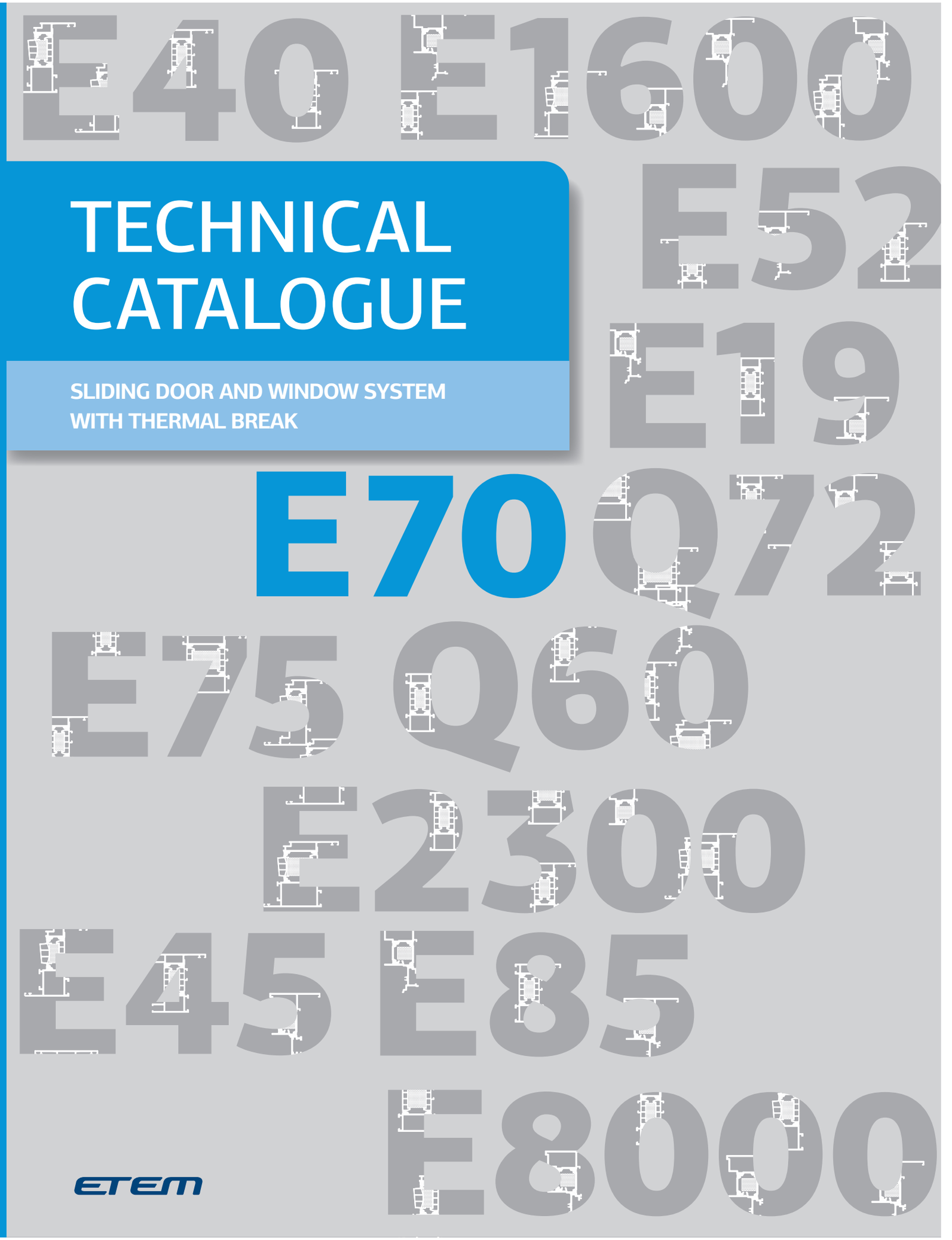


TECHNICAL CATALOGUE

SLIDING DOOR AND WINDOW SYSTEM WITH THERMAL BREAK

ETEM

E70
WINDOW AND DOOR SYSTEM WITH THERMAL BREAK

TABLE OF CONTENTS

ETEM HISTORY

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

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

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

SERVICES WE PROVIDE

ETEM supports you with the following:

▷ design of conventional and bespoke architectural system solutions

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

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

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

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

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

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

ETEM PRODUCTS AND SUSTAINABLE DEVELOPMENT

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

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

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

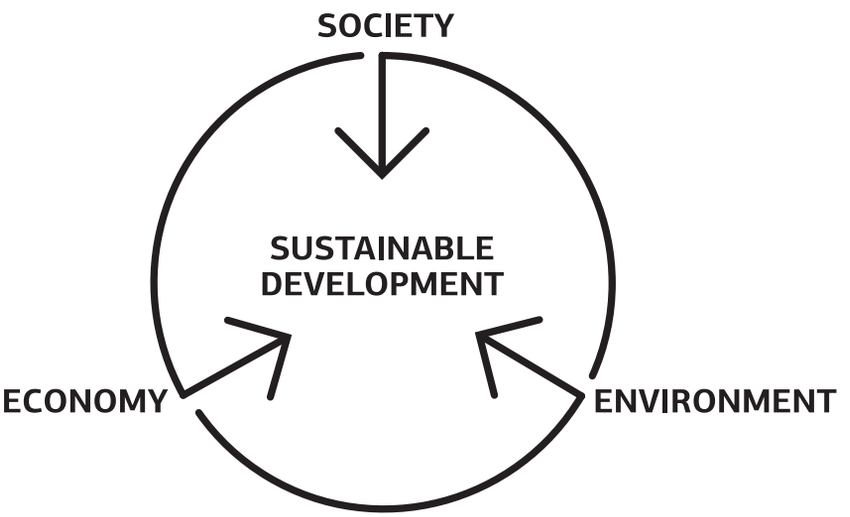
For us meeting this objective translates into the challenge of satisfying market demands at the lowest economic, social and environmental cost possible.

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

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

As a moderator between outside and inside our systems provide:

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



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

GENERAL INFORMATION

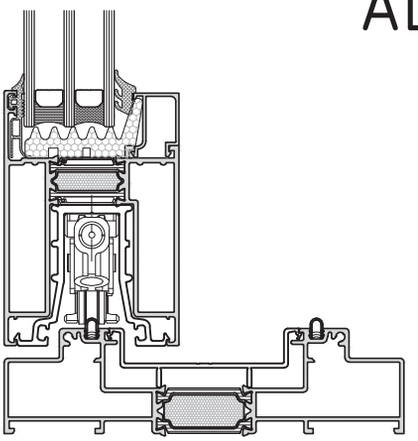
CONCEPT / ADVANTAGES / CERTIFICATES

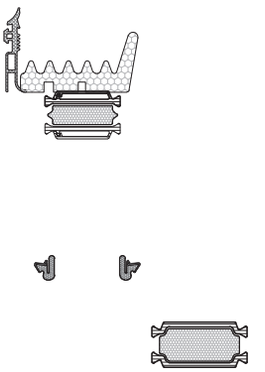
E70 WINDOW CONCEPT

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





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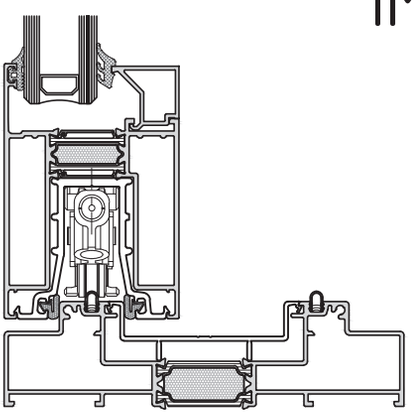

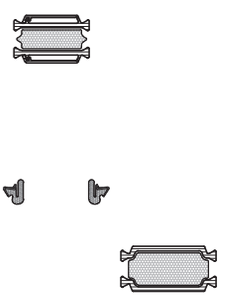

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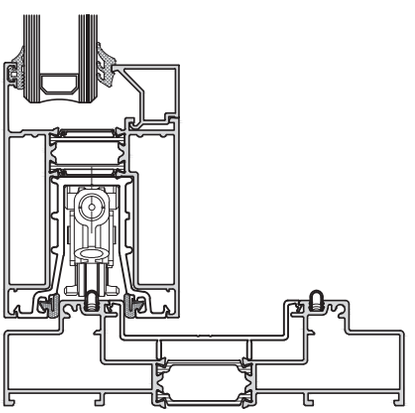
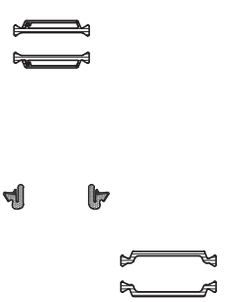
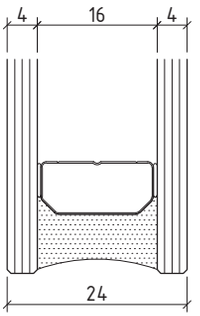
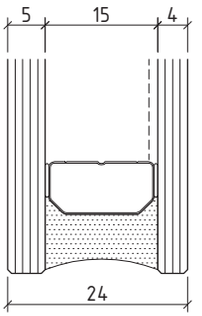
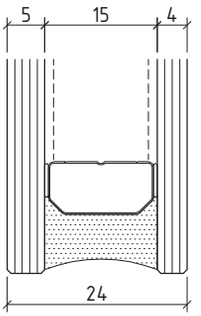
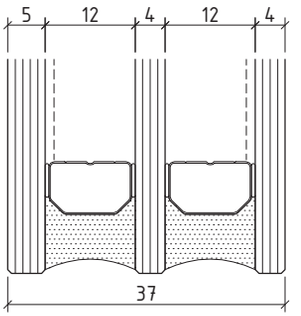




ADVANTAGES AND COMBINATION

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
				
Uglass	1,4	1,1	1,0	0,6
Uwindow[1]	1,7	1,5	1,4	1,1
g value[2]	0,6	0,6	0,5	0,46

ADVANTAGES

Energy Efficincy		*	**	***	****
Sound Insulation		*	**	***	****
Ventilation		□	□	□	□
Daylight		****	***	**	*
Sunshading	E 66	*	**	***	****
Automation		□	□	□	□
Safety and security		□	□	□	□

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

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

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

[b] Manually operated windows only

BUILDING PHYSICS

DIMENSIONING / FORMULAS / EXAMPLES

ALUMINIUM AS MATERIAL

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

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

ADVANTAGES

DESIGN FLEXIBILITY

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

LONG SERVICE LIFE

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

HIGH STRENGTH-TO-WEIGHT RATIO

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

HIGH-REFLECTIVITY

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

FIRE SAFETY

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

NO RELEASE OF DANGEROUS SUBSTANCES

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

OPTIMAL SECURITY

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

ALLOYS

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

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

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

MATERIAL PROPERTIES	
Aluminium alloy	EN 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.

FINISHING

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

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

MAINTENANCE

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

RECYCLING

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

WIND LOAD

Wind action

The main influence over the facade is wind action, which depends mainly on the heigh 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	
h	v	$q = \frac{V^2}{16}$		$Wp^* = 1.25 \times cp \times q$ $c_p = 0.8$		$h/b \le 0.25$ $W_s = c_p \times q$ $c_p = 0.5$		$h/b \ge 0.5$ $W_s = c_p \times q$ $c_p = 0.7$		$b/8 \le 2$ m $W_s = c_p \times q$ $c_p = 2.0$	
m	m/s	kg/m2	kg/m2	kg/m2	kg/m2	kg/m2	kg/m2	kg/m2	kg/m2	kg/m2	kg/m2
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/m^2 and kN/m^2
$w_{p/s}$ - wind pressure / suction, kN/m^2
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/m^2 = 0.01 kN/m^2
1 Pa = 1 N/m^2 = 0.1 kg/m^2
1 kPa = 1000 Pa = 1 kN/m^2 =100 kg/m^2
1 MPa = 1000 kPa = 1 000 000 Pa
1 MPa = 1 N/mm^2 = 0.1 kN/cm^2 =100 000 kg/m^2

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

If $\frac{H}{c} \le 1, \quad J_{yc} \ge \frac{w.(H/2).H^4.10^8}{120.E_{el}.f_{max}}, cm^4$

or

b) trapezoid load

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

Use the same method to calculate J_{yd}

Total of required moment of inertia:

$J_y = J_{yc} + J_{yd}$, cm4

where:

J_y	– Moment of inertia of a transom,	cm4
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

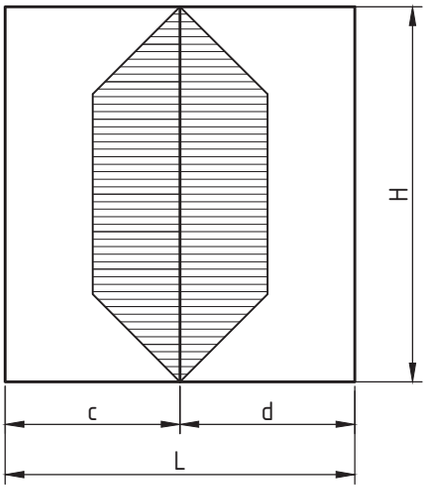
Maximum transom deflection fmax by wind load:

$f = \frac{H}{200}, m$ or 0,015 m – whichever is less (EN 14351-1)

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

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

Example:



Initial data:

H = 3 m w = 120 kg/m^2

c = 2,8 m E_{al} = 7.10^9 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:

$$\frac{H}{c} = \frac{3}{2.8} = 1.07 > 1$$

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

$$J_{yc} = \frac{120\;(2.8/2)\;3^4}{1920\;7x10^9\;0.015}\;10^8\left[25-40\;\frac{(2.8/2)^2}{3^2}+16\;\frac{(2.8/2)^4}{3^4}\right] \Rightarrow J_{yd} = 58.65cm^4$$

$$\frac{H}{d} = \frac{3}{2.8} = 1.07 > 1$$

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

$$J_{yd} = \frac{120\;(2.8/2)\;3^4}{1920\;7x10^9\;0.015}\;10^8\left[25-40\;\frac{(2.8/2)^2}{3^2}+16\;\frac{(2.8/2)^4}{3^4}\right] \Rightarrow J_{yd} = 58.7cm^4$$

$$J_y = J_{yc} + J_{yd} = 58.65 + 58.6 = 117.3 \; cm^4$$

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

$$J_y \ge 117.3 \; cm^4$$

The moment of inertia of the combination is: $J_y = 121.9 \; cm^4$

CALCULATION OF GLASS PANE THICKNESS

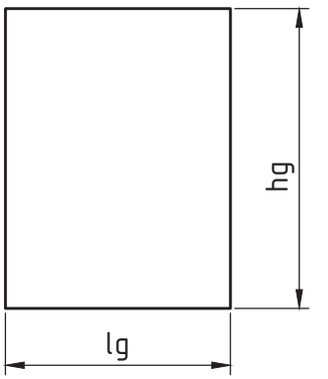
Glazing thickness:

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

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

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/m^2
l_g	– The smallest dimension of the glass pane,	m
h_g	– The largest dimension of the glass pane,	m

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

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

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

Example:

Initial data:

l_g = 2,8 m

h_g = 3 m

w = 120 kg/m^2

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

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

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

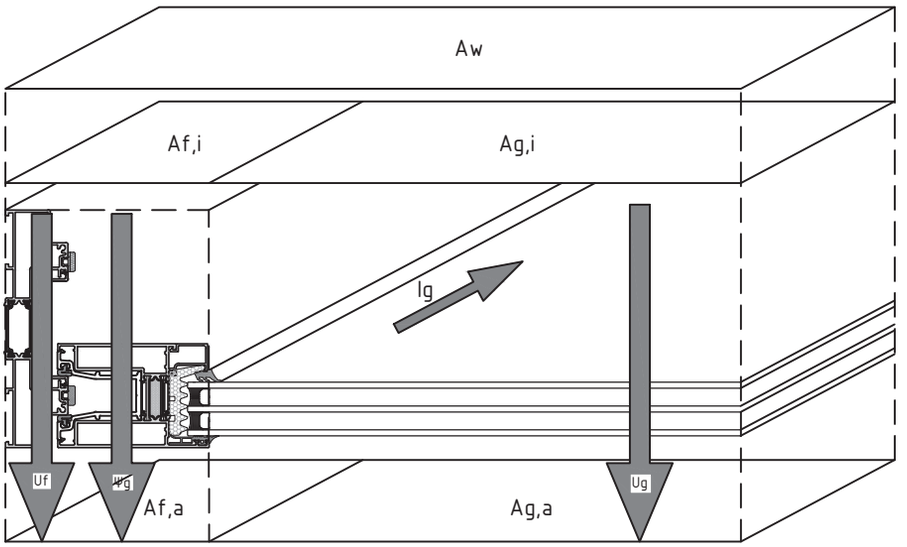
We choose double glazing 10/spacer/4+4

ATTENTION: PLEASE NOTE THAT THE ABOVE CALCULATIONS ARE INDICATIVE

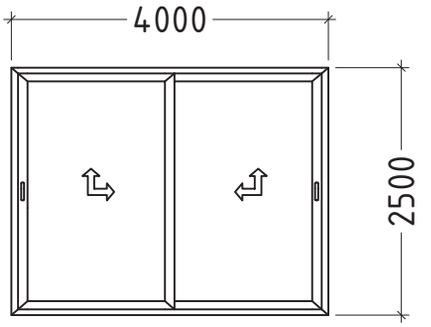
Method for calculation according to EN ISO 10077-2

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

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/(m²K)
spacer:	Warm Edge	ψ_g	0.051	W/(mK)
glass:	triple insulated glass	U_g	1.00	W/(m²K)

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

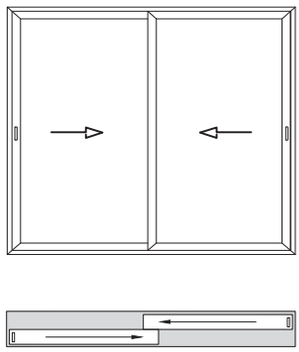
$$U_w = \frac{8.0 \times 1 + 2.0 \times 2.29 + 16 \times 0.051}{8.0 + 2}$$

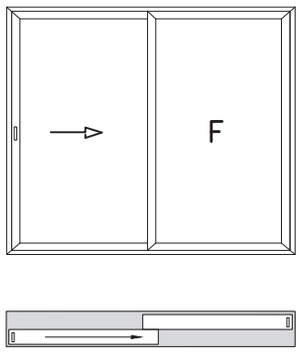
$$U_w \approx 1{,}4 \ W/(m^2K)$$

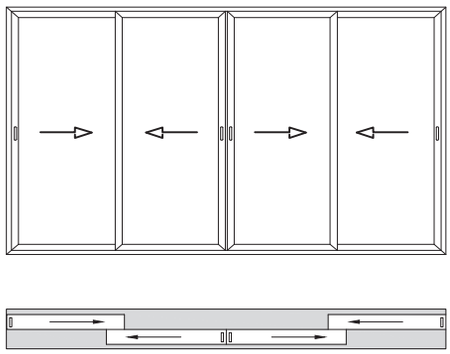
TABLES

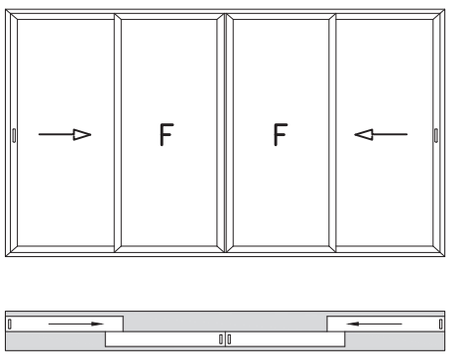
TYPOLOGIES / LIST OF PROFILES / CHARACTERISTICS

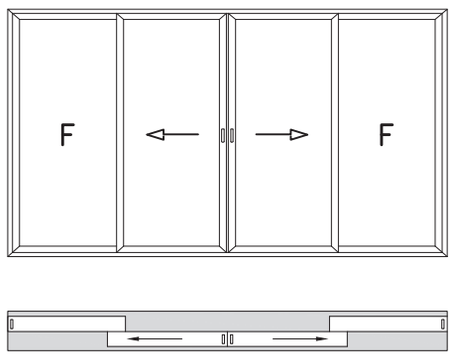
sliding system with thermal break E70

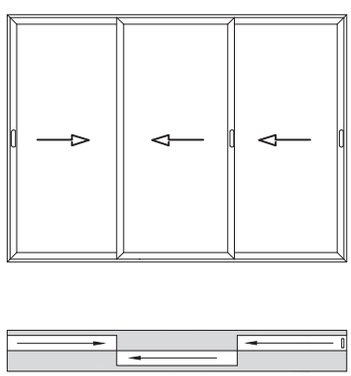


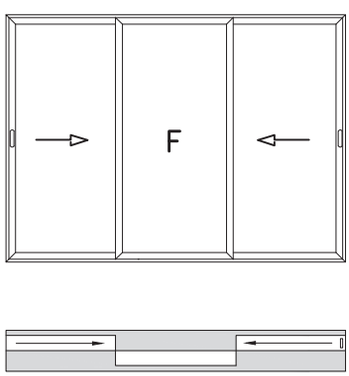


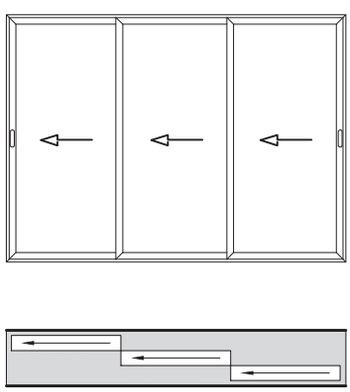


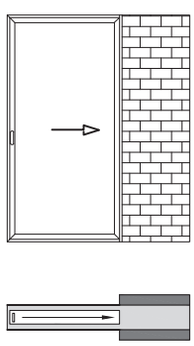


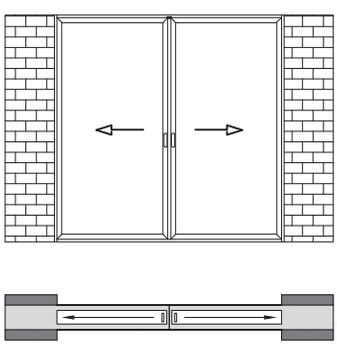


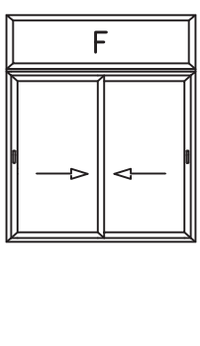


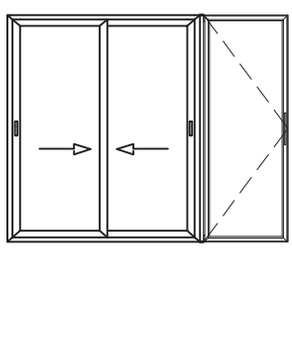




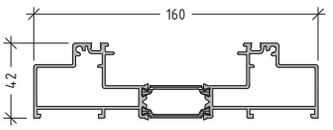
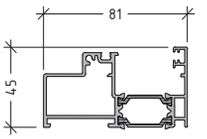
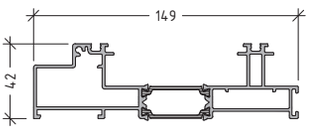
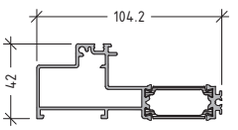
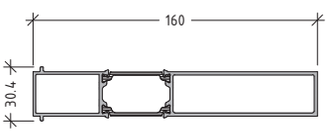
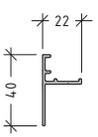


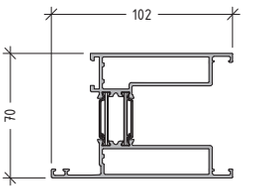
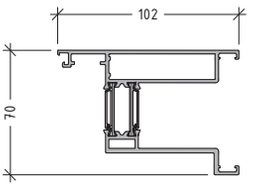
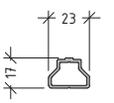
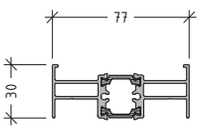
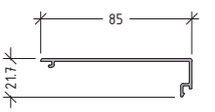
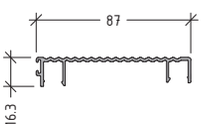




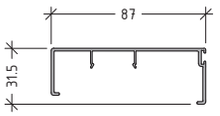
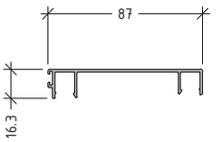
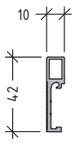
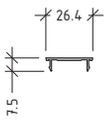
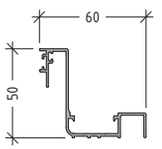
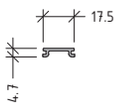


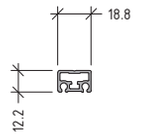
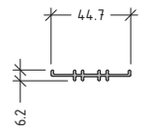
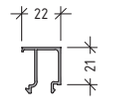
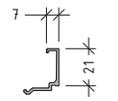
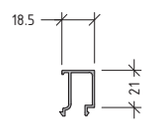
G70-01

code	profile	weight length moment of inertia
E70101 Double rail		2300 g/m L=6.01 m
E70102 Single rail		1500 g/m L=6.01 m
E70103 Part of triple rail		2178 g/m L=6.01 m
E70104 Part of triple rail		1507 g/m L=6.01 m
E70153 Indermidiate profile		1995 g/m L=6.01m Ix=177.6 cm⁴ Iy=8.9 cm⁴
E70601 Suplementary profil for rail		269 g/m L=6.01 m

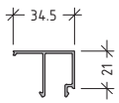
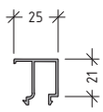
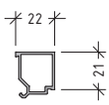
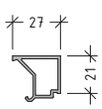
code	profile	weight length moment of inertia
E70201 Sash		2313 g/m L=6.01 m Ix=59.7 cm⁴ Iy=57.2 cm⁴
E70204 Sash for "Less Frame"		2105 g/m L=6.01 m Ix=45.6 cm⁴ Iy=55.1 cm⁴
E70602 Supplementary profil for upper rail		277 g/m L=6.01 m
E70551 Adjoining profile		1274 g/m L=6.01 m Ix=25.7 cm⁴ Iy=3.1 cm⁴
E70603 Interlock profile		486 g/m L=6.01 m
E70604 Anodised cover for bottom rail		594 g/m L=6.01 m

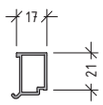
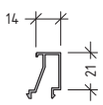
L70-01

code	profile	weight length moment of inertia
E70605 Anodised cover for bottom rail		667 g/m L=6.01 m
E70606 Cover for jamb		569 g/m L=6.01 m
E70607 Supplementary profil for frame		386 g/m L=6.01 m
E 19641 Cover for E70640		130 g/m L=4.80 m
E70640 Wall joining profile		597 g/m L=4.80 m
E70650 Supplemetary anodized profile for E70204		103 g/m L=6.01 m

code	profile	weight length moment of inertia
E70651 Supplemetary anodized profile for E70204		265 g/m L=6.01 m
E70959 Anodized spacer for E70204		238 g/m L=6.01 m
E60222 Glazing bead		281 g/m L=6.01 m
E60107 Glazing bead		189 g/m L=6.01 m
E60207 Glazing bead		205 g/m L=6.01 m
E60219 Glazing bead		270 g/m L=6.01 m

L70-02

code	profile	weight length moment of inertia
E60235 Glazing bead		322.1 g/m L=6.01 m
E60225 Glazing bead		289 g/m L=6.01 m
E60122 Glazing bead		308 g/m L=6.01 m
E60127 Glazing bead		381 g/m L=6.01 m

code	profile	weight length moment of inertia
E60230 Glazing bead		304.5 g/m L=6.01 m
E60117 Glazing bead		284 g/m L=6.01 m
E60215 Glazing bead		238 g/m L=6.01 m

L70-03

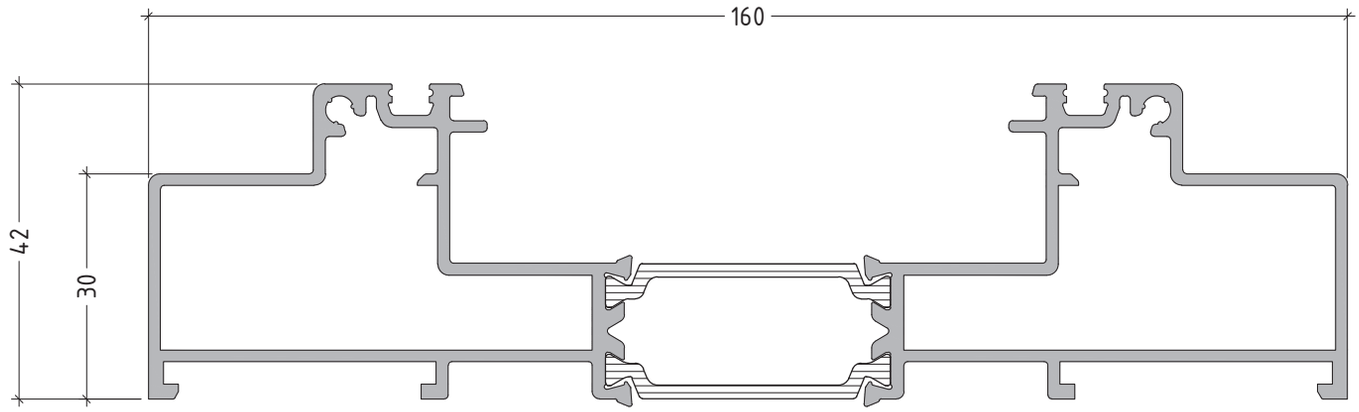
PROFILES

DRAWINGS / SCALE 1:1

E70101

Double rail

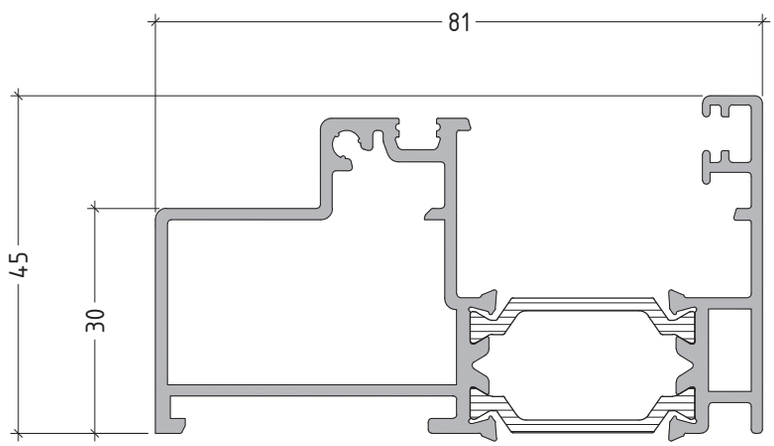
2300 gr/m



E70102

Single rail

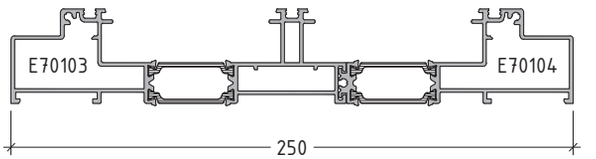
1500 gr/m



scale : 1:1

P70-01

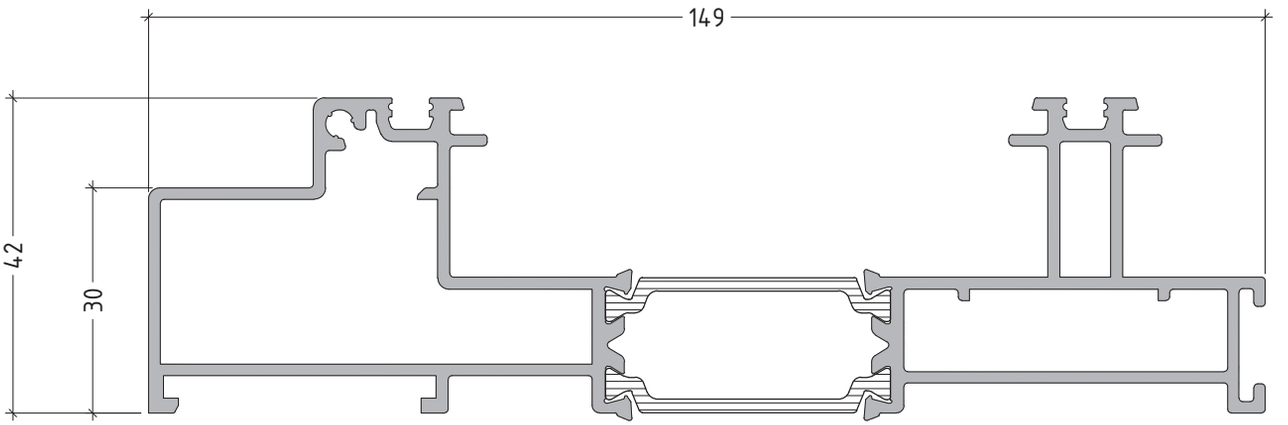
Triple rail = E70103 + E70104



E70103

Part of triple rail

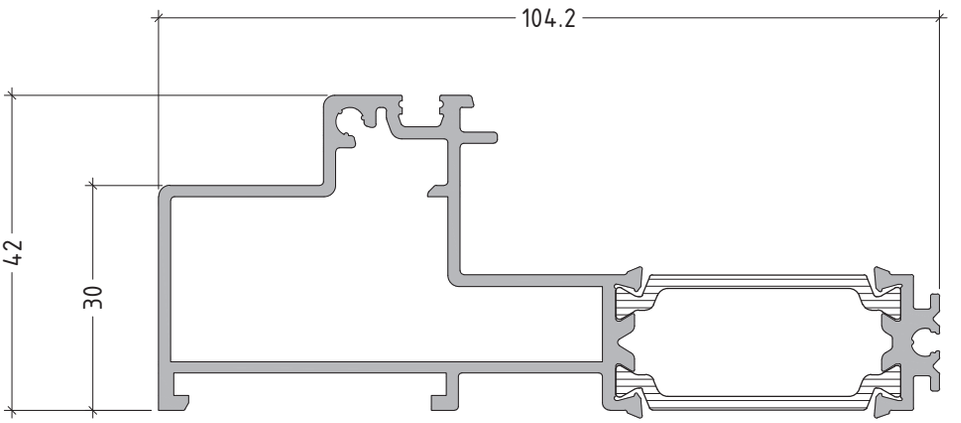
2178 gr/m



E70104

Part of triple rail

1507 gr/m



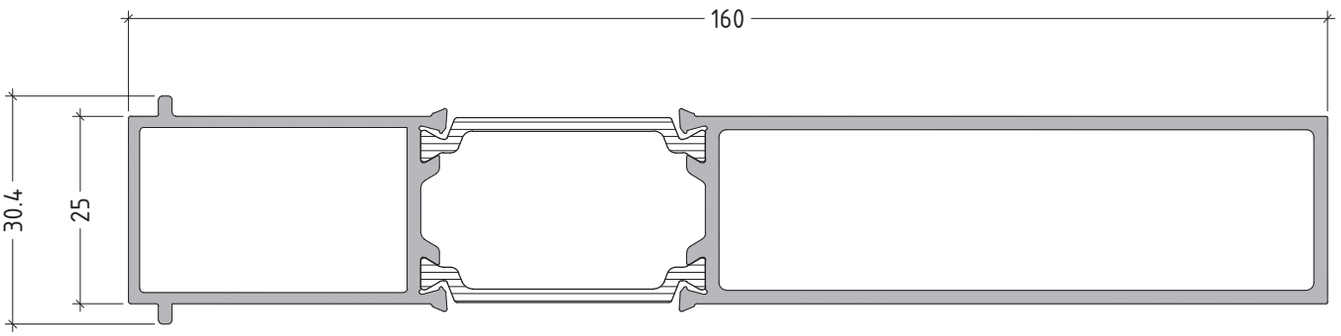
scale : 1:1

P70-02

E70153

Indermidiate profile

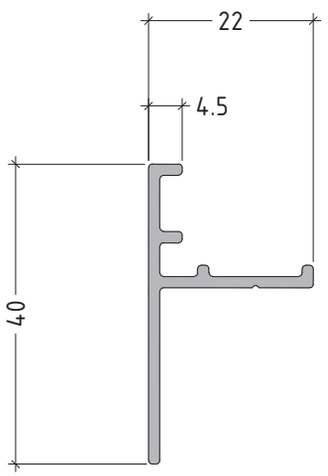
1995 gr/m



E70601

Supplementary
profile for rail

269 gr/m



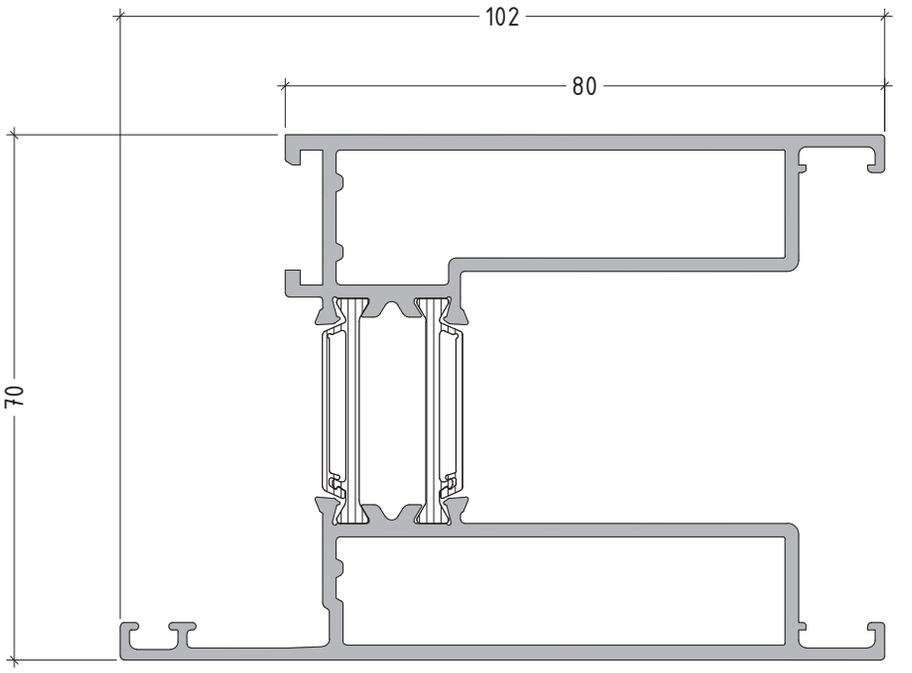
scale : 1:1

P70-03

E70201

Sash

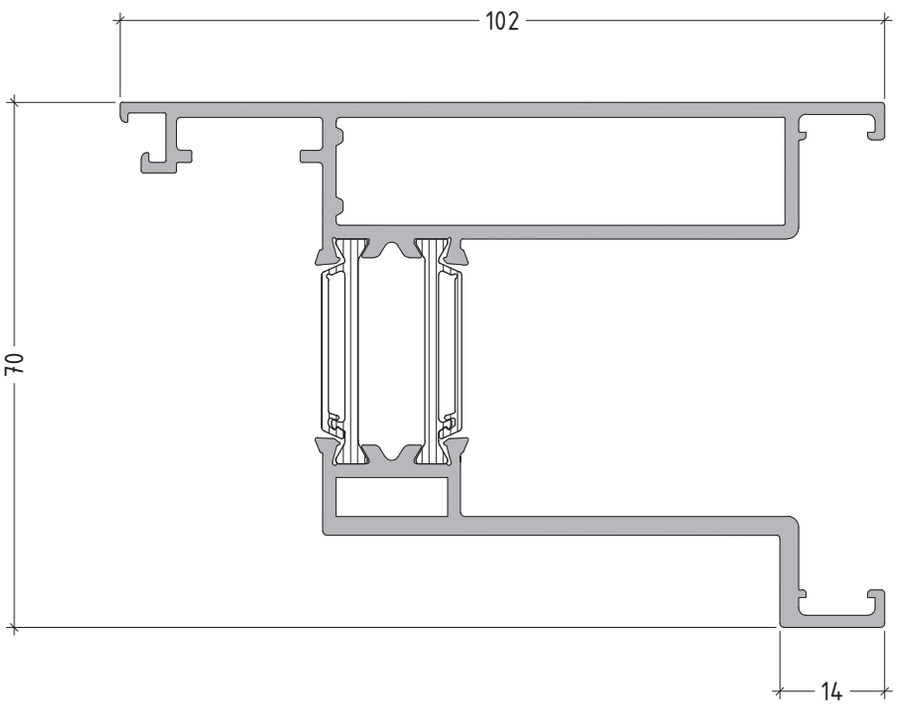
2313 gr/m



E70204

Sash for "Less Frame"

2105 gr/m



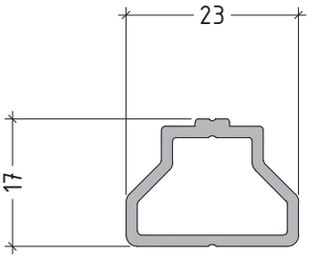
scale : 1:1

P70-04

E70602

Supplementary profile
for upper rail

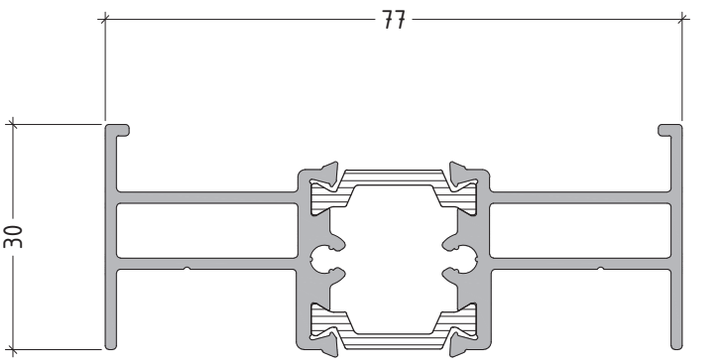
277 gr/m



E70551

Adjoining profile

1274 gr/m



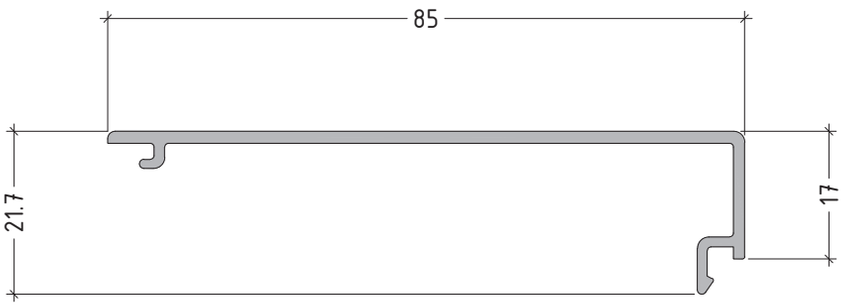
scale : 1:1

P70-05

E70603

Interlock profile

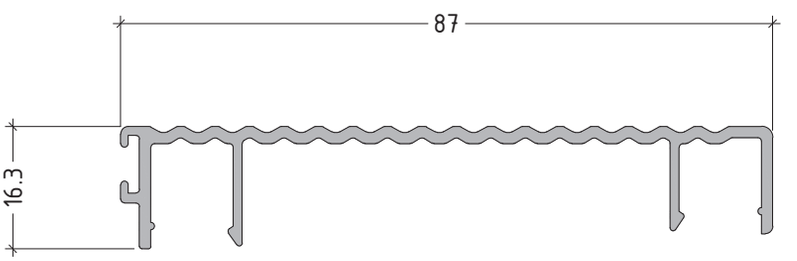
486 gr/m



E70604

Anodized cover
for bottom rail

594 gr/m



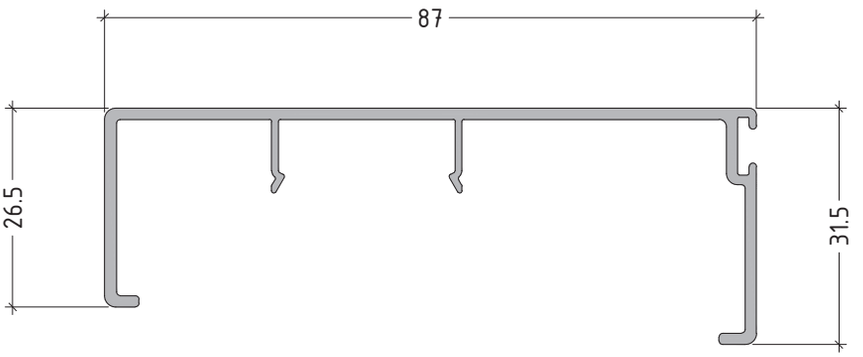
scale : 1:1

P70-06

E70605

Anodized cover
for bottom rail

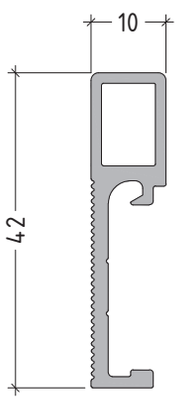
667 gr/m



E70607

Supplementary profile
for frame

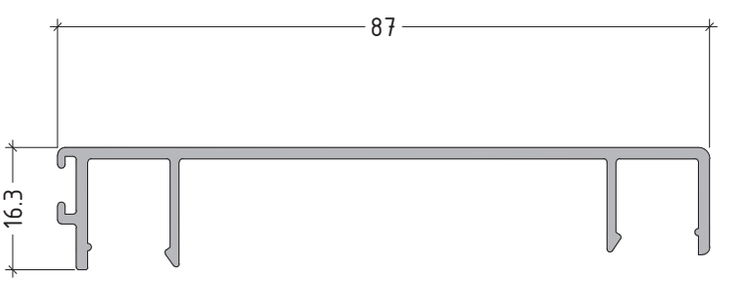
386 gr/m



E70606

Cover for jamb

569 gr/m



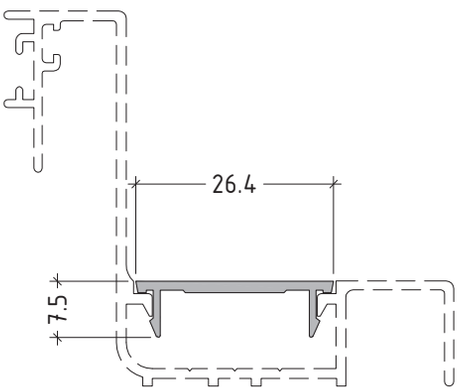
scale : 1:1

P70-07

E19641

Cover for E70640

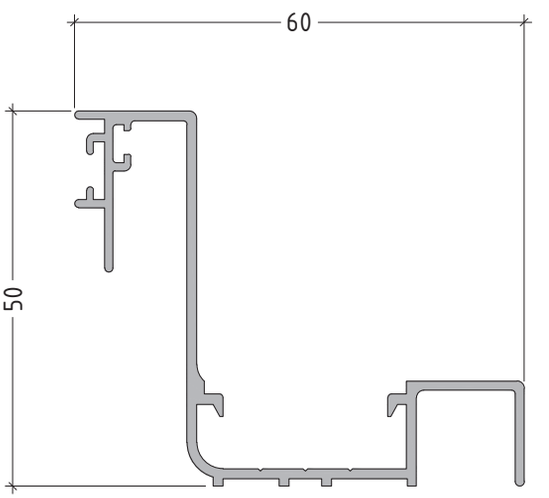
130 gr/m



E70640

Wall joining profile

597 gr/m



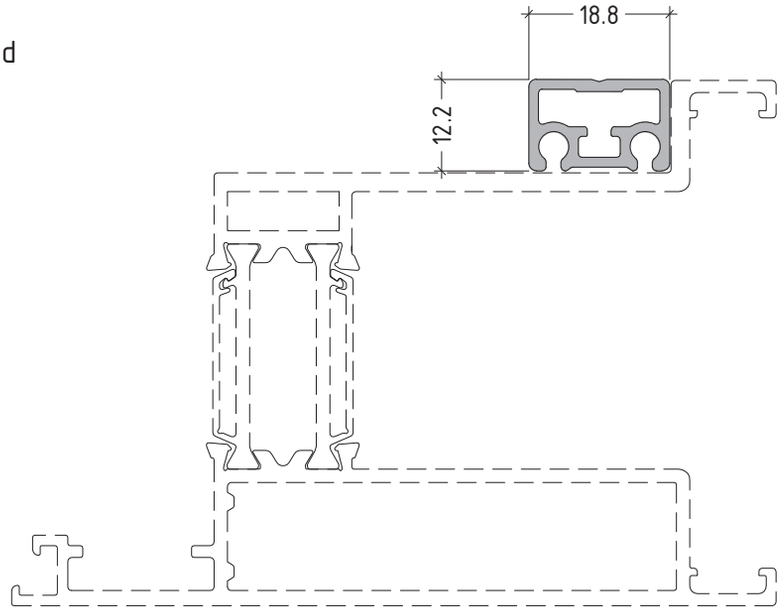
scale : 1:1

P70-08

E70651

Supplementary anodised
profile for E70204

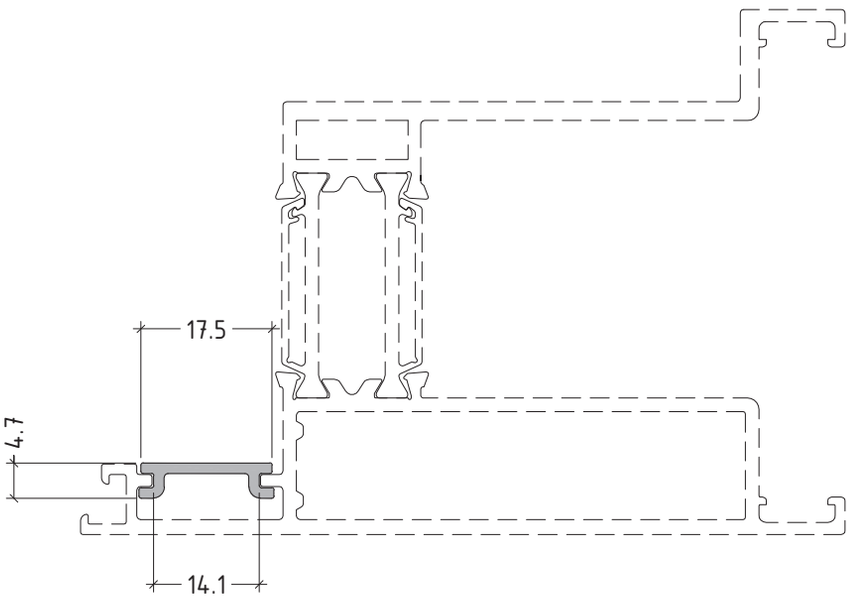
265 gr/m



E70650

Supplementary anodized
profile for E70204

103 gr/m



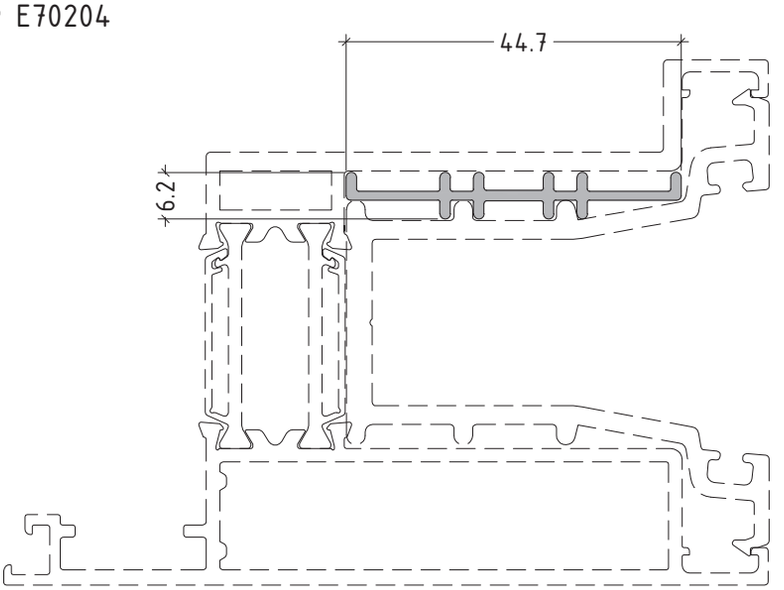
scale : 1:1

P70-09

E70959

Anodized spacer for E70204

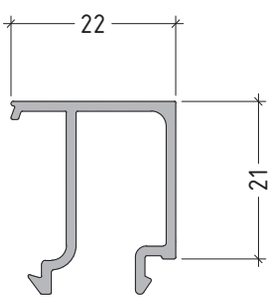
238 gr/m



E60222

Glazing bead

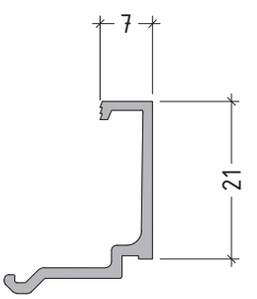
281 gr/m



E60107

Glazing bead

189 gr/m



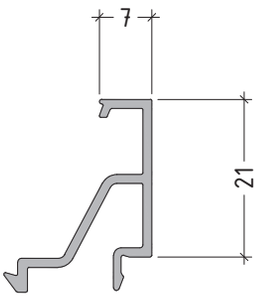
scale : 1:1

P70-10

E60207

Glazing bead

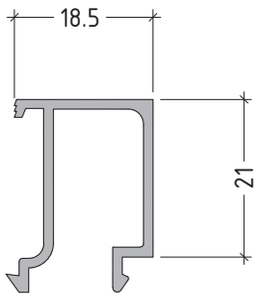
205 gr/m



E60219

Glazing bead

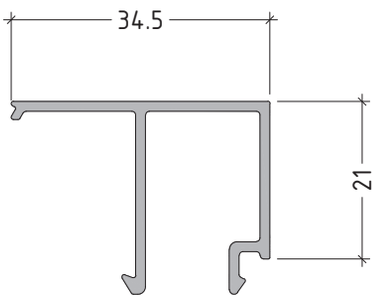
270 gr/m



E60235

Glazing bead

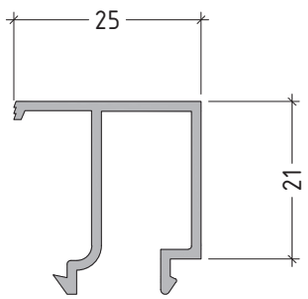
322.1 gr/m



E60225

Glazing bead

289 gr/m



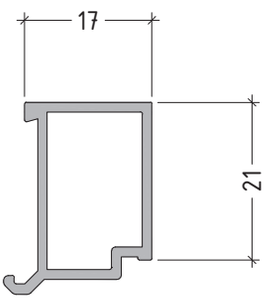
scale : 1:1

P70-11

E60117

Glazing bead

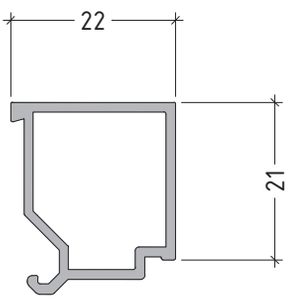
284 gr/m



E60122

Glazing bead

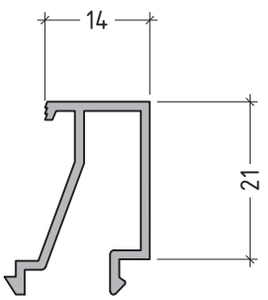
308 gr/m



E60215

Glazing bead

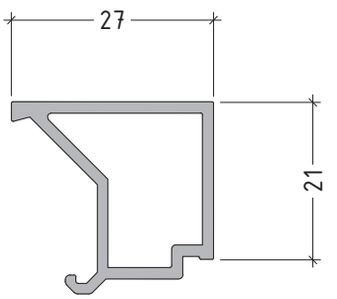
238 gr/m



E60127

Glazing bead

381 gr/m



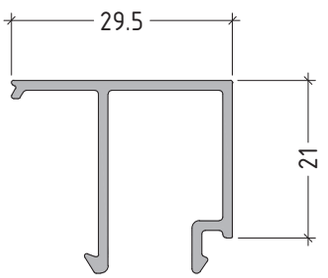
scale : 1:1

P70-12

E60230

Glazing bead

304.5 gr/m

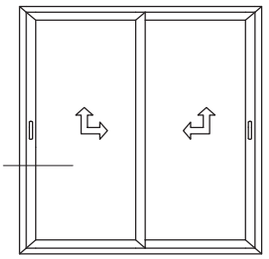


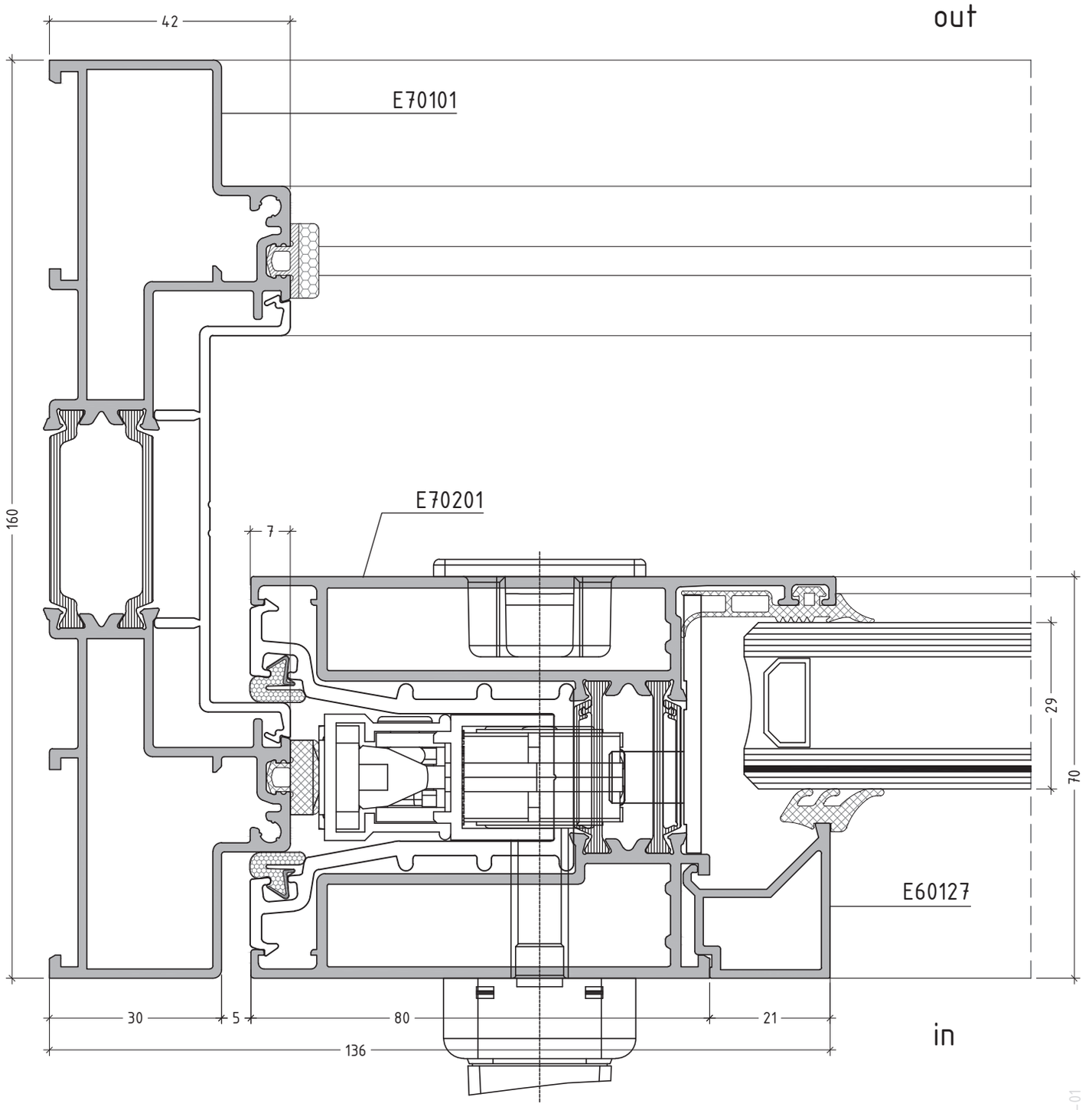
scale : 1:1

P70-13

SECTIONS

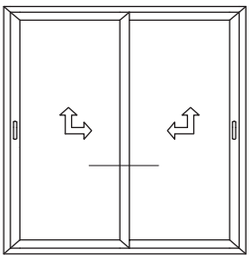
SECTIONS / DETAILS

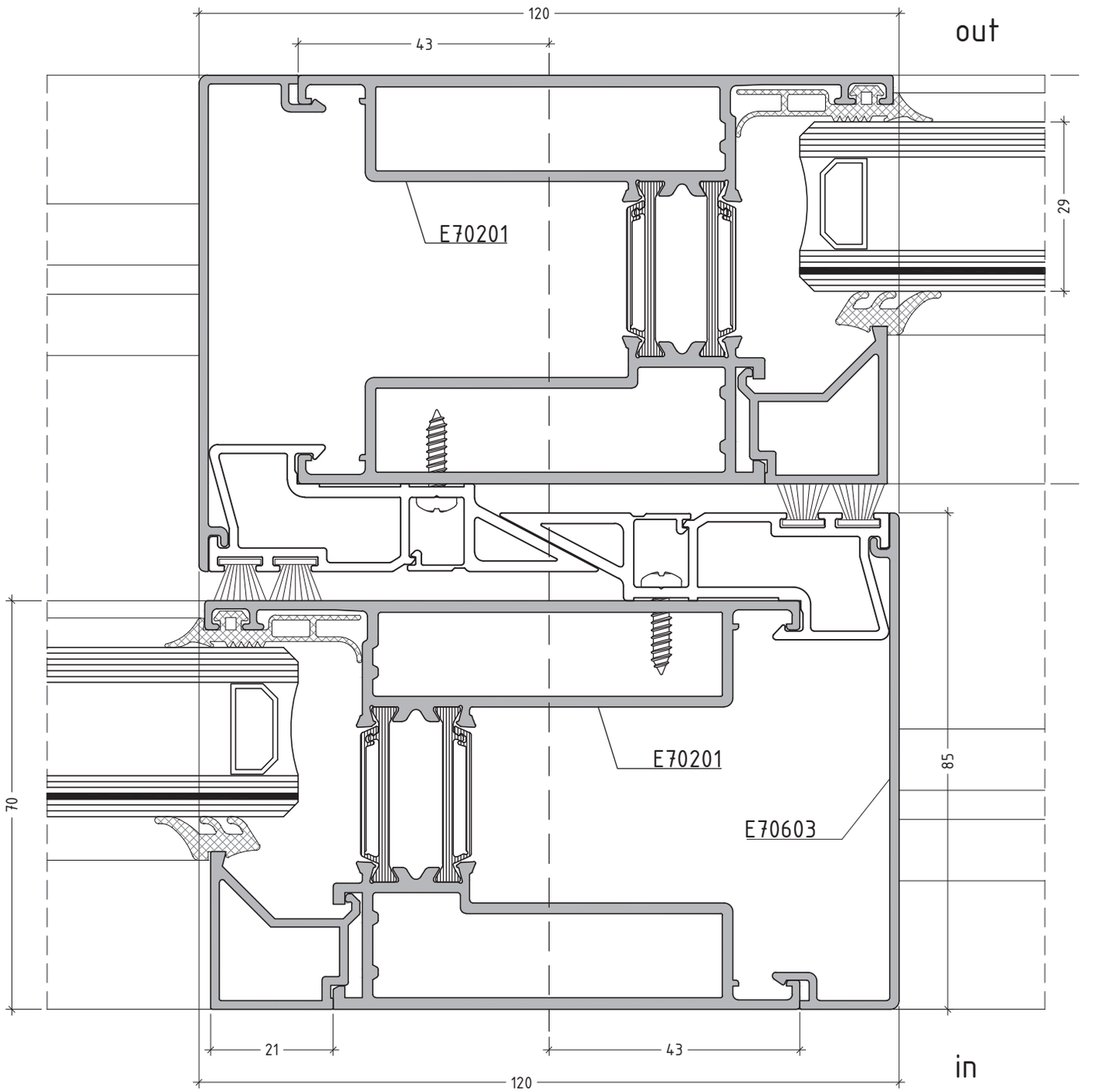




scale : 1:1

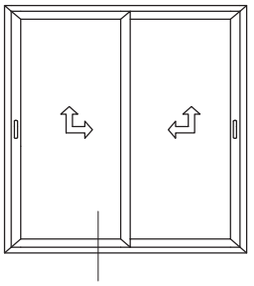
D70-01

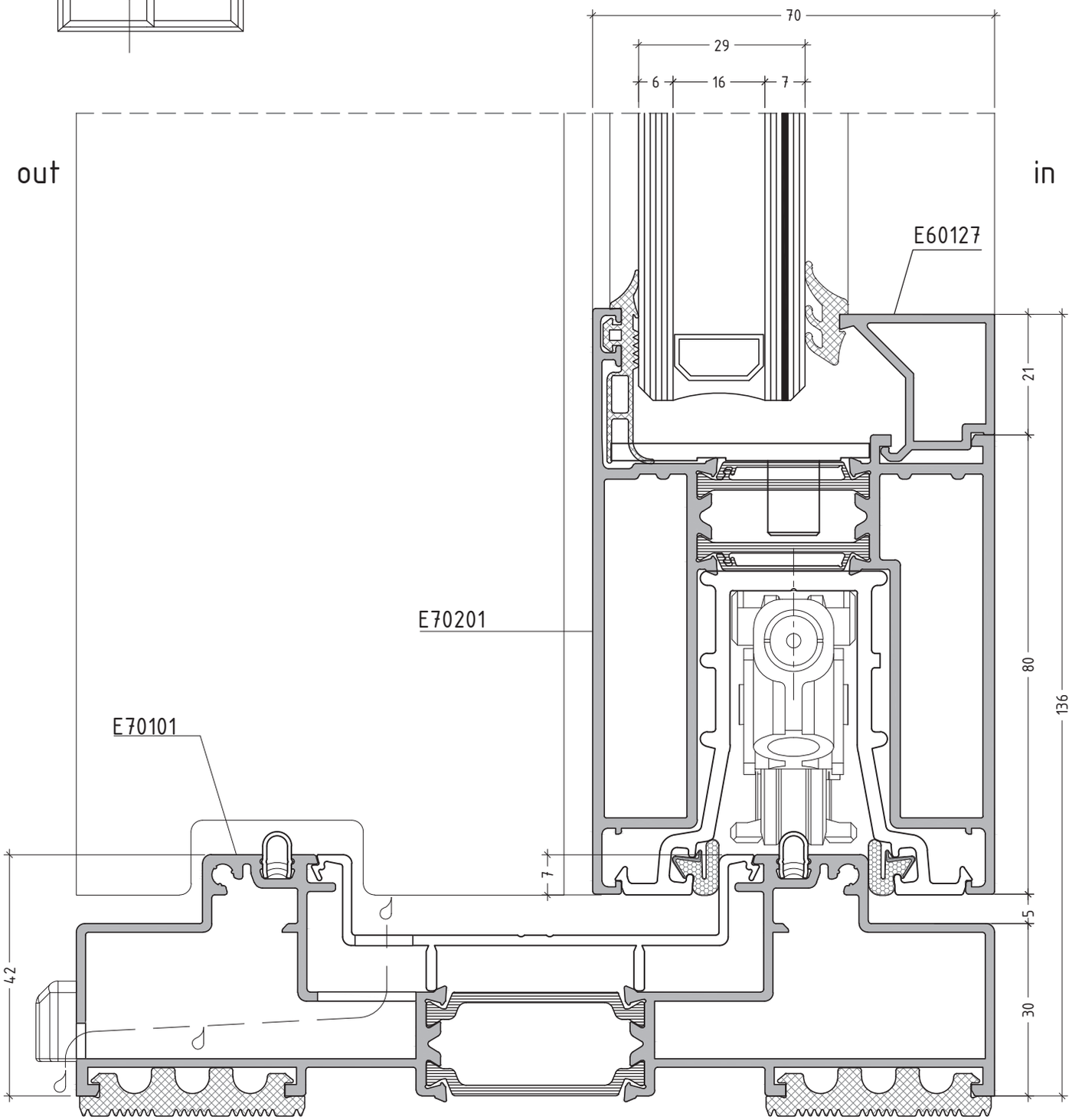




scale : 1:1

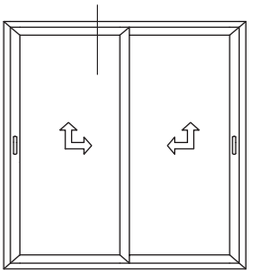
D70-02

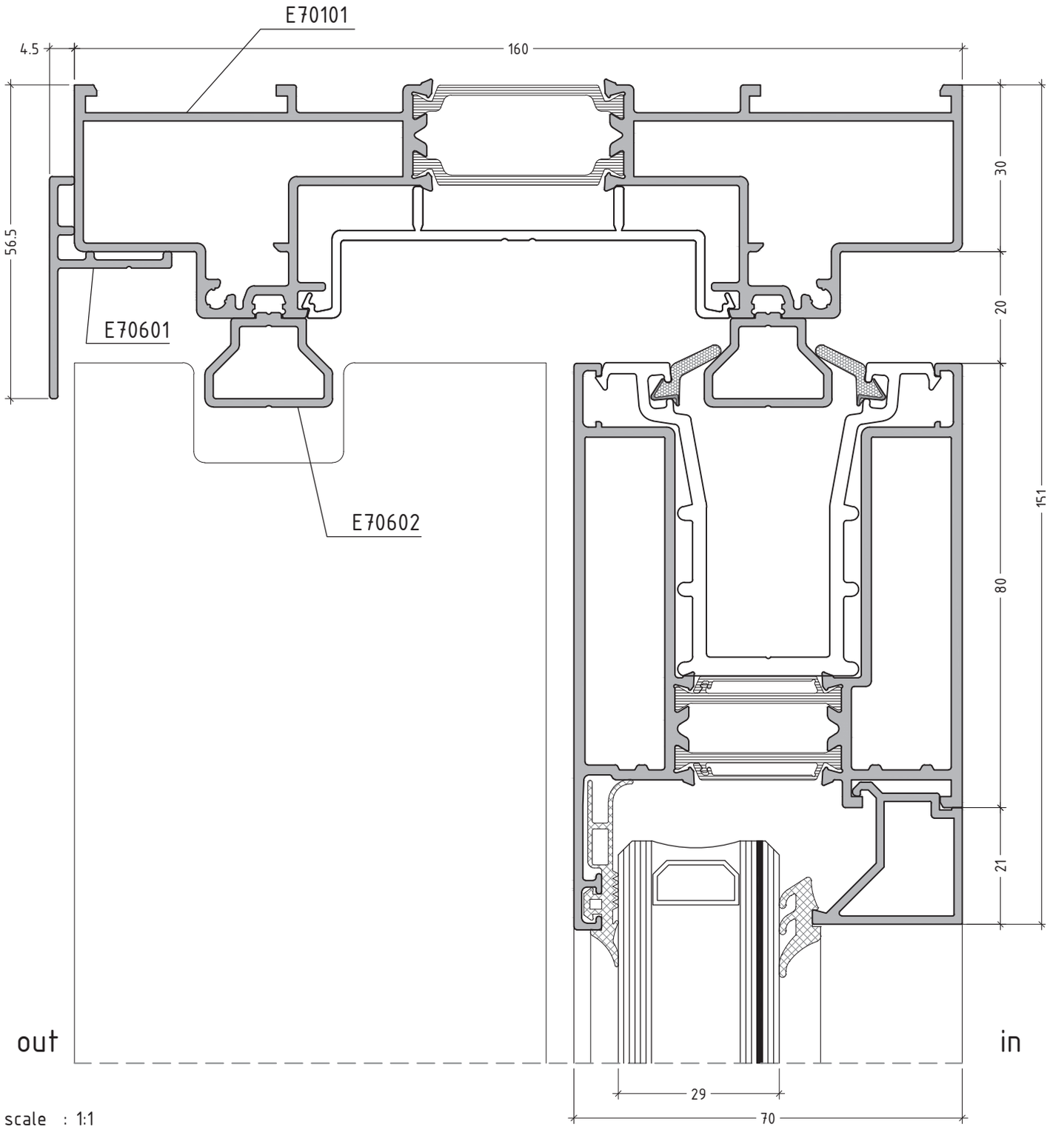




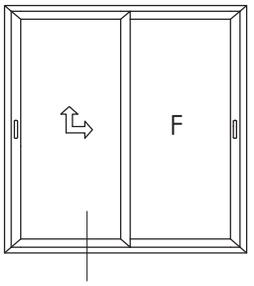
scale : 1:1

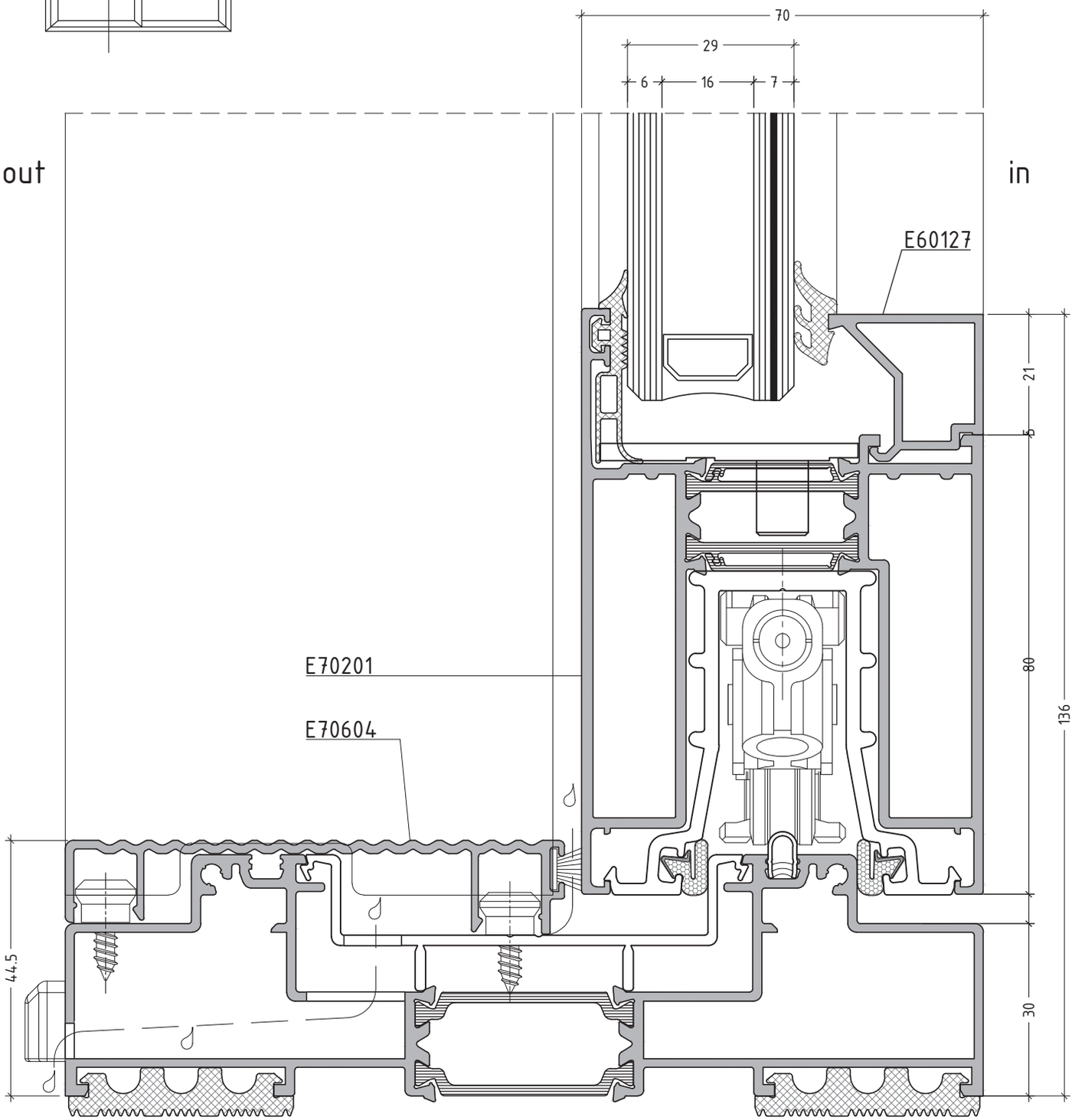
D70-03





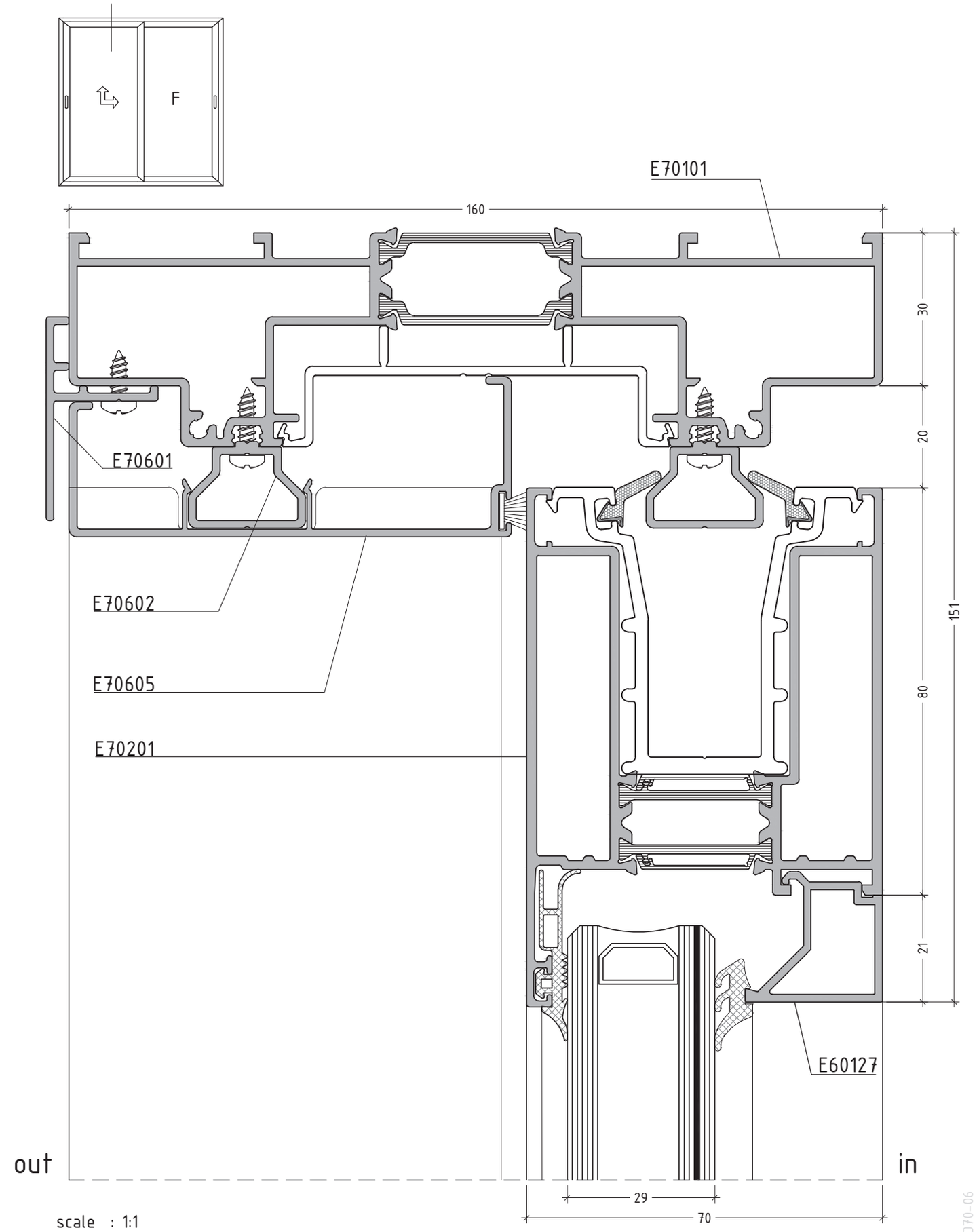
scale : 1:1

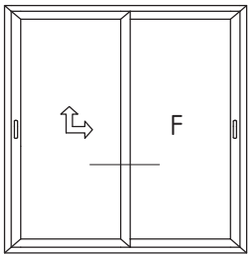


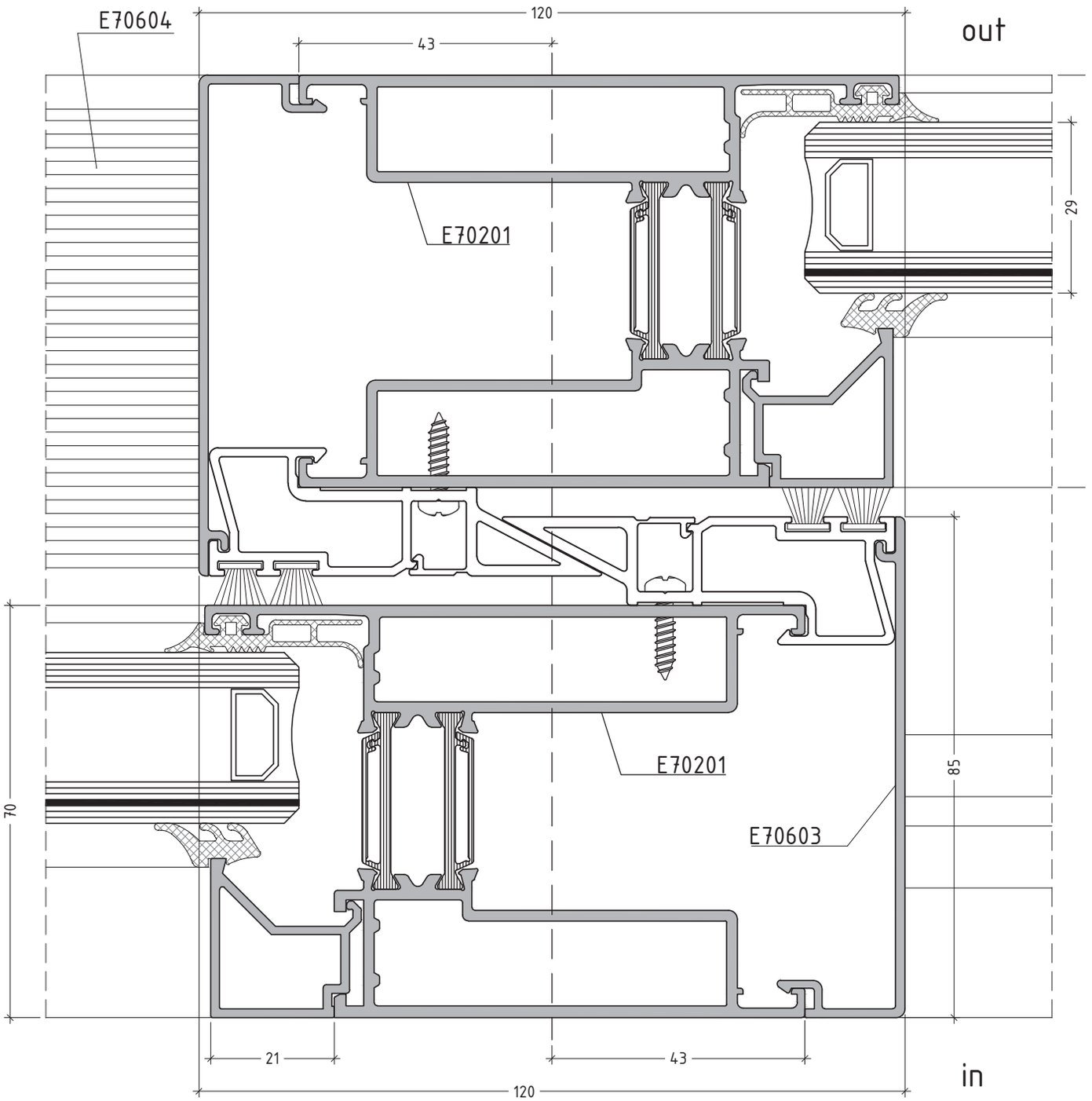


scale : 1:1

D70-05

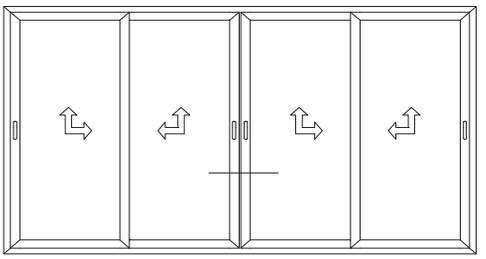

F
E70101
160
30
20
151
80
21
E70601
E70602
E70605
E70201
E60127
out
in
29
70
scale : 1:1
D70-06

