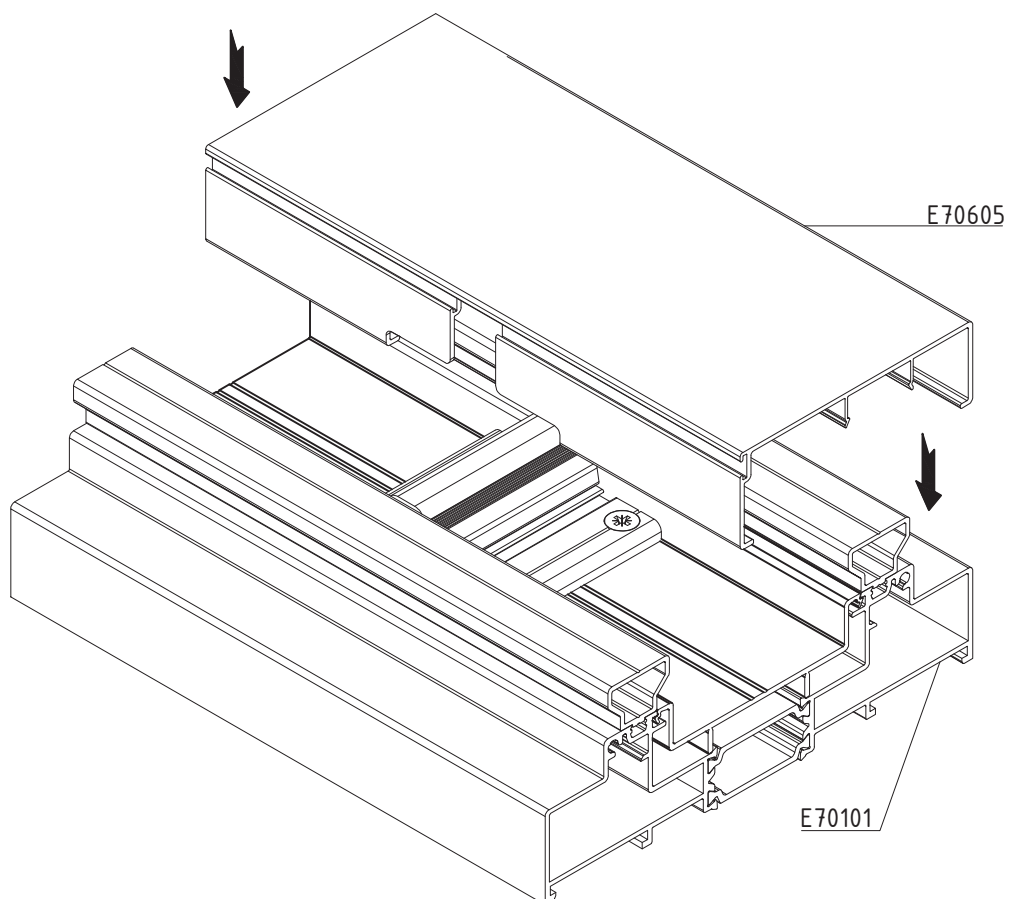
stop ET240621.02 is fixed using sheet metal screws 4.8x32mm DIN 7982

FIXING E70605 ON THE TOP SIDE OF A FOUR SASHES SLIDING DOOR

M70-59

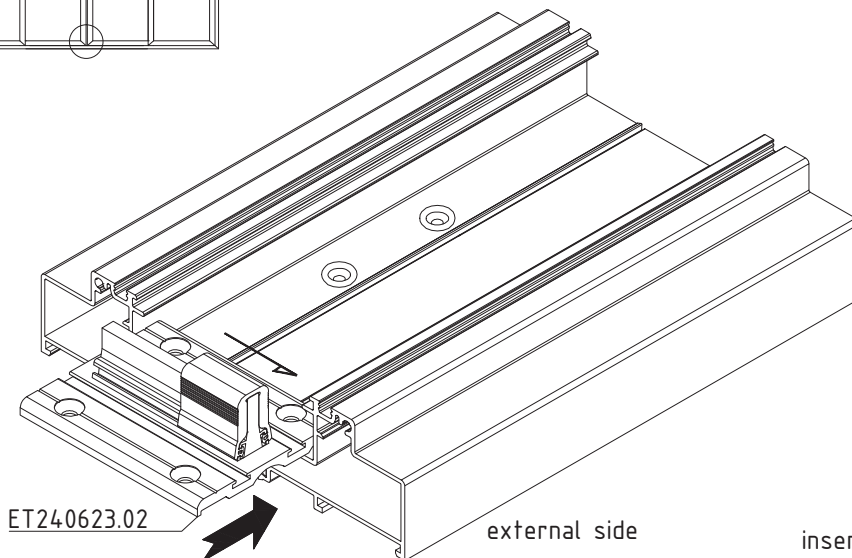
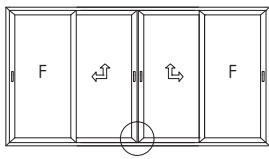


cover profile E70605 is fixed on the top side of a four sashes sliding door, only in case that the intermediate sashes are sliding



FIXING ET240622.02 ON THE LOWER SIDE OF A FOUR SASHES SLIDING DOOR

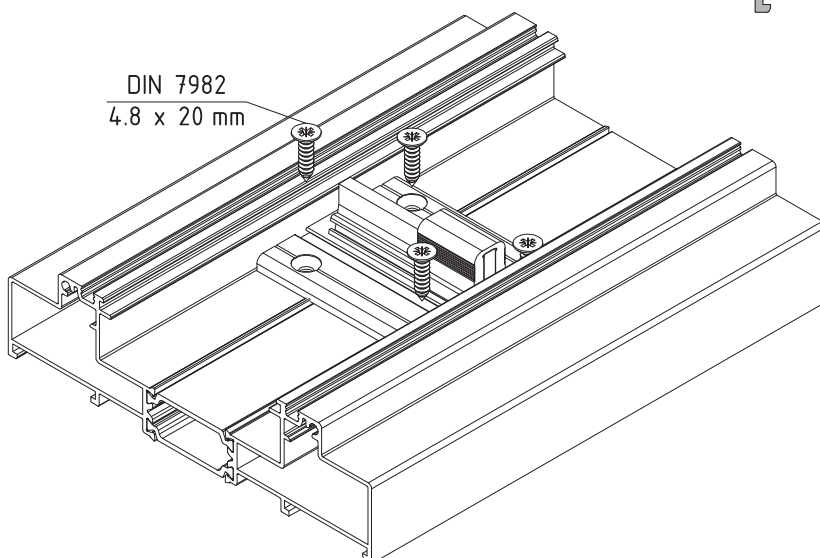
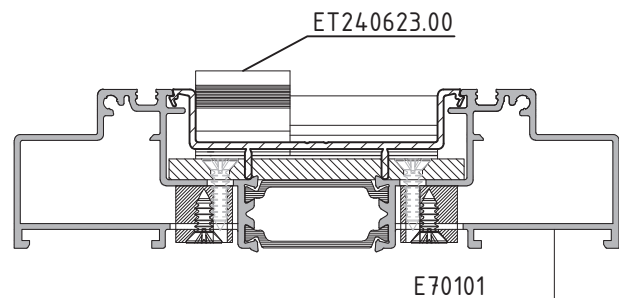
M70-60



stopper ET240623.02 , is fixed on the bottom rail of a four sashes sliding door, only in case that the intermediate sashes are sliding

insert stopper ET240623.02 on to rail E70101 before fixing the frame into the opening, taking care that the gaskets positioned at the external side of the frame

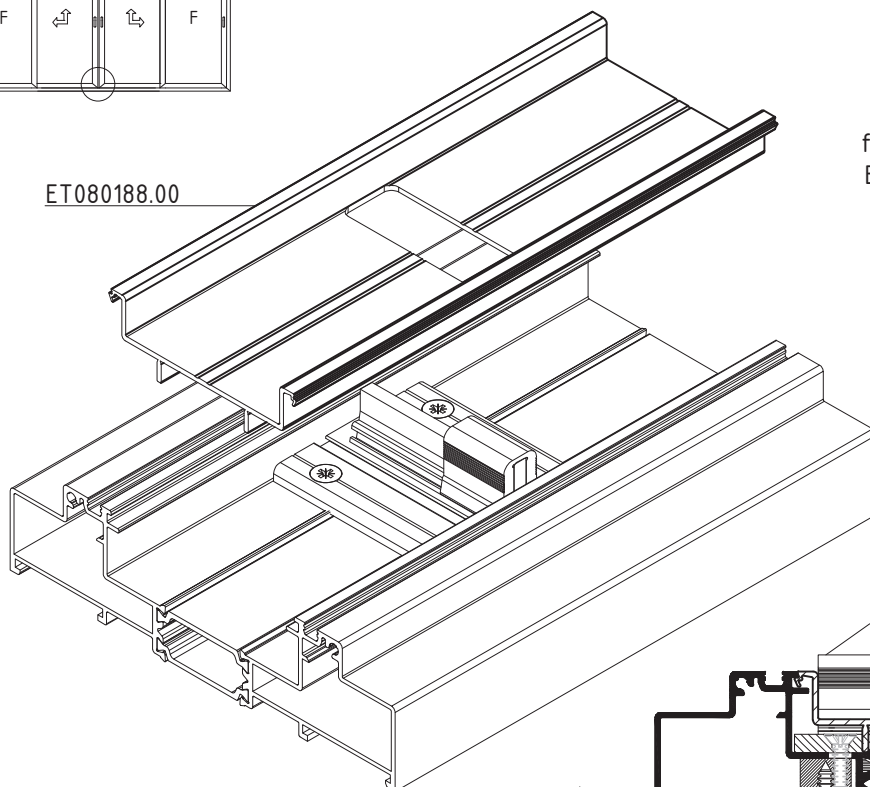
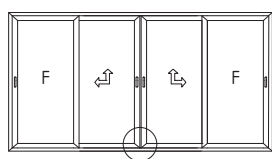
after fixing the rail into the opening apply silicone along the perimeter of each hole drilled on to rail E70101, as presented in the figure. move up the stopper, so that not to spread the silicone and move it until the fixing holes are aligned, then press the stopper against the rail



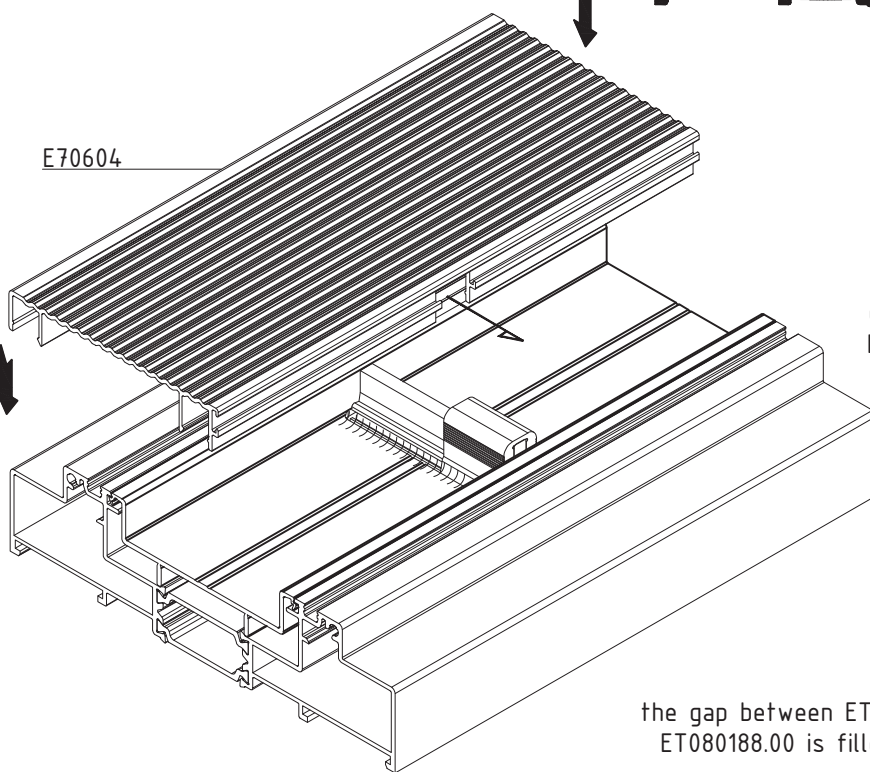
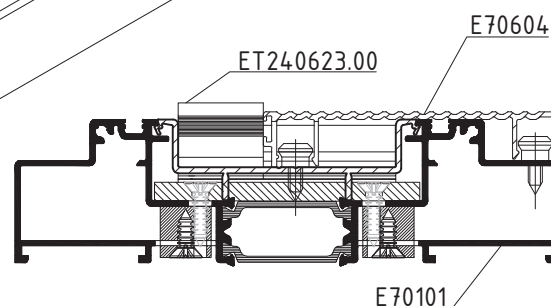
stop ET240624.02 is fixed using sheet metal screws 4.8x20 mm DIN 7982

