

Machines & Aluminum Center
مرکز ماشینات و مستلزمات آلومینیوم



TEMPO 84

SLIDING SYSTEMS

2021

www.mac-alum.com

MACHINES & ALUMINIUM CENTER

Machines and Aluminum Center is an Egyptian based company established in the year 1981 and started its activity with aluminium applications in architectural and construction field.

They represent and cooperate with several leading European firms in field of aluminium business including aluminium fabrication machinery, accessories and hardware for architectural applications and different aluminium systems varying from windows and doors, up to facades and solar protection.

Our goal is to supply our clients with whatever is needed to apply our aluminium systems in the building construction. We are specialized in supplying all required machinery, equipments, dies, punches, hardware and fittings for our aluminium systems.

We offer a wide range of products to local market and neighbor countries. Our product range includes windows and doors, partition systems, different façade solutions and the related integrated accessories.

We partner with our customers with value added services which means that with the help of our specialized team of engineers, we provide our clients with technical support to assist them in improving their product's quality.

We are committed to innovative and creative product design to fulfill all architectural requirements. Our products can meet the most exacting engineering and technical standards while overcoming sophisticated design challenges.



Machines & Aluminium Center
مرکز ماشینات و مستلزمات آلومینیوم

The profiles shown in this catalogue are patented.

The items shown are the exclusive property of **MACHINES & ALUMINIUM CENTER** and may not be even partially reproduced without **MACHINES & ALUMINIUM CENTER** authorization.

The manufacturer reserves the right to modify the items in this catalog without advanced notice.

INDEX

Technical Specifications.....	4
Technical Characteristics.....	13
Certificate.....	14
Wind Load Charts.....	15
Profiles.....	20
Profiles Sections 1:1.....	26
Detailed Sections.....	36
Assembly Instruction.....	61
Cutting List.....	66



Technical Specifications

Materials

All aluminium profiles are from extruded aluminium alloy 6063 according to American standards ASTM B221 (B221M) - 02 - 2004 or German standards (Din 1748 Part 1).

Alloy Components:

■ Silicon	:	0.2 - 0.6 %
■ Iron	:	0.35 %
■ Manganese	:	0.10 %
■ Magnesium	:	0.45 – 0.9 %
■ Copper	:	0.1 %
■ Chromium	:	0.1 %
■ Zinc	:	0.1 %
■ Titanium	:	0.05 - 0.1 %
■ Aluminium	:	All the rest

Alloy Specifications:

- Tensile Strength: At least 1550 kg/cm²
 - Yield Strength: At least 1100 kg/cm²
 - Elongation: Up to 8.0 %
-
- All plastics parts are made from nylon reinforced with fiber glass which has high mechanical properties.
 - All gaskets are made from extruded E.P.D.M. – in a hardness to suit its applications.
 - All fasteners within accessories are made from galvanized steel and stainless steel.



Finish

All exposed surfaces of the aluminium profiles is treated either by anodizing treatment (according to DIN 17611) or by electrostatic powder coating to meet international standards.

Anodizing treatment according to DIN 17611 with thickness from 16 to 20 micron according to next standards:

- Abrasion A.S.T.M. D-968-72
- Acid A.S.T.M. D-3260-73
- Detergent A.S.T.M. D-2248-73

Electrostatic powder coating according to RAL Specifications with thickness more than 70 micron.

Technical Features

- Many varieties are available in frame section and sash sections also.
- A full range of accessories is available for the various door and window types.
- Tolerance weights and dimensions according to standard ANSI H35.2 TABLE5 or (Din 1748).
- Corner Joints are assembled using die cast aluminium corner cleat or locking brackets with dowels, also using different types of angles to keep of right angle.
- Rollers have a high load capacity; that a couple of single rollers can carry a sliding leaf that weigh up to 90 kg, and a couple of double rollers can carry a leaf that weigh up to 160 kg.
- The profiles provide a large range of infill types and measures, due to the availability of different profile types and a wide range of gaskets measures.
- Additional locking points are available to make more security for the window which make opening or moving leaf is impossible.
- According to moment of inertia value of selected profiles and window type, wind load resistance can be calculated avoiding any deformation grater than 1200/ of window span under load up to 500 Pascal.
- Water infiltration is confirms to American standard a.s.t.m. E313, with no penetration up to 10.0 psf and not grater than 1.5 cubic meter per hour per meter length of opening joint at pressure 100 N/m²



Powder Coating

ALWAN is one of the largest facilities in Egypt, in the field of electrostatic application of pure-polyester powder coatings as surface treatment, specifically designed to meet stringent requirements of the construction industry for architectural and industrial aluminum profiles.

We guarantee complete customer satisfaction on all our delivered products. Every production line has a fully equipped laboratory in order to meet all international quality specifications and standards as set by the QUALICOAT organization. The certifications of QUALICOAT , Quality Management ISO 9001 and Environmental Management ISO 14001, provide complete quality assurance. We ensure a full control over all the critical parameters concerning chemical pretreatment and the use of enhanced chemical pretreatment process, with high etching degree, in accordance to QUALICOAT specifications, as well as a full control on the painting processes and polymerization during the whole surface treatment procedure. Therefore, through a unique blending system, stringent quality assurance and compliance to measures, consistent quality during the production process is guaranteed.

The application of the above-mentioned steps will assist along the line with the overall excellent properties and the longevity of the color, providing an attractive finish to the projects and building components by ensuring gloss retention, color stability and corrosion protection.

Available Colors

In regards to the colors, they are available in RAL Gloss & RAL matt. The gloss affects how the eye perceives color so some slight variations in the finish may occur. In addition to that, the coating provides a wide range of custom-made colors that gives a variety of effects, including metallic effects.



Most of the colors are available in standard durable and some are available in super durable, which complies with advanced levels of weather resistance, gloss and color retention, and corrosion resistance, when compared to the standard durable specification.

Color customization to our standard products may be available on a request basis, with unlimited options of powder coating. In this respect, Non-standard designs and applications can be reviewed to determine the feasibility on a project-specific basis.

Warranty

The warranty is subject to terms and conditions based on the geographical location & when used on an architectural aluminum substrate.

Standard Durable Class 1: Up to 10 years

Super Durable Class 2: Up to 25 years

Notes:

- As the products are very often used under conditions beyond supplier's control, we cannot guarantee anything but the quality of the product itself.
- It is expected that any fading and/or chalking and/or change in gloss retention, either uniform or non-uniform that a color will experience in the field will result in the falling within acceptable range as specified in the Qualicoat specification standards.

*QUALICOAT is a quality label organization committed to maintaining and promoting the quality of lacquering, painting and coating on aluminum and its alloys, for architectural applications.