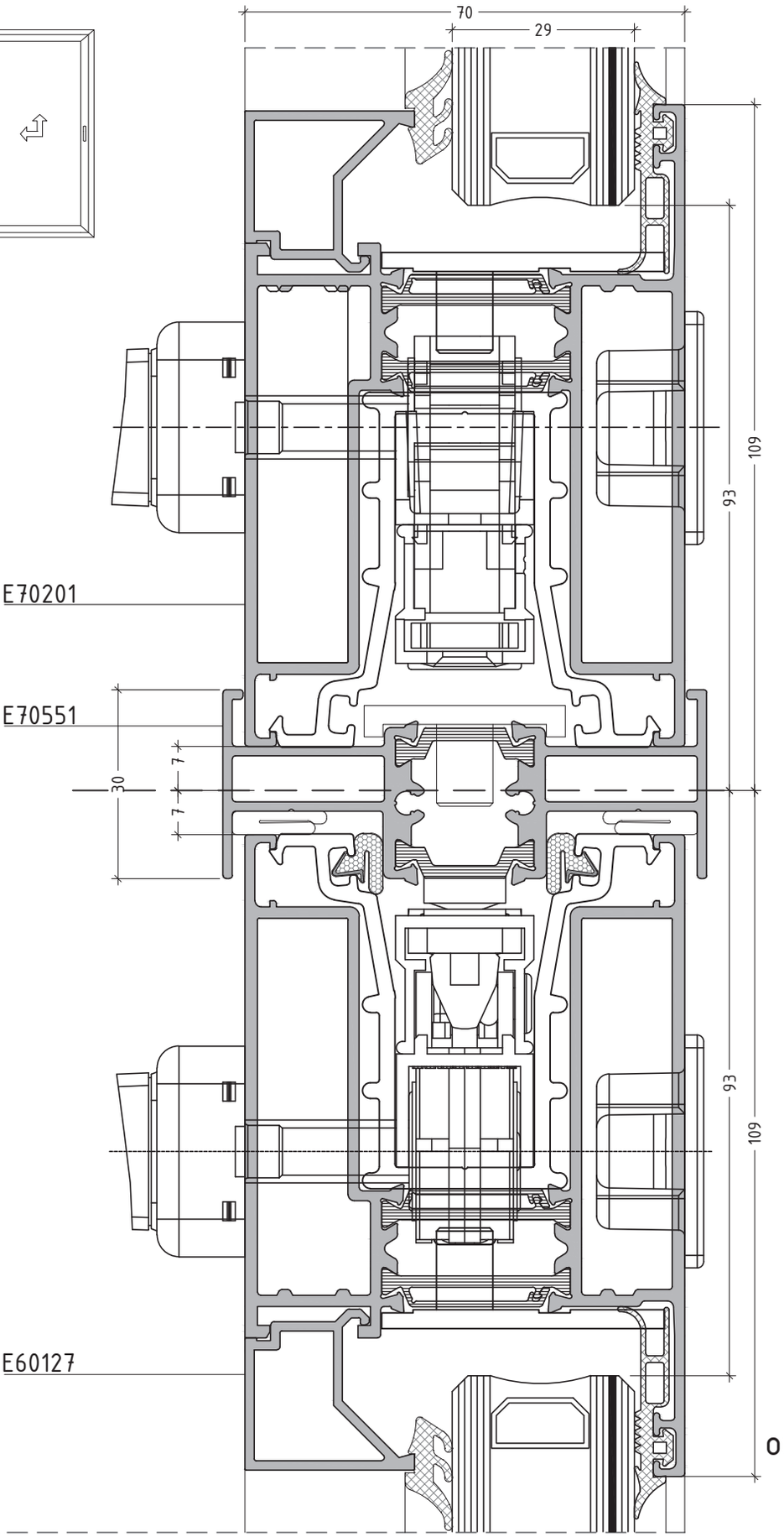




scale : 1:1

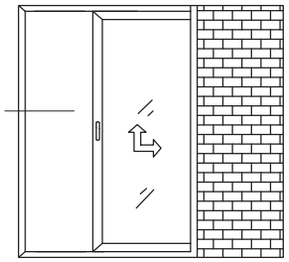
D70-07

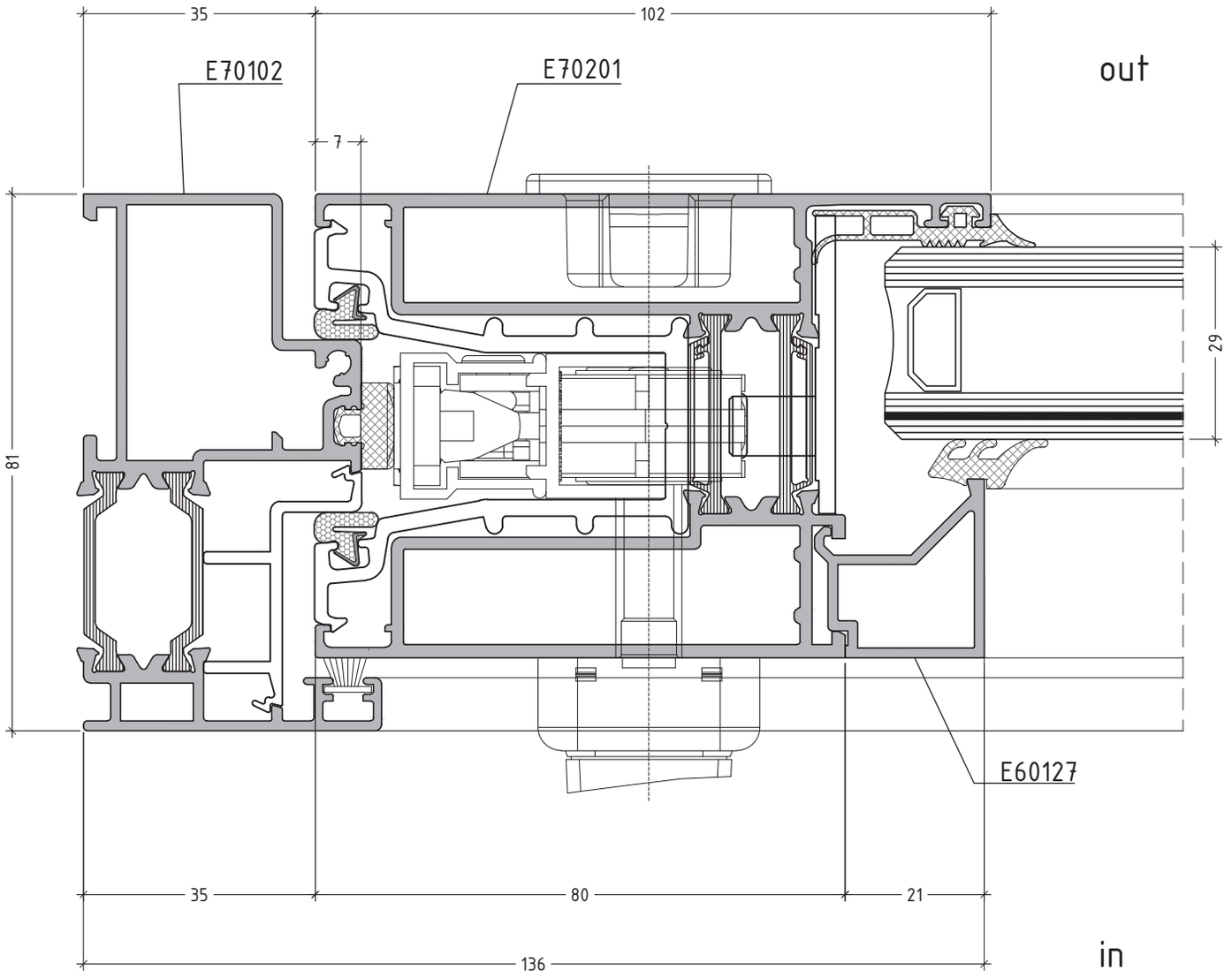




scale : 1:1 – 2:1

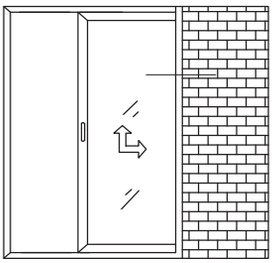
D70-08

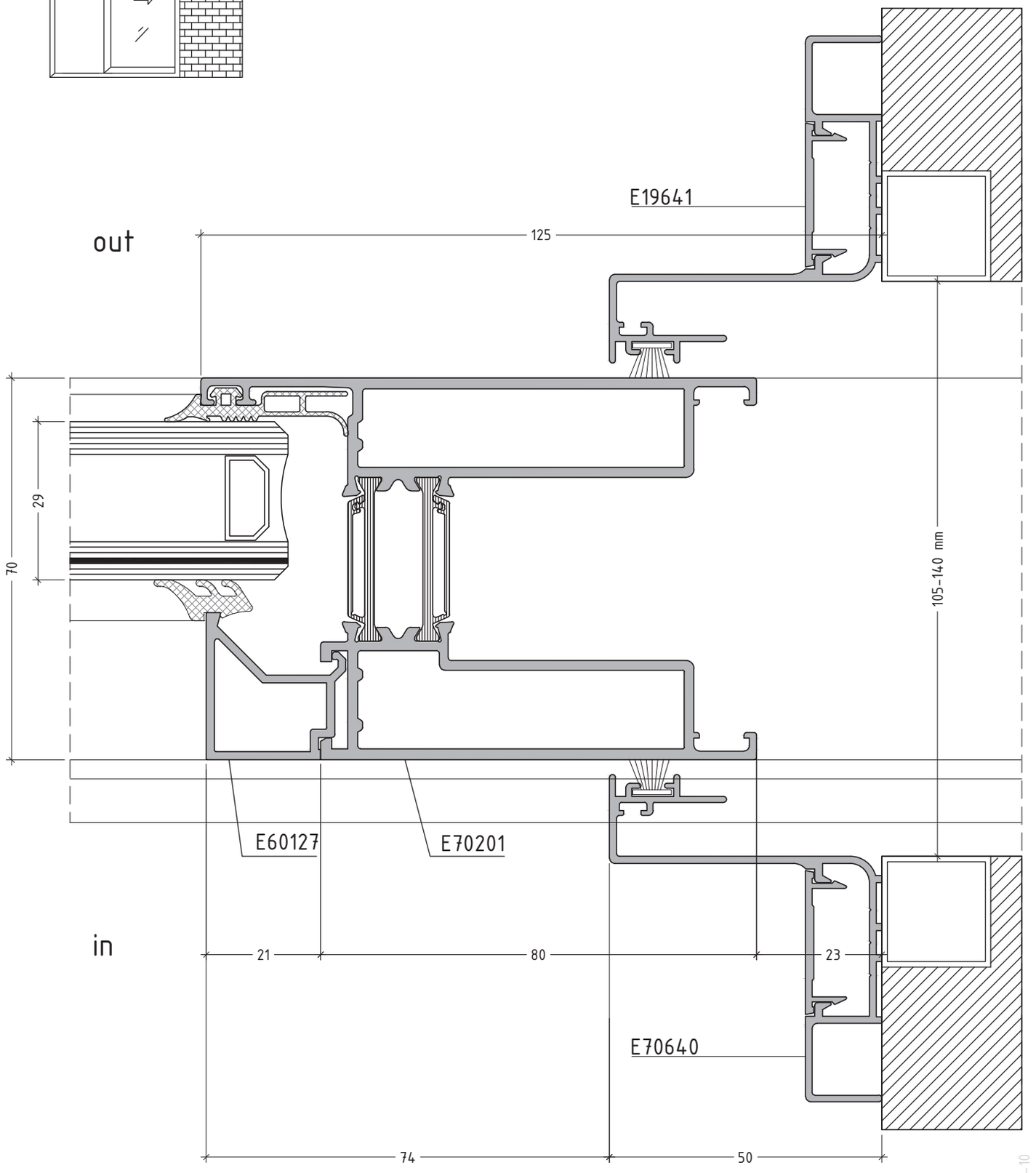




scale : 1:1

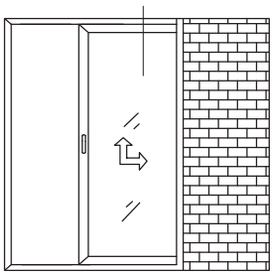
D70-09

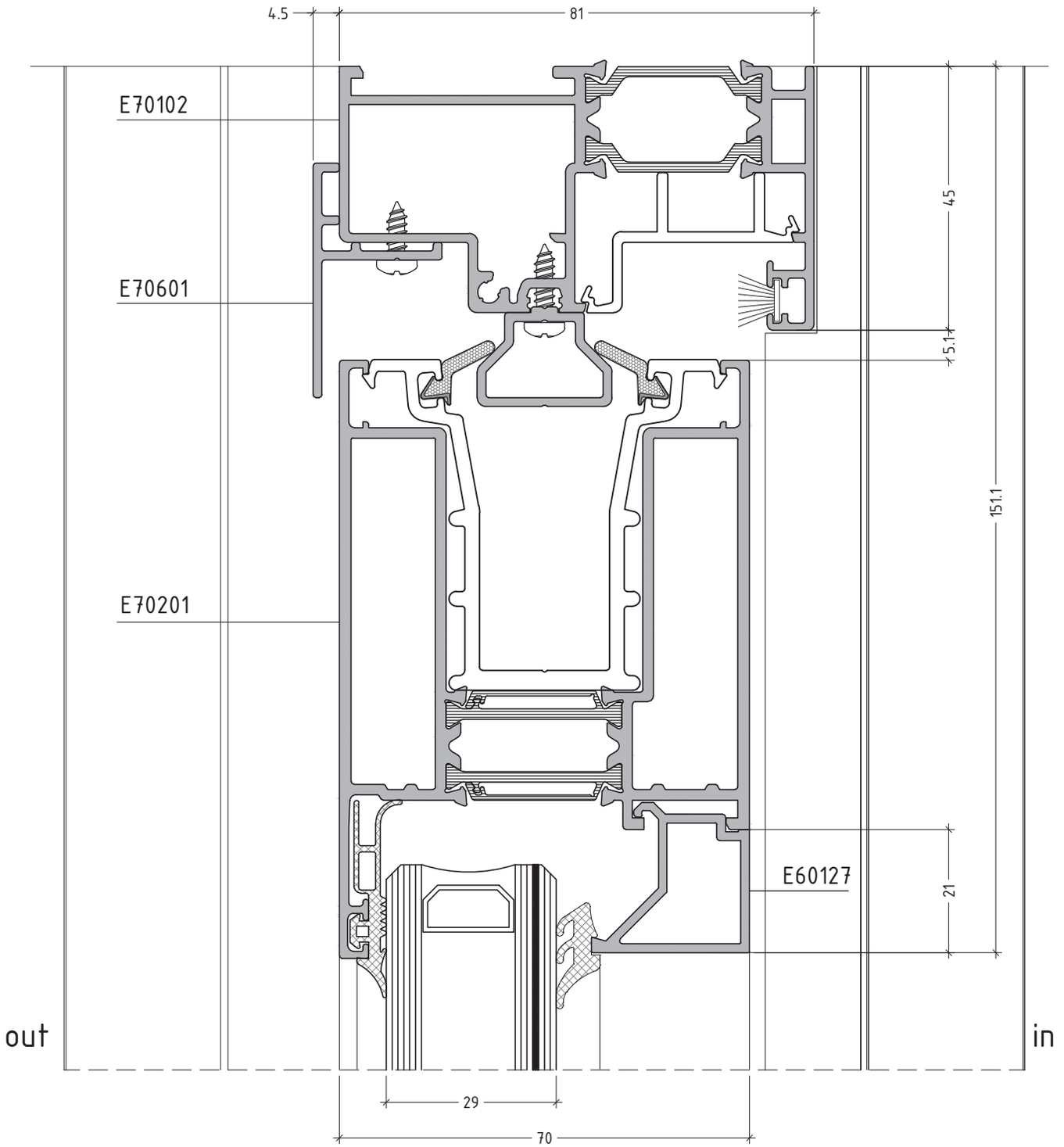




scale : 1:1

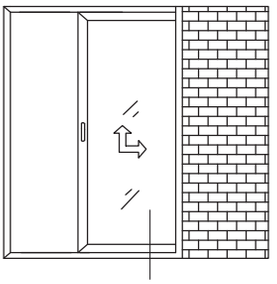
D75-10

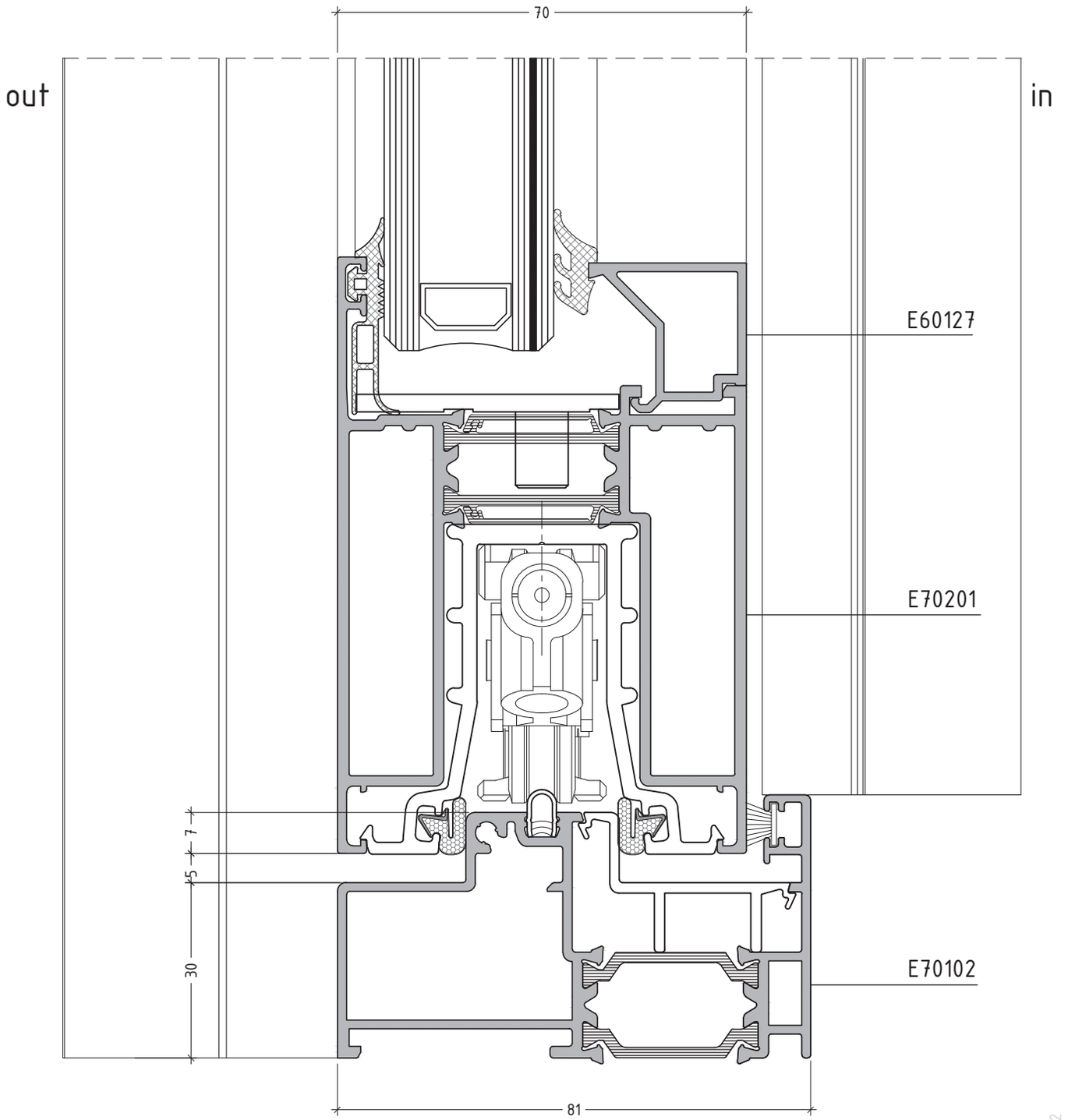




scale : 1:1

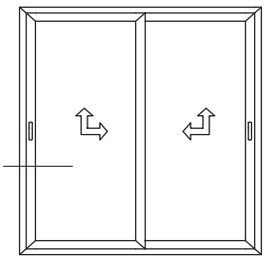
075-11

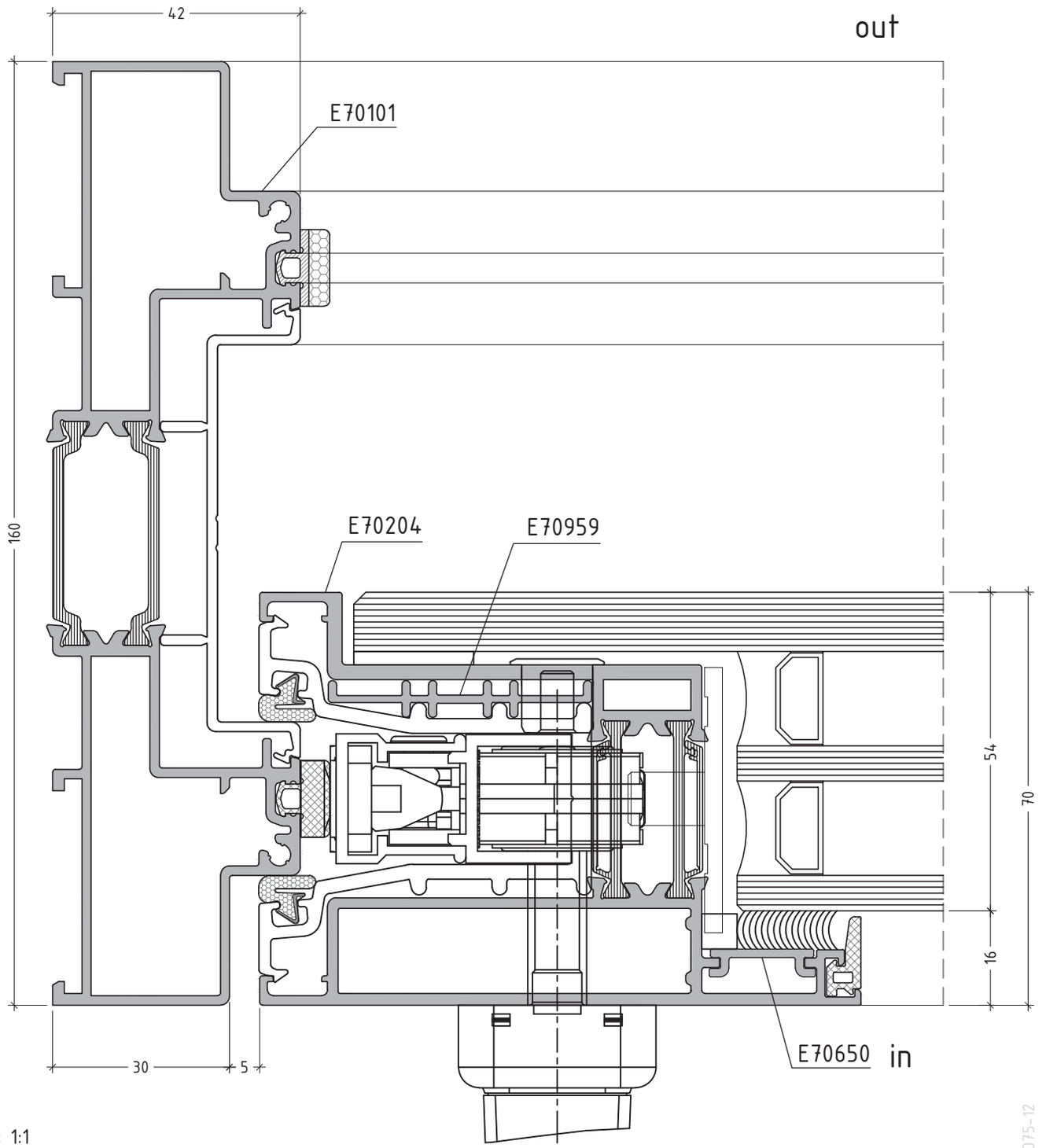




scale : 1:1

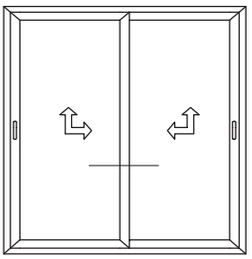
D75-12

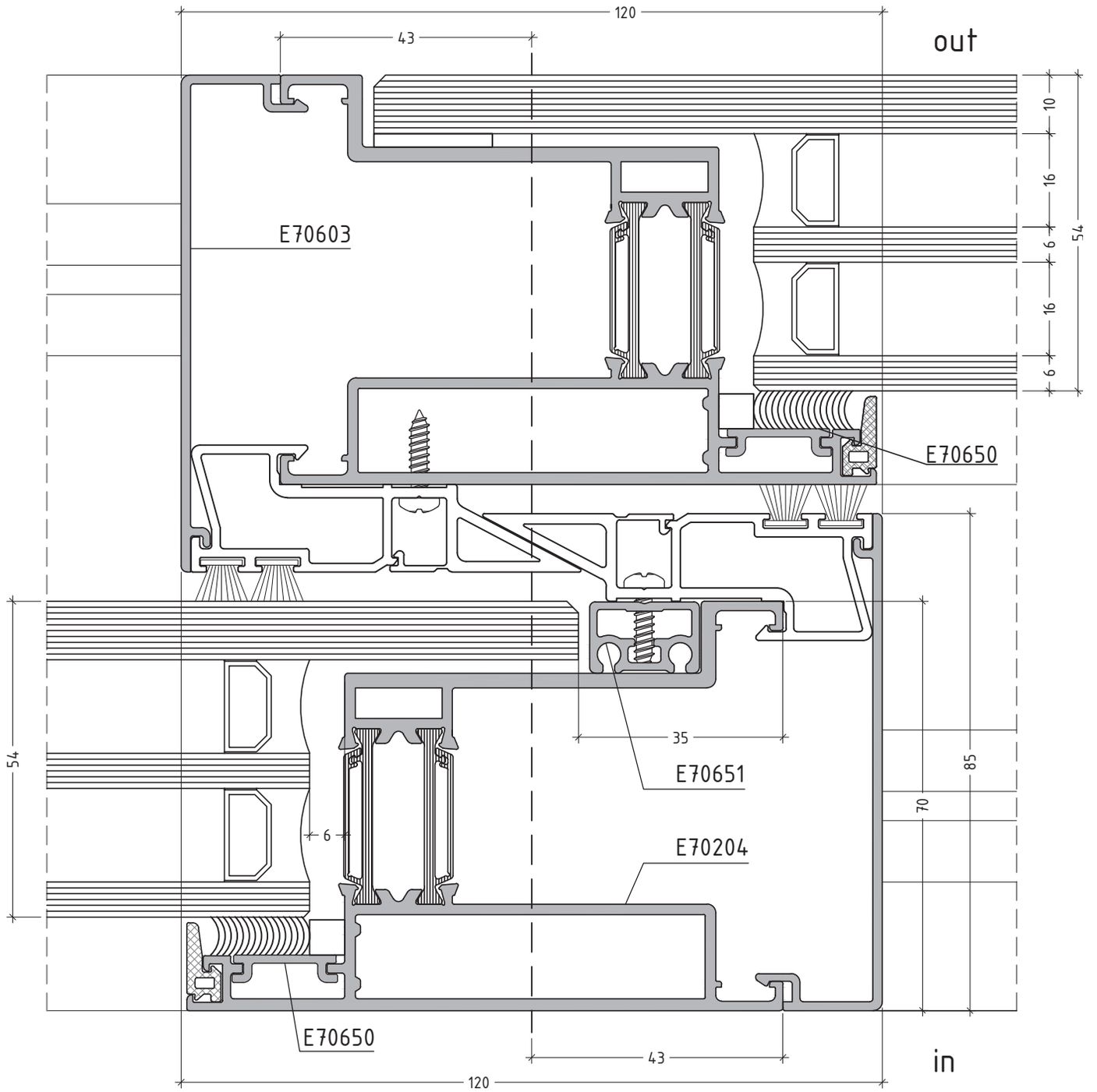




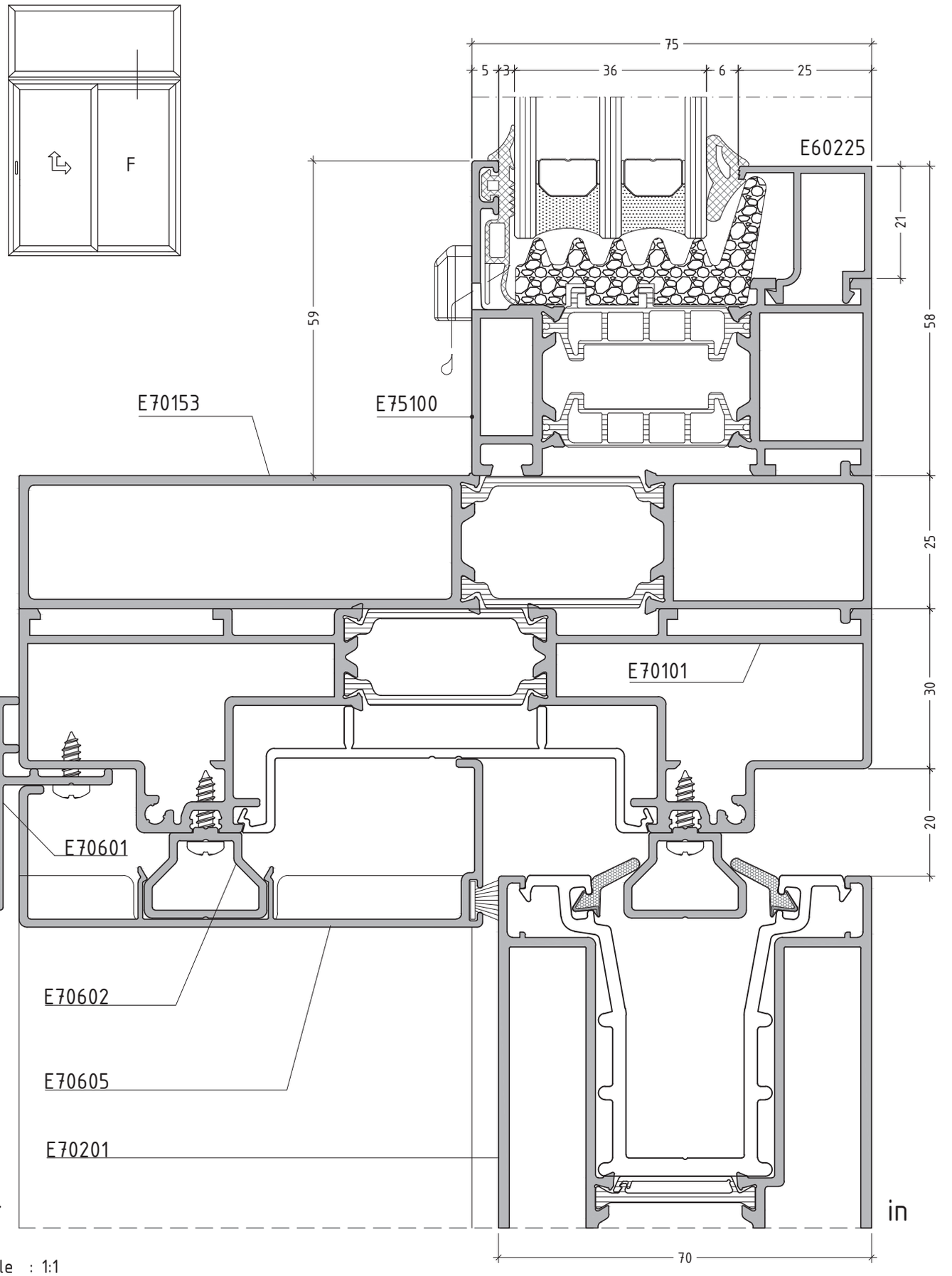
scale : 1:1

D75-12

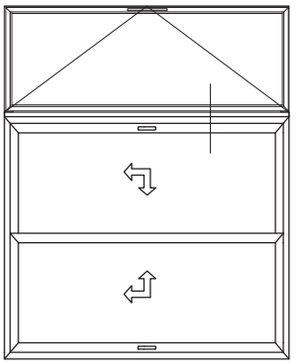


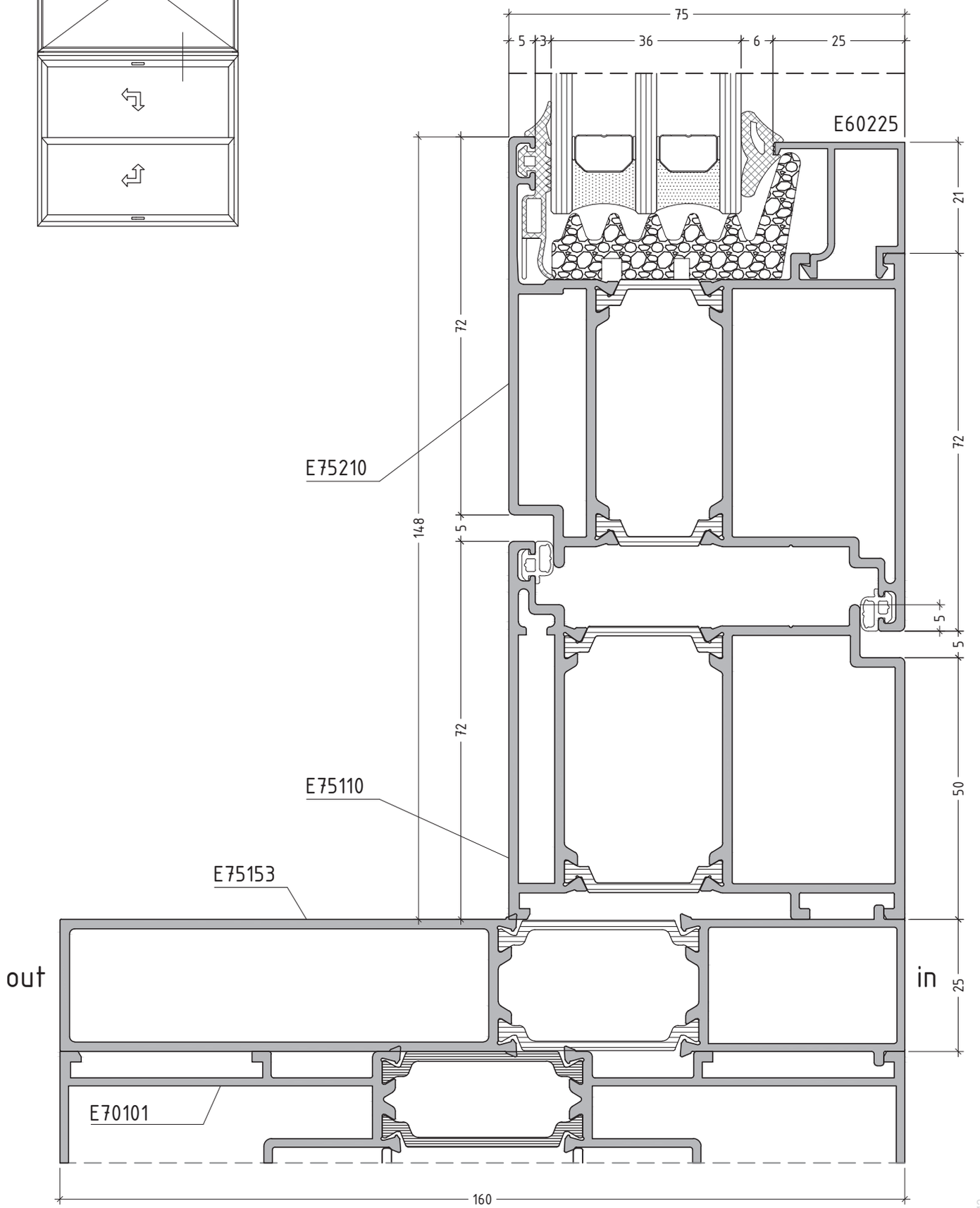

120
43
out
10
16
6
16
6
54
E70603
E70650
54
35
E70651
85
70
6
E70204
E70650
43
120
in

scale : 1:1


F
75
5
3
36
6
25
E60225
21
59
58
E70153
E75100
25
E70101
30
E70601
20
E70602
E70605
E70201
out
in
70

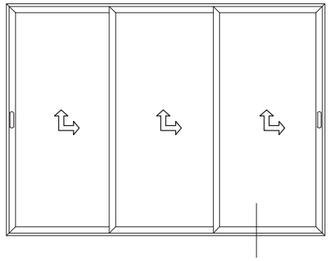
scale : 1:1

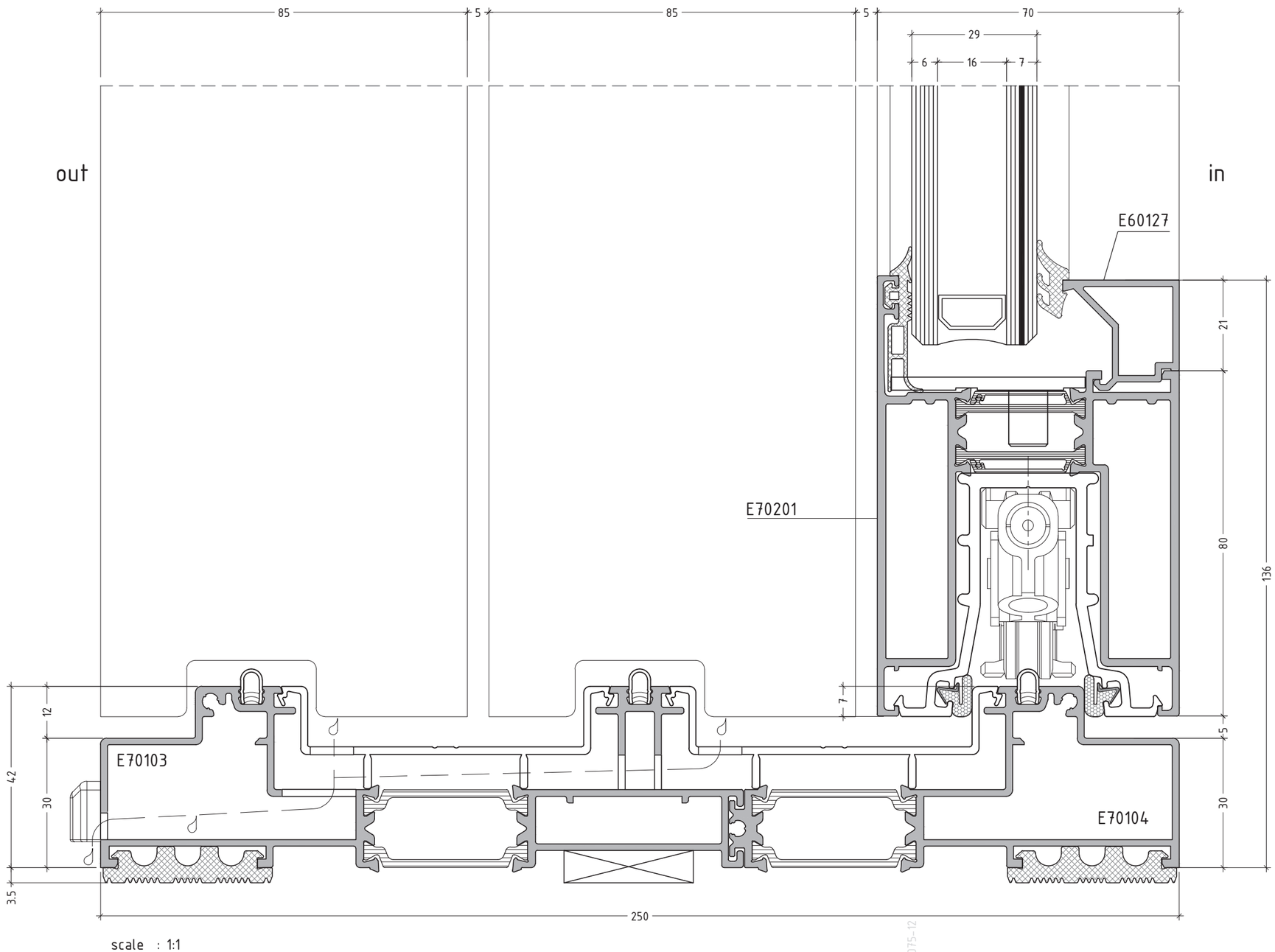




scale : 1:1

D75-12





scale : 1:1

D75-12

GLAZING OPTIONS

GLAZING OPTIONS						
external gaskets	INTERNAL GASKETS				GLAZING BEADS	
3 mm 130411	5 - 6 mm 130176		7 - 8 mm 130177		X 65	
3 mm 130402	5 mm 990619	6 mm 130207	7 mm 130207	8 mm 130208		
	X mm				1	2
130411 130402	50	49	48	47	E60107 old code E1114	E60207 old code E1144
130411 130402	47	46	45	44	E60110	E60210
130411 130402	45	44	43	42	E60112 old code E5317	
130411 130402	43	42	41	40	E60215 old code E5324	
130411 130402	40	39	38	37	E60117 old code E5311	
130411 130402	38	37	36	35	E60219 old code E5304	
130411 130402	35	34	33	32	E60222 old code E1113	E60122 old code E5312
130411 130402	32	31	30	29	E60225 old code E5307	
130411 130402	30	29	28	27	E60127 old code E5325	
130411 130402	27	26	25	24	E60230	
130411 130402	22	21	20	19	E60235	

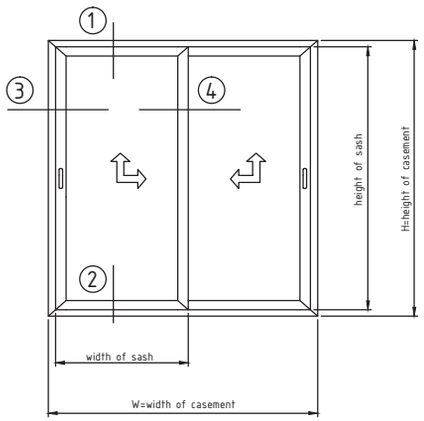
ETEM is stopping the production and distribution of profiles E5397, E5380, E5305 and E5393. Please see the revised glazing scheme above!

Note:
Tolerance in dimension chain ±0.5mm

T70-01

CUTTING LISTS

DOUBLE LEAF WITH LIFT & SLIDE MECHANISM T70-01

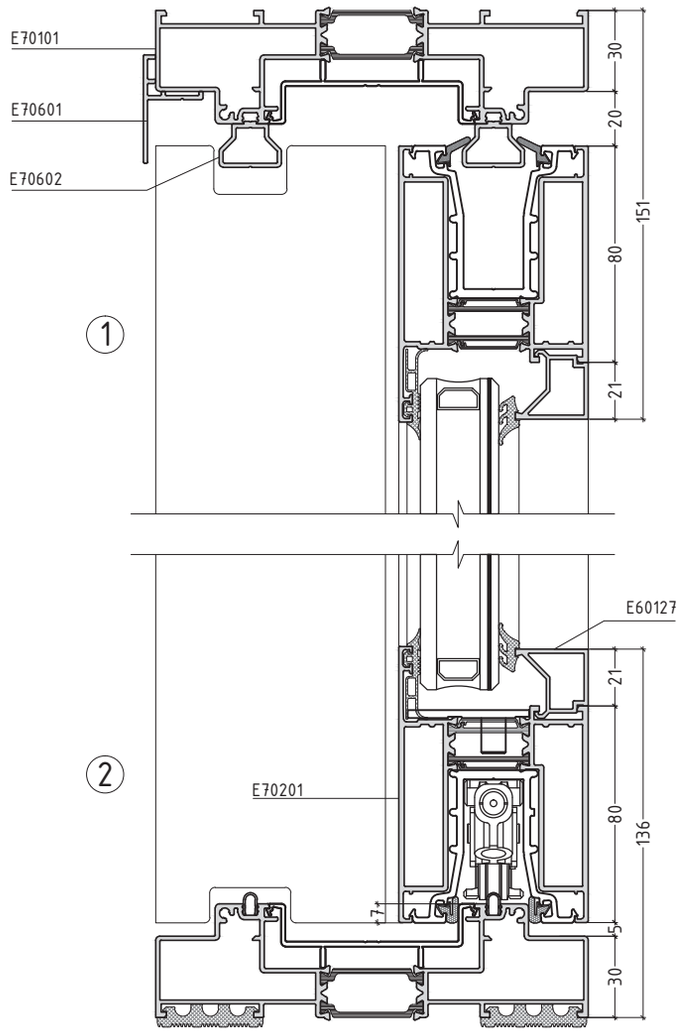


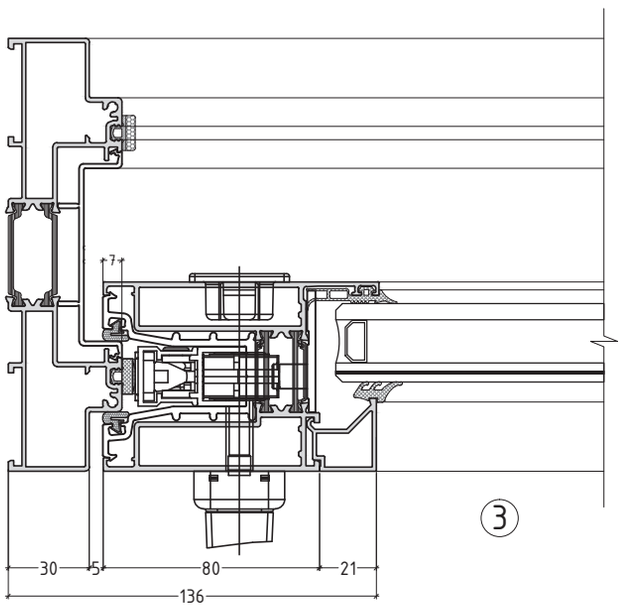
cutting lengths

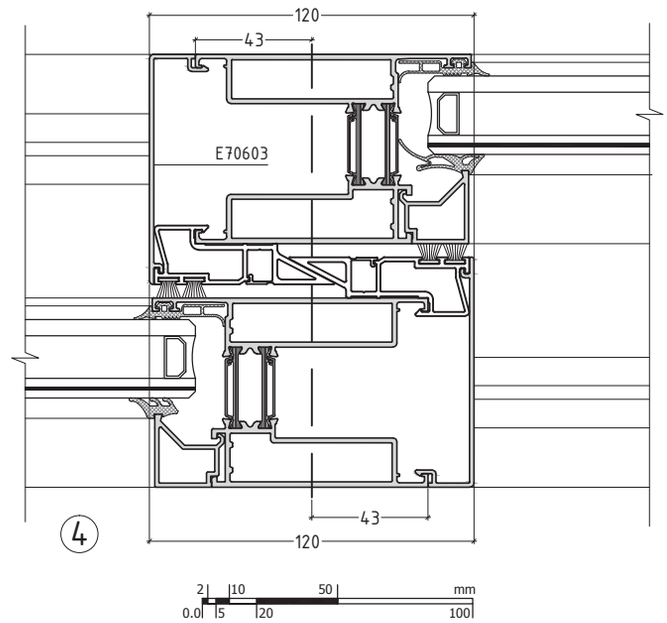
width of rail E70101	= W
height of frame E70101	= H
width E70601	= W
width E70602	= W - 85
width of sash E70201	= (W+16)/2
height of sash E70201	= H - 85
inter. profile height E70603	= H - 85

dimension in millimeters

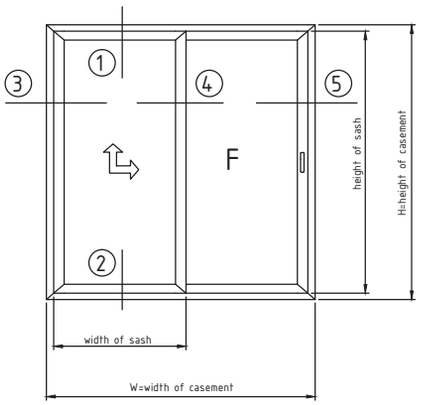
all measurements are taken from the external side of the frame







DOUBLE LEAF WITH LIFT & SLIDE MECHANISM AND FIXED SASH T70-03

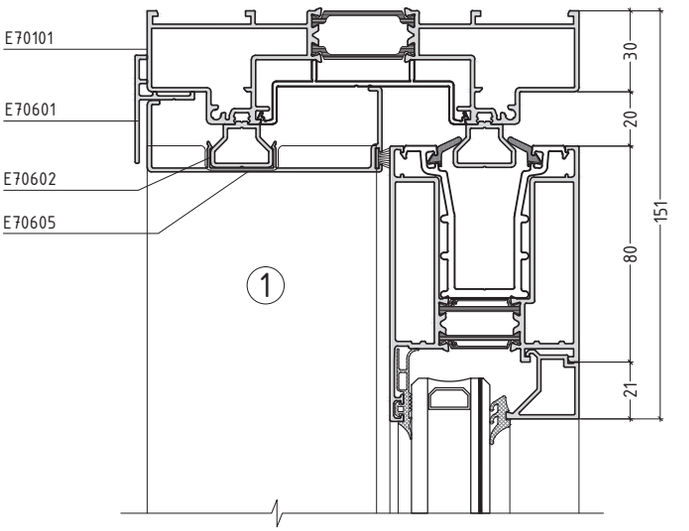


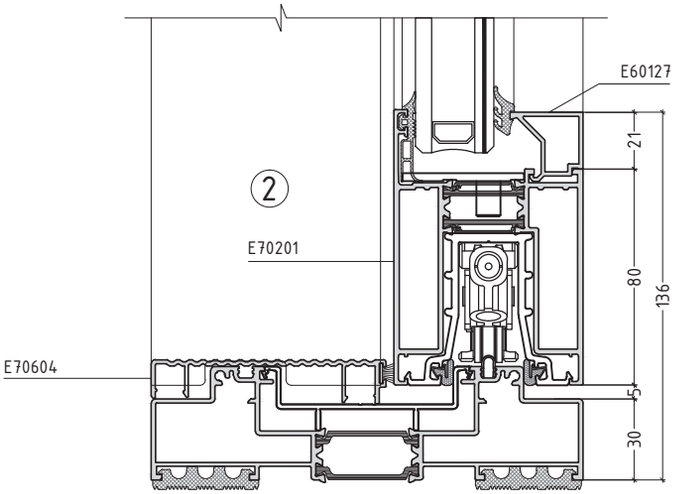
cutting lengths

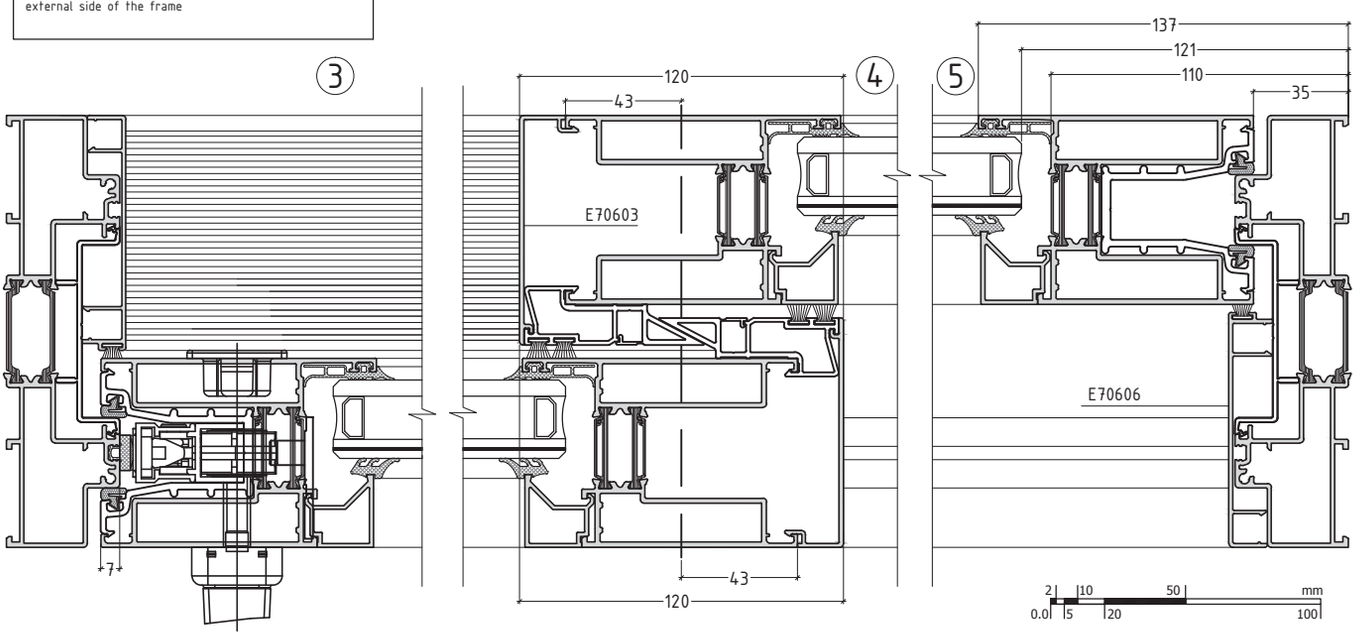
width of rail E70101	= W
height of frame E70101	= H
height E70601	= W
height E70602	= W – 85
width of sash E70201	= $\frac{(W+16)}{2}$
height of sash E70201	= H – 85
inter. profile height E70603	= H – 85
E70606	= H – 105
E70604	= $\frac{W}{2}$ – 91
E70605	= $\frac{W}{2}$ – 91

dimension in millimeters

all measurements are taken from the external side of the frame

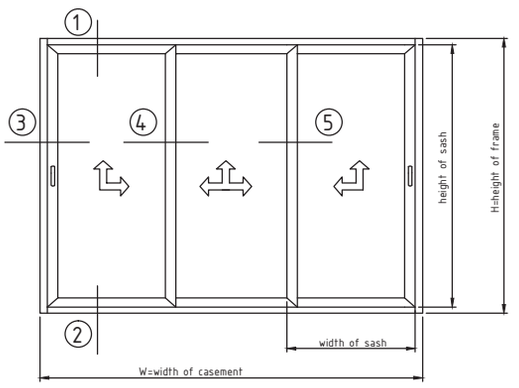


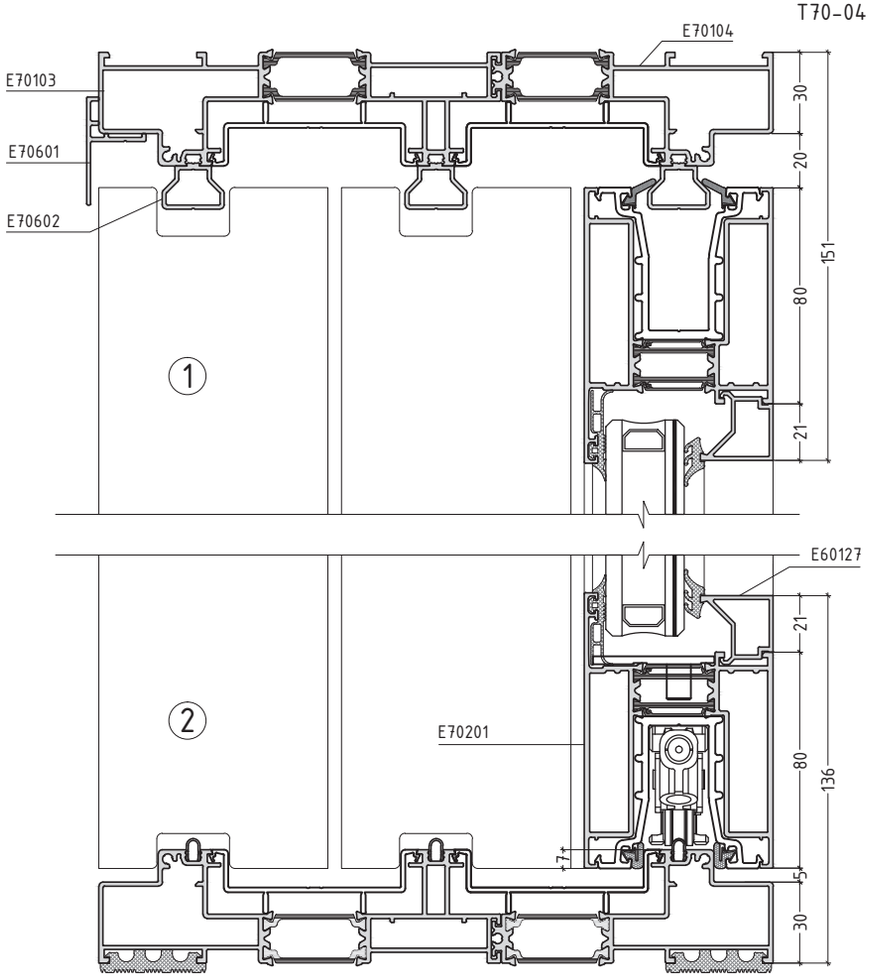


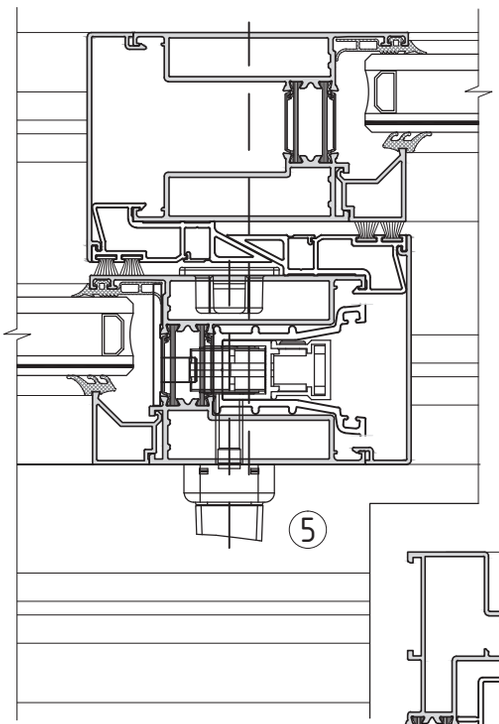


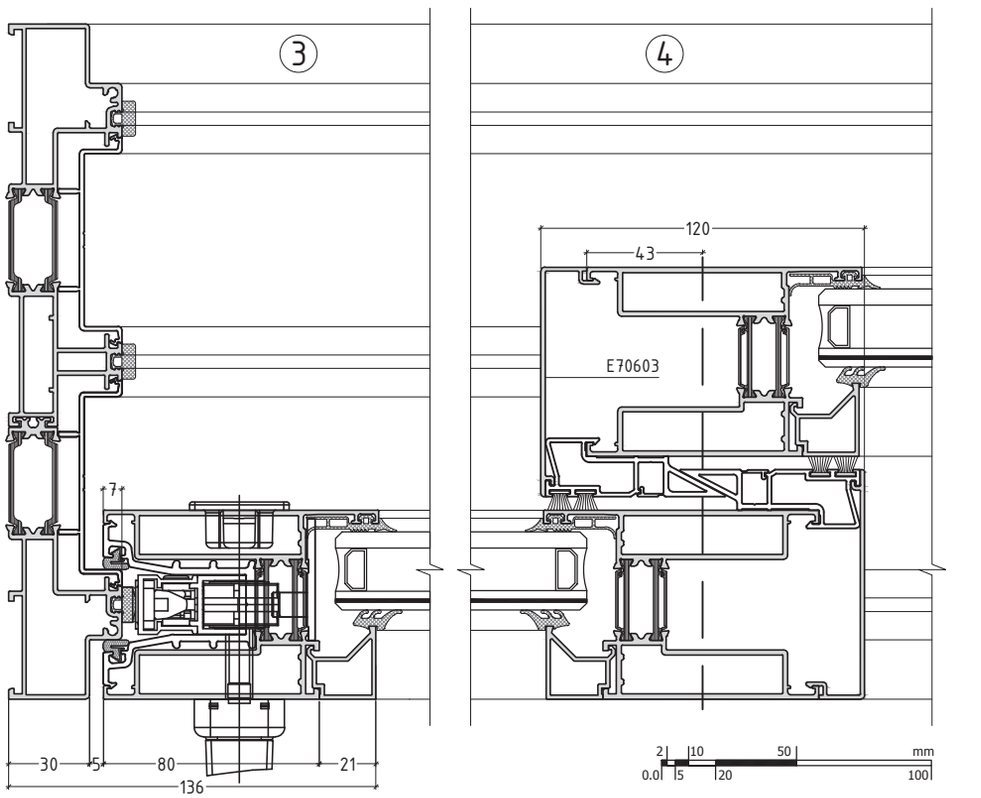
THREE LEAF WITH LIFT & SLIDE MECHANISM

T70-04









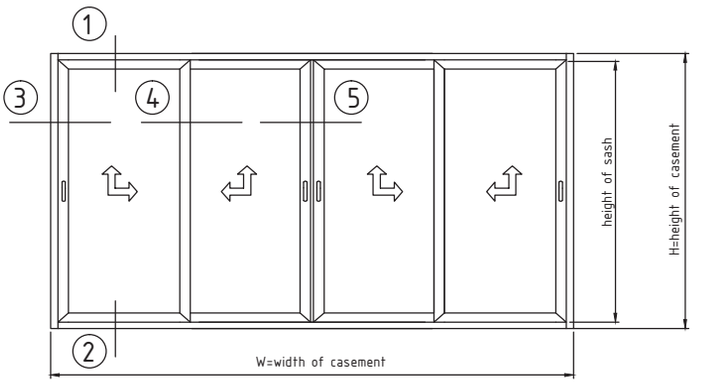
cutting lengths

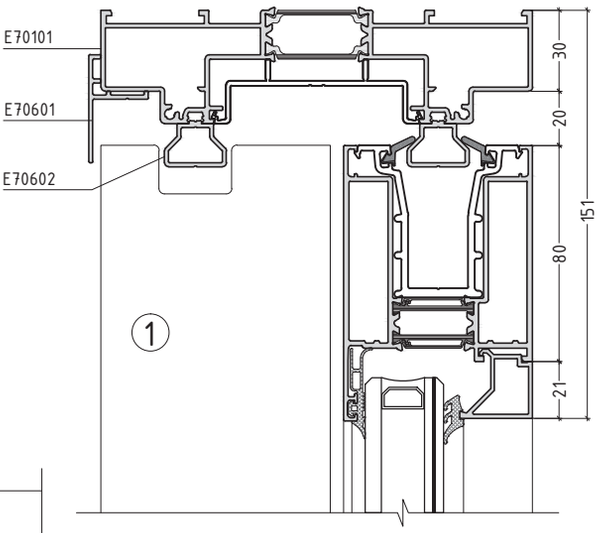
width of rail E70101	= W
height of frame E70101	= H
height E70601	= W
height E70602	= W - 85
width of sash E70201	= (W+102) / 3
height of sash E70201	= H - 85
inter. profile height E70603	= H - 85

dimension in millimeters

all measurements are taken from the external side of the frame

FOUR LEAF WITH LIFT & SLIDE MECHANISM T70-05



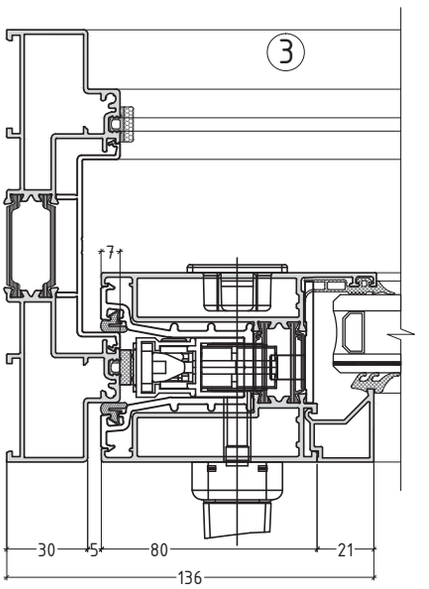


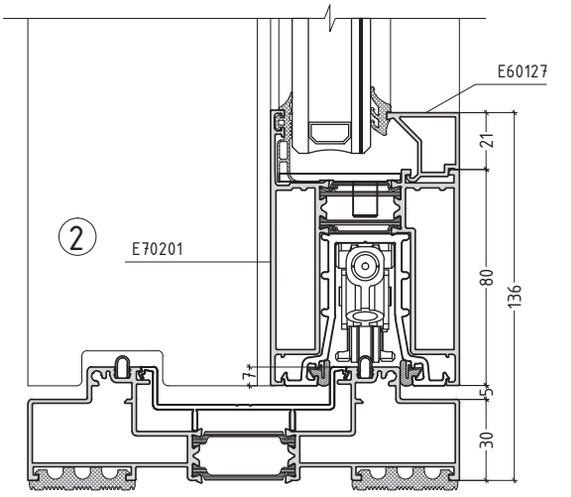
cutting lengths

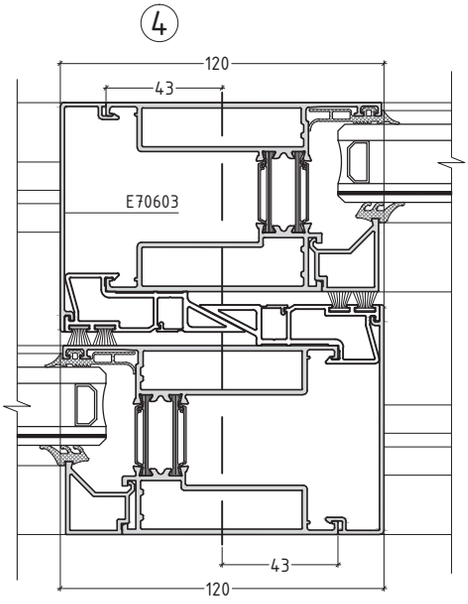
width of rail E70101	= W
height of frame E70101	= H
height E70601	= W
height E70602	= W - 85
width of sash E70201	= (W+88)/4
height of sash E70201	= H - 85
sup. profile height E70551	= H - 128
inter. profile height E70603	= H - 85