FIXING E70604 ON THE LOWER SIDE OF A FOUR SASHES SLIDING DOOR

M70-61



fix machined plastic profile
ET080188.00 on to the rail

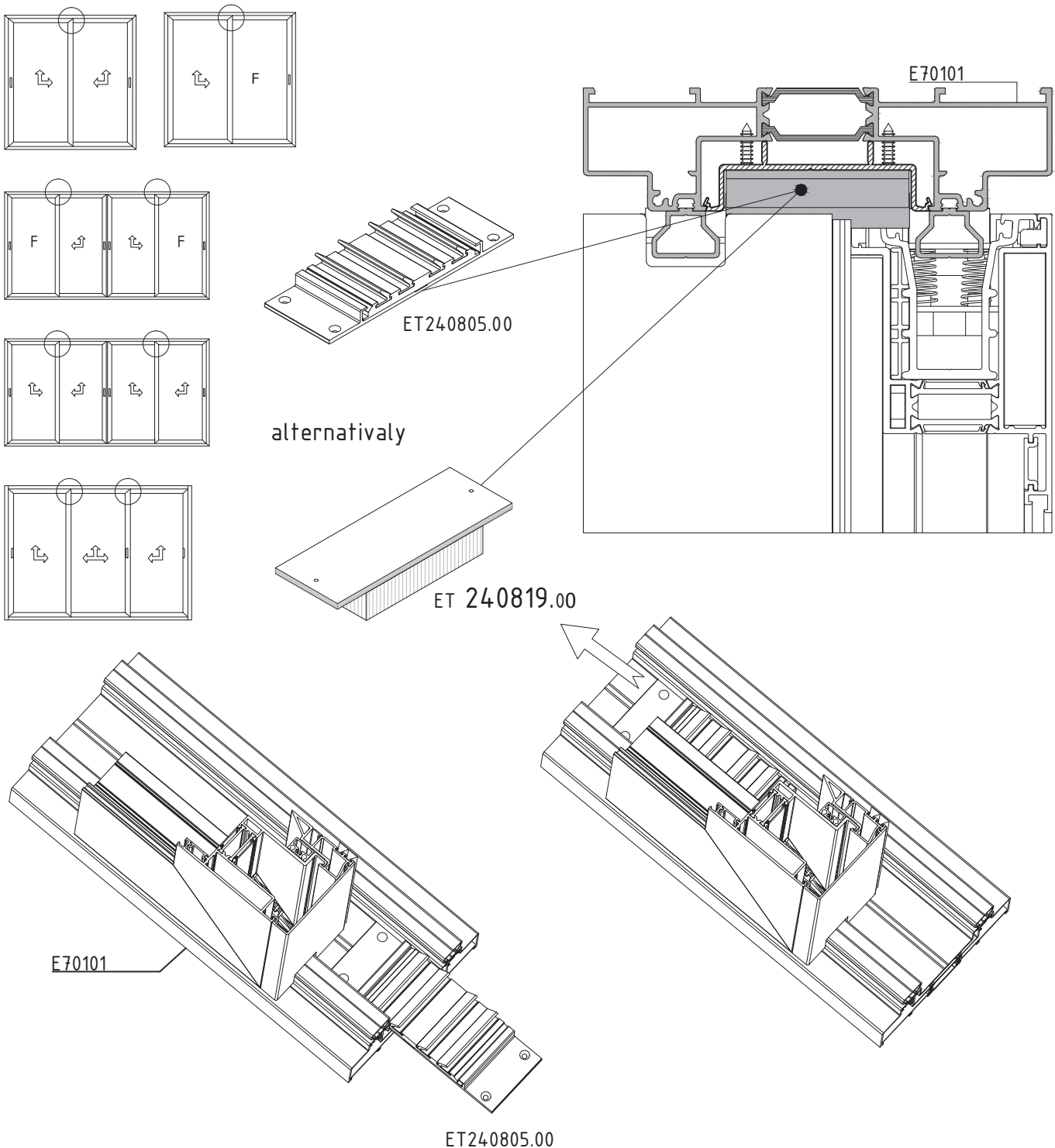


cover profile E70604 is fixed on the
bottom side of a four sashes sliding
door, only in case that the
intermediate sashes are sliding

the gap between ET240623.02 and plastic profile
ET080188.00 is filled with silicone ET138001.02

FIXING SEALING BRUSH ET240805 ON THE TOP RAIL E70101

M70-73

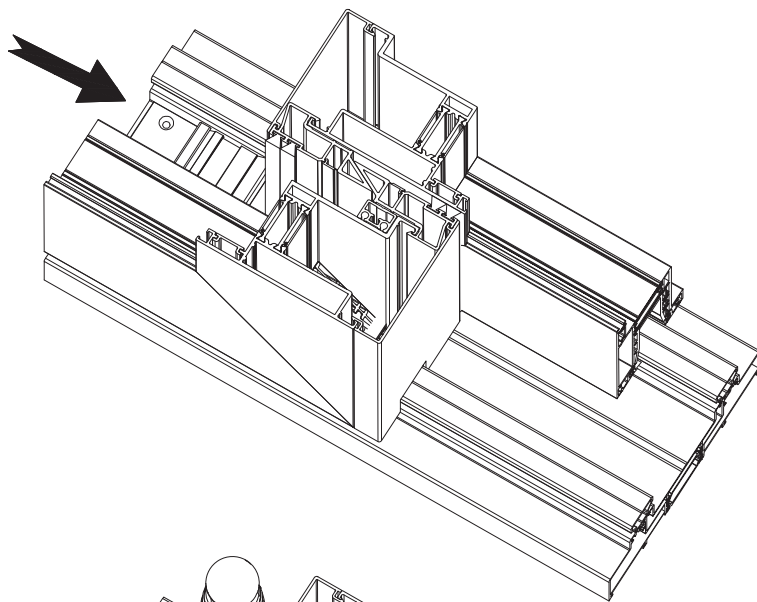


sealing brush ET240805 is fixed on to the top rail E70102, after placing one sash into the frame

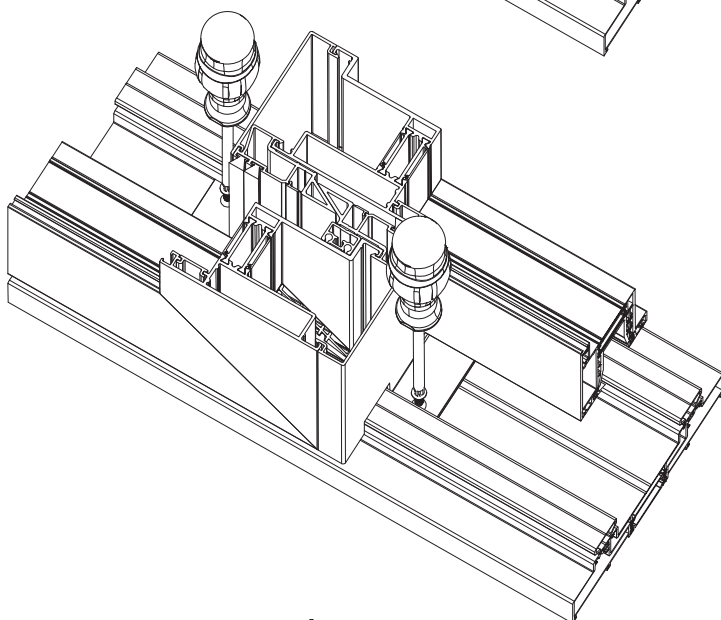
sealing brush is moved underneath the first sash so that to be able to place the next sash into the frame

FIXING SEALING BRUSH ET24-0805 ON THE TOP RAIL E70101

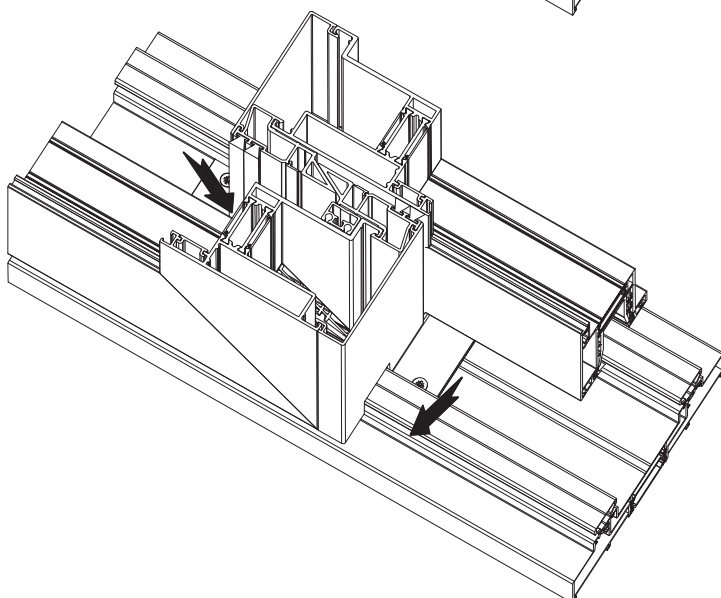
M70-63



place the next sash into the frame and move the sealing brush between the two sashes

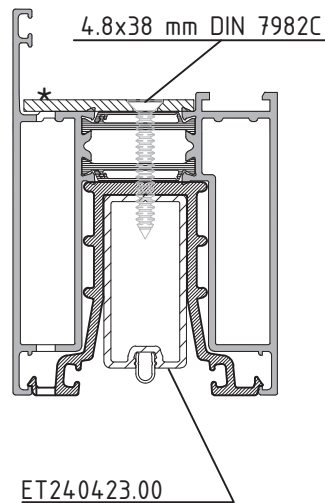
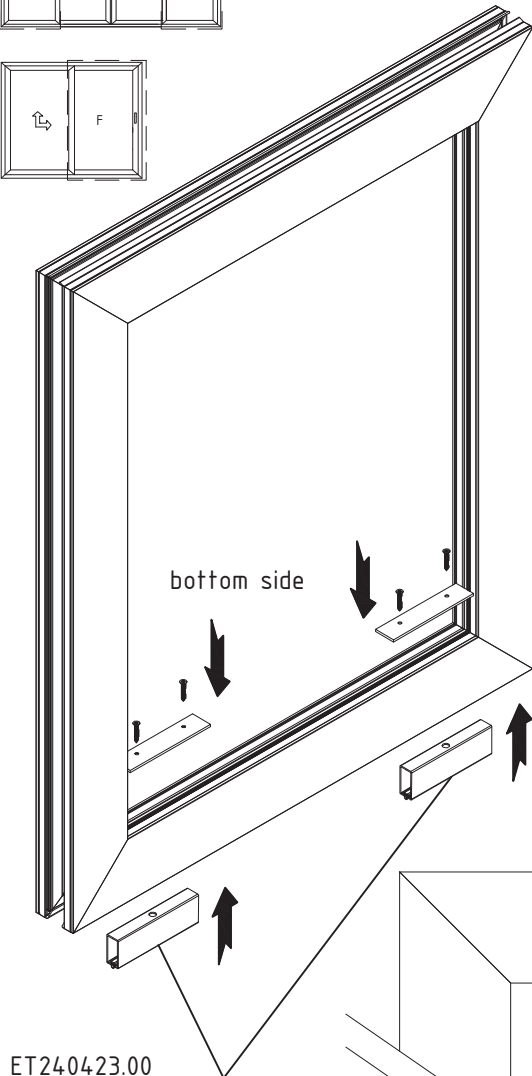
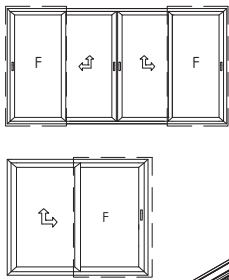


the sealing brush is fixed on to the frame using two countersunk head sheet metal screws 4.2x19 mm DIN 7982, as presented in the drawing



FIXING SPACER ET240423 ON TO SASH FRAME

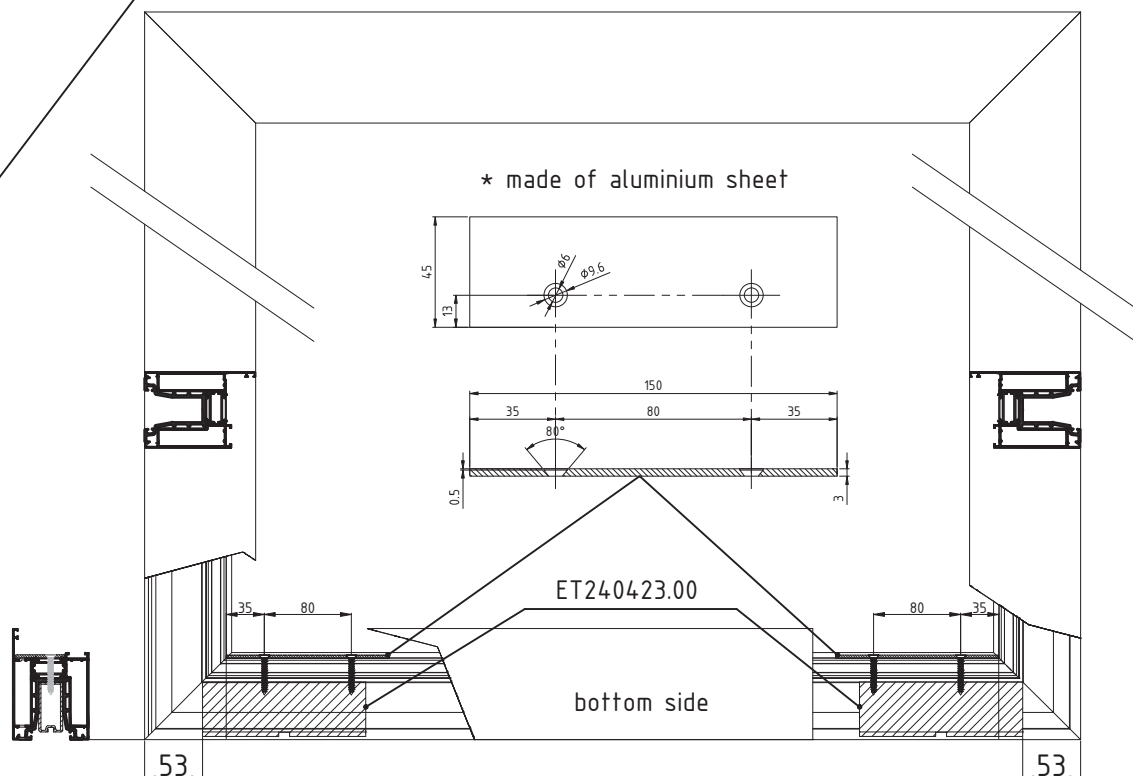
M70-64



in order to fix spacer for fixed frame ET240423.00 on to the sash frame, is necessary to prepare 2 shims according to drawing (*) made of aluminum sheet or composite panel, having a thickness of 3mm