CERTIFICATE

for a COATING APPLICATOR



hereby authorises

MACHINES & ALUMINIUM CENTER (ALWAN)

213, SECOND INDUSTRIAL ZONE
6TH OF OCTOBER CITY
GIZA
Egypt

to use the quality label in conformity with the
QUALICOAT 2021 Specifications, applicable from 1 January 2021

Licence No.:	1609
--------------	------

Date of Granting:	06.05.2021
-------------------	------------

Valid until:	31.12.2021
--------------	------------

Zurich, 6 May 2021

QUALICOAT

M. C. Panam

Mohammed C. Panam
President



Sue C. C. Paredi

Sue C. C. Paredi
Managing Director

QUALICOAT | Tödistrasse 48, 8002 Zurich, Switzerland | www.qualicoat.net





CERTIFICATE OF REGISTRATION

INTERCERT hereby certifies that Quality Management System of

Machines & Aluminium center



Office: Street No.75, Piece No. 32, 1st Industrial Zone, 6th of October City, Egypt.

مركز ماكينات ومعالجات الألمنيوم
(القاهرة)

Site: Piece No. 213, 2nd Industrial Zone, 6th of October city, Egypt.

Has been successfully assessed as per the requirements of

ISO 9001:2015

For the scope of

Trading, Treatment and Painting of Aluminum Profile

Initial Certification Date: 07-06-2021

Certificate Issue Date: 07-06-2021

Surveillance Validity Date: 06-06-2022

Recertification Date: 06-06-2024

Registration Number: IC-QM-2106051

Amr Mohamed

Issued on behalf of InterCert
Head - Certifications



The validity of this certificate can be verified at www.intercert.com or through email at info@intercert.com. This certificate is the property of INTERCERT and must be returned on request. Accreditation details are available with IAS, (International Accreditation Services) Inc. USA at www.iasonline.org



CERTIFICATE OF REGISTRATION

INTERCERT hereby certifies that the Environmental Management System of

Machines & Aluminium center

Office: Street No.75, Piece No. 32, 1st Industrial Zone, 6th of October City, Egypt.

Site: Piece No. 213, 2nd Industrial Zone, 6th of October city, Egypt.



مركز ماكينات ومعالجات الألمنيوم
(ألدان)

Has been successfully assessed as per the requirements of

ISO 14001:2015

For the scope of

Trading, Treatment and Painting of Aluminum Profile

Initial Certification Date:	07-06-2021
Certificate Issue Date:	07-06-2021
Surveillance Validity Date:	06-06-2022
Recertification Date:	06-06-2024

Registration Number: IC-EM-2106052

Issued on behalf of InterCert
Head - Certifications



The validity of this certificate can be verified at www.intercert.com or through email at info@intercert.com. This certificate is the property of INTERCERT and must be returned on request. Accreditation details are available with IAS, (International Accreditation Services) Inc. USA at www.iasonline.org



AkzoNobel



AkzoNobel

Interpon D Approved Applicator

Series D1000

MACHINES AND ALUMINIUM CENTER
(Alwan)
213, 2nd industrial Zone, 6th of October City, Giza
Egypt

Has fulfilled AkzoNobel's tests and inspection regarding the pre-treatment, application, quality management standards and procedures, and complies with the requirements of the Architectural Range Approved Applicator schedule.

This certificate is effective from
31st May 2021 to 30th May 2022

Approved for Aluminium Alloys: AA6080

Approved for Pre-treatment Type: Chrome

Wael Mahmoud
Sales and Marketing Manager
North Africa & Levant

3/1/2021

AkzoNobel Industrial Paints



Interpon D Approved Applicator

Series D2000

MACHINES AND ALUMINIUM CENTER
(Alwan)
213, 2nd industrial Zone, 6th of October City, Giza
Egypt

Has fulfilled AkzoNobel's tests and inspection regarding the pre-treatment, application, quality management standards and procedures, and complies with the requirements of the Architectural Range Approved Applicator schedule.

This certificate is effective from
31st May 2021 to 30th May 2022

Approved for Aluminium Alloys: AA6090

Approved for Pre-treatment Type: Chrome

Wael Mahmoud
Sales and Marketing Manager
North Africa & Levant

3/1/2021

AkzoNobel Industrial Paints



To Whomever it may concern

Date: 18th April 2021

Subject: Powder coating facility of **Machines and Aluminium Center**, under the process of Jotun approved applicator certification to coat Jotun Architectural products.

Dear Sir/ Madame

This refers to above subject, here with we confirm you that for **Machines and Aluminium Center**, located in **Second Industrial Zone, Plot 213, 6th of October, EGYPT** is under the process of Jotun Approved Applicator certification to coat Jotun Architectural products. Preliminary audit has already been conducted, final audit will be conducted soon for certification. This letter is valid for six (6) months from the date above.

Please don't hesitate to contact me in case further clarifications

Godfrey E. Brazil

Godfrey E. Brazil

Technical Service Executive



Jotun Powder Coatings U.A.E. (LLC)
P.O. Box 51033, Dubai, United Arab Emirates
Tel: +971-4-347-2519 | Fax: +971-4-347-2615 | www.jotun.com

Bankers
The Main office
Emirates NBD

IBAN: AE77026000102009471404
R/C No: 40094
Paid up: QRAM AEO 3,000,000



Applicator approval certificate

Machines & Aluminium Center
(Alwan)

Is acknowledged by us to be an approved applicator to series 29 Powder coatings product line