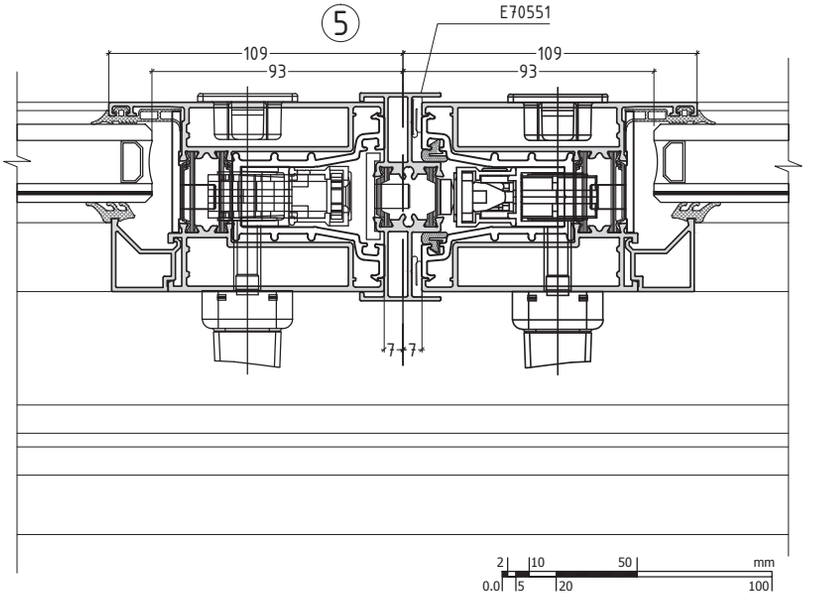
dimension in millimeters

all measurements are taken from the external side of the frame

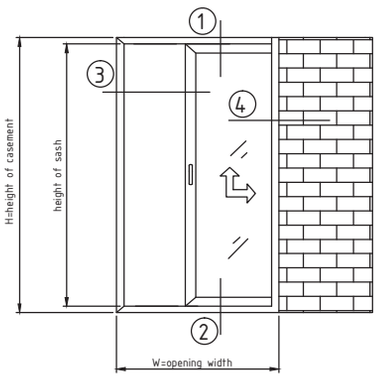


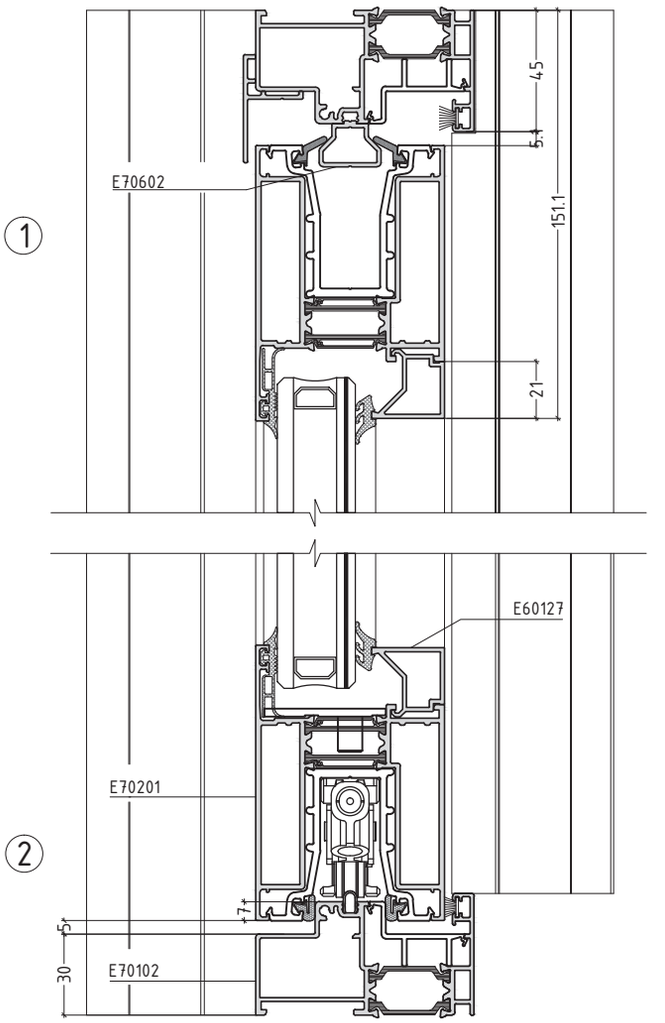






SINGLE LEAF WITH LIFT & SLIDE MECHANISM T70-06



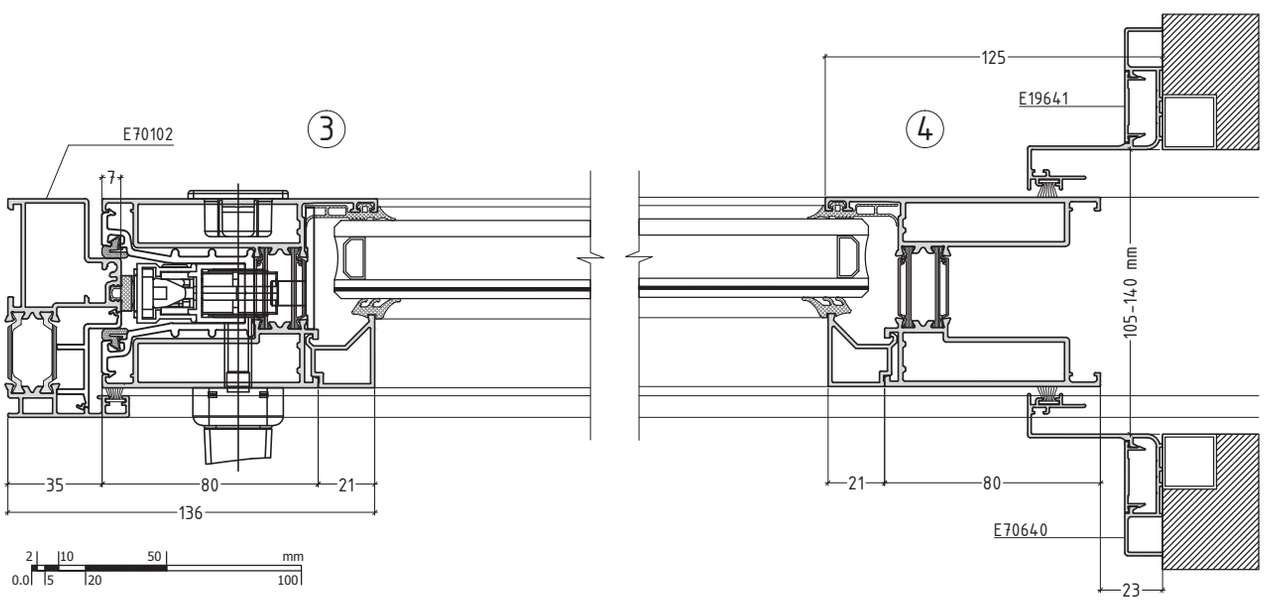


cutting lengths

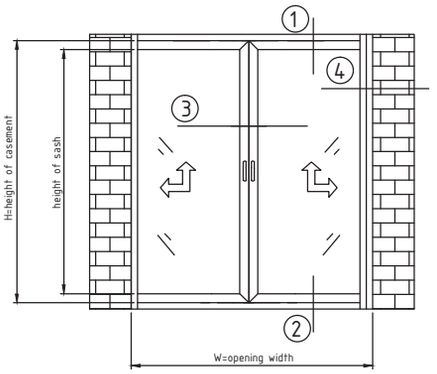
width of top rail E70102	= W + 500
width of bot. rail E70102	= 2W - 175
height of frame E70102	= H
width E70601	= W - 50
width E70602	= W + 500
width of sash E70201	= W - 58
height of sash E70201	= H - 85

dimension in millimeters

all measurements are taken from the external side of the frame



DOUBLE LEAF WITH LIFT & SLIDE MECHANISM T70-07

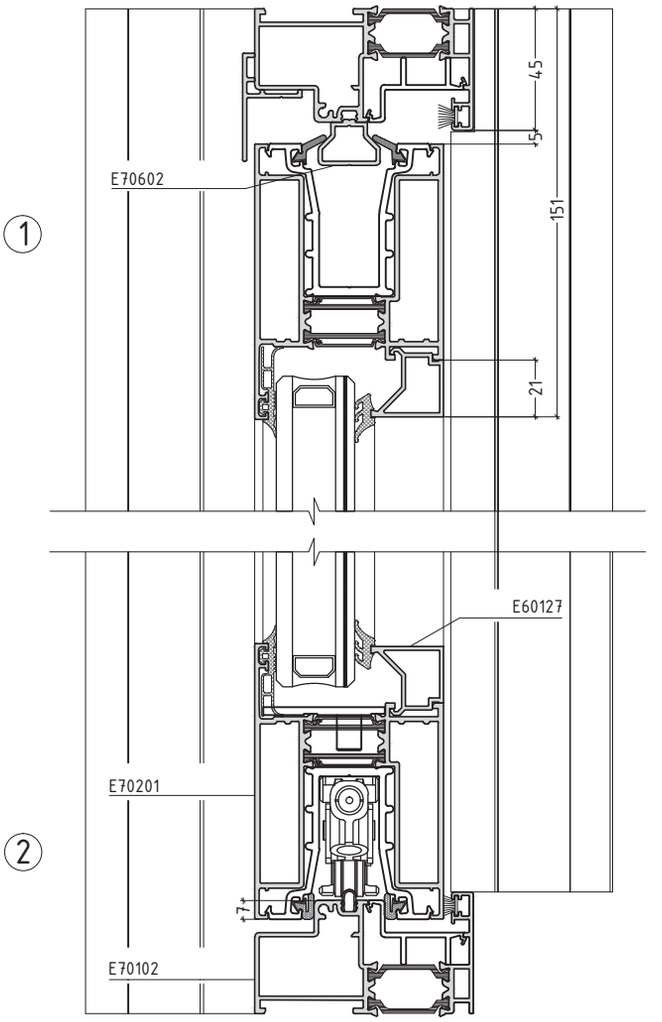


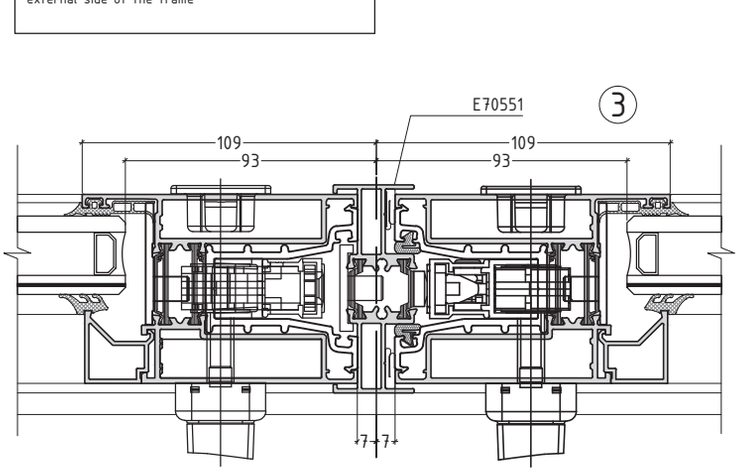
cutting lengths

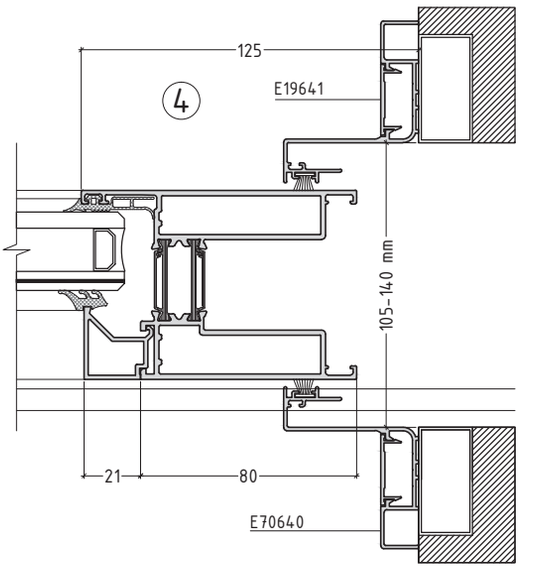
width of top rail E70102	= W + 1000
width of bot. rail E70102	= 2W - 300
height of frame E70102	= H
width E70601	= W - 100
width E70602	= W + 1000
width of sash E70201	= (W- 60) / 2
height of sash E70201	= H - 85
sup. profile height E70551	= H - 128

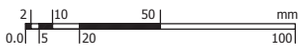
dimension in millimeters

all measurements are taken from the external side of the frame

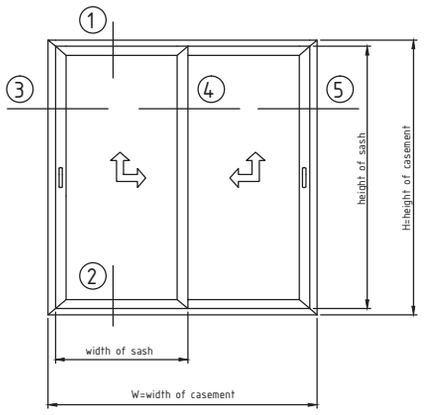








DOUBLE LEAF WITH LIFT & SLIDE MECHANISM T70-11

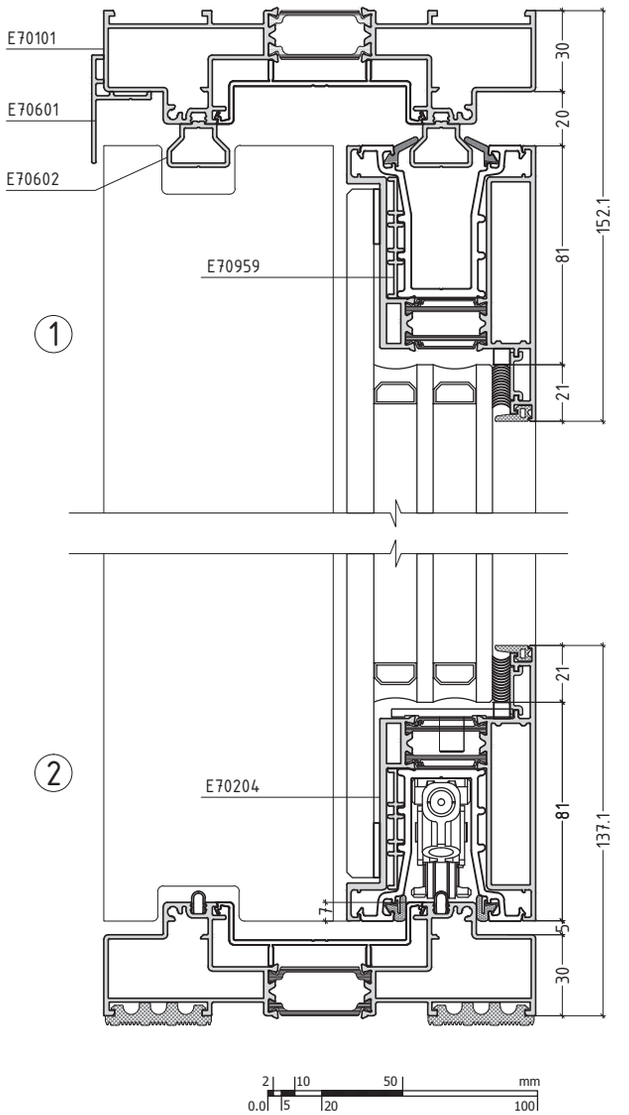


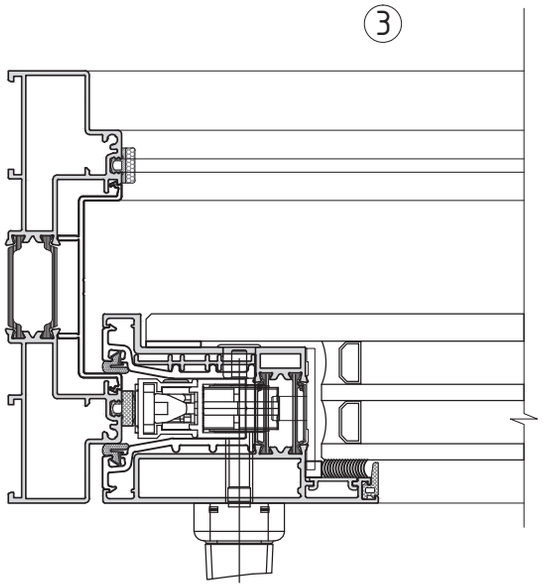
cutting lengths

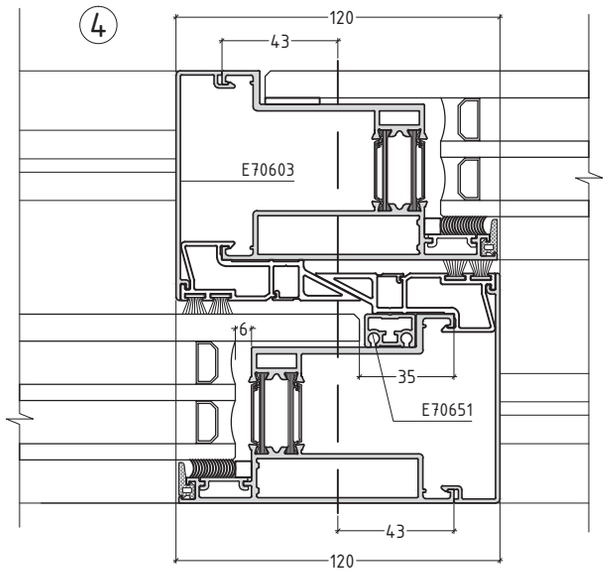
width of rail E70101	= W
height of frame E70101	= H
width E70601	= W
width E70602	= W - 85
width of sash E70204	= (W+16)/2
height of sash E70204	= H - 85
inter. profile height E70603	= H - 85

dimension in millimeters

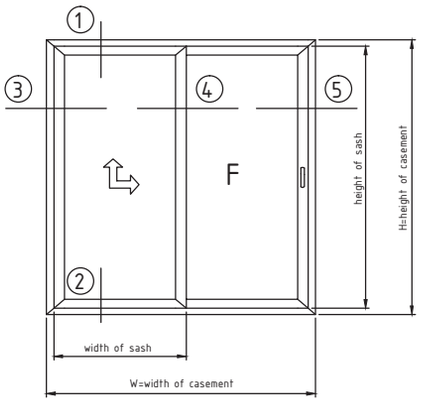
all measurements are taken from the external side of the frame







DOUBLE LEAF WITH LIFT & SLIDE MECHANISM AND FIXED SASH T70-13

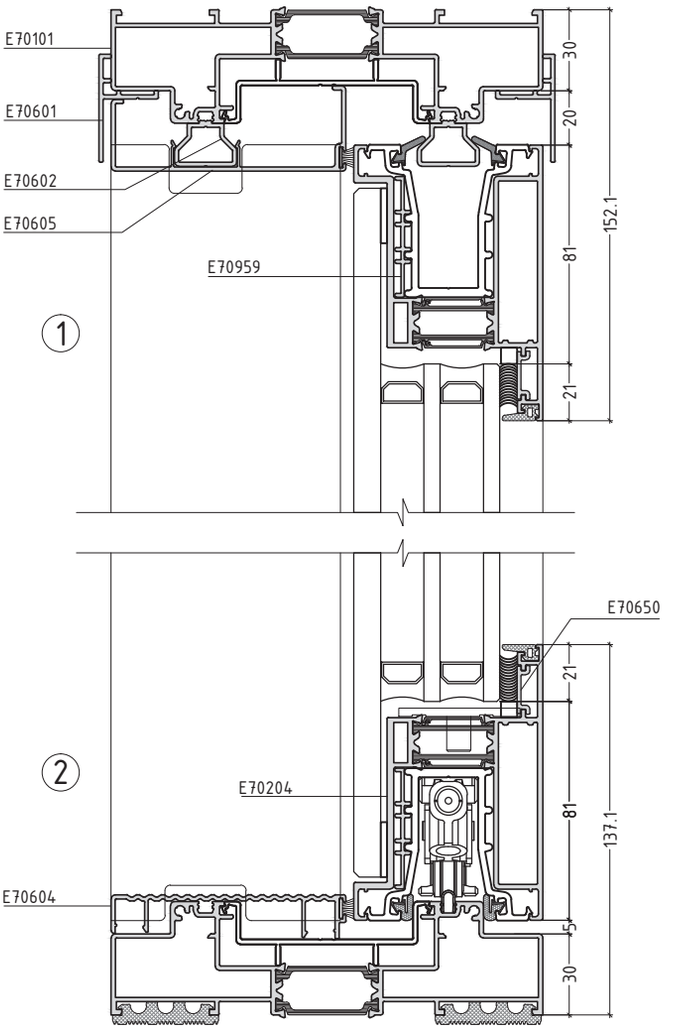


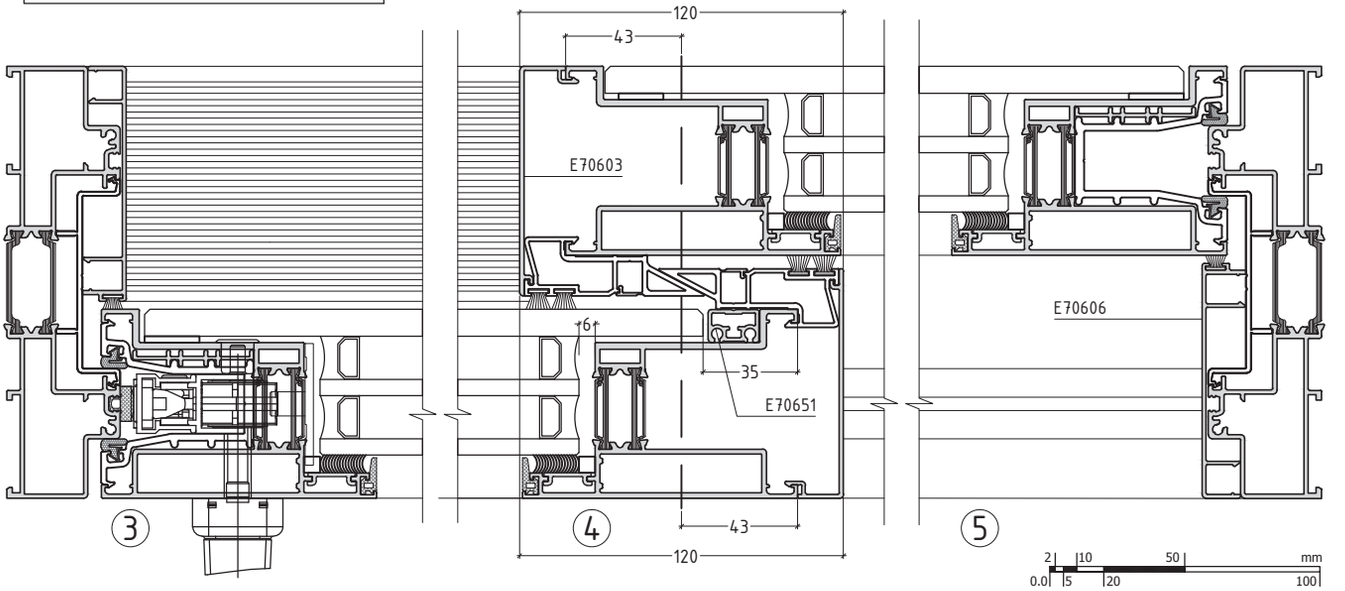
cutting lengths

width of rail E70101	= W
height of frame E70101	= H
width E70601	= W
width E70602	= W - 85
width of sash E70204	= (W+16)/2
height of sash E70204	= H - 85
inter. profile height E70603	= H - 85
E70606	= H - 105
E70604	= W/2 - 91
E70605	= W/2 - 91

dimension in millimeters

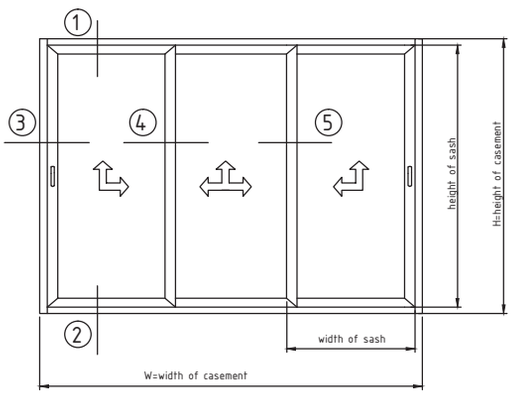
all measurements are taken from the external side of the frame

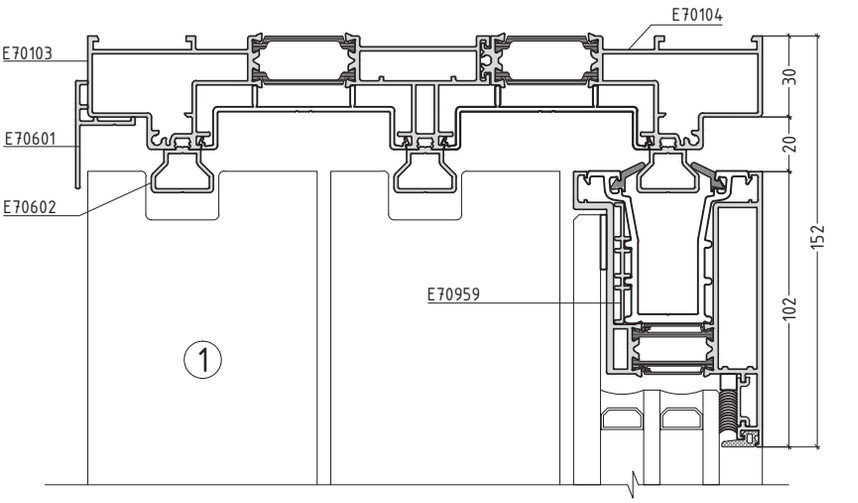


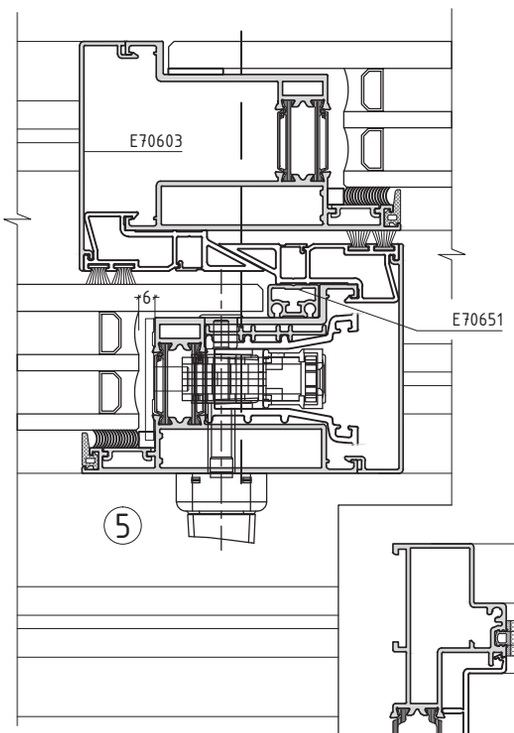


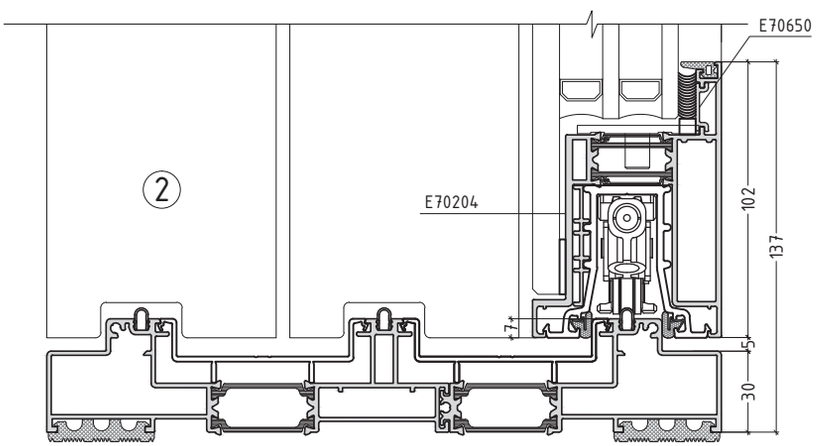
THREE LEAF WITH LIFT & SLIDE MECHANISM

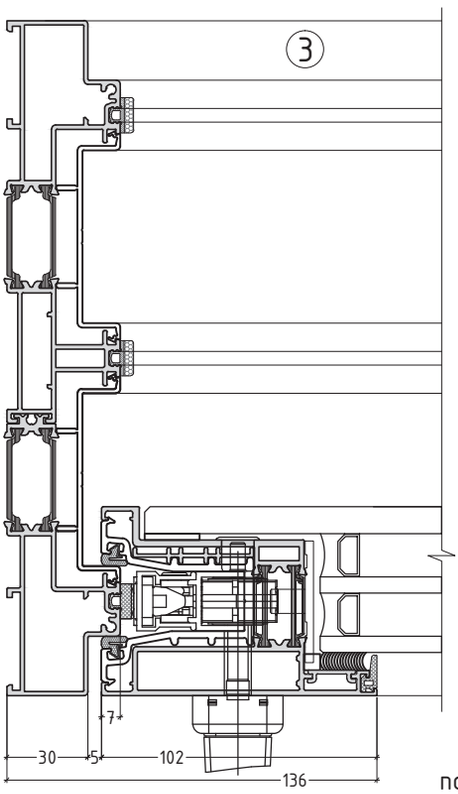
T70-14

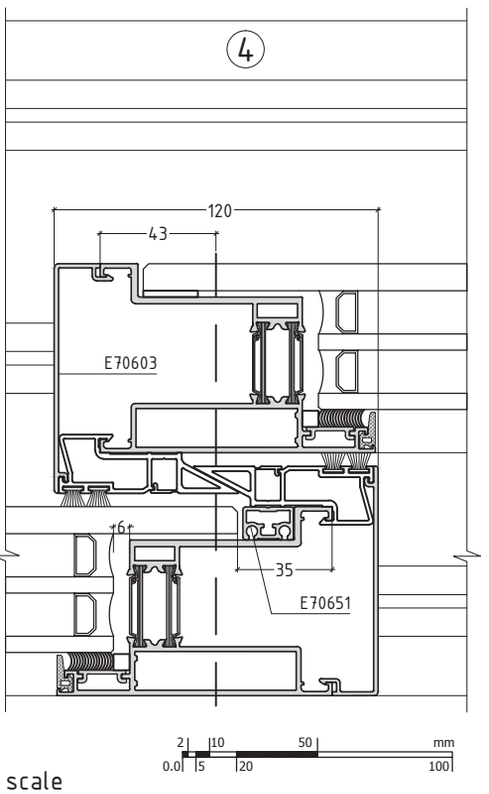












cutting lengths

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
inter. profile height E70603	= H - 85

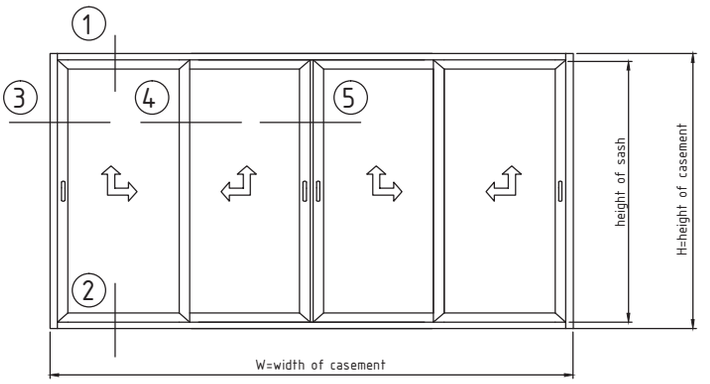
dimension in millimeters

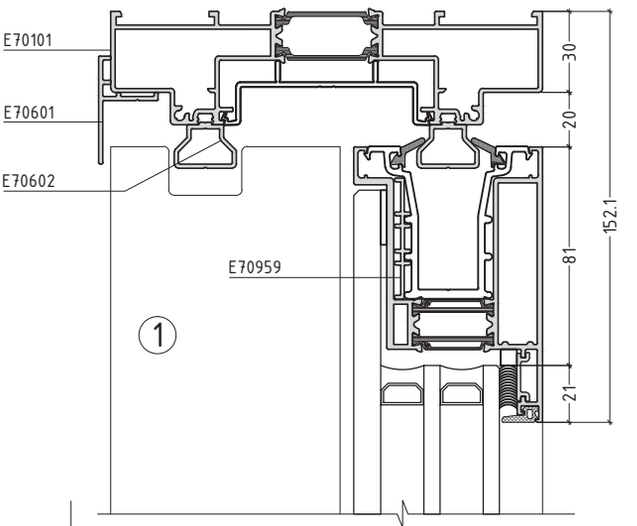
all measurements are taken from the external side of the frame

no scale

2 | 10 | 50 | mm
0.0 | 5 | 20 | 100

FOUR LEAF WITH LIFT & SLIDE MECHANISM T70-15



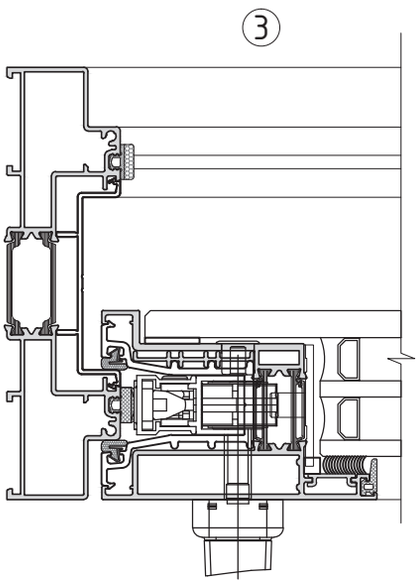


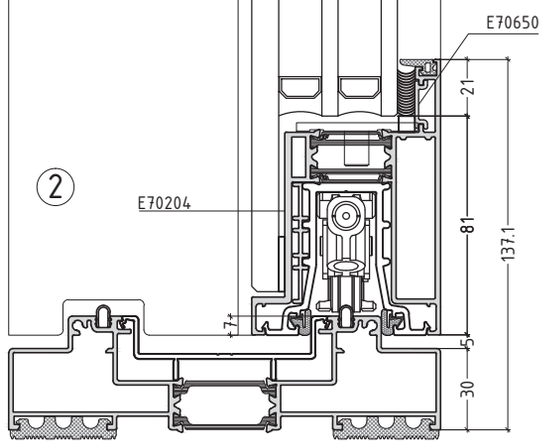
cutting lengths

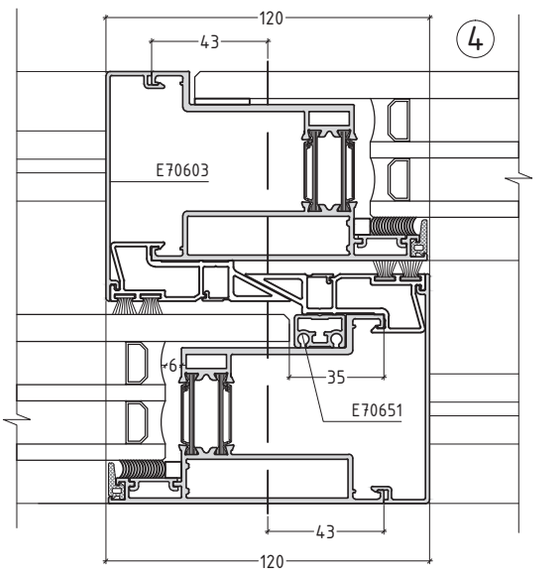
width of rail E70101	= W
height of frame E70101	= H
width E70601	= W
width E70602	= W – 85
width of sash E70201	= (W+88)/4
height of sash E70201	= H – 85
sup. profile height E70551	= H – 128
inter. profile height E70603	= H – 85

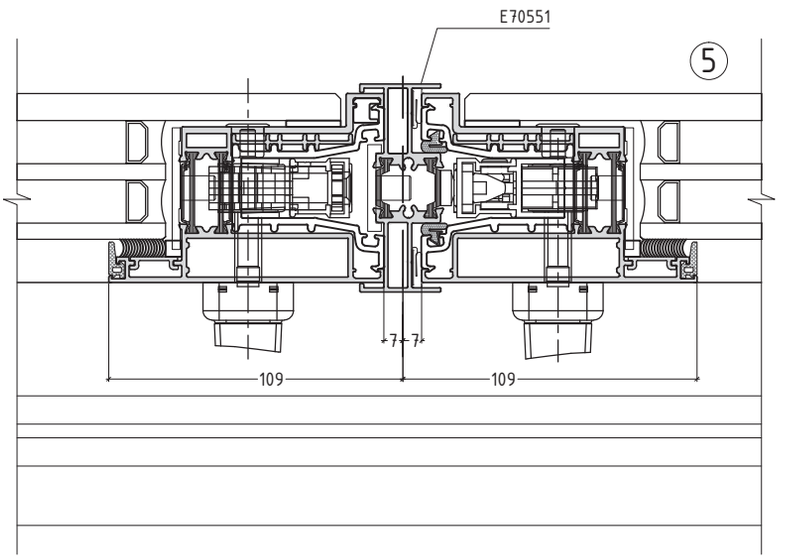
dimensions in milimeters

all measurements are taken from the external side of the frame

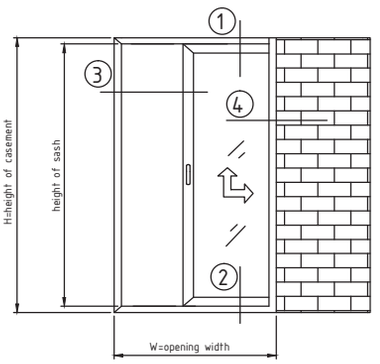








SINGLE LEAF WITH LIFT & SLIDE MECHANISM T70-16



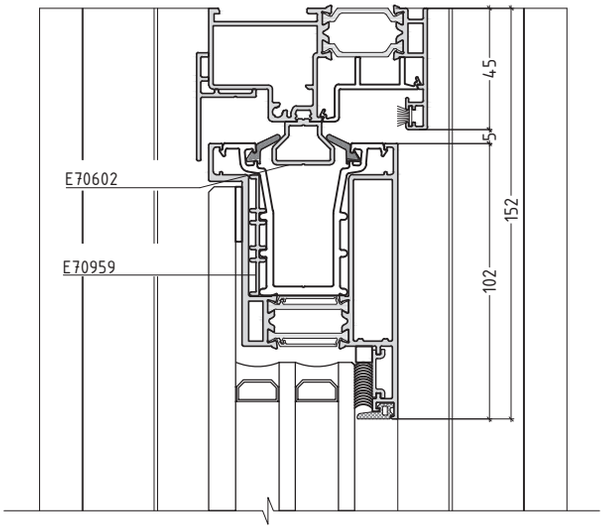
cutting lengths

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

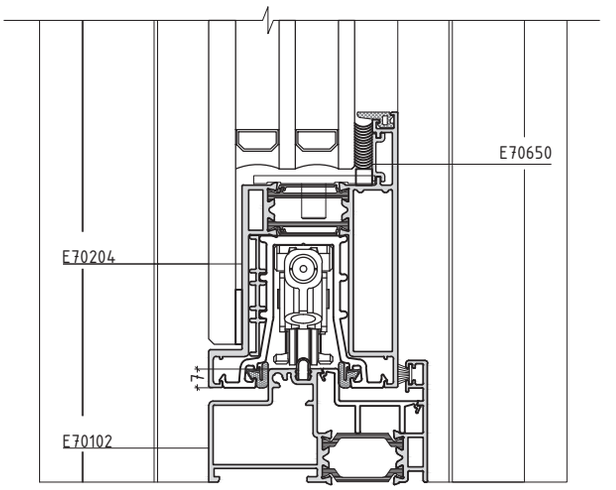
dimension in millimeters

all measurements are taken from the external side of the frame

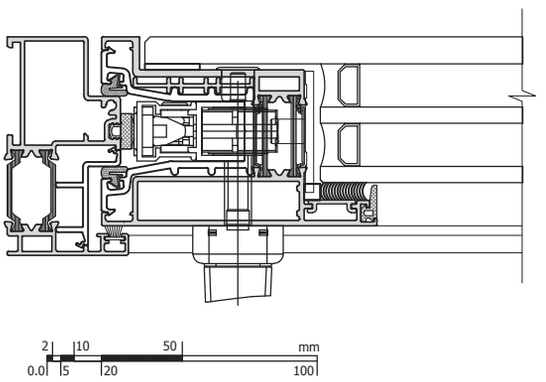
1



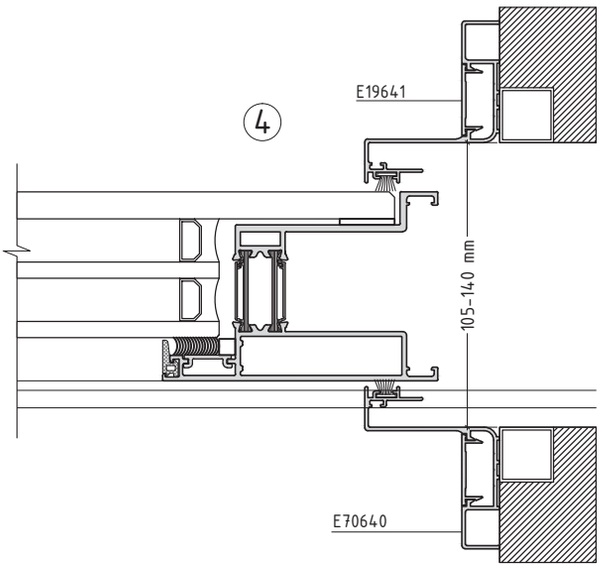
2



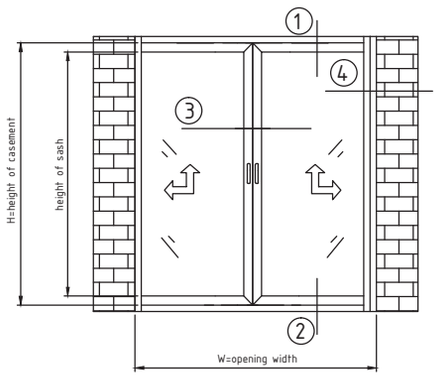
3

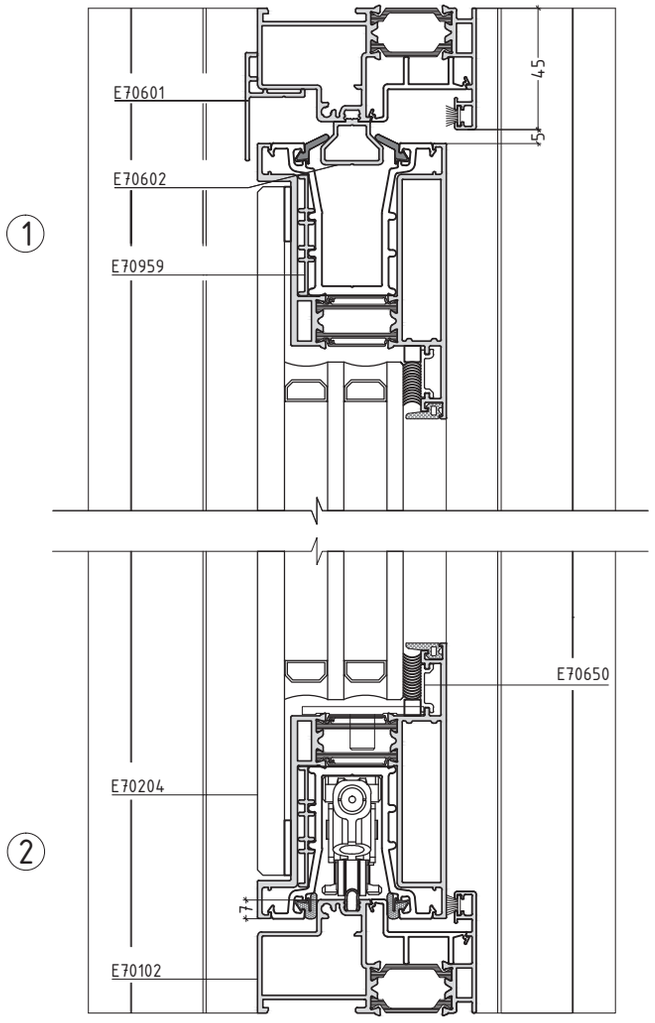


4



DOUBLE LEAF WITH LIFT & SLIDE MECHANISM T70-17



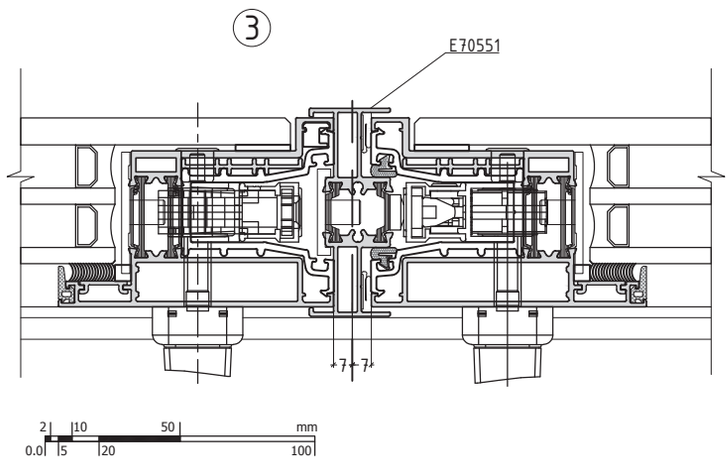


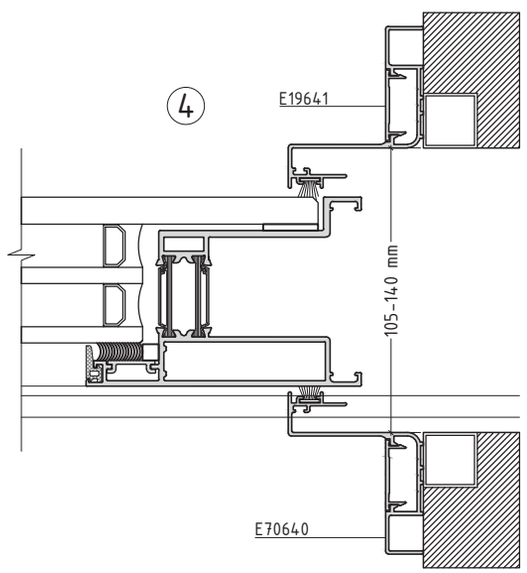
cutting lengths

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	= (W- 60) / 2
height of sash E70204	= H - 85
sup. profile height E70551	= H - 128

dimension in millimeters

all measurements are taken from the external side of the frame



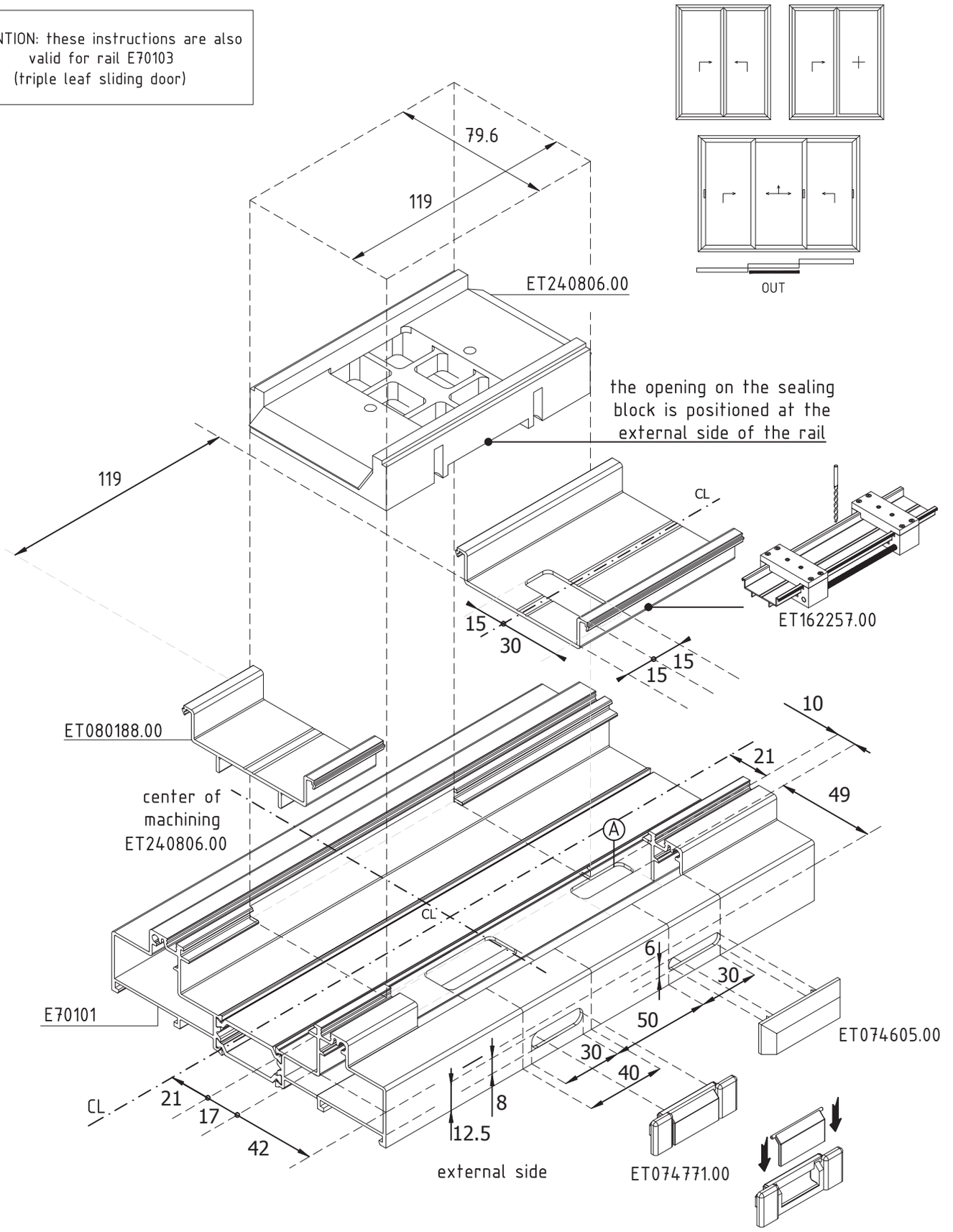


MACHINING

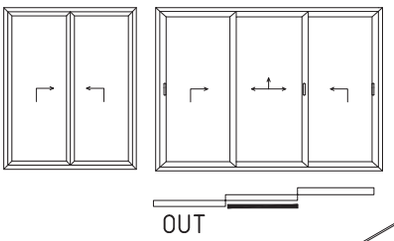
MACHINING ON E70101 FOR WATER DRAINAGE

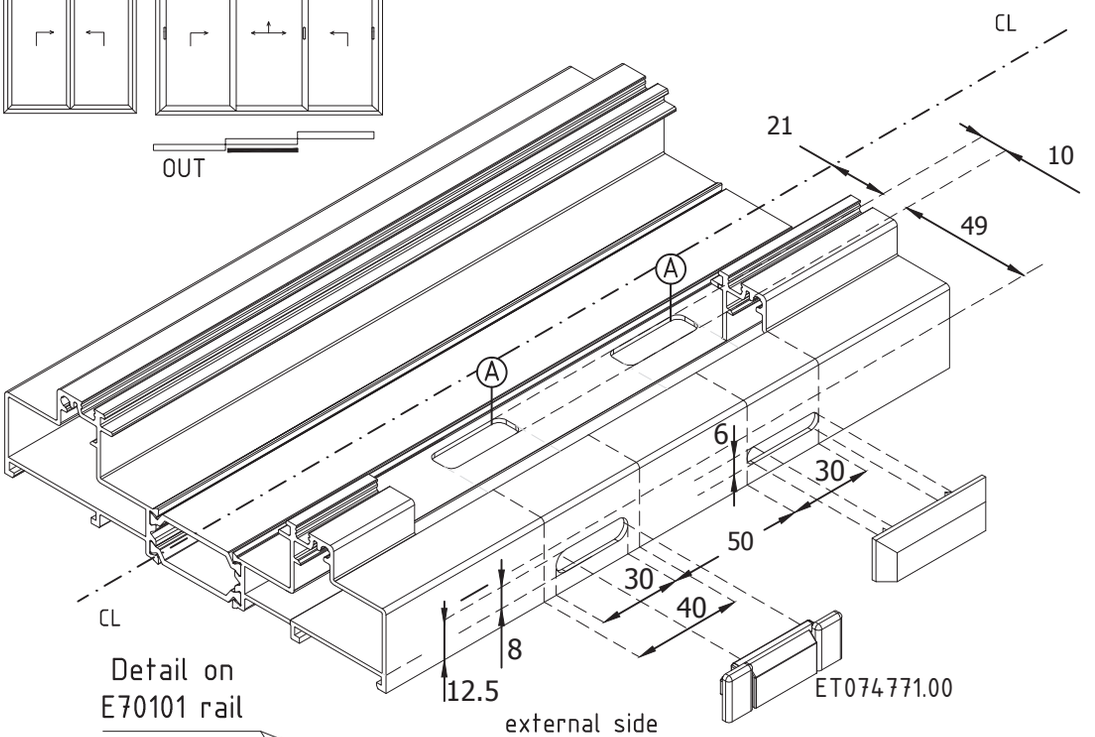
M70-01

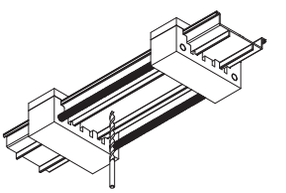
ATTENTION: these instructions are also valid for rail E70103 (triple leaf sliding door)



MACHINING ON E70101 FOR DRAINAGE M70-02

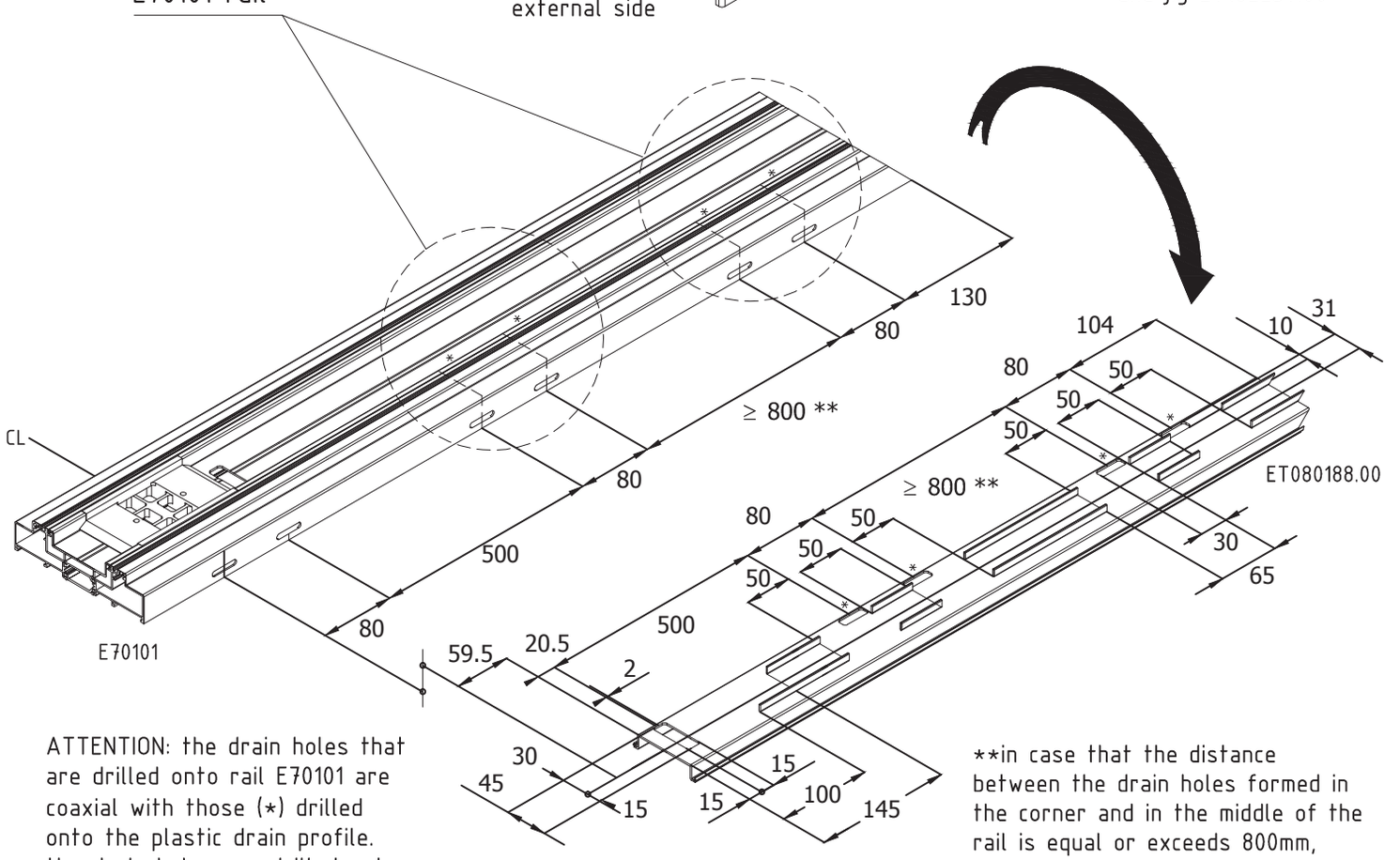






machining of the PVC profile is done using pantograph and jig ET162257.00

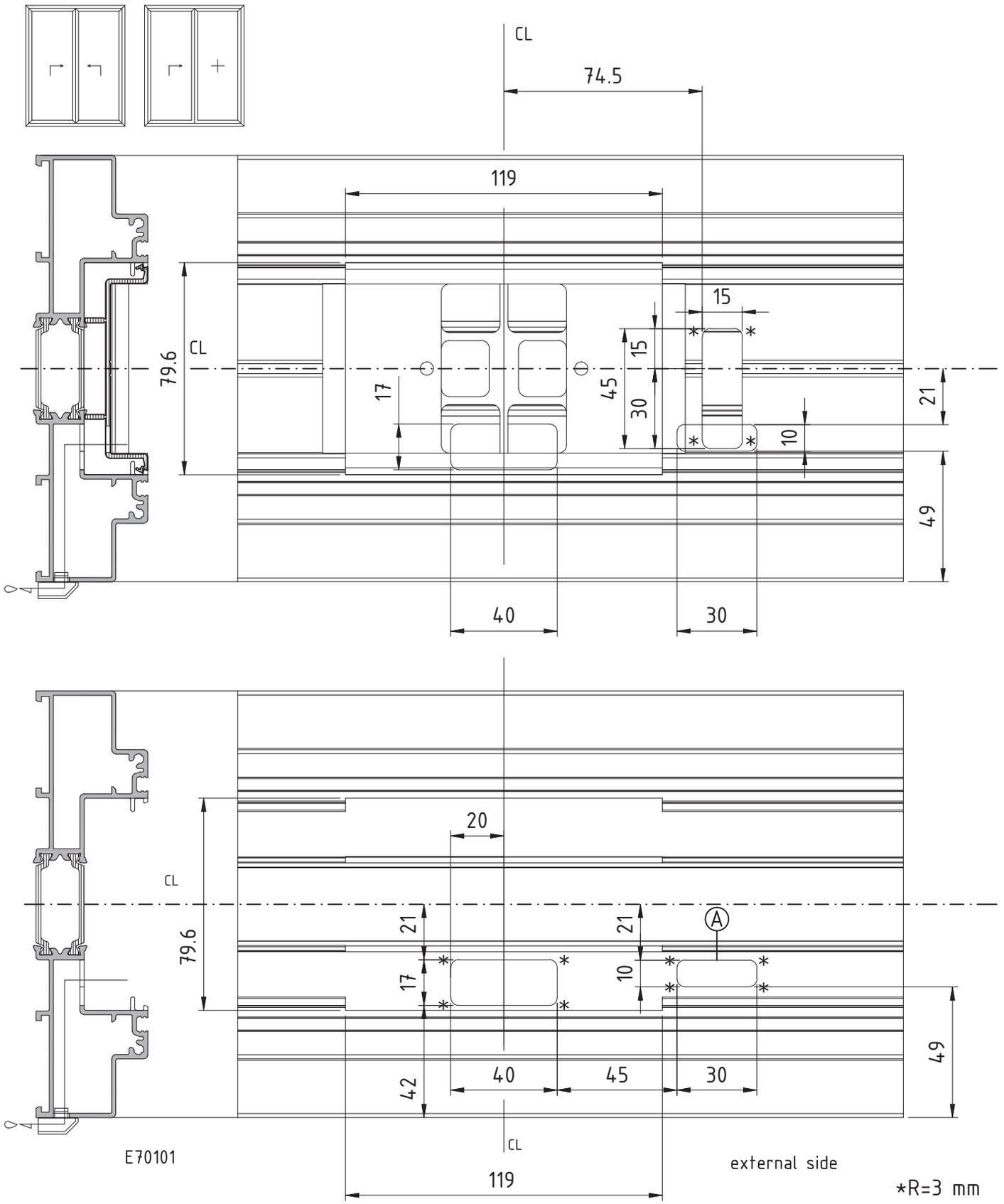
Detail on E70101 rail



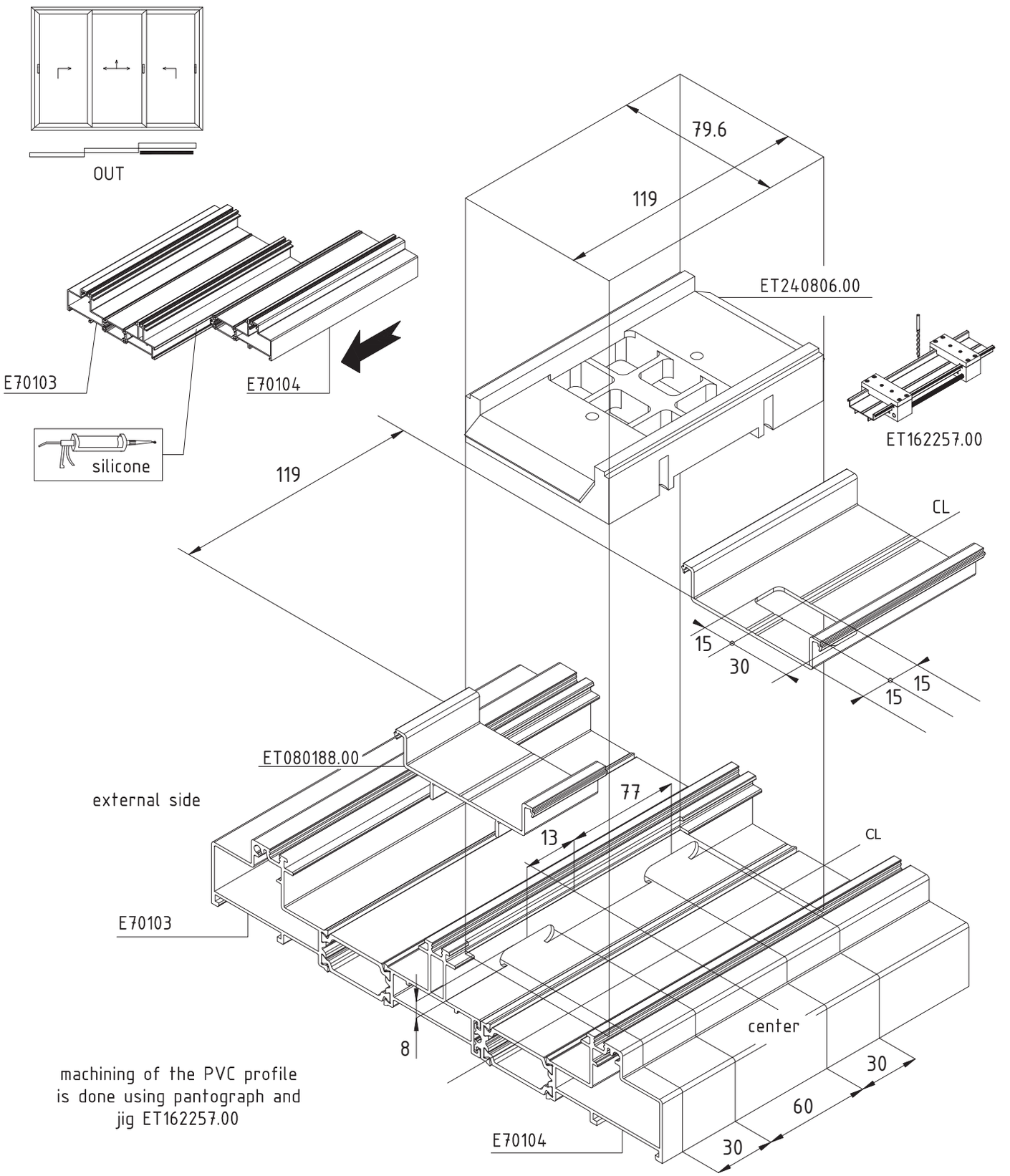
ATTENTION: the drain holes that are drilled onto rail E70101 are coaxial with those (*) drilled onto the plastic drain profile. the drain holes are drilled onto E70101 , as presented in M701-1 & M70-3 (mentioned as (A)

**in case that the distance between the drain holes formed in the corner and in the middle of the rail is equal or exceeds 800mm, then an extra pair of drain holes is punched in between, as presented in the drawing

MACHINING ON E70101 FOR DRAINAGE M70-03

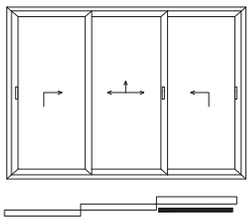


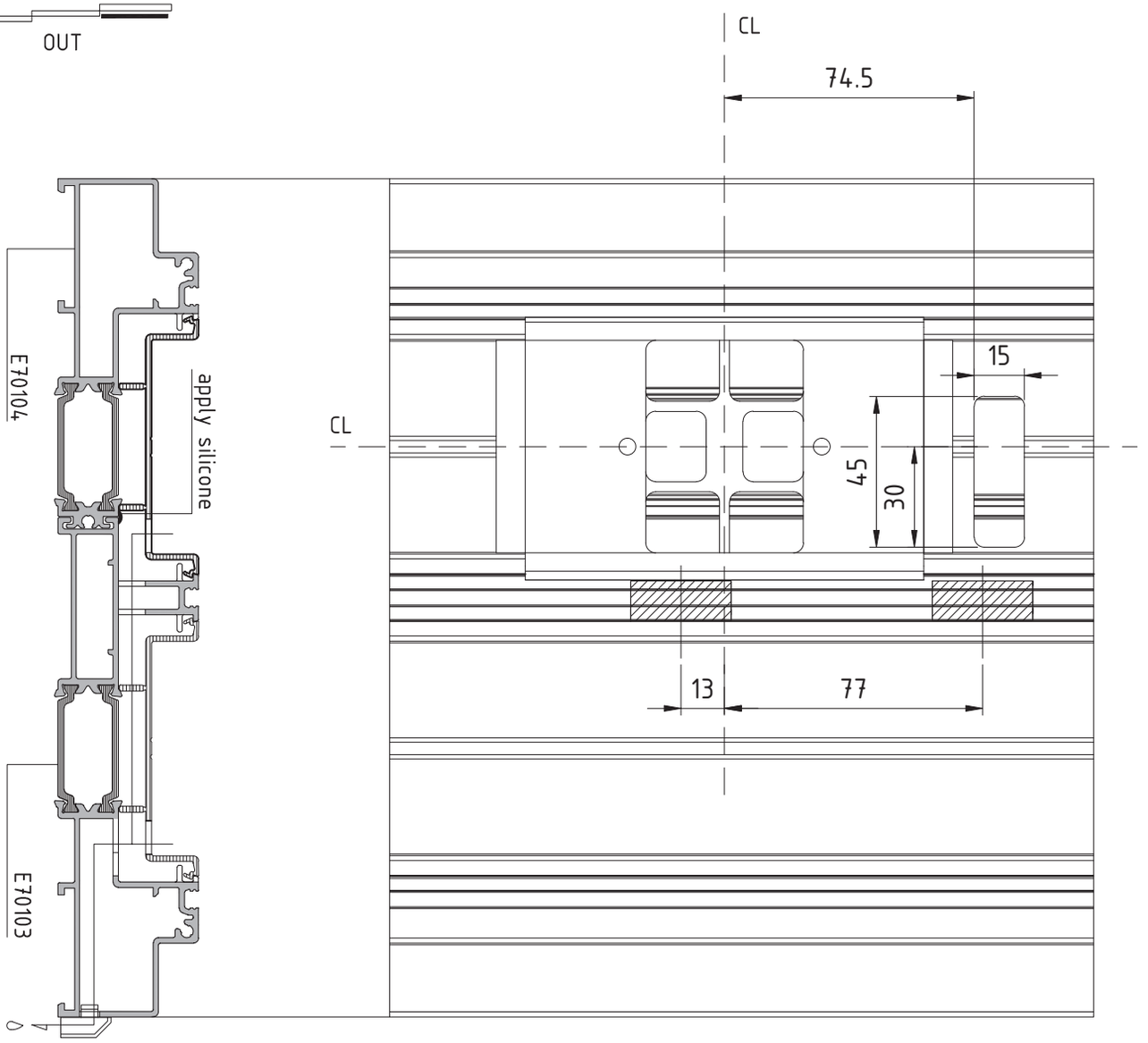
MACHINING ON E70103 & E70104 FOR DRAINAGE M70-04



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

MACHINING ON E70103 & E70104 FOR DRAINAGE M70-05

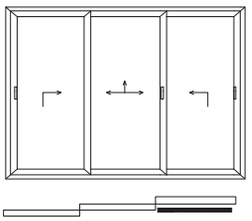




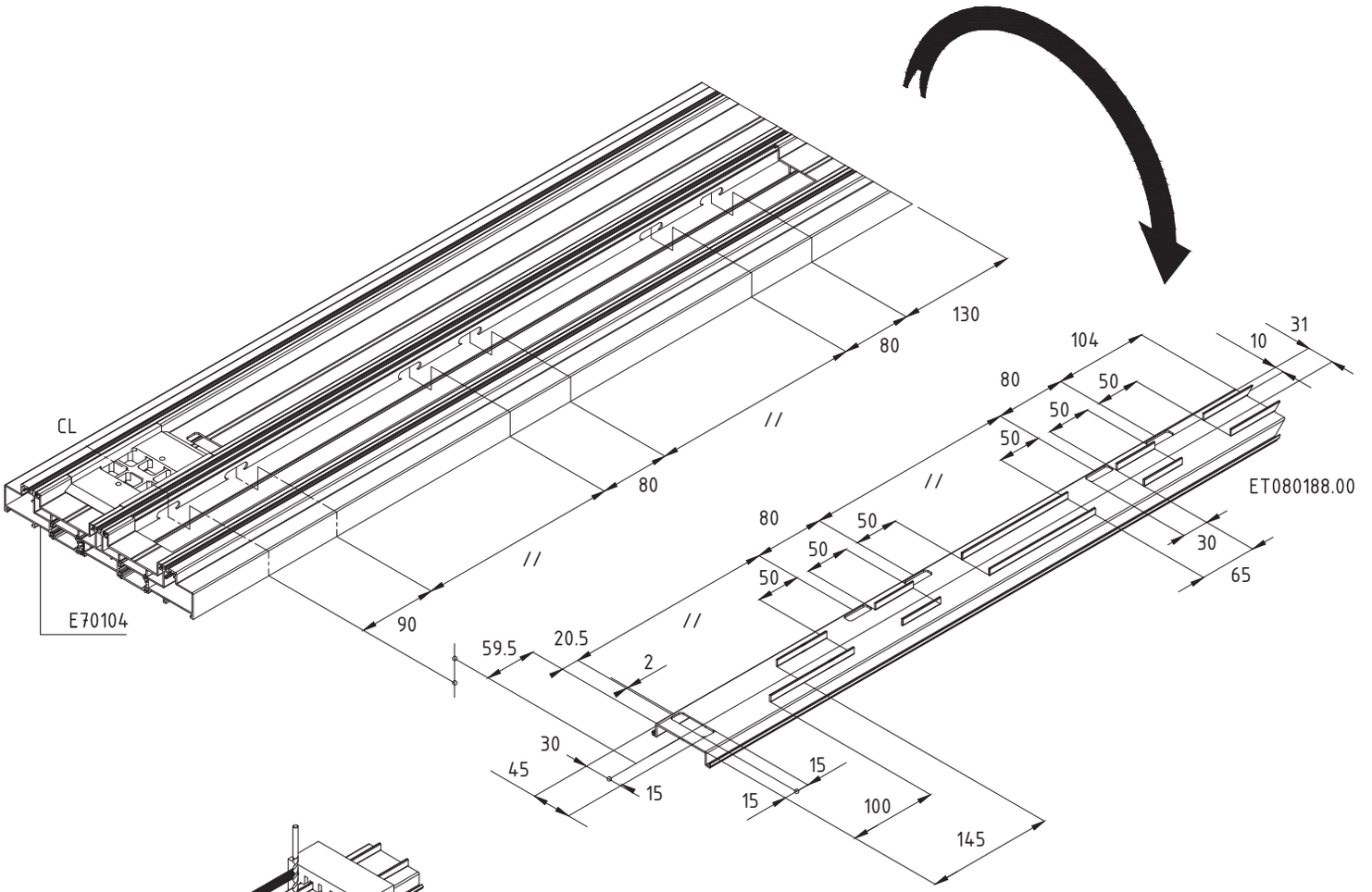
external side

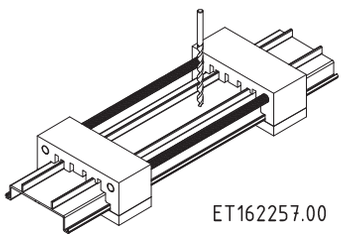
ATTENTION: the machining performed on rail E70103 is the same performed on rail E70101 (double leaf sliding door)

MACHINING ON RAIL E70104 FOR DRAINAGE M70-06



OUT



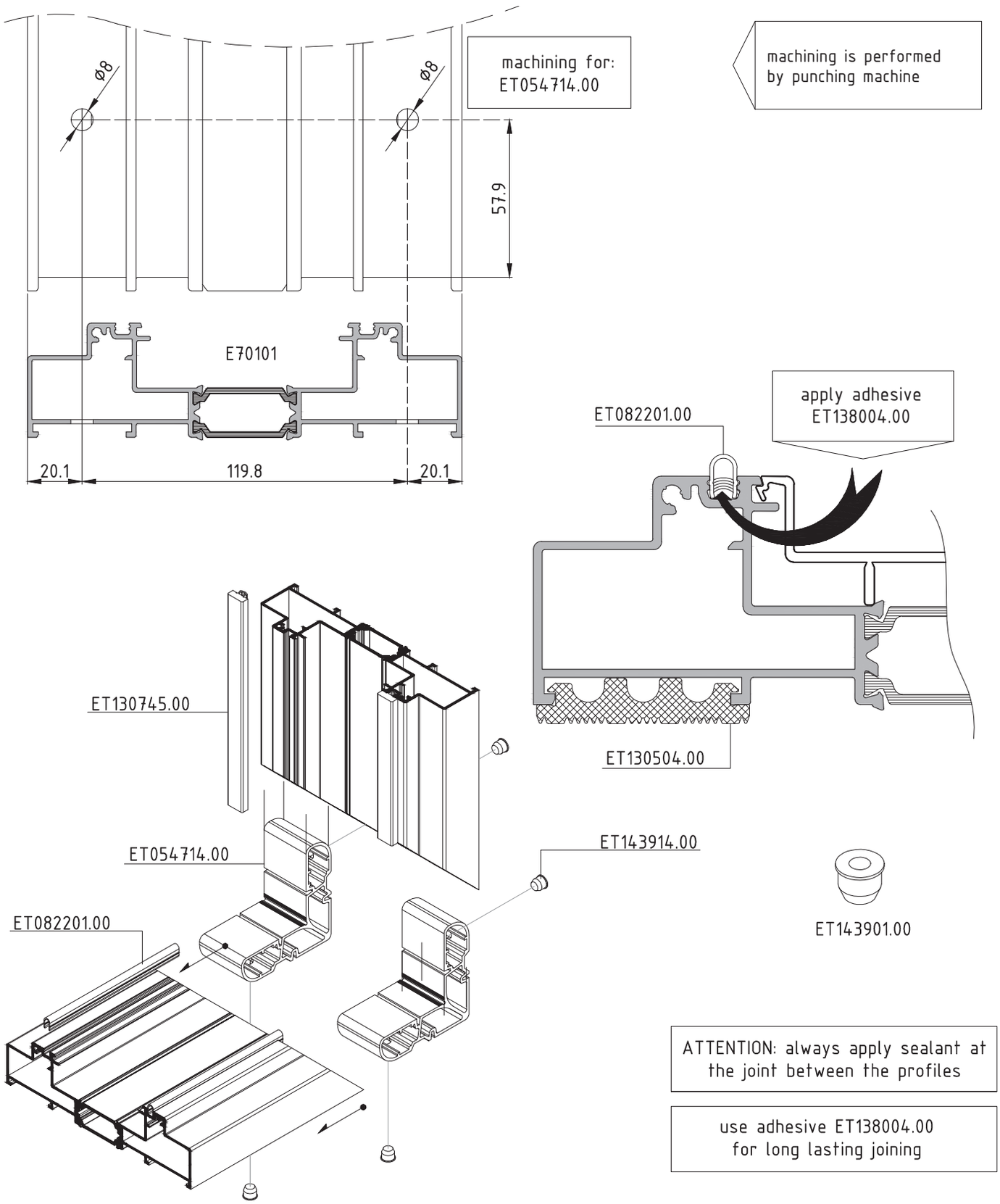


ET162257.00

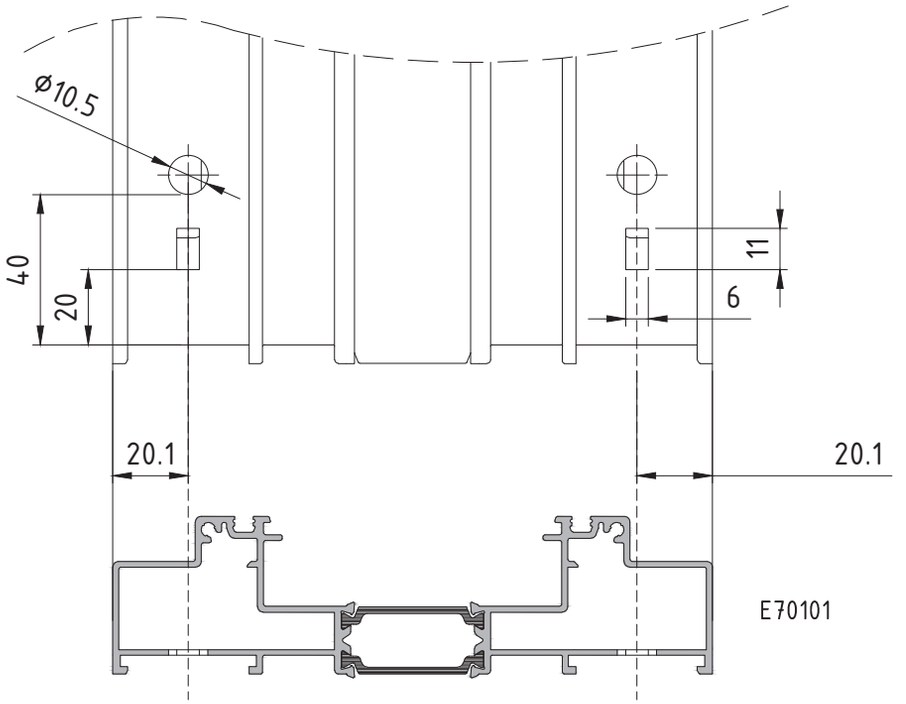
machining of the PVC profile
is done using pantograph and
jig ET162257.00