attention: always fix stainless steel rail at the bottom part of ET240423.00

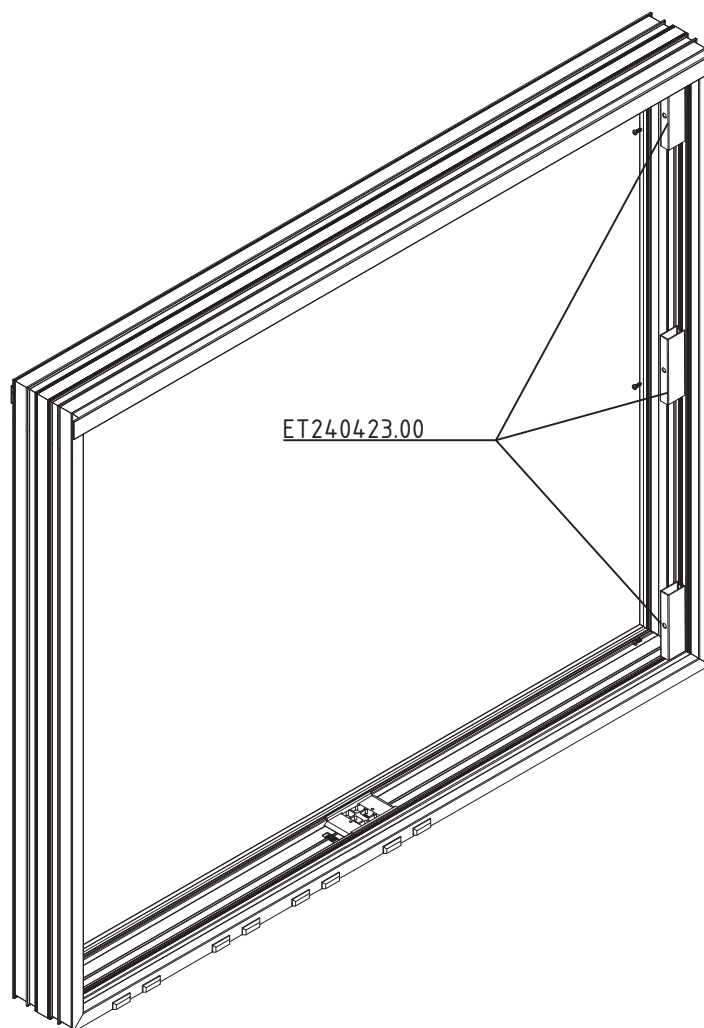
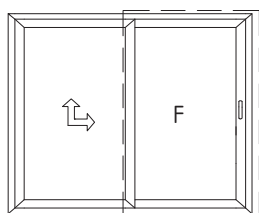
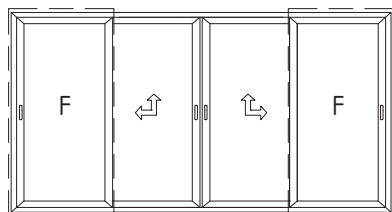
spacer ET240423.00 is fixed into the groove of the bottom part of the sash frame, 53 mm measured from the edges of the sash frame. the aluminum sheet is placed into the groove for the glazing of the bottom part of the sash frame, as presented in the drawing. ET240423.00 is fixed using sheet metal screws 4.8x38 mm DIN 7982C, that are fixed at the drilled holes of the aluminum shims.



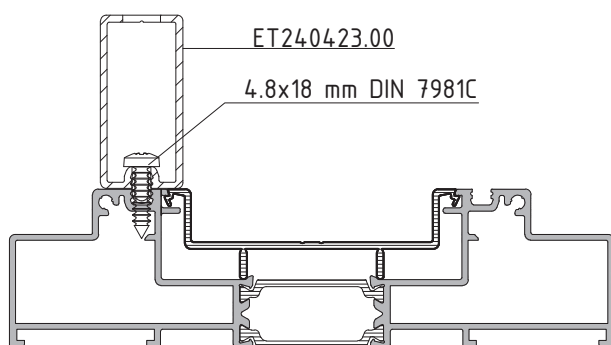
scale : 1:1

FIXING SPACER ET240423 ON TO THE FRAME

M70-65



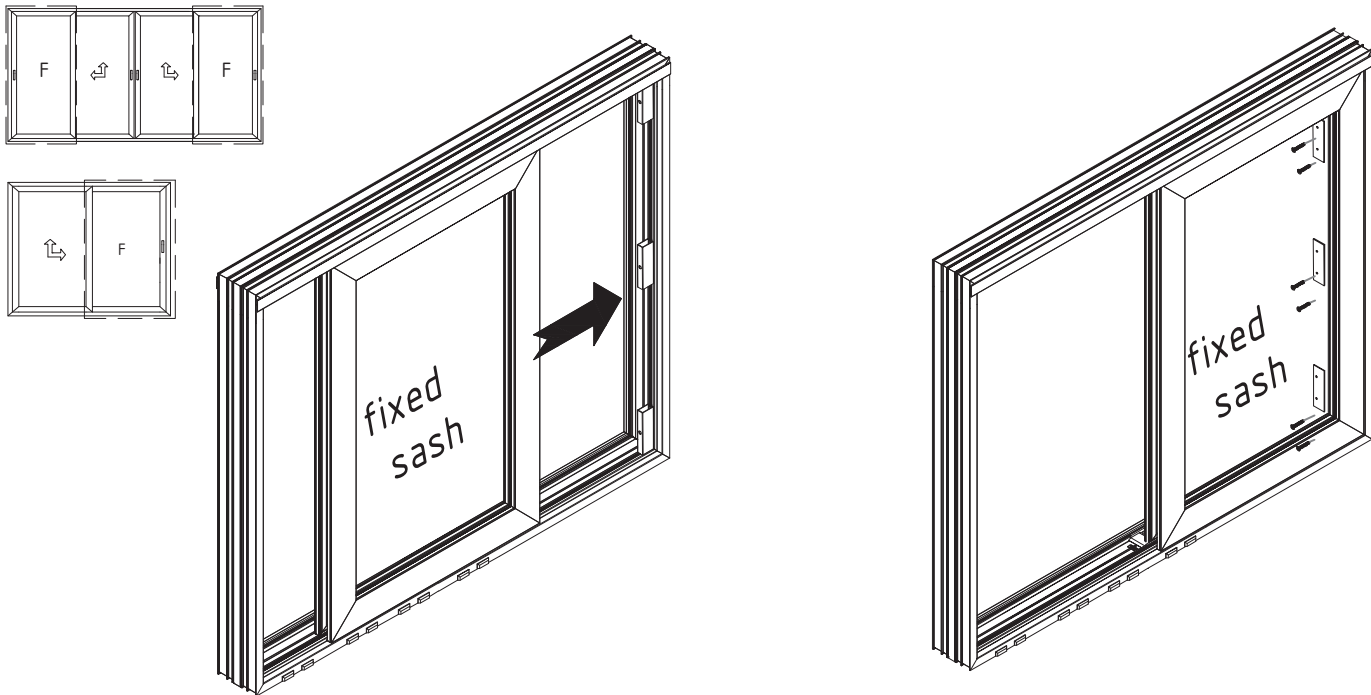
spacer ET240423.00 is also fixed at the vertical member of the frame, at the side where the fixed sash frame is to be placed. three (3) spacers shall be fixed, one at each edge of the vertical member and one in the middle, as presented in the drawing. the spacers shall be fixed using sheet metal screws 4.8x18 mm DIN 7981C



ATTENTION: always fix stainless steel rail at the bottom part of ET240423.00

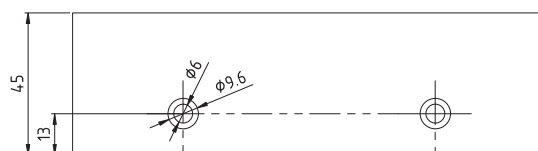
PLACING FIXED SASH INTO THE FRAME

M70-66

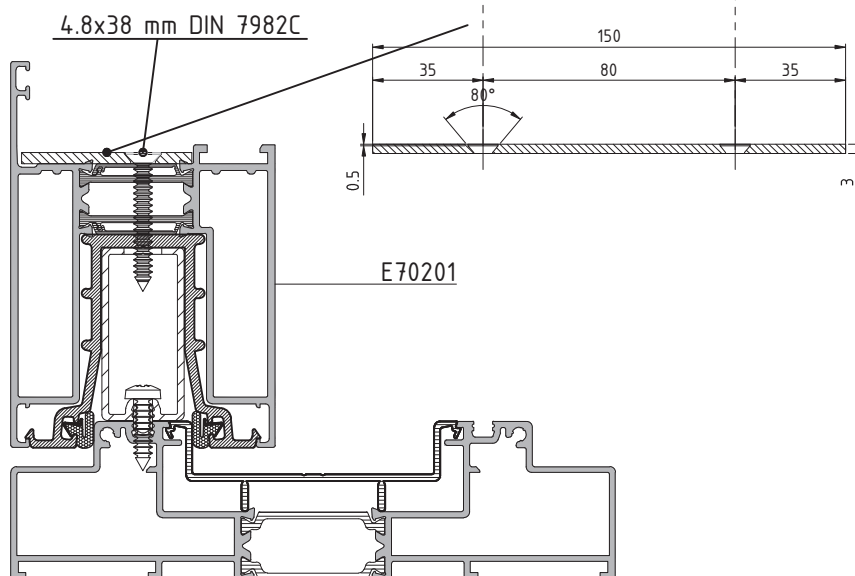


the fixed sash frame is placed into the frame and is guided towards the vertical side of the frame, where the spacers are fixed

made of aluminium sheet



fixed sash frame is fixed on to the spacers using sheet metal screws 4.8x38 mm DIN 7982C, that are fixed at the drilled holes of the aluminum shims.



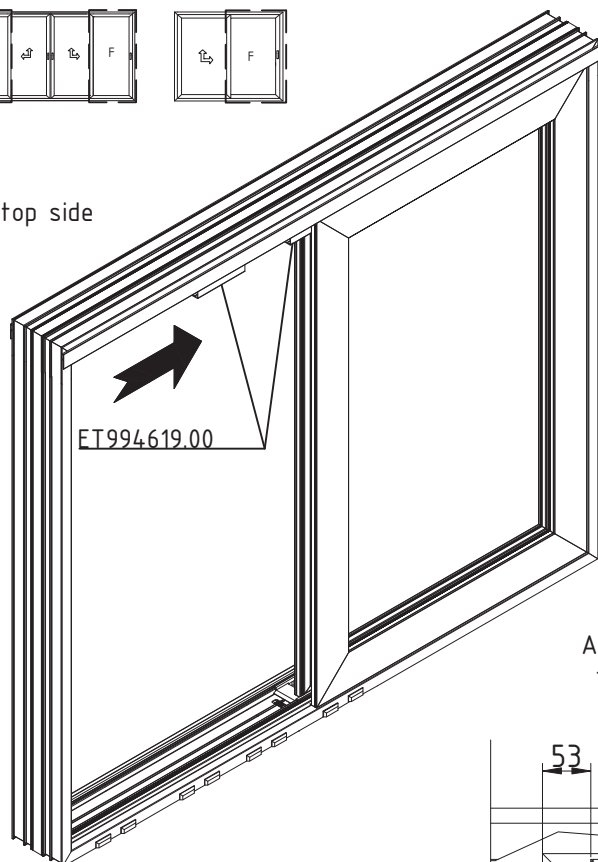
in order to fix fixed sash frame on to spacer ET240423.00, that is fixed on to the frame, is necessary to prepare 3 shims according to drawing (*) made of aluminum sheet or composite panel, having a thickness of 3 mm