Date of certificate : 20/5/2021

Date of expiration : 21/5/2022

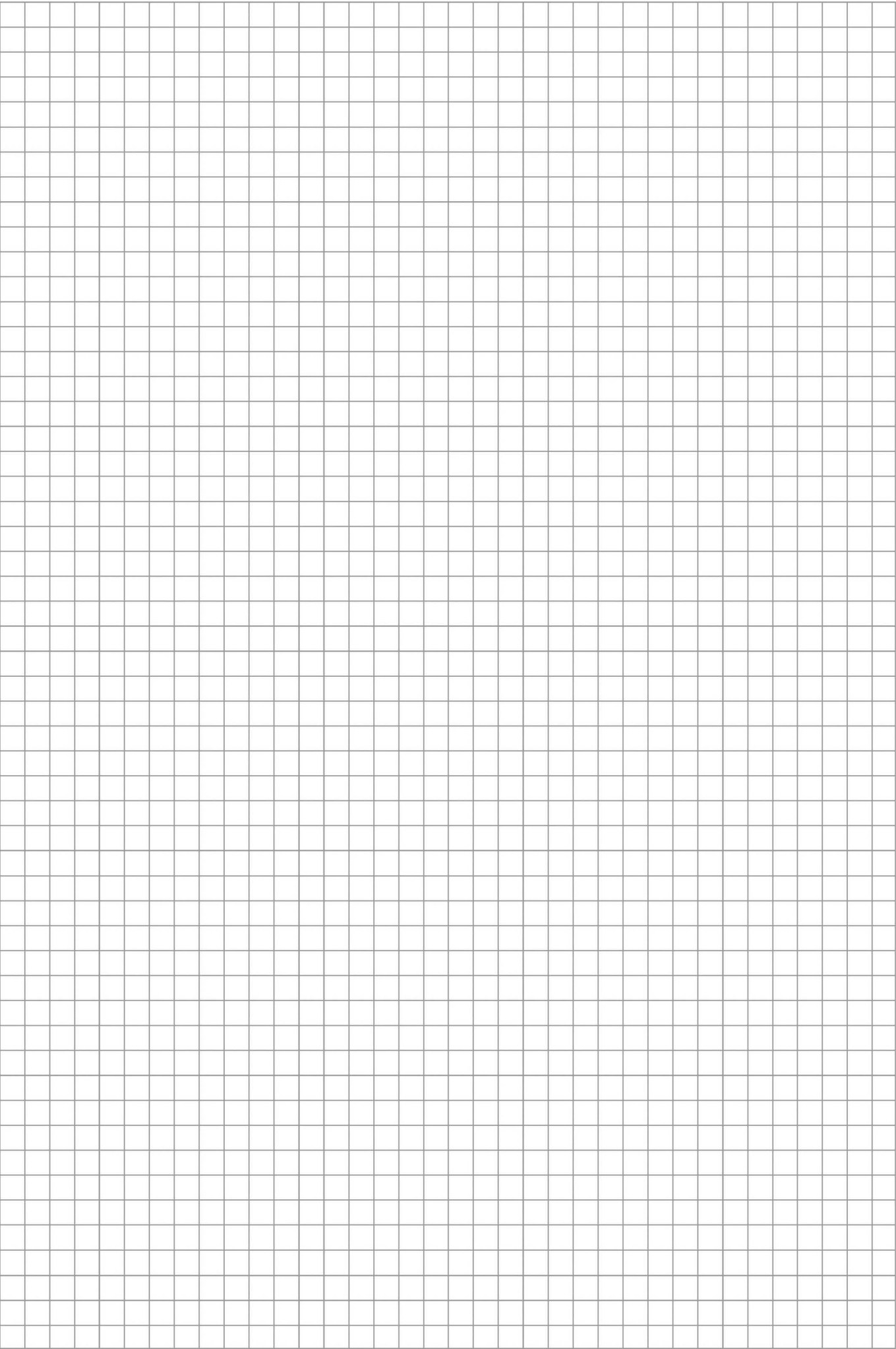
This certificate is granted after a complete audit of pre-treatment used by the applicator, inspection of the oven, equipment, and knowledge of staff. We hereby acknowledge that Machines & Aluminium center fulfills our standards for an approved applicator.

Authorized signature
CEO

Signature of CEO

Authorized signature
Commercial director

Signature of Commercial director





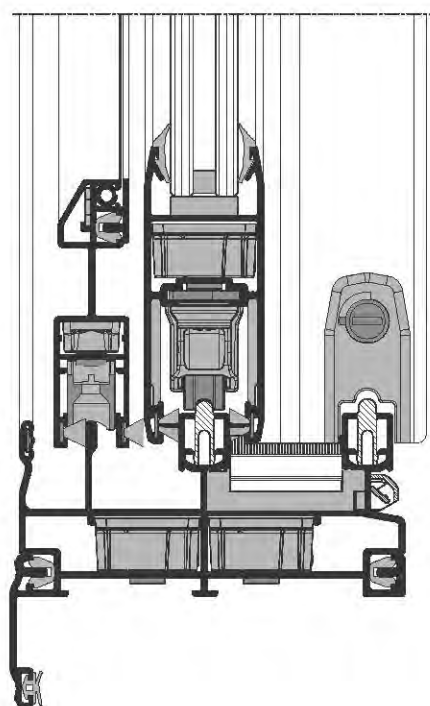
- Frame and sash are designed in soft-line modern look, suitable for modern buildings, renovation projects, residential and service buildings.
- Available in the double or triple track design, structures with up to six leaves.
- Low sill rail is available for patio doors and balconies.
- Aluminium or stainless-steel clip-on rails to simplify maintenance.
- Integrated fly screen sash, available inside or outside.

Technical Characteristics

Frame	Depth	76 mm. to 169 mm.
	Height	50 mm. to 102 mm.
Sash	Depth	32 mm.
	Height	80 mm.
Max Glass Thickness	Up to 24 mm.	
Max Sash Weight	Up to 200 kg.	
Sealing Type	Perimetrical, with two rows of high-density brushes	

Complies with European norm hEN 1435-1

Air Permeability	(Class 3) up to 600 pa.
Water Tightness	(Class 9A) up to 600 pa.
Resistance to wind load	(Class C4) up to 1600 pa.





EUROPEAN CERTIFYING ORGANIZATION S.P.A.
NOTIFIED TESTING LABORATORY N. 0714
FOR REGULATION (EU) No 305/2011
CLASSIFICATION ASSESSMENT
N. 0714-CPR-1301 DATED NOVEMBER, 30 2015

In compliance with Regulation (EU) No. 305/2011 of the European Parliament and of the Council of 9 March 2011, that replaces Council Directive 89/106/EEC and lays down conditions for the placing or making available on the market of construction products by establishing harmonised rules on how to express their performance in relation to their essential characteristics and taking account of the horizontal legal framework for the marketing of products in the internal market, established by Regulation (EC) No. 765/2008 of the European Parliament and of the Council of 9 July 2008 setting out the requirements for accreditation and market surveillance relating to the marketing of products, as well as by Decision No. 768/2008/EC of the European Parliament and of the Council of 9 July 2008 on a common framework for the marketing of products,

and in compliance with hEN 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, which is currently in force,

European Certifying Organization S.p.A., notified laboratory NB 0714, carried out the following:

type-testing

for the determination of the essential characteristics

Air Permeability – Water tightness – Resistance to Wind Load

on the below mentioned external pedestrian doorset without resistance to fire and/or smoke leakage characteristics

In compliance with EN 12207:1999, EN 12208:1999, EN 12210:1999 – Classification,

EN 1026:2000, EN 1027:2000, EN 12211:2000 – Tests and calculations

System of assessment and verification of constancy of performance 3

The specimen, as provided by the Manufacturer, was identified as follows:

DESCRIPTION OF THE PRODUCT

Type: Sliding window, two sashes.
Model: TEMPO 84
Width= 1,860 mm, Height = 1,460 mm, Thickness = 32 mm
Fabrication number: -
Date of fabrication: 2015

PRODUCED IN THE FACTORY

Name: MACHINES & ALUMINIUM CENTER
Address: 122, MOHIY AL-DIN ABU AL-EZZ ST., DOKKI - GIZA - EGYPT

PLACED ON THE MARKET BY

Name: MACHINES & ALUMINIUM CENTER
Address: 122, MOHIY AL-DIN ABU AL-EZZ ST., DOKKI - GIZA - EGYPT

Taking into account the documentation submitted by the Manufacturer and on the basis of the results of the type-testing carried out, as described in the laboratory report ECO CP0025/4, dated November 26, 2015, in accordance with Annex ZA of hEN 14351-1:2006 - A1:2010 and with the EN 12207:1999, EN 12208:1999 and EN 12210:1999 classification, to the specimen, as previously identified,

THE FOLLOWING CLASSIFICATION IS AWARDED

AIR PERMEABILITY:	CLASS 3
WATERTIGHTNESS:	CLASS 9A
RESISTANCE TO WIND LOAD:	CLASS C4

The results refer only to the specimen that has been provided by the Manufacturer and submitted to type-testing listed above.
This classification assessment consists of 1 page and its reproduction is permitted in full or in part.