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

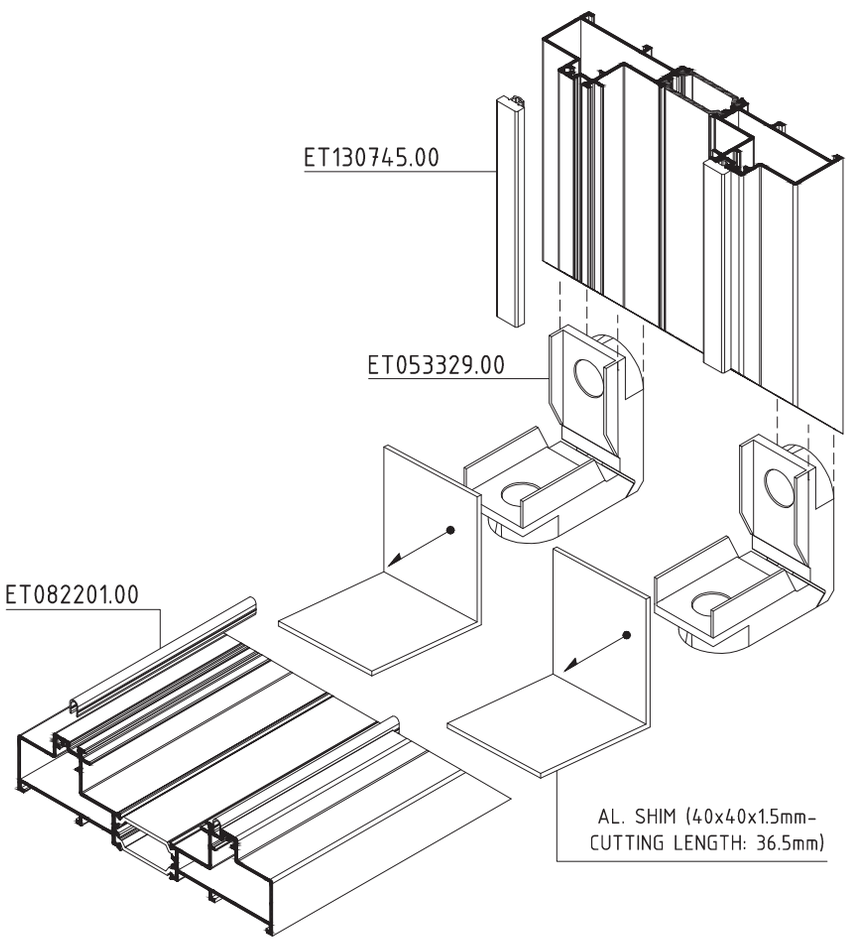


MACHINING REQUIRED FOR CONNECTION OF RAIL USING DIE CUST CORNERS M70-08



machining is performed by punching machine

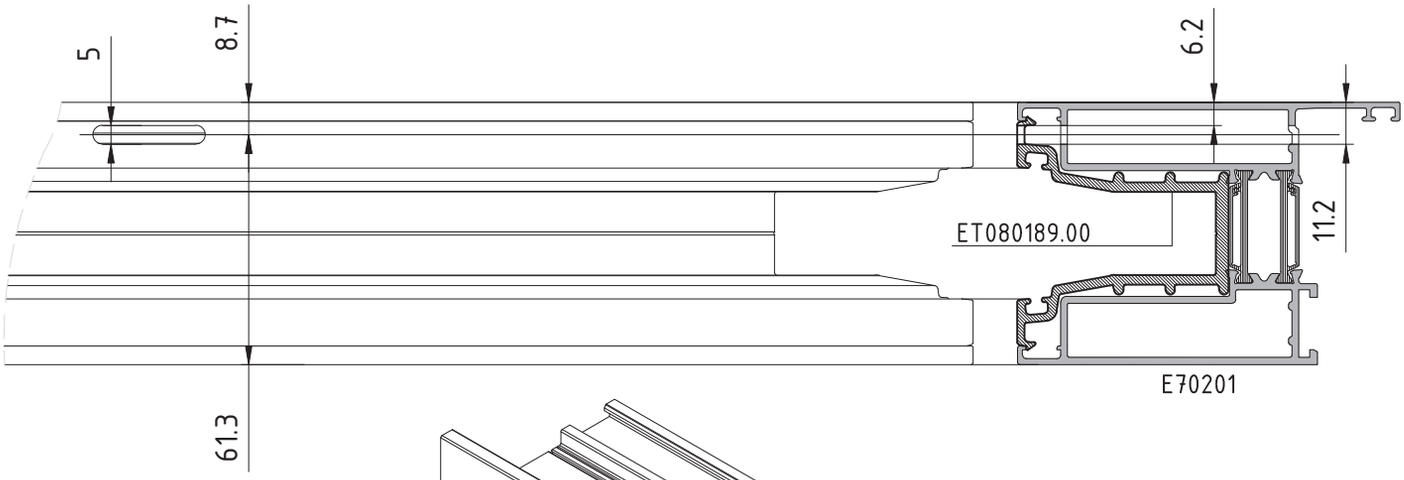
machining for: ET053329.00

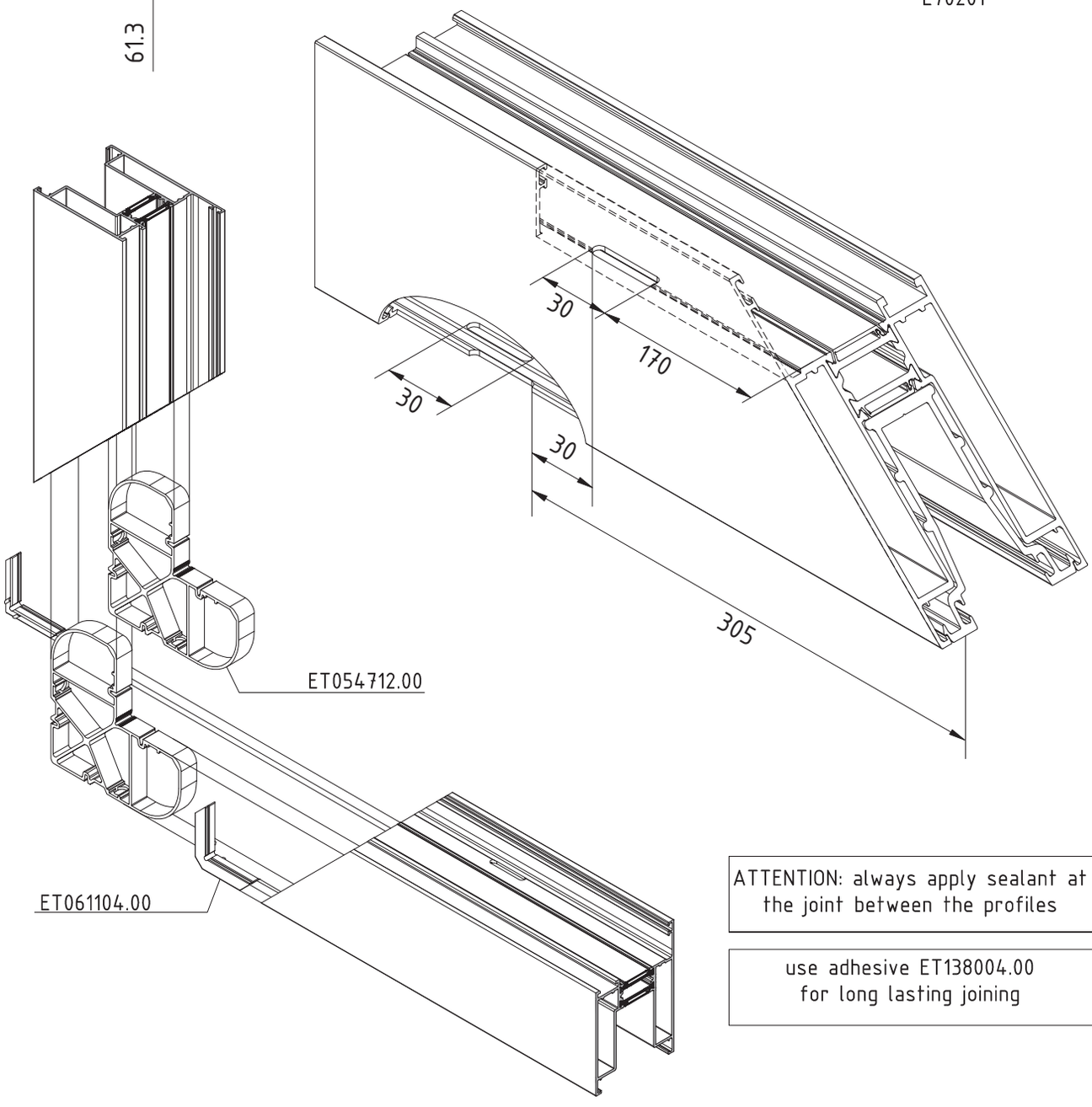


ATTENTION: always apply sealant at the joint between the profiles

use adhesive ET138004.00 for long lasting joining

MACHINING REQUIRED FOR CONNECTION & DRAINAGE OF E70201 M70-09

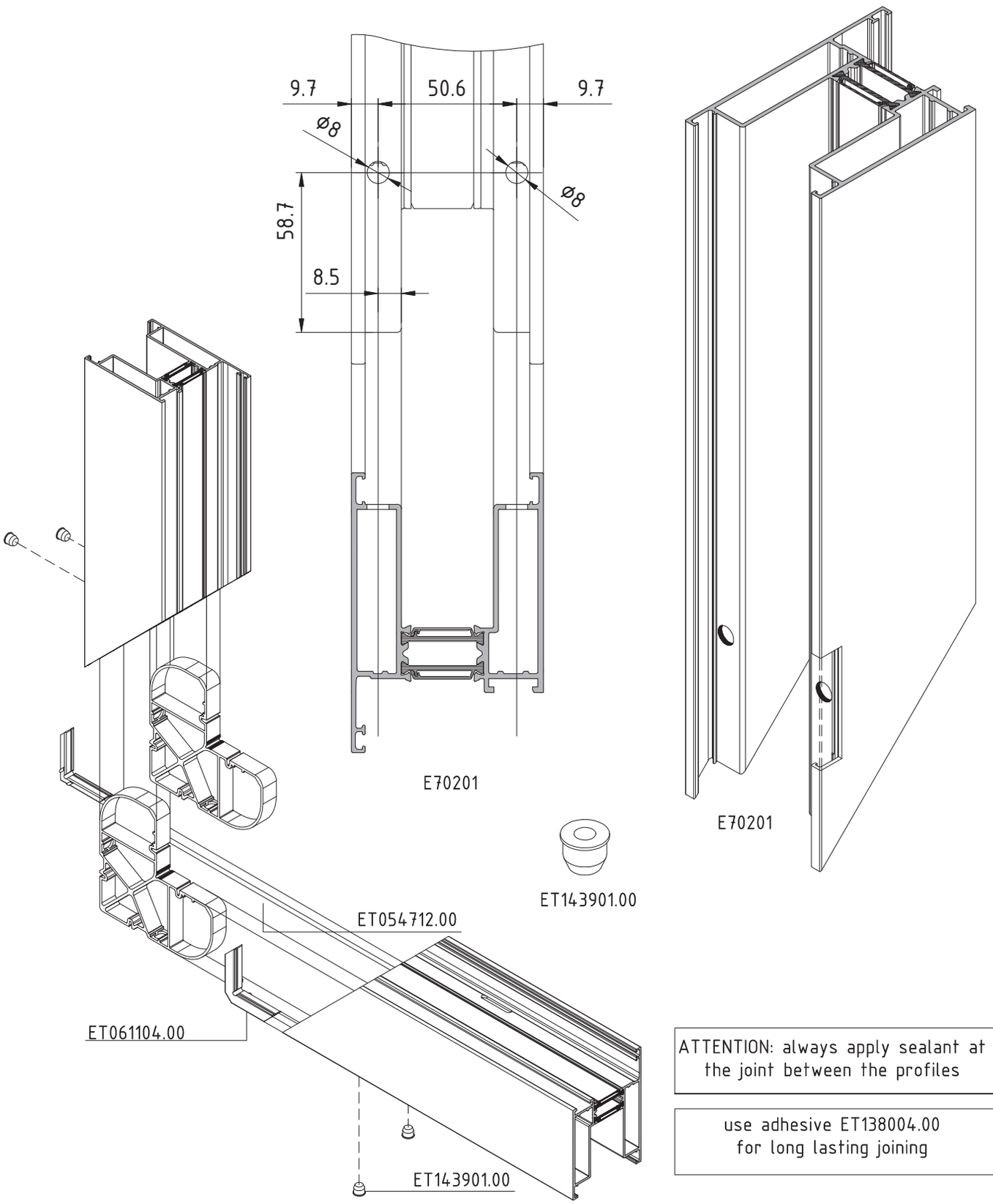




ATTENTION: always apply sealant at the joint between the profiles

use adhesive ET138004.00 for long lasting joining

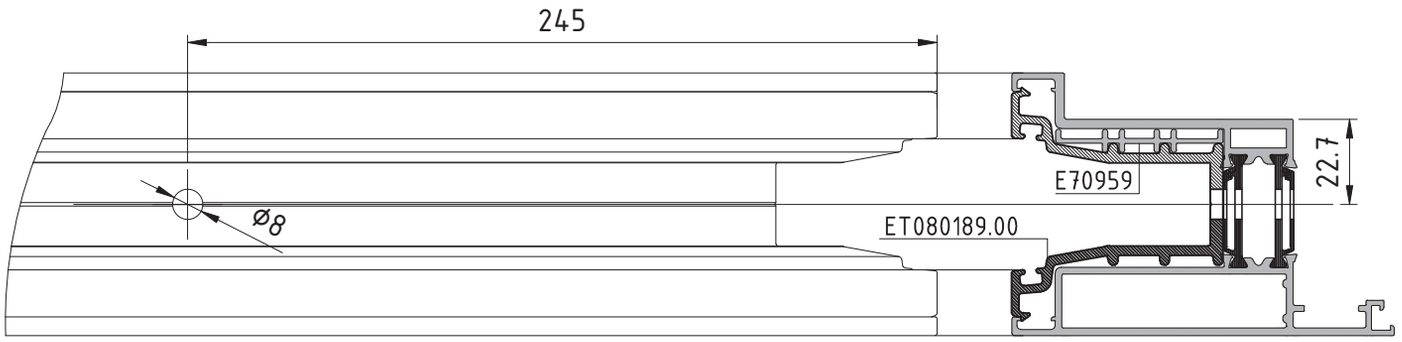
MACHINING REQUIRED FOR CONNECTION OF E70201 USING ROLL PINS M70-10



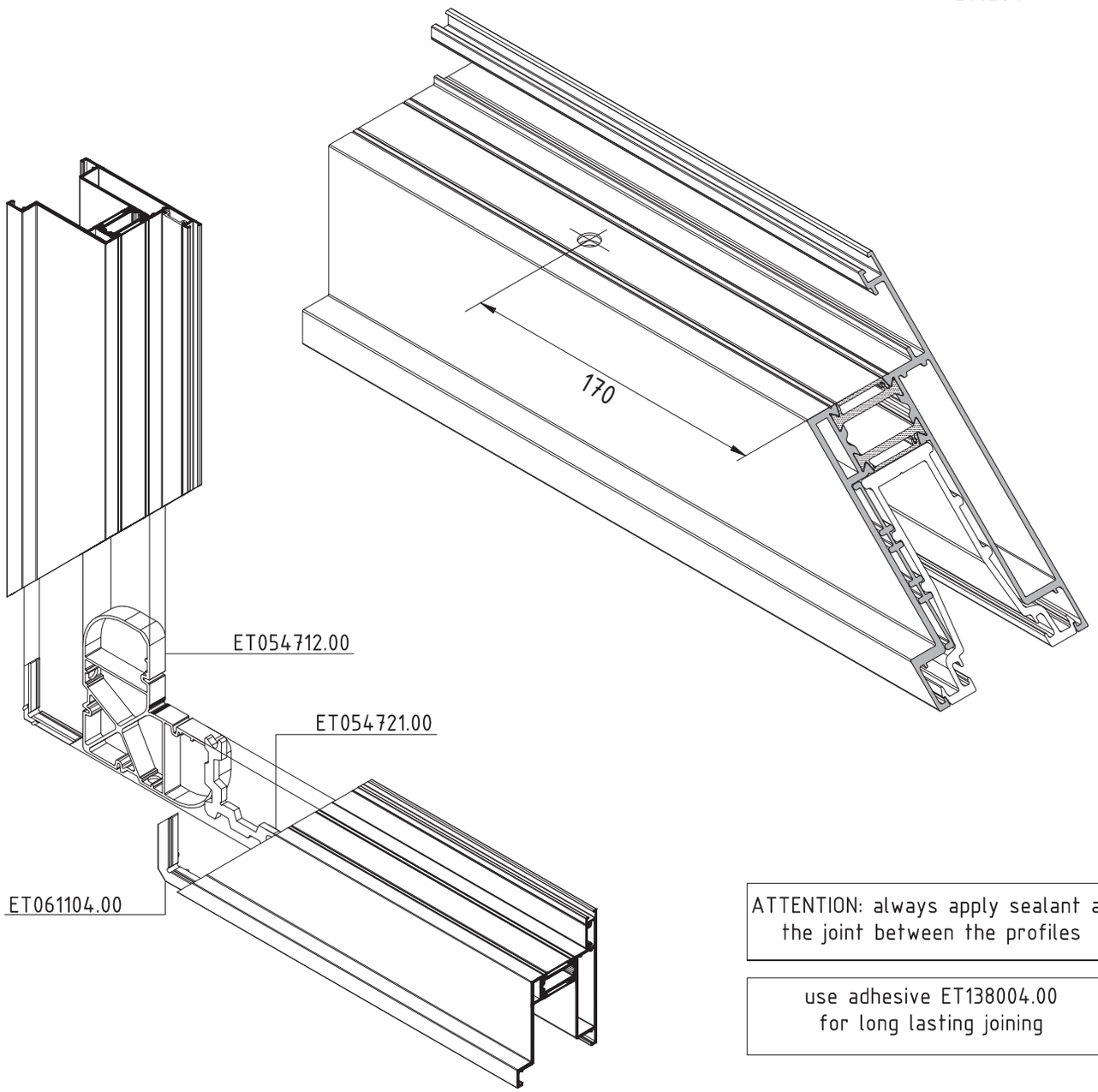
ATTENTION: always apply sealant at the joint between the profiles

use adhesive ET138004.00 for long lasting joining

MACHINING REQUIRED FOR CONNECTION & DRAINAGE OF E70204 M70-11



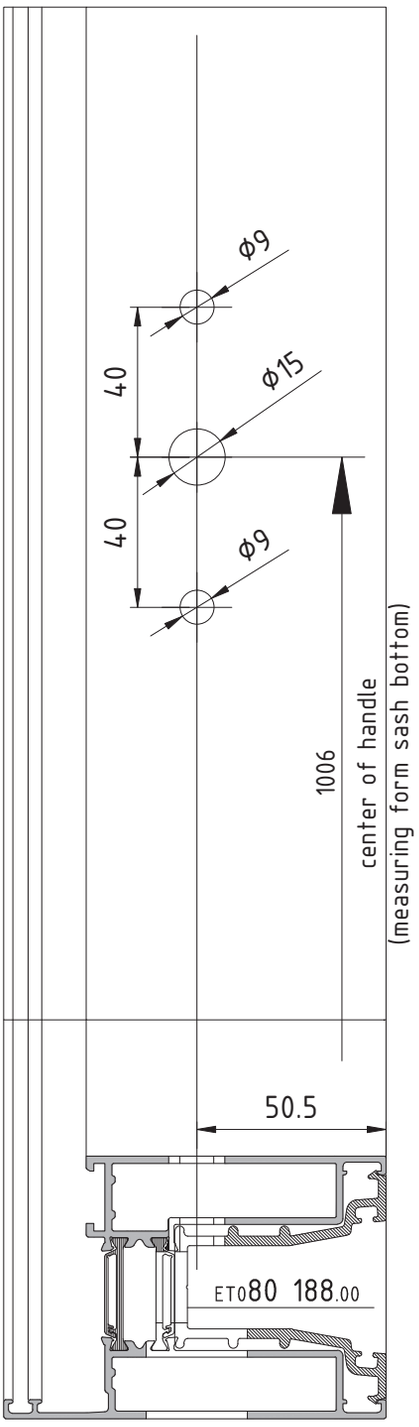
E70204

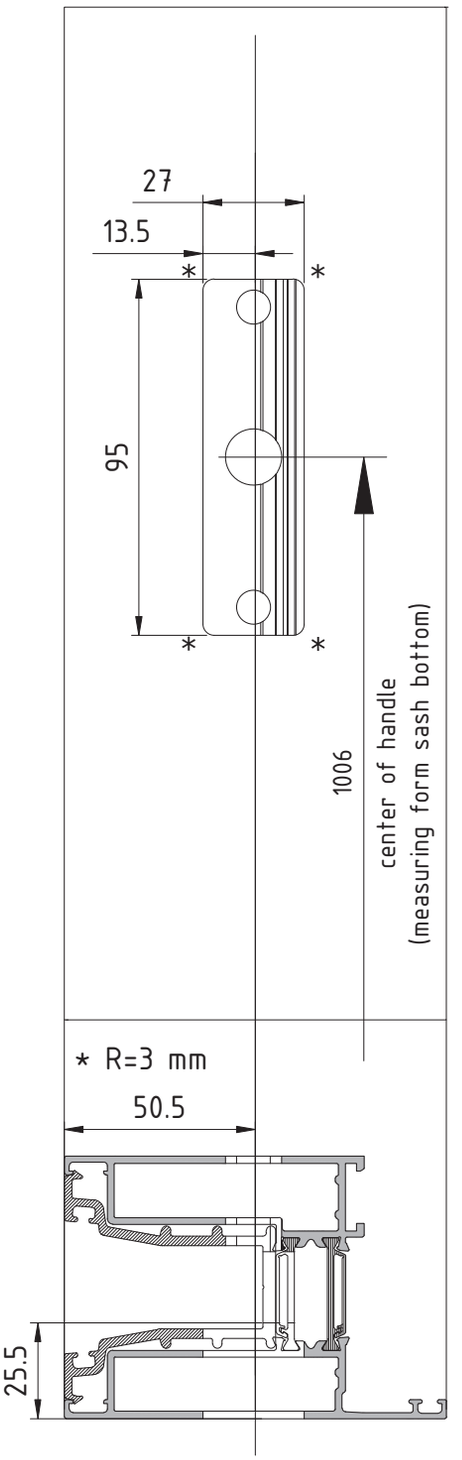


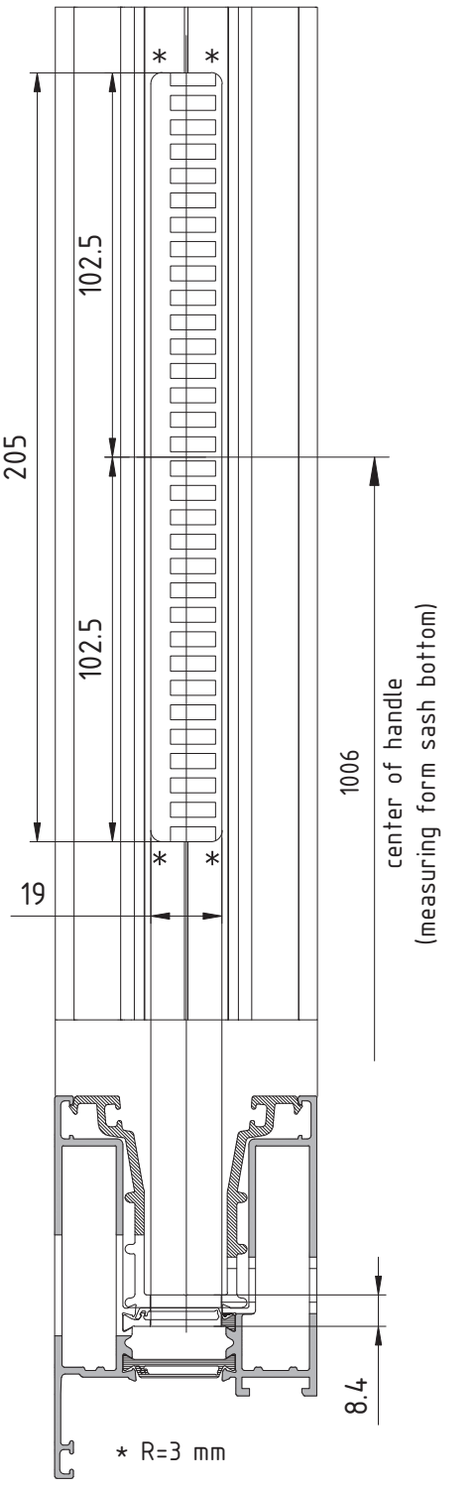
ATTENTION: always apply sealant at the joint between the profiles

use adhesive ET138004.00 for long lasting joining

MACHINING REQUIRED FIXING THE HANDLE & HARDWARE ON E70201 M70-12



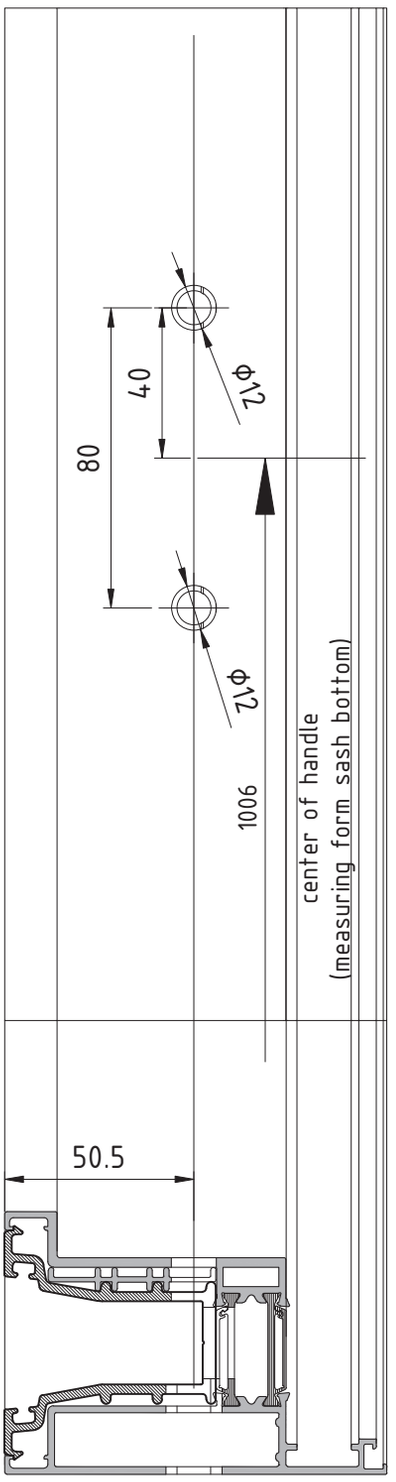


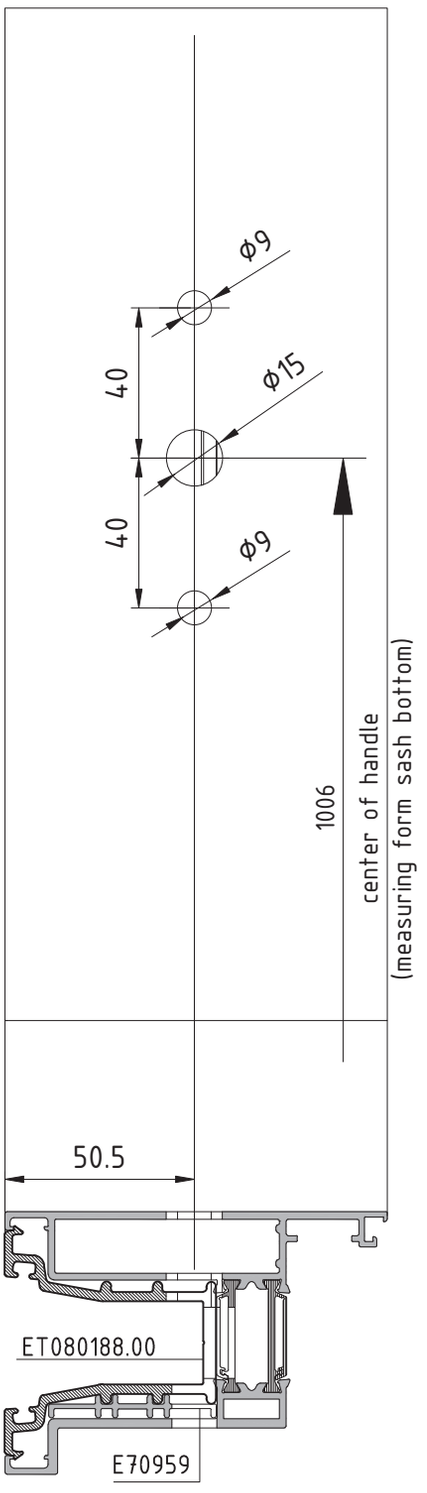


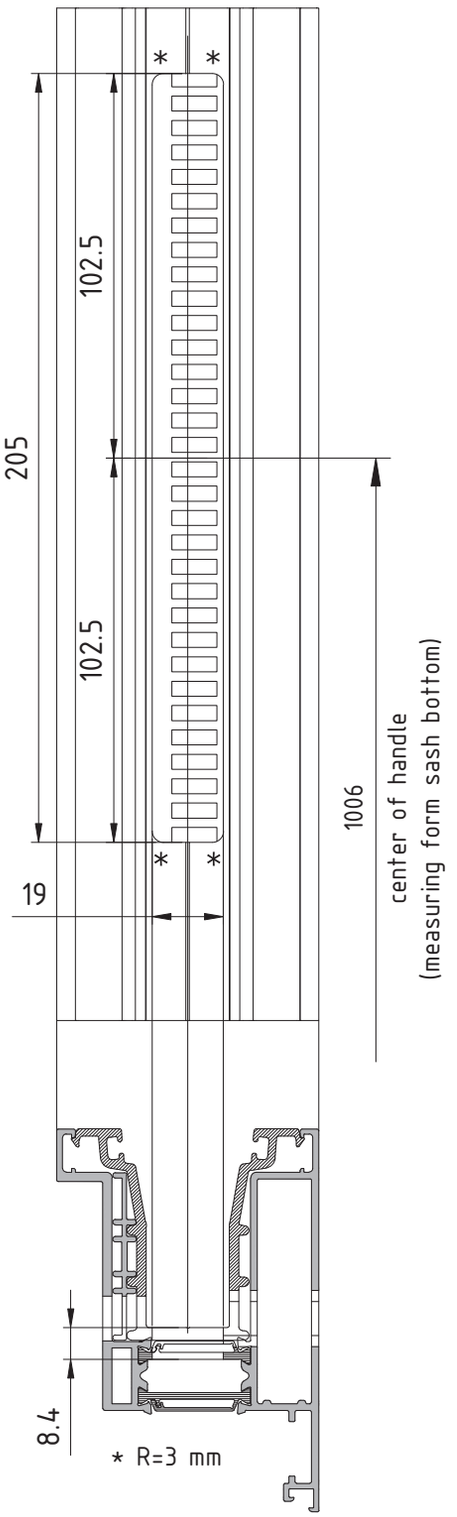
ATTENTION: all the above are valid for 250 kg lift & slide hardware

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

MACHINING REQUIRED FIXING THE HANDLE & HARDWARE ON E70204 M70-13



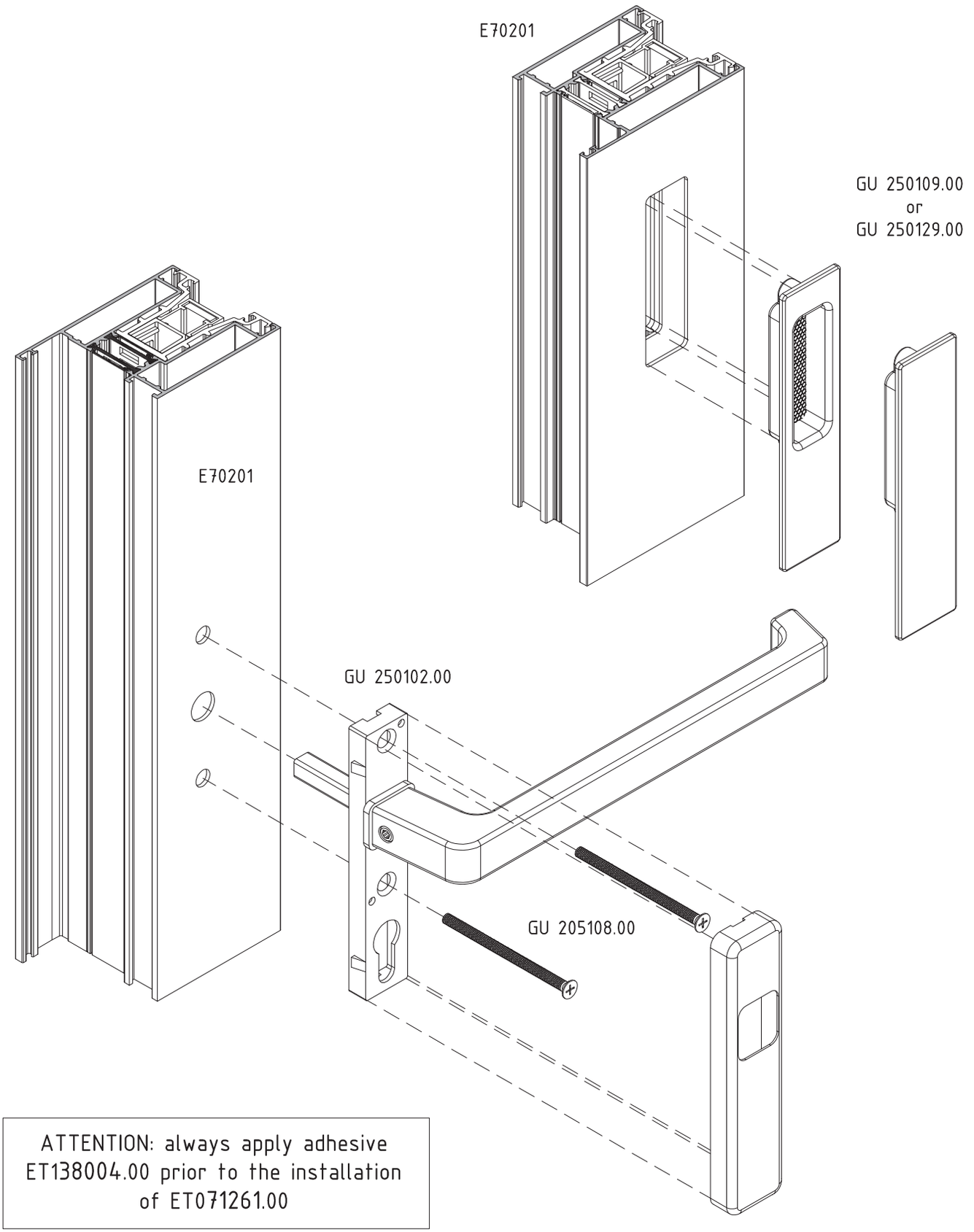




ATTENTION: the center of the hardware is valid only for doors

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

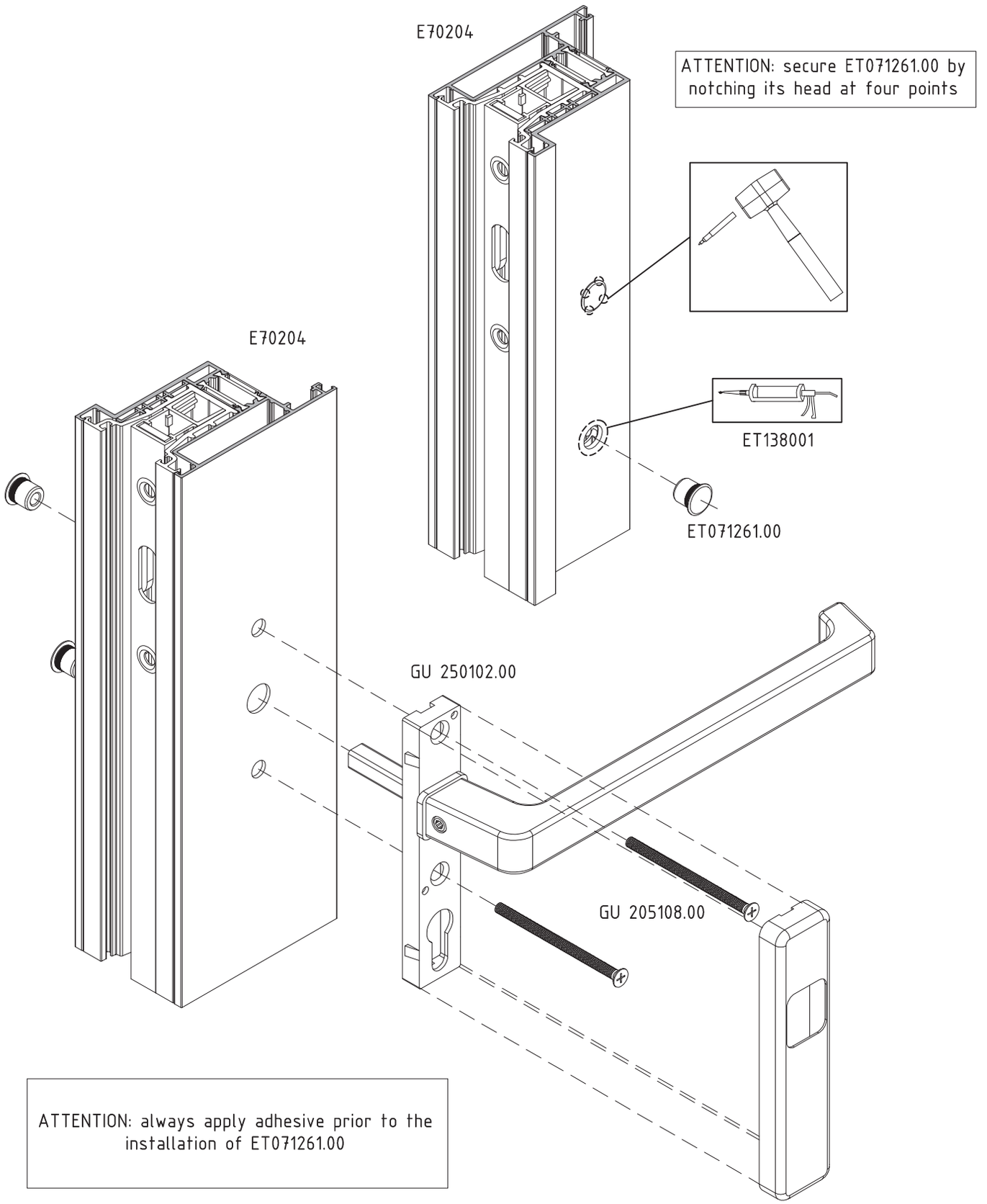
FIXING THE HANDLE OF HARDWARE G.U. 934 ON SASH E70201 M70-14



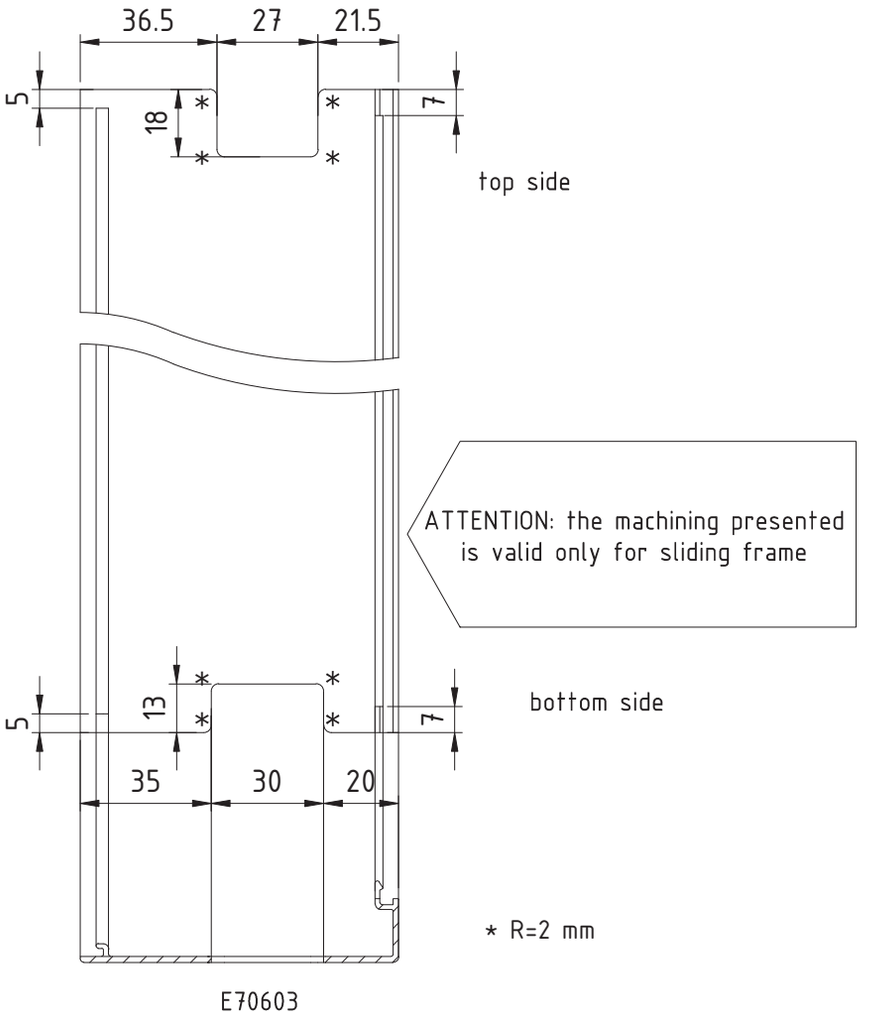
ATTENTION: always apply adhesive ET138004.00 prior to the installation of ET071261.00

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

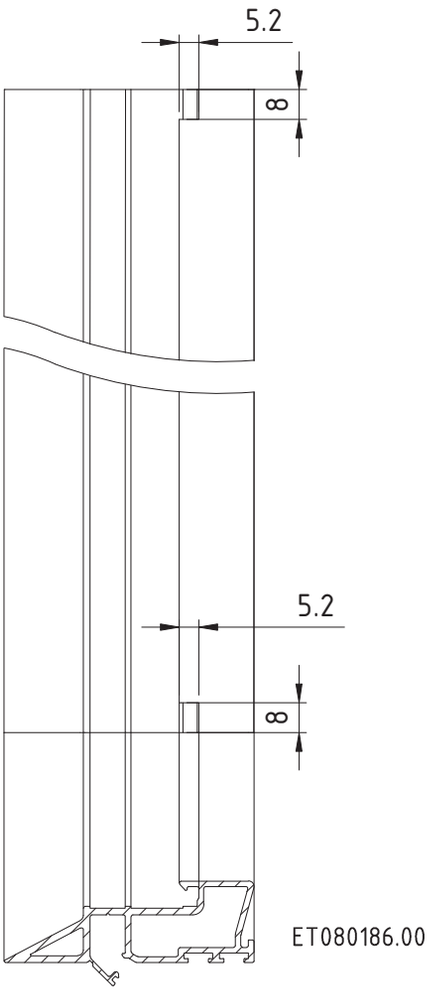
M70-15



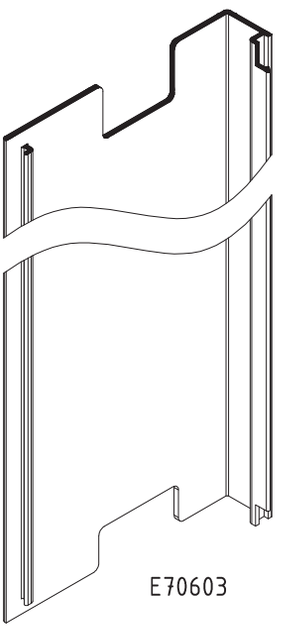
MACHINING ON INTERLOCK PROFILES E70603 & ET080186.00 FOR SLIDING FRAME M70-16



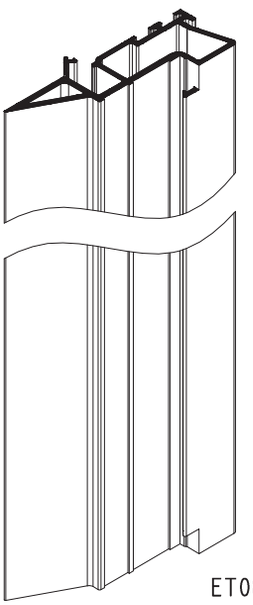
E70603



ET080186.00

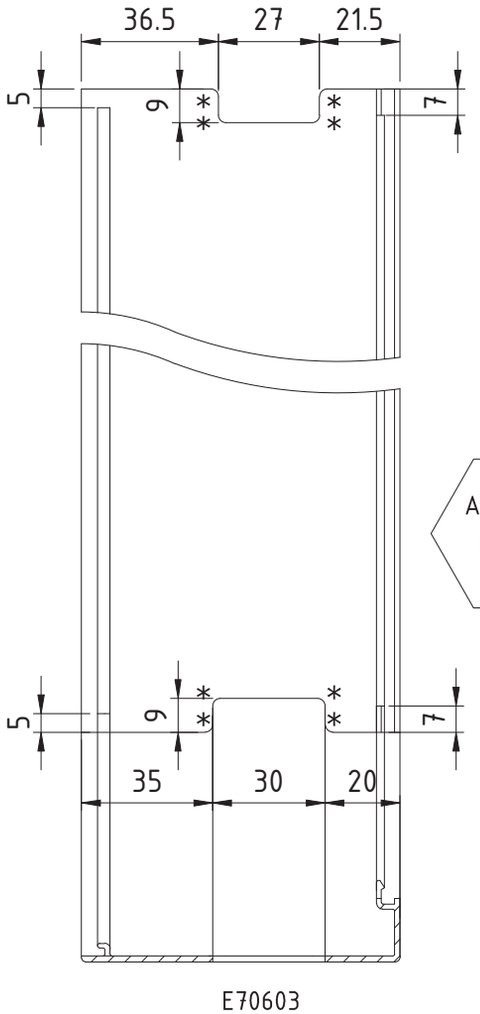


E70603

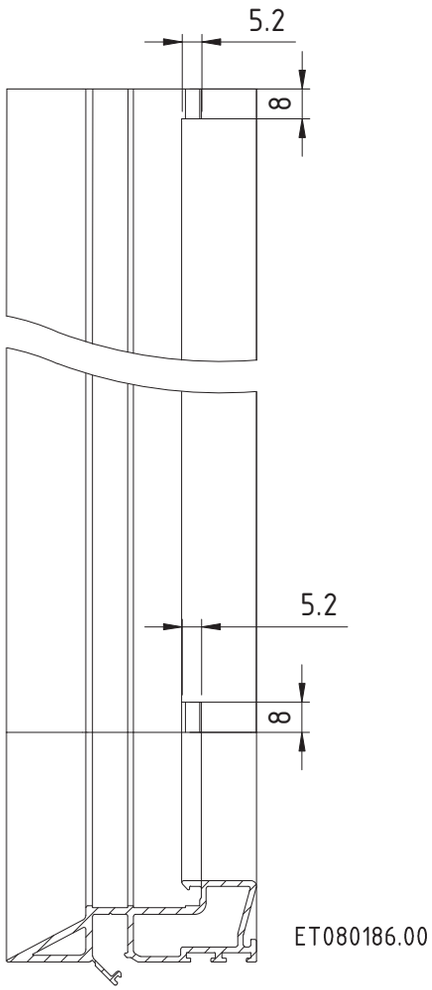


ET080186.00

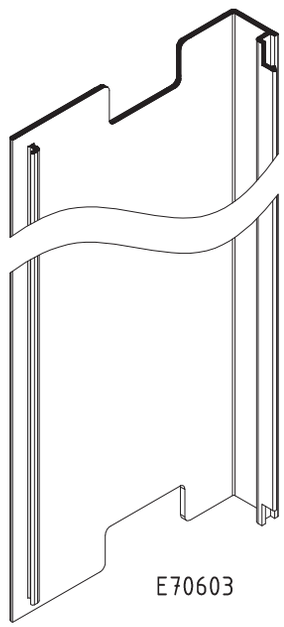
MACHINING ON INTERLOCK PROFILES E70603 & ET080186.00 FOR FIXED FRAME M70-17



E70603

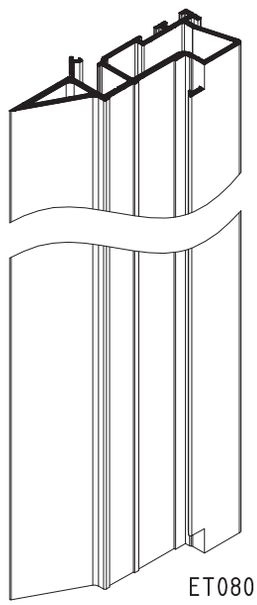


ET080186.00



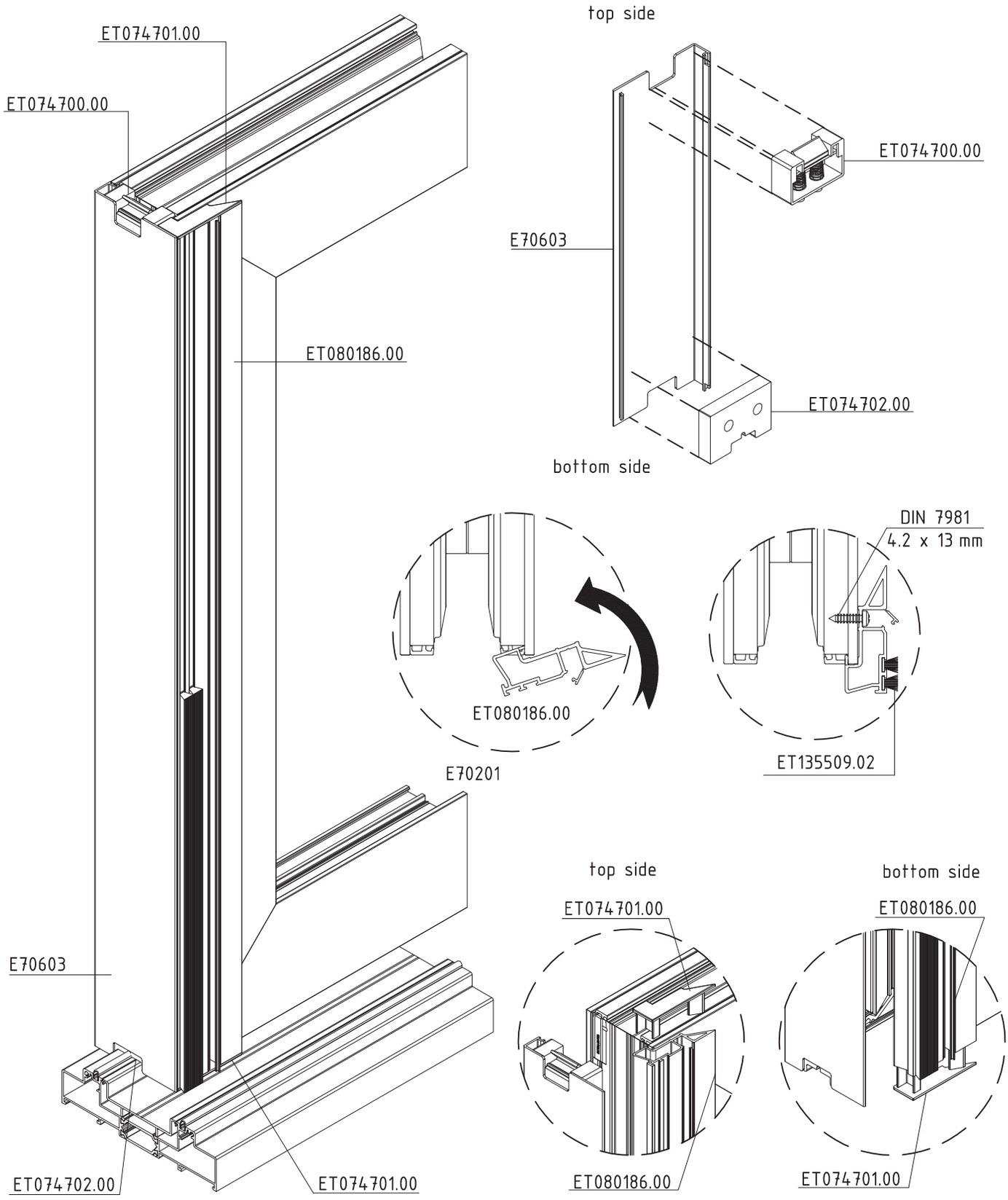
ATTENTION: profile E70603 is fixed once the sash has been placed onto the frame

E70603

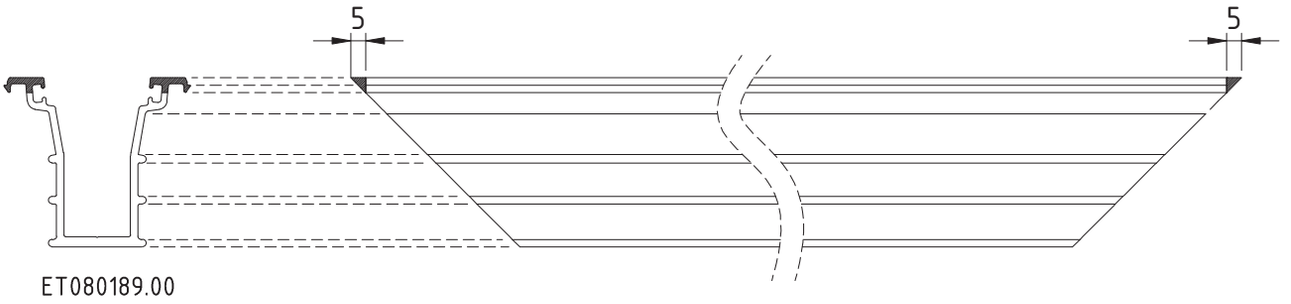


ET080186.00

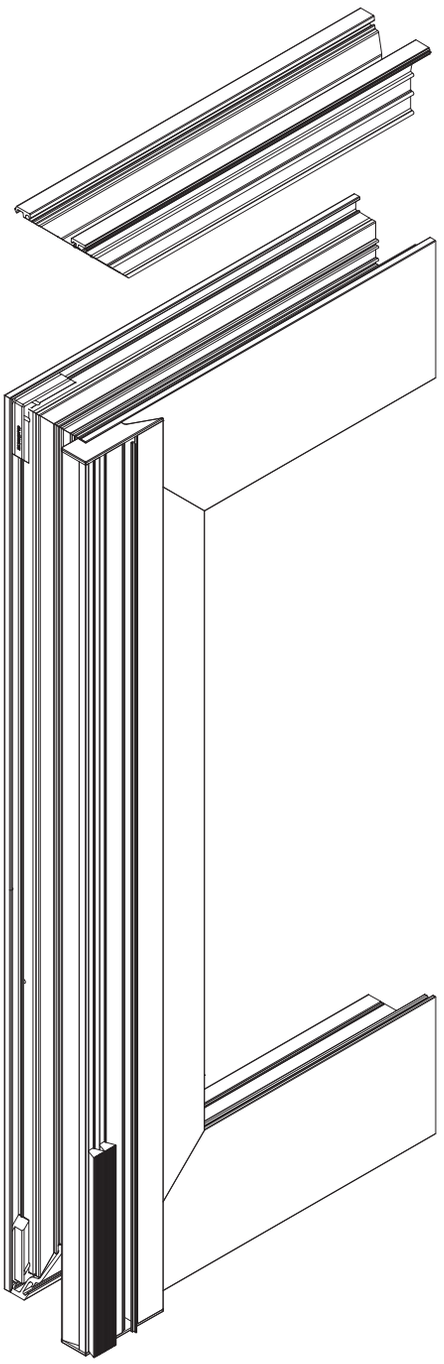
FIXING INTERLOCK PROFILES E70603 & ET080186.00 ONTO SASH E70201 M70-18



MACHINING ON PLASTIC PROFILE ET080189.00 FOR UPPER SIDE OF SLIDING FRAME M70-19



ET080189.00

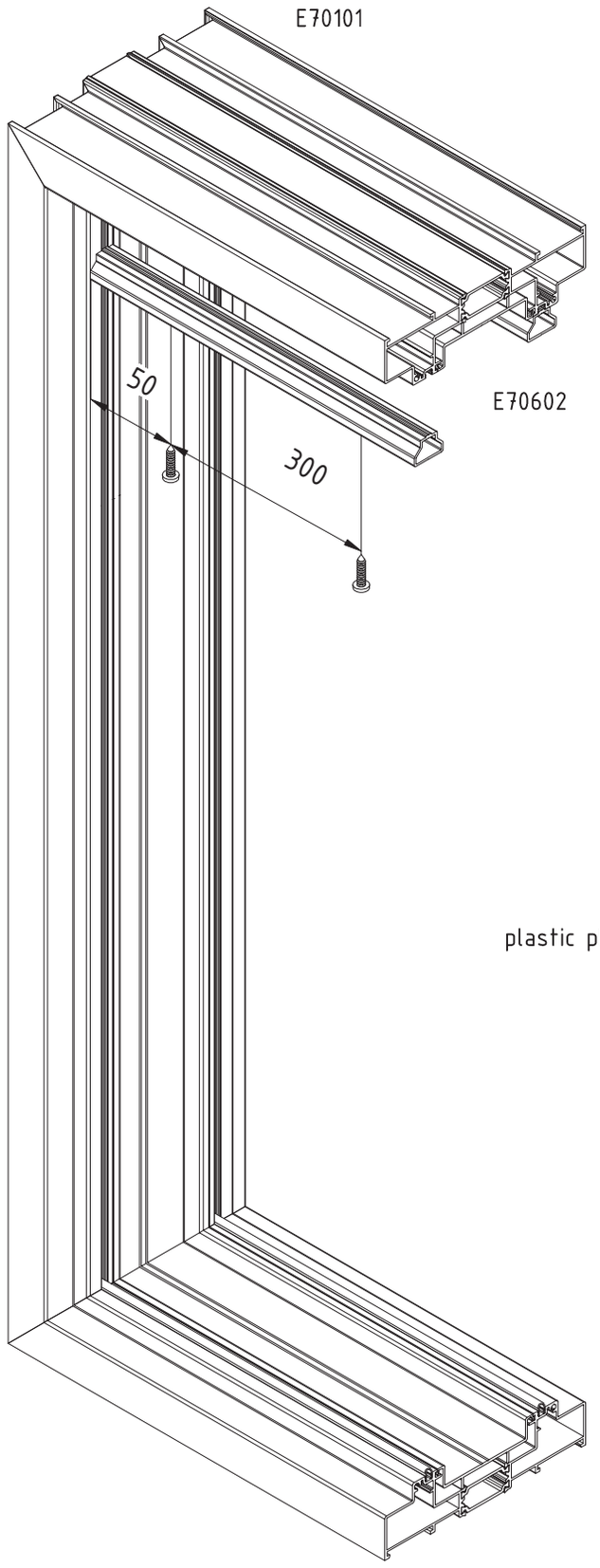


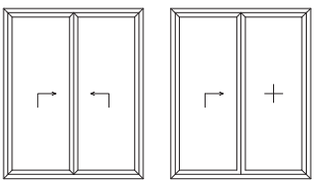
ET080189.00

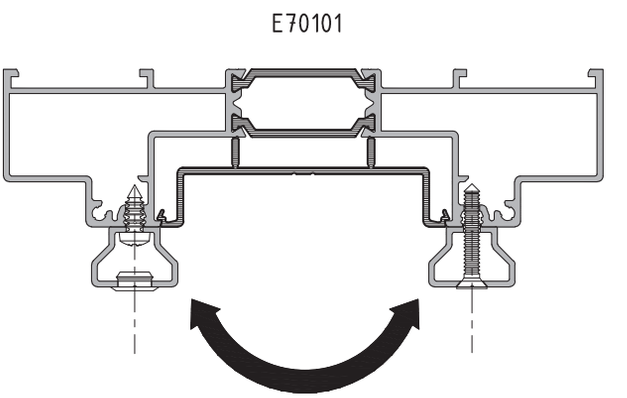
ATTENTION: machining of ET080189.00 is performed only at the part that will be fixed on the top side of the frame