FIXING SPACER ET994619.00 ON TOP SIDE OF FIXED SASH FRAME

M70-67



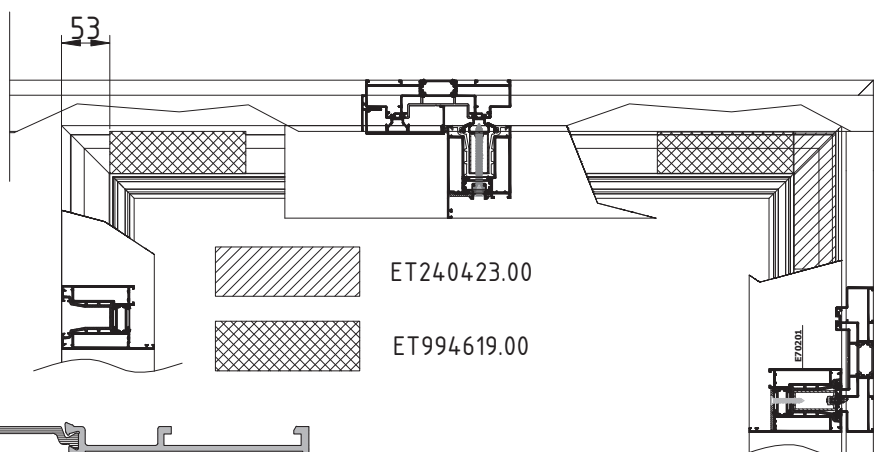
top side



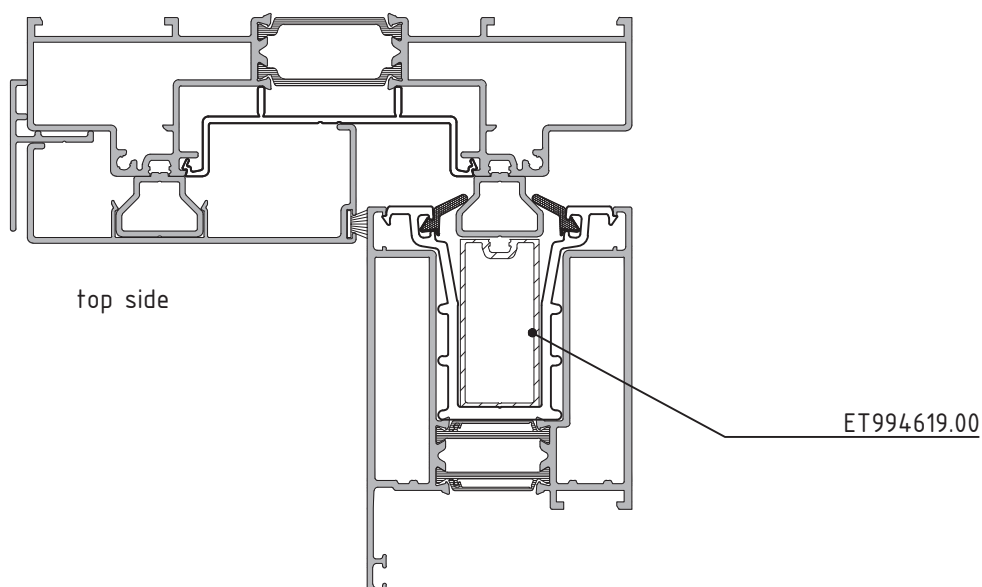
spacer ET994619.00 is inserted into the groove of the upper part of the fixed sash frame. it is required two use two pieces, one at each side. the first spacer is guided until it reaches spacer ET240423.00, that is already fixed on to the vertical member of the frame. the second is placed at distance of 53 mm, measured from the edge of the sash frame (see drawing below)

ATTENTION: use only spacer ET994619.00 on the top side of the fixed sash frame. do not fix stainless steel rail on to ET994619.00

side of interlock

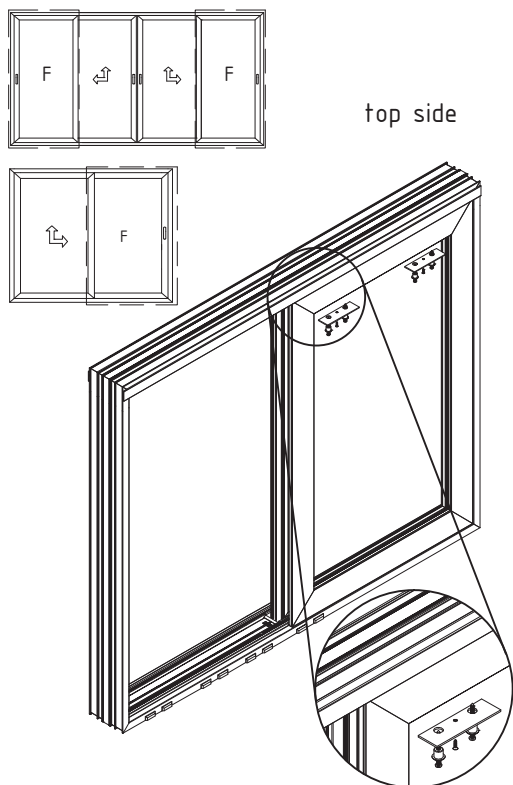


top side

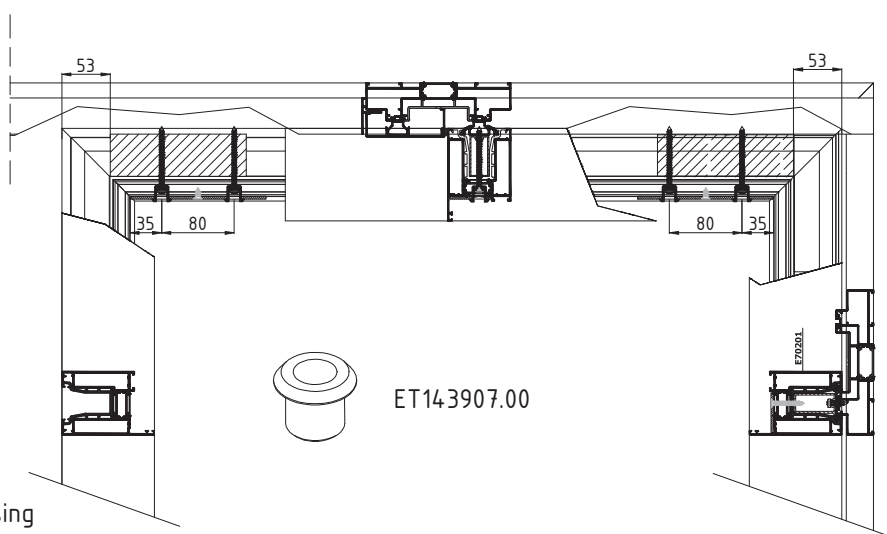


FIXING FIXED SASH FRAME ON TO THE TOP SIDE OF THE FRAME

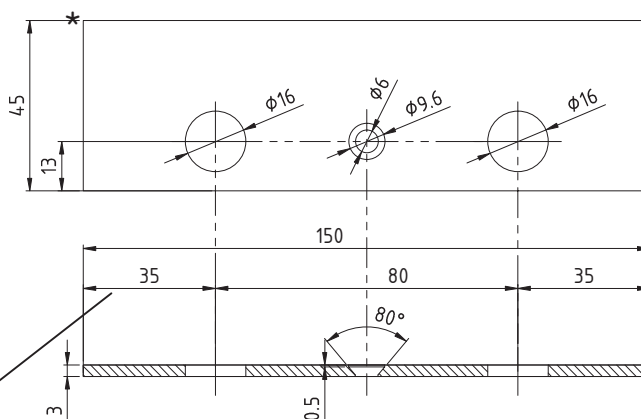
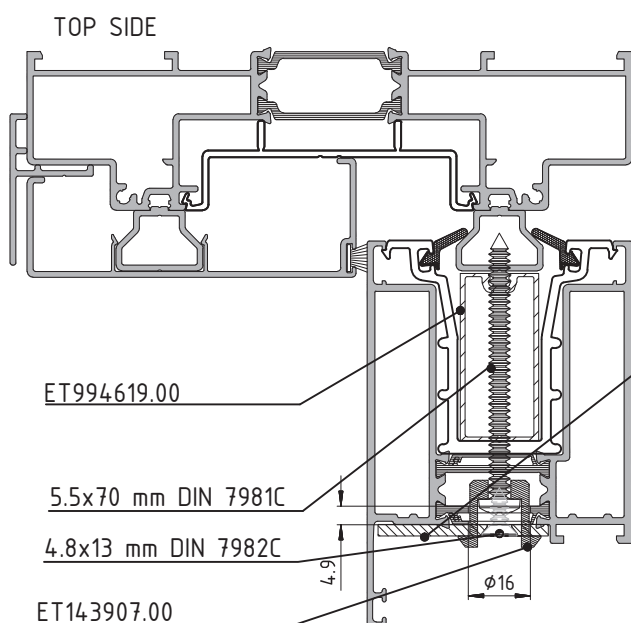
M70-68



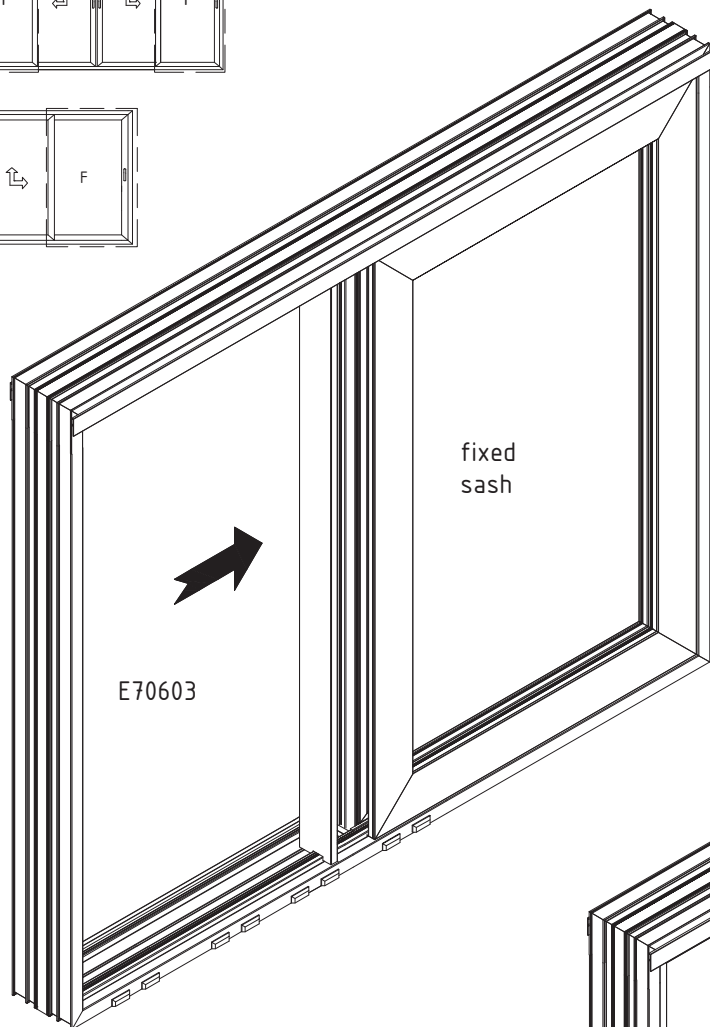
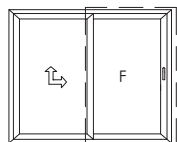
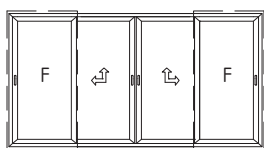
the aluminum spacers (*) are fixed on to the sash frame using sheet metal screws 4.8x13 mm DIN 7982C. using the al. spacers as jigs, drill holes on the external polyamide of the sash frame, with a diameter of 16mm, so that fix washer ET143907.00



fixed sash frame is fixed on to the rail, using sheet metal screws 5.5x70 mm DIN 7981C, that are fixed at the drilled holes of washer ET143907.00



in order to fix fixed sash frame spacer, on to the frame, trough spacer ET994619.00, is necessary to prepare 2 shims according to drawing made of aluminum sheet or composite panel, having a thickness of 3 mm

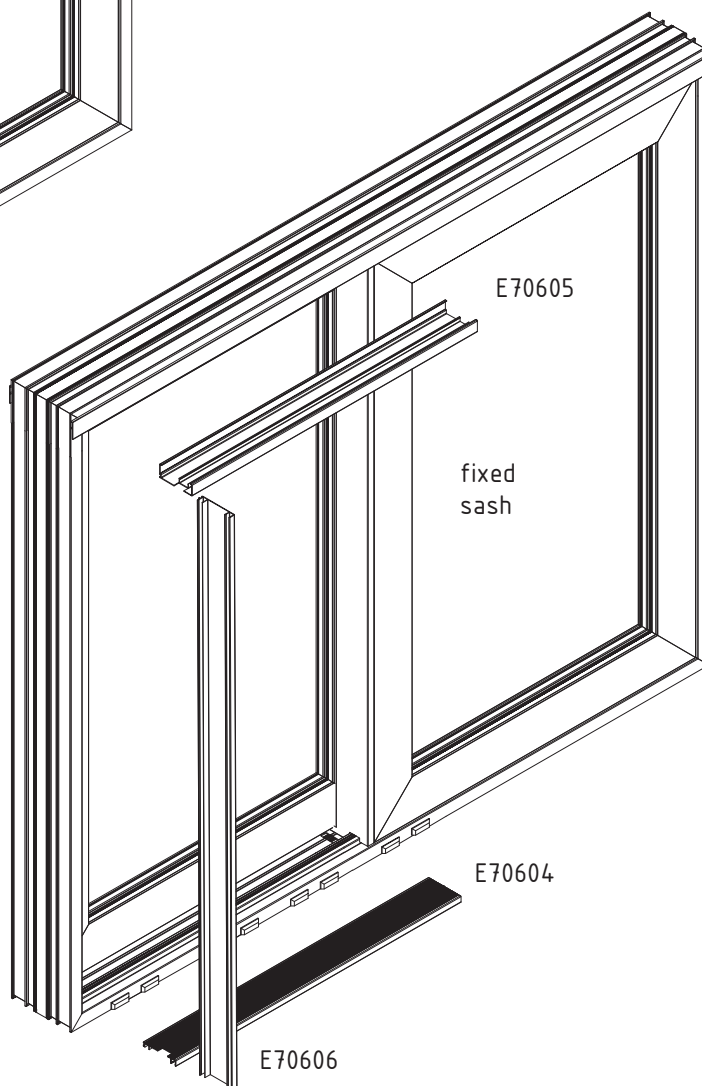


fix the cover cap of the interlock profile E70603. if there is a demand for additional thermal insulation, insert into the cavity of the sash the foam insert ET080506.00, before fixing the cover cap E70603.