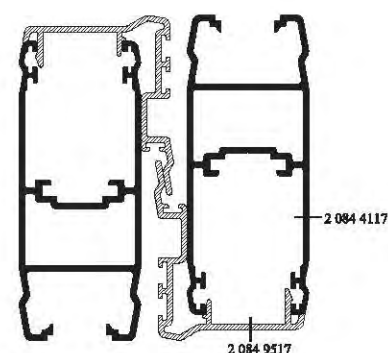
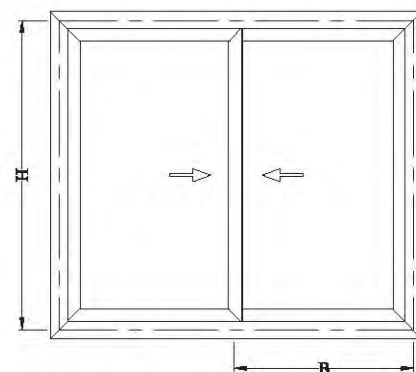
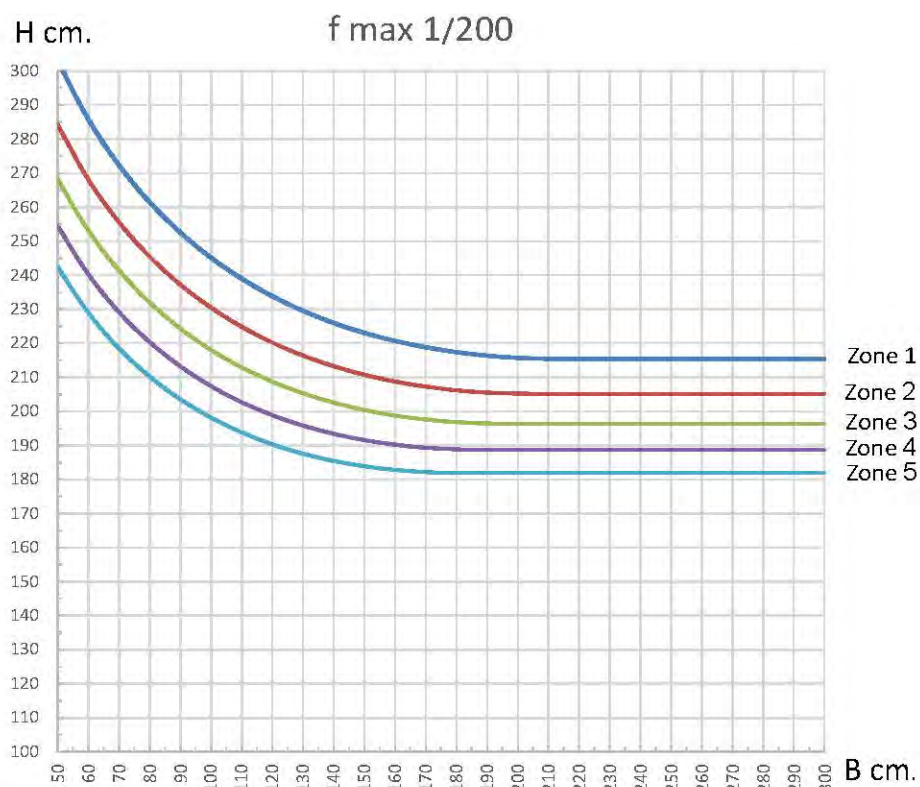
Faenza, November 30, 2015

The undersigned ECO Certificazioni S.p.A. Scheme Manager CPR

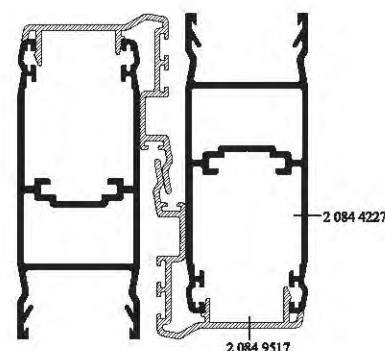
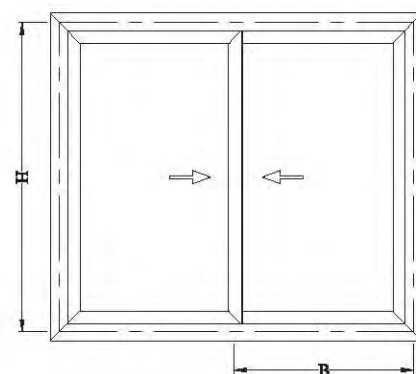
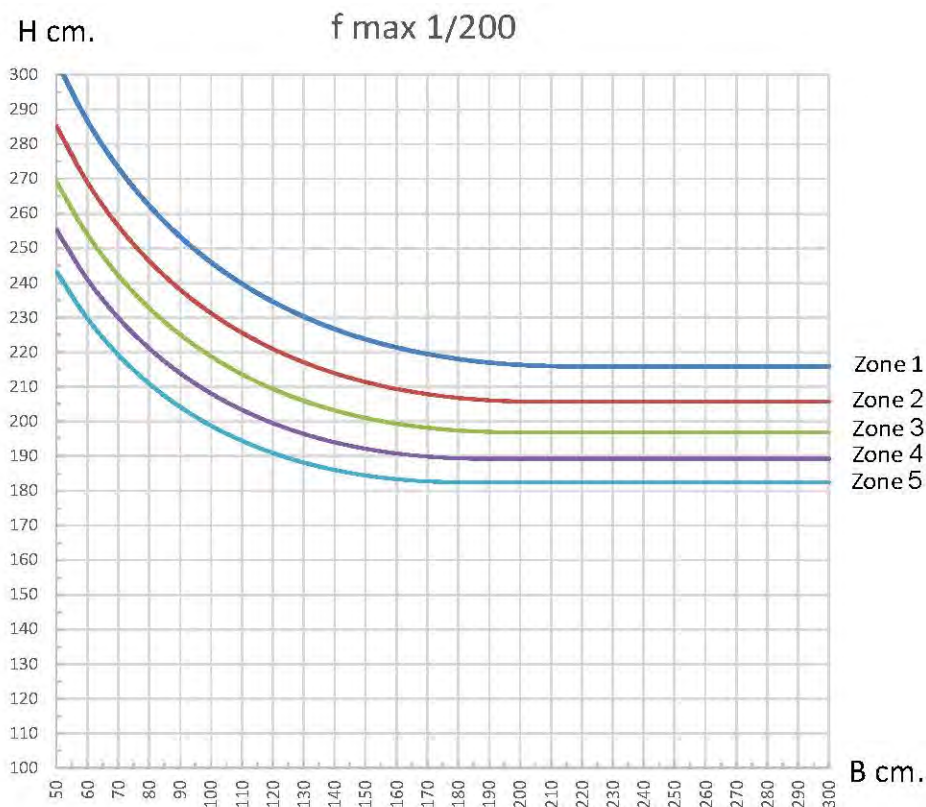
Eng. Gianluca Camporeale