MACHINING ON E70602

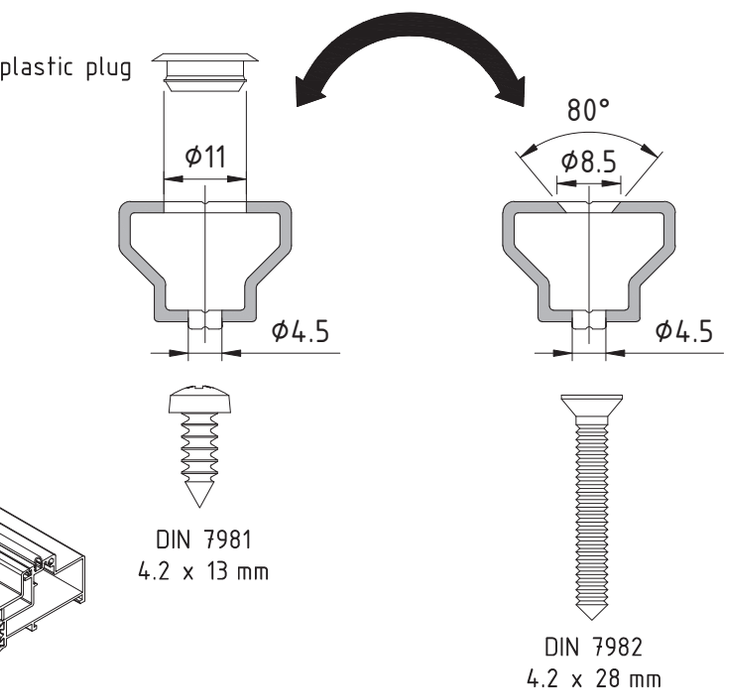
M70-20



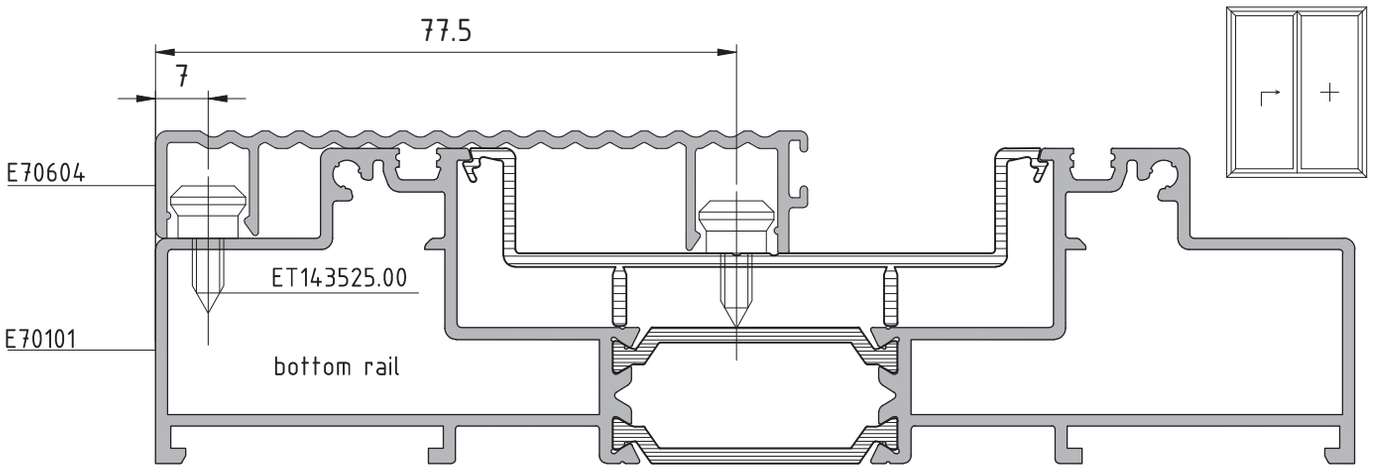


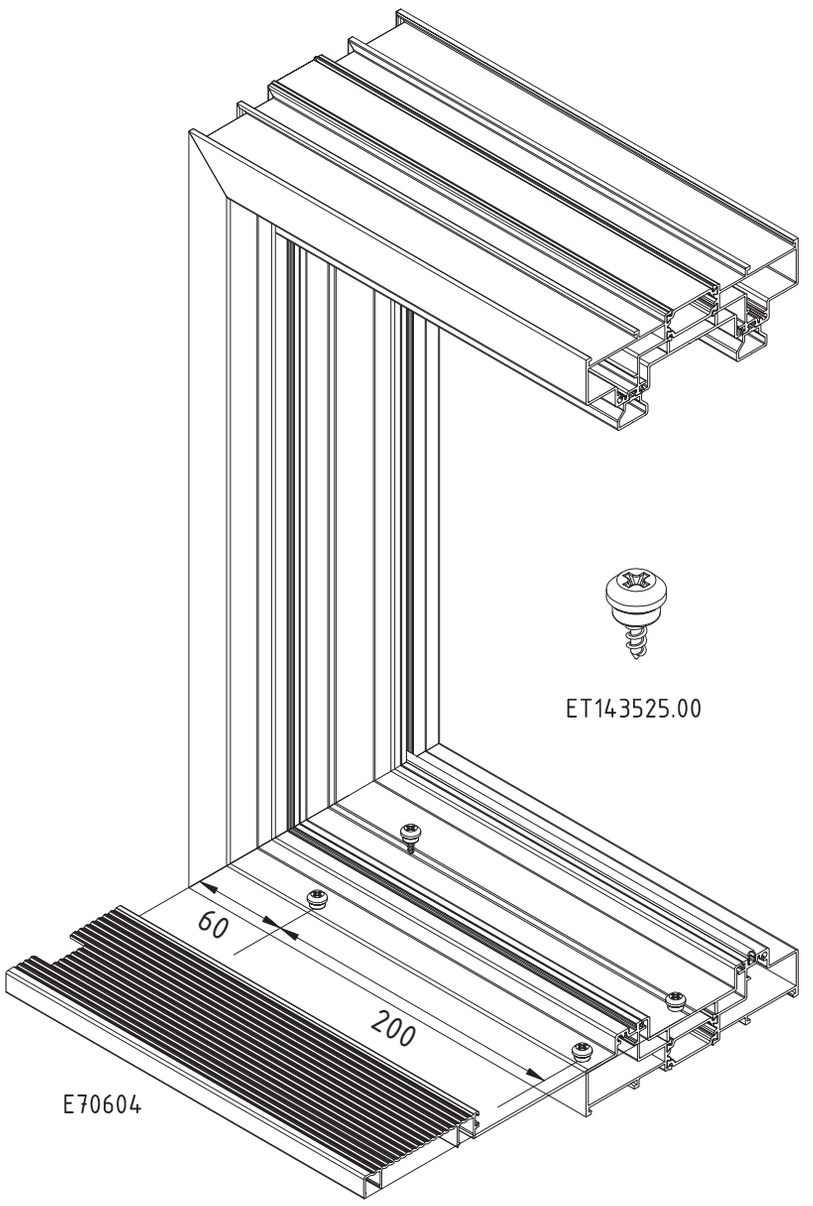


ALTERNATIVE methods for fixing supplementary profile E70602 onto rail E70101

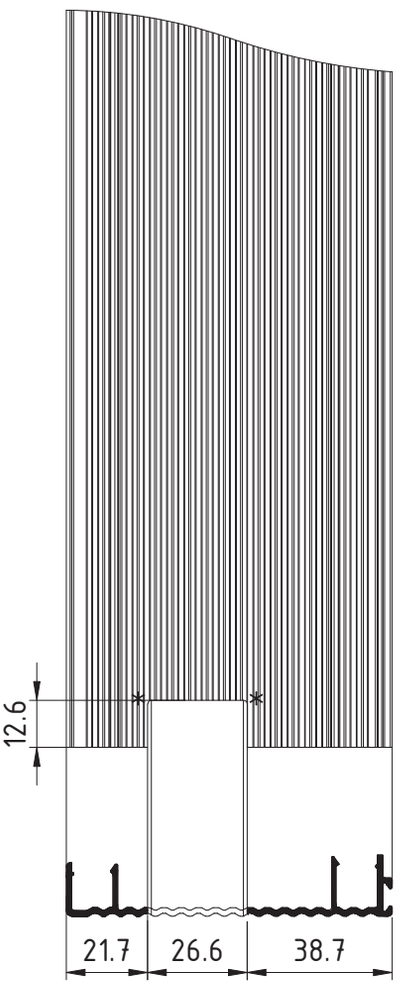


MACHINING ON COVER PROFILE E70604 M70-21





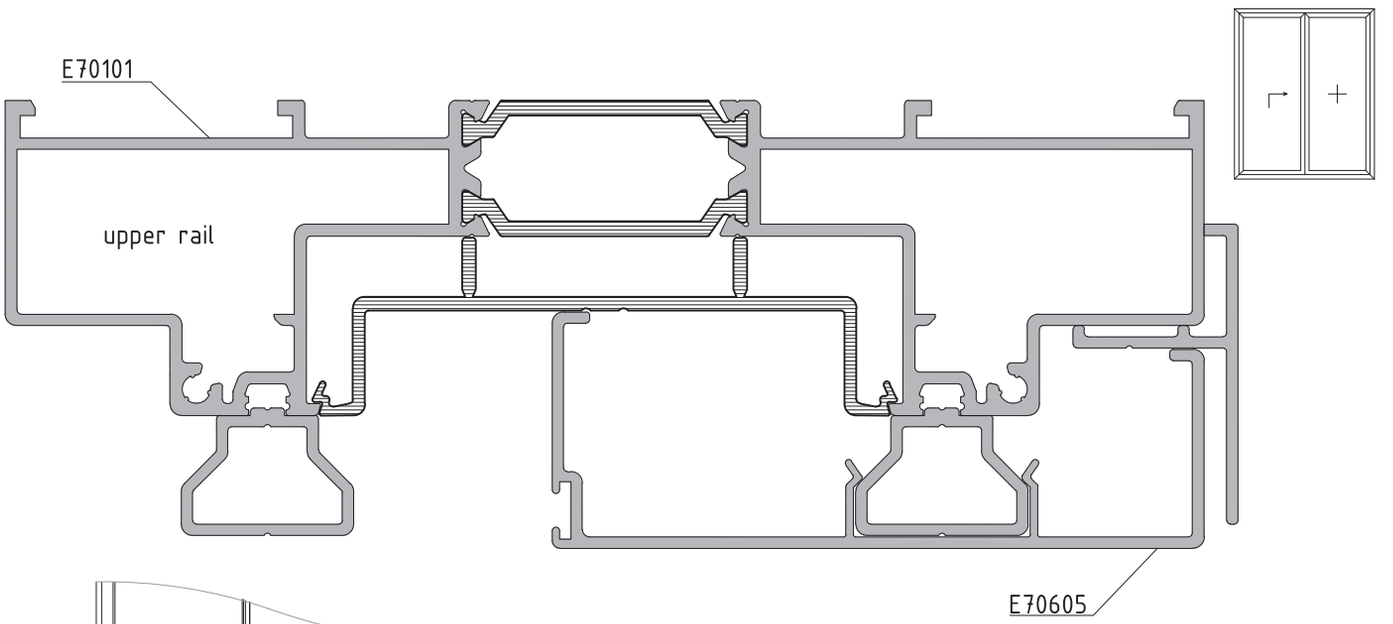
ET143525.00

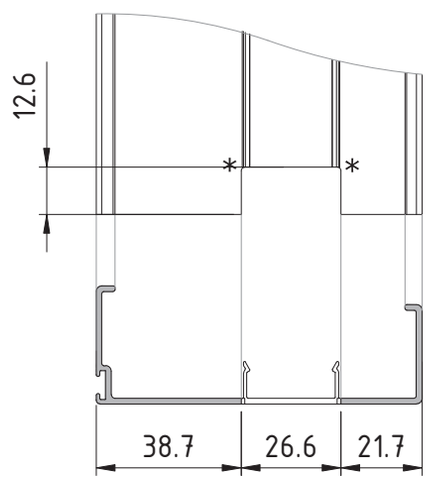


E70604

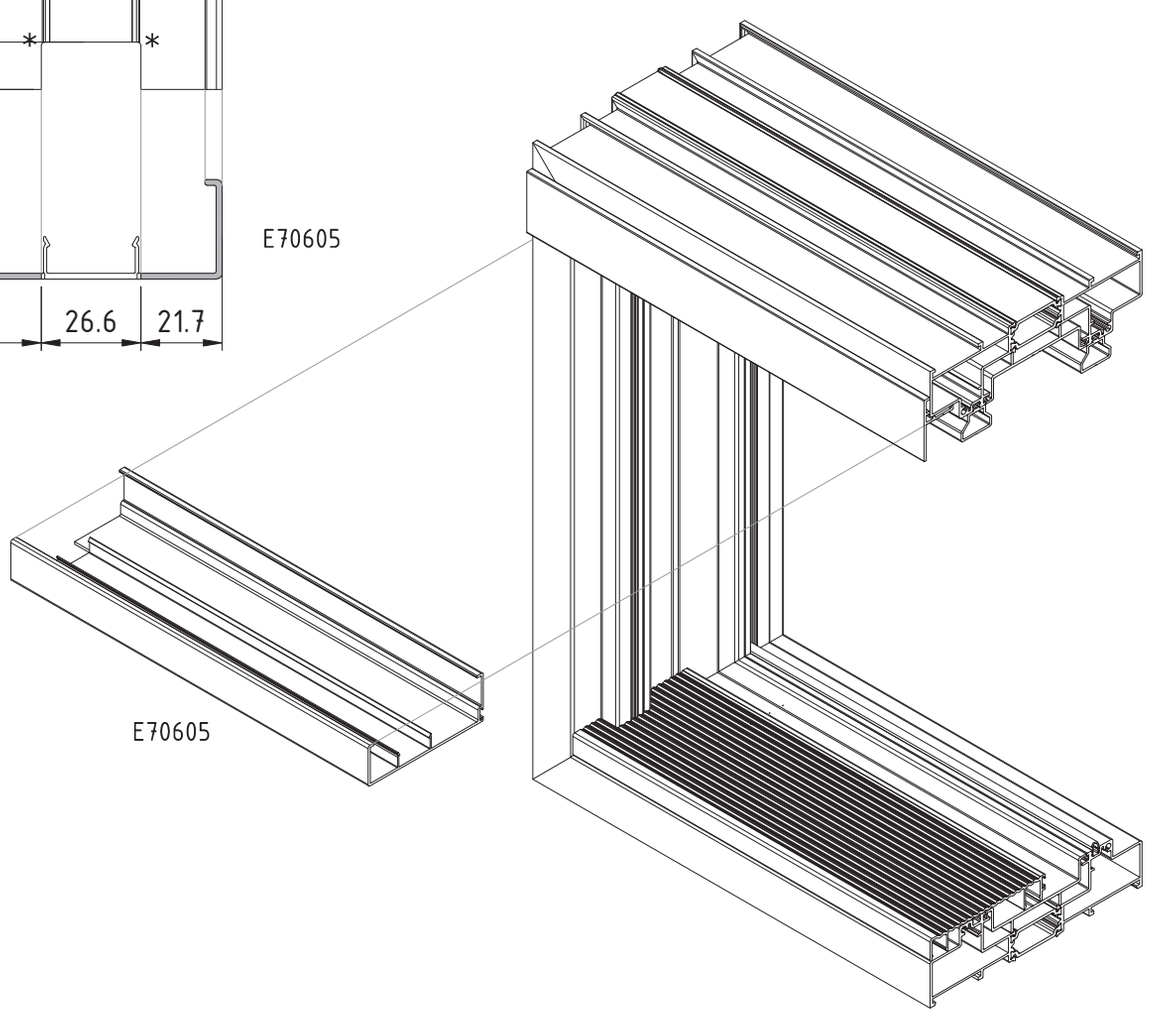
MACHINING ON COVER PROFILE E70605

M70-22

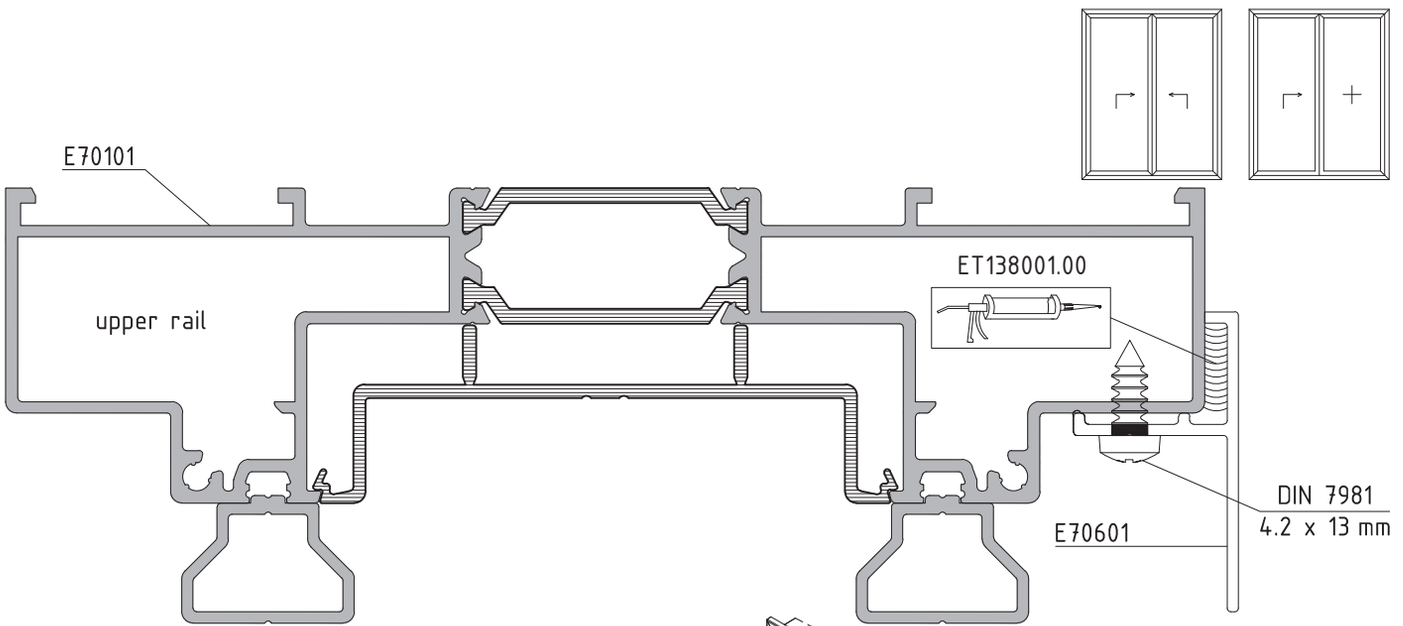


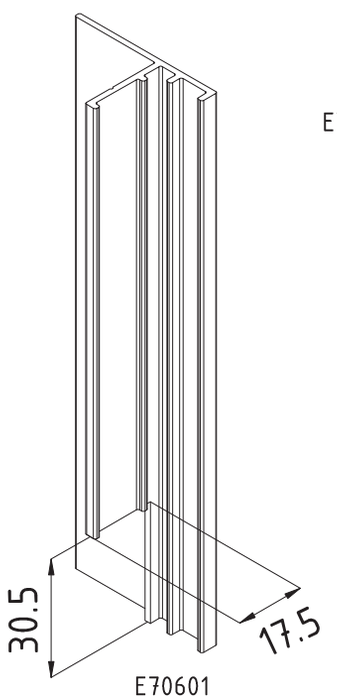


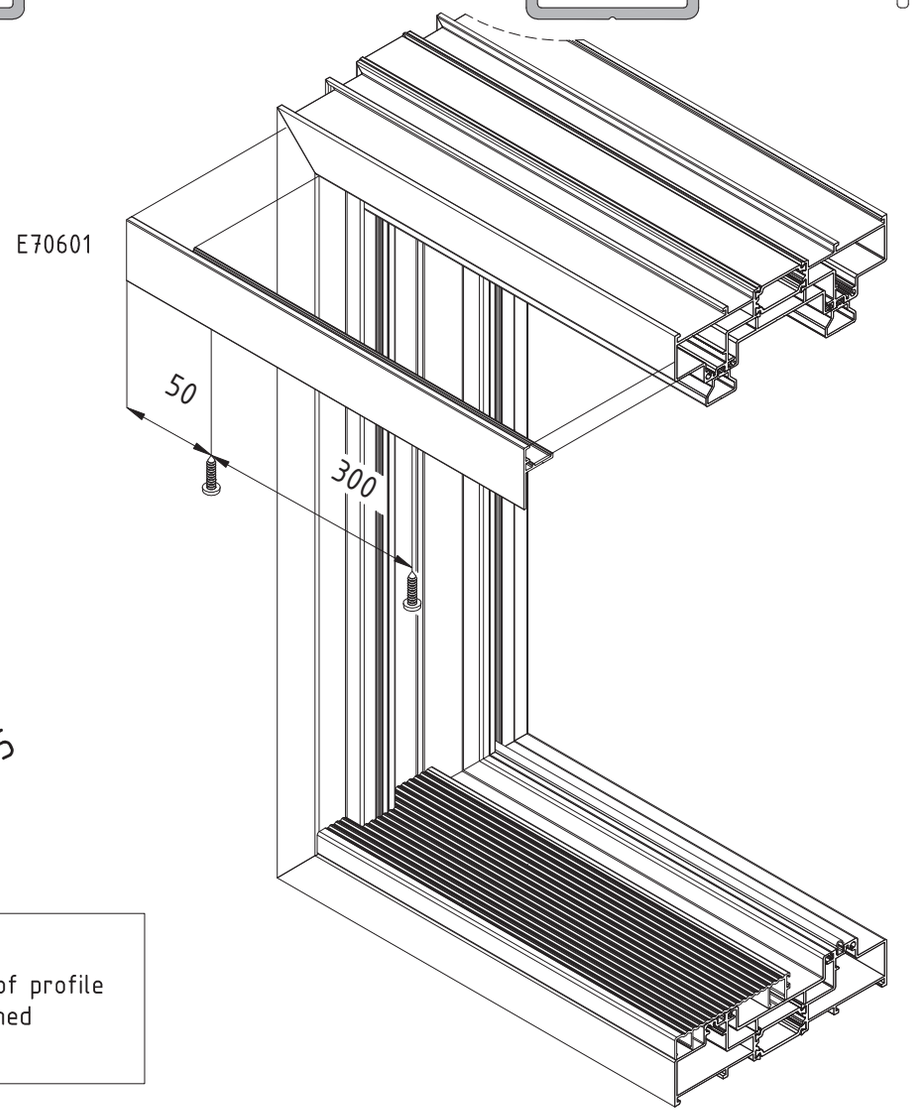
* R=1 mm



MACHINING ON COVER PROFILE E70601 M70-23

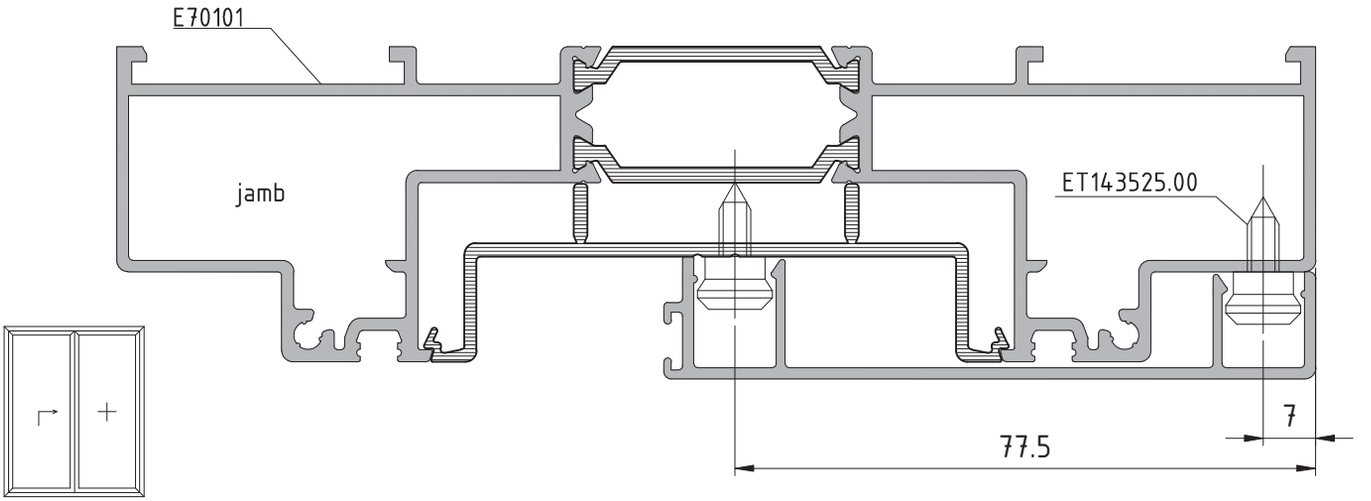


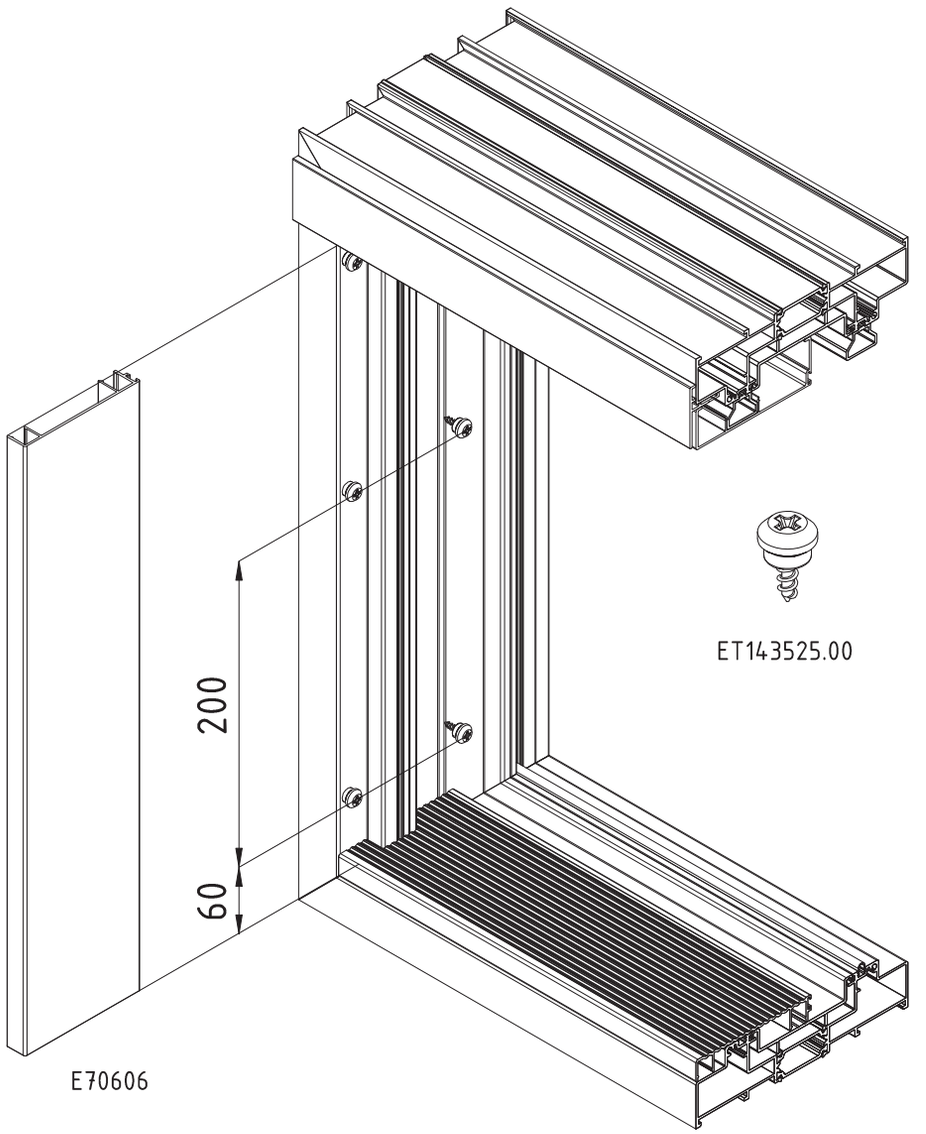




ATTENTION: both ends of profile E70601 are machined

FIXING COVER PROFILE E70606 ONTO RAIL E70101 M70-24

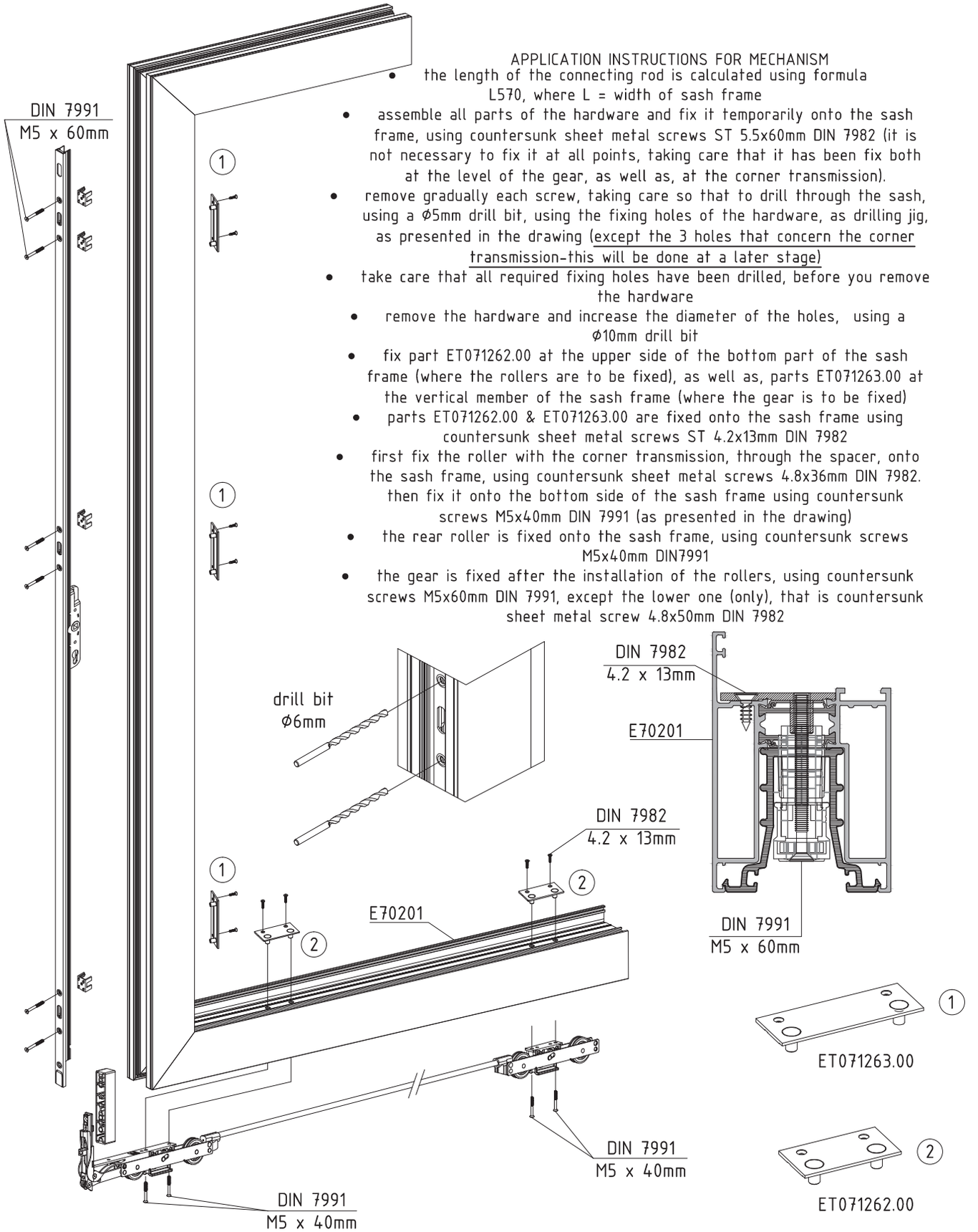




ET143525.00

FIXING HARDWARE ONTO SASH E70201

M70-33

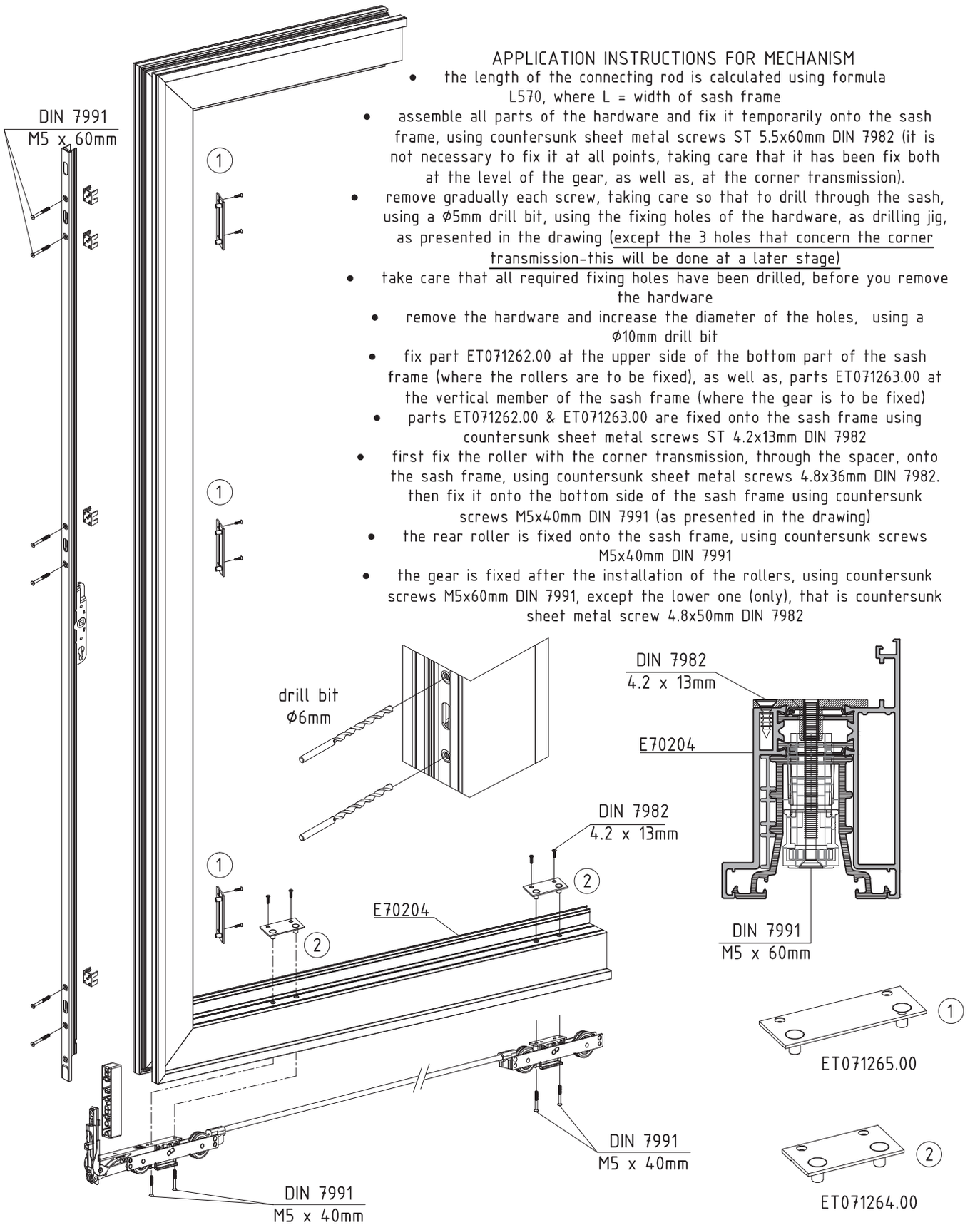


APPLICATION INSTRUCTIONS FOR MECHANISM

- the length of the connecting rod is calculated using formula L570, where L = width of sash frame
- assemble all parts of the hardware and fix it temporarily onto the sash frame, using countersunk sheet metal screws ST 5.5x60mm DIN 7982 (it is not necessary to fix it at all points, taking care that it has been fix both at the level of the gear, as well as, at the corner transmission).
- remove gradually each screw, taking care so that to drill through the sash, using a ϕ5mm drill bit, using the fixing holes of the hardware, as drilling jig, as presented in the drawing (except the 3 holes that concern the corner transmission-this will be done at a later stage)
- take care that all required fixing holes have been drilled, before you remove the hardware
- remove the hardware and increase the diameter of the holes, using a ϕ10mm drill bit
- fix part ET071262.00 at the upper side of the bottom part of the sash frame (where the rollers are to be fixed), as well as, parts ET071263.00 at the vertical member of the sash frame (where the gear is to be fixed)
- parts ET071262.00 & ET071263.00 are fixed onto the sash frame using countersunk sheet metal screws ST 4.2x13mm DIN 7982
- first fix the roller with the corner transmission, through the spacer, onto the sash frame, using countersunk sheet metal screws 4.8x36mm DIN 7982. then fix it onto the bottom side of the sash frame using countersunk screws M5x40mm DIN 7991 (as presented in the drawing)
- the rear roller is fixed onto the sash frame, using countersunk screws M5x40mm DIN7991
- the gear is fixed after the installation of the rollers, using countersunk screws M5x60mm DIN 7991, except the lower one (only), that is countersunk sheet metal screw 4.8x50mm DIN 7982

FIXING HARDWARE ONTO SASH E70204

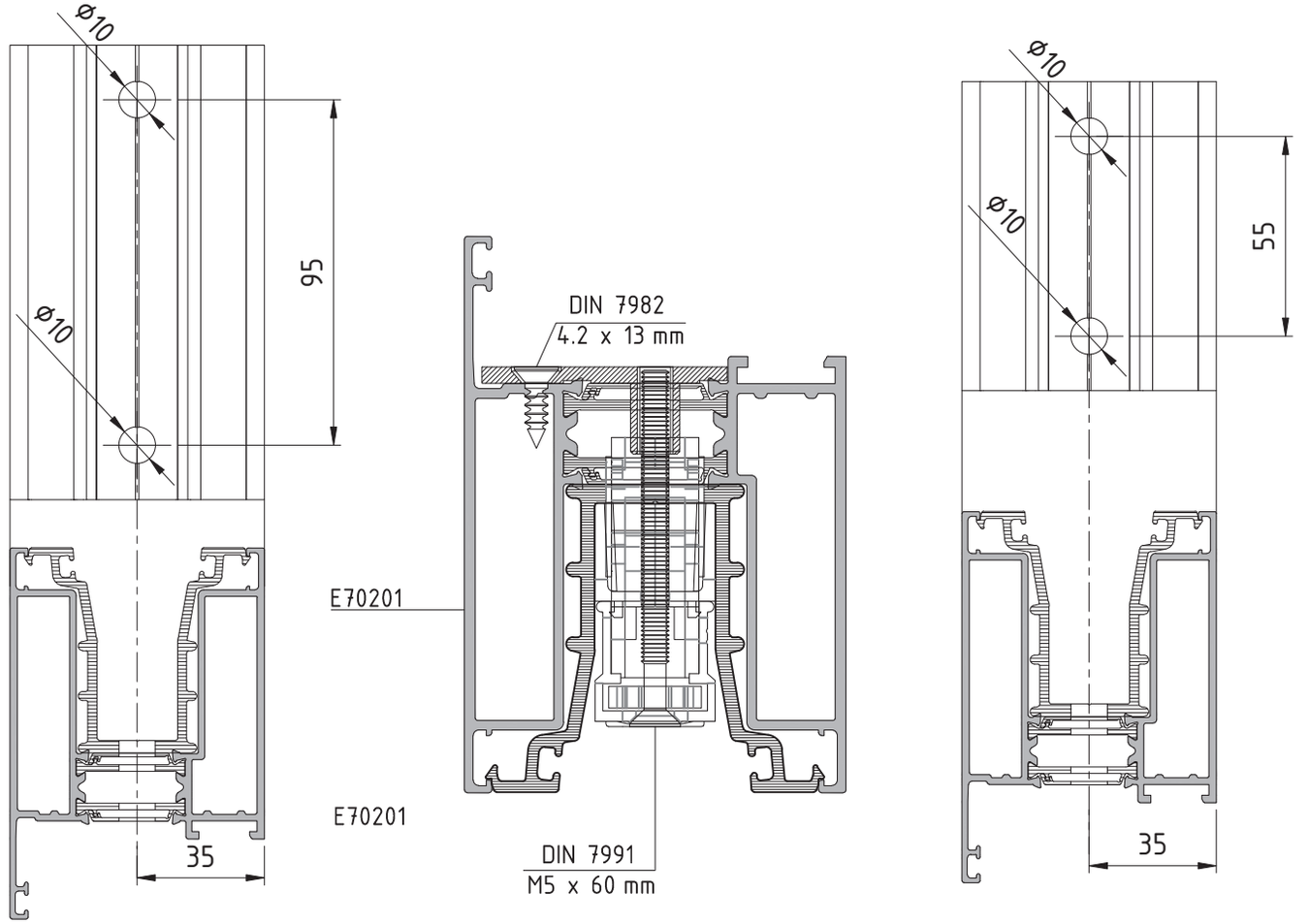
M70-34

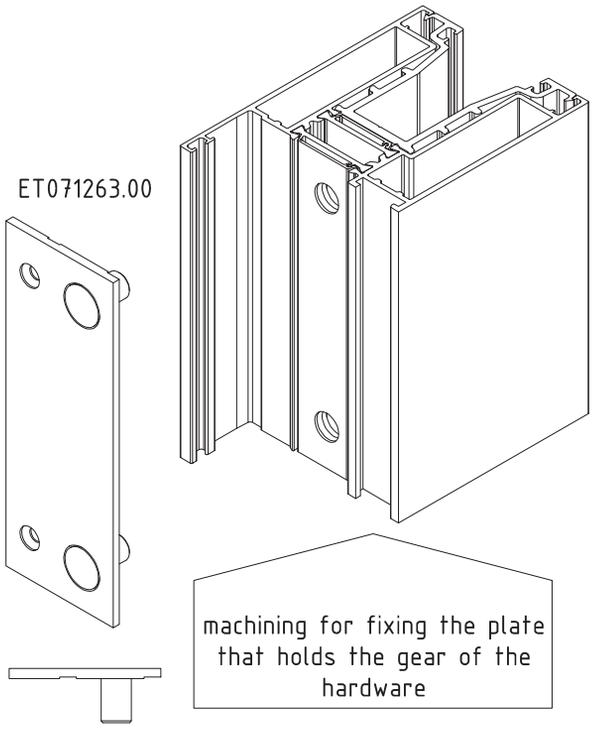


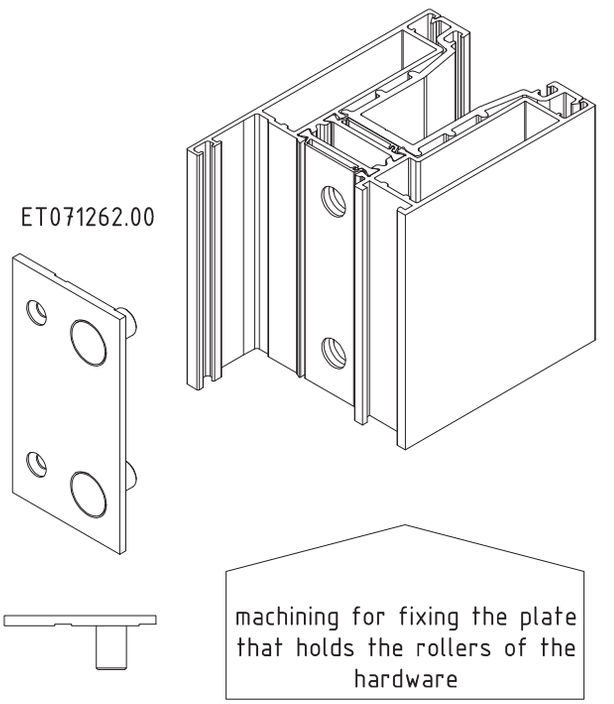
APPLICATION INSTRUCTIONS FOR MECHANISM

- the length of the connecting rod is calculated using formula L570, where L = width of sash frame
- assemble all parts of the hardware and fix it temporarily onto the sash frame, using countersunk sheet metal screws ST 5.5x60mm DIN 7982 (it is not necessary to fix it at all points, taking care that it has been fix both at the level of the gear, as well as, at the corner transmission).
- remove gradually each screw, taking care so that to drill through the sash, using a Φ5mm drill bit, using the fixing holes of the hardware, as drilling jig, as presented in the drawing (except the 3 holes that concern the corner transmission-this will be done at a later stage)
- take care that all required fixing holes have been drilled, before you remove the hardware
- remove the hardware and increase the diameter of the holes, using a Φ10mm drill bit
- fix part ET071262.00 at the upper side of the bottom part of the sash frame (where the rollers are to be fixed), as well as, parts ET071263.00 at the vertical member of the sash frame (where the gear is to be fixed)
- parts ET071262.00 & ET071263.00 are fixed onto the sash frame using countersunk sheet metal screws ST 4.2x13mm DIN 7982
- first fix the roller with the corner transmission, through the spacer, onto the sash frame, using countersunk sheet metal screws 4.8x36mm DIN 7982. then fix it onto the bottom side of the sash frame using countersunk screws M5x40mm DIN 7991 (as presented in the drawing)
- the rear roller is fixed onto the sash frame, using countersunk screws M5x40mm DIN 7991
- the gear is fixed after the installation of the rollers, using countersunk screws M5x60mm DIN 7991, except the lower one (only), that is countersunk sheet metal screw 4.8x50mm DIN 7982

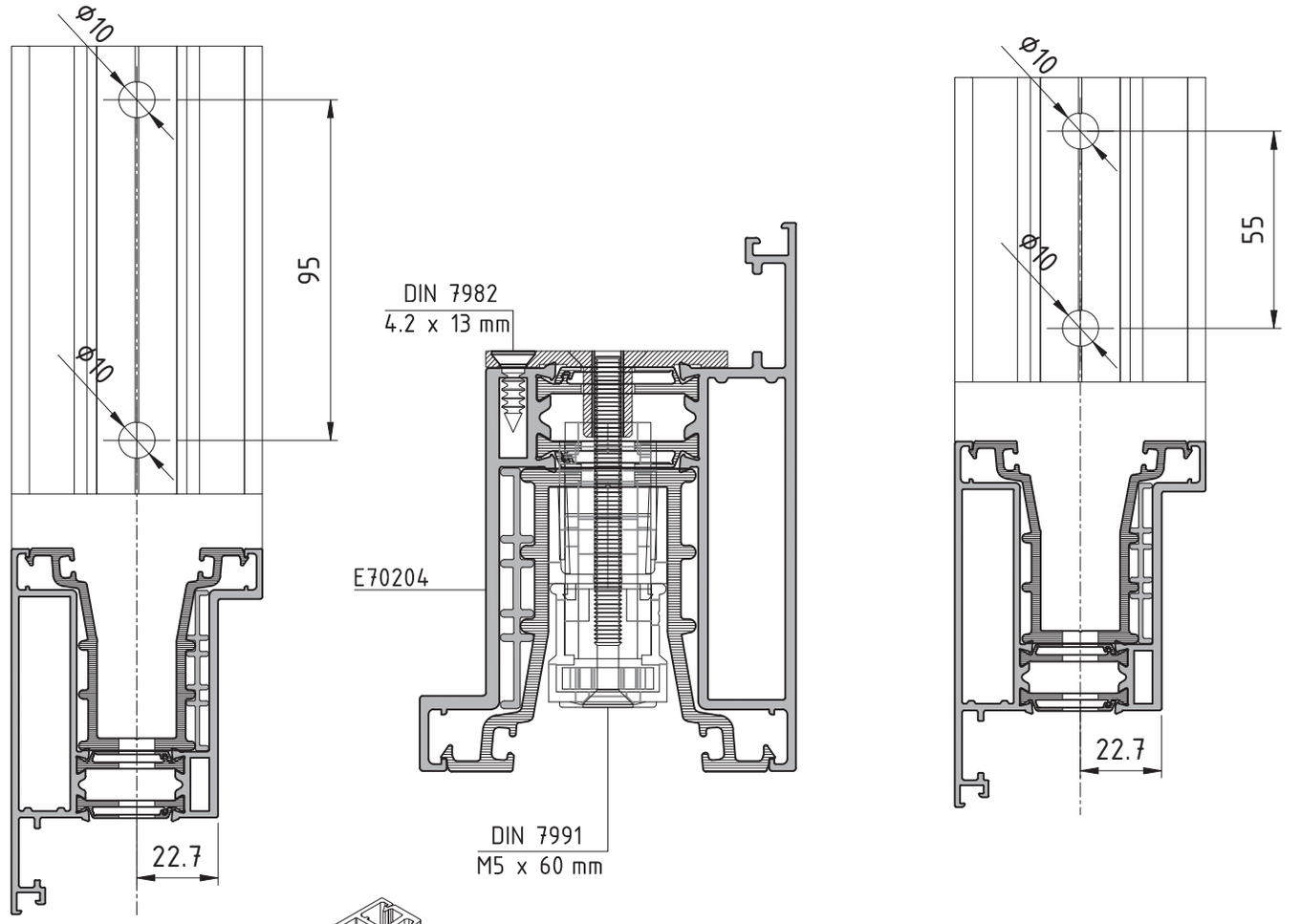
FIXING HOLES ON SASH E70201 FOR THE HARDWARE M70-27

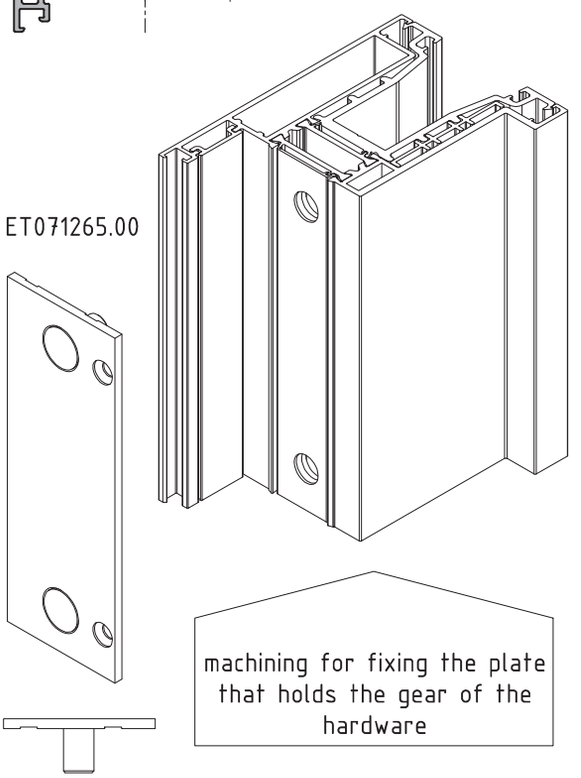


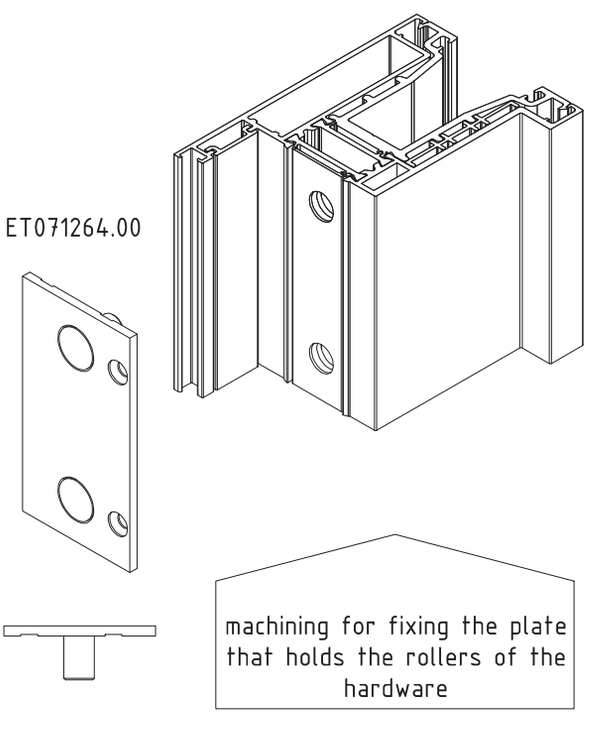




FIXING HOLES ON SASH E70204 FOR THE HARDWARE M70-28

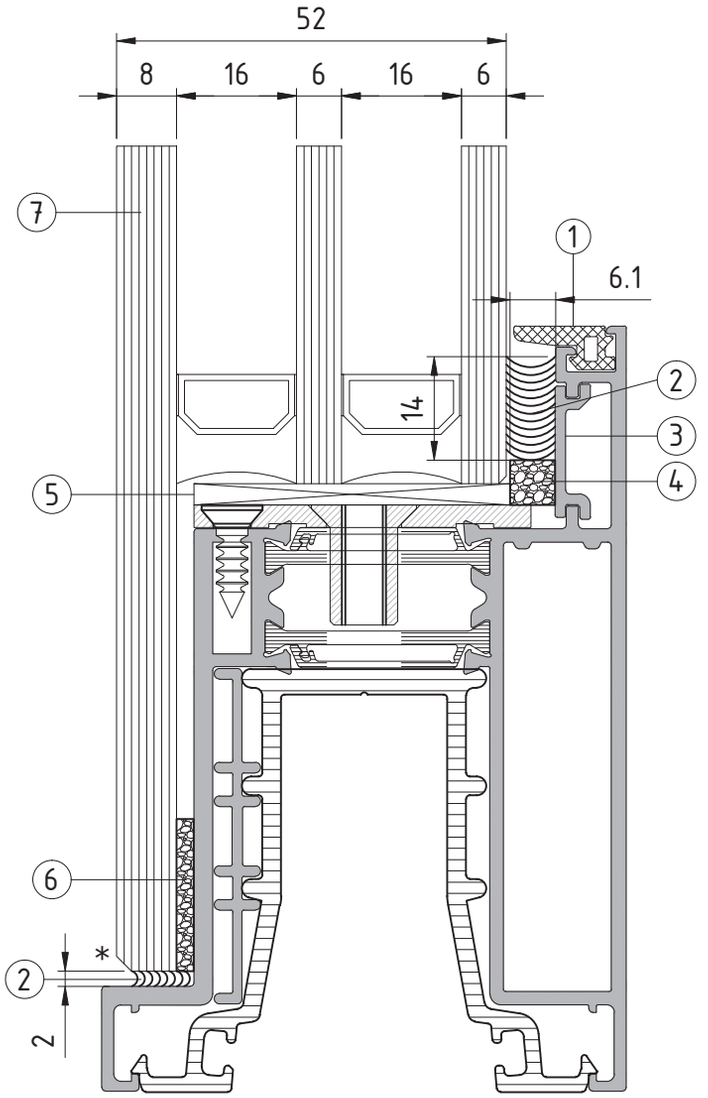






GUIDELINES FOR FIXING GLASS PANE ON SASH E70204

M70-29



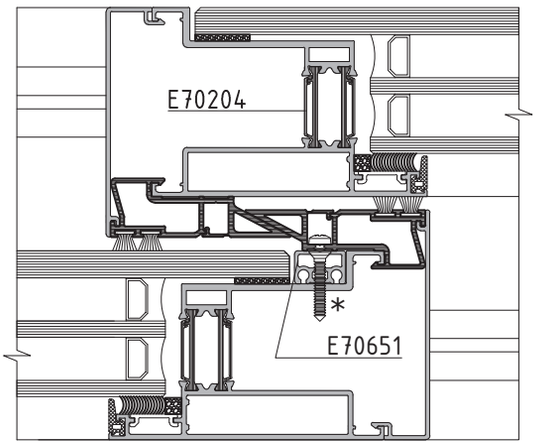
	description
1	EPDM gasket for covering structural glazing silicone (ET130751.00)
2	structural glazing silicone proglaze VEC90 by truseal or equal
3	supplementary profile E70650 (anodized) - seating for the structural glazing silicone
4	self adhesive foam spacer NORTON V2200 6x6mm or equal
5	glazing shim 120x40x3mm material: polypropylene
6	3M very high bond structural glazing tape B 23F or equal
7	glass pane thickness 54 mm - composition: as presented in the drawing

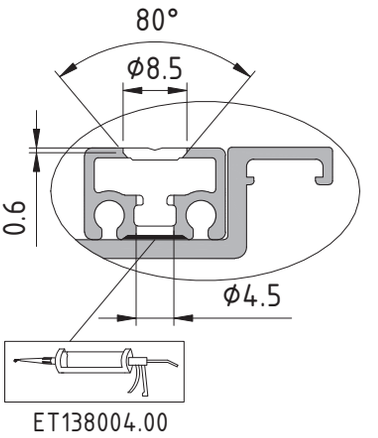
* the edges of the glass pane are trimmed: 2x2 mm

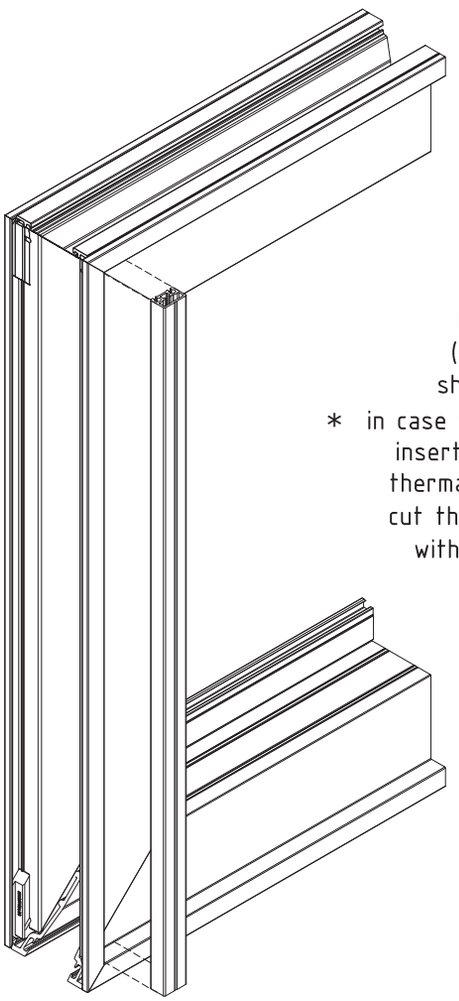
- the gap, between sash E70204 and the outer glass pane (thickness 8 mm), must be not less than 2-3 mm
- the gap between sash E70204 and the outer glass pane, is filled with structural glazing silicone
- the structural glazing tape, as well as, the structural glazing silicone must be applied according to the written instructions of the supplier
- the glazing shim must be made of polypropylene for optimum performance
- ATTENTION: profile E70650 must be inserted into the groove of sash E70204 and then cut them according to the specified dimensions. it is not possible to insert E70650 once the corners of the sash frame have been fixed by the crimping machine

FIXING SUPPLEMENTARY PROFILE E70651 ON SASH E70204

M70-30

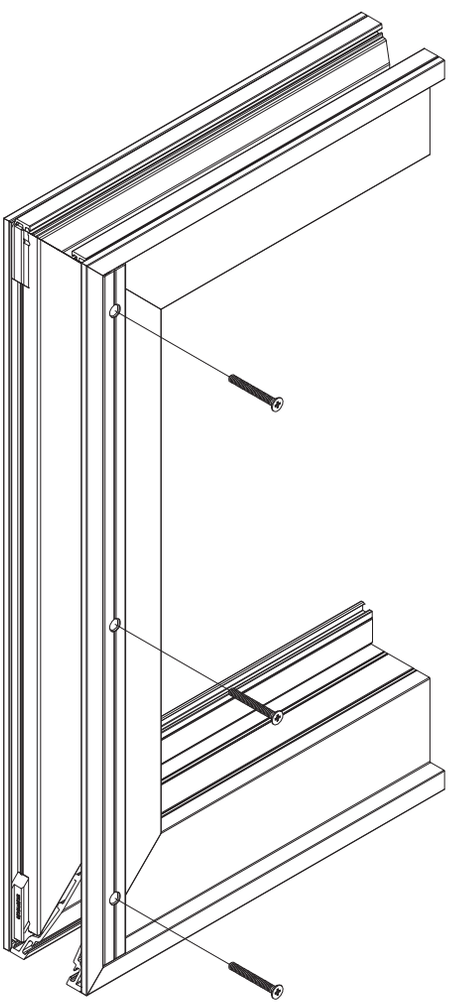




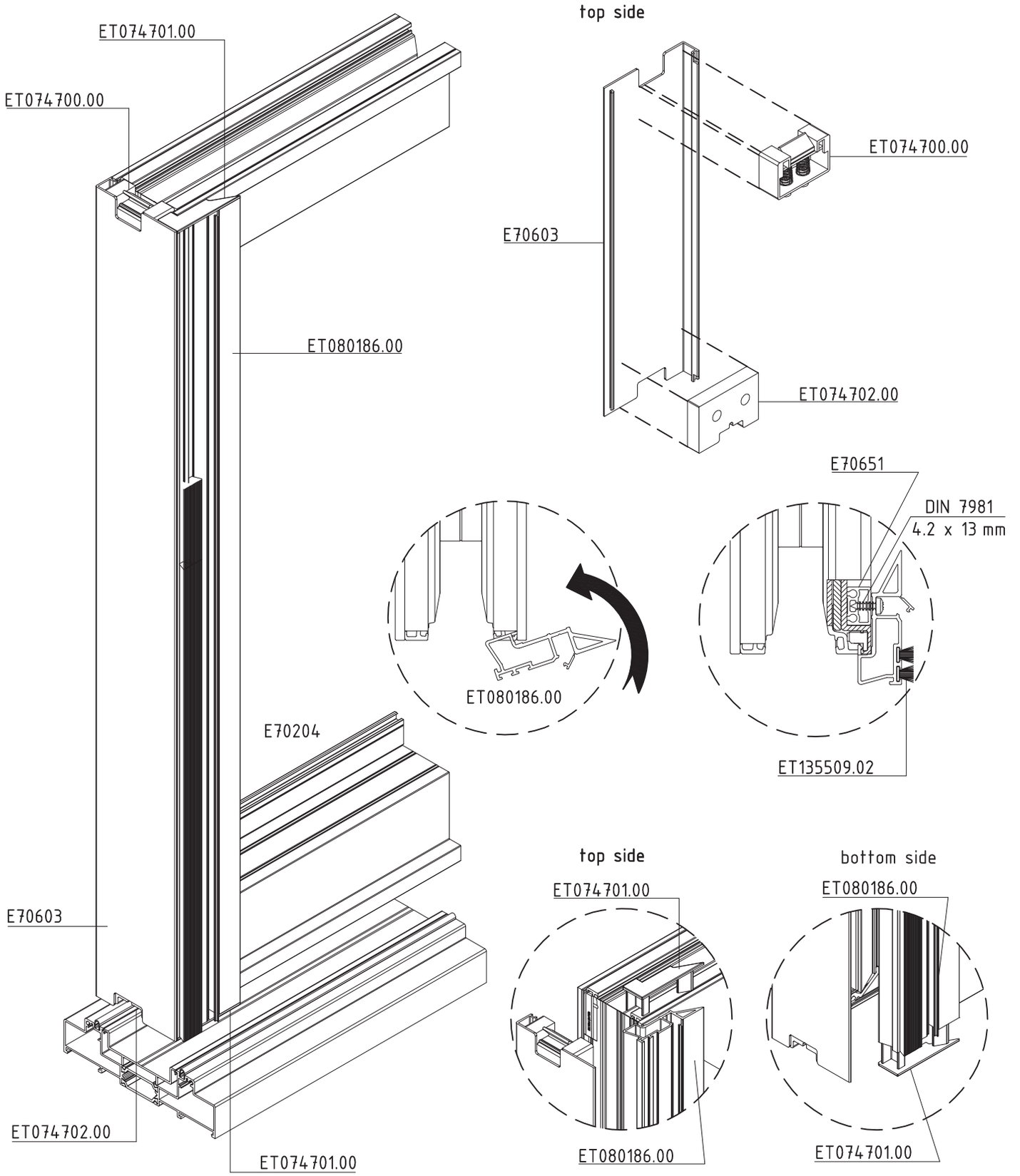


- profile E70651 is fixed only at the inner sash (E70204) of a double leaf door/window E70 less frame
- profile E70651 is machined as presented, so that the head of the countersunk screw is aligned to the external side of the profile
- to E70651 is fixed onto sash E70204, using adhesive ET138004.00 (see 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

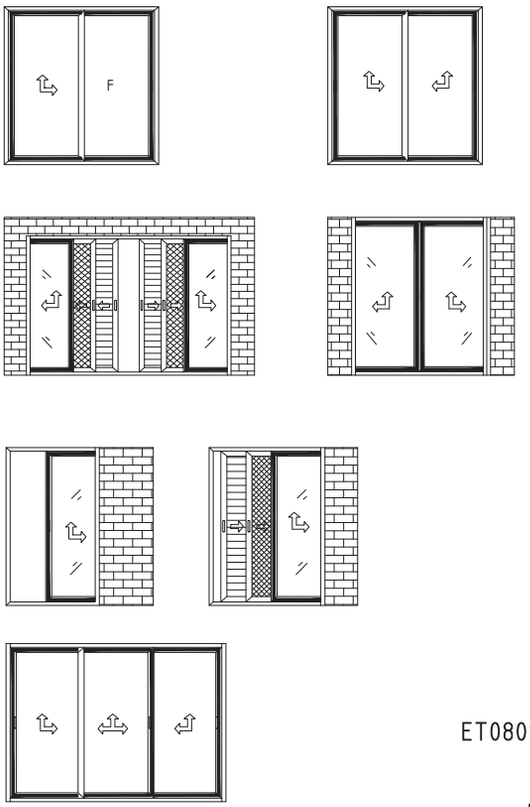


FIXING INTERLOCK PROFILES E70603 & ET080186.00 ON TO E70204 M70-31



FIXING PVC PROFILE ET080189.00 ON TO E70201

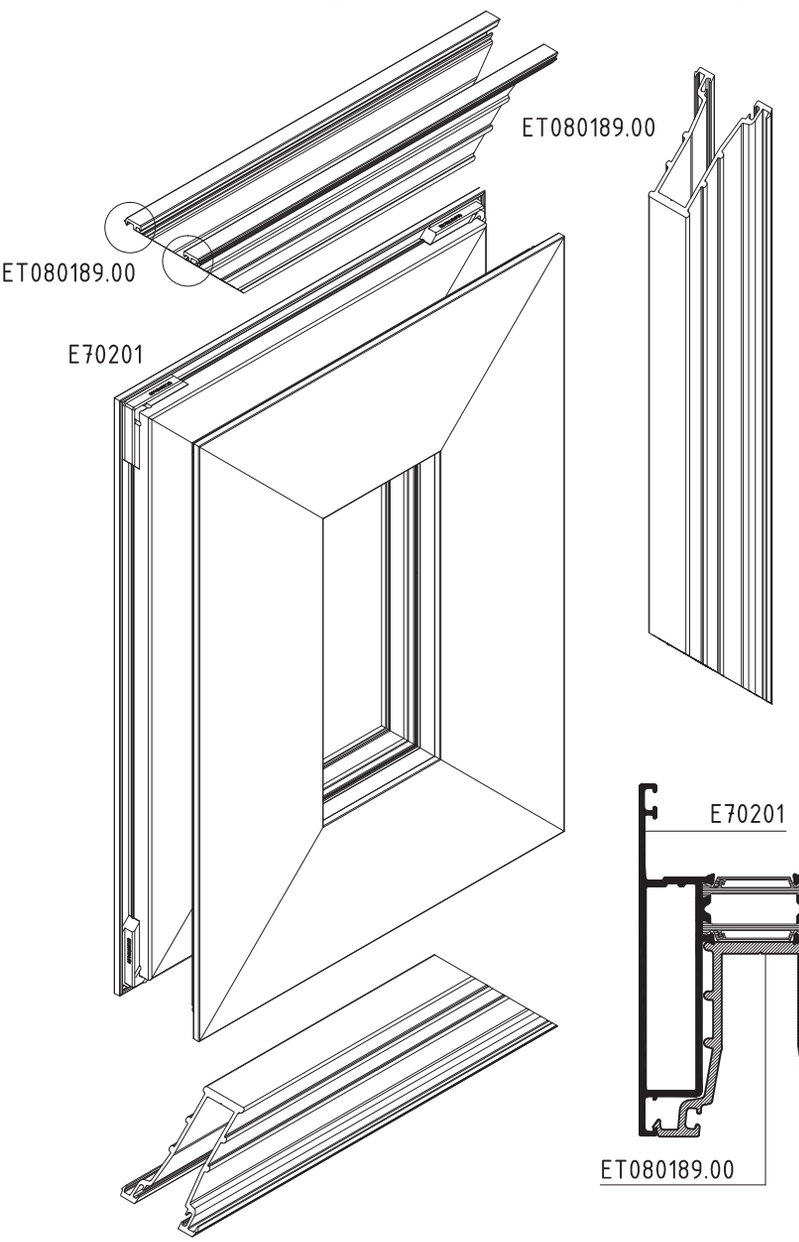
M70-32



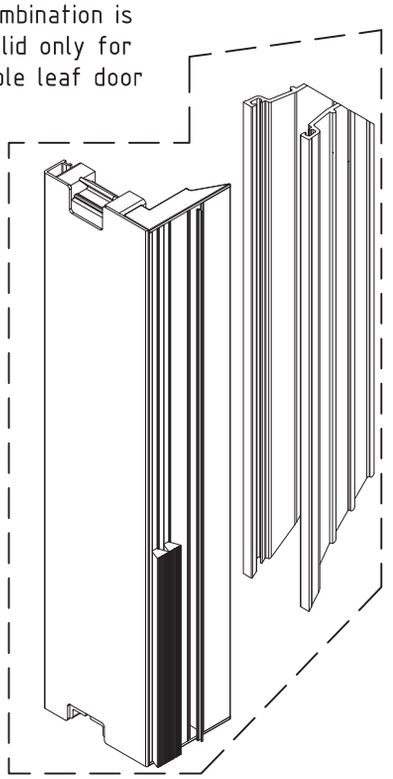
- plastic profile ET080189.00 is fixed on sash, as presented in the drawings
- attention: the plastic profile must not be fixed at the side of the sash, where the interlock is fixed, as well as, at the side of the sash that is positioned in the wall
- attention: the plastic profile ET080189.00 must be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

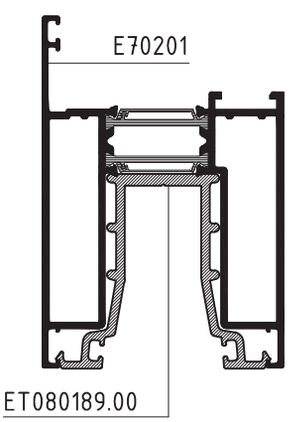
it is suggested to fix plastic profile ET080189.00 ON TO the sash and cut them together

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



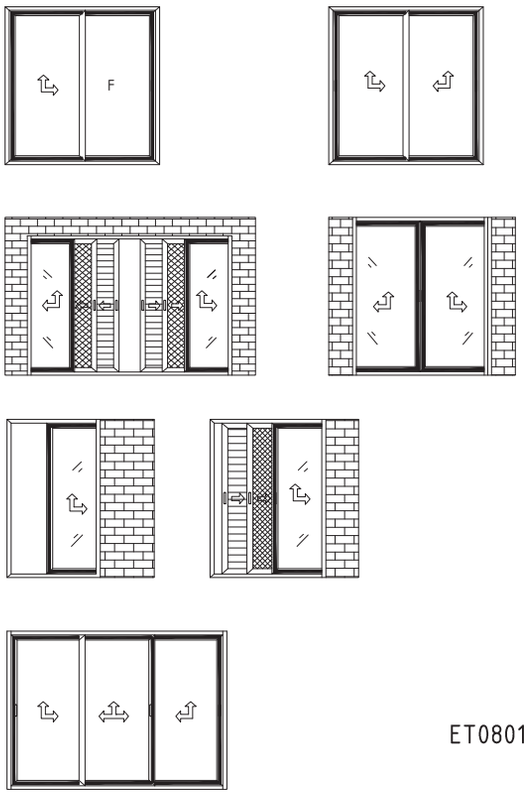
ATTENTION: the combination is valid only for triple leaf door





FIXING PVC PROFILE ET080189.00 ON TO E70204

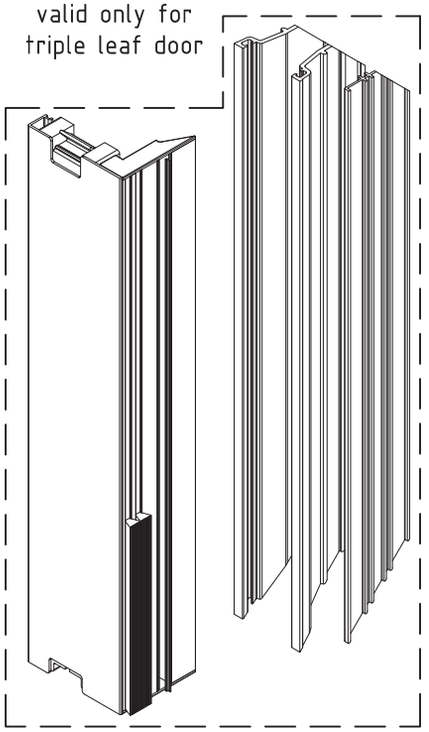
M70-33

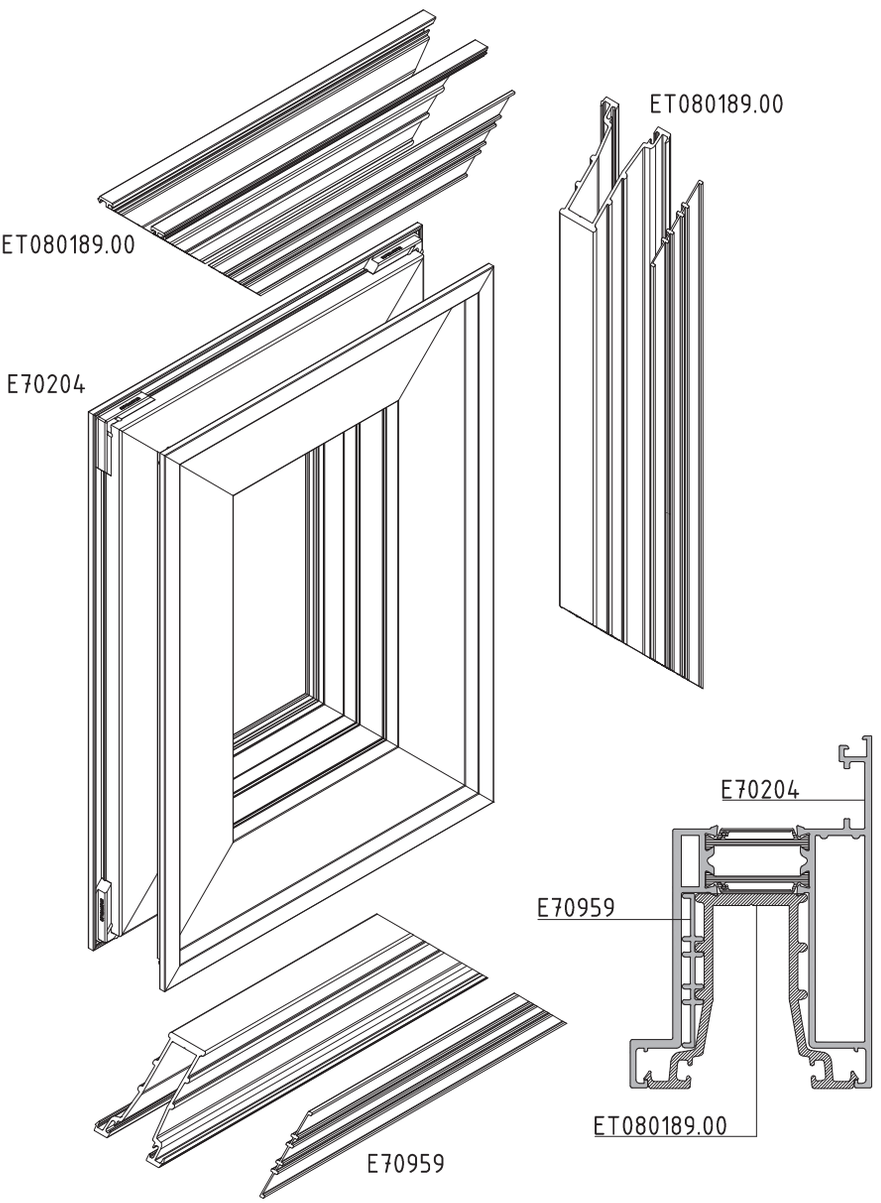


- plastic profile ET080189.00 is fixed on sash, as presented in the drawings
- ATTENTION: the plastic profile must not be fixed at the side of the sash, where the interlock is fixed, as well as, at the side of the sash that is positioned in the wall
- attention: the plastic profile ET080189.00 must be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

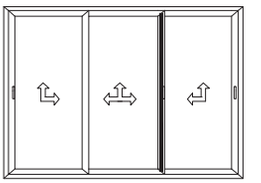
ATTENTION: the combination is valid only for triple leaf door

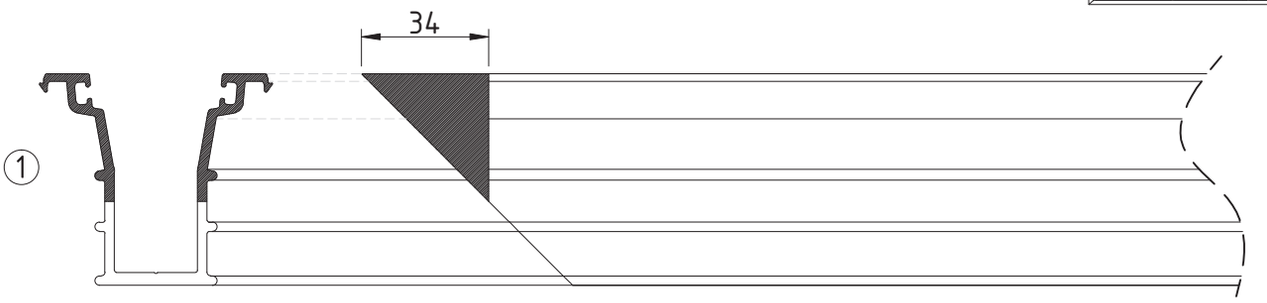




MACHINING ON PLASTIC PROFILE ET080189.00 FOR TRIPLE SLIDING DOOR M70-34

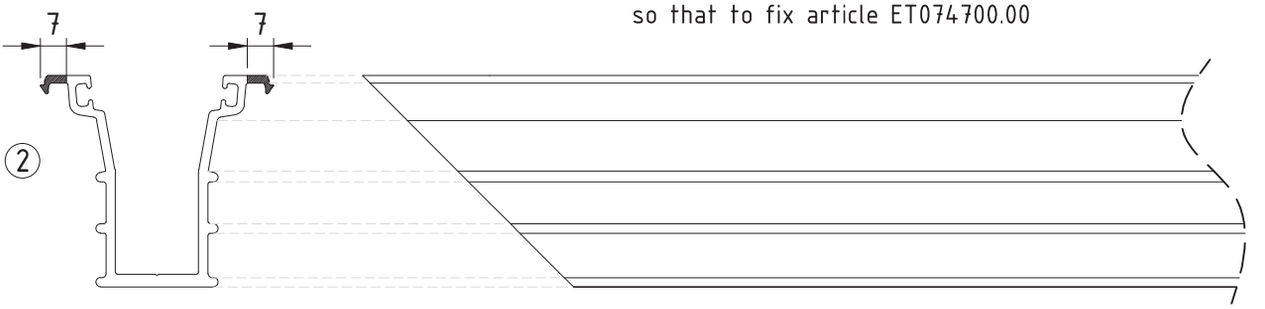
ATTENTION: machining (as presented below) is performed on plastic profile ET080189.00, that is fixed on the side of the interlock profile (this is valid only for triple sliding door)



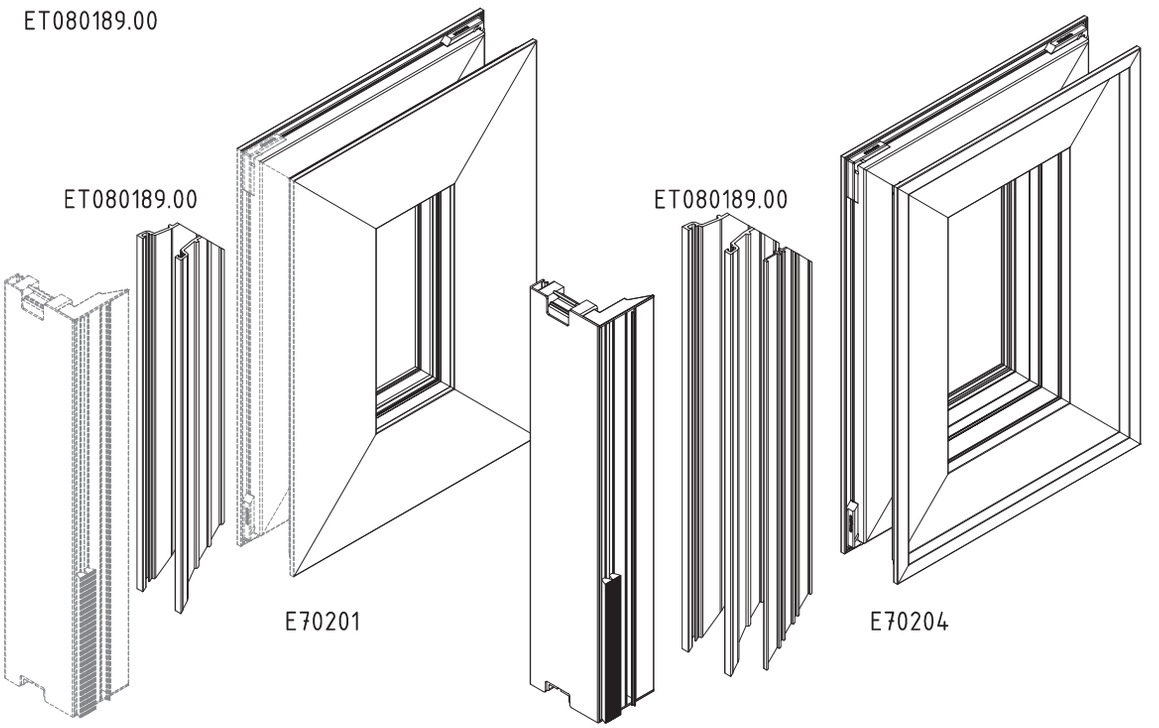


ET080189.00

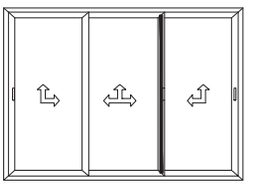
the side of ET080189.00, where the edge is cut (34 mm), is placed on the top side of the vertical member of the sash frame(where the interlock profile is fixed) so that to fix article ET074700.00



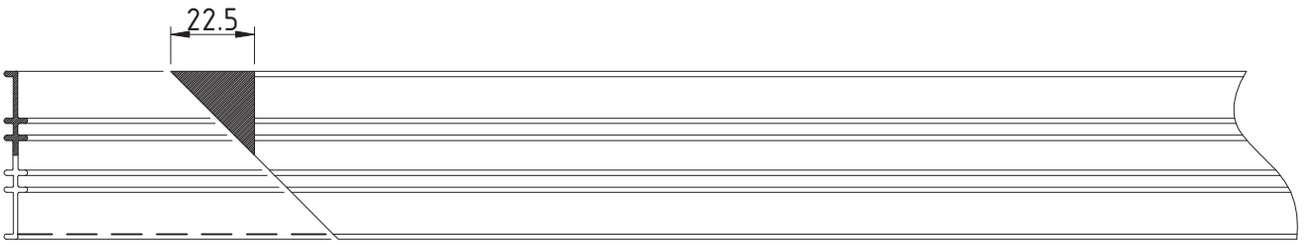
ET080189.00



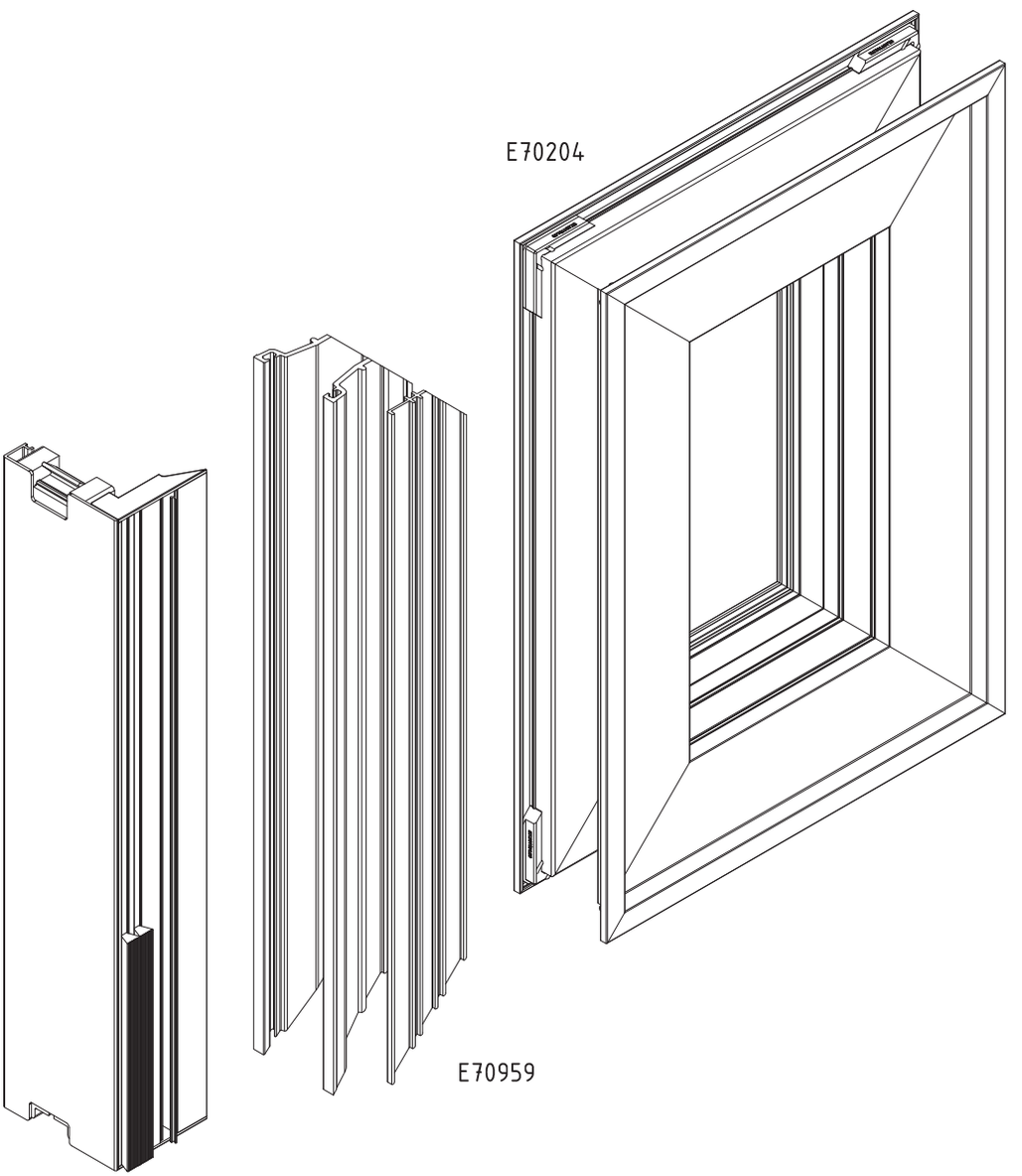
MACHINING ON PROFILE E70959 FOR TRIPLE SLIDING DOOR (LESS FRAME) M70-35



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)



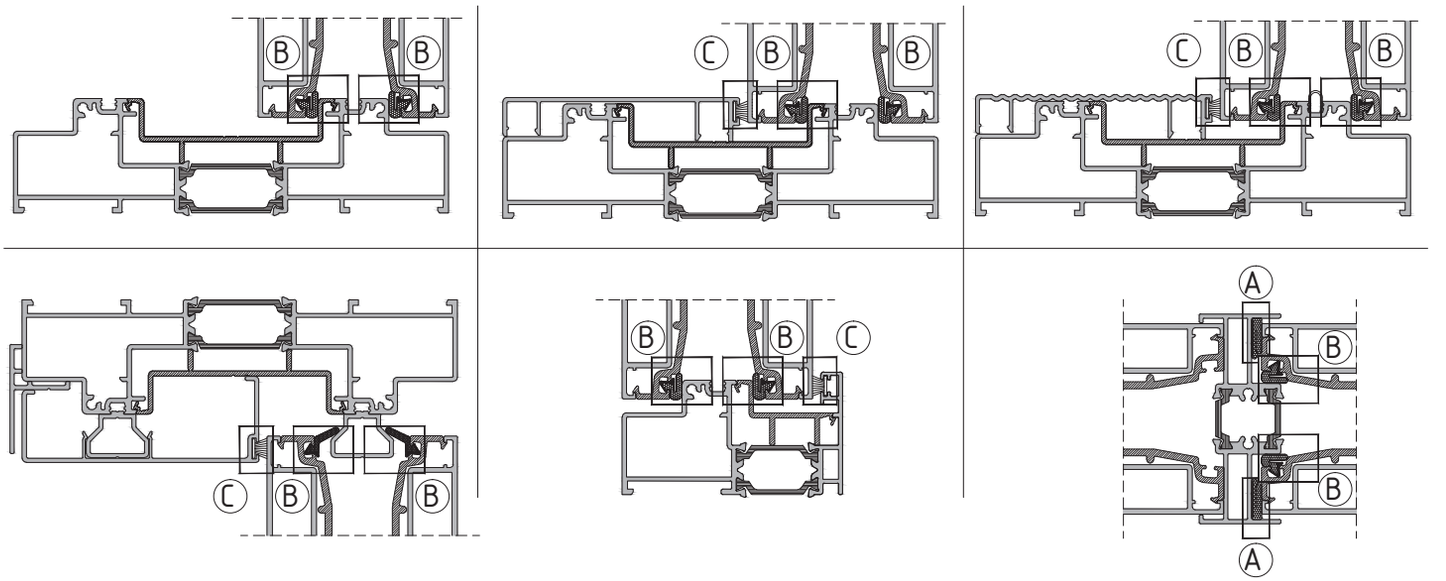
E70959

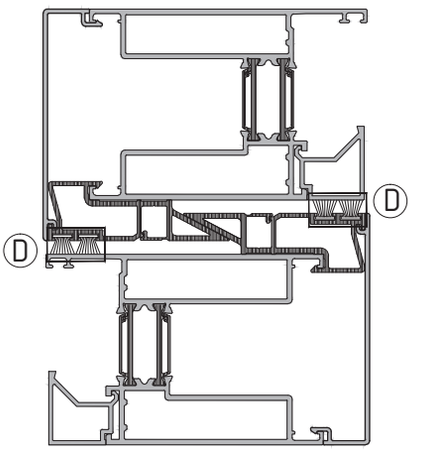


E70204

E70959

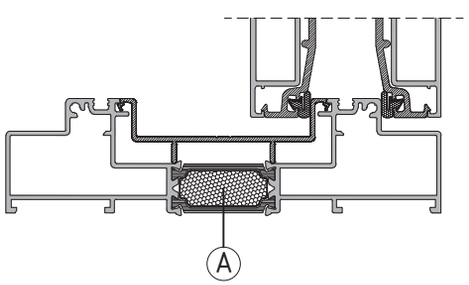
SELECTION OF APPROPRIATE WEATHERSEAL M70-44