ET080506.00



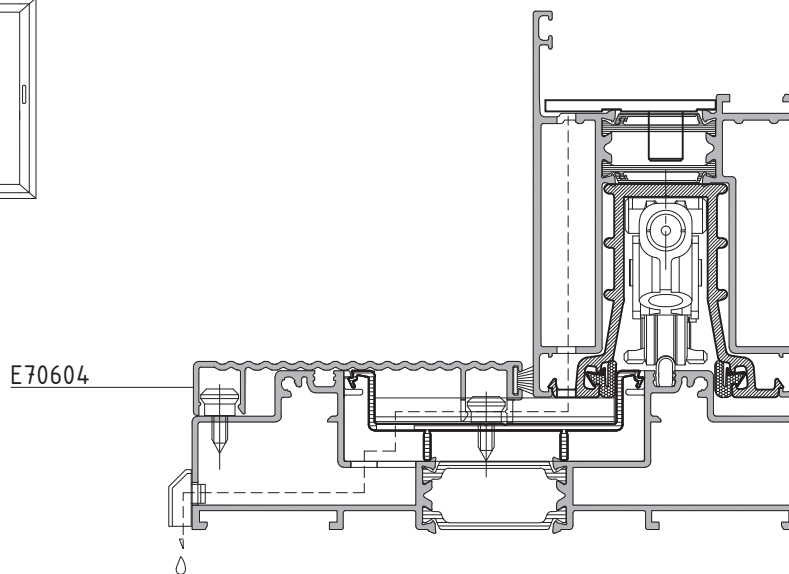
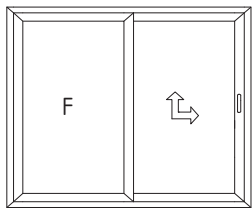
fix supplementary profiles E70604,
E70605 & E70606



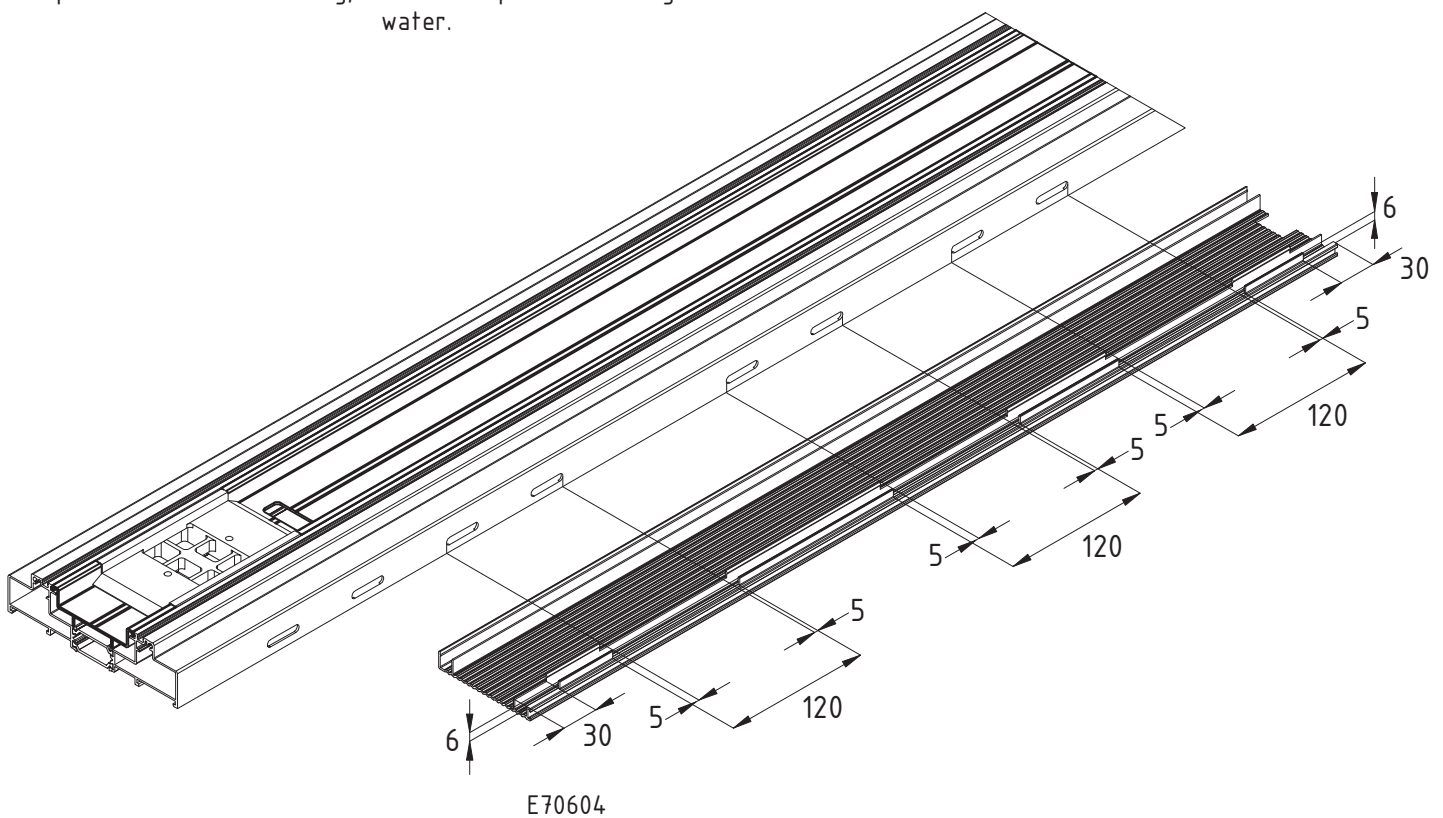
scale : 1:1

MACHINING ON E70604 FOR WATER DRAINAGE

M70-70

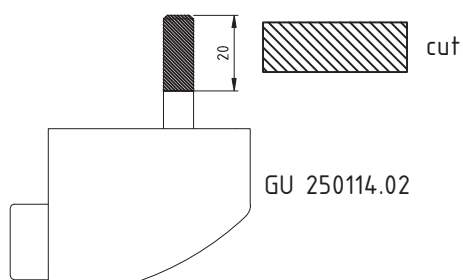


in case that the fixed frame is placed at the external side, is necessary to machine the supplementary profile E70604, as presented in the drawing, so that to provide drainage of the water.



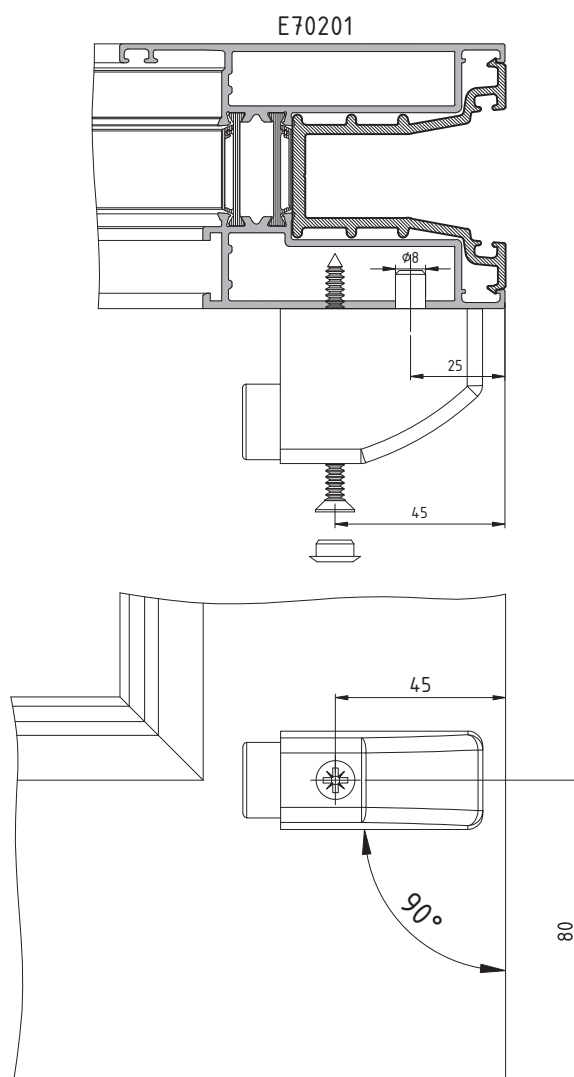
FIXING STOP GU250114 ON E70201

M70-71

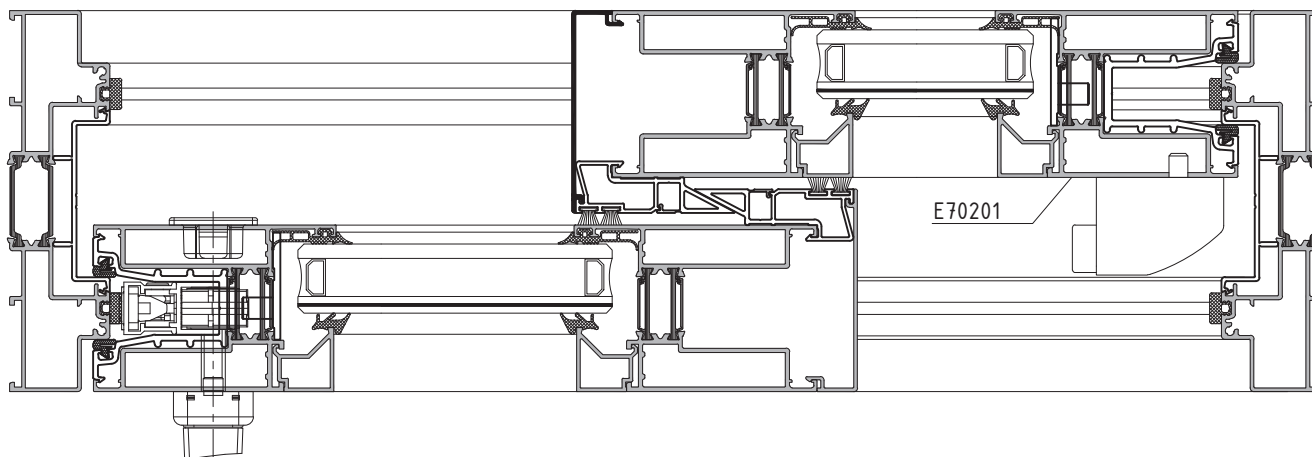


cut and remove 20 mm of the height of the metal pin, that is inserted into the plastic part of the stop GU 250114.02

drill a hole, on to the sash frame, with a diameter of $\varnothing 8$ mm, at the distances presented in the drawings. fix the stopper temporarily on to the sash frame, by inserting the metal pin (encased in the stopper) into the hole, that was drilled previously. align the stopper, so that the stopper is vertical in respect to the height of the sash frame. once this is achieved drill a hole, with a diameter of $\varnothing 3.5$ mm on to the sash frame, using as jig the hole formed on the plastic part of the stopper. the stopper is fixed using a sheet metal screw 4.8x38 mm DIN 7982C