ECO Certificazioni S.p.A. • Via Mengolina, 33
48018 Faenza (RA) - ITALY
Tel. +39 0546 824911 • Fax +39 0546 824922
E-mail: info@eco-cert.it • www.ecocertificazioni.eu



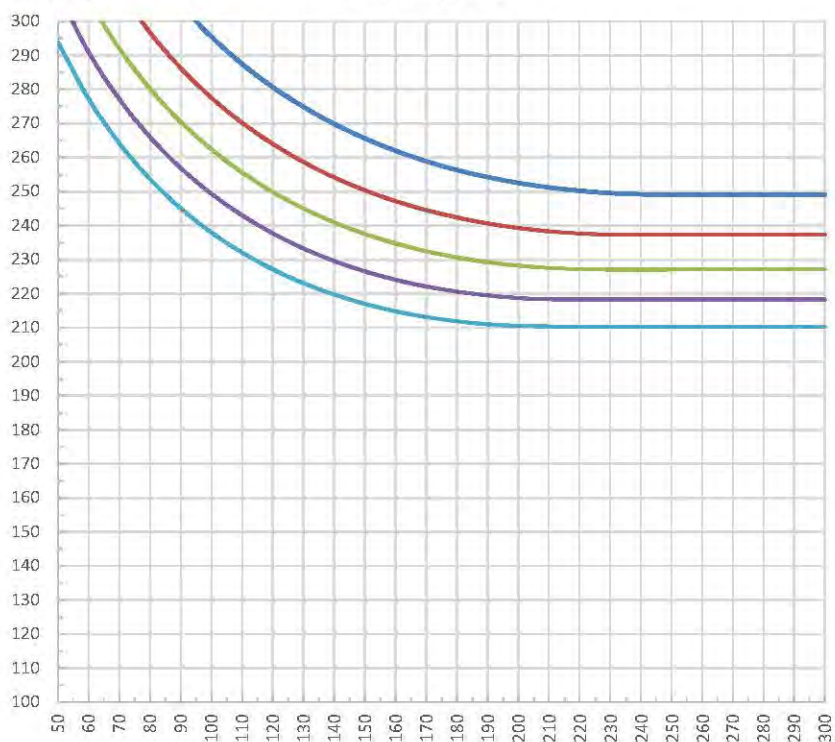
$I_x = 22.95 \text{ cm}^4$



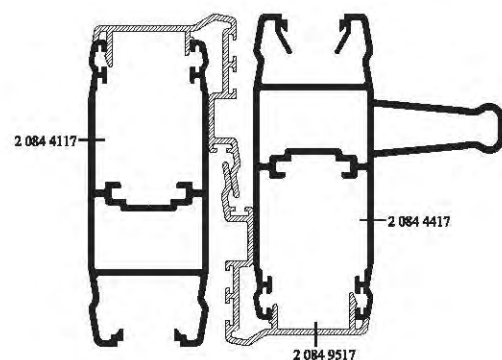
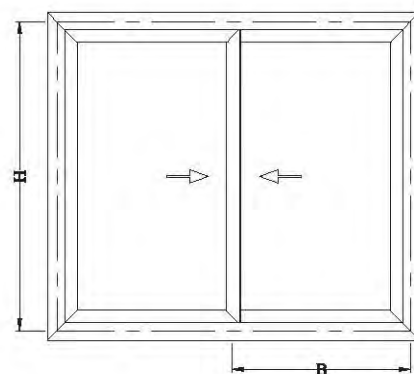
$I_x = 23.19 \text{ cm}^4$



H cm. $f \max 1/200$

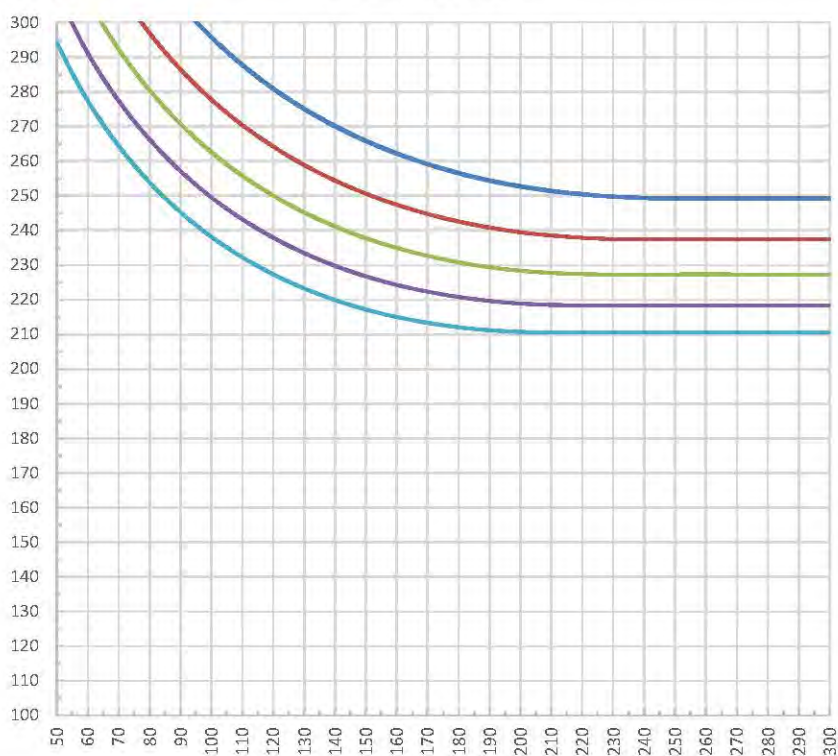


Zone 1
Zone 2
Zone 3
Zone 4
Zone 5

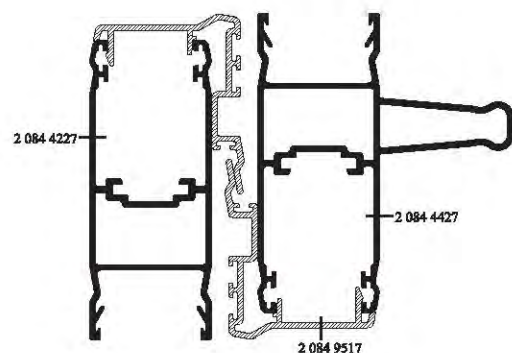
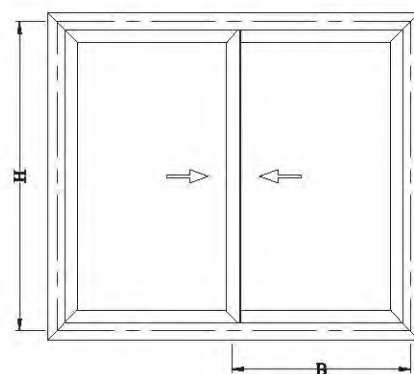