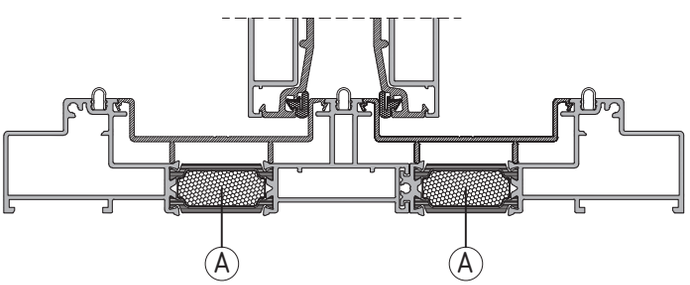


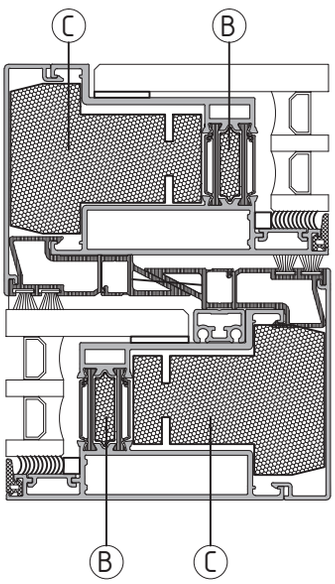


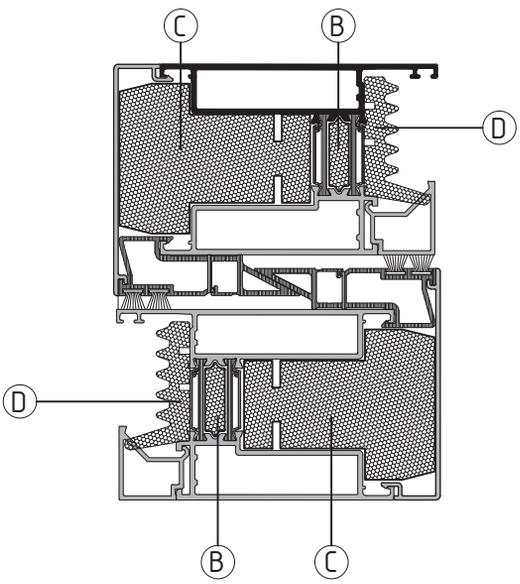
A			ET133010	composite weather seal for E70551
B			ET133011	composite weather seal for sash E70
C		7 mm	ET135507	pile weather seal FP 7 mm
D		9 mm	ET135509	pile weather seal FP 9 mm

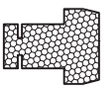
SELECTION OF APPROPRIATE FOAMED INSERT FOR ADDITIONAL THERMAL INSULATION M70-37



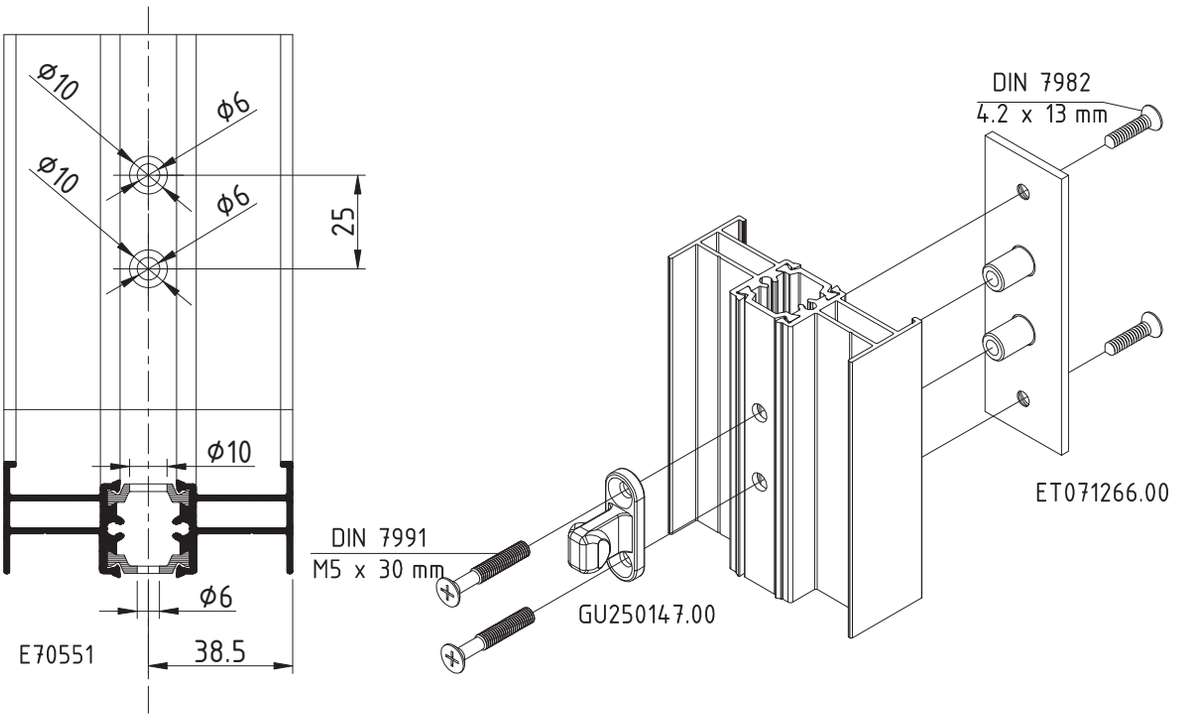


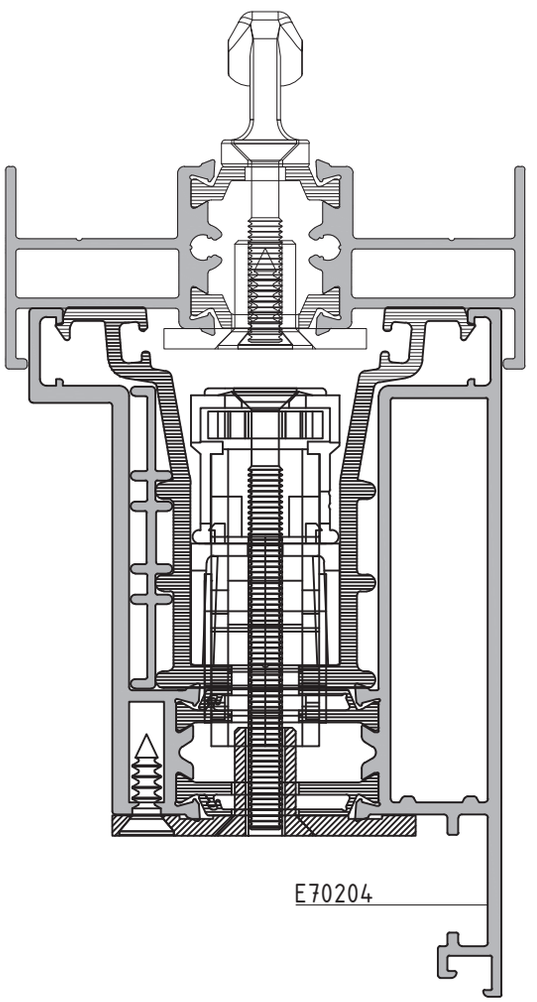


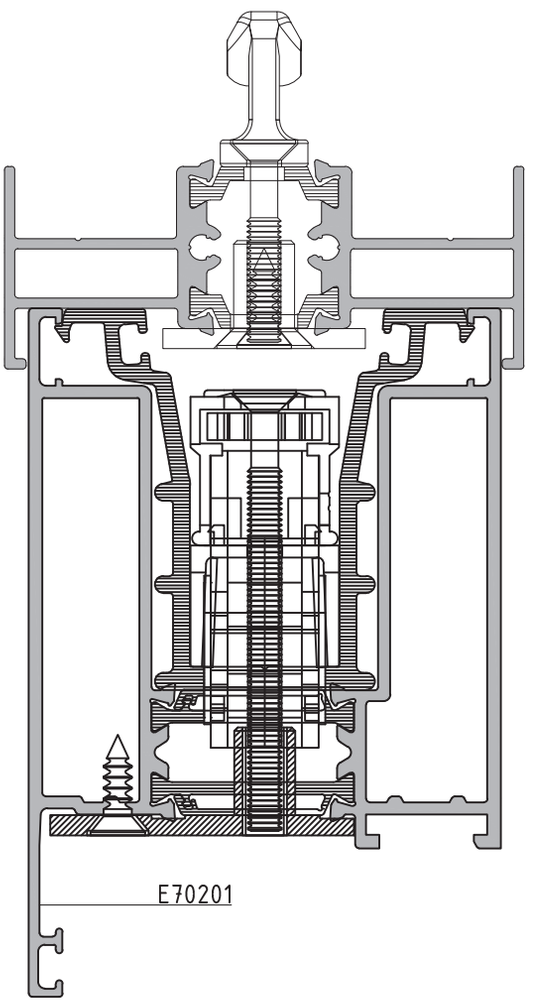


A		ET970101.00	foamed insert for rail E70
B		ET970201.00	foamed insert for ET080188, E70201, E70204
C		ET970603.00	foamed insert for sash (fixed at interlock side)
D		ET080523.00	foamed insert for filling the gap between glass pane - sash

MACHINING ON E70551 FOR FIXING THE STRIKERS OF THE HARDWARE M70-38

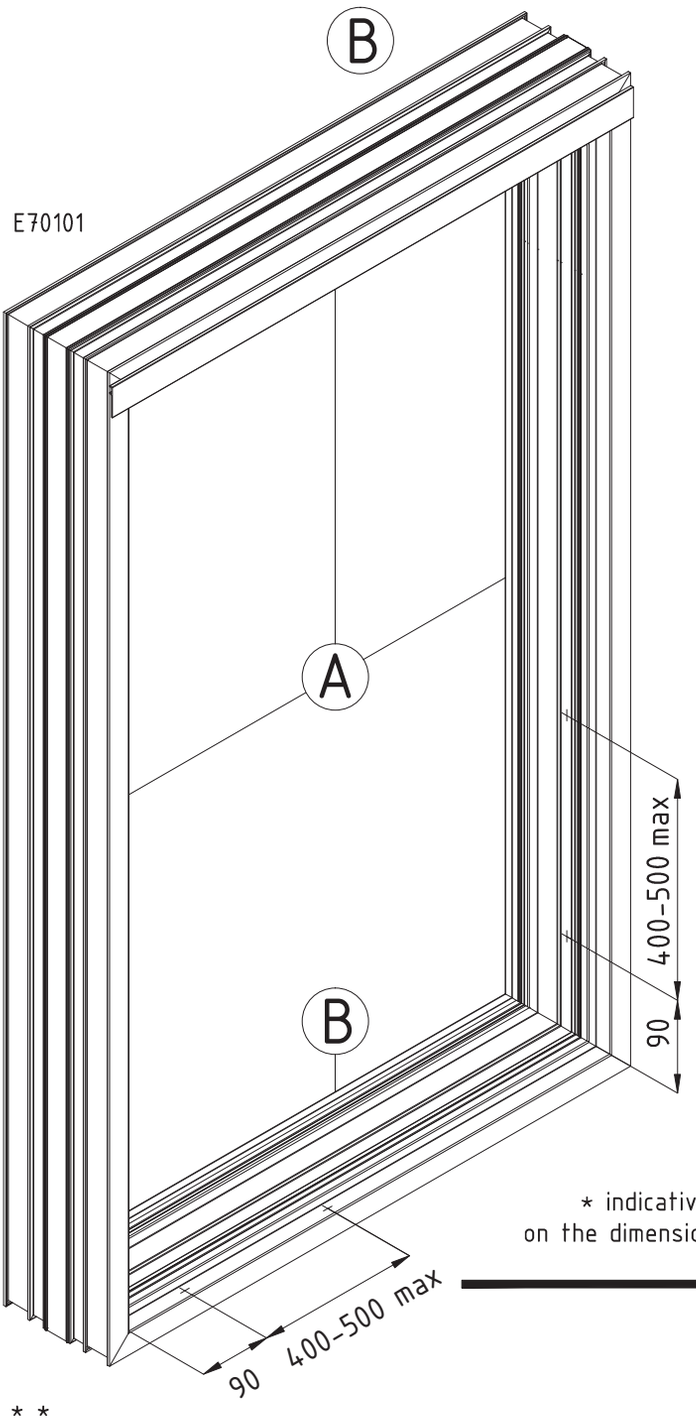




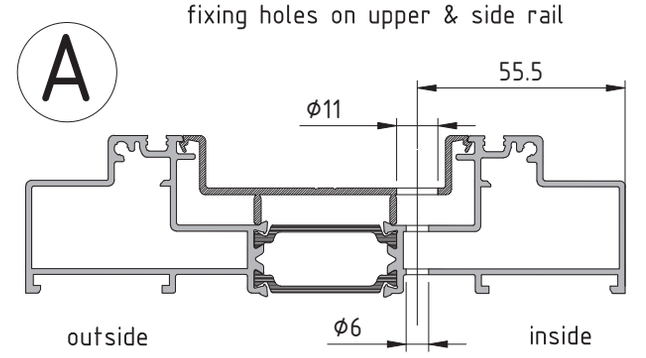


INSTALLATION OF FRAME E70101

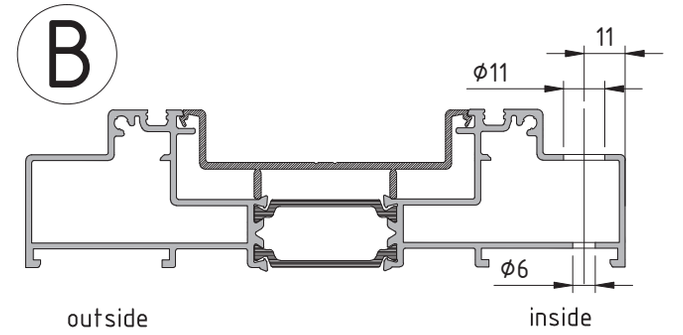
M70-39



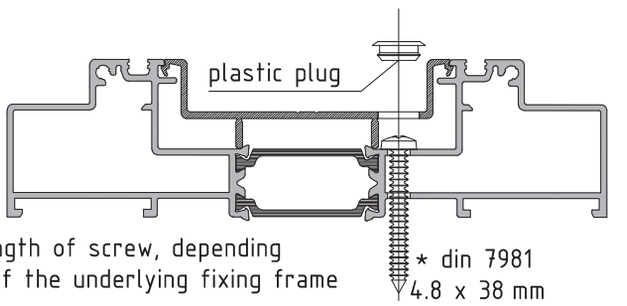
fixing holes on upper & side rail



fixing holes on bottom rail

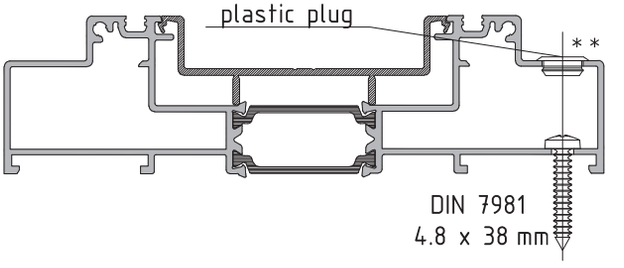


fixing upper & side rail



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

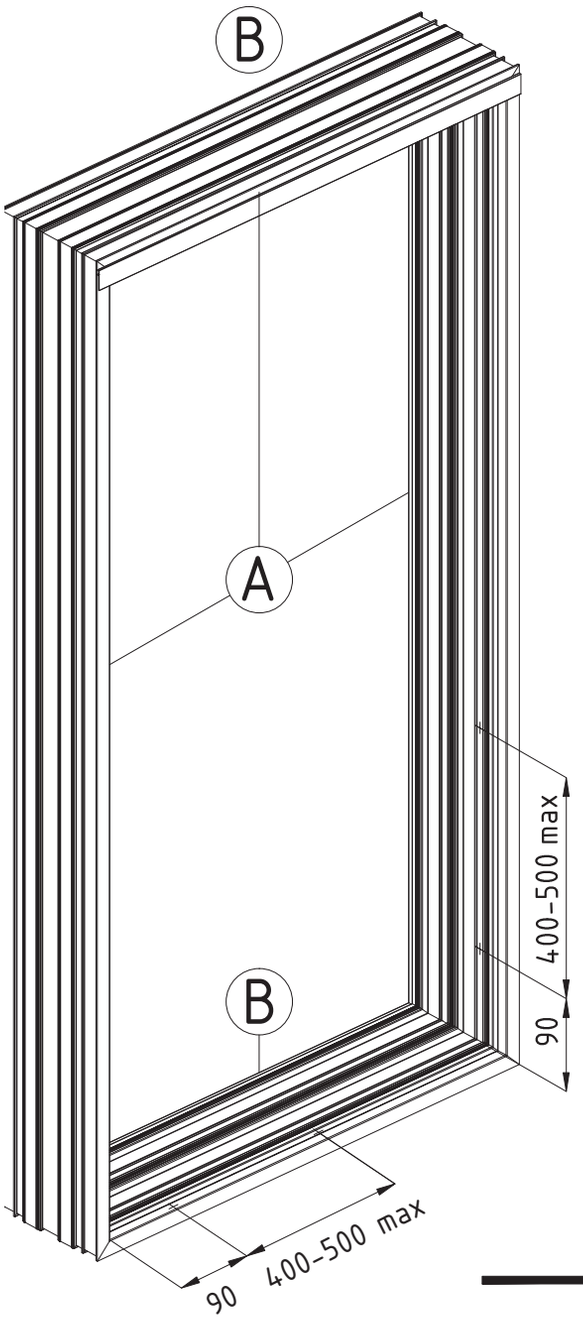
fixing bottom rail



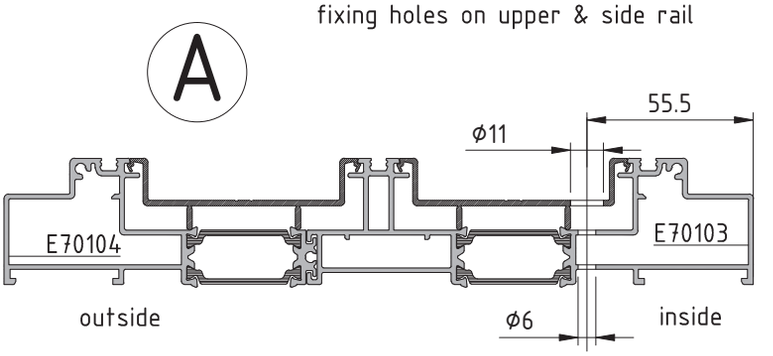
ATTENTION: do not fix plastic plugs on bottom rail in case of use of cover profile E70604

INSTALLATION OF FRAME E70103 & E70104

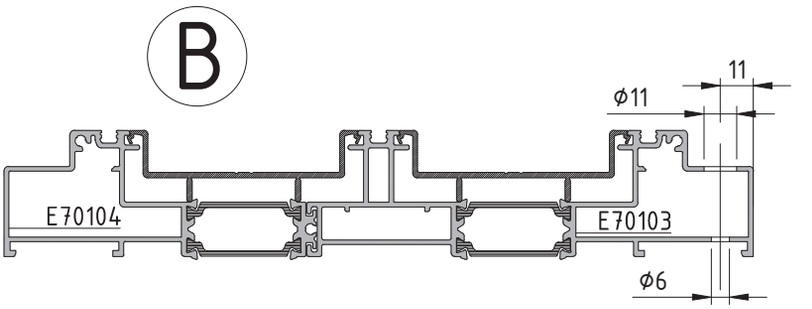
M70-40



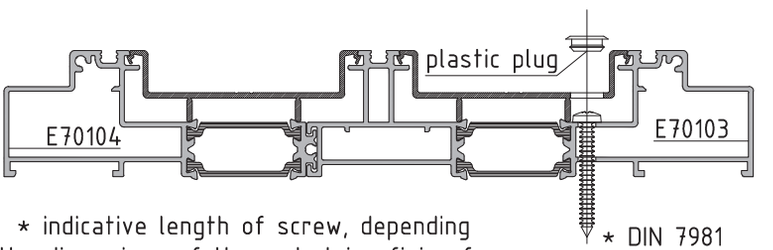
fixing holes on upper & side rail



fixing holes on bottom rail



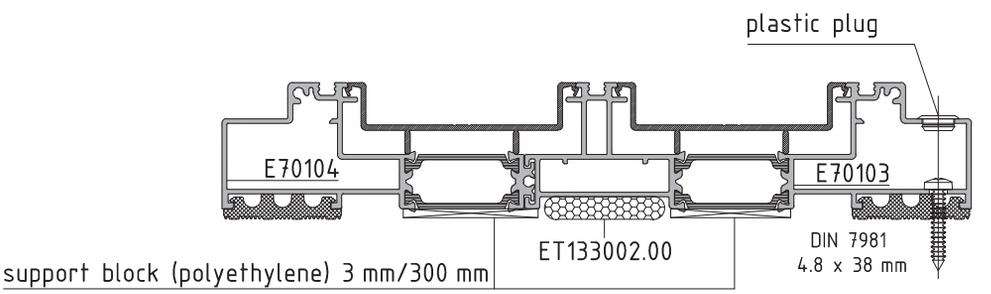
fixing holes upper & side rail



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

* DIN 7981 4.8 x 38 mm

fixing holes bottom rail

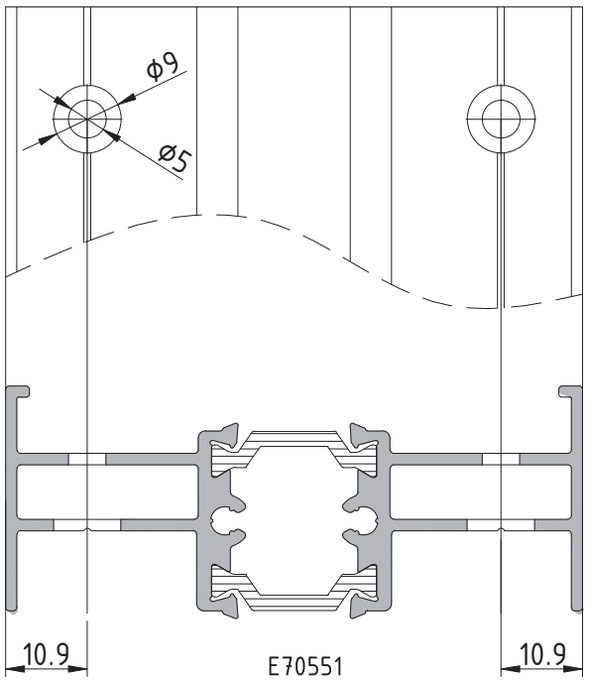


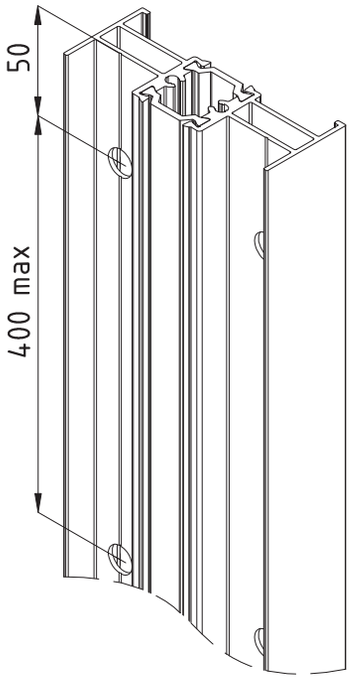
no scale

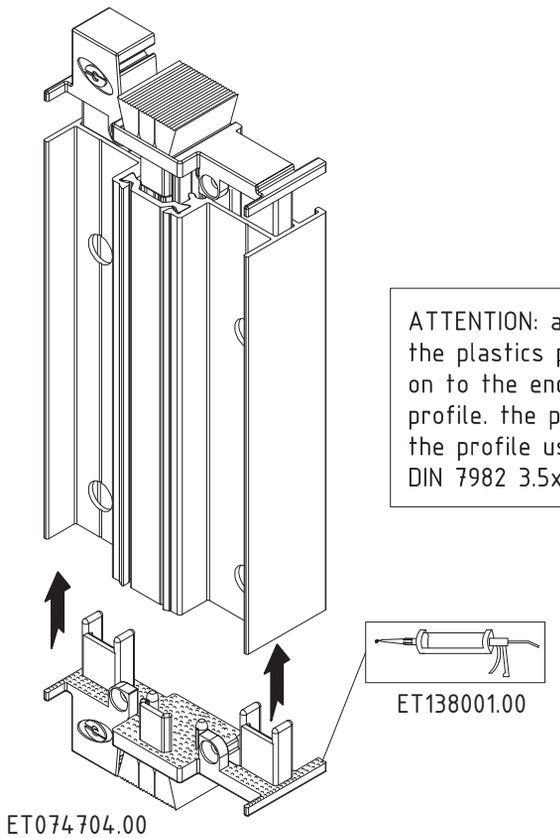
FIXING E70551 ON TO THE SASH FRAME

M70-41

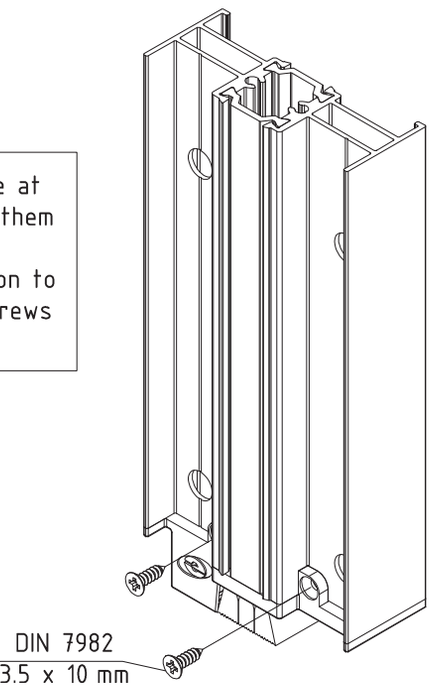
fixing holes on E70551 so that to fix it on to the sash frame



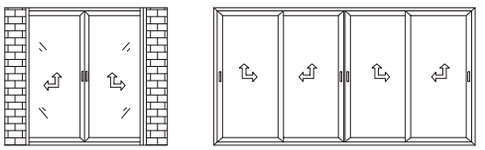


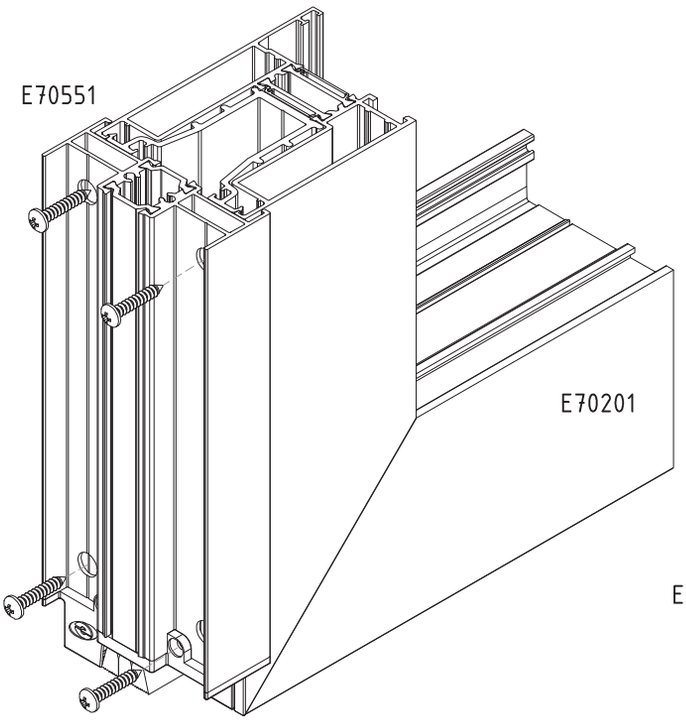


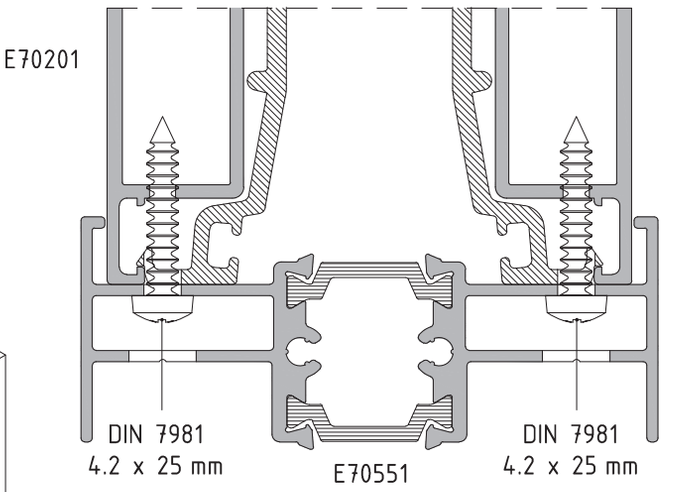
ATTENTION: always apply silicone at the plastics plugs before fixing them on to the ends on the adjoining profile. the plugs are fastened on to the profile using sheet metal screws DIN 7982 3.5x10 mm

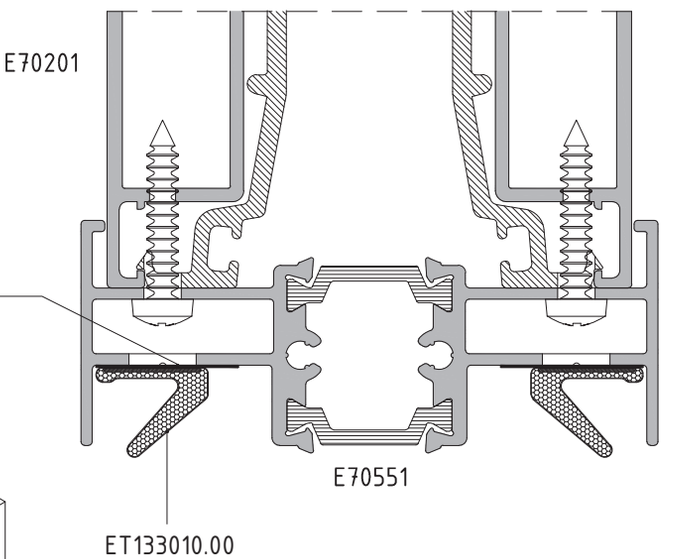


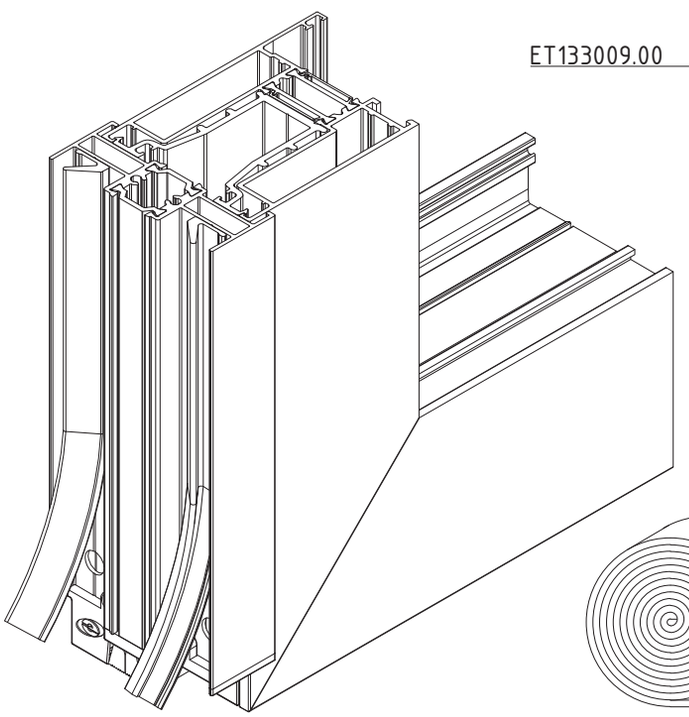
FIXING E70551 ON TO SASH FRAME MADE OF E70201 M70-42



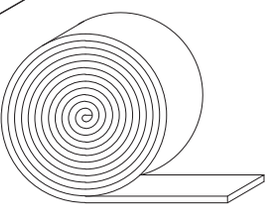








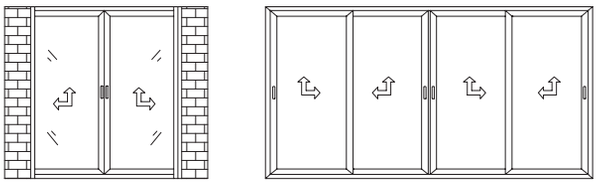
ET133010.00
no scale

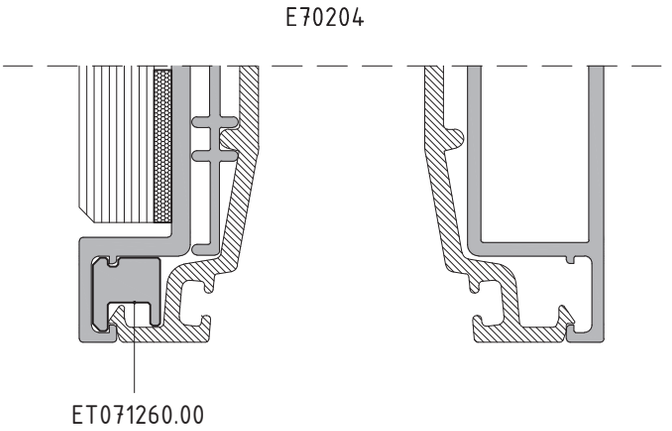


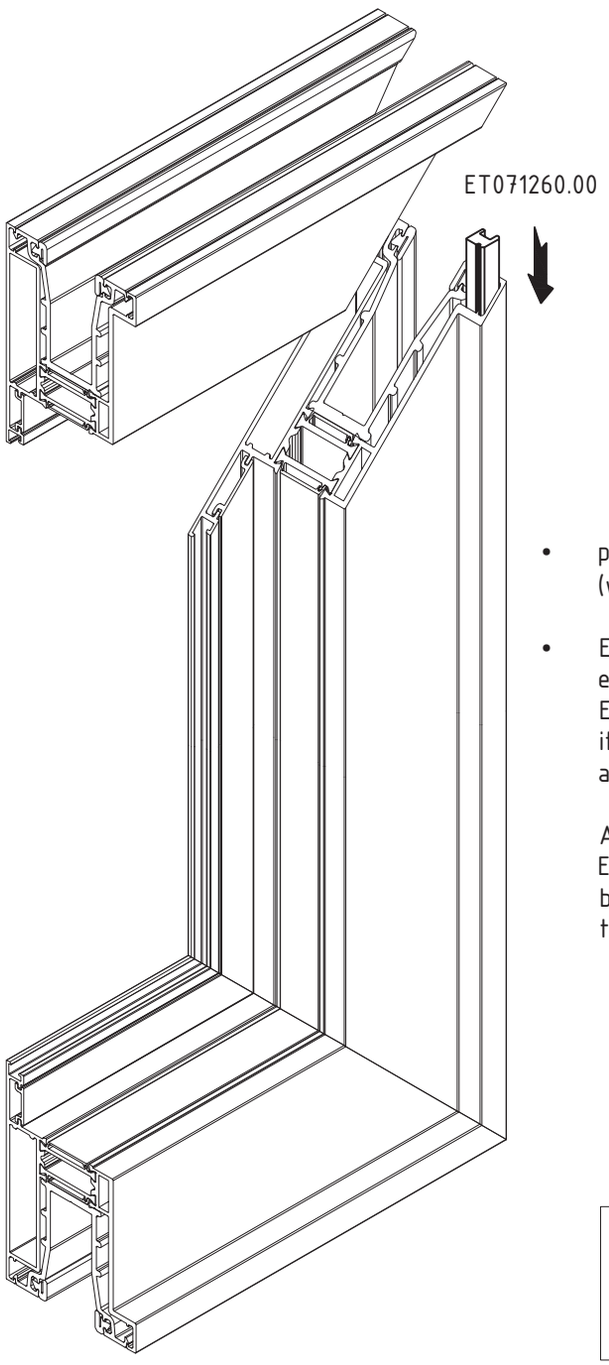
ET133009.00

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

FIXING ET 071260.00 ON TO SASH FRAME MADE OF E70204 M70-43







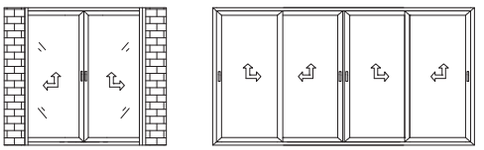
- part ET071260.00 is cut according to the formula S.H-30mm (where S.H = sash height)
- ET071260.00 is inserted into the groove formed between the external part of E70204 and the the PVC profile ET080189.00.
  it is placed only at the side of the sash frame, at which the adjoining profile E70551 is to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

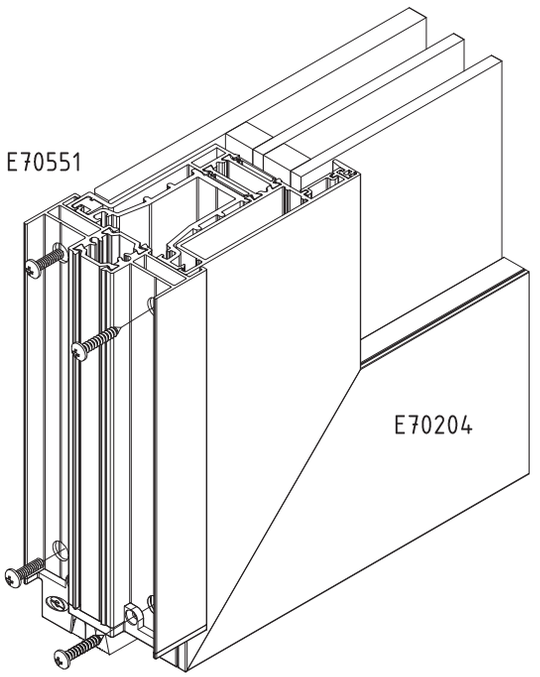
  ATTENTION:
  ET071260.00 is inserted into the sash profile before pressing the joint corner brackets at the crimping machine.

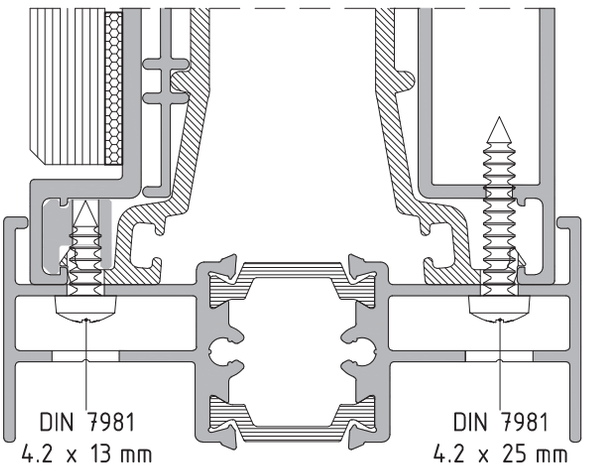
ATTENTION:
part ET071260.00 is fixed only at profile E70204

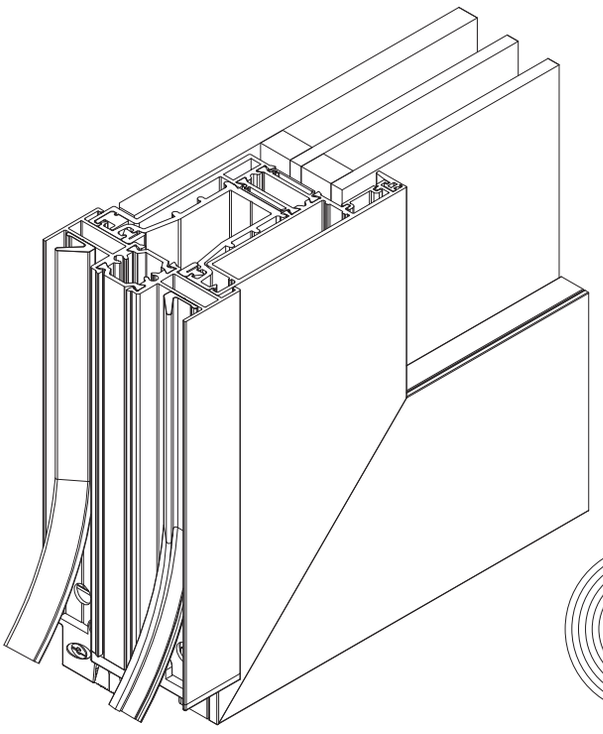
scale : 1:1

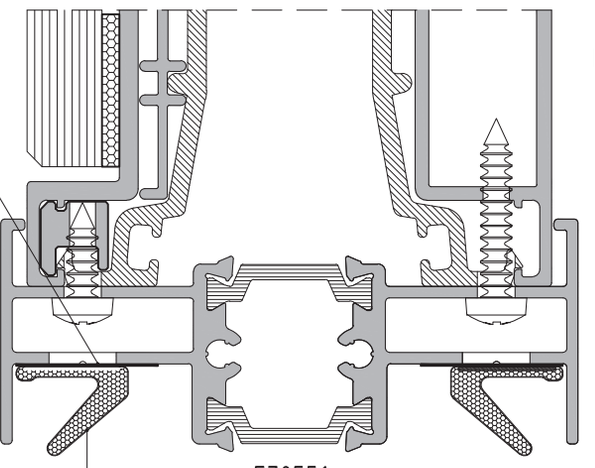
FIXING E70551 ON TO SASH FRAME MADE OF E70204 M70-44

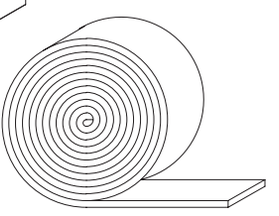






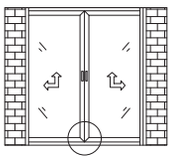




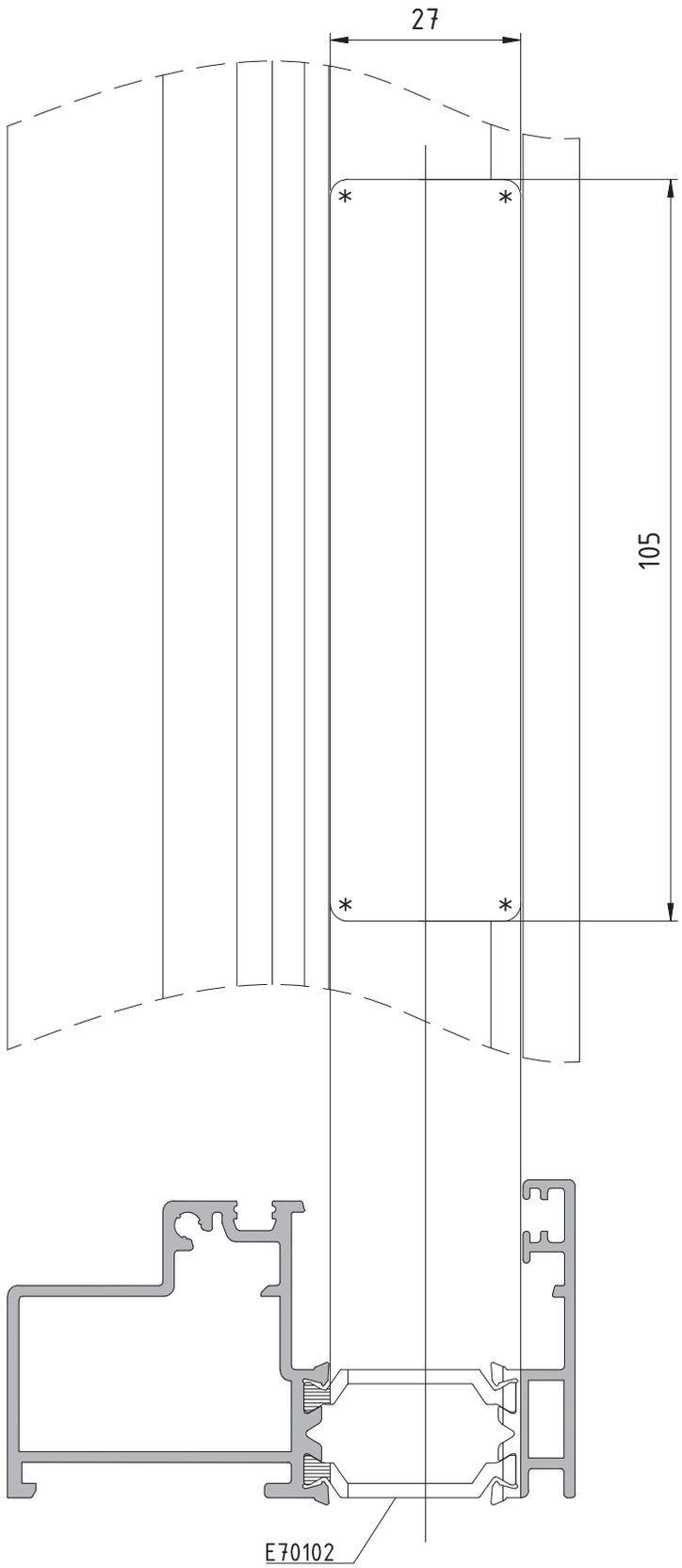


ATTENTION: foam gasket ET133010.00 is fixed on to E70551 using double coated tape ET133009.00

MACHINING ON BOTTOM RAIL E70102 FOR DOUBLE VENT SLIDING DOOR M70-45



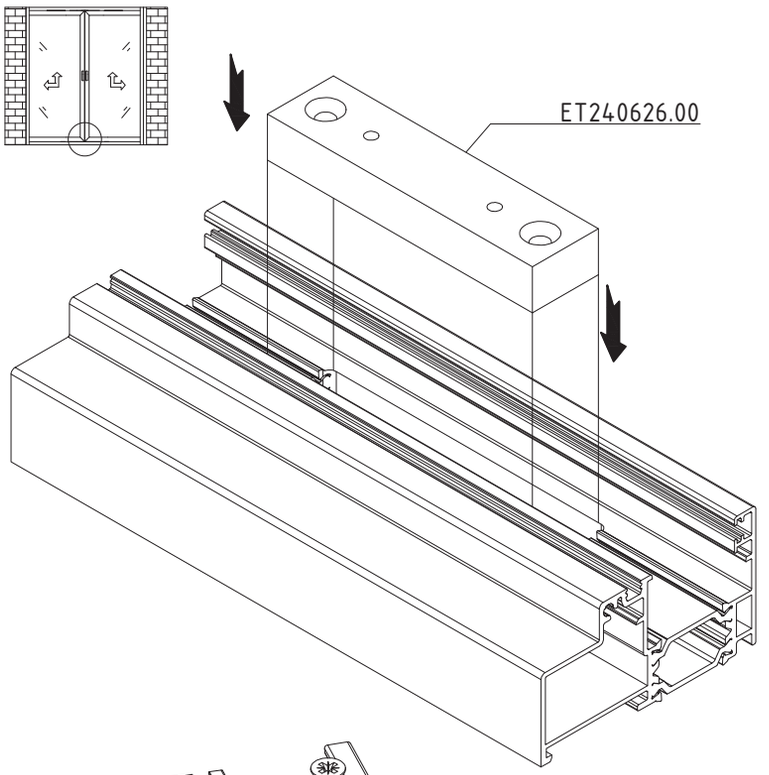
machining on E70102
for ET240626.00

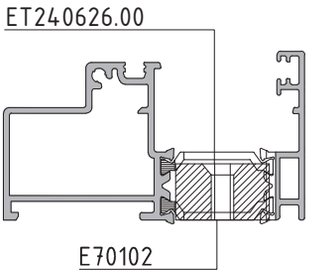


*R=3 mm

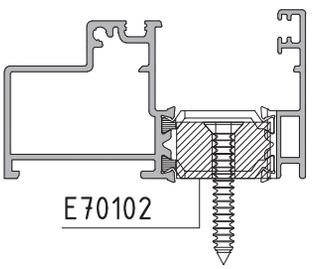
scale : 1:1

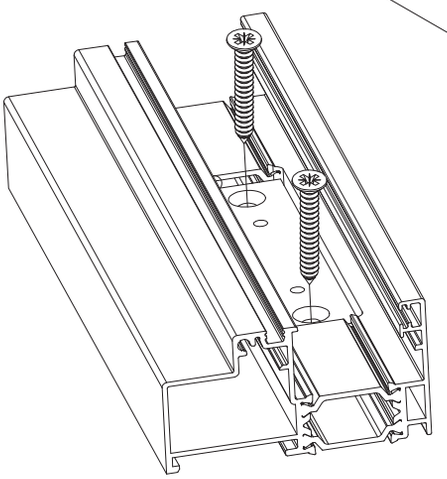
FIXING ET240626.00 ON THE LOWER SIDE OF A DOUBLE VENT POCKETSLIDING DOOR M70-46

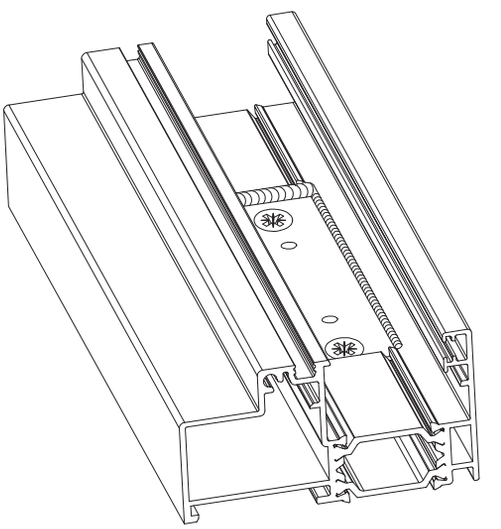




ET240626.00 is placed into the groove that has been formed on to rail E70102



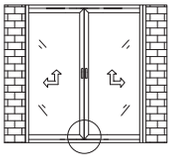


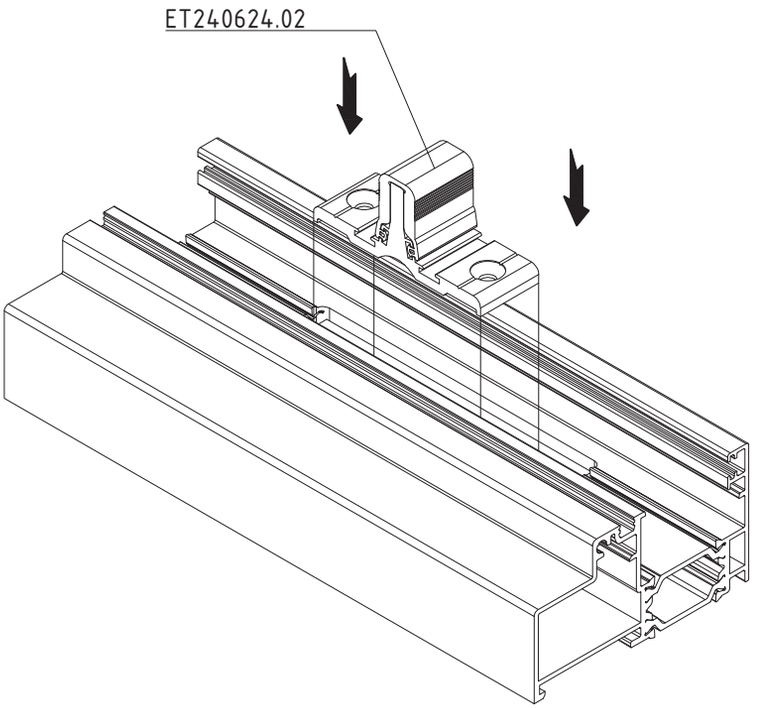


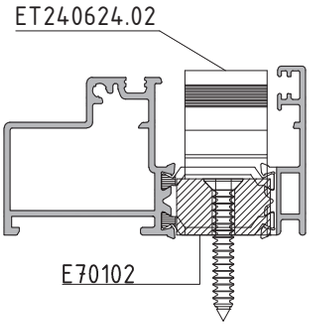
using part ET240626.00 as jig, drill fixing holes (for sheet metal screws 5.5x50 mm) on to the threshold. remove part temporarily, so that to fix the plastic plugs. place the part and fix it on place using countesunk head sheet metal screws 5.5x50 mm DIN 7982

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

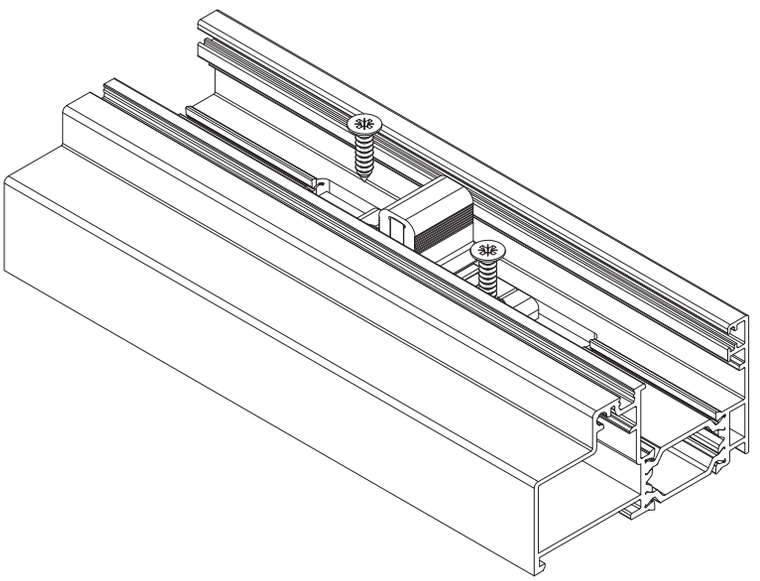
FIXING ET240624.00 ON THE LOWER SIDE OF A DOUBLE VENT POCKETSLIDING DOOR M70-47

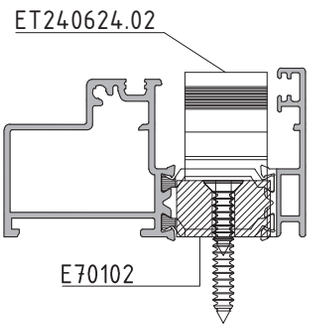






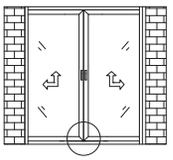
place stop ET240624.02 on to ET240626.00 taking care so that the fixing holes are aligned

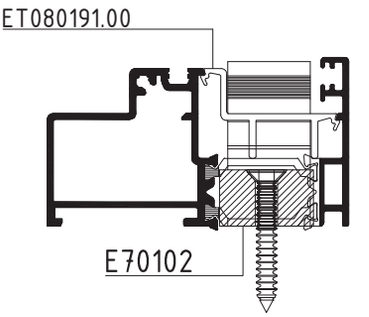


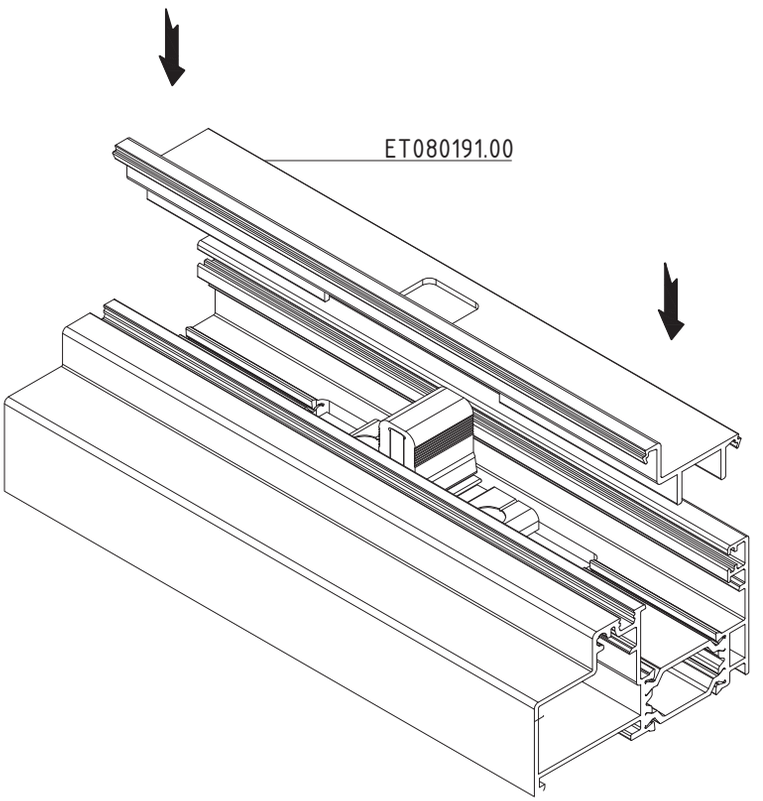


stop ET240624.02 is fixed on to ET240626.00 using sheet metal screws 4.8x20 mm DIN 7982

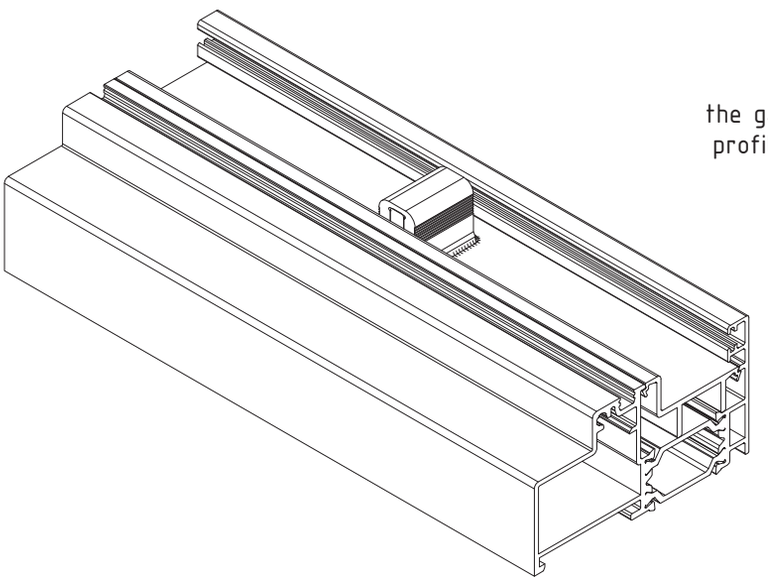
FIXING ET080191.00 ON THE bottom SIDE OF A DOUBLE VENT POCKETSLIDING DOOR M70-48





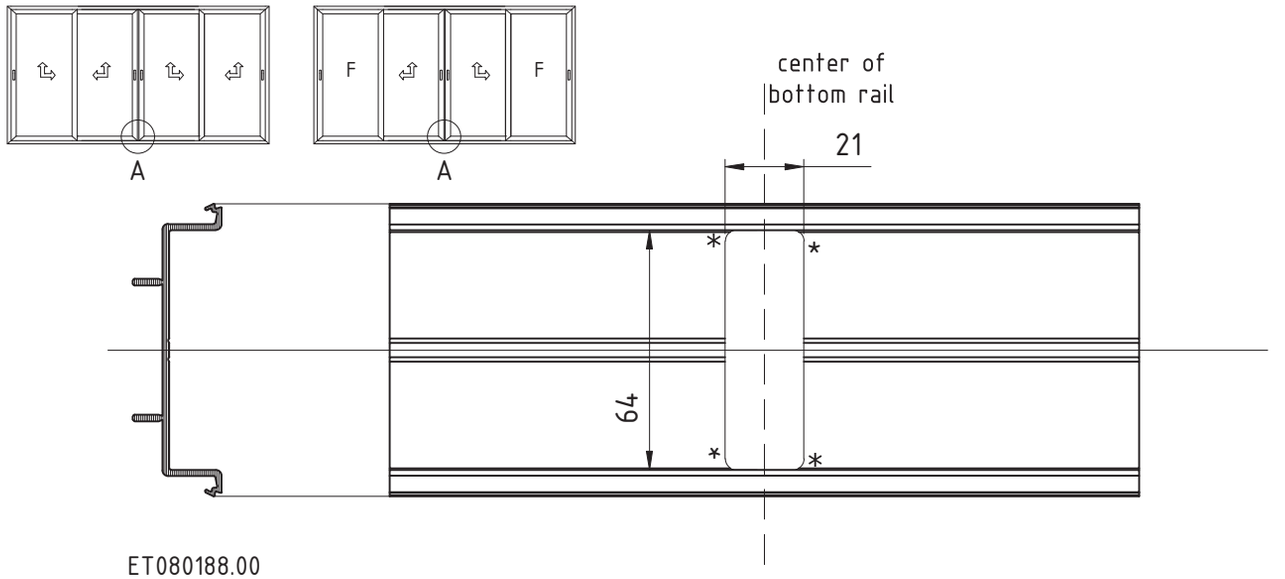


fix machined plastic profile
ET080191.00 on to the rail



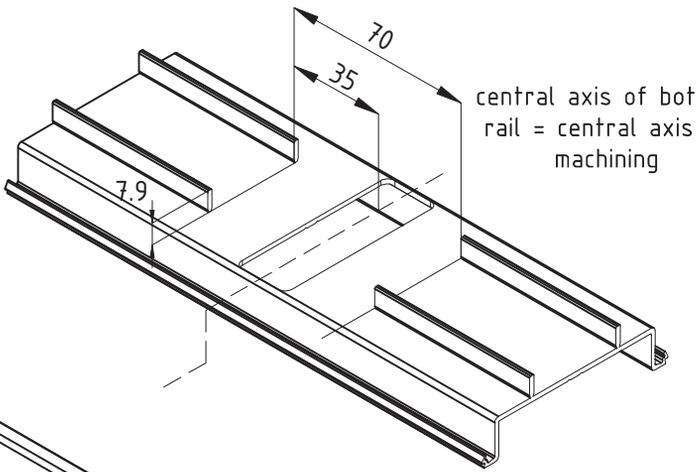
the gap between ET240624.02 and plastic
profile ET080191.00 is filled with silicone
ET138001.02

MACHINING ON ET080188 FOR FOUR SASHES SLIDING DOOR FOR bottom RAIL E70101 M70-49

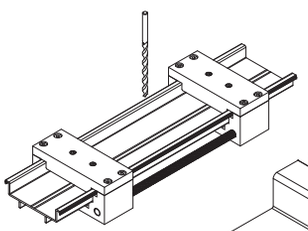


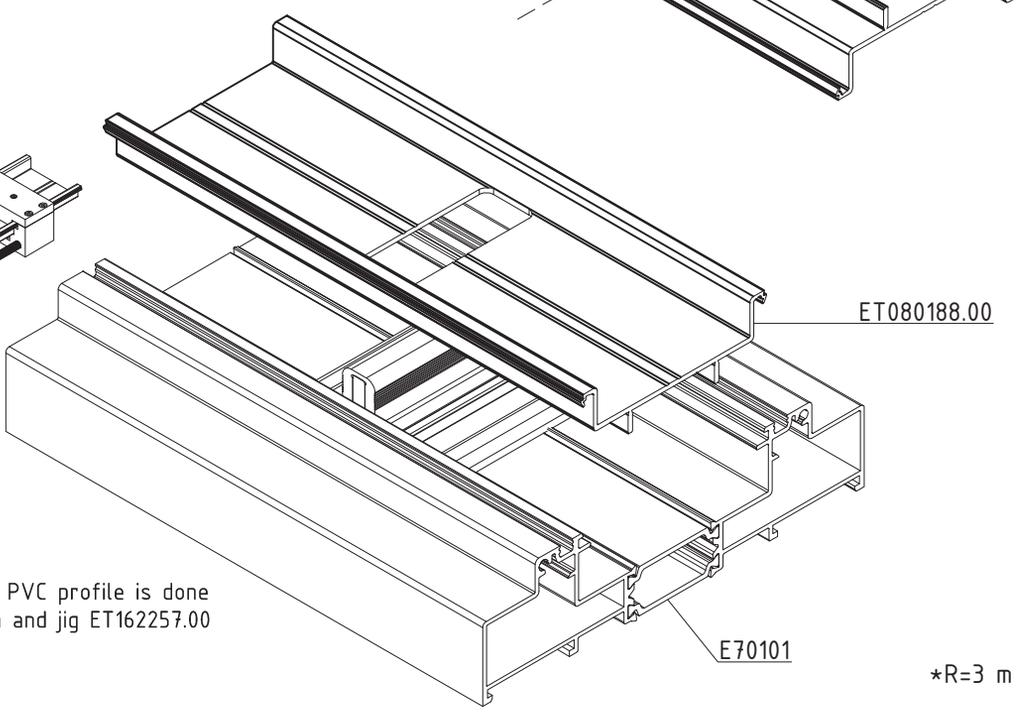
ET080188.00

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



ET162257.00

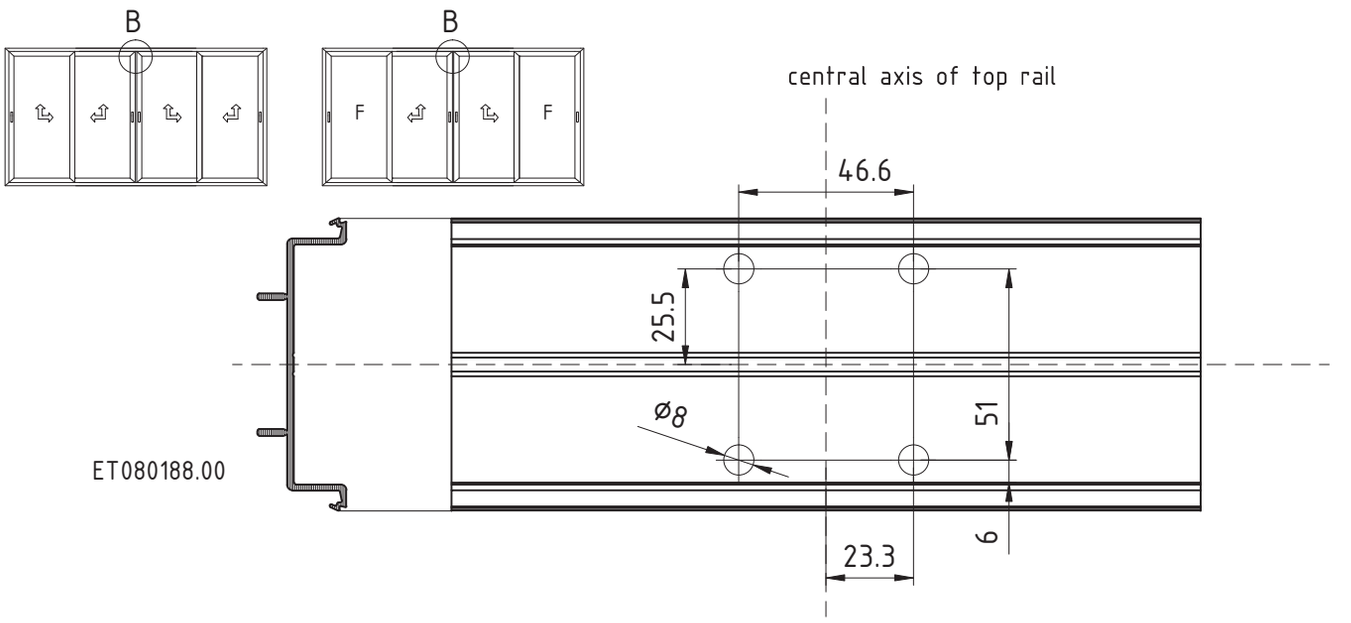




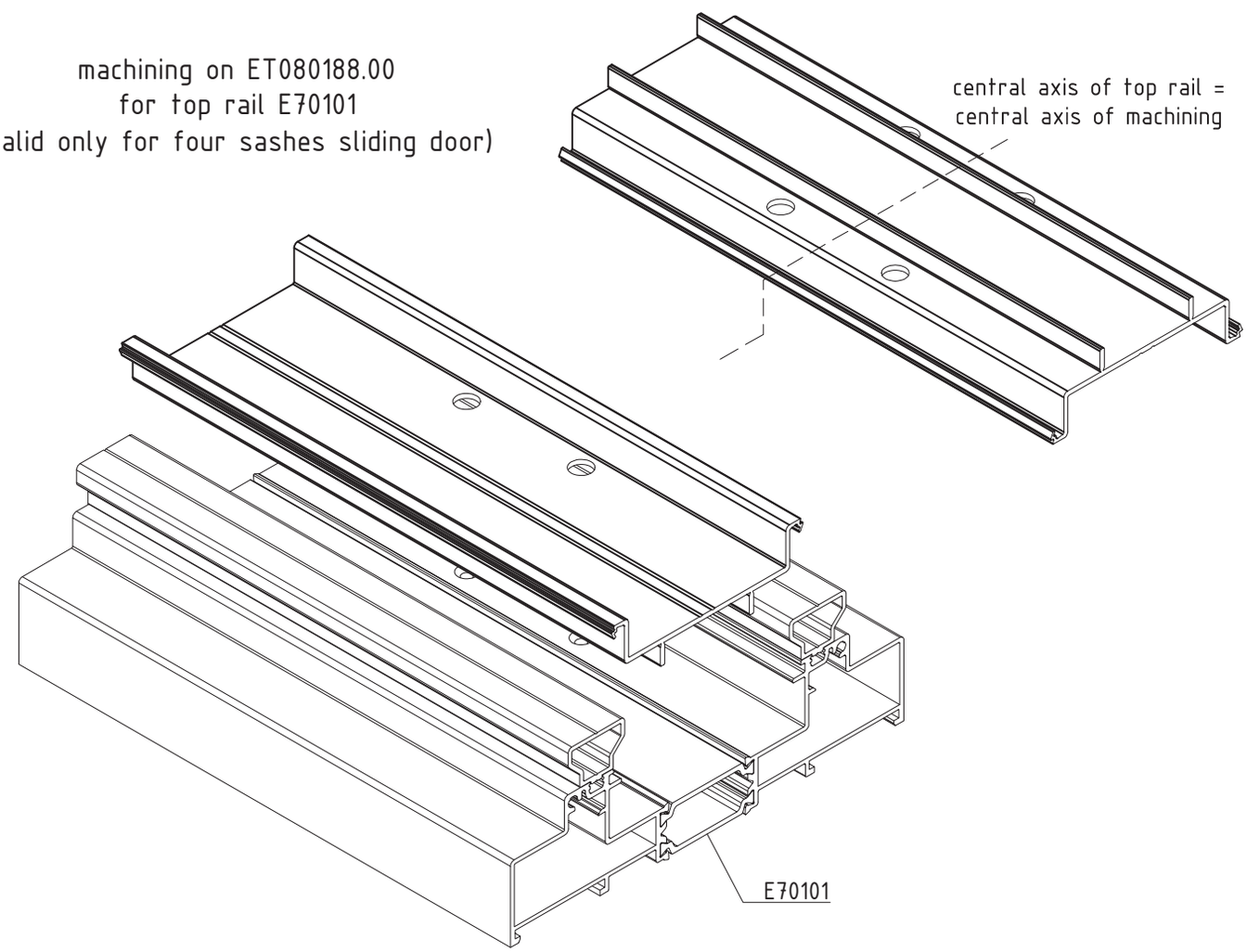
machining of the PVC profile is done using pantograph and jig ET162257.00

*R=3 mm

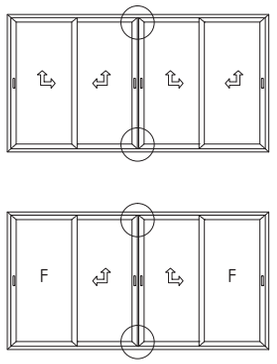
MACHINING ON ET080188 FOR FOUR SASHES SLIDING DOOR FOR TOP RAIL E70101 M70-50

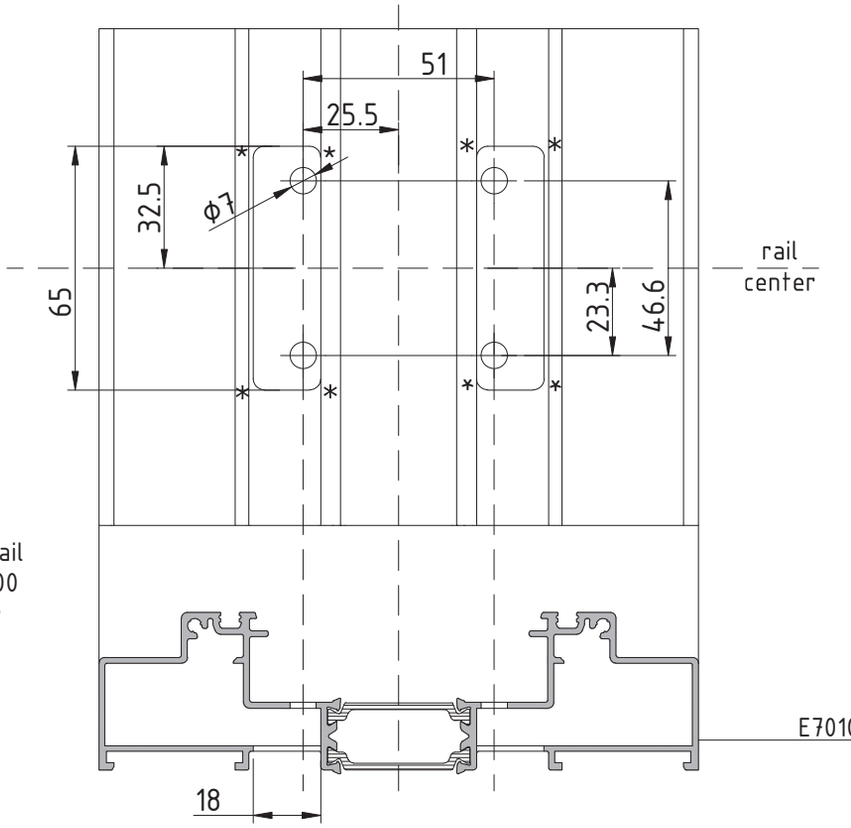


machining on ET080188.00
for top rail E70101
(valid only for four sashes sliding door)