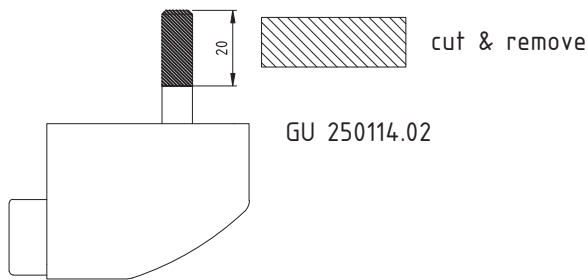


stop GU 250114.02 is fixed at the internal side of the external sash frame



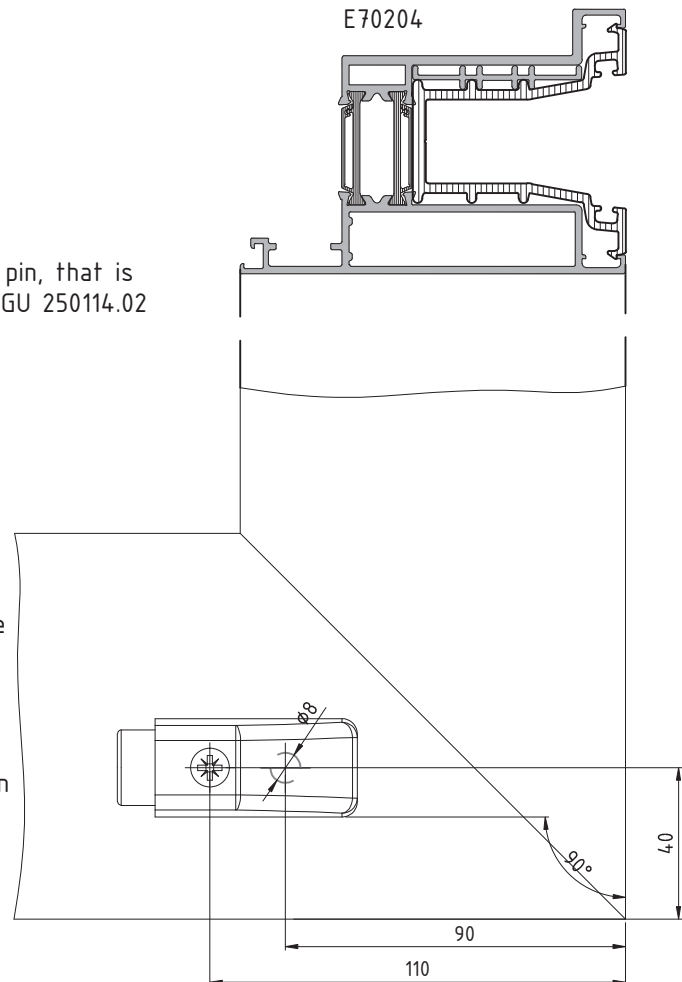
FIXING STOP GU250114 ON E70204

M70-72

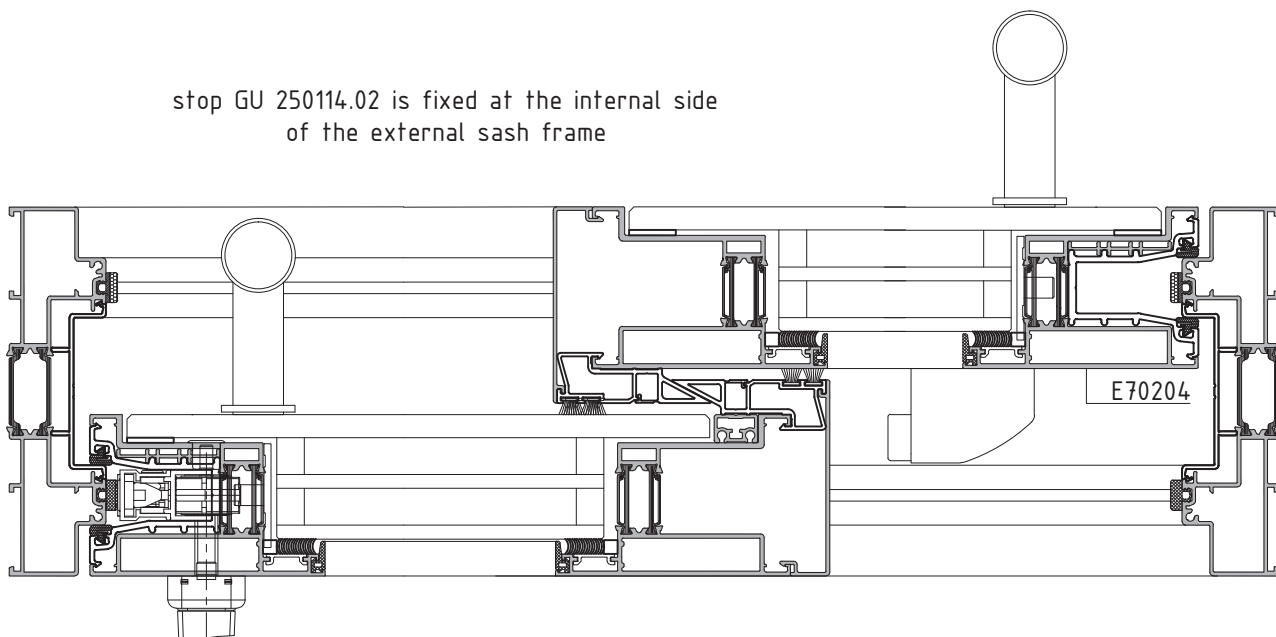


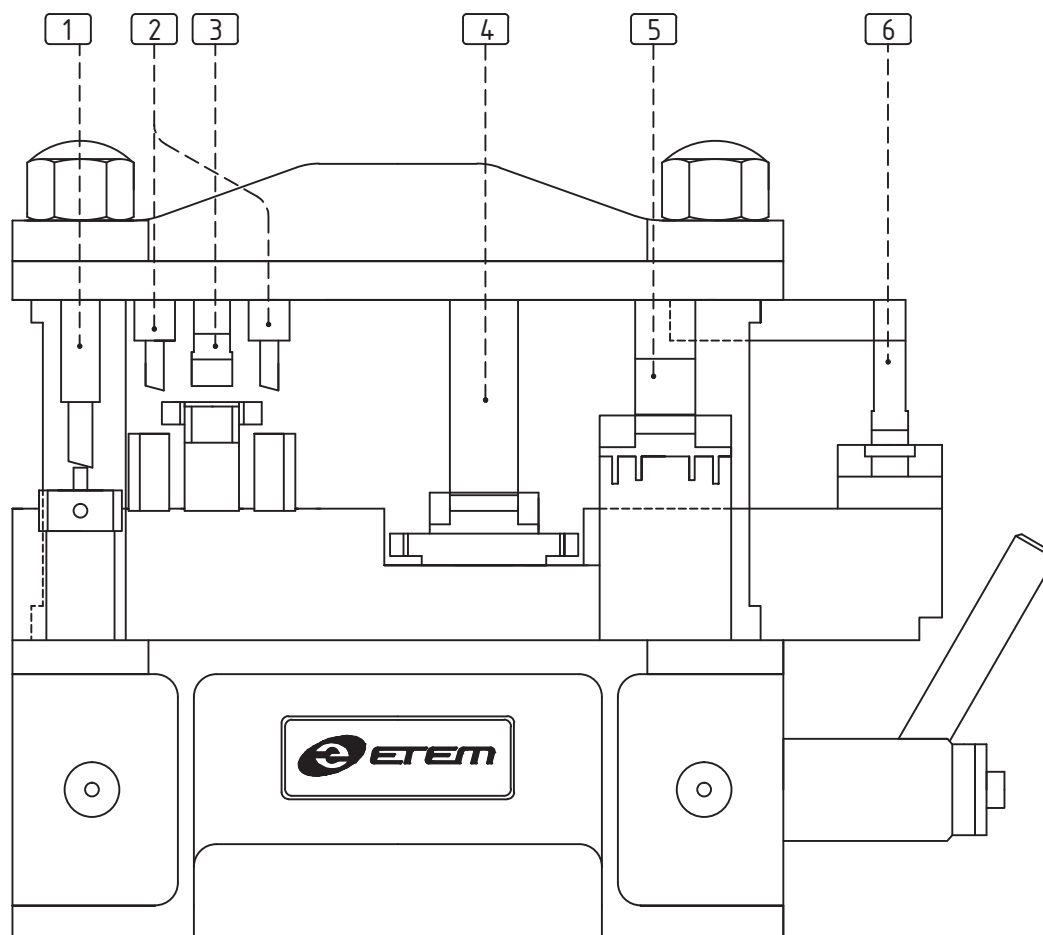
reduce 20 mm of the height of the metal pin, that is inserted into the plastic part of the stop GU 250114.02

drill a hole on to the sash frame, with a diameter of $\varnothing 8$ mm, at the distances presented in the drawings. fix the stopper temporarily on to the sash frame, by inserting the metal pin (encased in the stopper) into the hole, that was drilled previously. align the stopper, so that the stopper is vertical in respect to the height of the sash frame. once this is achieved drill a hole, with a diameter of $\varnothing 3.5$ mm on to the sash frame, using as jig the hole formed on the plastic part of the stopper. the stopper is fixed using a sheet metal screw 4.8x38 mm DIN 7982C



stop GU 250114.02 is fixed at the internal side of the external sash frame





1 Machining for rail corner joint connection
(Machining's M70-07 & M70-08)

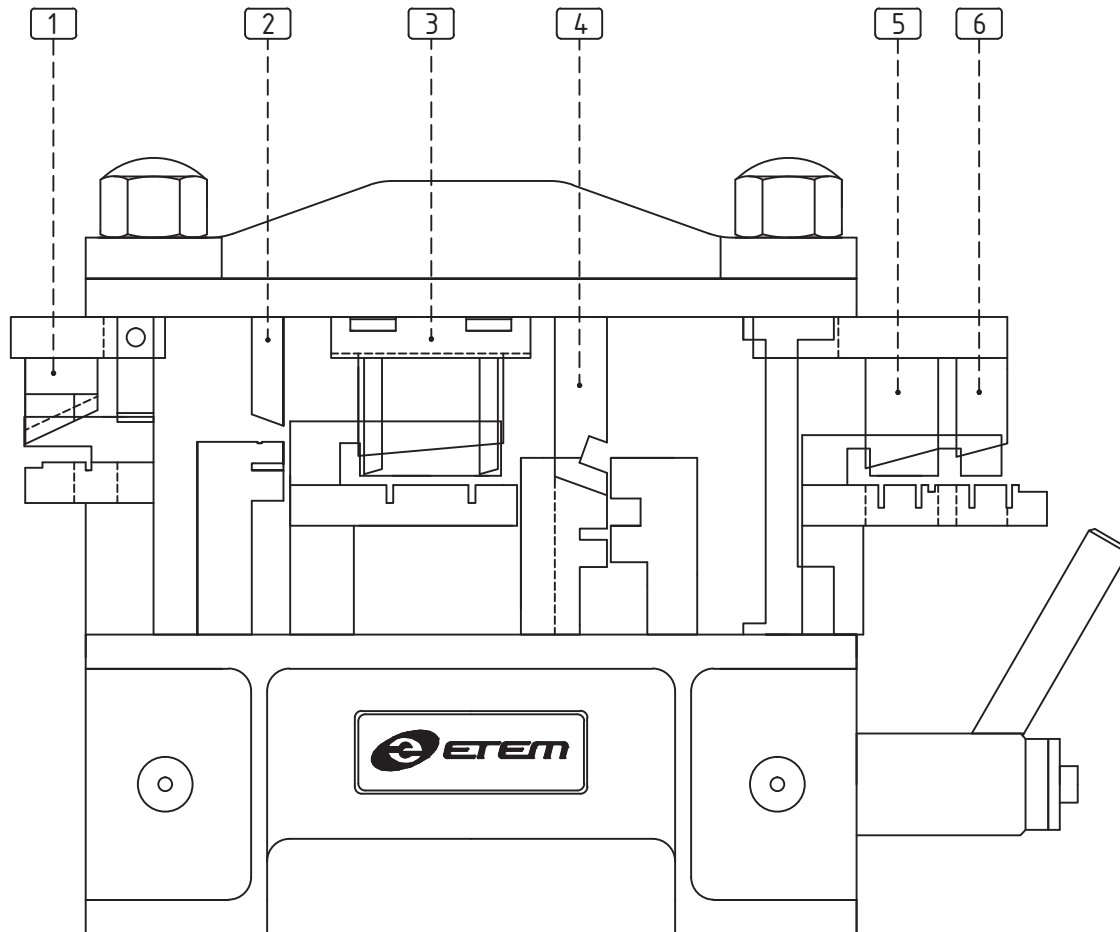
4 Machining of interlock profile E70603
(Machining's M70-16 & M70-17)

2 Machining for sashes corner joint
(Machining's M70-09 & M70-10)

5 Machining for profiles E70604 & E70605
(Machining's M70-21 & M70-22)

3 Machining for additional rail profile E70601
(Machining M70-23)

6 Machining on PVC profile ET080189.00
(Machining M70-19)



1 Machining on profile E70605 for sliding sash
(Machining M70-53 & M70-59)

4 Machining on PVC profile ET080188.00
(Machining M70-49)

2 Machining on rail cover profile E70604
(Machining M70-52 & M70-61)

5 Machining on PVC profile ET080191.00 for top
side of rail (hole 119x30.2 mm)

3 Machining on PVC profile ET080188.00
(Machining M70-50)

6 Machining on PVC profile ET080191.00 for
bottom side of rail (hole 20x22.5 mm)

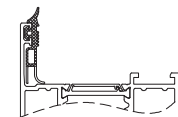
ACCESSORIES

sliding system with thermal break

E70

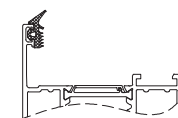
code/description	package/pcs	colour
ET 130402.00	70	●

Elongated glazing EPDM gasket 3.0 mm



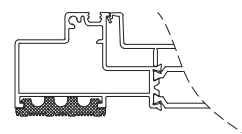
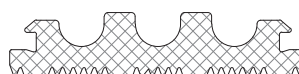
ET 130411.00	150	●
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EPDM glazing gasket press-in 3.0 mm



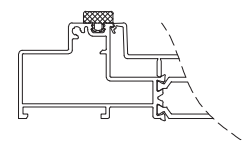
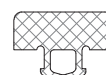
ET 130504.00	40	●
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EPDM glazing gasket press-in 5.0 mm



ET 130745.00	120	●
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EPDM gasket for E70 rail



A70-01

code/description	package/pcs	colour
ET 130751.00	140	●

EPDM gasket for structural silicone covering



ET 130174.00	160	●
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Interior seal EPDM gasket
gaskETTOP LINE



ET 130203.00	260	●
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EPDM glazing gasket
press-in 3.0 mm



ET 130204.00	200	●
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EPDM glazing gasket
press-in 4.0 mm



sliding system with thermal break

E70

code/description	package/pcs	colour
ET 130205.00	180	●

EPDM glazing gasket
press-in 5.0 mm



ET 130207.00	75	●
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EPDM glazing gasket
press-in 7.0 mm



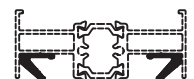
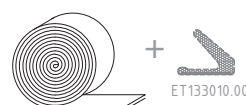
ET 130208.00	40	●
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EPDM glazing gasket
press-in 8.0 mm



ET 133009.00	1	●
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Double face tape for E70
50 m



required for fixing
ET133010.00 onto E70551

A70-03

sliding system with thermal break

E70

code/description	package/pcs	colour
ET 133010.00	150	●

Composite gasket for sealing adjoining profile E70



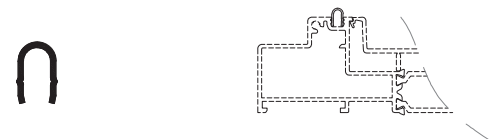
ET 133011.00	150	●
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Composite gasket for sealing sash E70



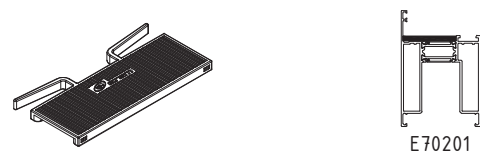
ET 082201.00	1	INOX
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Stainless steel rail "U" shape for E70 & E3000 rails 6.01 m



ET 073004.00	50	●
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Plastic glazing block for E70



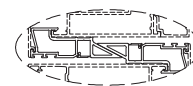
A70-04

sliding system with thermal break

E70

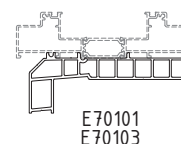
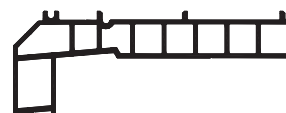
code/description	package/pcs	colour
ET 080186.00	1	●

Interlock profile (PVC)
for E70
6 m



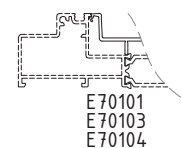
ET 080187.00	1	●
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Supplementary PVC profile
for E70 bottom rail
6 m