$I_x = 41.05 \text{ cm}^4$

H cm. $f \max 1/200$



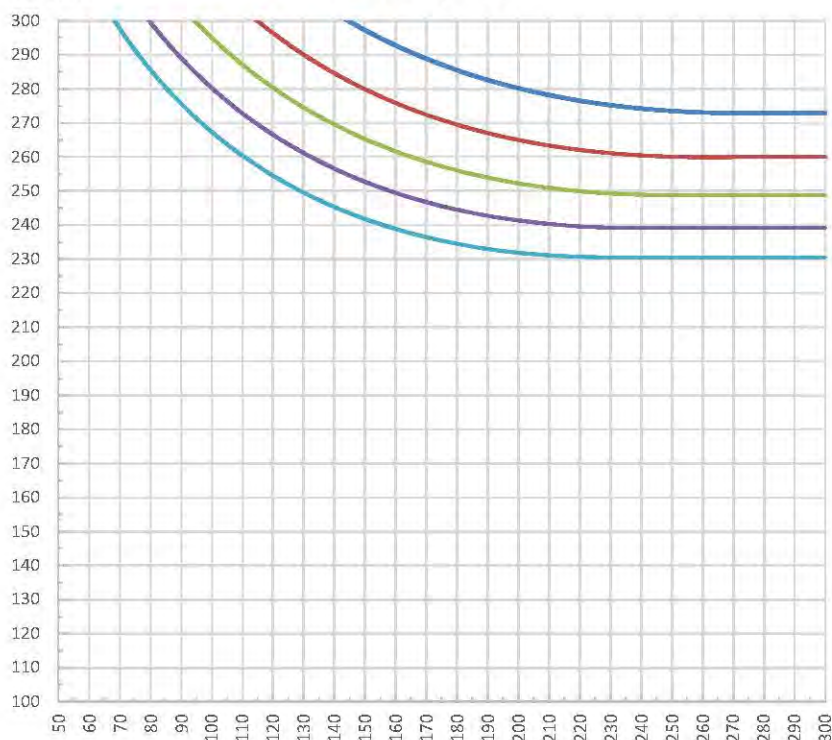
Zone 1
Zone 2
Zone 3
Zone 4
Zone 5



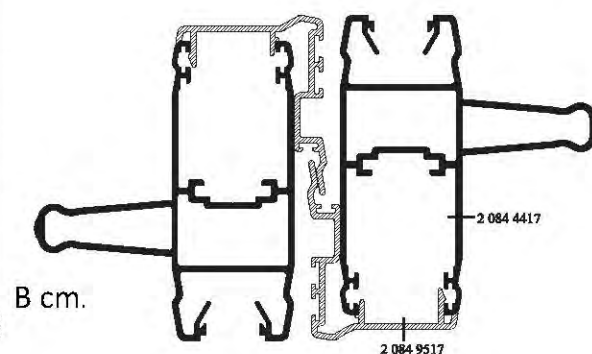
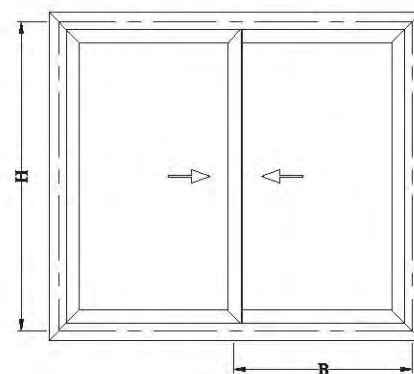
$I_x = 41.15 \text{ cm}^4$



H cm. f max 1/200

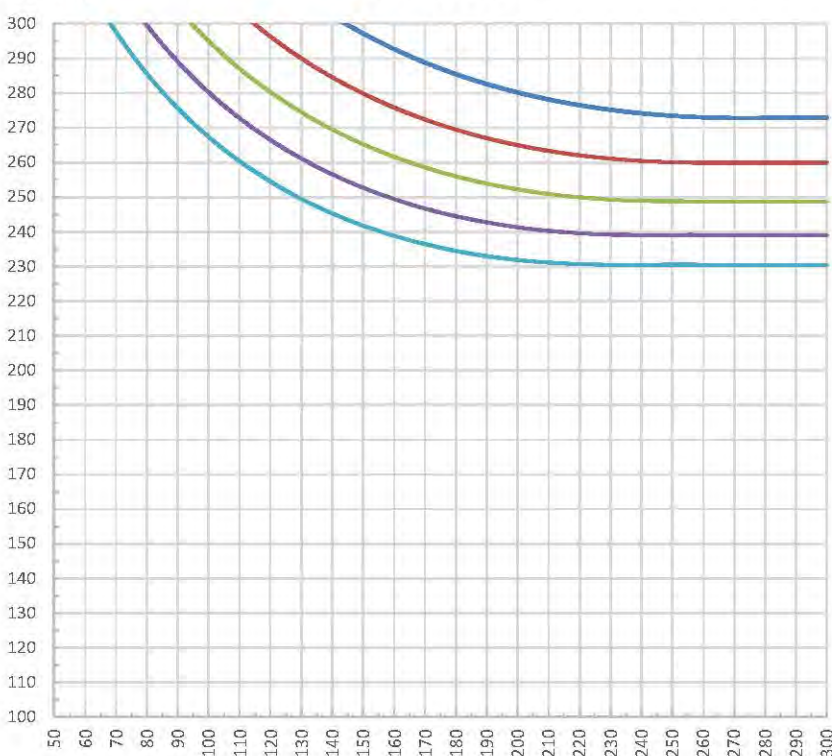


Zone 1
Zone 2
Zone 3
Zone 4
Zone 5

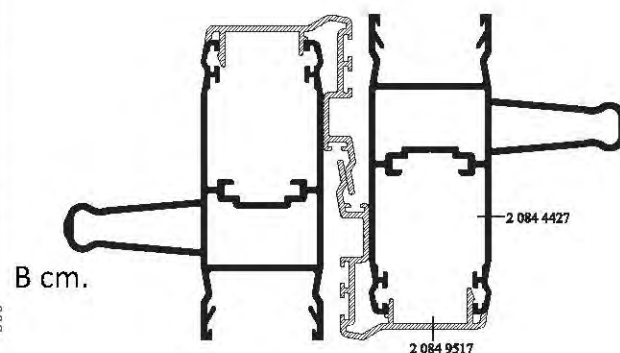
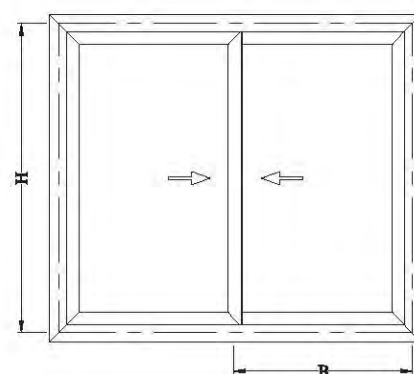