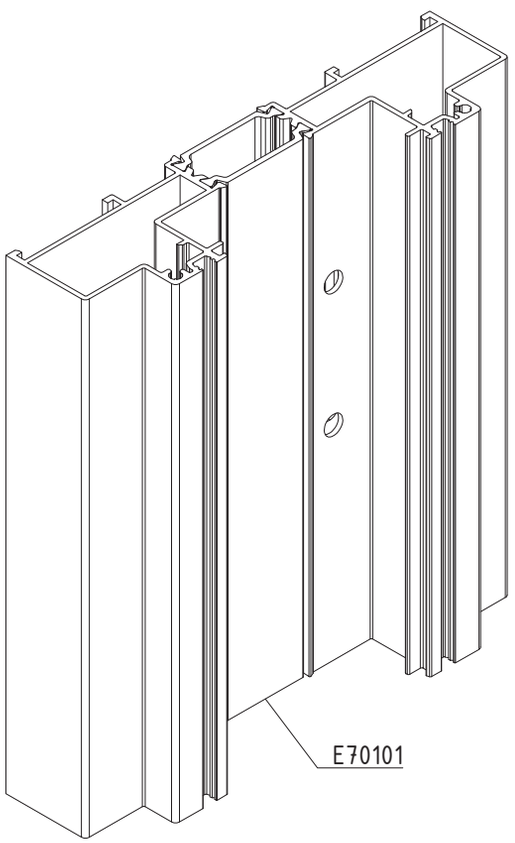
MACHINING ON TOP & BOTTOM RAIL E70101 FOR FOUR SASHES SLIDING DOOR M70-51

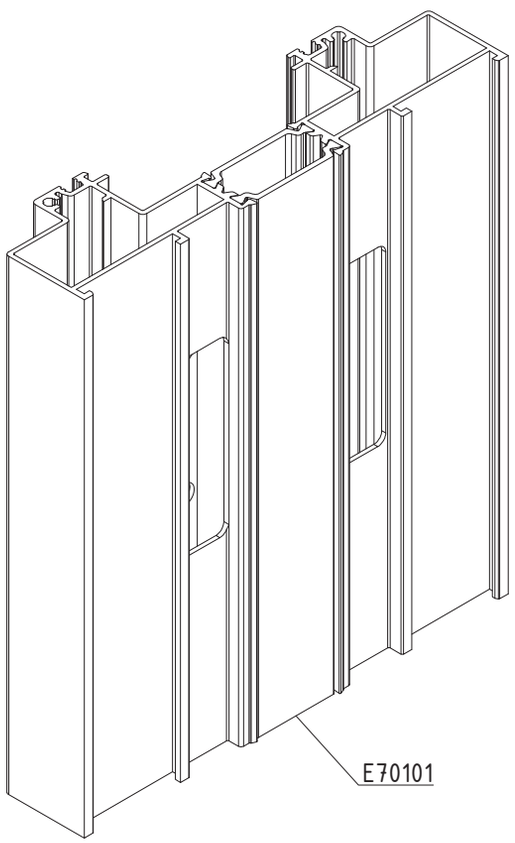




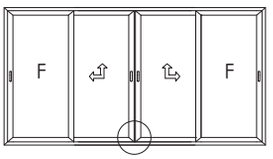
machining on top and bottom rail E70101 so that to fix ET240625.00 on to a four sashes sliding door

*R=3 mm

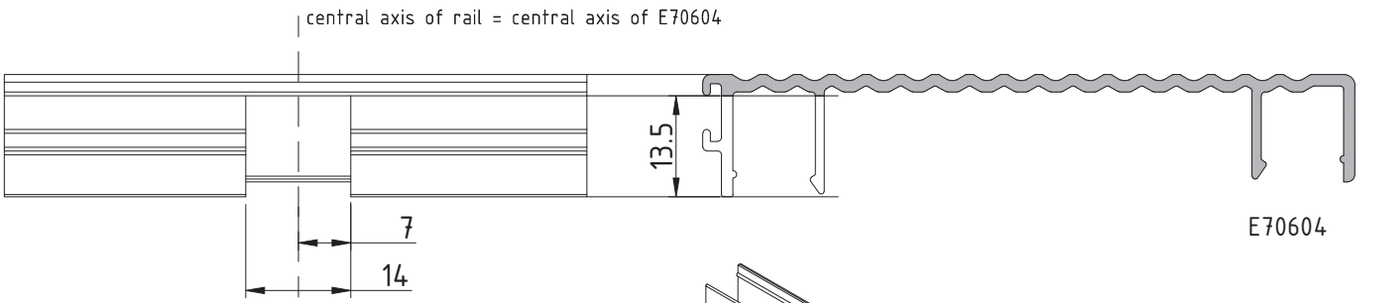


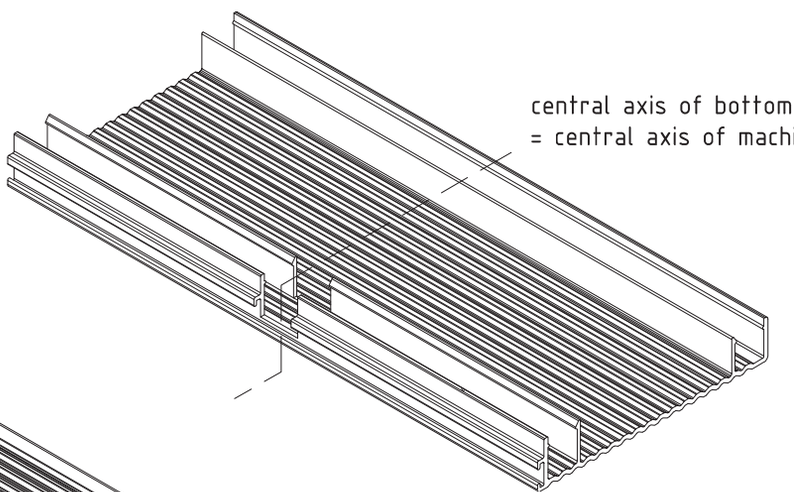


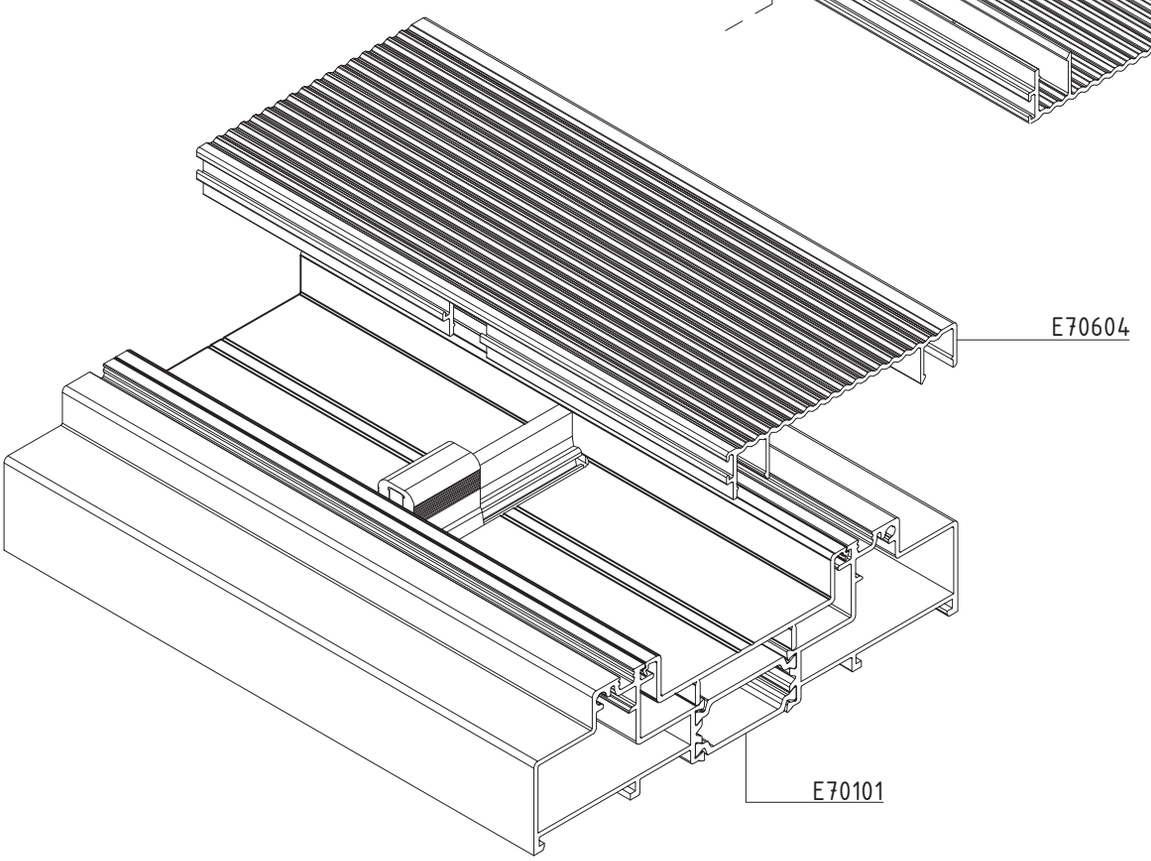
MACHINING ON COVER PROFILE E-70604 FOR FOUR SASHES SLIDING DOOR M70-52



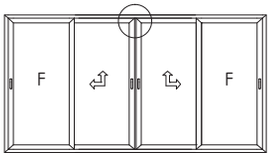
machining on E70604 in order to fix it on to the bottom rail E70101 of a four sashes sliding door



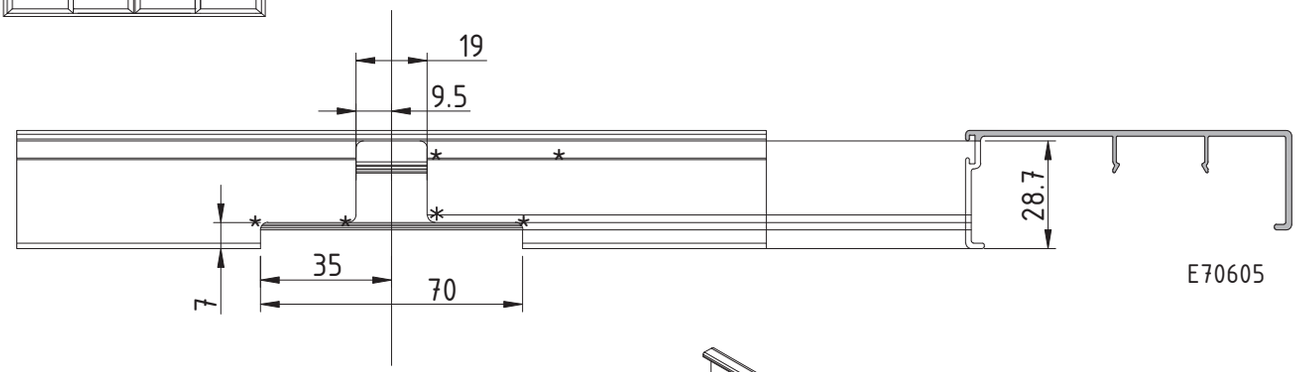




MACHINING ON COVER PROFILE E70605 FOR FOUR SASHES SLIDING DOOR M70-53



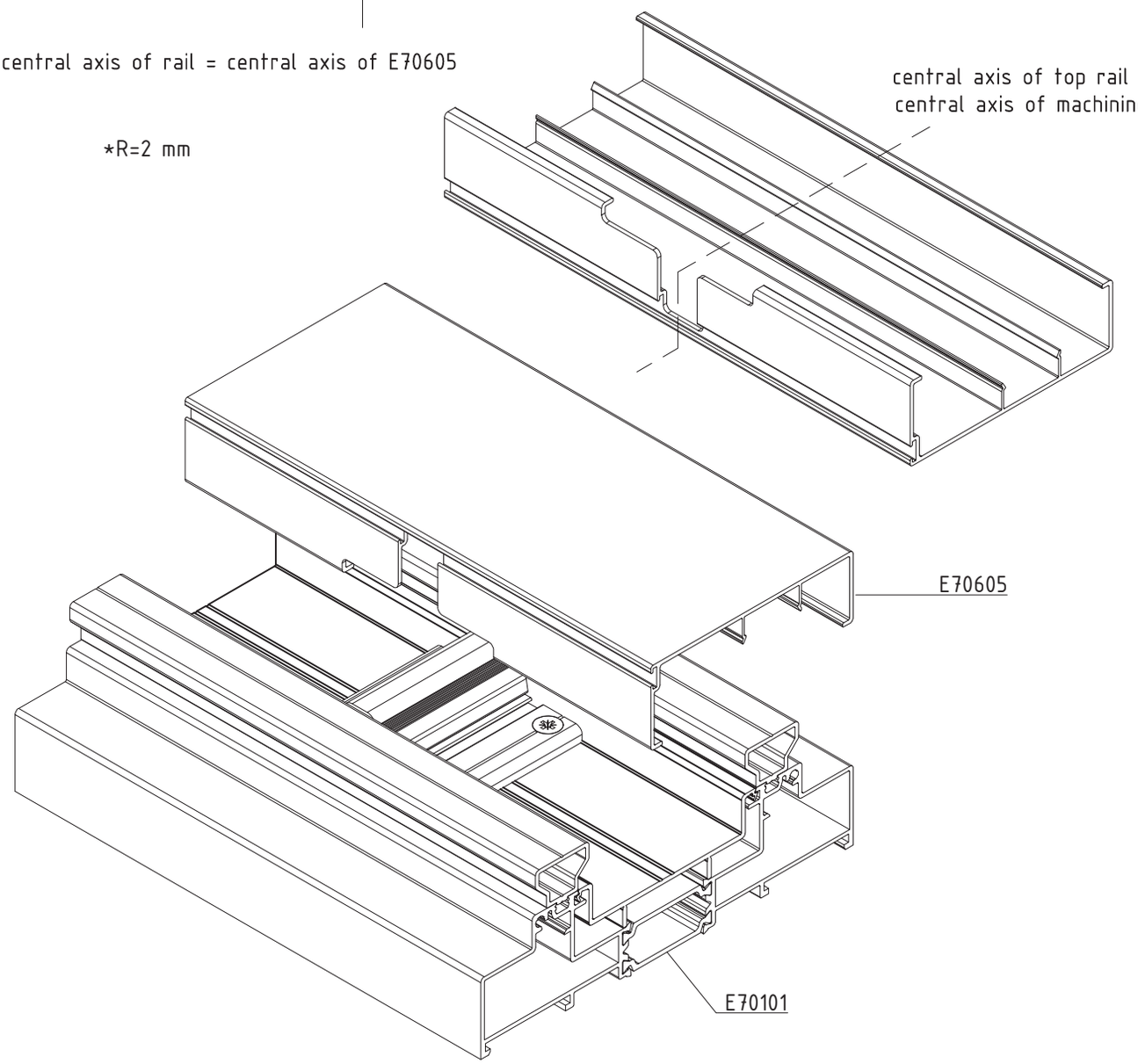
machining on E70605 in order to fix it on to the top rail E70101 of a four sashes sliding door



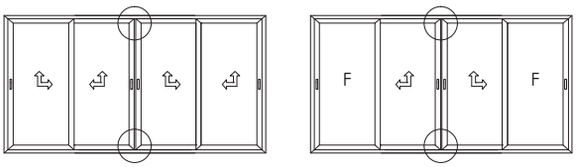
central axis of rail = central axis of E70605

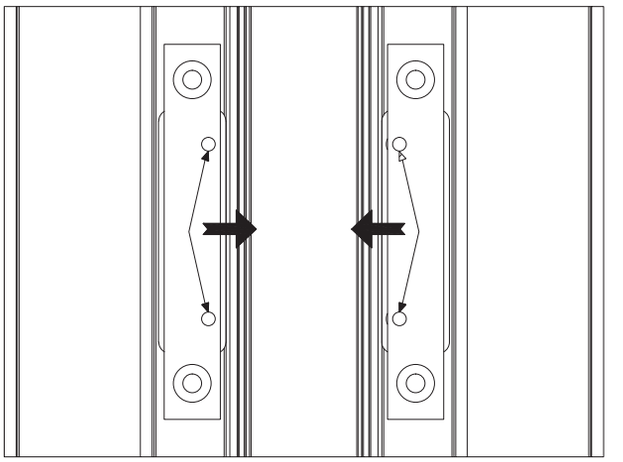
central axis of top rail = central axis of machining

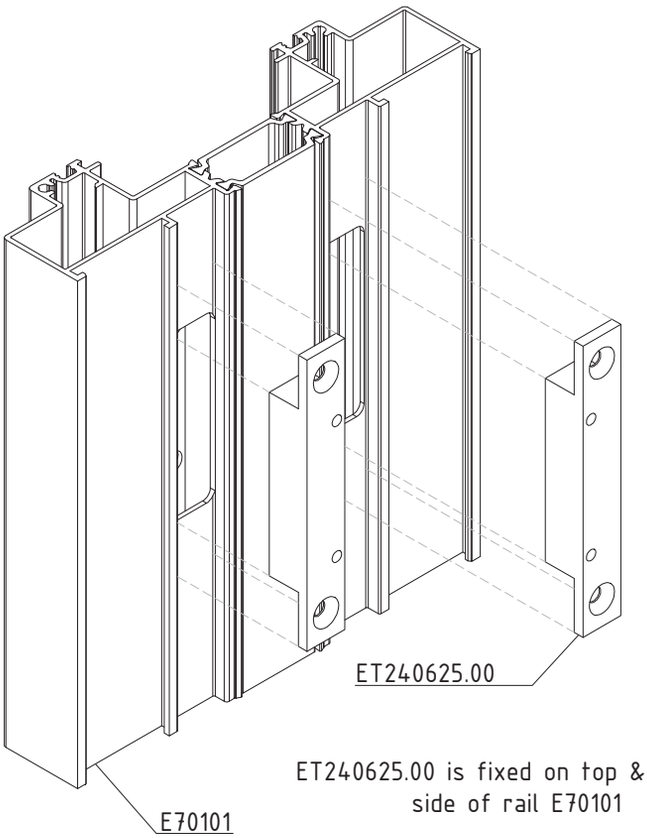
*R=2 mm



FIXING ET240625 ONTO E70101 (VALID ONLY FOR FOUR SASHES SLIDING DOOR) M70-54

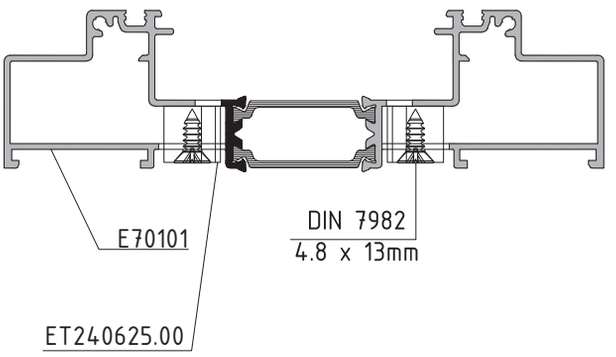




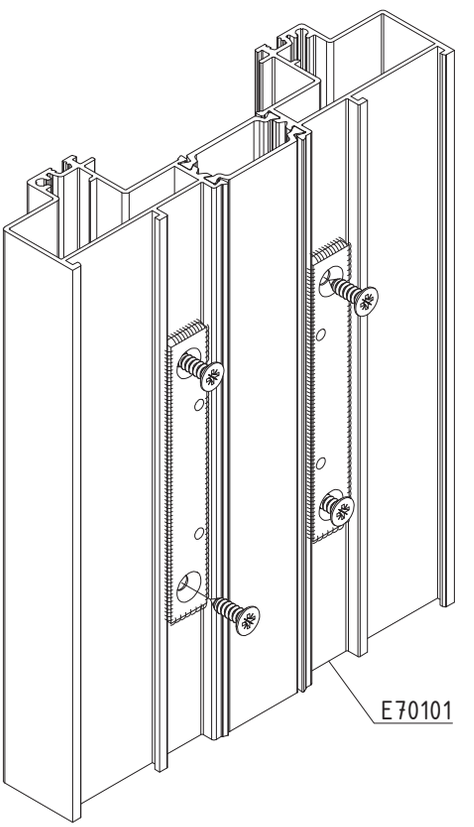


ET240625.00 is placed into the grooves formed at the back side of profile E70101, taking care so that the fixing holes of ET240625.00 (for the stop) are placed at the side of the polyamide, as presented in the drawing above

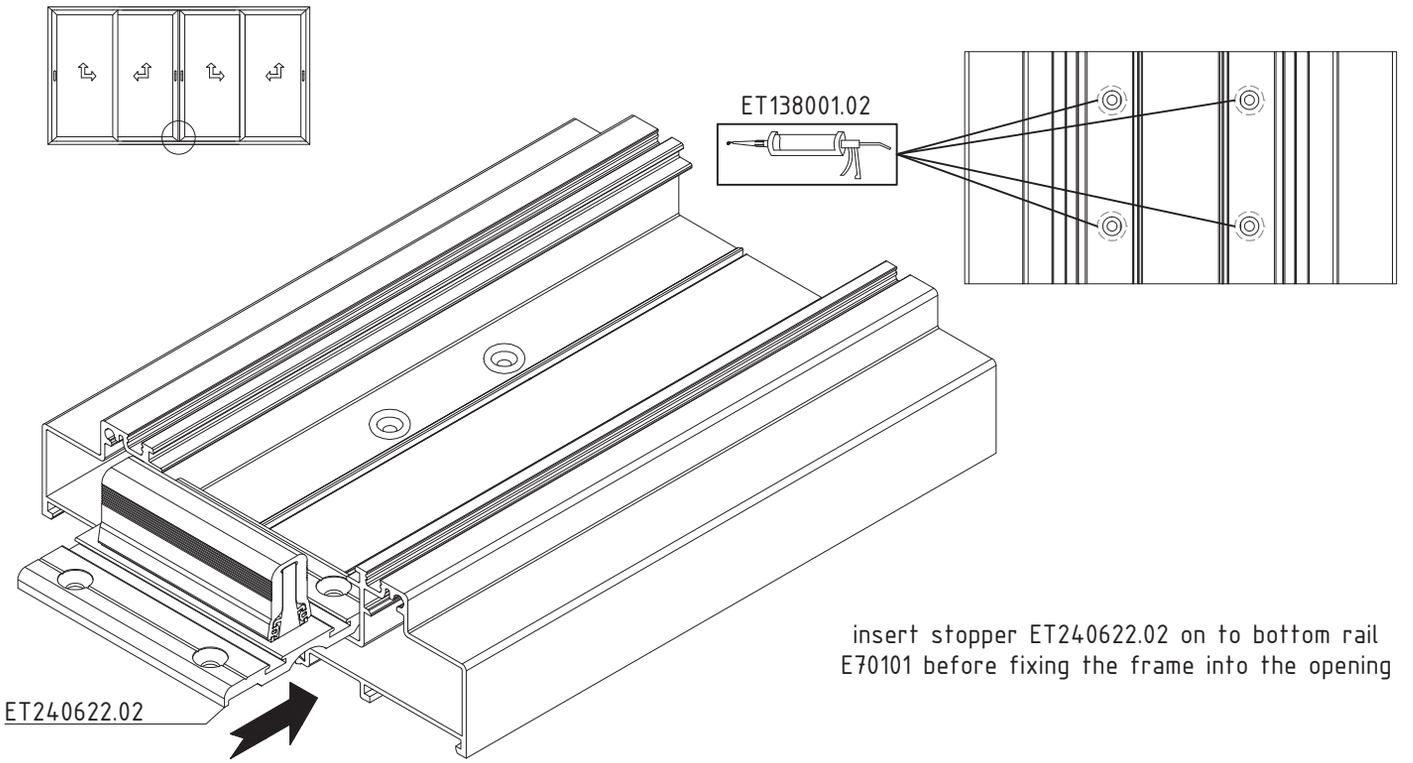
ET240625.00 is fixed on top & bottom side of rail E70101



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

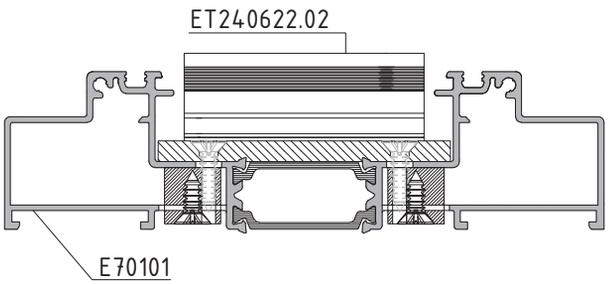


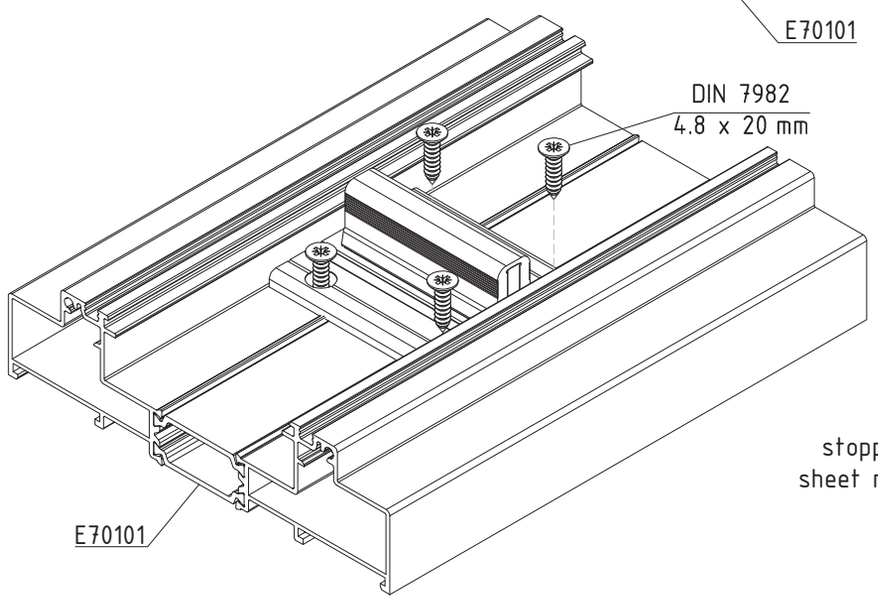
FIXING ET240622.02 ON THE LOWER SIDE OF A FOUR SASHES SLIDING DOOR M70-55



insert stopper ET240622.02 on to bottom rail E70101 before fixing the frame into the opening

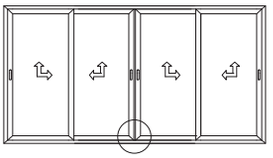
after fixing the rail into the opening apply silicone along the perimeter of each hole drilled on to rail E70101, as presented in the figure. move up the stopper, so that not to spread the silicone and move it until the fixing holes are aligned, then press the stopper against the rail

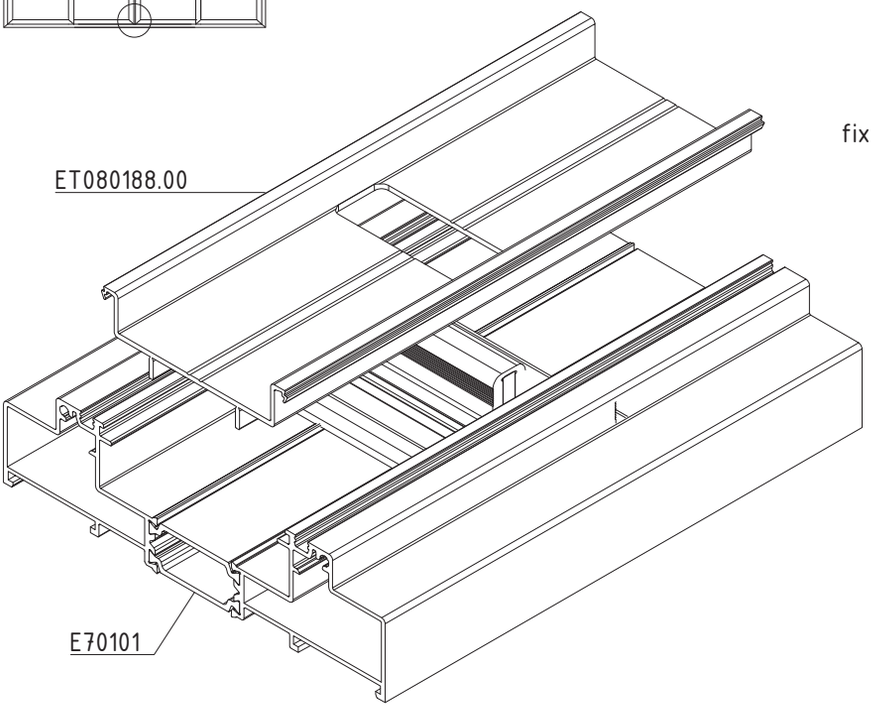




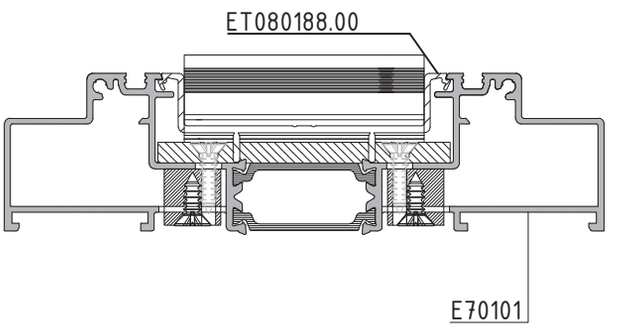
stopper ET240624.02 is fixed using sheet metal screws 4.8x20 mm DIN 7982

FIXING ET080188.00 ON THE bottom SIDE OF A FOUR LEAF SLIDING DOOR M70-56

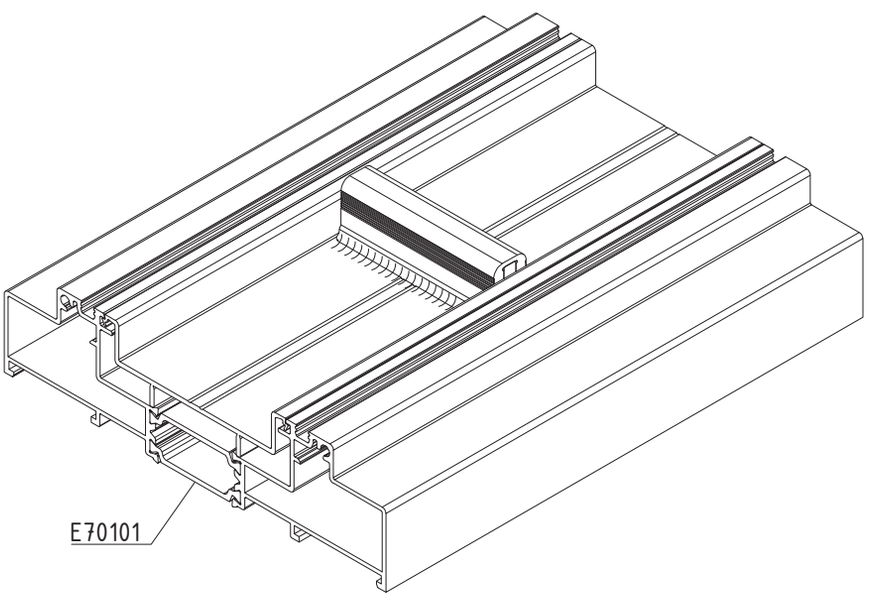




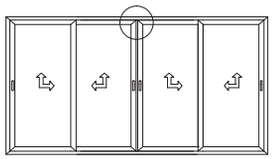
fix machined plastic profile ET080188.00
on to the rail

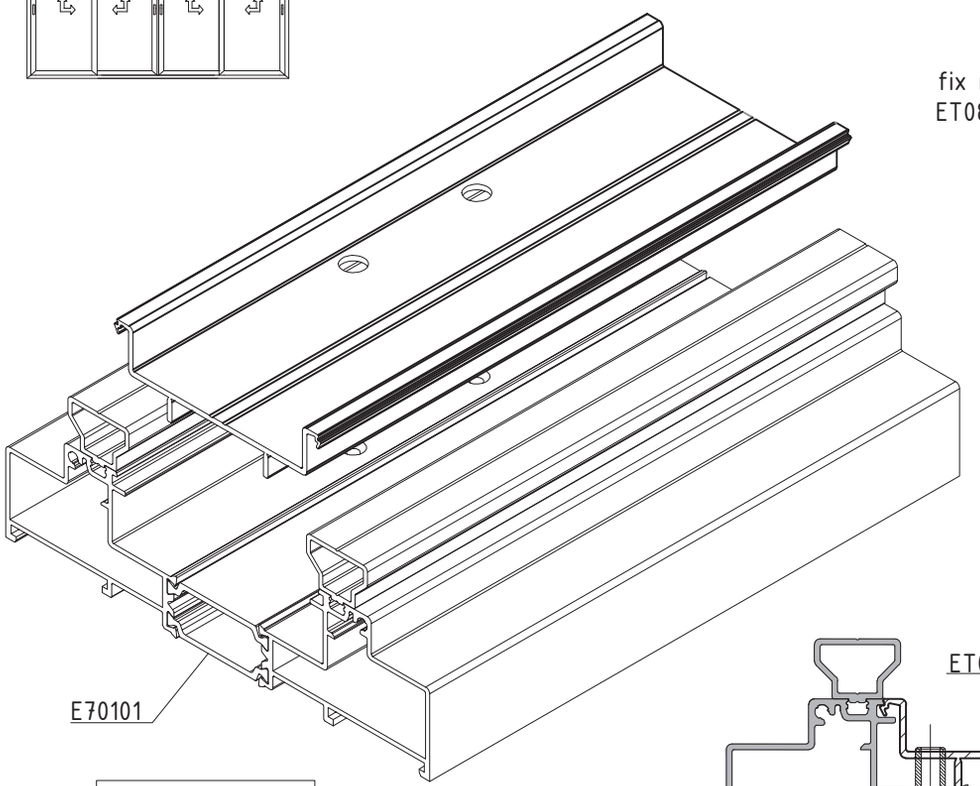


the gap between ET240622.02 and plastic profile
ET080188.00 is filled with silicone ET138001.02

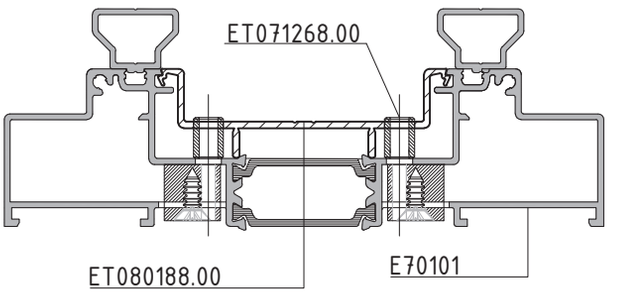


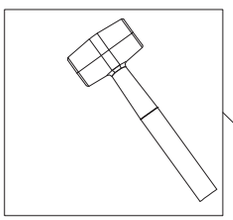
FIXING ET080188.00 ON THE TOP SIDE OF A FOUR LEAF SLIDING DOOR M70-57

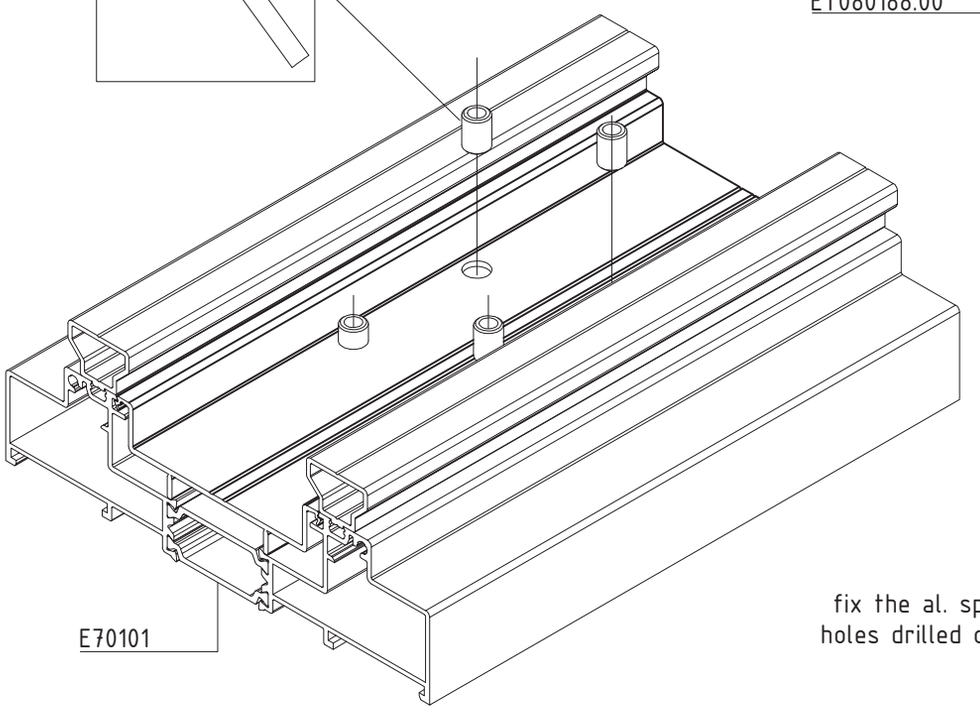




fix machined plastic profile
ET080188.00 on to the rail

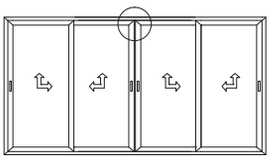


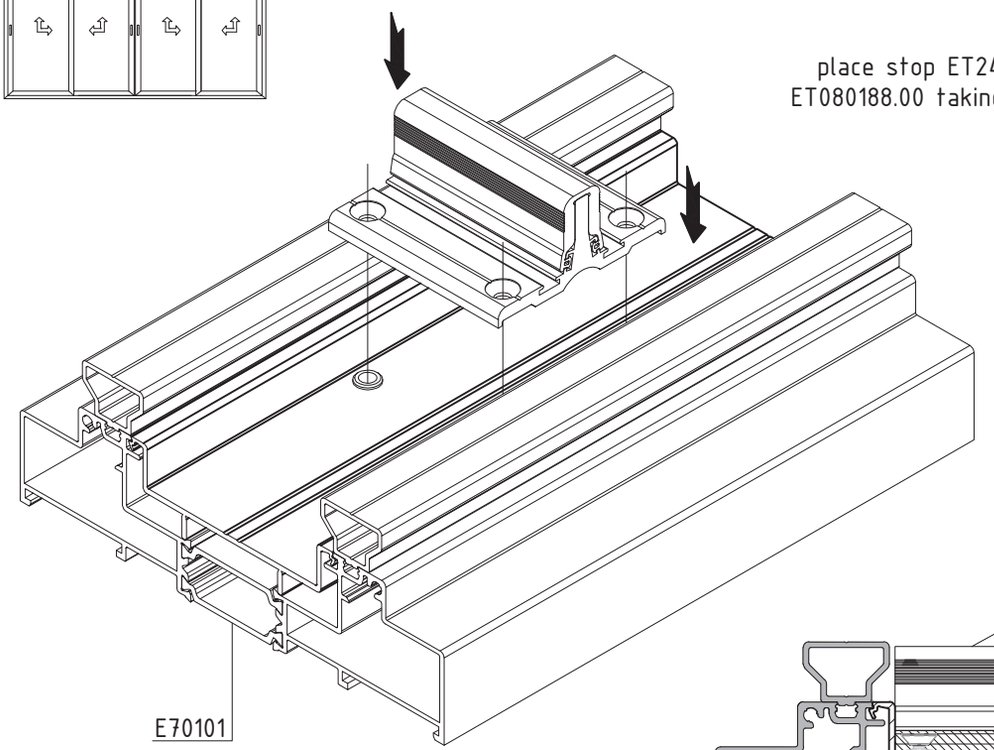




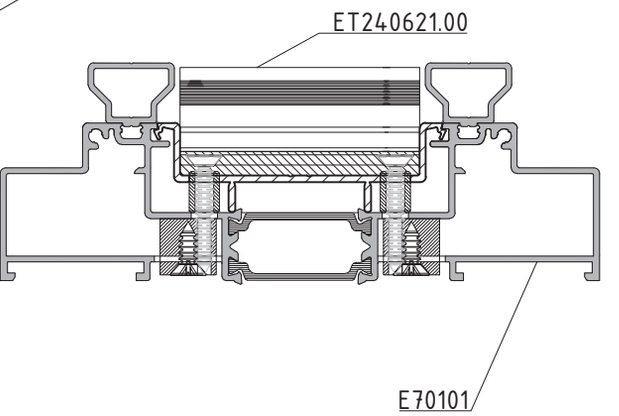
fix the al. spacer ET071268.00 into each of the
holes drilled on to plastic drain profile 080188.00

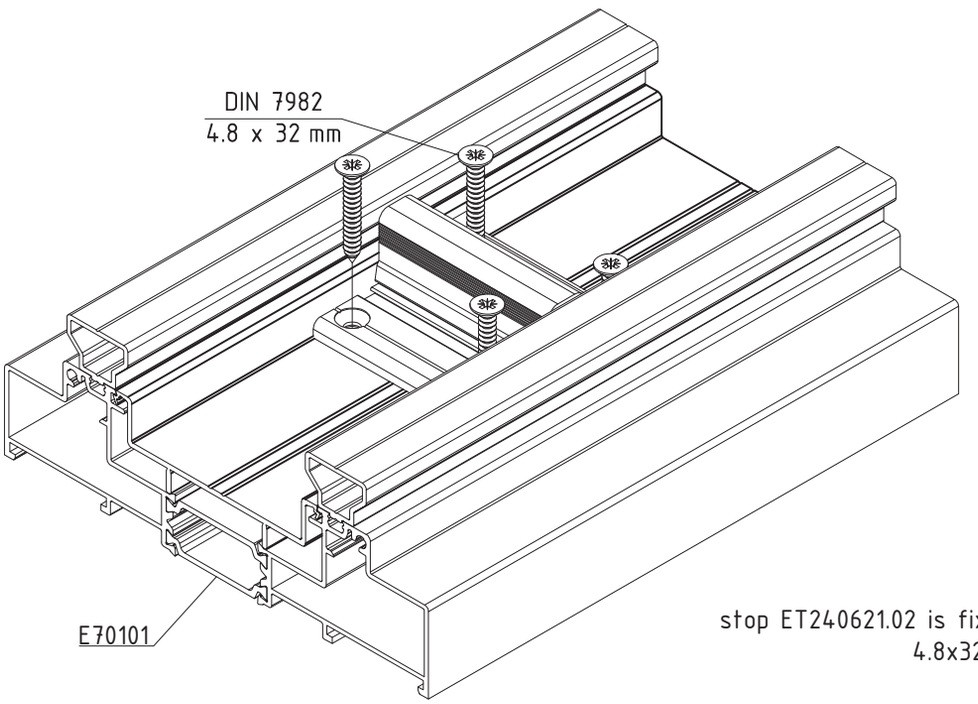
FIXING ET240621.02 ON THE TOP SIDE OF A FOUR SASHES SLIDING DOOR M70-58





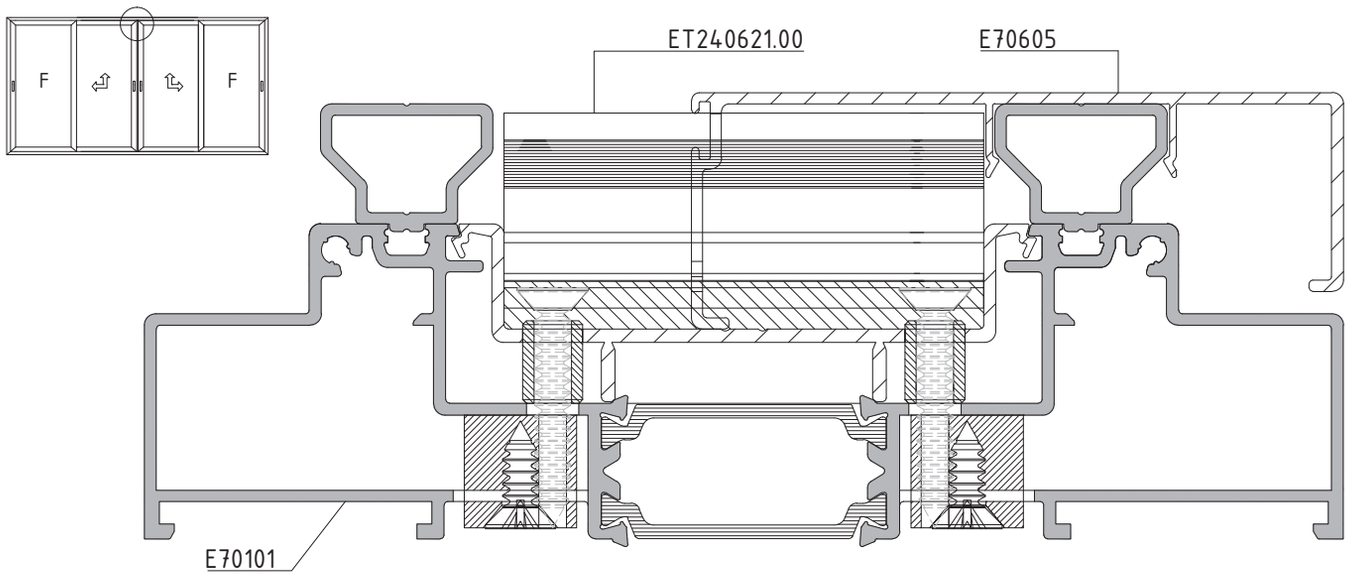
place stop ET240621.02 on to plastic profile ET080188.00 taking care so that the fixing holes are aligned



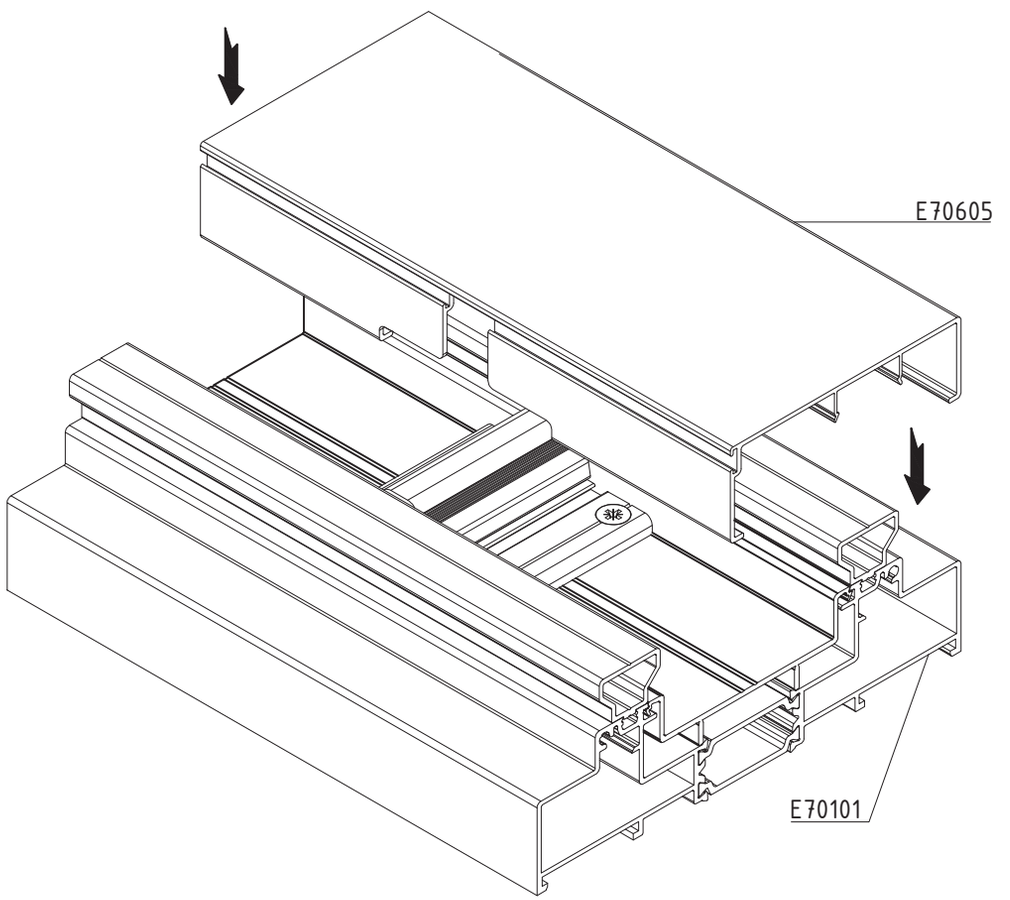


stop ET240621.02 is fixed using sheet metal screws 4.8x32mm DIN 7982

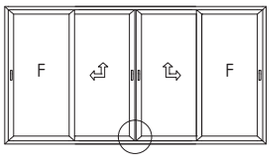
FIXING E70605 ON THE TOP SIDE OF A FOUR SASHES SLIDING DOOR M70-59

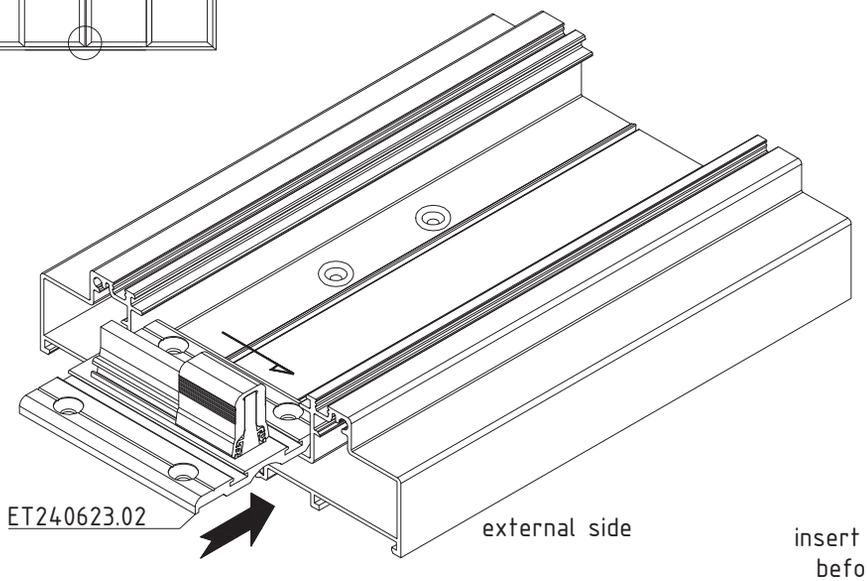


cover profile E70605 is fixed on the top side of a four sashes sliding door, only in case that the intermediate sashes are sliding



FIXING ET240622.02 ON THE LOWER SIDE OF A FOUR SASHES SLIDING DOOR M70-60

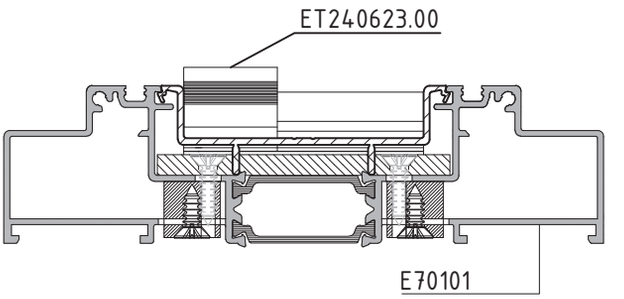


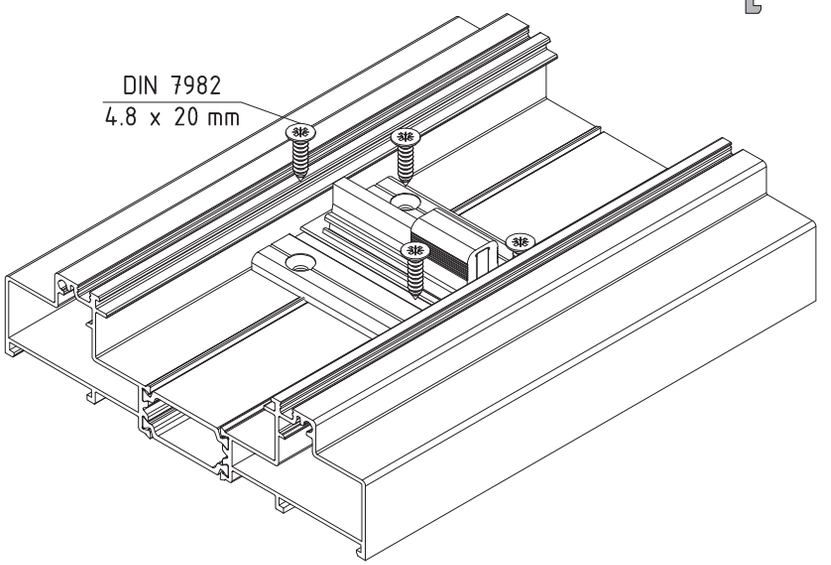


stopper ET240623.02 , is fixed on the bottom rail of a four sashes sliding door, only in case that the intermediate sashes are sliding

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

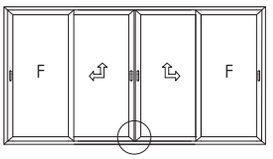
after fixing the rail into the opening apply silicone along the perimeter of each hole drilled on to rail E70101, as presented in the figure. move up the stopper, so that not to spread the silicone and move it until the fixing holes are aligned, then press the stopper against the rail

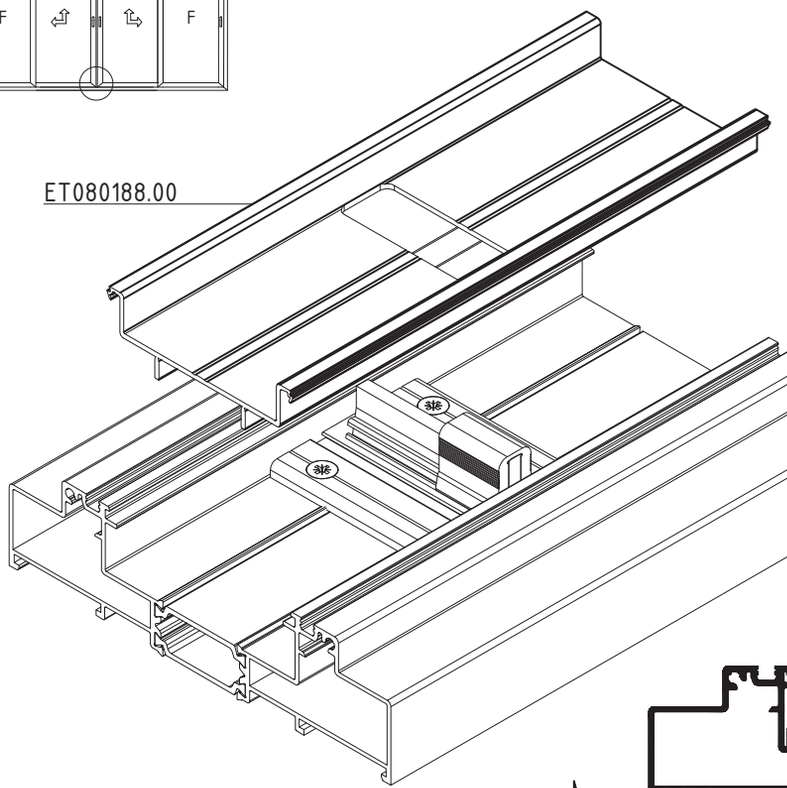




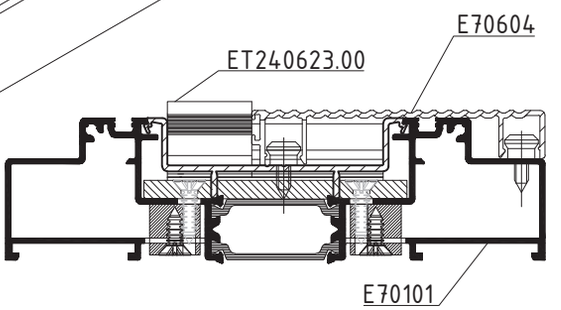
stop ET240624.02 is fixed using sheet metal screws 4.8x20 mm DIN 7982

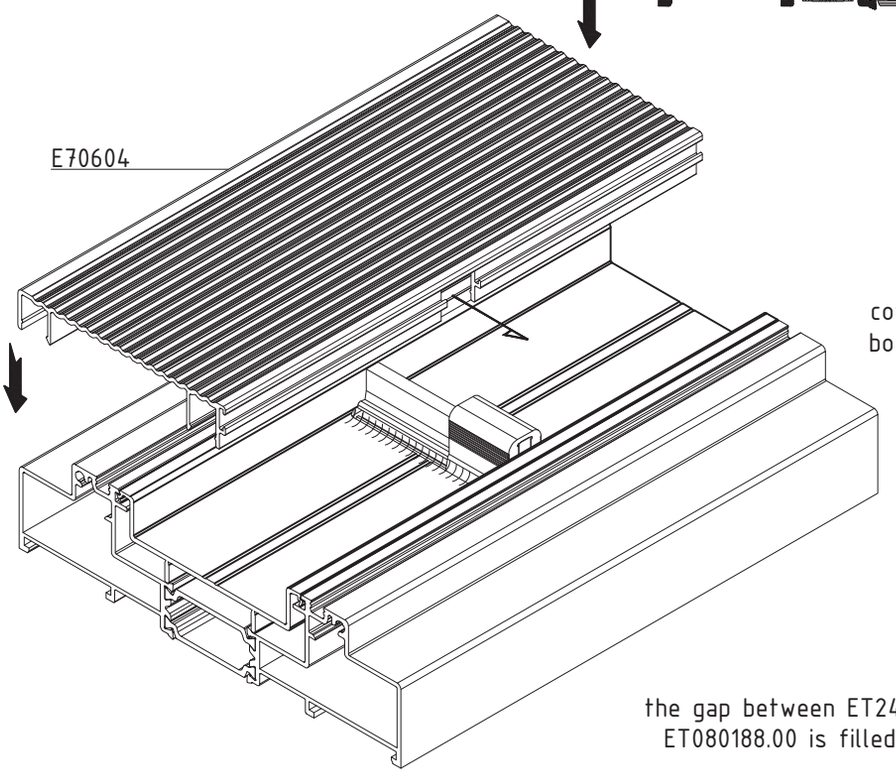
FIXING E70604 ON THE LOWER SIDE OF A FOUR SASHES SLIDING DOOR M70-61





fix machined plastic profile
ET080188.00 on to the rail



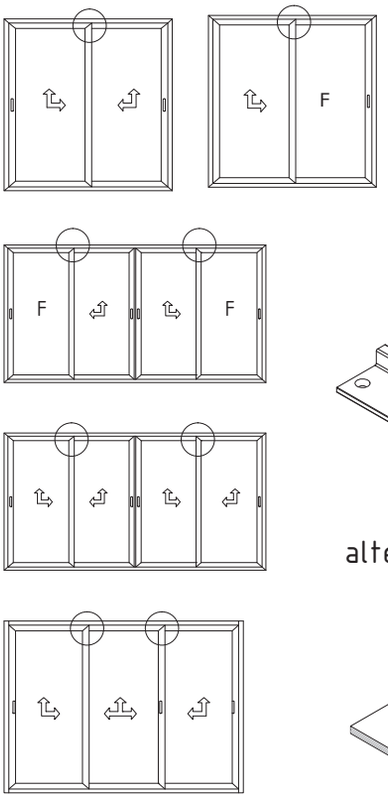


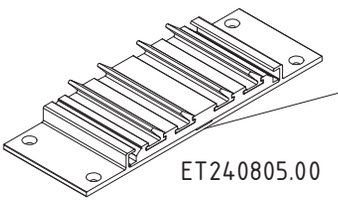
cover profile E70604 is fixed on the bottom side of a four sashes sliding door, only in case that the intermediate sashes are sliding

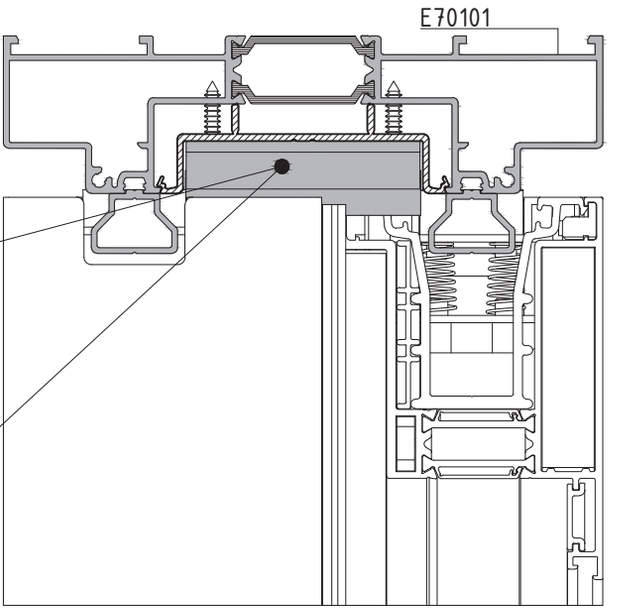
the gap between ET240623.02 and plastic profile ET080188.00 is filled with silicone ET138001.02

FIXING SEALING BRUSH ET240805 ON THE TOP RAIL E70101

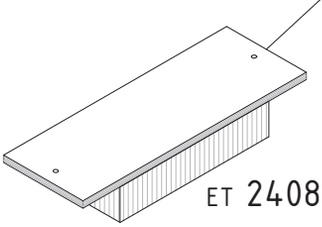
M70-73

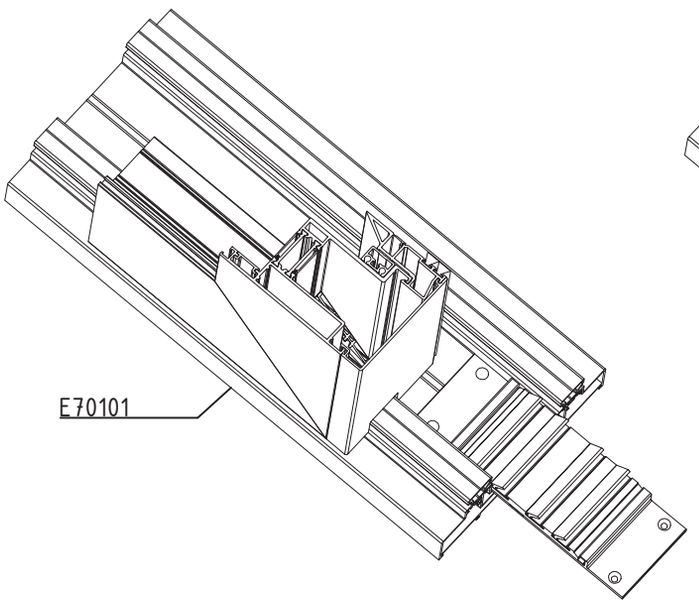




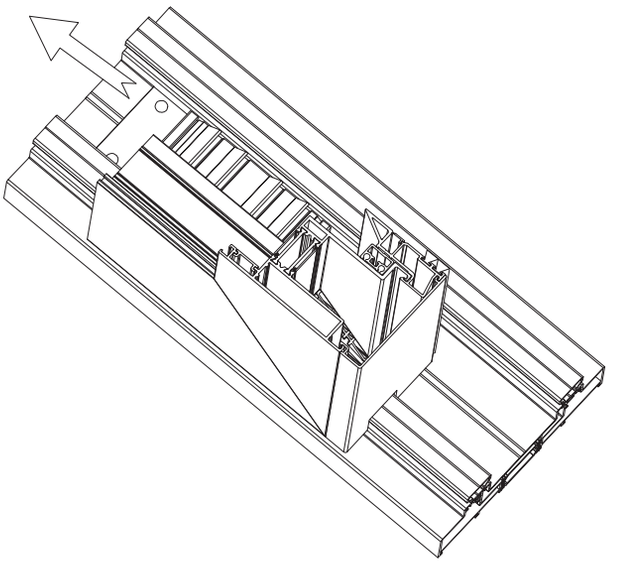


alternativaly



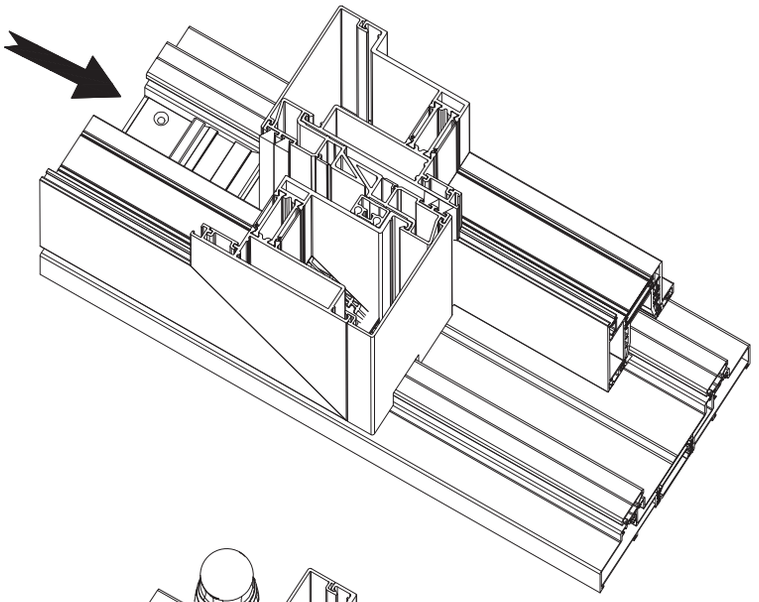


sealing brush ET240805 is fixed on to the top rail E70102, after placing one sash into the frame

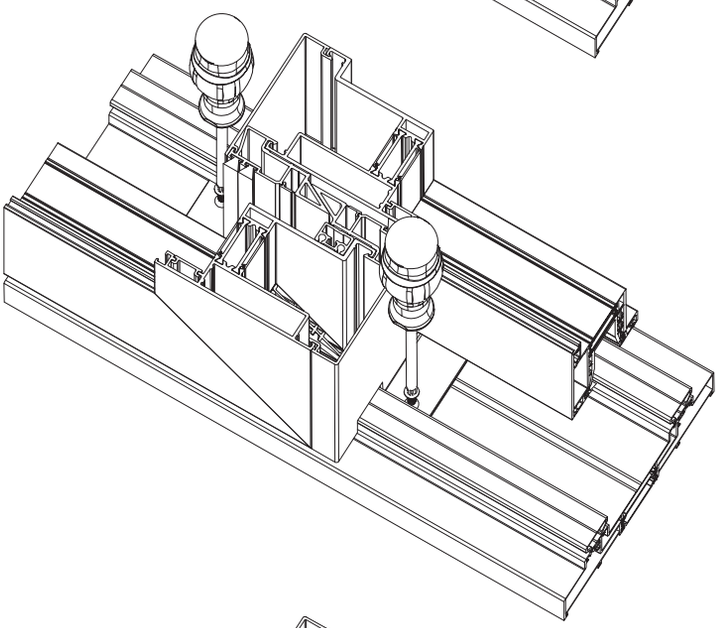


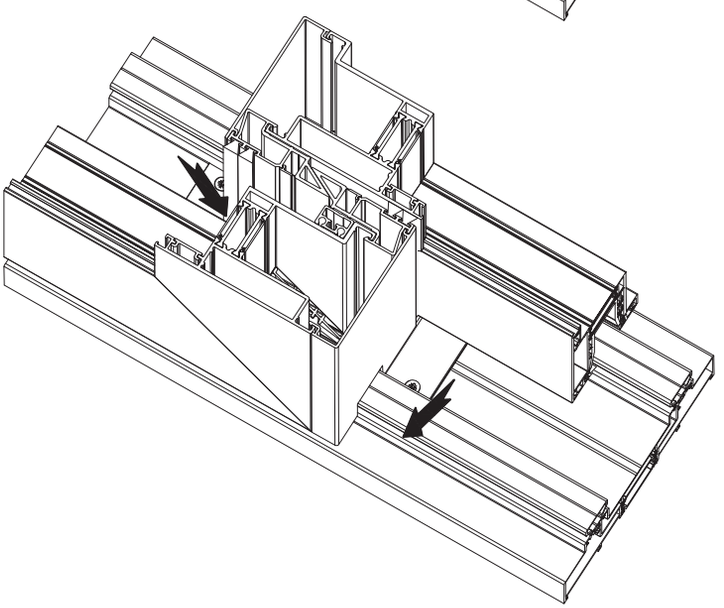
sealing brush is moved underneath the first sash so that to be able to place the next sash into the frame

FIXING SEALING BRUSH ET240805 ON THE TOP RAIL E70101 M70-63



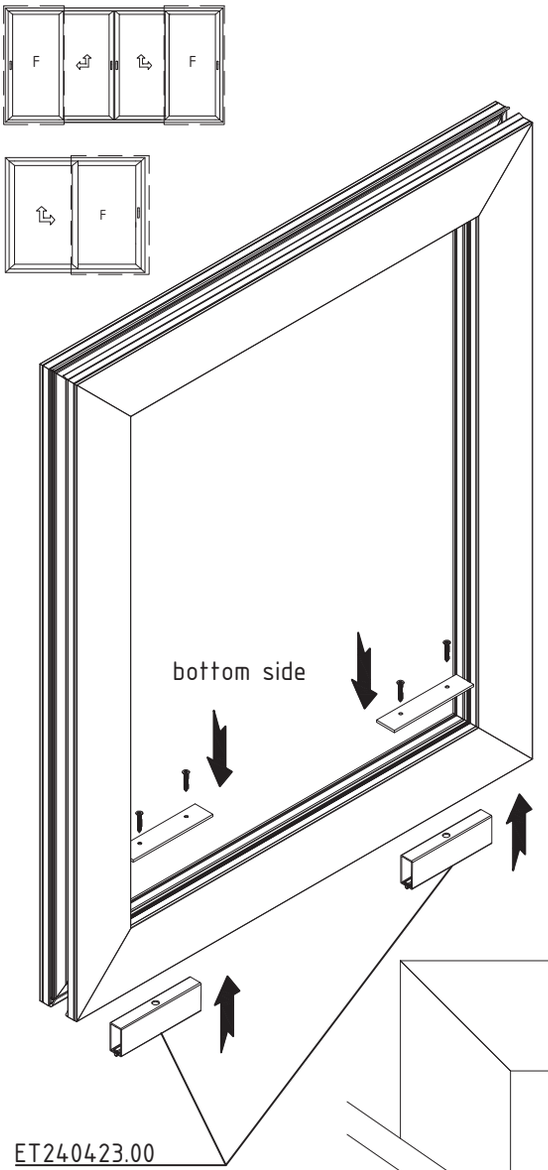
place the next sash into the
frame and move the sealing brush
between the two sashes

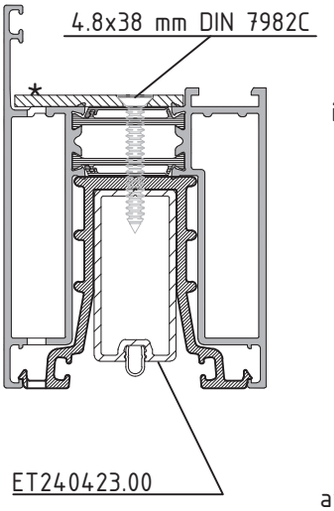




the sealing brush is fixed on to the frame using
two countersunk head sheet metal screws
4.2x19 mm DIN 7982, as presented in the drawing

FIXING SPACER ET240423 ON TO SASH FRAME M70-64

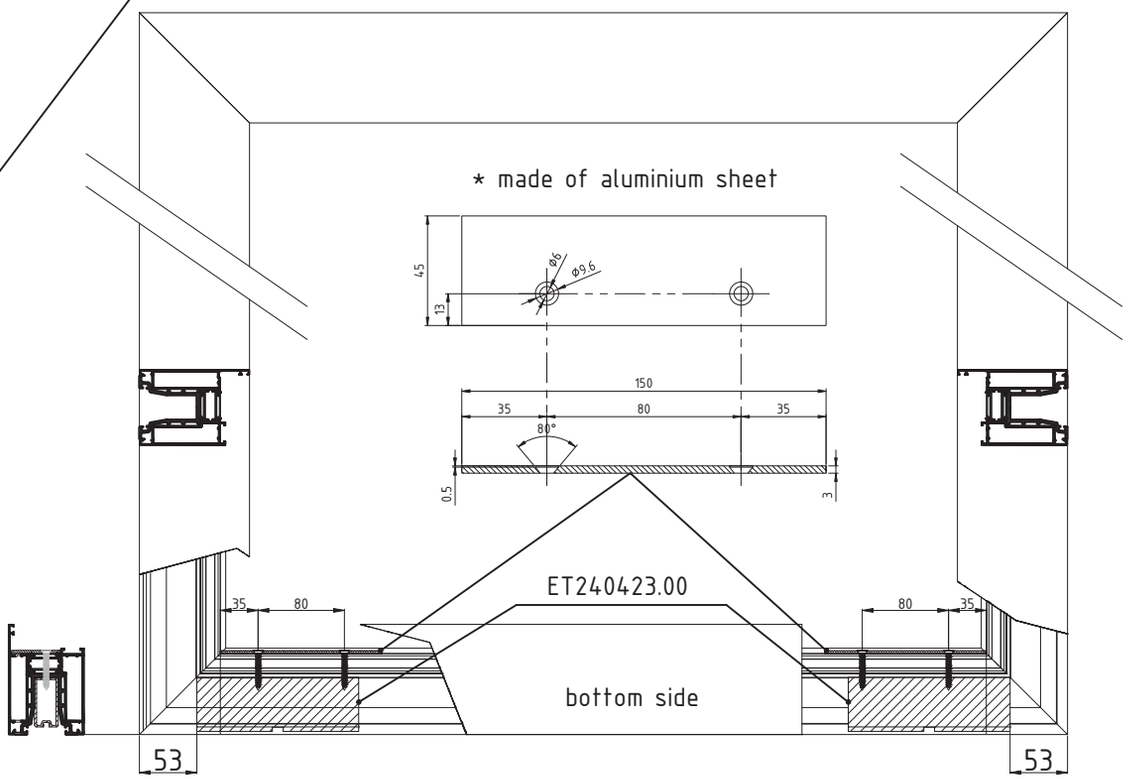




in order to fix spacer for fixed frame ET240423.00 on to the sash frame, is necessary to prepare 2 shims according to drawing (*)made of aluminum sheetor composite panel, having a thickness of 3mm

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

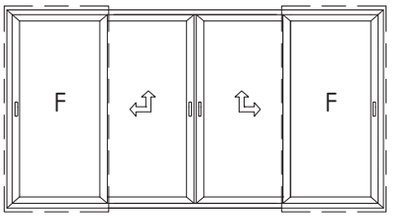
spacer ET240423.00 is fixed into the groove of the bottom part of the sash frame, 53 mm measured from the edges of the sash frame. the aluminum sheet is placed into the groove for the glazing of the bottom part of the sash frame, as presented in the drawing. ET240423.00 is fixed using sheet metal screws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

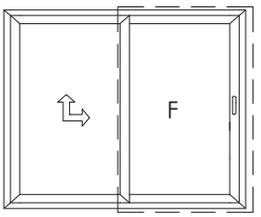


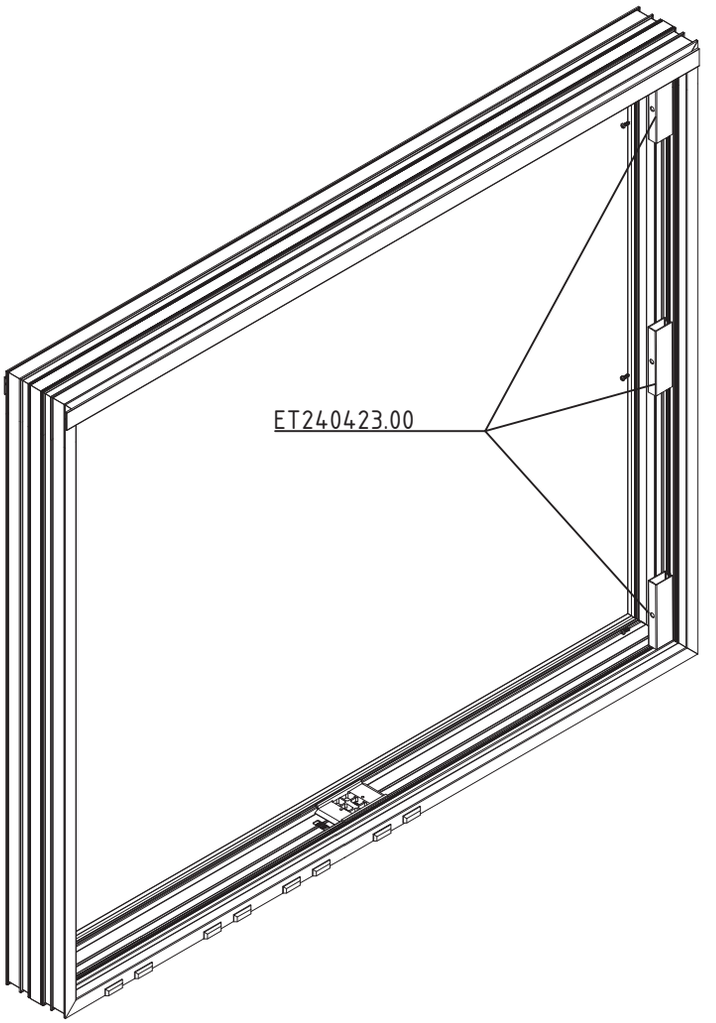
scale : 1:1

FIXING SPACER ET240423 ON TO THE FRAME

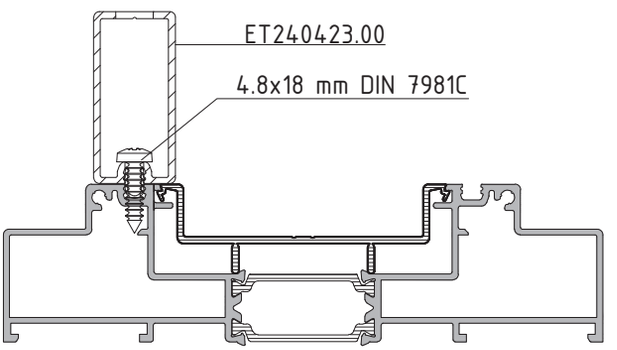
M70-65





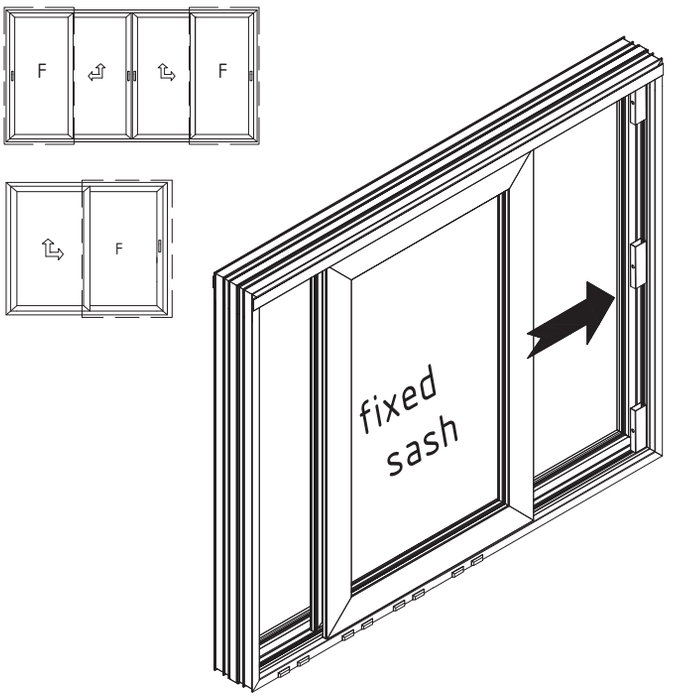


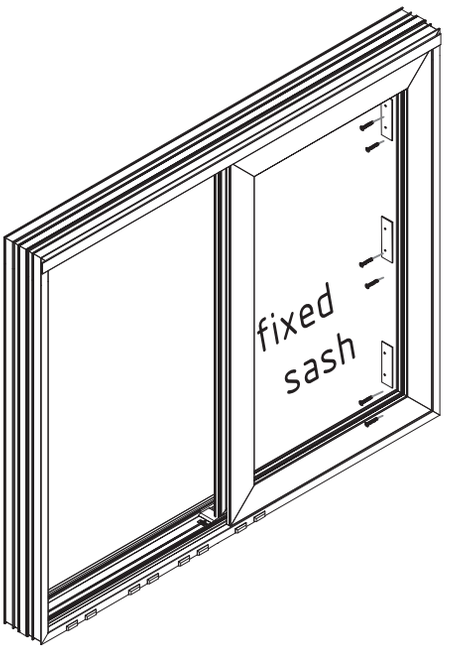
spacer ET240423.00 is also fixed at the vertical member of the frame, at the side where the fixed sash frame is to be placed. three (3) spacers shall be fixed, one at each edge of the vertical member and one in the middle, as presented in the drawing. the spacers shall be fixed using sheet metal screws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



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

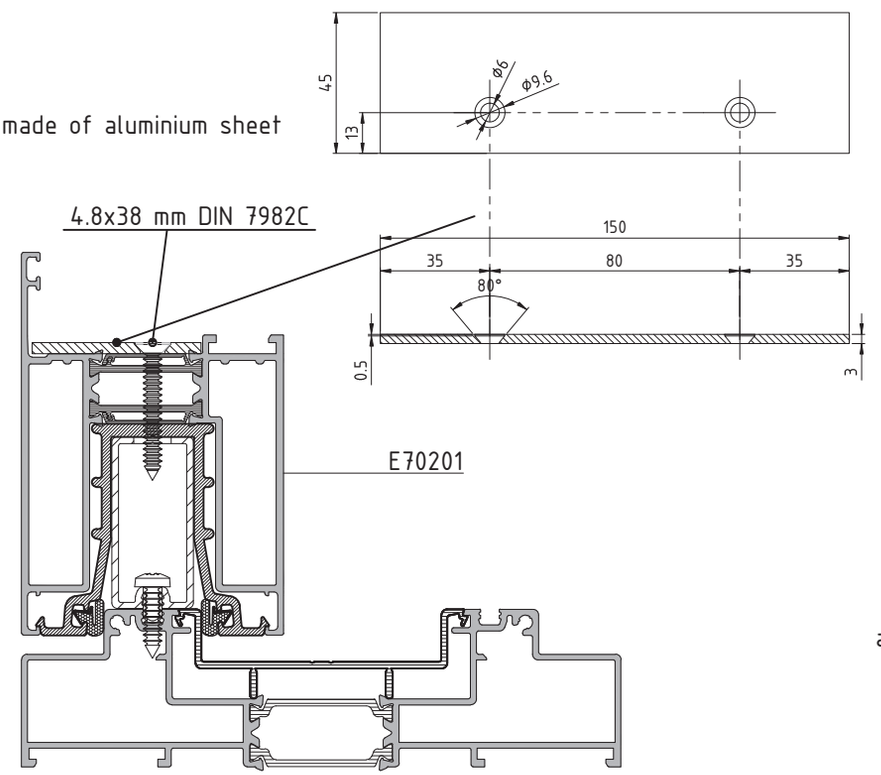
PLACING FIXED SASH INTO THE FRAME M70-66





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

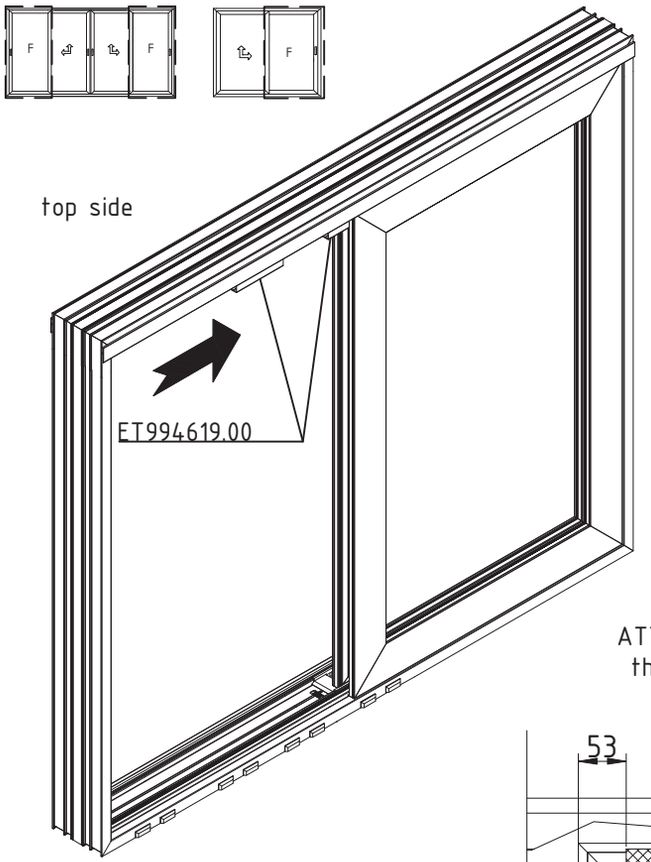
made of aluminium sheet



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.