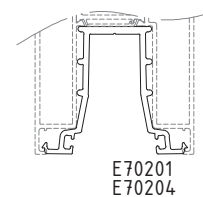
ET 080188.00	1	●
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Thermal drain profile
for E70 rail
6 m



ET 080189.00	1	●
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PVC mechanism channel
profile for E70 sash
6 m



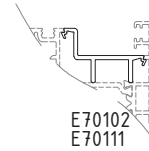
A70-05

sliding system with thermal break

E70

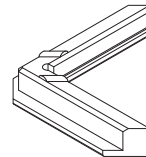
code/description	package/pcs	colour
ET 080191.00	1	●

PVC profile for
E70102 & E70111
6 m



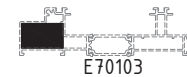
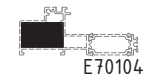
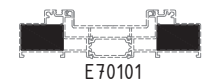
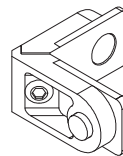
ET 061104.00	100	●
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Plastic alignment square
for E70 sash



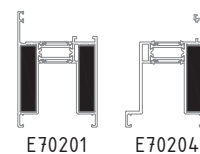
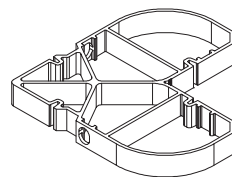
ET 053329.00	250	natural
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Die cast aluminum corner
joint for rails



ET 054712.00	70	MF
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Extruded aluminium corner
joint (13.9 mm) with socket
for E70 sashes



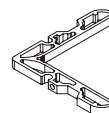
A70-06

sliding system with thermal break

E70

code/description	package/pcs	colour
ET 054257.00	300	MF

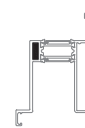
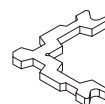
Extruded aluminium corner joint (5.2 mm) with socket for E70102



E70102

ET 054721.00	300	MF
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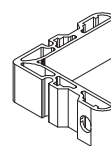
Extruded aluminium corner joint (4.8 mm) for E70204



E70204

ET 054253.00	200	MF
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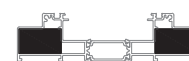
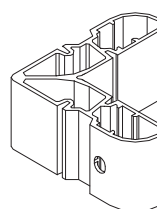
Extruded aluminium corner joint (24.7 mm) with socket for E70103



E70103

ET 054714.00	40	MF
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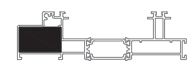
Extruded aluminium corner joint (36.5 mm) with socket for E70 rails



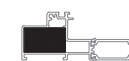
E70101



E70102



E70103



E70104

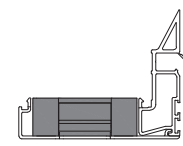
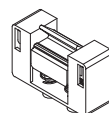
A70-07

sliding system with thermal break

E70

code/description	package/pcs	colour
ET 074700.00	1	●

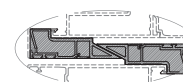
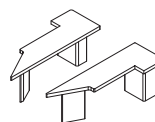
Plastic plug for upper side of interlock profile of E70



E70603

ET 074701.00	100	●
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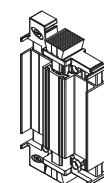
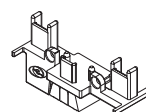
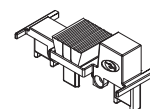
Pair of plastic plugs for interlock profile



ET080186.00

ET 074704.00	100	●
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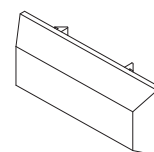
Pair of plastic plugs for adjoining profile E70551



E70551

ET 074605.00	100	●
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Plastic water drain cap



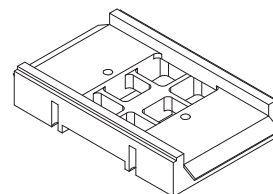
A70-08

sliding system with thermal break

E70

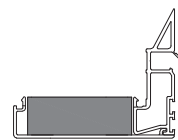
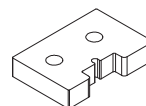
code/description	package/pcs	colour
ET 240806.00	1	●

EPDM sealing block for bottom rail E70



ET 074702.00	10	●
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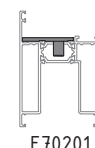
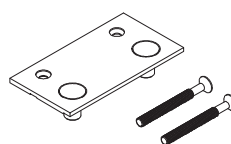
EPDM foam plug for bottom side of interlock E70



E70603

ET 071262.00	1	●
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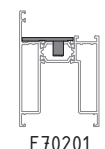
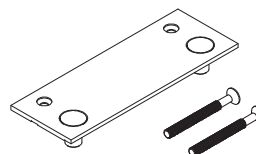
Fastening fixing plate for rollers of sash E70201



E70201

ET 071263.00	1	●
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Fastening fixing plate for hardware on sashes E70201, E70202



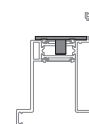
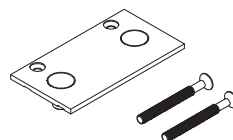
E70201

A70-09

sliding system with thermal break

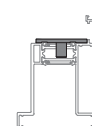
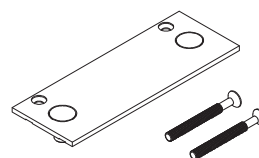
E70

code/description	package/pcs	colour
ET 071264.00		●



E70204

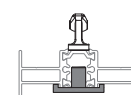
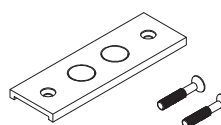
ET 071265.00		●
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E70204

ET 071266.00		●
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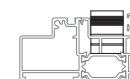
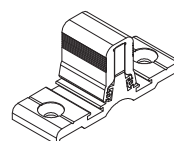
Fastening fixing plate for
striker on profile E70511



E70204

ET 240624.02		●
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Aluminium stopper (22 mm) for
rail E70102, RAL 9005



E70102

ATTENTION

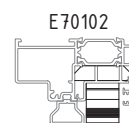
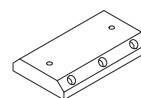
A70-10

sliding system with thermal break

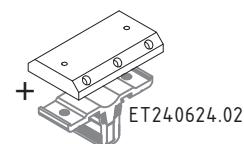
E70

code/description	package/pcs	colour
ET 071267.00	1	●

Aluminium shim for fixing stopper ET071267 on upper rail E70102

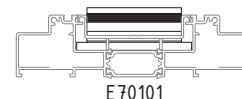
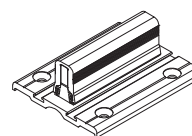


ATTENTION
co-operate with stopper ET240624.02 and applied only on top rail



ET 240622.02	1	●
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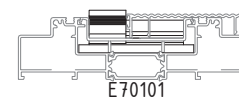
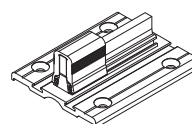
Al. stopper 78 mm for bottom rail without cover cap for four leaf door E70 RAL 9005



ATTENTION
applied only on bottom rail

ET 240623.02	1	●
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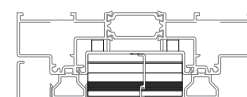
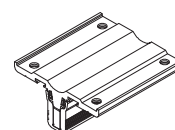
Aluminium stopper 78 mm for bottom rail with cover cap for four leaf door E70 RAL 9005



ATTENTION
applied only on bottom rail

ET 240621.02	1	●
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Aluminium stopper 64 mm for upper rail for four leaf door E70 RAL 9005



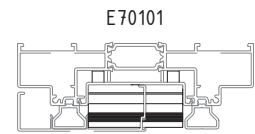
ATTENTION
applied only on top rail

sliding system with thermal break

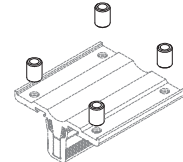
E70

code/description	package/pcs	colour
ET 071268.00	20	MF

Spacer for aluminium stopper
ET240621

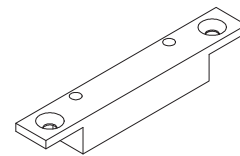


ATTENTION
co-operate with stopper ET240621.02
and applied only on top rail



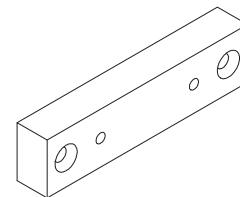
ET 240625.00	1	●
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Fixing part for stopper of
four leaf door E70



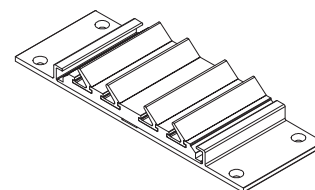
ET 240626.00	1	●
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Fixing part for stopper of
double leaf door E70



ET 240805.00	1	●
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Plastic brush 63 mm for
upper rail E70



A70-12

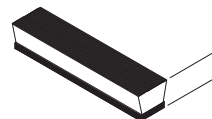
sliding system with thermal break

E70

code/description	package/pcs	colour
ET 135407.01	275	●
ET 135407.02	275	●
ET 135407.04	275	○

071268.00

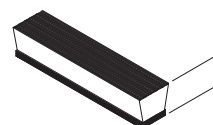
Pile weatherseal 4P - 7 mm



E70102
E70111
E70115
E70510
E70604
E70605
E70606

ET 135408.01	225	●
ET 135408.02	225	●
ET 135408.04	225	○

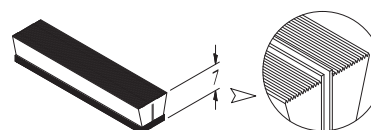
Pile weatherseal 4P - 8 mm



E70640

ET 135507.01	275	●
ET 135507.02	275	●
ET 135507.04	275	○

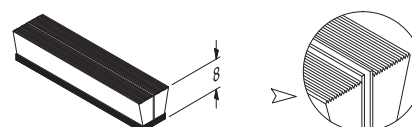
Pile weatherseal FP - 7 mm



E70102
E70111
E70115
E70510
E70604
E70605
E70606

ET 135508.01	225	●
ET 135508.02	225	●
ET 135508.04	225	○

Pile weatherseal FP - 8 mm



E70640

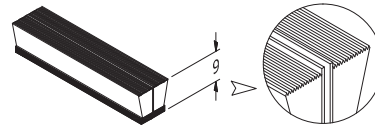
A70-13

sliding system with thermal break

E70

code/description	package/pcs	colour
ET 135509.02	175	●

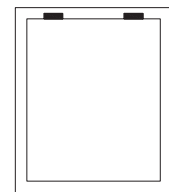
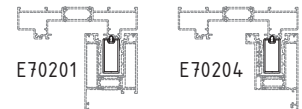
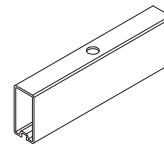
Pile weatherseal FP - 9 mm



ET080186.00

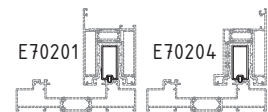
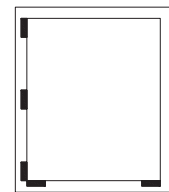
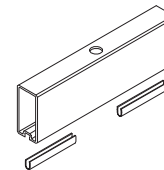
ET 994619.00	1	MF
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Spacer for fixed frame
44.3 x 20.8 mm



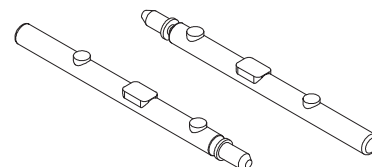
ET 240423.00	1	MF
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Spacer for fixed frame
E70201, E70204



ET 143900.00	100	natural
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Roll pin 3x6 with sleeve



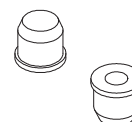
A70-14

sliding system with thermal break

E70

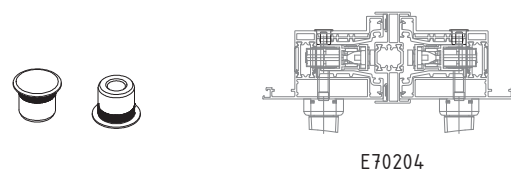
code/description	package/pcs	colour
ET 143914.00	100	INOX

Roll pin 4/8 x 6.5 mm
with collar-inox



ET 071261.00	1	
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Securing nut for hardware
handle of E70 Less Frame



E70204

ET 071260.00	1	
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Fixing profile for E70551
on to E70204 (Less Frame)

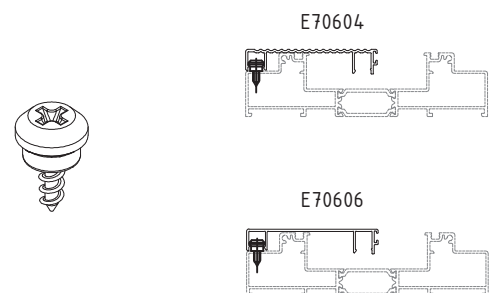


E70551

E70204

ET 143525.00	1	
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Special screw for fixing
E70604 & E70606 on rail



E70604

E70606

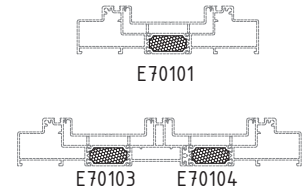
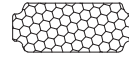
A 70-15

sliding system with thermal break

E70

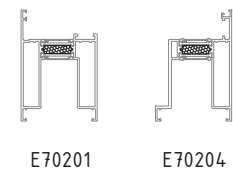
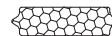
code/description	package/pcs	colour
ET 970101.00	9 pcs x 700 mm	standard

Foam insert for E70 rails



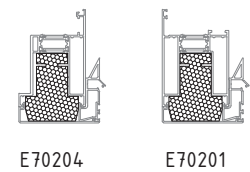
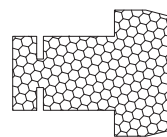
ET 970201.00	9 pcs x 700 mm	standard
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Foam insert for E70 sashes