$I_x = 59.14 \text{ cm}^4$

H cm. f max 1/200



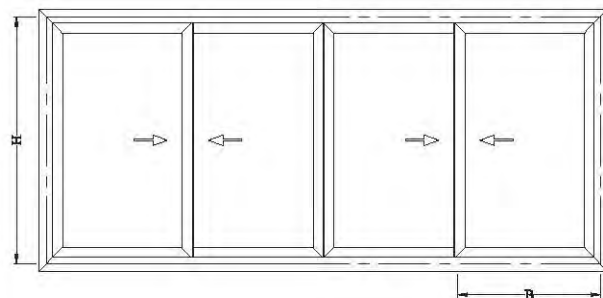
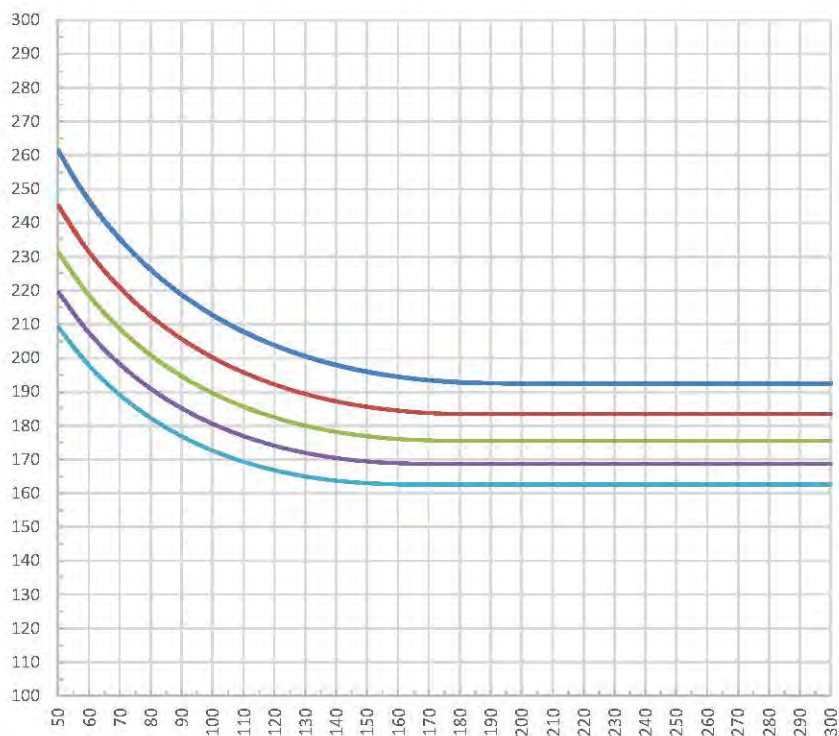
Zone 1
Zone 2
Zone 3
Zone 4
Zone 5



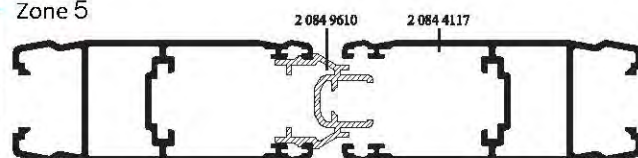
$I_x = 59.11 \text{ cm}^4$



H cm. f max 1/200



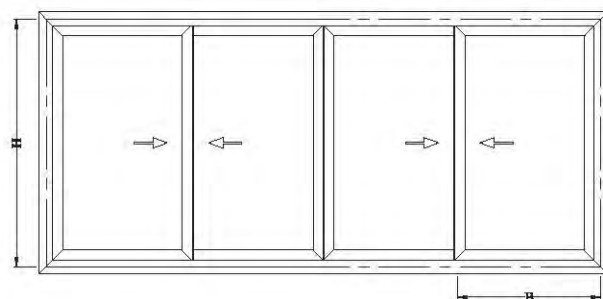
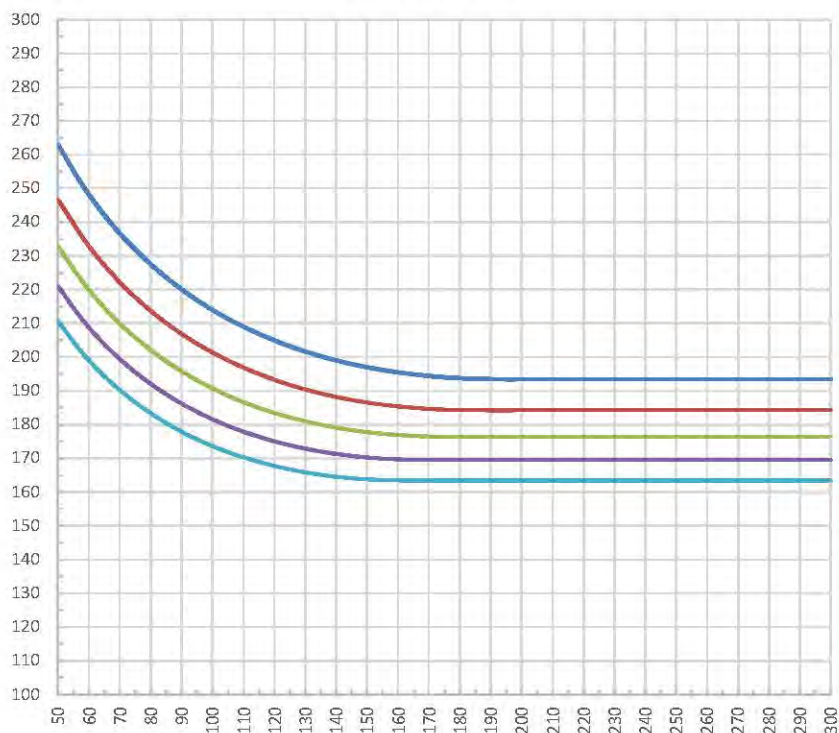
Zone 1
Zone 2
Zone 3
Zone 4
Zone 5



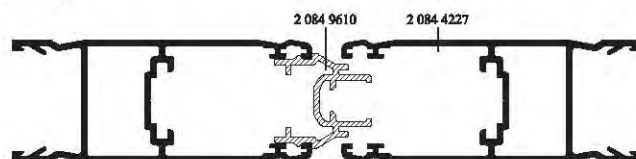
B cm.