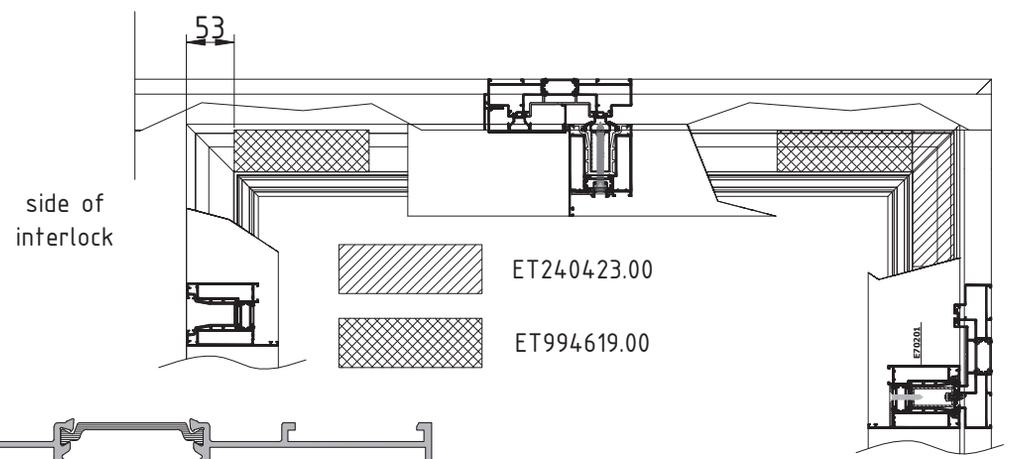
in order to fix fixed sash frame on to spacer ET240423.00, that is fixed on to the frame, is necessary to prepare 3 shims according to drawing (*) made of aluminum sheetor composite panel, having a thickness of 3 mm

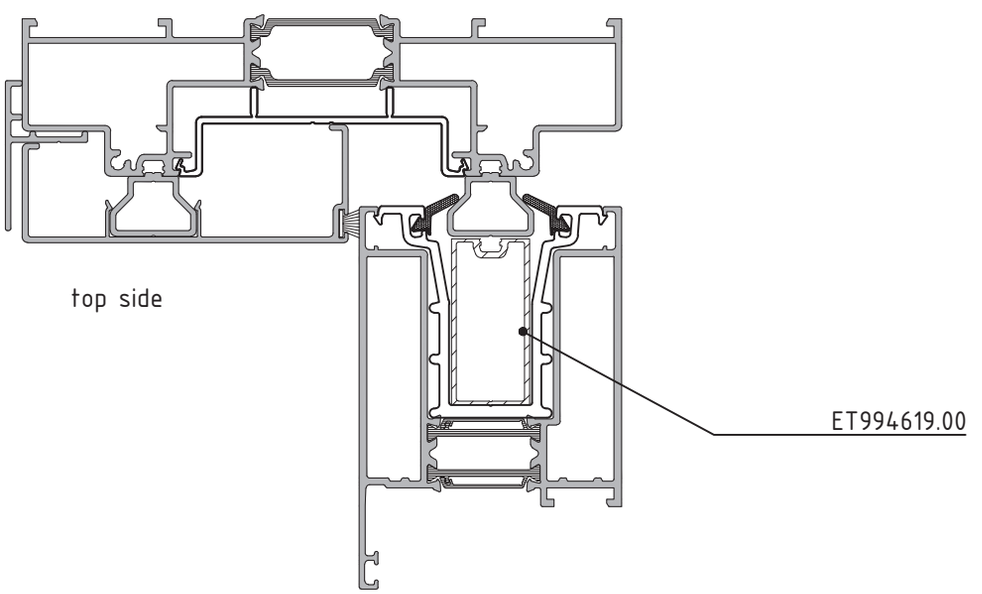
FIXING SPACER ET994619 ON TOP SIDE OF FIXED SASH FRAME M70-67



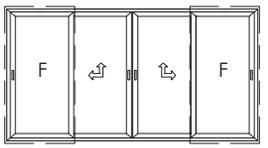
spacer ET994619.00 is inserted into the groove of the upper part of the fixed sash frame. it is required two use two pieces, one at each side. the first spacer is guided until it reaches spacer ET240423.00, that is already fixed on to the vertical member of the frame. the second is placed at distance 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

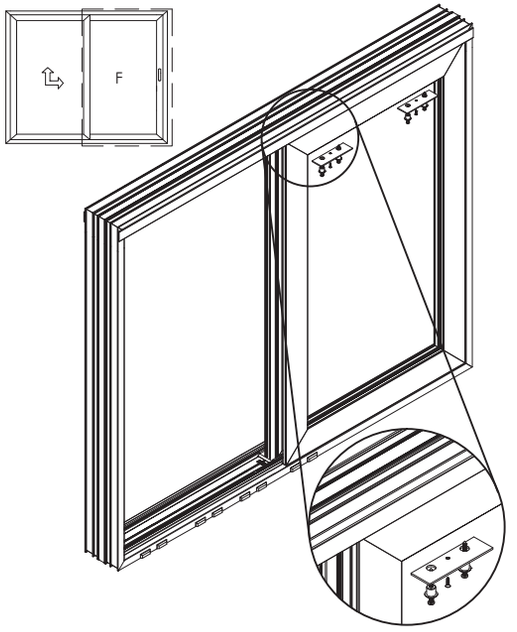




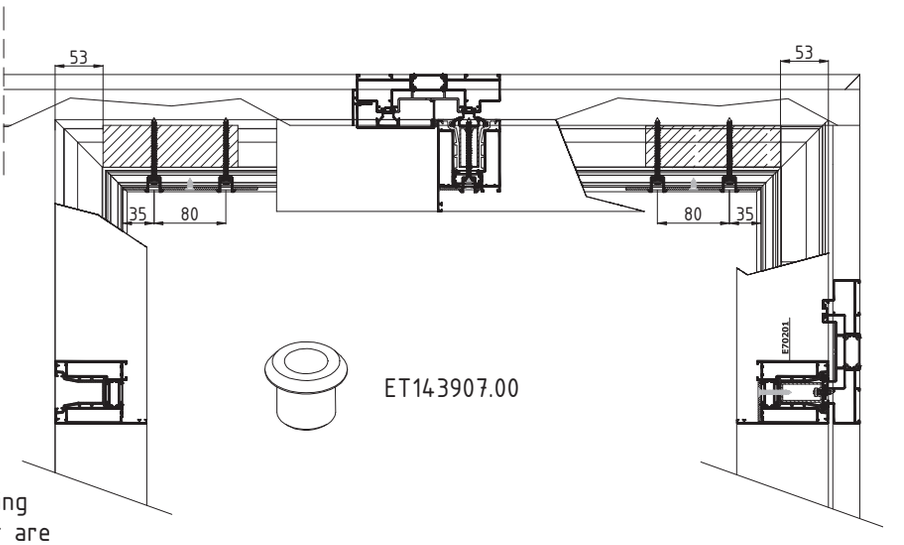
FIXING FIXED SASH FRAME ON TO THE TOP SIDE OF THE FRAME M70-68



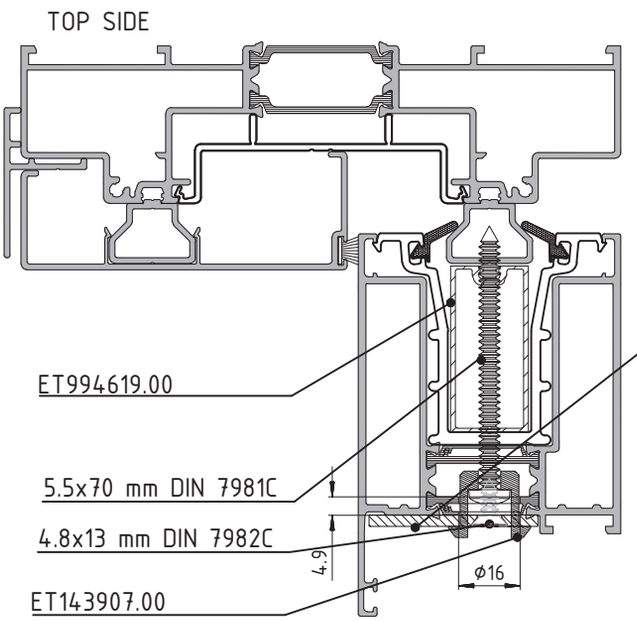
top side

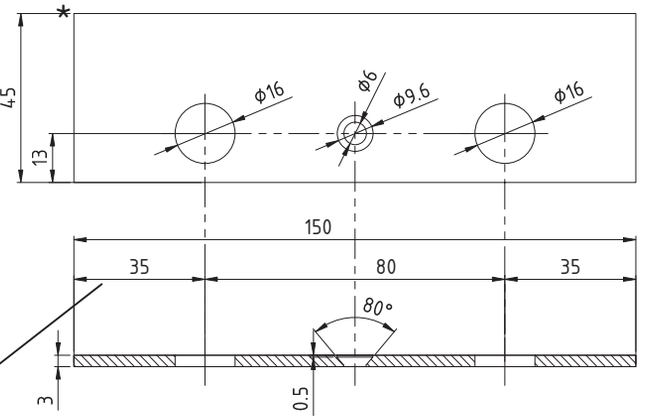


the aluminum spacers (*) are fixed on to the sash frame using sheet metal screws 4.8x13 mm DIN 7982C. using the al. spacers as jigs, drill holes on the external polyamide of the sash frame, with a diameter of 16mm, so that fix washer ET143907.00



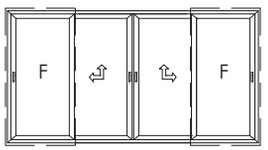
fixed sash frame is fixed on to the rail, using sheet metal screws 5.5x70 mm DIN 7981C, that are fixed at the drilled holes of washer ET143907.00

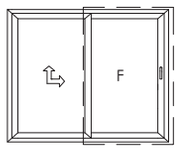


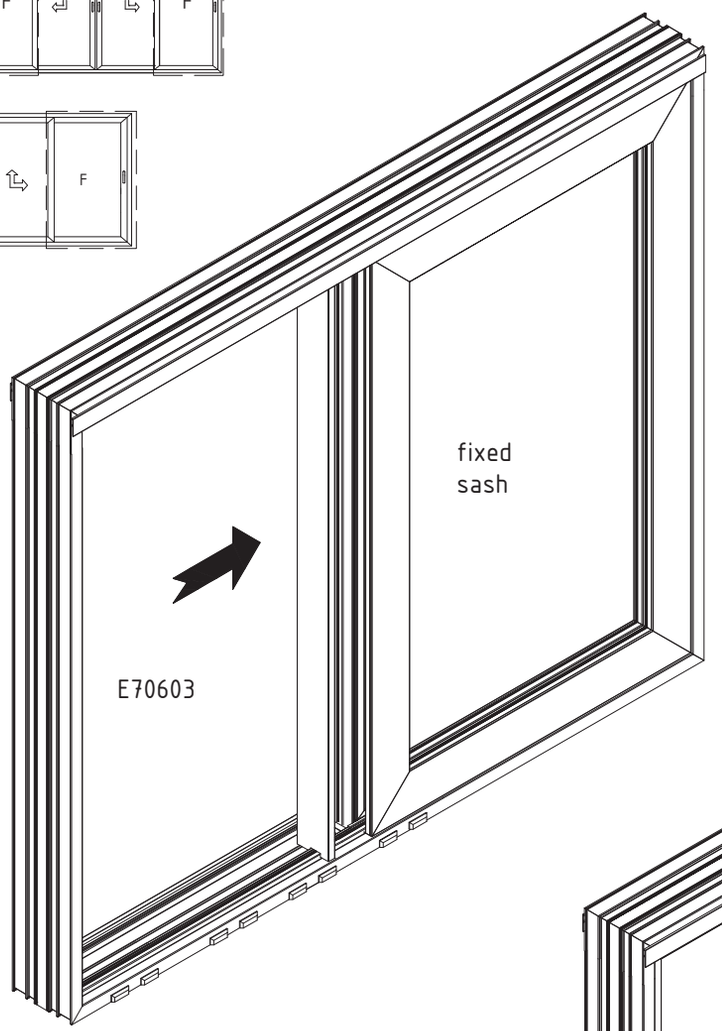


in order to fix fixed sash frame spacer, on to the frame, trough spacer ET994619.00, is necessary to prepare 2 shims according to drawing made of aluminum sheetor composite panel, having a thickness of 3 mm

APPLICATION OF SUPPLEMENTARY PROFILES OF FIXED SASH FRAME M70-69

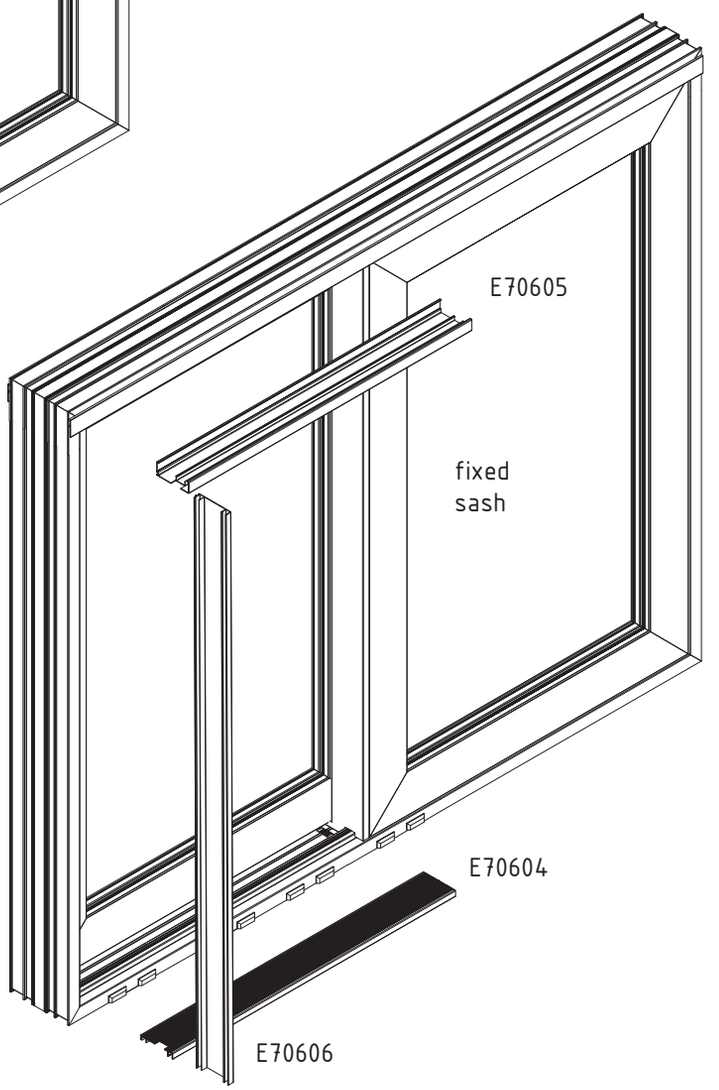






fix the cover cap of the interlock profile E70603. if there is a demand for additional thermal insulation, insert into the cavity of the sash the foam insert ET080506.00, before fixing the cover cap E70603.

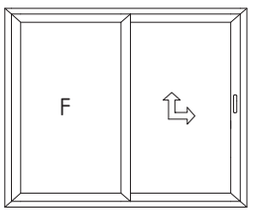
ET080506.00

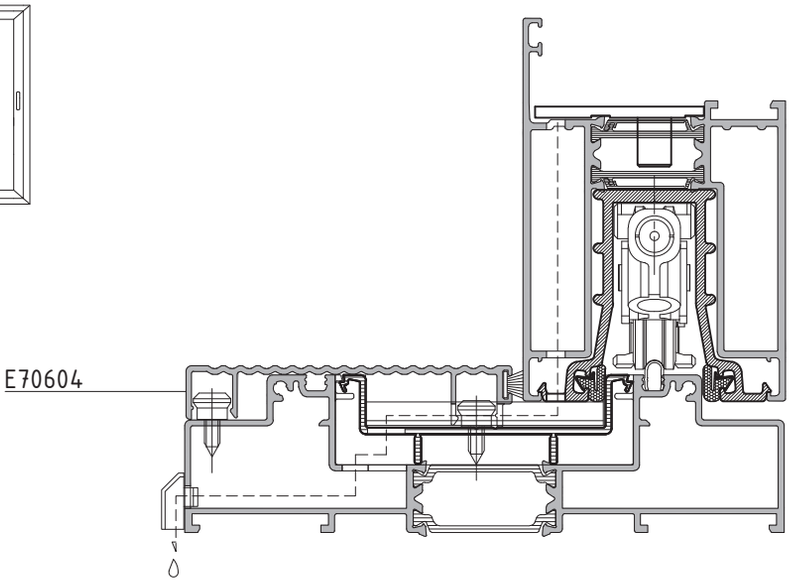


fix supplementary profiles E70604, E70605 & E70606

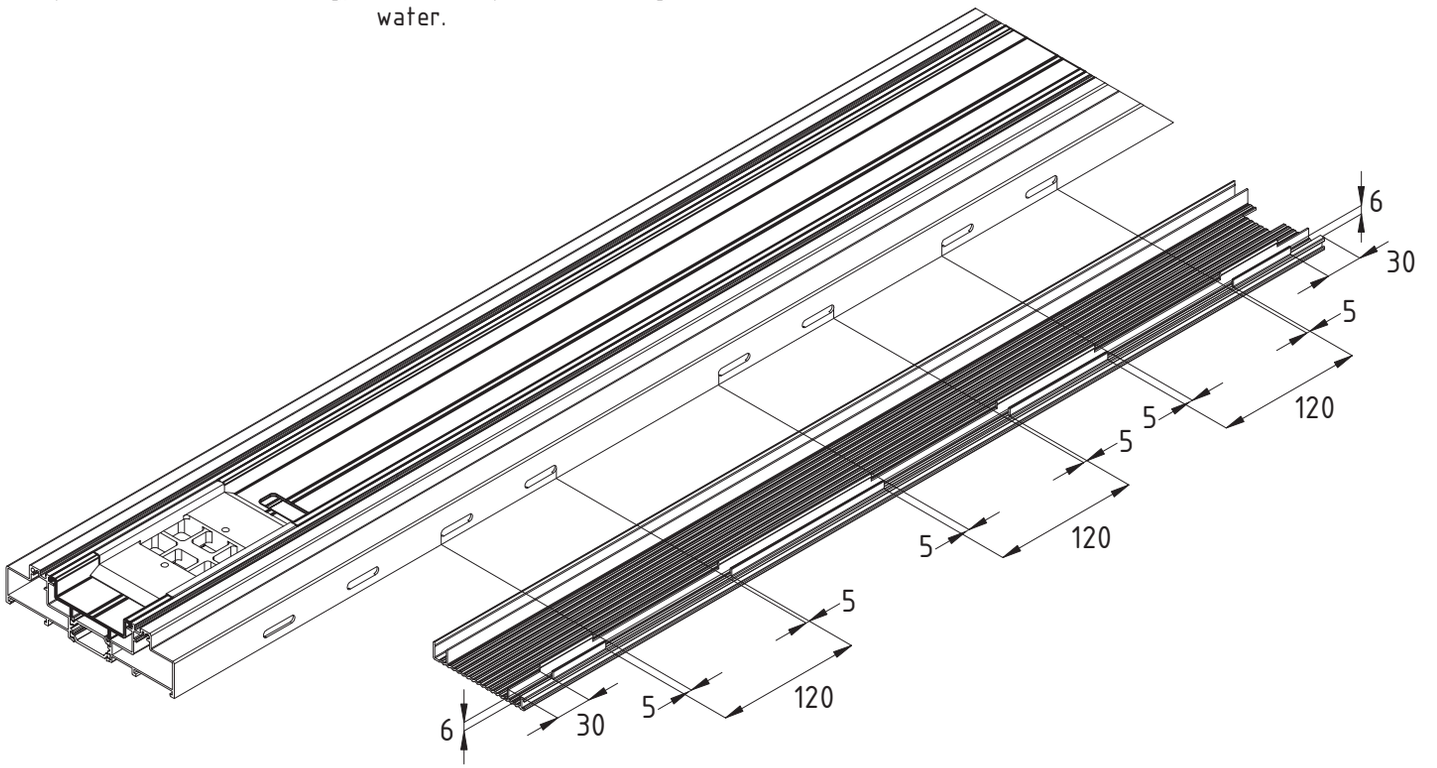
scale : 1:1

MACHINING ON E70604 FOR WATER DRAINAGE M70-70





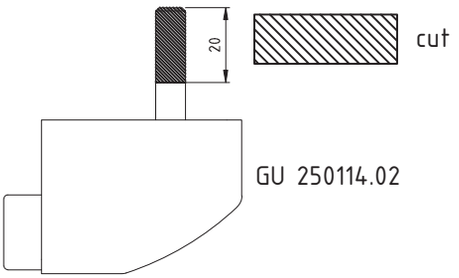
in case that the fixed frame is placed at the external side, is necessary to machine the supplementary profile E70604, as presented in the drawing, so that to provide drainage of the water.

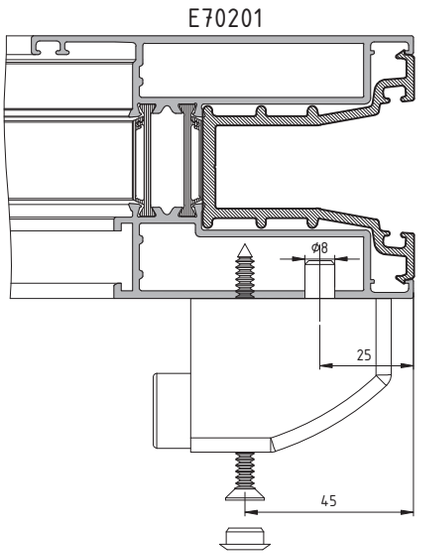


E70604

FIXING STOP GU250114 ON E70201

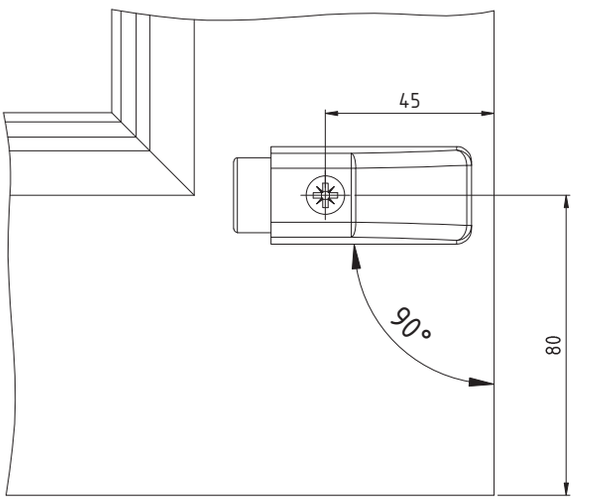
M70-71



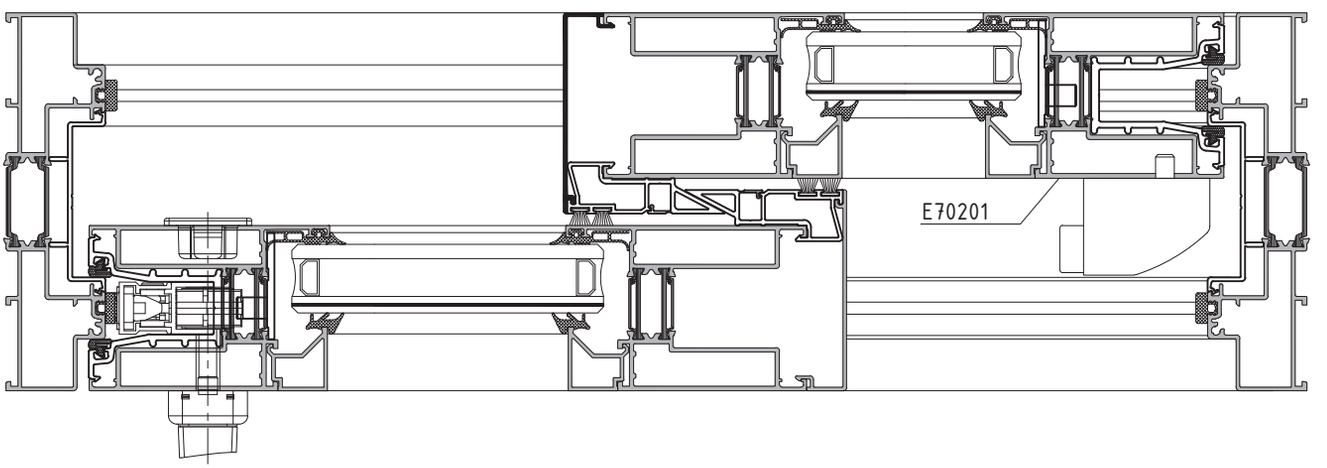


cut and remove 20 mm of the height of the metal pin, that is inserted into the plastic part of the stop GU 250114.02

drill a hole, on to the sash frame, with a diameter of ø 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 ø3.5 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

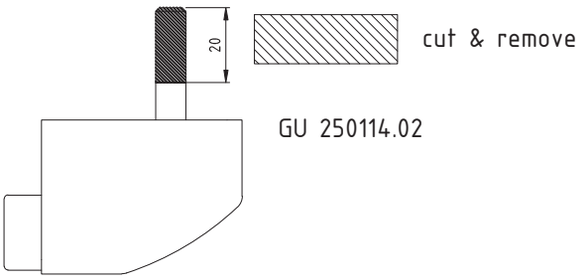


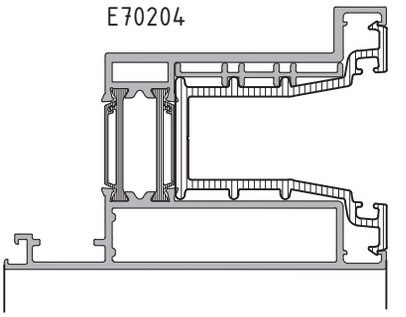
stop GU 250114.02 is fixed at the internal side of the external sash frame



FIXING STOP GU250114 ON E70204

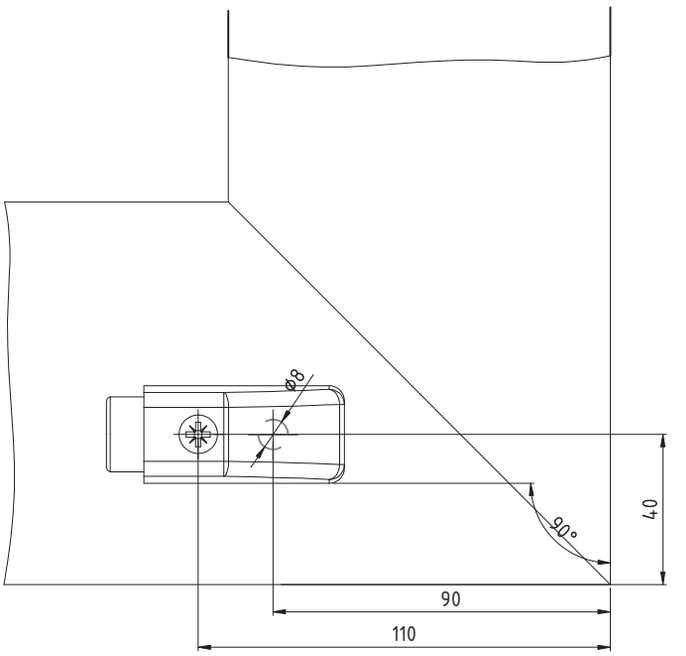
M70-72



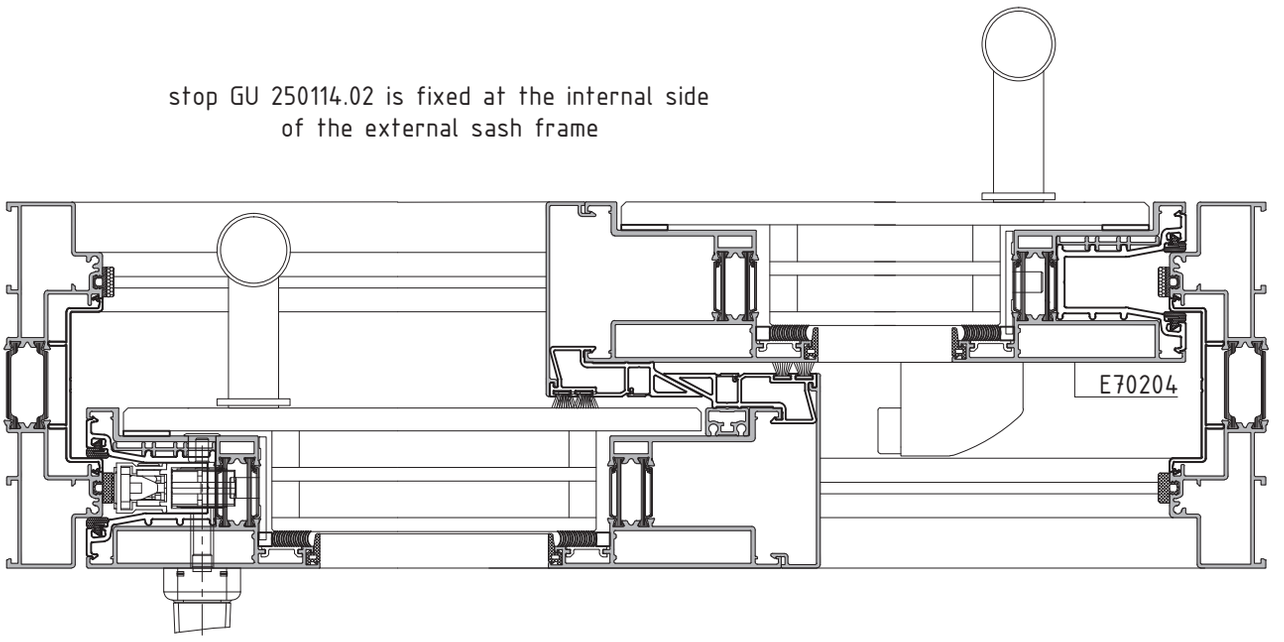


reduce 20 mm of the height of the metal pin, that is inserted into the plastic part of the stop GU 250114.02

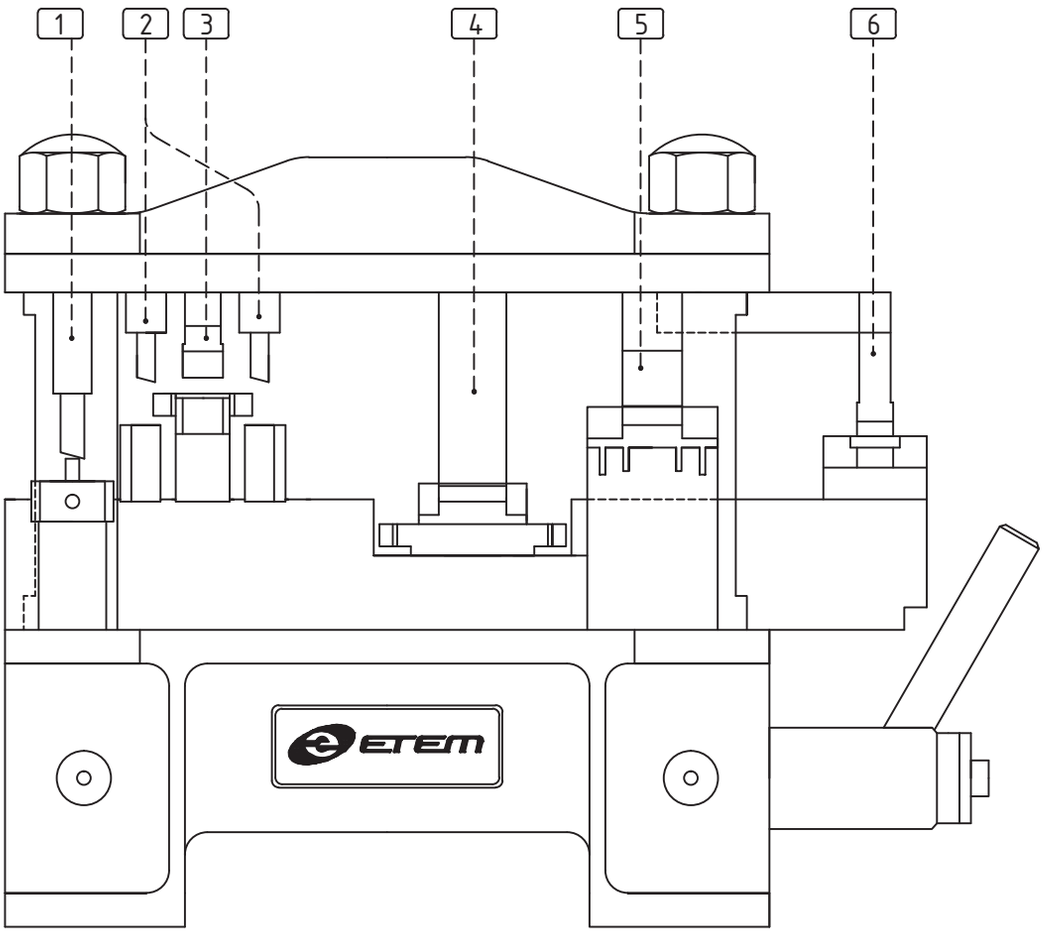
drill a hole ,on to the sash frame, with a diameter of ø8 mm, at the distances presented in the drawings. fix the stopper temporarily on to the sash frame, by inserting the metal pin (encased in the stopper) into the hole, that was drilled previously. align the stopper, so that the stopper is vertical in respect to the height of the sash frame. once this is achieved drill a hole, with a diameter of ø3.5 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



PUNCHING MACHINE FOR E70 PROFILES, CODE No ET162256.00 M70-73



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

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

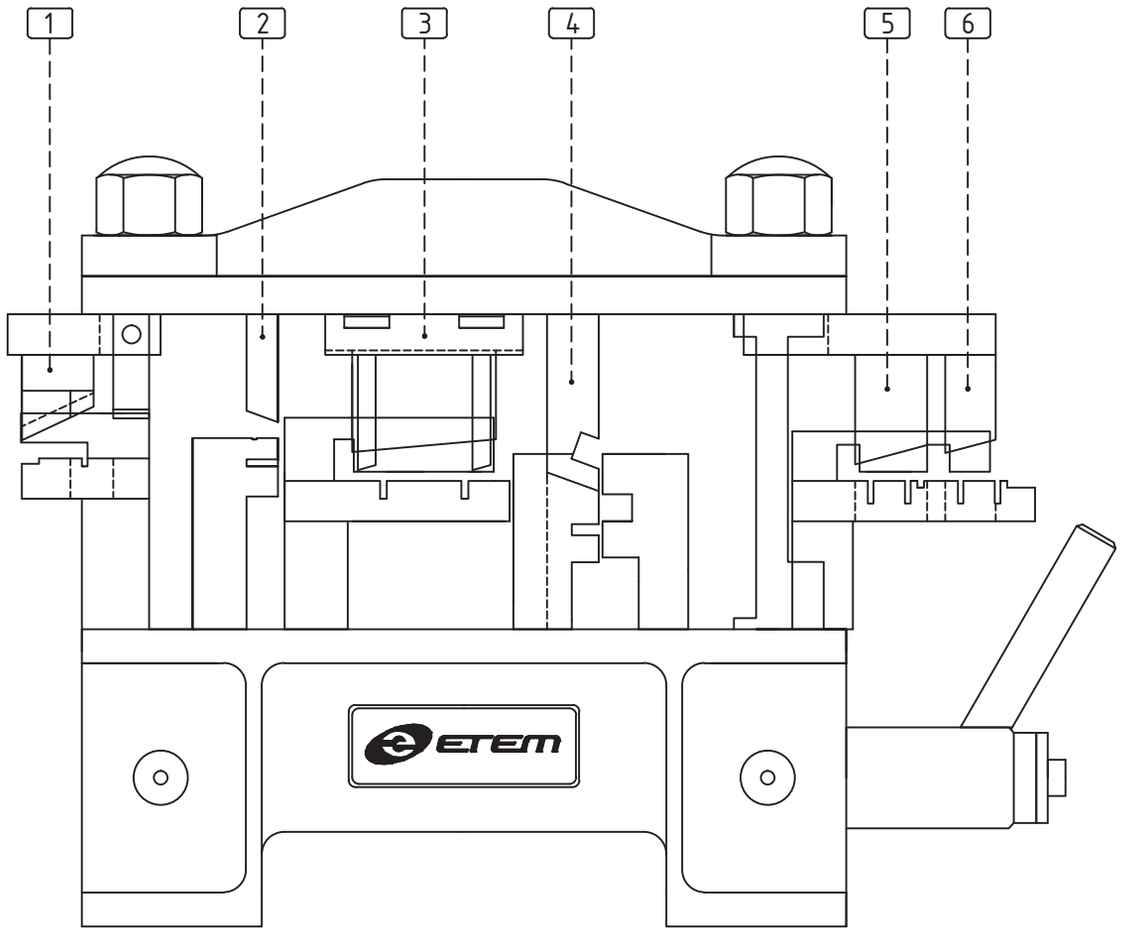
3 Machining for additional rail profile E70601
(Machining M70-23)

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

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

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

PUNCHING MACHINE FOR E70 PROFILES, CODE No ET162261.00 M70-74



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

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

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

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

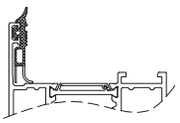
5 Machining on PVC profile ET080191.00 for top side of rail (hole 119x30.2 mm)

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

ACCESSORIES

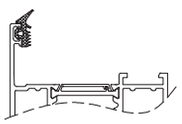
code/description	package/pcs	colour
ET 130402.00	70	●

Elongated glazing EPDM gaskET3.0 mm



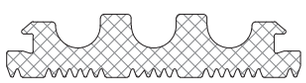
ET 130411.00	150	●

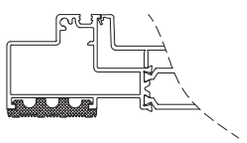
EPDM glazing gasket press-in 3.0 mm



ET 130504.00	40	●

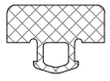
EPDM glazing gasket press-in 5.0 mm

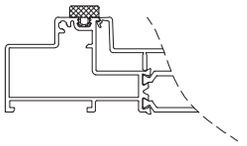




ET 130745.00	120	●

EPDM gasket for E70 rail

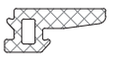


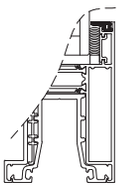


A70-01

code/description	package/pcs	colour
ET 130751.00	140	●

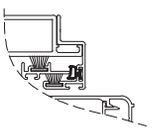
EPDM gasket for structural silicone covering





ET 130174.00	160	●

Interior seal EPDM gaskETTOP LINE



ET 130203.00	260	●

EPDM glazing gasket press-in 3.0 mm

ET 130204.00	200	●

EPDM glazing gasket press-in 4.0 mm

A70-02

code/description	package/pcs	colour
ET 130205.00	180	●

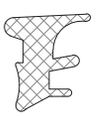
EPDM glazing gasket
press-in 5.0 mm

ET 130207.00	75	●

EPDM glazing gasket
press-in 7.0 mm

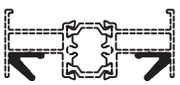
ET 130208.00	40	●

EPDM glazing gasket
press-in 8.0 mm



ET 133009.00	1	●

Double face tape for E70
50 m

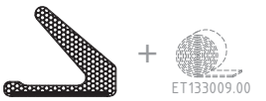


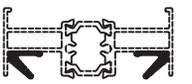
required for fixing
ET133010.00 onto E70551

A70-03

code/description	package/pcs	colour
ET 133010.00	150	●

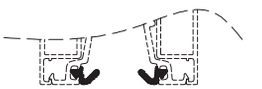
Composite gasket for sealing
adjoining profile E70




E70551

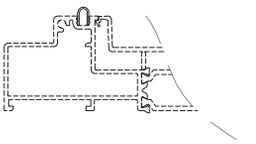
ET 133011.00	150	●

Composite gasket for sealing
sash E70



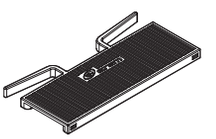
ET 082201.00	1	INOX

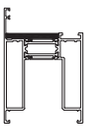
Stainless steel rail "U"
shape
for E70 & E3000 rails
6.01 m



ET 073004.00	50	●

Plastic glazing block for E70

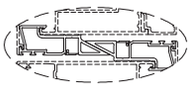



E70201

A70-04

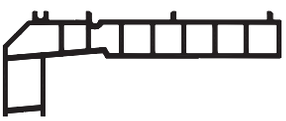
code/description	package/pcs	colour
ET 080186.00	1	●

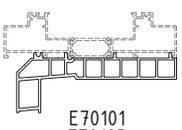
Interlock profile (PVC)
for E70
6 m



ET 080187.00	1	●

Supplementary PVC profile
for E70 bottom rail
6 m

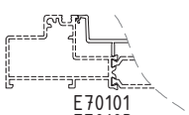




E70101
E70103

ET 080188.00	1	●

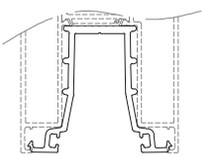
Thermal drain profile
for E70 rail
6 m



E70101
E70103
E70104

ET 080189.00	1	●

PVC mechanism channel
profile for E70 sash
6 m

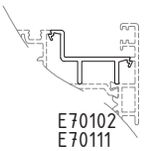


E70201
E70204

A70–05

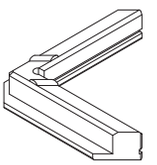
code/description	package/pcs	colour
ET 080191.00	1	●

PVC profile for
E70102 & E70111
6 m



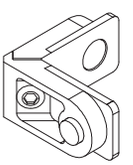
code/description	package/pcs	colour
ET 061104.00	100	●

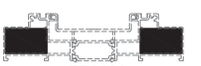
Plastic alignment square
for E70 sash



code/description	package/pcs	colour
ET 053329.00	250	natural

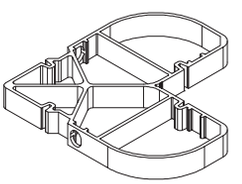
Die cust aluminum corner
joint for rails

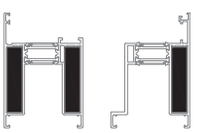




code/description	package/pcs	colour
ET 054712.00	70	MF

Extruded aluminium corner
joint (13.9 mm) with socket
for E70 sashes

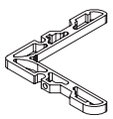


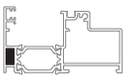


A70-06

code/description	package/pcs	colour
ET 054257.00	300	MF

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

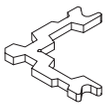


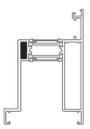


E70102

ET 054721.00	300	MF

Extruded aluminium corner joint (4.8 mm) for E70204

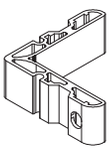


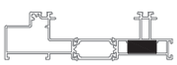


E70204

ET 054253.00	200	MF

Extruded aluminium corner joint (24.7 mm) with socket for E70103

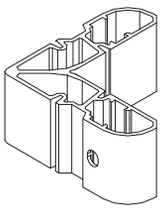


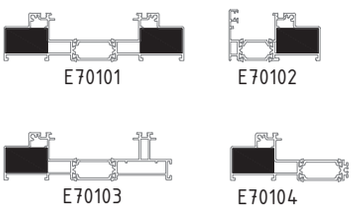


E70103

ET 054714.00	40	MF

Extruded aluminium corner joint (36.5 mm) with socket for E70 rails



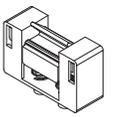


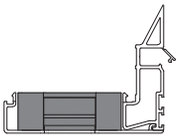
E70101 E70102 E70103 E70104

A70-07

code/description	package/pcs	colour
ET 074700.00	1	●

Plastic plug for upper side of interlock profile of E70

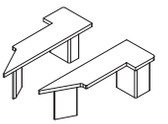


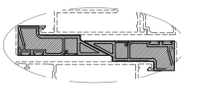


E70603

ET 074701.00	100	●

Pair of plastic plugs for interlock profile

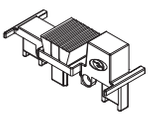


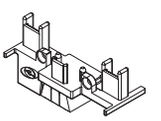


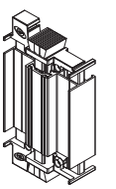
ET080186.00

ET 074704.00	100	●

Pair of plastic plugs for adjoining profile E70551



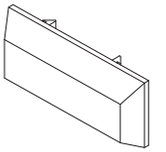




E70551

ET 074605.00	100	●

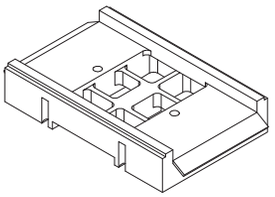
Plastic water drain cap



A70-08

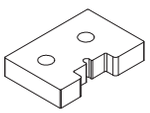
code/description	package/pcs	colour
ET 240806.00	1	●

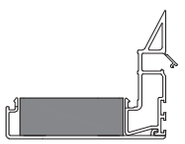
EPDM sealing block for bottom rail E70



ET 074702.00	10	●

EPDM foam plug for bottom side of interlock E70

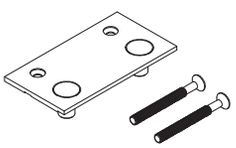


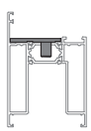


E70603

ET 071262.00	1	●

Fastening fixing plate for rollers of sash E70201

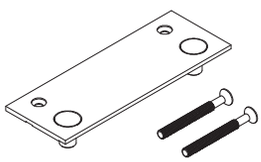


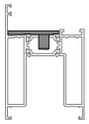


E70201

ET 071263.00	1	●

Fastening fixing plate for hardware on sashes E70201, E70202

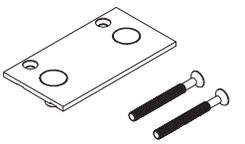


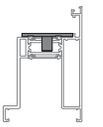


E70201

A70–09

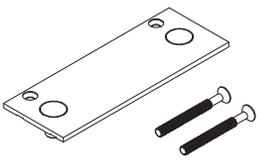
code/description	package/pcs	colour
ET 071264.00		

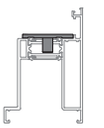




E70204

ET 071265.00		

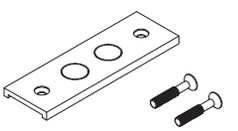


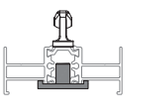


E70204

ET 071266.00		

Fastening fixing plate for striker on profile E70511

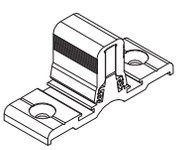


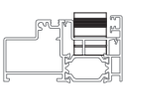


E70204

ET 240624.02		

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





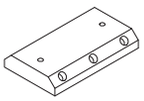
E70102

ATTENTION

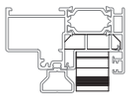
A70–10

code/description	package/pcs	colour
ET 071267.00	1	●

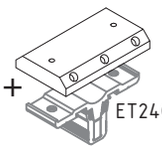
Alumunium shim for fixing stopper ET071267 on upper rail E70102



E70102

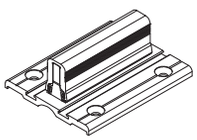


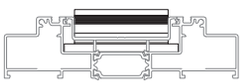
ATTENTION
co-operate with stopper ET240624.02
and applied only on top rail



code/description	package/pcs	colour
ET 240622.02	1	●

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



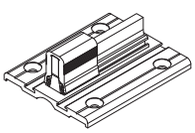


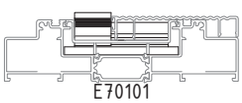
E70101

ATTENTION
applied only on bottom rail

code/description	package/pcs	colour
ET 240623.02	1	●

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



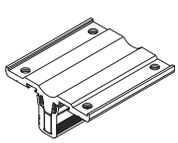


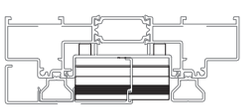
E70101

ATTENTION
applied only on bottom rail

code/description	package/pcs	colour
ET 240621.02	1	●

Aluminium stopper 64 mm for upper rail for four leaf door E70 RAL 9005



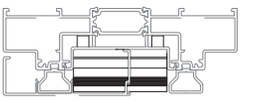


ATTENTION
applied only on top rail

A 70–11

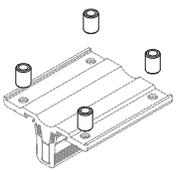
code/description	package/pcs	colour
ET 071268.00	20	MF

E70101

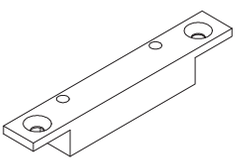


ATTENTION
co-operate with stopper ET240621.02
and applied only on top rail

Spacer for aluminium stopper
ET240621

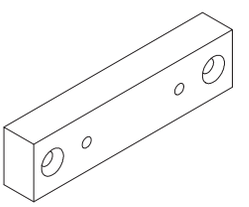


ET 240625.00	1	●



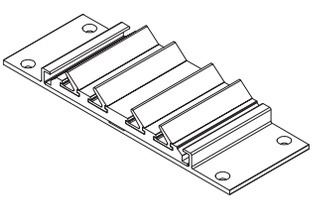
Fixing part for stopper of
four leaf doof E70

ET 240626.00	1	●



Fixing part for stopper of
double leaf door E70

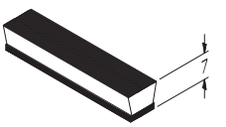
ET 240805.00	1	●



Plastic brush 63 mm for
upper rail E70

A70-12

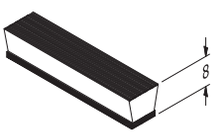
code/description	package/pcs	colour
ET 135407.01	275	
ET 135407.02	275	
ET 135407.04	275	



E70102
E70111
E70115
E70510
E70604
E70605
E70606

Pile weatherseal 4P - 7 mm

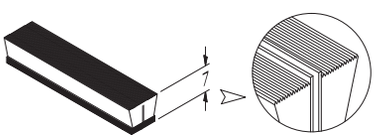
ET 135408.01	225	
ET 135408.02	225	
ET 135408.04	225	



E70640

Pile weatherseal 4P - 8 mm

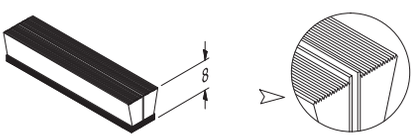
ET 135507.01	275	
ET 135507.02	275	
ET 135507.04	275	



E70102
E70111
E70115
E70510
E70604
E70605
E70606

Pile weatherseal FP - 7 mm

ET 135508.01	225	
ET 135508.02	225	
ET 135508.04	225	



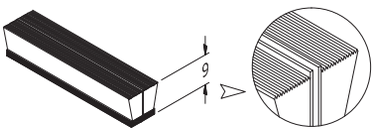
E70640

Pile weatherseal FP - 8 mm

A 70-13

code/description	package/pcs	colour
ET 135509.02	175	●

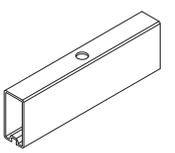
Pile weatherseal FP - 9 mm

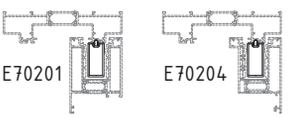


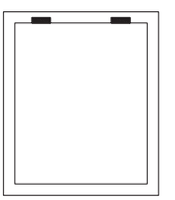
ET080186.00

ET 994619.00	1	MF

Spacer for fixed frame
44.3 x 20.8 mm

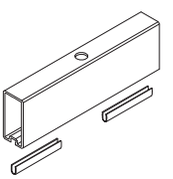


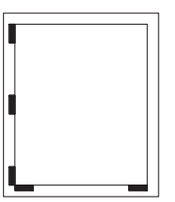


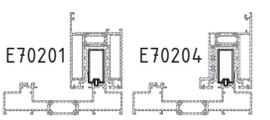


ET 240423.00	1	MF

Spacer for fixed frame
E70201, E70204

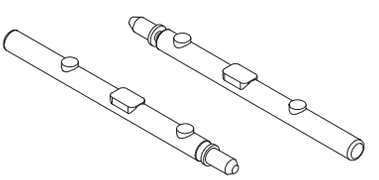






ET 143900.00	100	natural

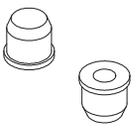
Roll pin 3x6 with sleeve



A70-14

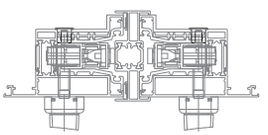
code/description	package/pcs	colour
ET 143914.00	100	INOX

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



ET 071261.00	1	

Securing nut for hardware
handle of E70 Less Frame

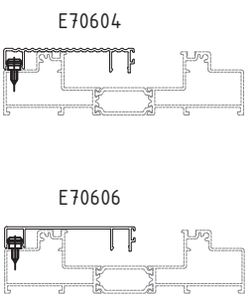


ET 071260.00	1	

Fixing profile for E70551
on to E70204 (Less Frame)

ET 143525.00	1	

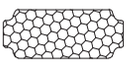
Special screw for fixing
E70604 & E70606 on rail

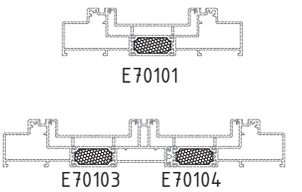


A70-15

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

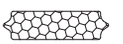
Foam insert for E70 rails

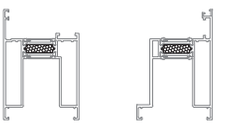




ET 970201.00	9 pcs x 700 mm	standard

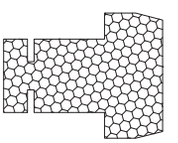
Foam insert for E70 sashes

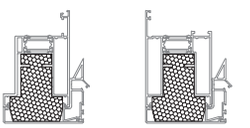




ET 970603.00	9 pcs x 700 mm	standard

Foam insert for E70
interlock profile





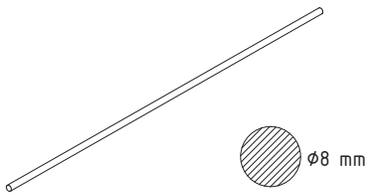
ET 080523.00	2	●

Foam insert for E70
glazing space

A70-16

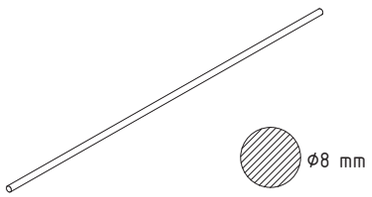
code/description	package/pcs	colour
GU 201055.00	1	MF

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



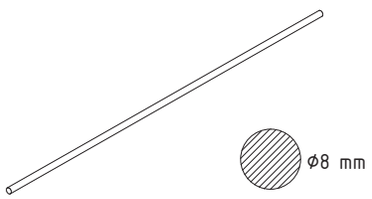
GU 201058.00	1	MF

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



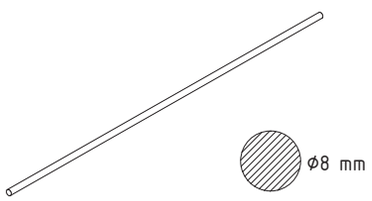
GU 201059.00	1	MF

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



GU 201056.00	1	MF

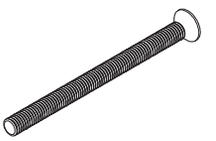
Connecting rod 8 mm
(for Sash W. 2351 – 3300 mm)



A70–17

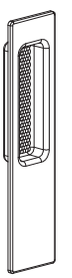
code/description	package/pcs	colour
GU 205108.00	1	MF

Screw M6x75 mm, DIN 965



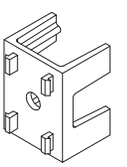
GU 205109.01	1	●
GU 205109.03	1	brown
GU 205109.11	1	silver

Flush pull 934



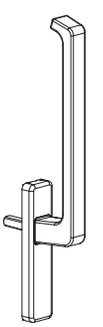
GU 205118.00	1	

Additional part for GU 934
18 mm



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

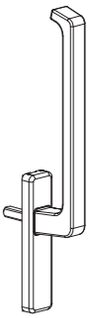
Flush pull 934 without
cylinder bore with screw
base plate



A70-18

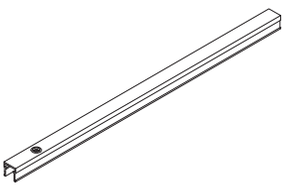
code/description	package/pcs	colour
GU 250102.01	1	●
GU 250102.03	1	brown
GU 250102.11	1	silver

Flush pull 934 without cylinder bore



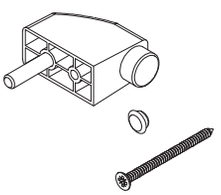
GU 250111.01	1	

Cover rail extension for gear GU 934, 500 mm



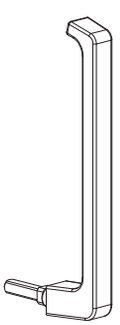
GU 250114.02	1	●

Stopper GU 934, black



code/description	package/pcs	colour
GU 250124.01	1	●
GU 250124.03	1	brown
GU 250124.11	1	silver

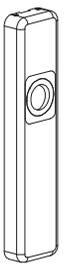
Removable handle 934



A 70–19

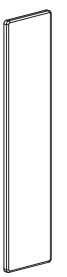
code/description	package/pcs	colour
GU 250125.01	1	●
GU 250125.03	1	brown
GU 250125.11	1	silver

Rosette for 934 handle
without cylinder bore



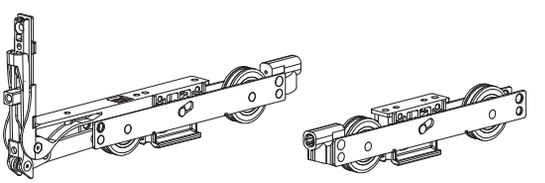
GU 250129.00	1	

Outer rosette for 934
handle



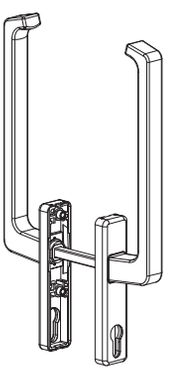
GU 250101.00		

Rollers GU 934



code/description	package/pcs	colour
GU 250140.01	1	●
GU 250140.03	1	brown
GU 250140.11	1	silver

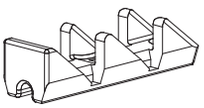
Both side handle 934,
with cylinder hole



A70-20

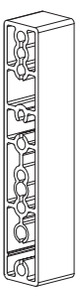
code/description	package/pcs	colour
GU 250119.00	1	

Ventilation striker for
hardware 934



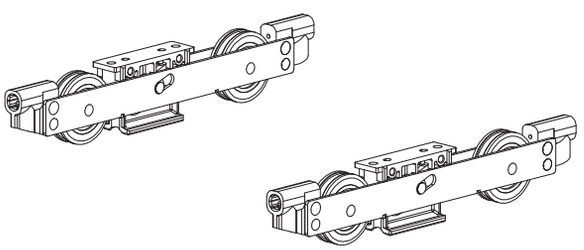
GU 250146.00	1	

Bottom spacer 18 mm
for GU 934



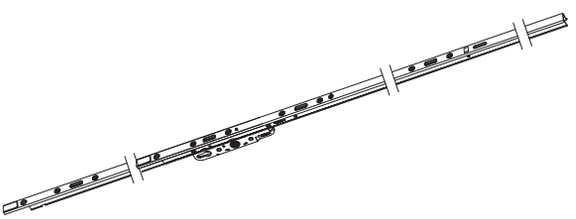
GU 250148.00	1	

Additional rollers basic kit
for GU 934



GU 250145.11	1	

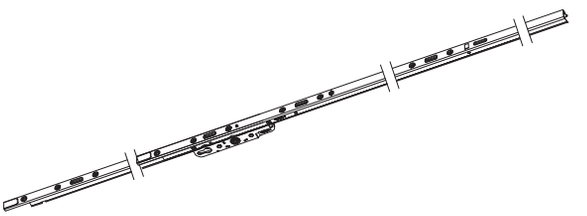
Gear for GU 934 Silver
for height 1865 – 2365 mm



A70-21

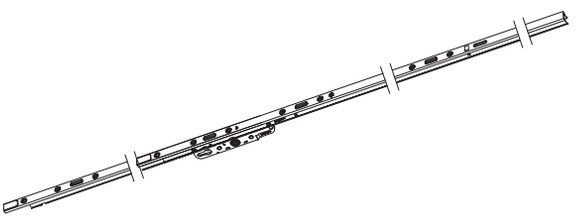
code/description	package/pcs	colour
GU 250149.11	1	

Gear for GU 934 Silver
for height 865 – 1285 mm



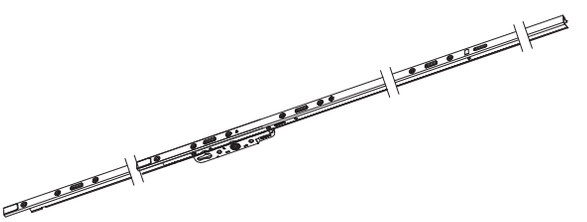
GU 250150.11	1	

Gear for GU 934 Silver
for height 1235 – 1865 mm



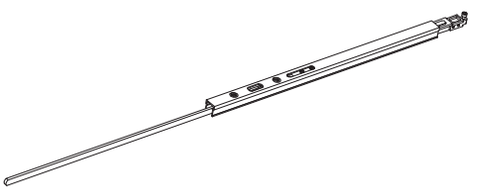
GU 250151.11	1	

Gear for GU 934 Silver
for height 2155 – 2765 mm



GU 250696.00	1	

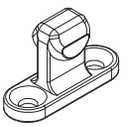
Gear extension with locking
point EV1



A70-22

code/description	package/pcs	colour
GU 250147.00	1	

Frame striker for GU 934



GU 250900.00	1	

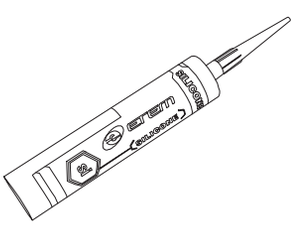
Elastic interlock stopper
for GU 934

ET 143907.00	1	

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

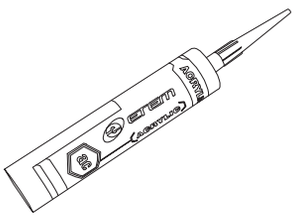
Silicone for general use 280 ml



A70-23

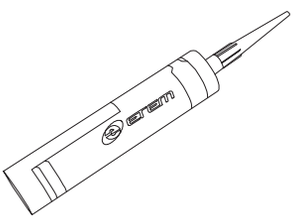
code/description	package/pcs	colour
ET 138000.01	1	

Acrylic putty 280 ml



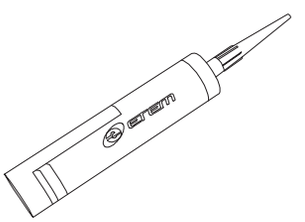
ET 138004.00	1	

Crimping machine adhesive with
rapid vulcanisation 290 ml



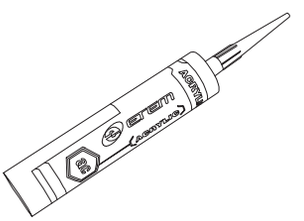
ET 138005.00	1	

High performance sealant
310 ml



ET 138013.00	1	

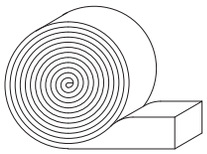
Boutyl for gluying gaskets



A70-24

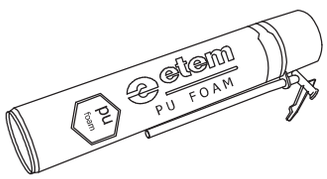
code/description	package/pcs	colour
ET 133002.00	20m	

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



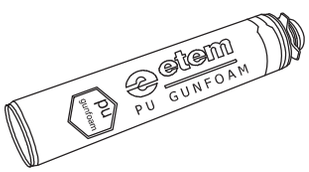
ET 136651.00	1	

P.U. Foam 750 ml



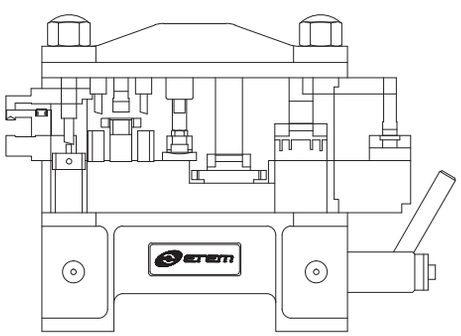
ET 136652.00	1	

P.U. Foam 750 ml
for foamgun



ET 162256.00	1	

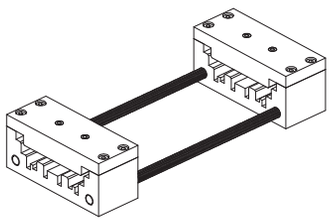
Punching machine
for E70 profiles



A70-25

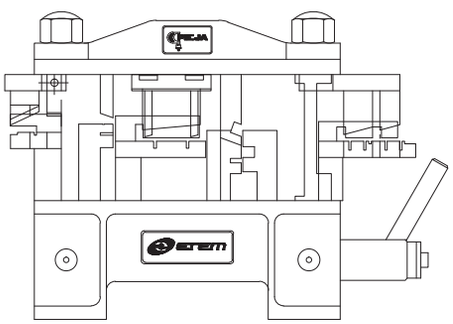
code/description	package/pcs	colour
ET 162257.00	1	

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

LEGAL ACTS

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

MAIN METHODS FOR OBTAINING TEST RESULTS BY THE MANUFACTURER

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

1

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

↓

NOTIFIED TESTING LABORATORY TESTS THE SAMPLE

↓

THE MANUFACTURER OWNS THE TEST REPORT

↓

MANUFACTURER ISSUES DECLARATION OF PERFORMANCE AND AFFIXES CE MARKING

2

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

↓

NOTIFIED TESTING LABORATORY TESTS THE SAMPLE

↓

THE PARTNER OWNS THE TEST REPORT

↓

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

↓

MANUFACTURER ISSUES DECLARATION OF PERFORMANCE AND AFFIXES CE MARKING

3

THE SYSTEM PROVIDER SELECTS SAMPLES FOR TESTING

↓

NOTIFIED TESTING LABORATORY TESTS THE SAMPLE

↓

THE SYSTEM PROVIDER OWNS THE TEST REPORT

↓

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

↓

AGREEMENT BETWEEN THE MANUFACTURER AND THE SYSTEM PROVIDER

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

↓

MANUFACTURER ISSUES DECLARATION OF PERFORMANCE AND AFFIXES CE MARKING

STANDARDS

GENERAL

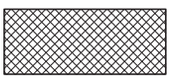
- EN 12020 (1÷2) – ALUMINIUM AND ALUMINIUM ALLOYS – EXTRUDED PRECISION PROFILES IN ALLOYS EN AW-6060 AND EN AW-6063
- EN 755 (1÷9)– ALUMINIUM AND ALUMINIUM ALLOYS – EXTRUDED ROD/BAR, TUBE AND PROFILES
- EN 573 (1÷3) – ALUMINIUM AND ALUMINIUM ALLOYS – CHEMICAL COMPOSITION AND FORM OF WROUGHT PRODUCTS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

WINDOWS AND DOORS

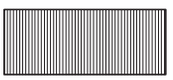
1. EN 14351 – WINDOWS AND DOORS – PRODUCT STANDARD, PERFORMANCE CHARACTERISTICS
2. EN 12519 – WINDOWS AND PEDESTRIAN DOORS – TERMINOLOGY
3. EN 12207 – WINDOWS AND DOORS – AIR PERMEABILITY – CLASSIFICATION
4. EN 1026 – WINDOWS AND DOORS – AIR PERMEABILITY – TEST METHOD
5. EN 12208 – WINDOWS AND DOORS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

HATCHES

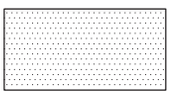
Hatches for different materials



EPDM

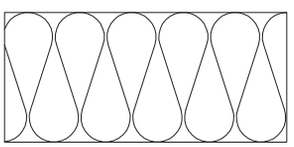


PVC

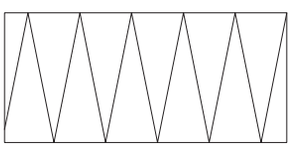


gypsum board

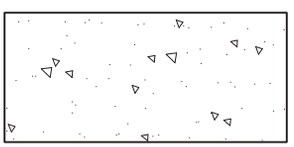
silicone seal



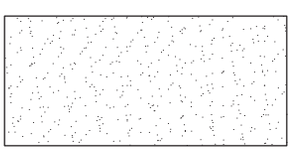
Insulation soft



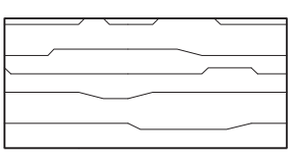
Insulation hard



concrete wall



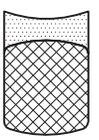
plaster



wood

butyl seal

membrane



silicone seal

backer rod

PVC spacer

etalbond

sheet aluminium

glass

aluminium profile

steel

LIABILITY

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

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

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

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

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