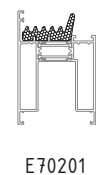
ET 970603.00	9 pcs x 700 mm	standard
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Foam insert for E70 interlock profile



ET 080523.00	2	●
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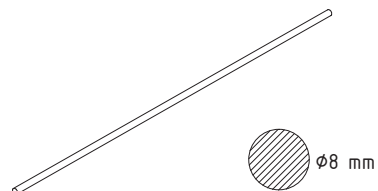
Foam insert for E70 glazing space



A70-16

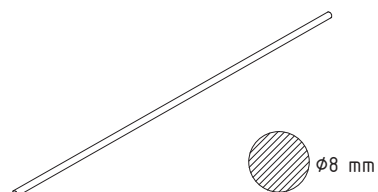
code/description	package/pcs	colour
GU 201055.00	1	MF

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



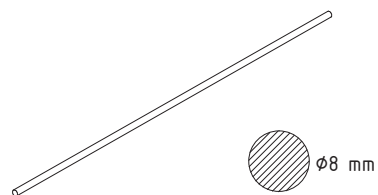
GU 201058.00	1	MF
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Connecting rod 8 mm
(for Sash W. 1601 - 1850 mm)



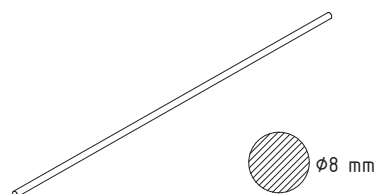
GU 201059.00	1	MF
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Connecting rod 8 mm
(for Sash W. 1851 - 2350 mm)



GU 201056.00	1	MF
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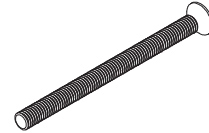
Connecting rod 8 mm
(for Sash W. 2351 - 3300 mm)



A70-17

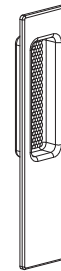
code/description	package/pcs	colour
GU 205108.00	1	MF

Screw M6x75 mm, DIN 965



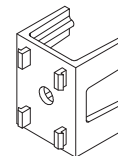
GU 205109.01	1	●
GU 205109.03	1	brown
GU 205109.11	1	silver

Flush pull 934



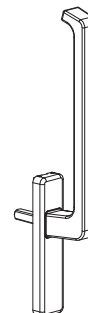
GU 205118.00	1	
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Additional part for GU 934
18 mm



GU 250100.01	1	●
GU 250100.03	1	brown
GU 250100.11	1	silver

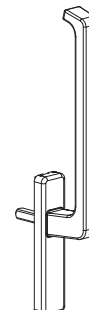
Flush pull 934 without
cylinder bore with screw
base plate



A70-18

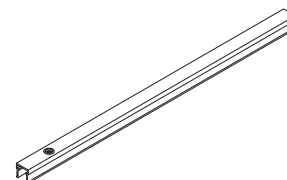
code/description	package/pcs	colour
GU 250102.01	1	●
GU 250102.03	1	brown
GU 250102.11	1	silver

Flush pull 934 without cylinder bore



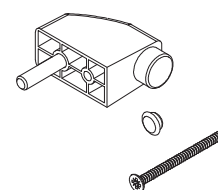
GU 250111.01	1	
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Cover rail extension for gear GU 934, 500 mm



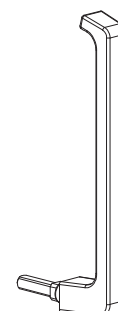
GU 250114.02	1	●
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Stopper GU 934, black



GU 250124.01	1	●
GU 250124.03	1	brown
GU 250124.11	1	silver

Removable handle 934



sliding system with thermal break

E70

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



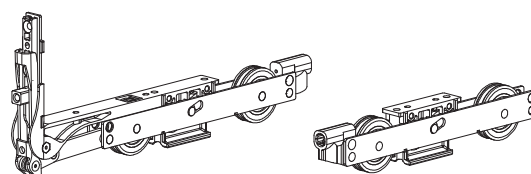
GU 250129.00	1	
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Outer rosette for 934
handle



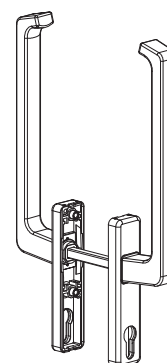
GU 250101.00		
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Rollers GU 934



GU 250140.01	1	●
GU 250140.03	1	brown
GU 250140.11	1	silver

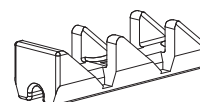
Both side handle 934,
with cylinder hole



A70-20

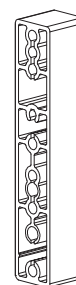
code/description	package/pcs	colour
GU 250119.00	1	

Ventilation striker for hardware 934



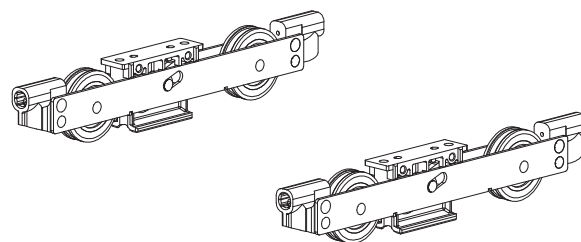
GU 250146.00	1	
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Bottom spacer 18 mm for GU 934



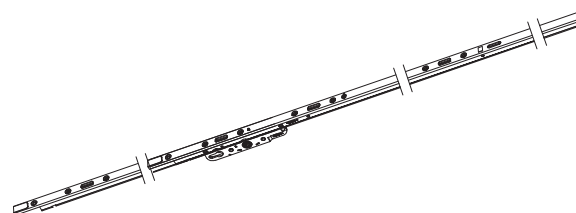
GU 250148.00	1	
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Additional rollers basic kit for GU 934



GU 250145.11	1	
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Gear for GU 934 Silver for height 1865 - 2365 mm

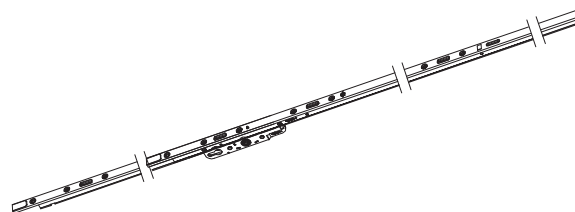


sliding system with thermal break

E70

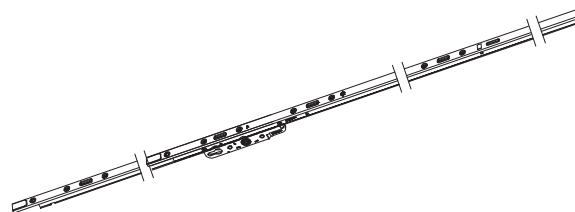
code/description	package/pcs	colour
GU 250149.11	1	

Gear for GU 934 Silver
for height 865 - 1285 mm



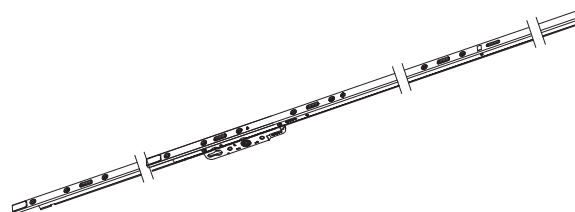
GU 250150.11	1	
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Gear for GU 934 Silver
for height 1235 - 1865 mm



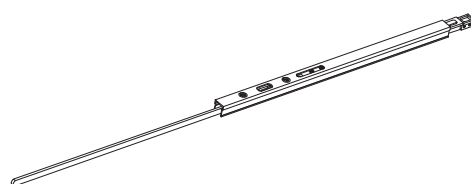
GU 250151.11	1	
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Gear for GU 934 Silver
for height 2155 - 2765 mm



GU 250696.00	1	
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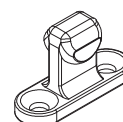
Gear extension with locking
point EV1



A70-22

code/description	package/pcs	colour
GU 250147.00	1	

Frame striker for GU 934



GU 250900.00	1	
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Elastic interlock stopper for GU 934

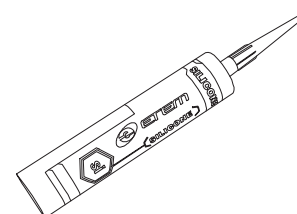


ET 143907.00	1	
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Screw hollow washer



ET 138001.00	1	transparent
ET 138001.01	1	white
ET 138001.02	1	black
ET 138001.03	1	brown
ET 138001.04	1	grey



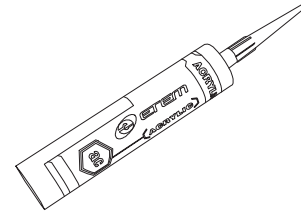
Silicone for general use 280 ml

sliding system with thermal break

E70

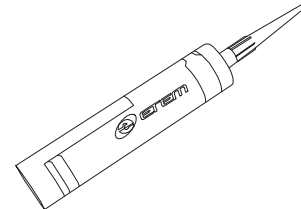
code/description	package/pcs	colour
ET 138000.01	1	

Acrylic putty 280 ml



ET 138004.00	1	
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Crimping machine adhesive with rapid vulcanisation 290 ml



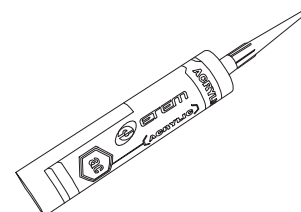
ET 138005.00	1	
--------------	---	--

High performance sealant 310 ml



ET 138013.00	1	
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Boutyl for gluing gaskets



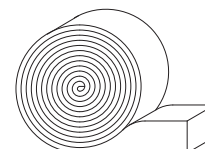
A70-24

sliding system with thermal break

E70

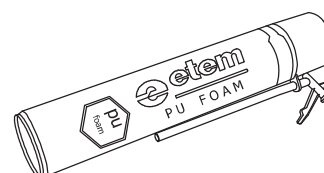
code/description	package/pcs	colour
ET 133002.00	20m	

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



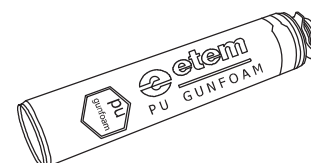
ET 136651.00	1	
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P.U. Foam 750 ml



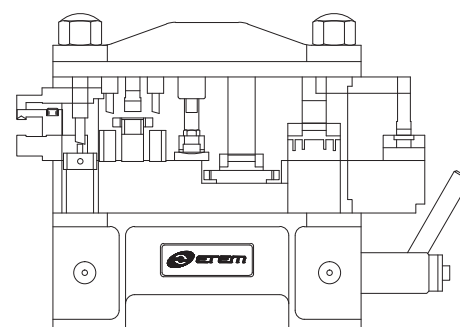
ET 136652.00	1	
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P.U. Foam 750 ml
for foamgun



ET 162256.00	1	
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Punching machine
for E70 profiles



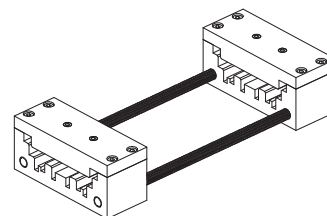
A70-25

sliding system with thermal break

E70

code/description	package/pcs	colour
ET 162257.00	1	

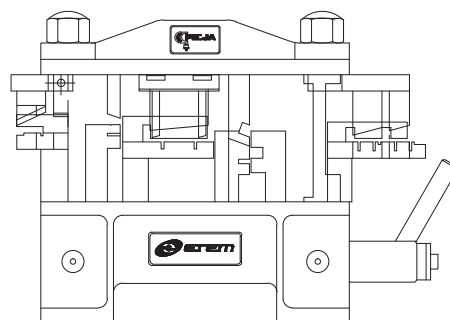
Jig for E70 PVC profiles



ET 162261.00

1

Additional punching machine
for E70 profiles



A70-26

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 assessment (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

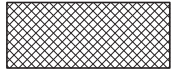
- EN 12020 (1÷2) - ALUMINIUM AND ALUMINIUM ALLOYS - EXTRUDED PRECISION PROFILES IN ALLOYS EN AW-6060 AND EN AW-6063
- EN 755 (1÷9)- ALUMINIUM AND ALUMINIUM ALLOYS - EXTRUDED ROD/BAR, TUBE AND PROFILES
- EN 573 (1÷3) - ALUMINIUM AND ALUMINIUM ALLOYS - CHEMICAL COMPOSITION AND FORM OF WROUGHT PRODUCTS
- 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

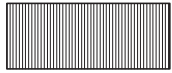
Hatches for different materials



EPDM



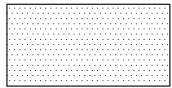
butyl seal



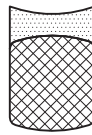
PVC



membrane



gypsum board



silicone seal

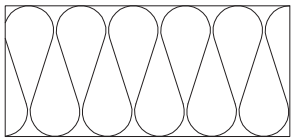
backer rod



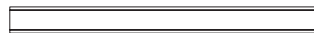
silicone seal



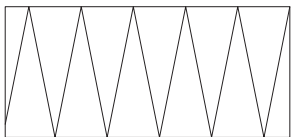
PVC spacer



Insulation soft



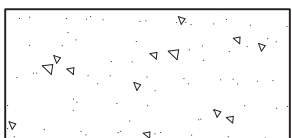
etalbond



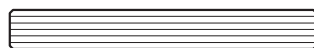
Insulation hard



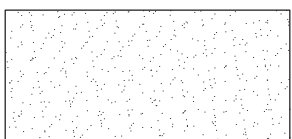
sheet aluminium



concrete wall



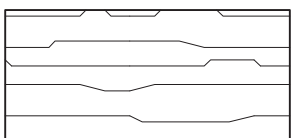
glass



plaster



aluminium profile



wood



steel

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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.

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