$I_x = 14.66 \text{ cm}^4$

H cm. f max 1/200

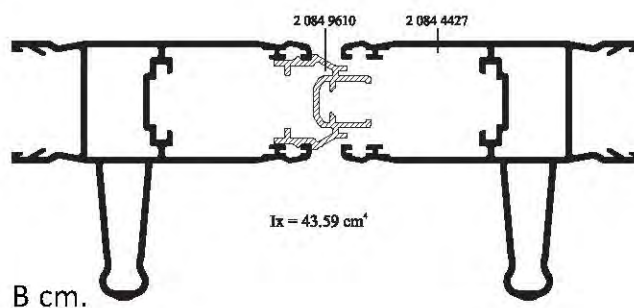
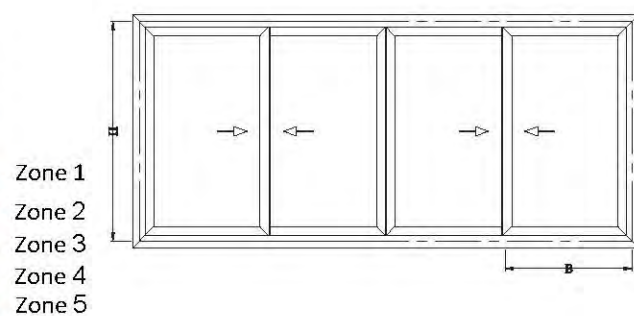
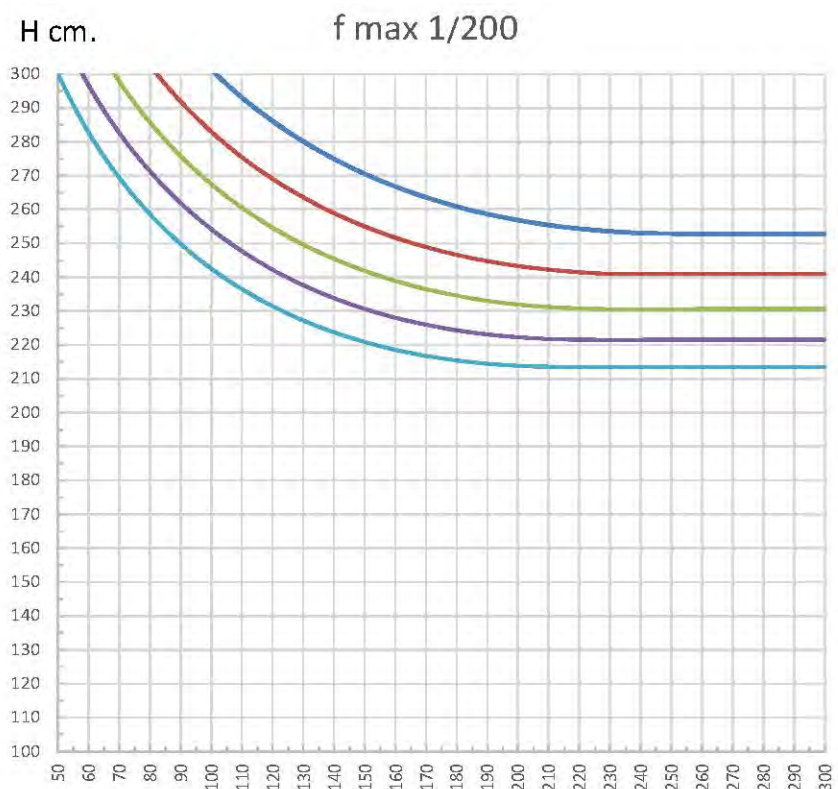
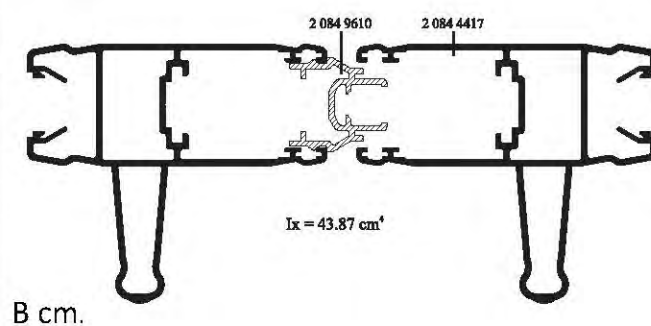
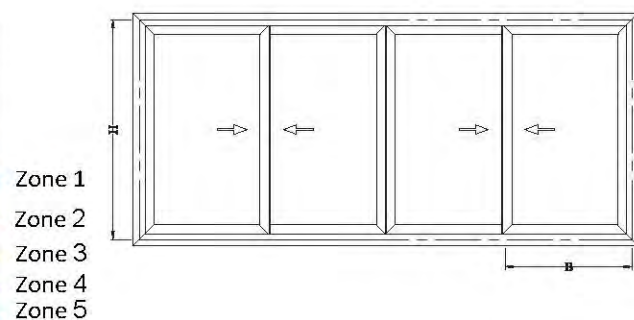
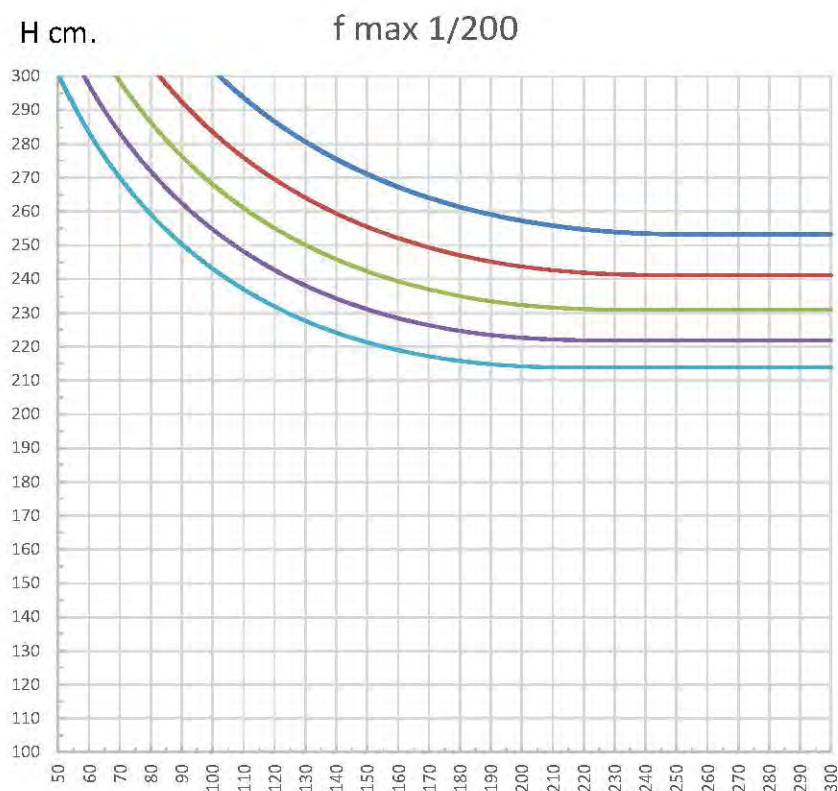


Zone 1
Zone 2
Zone 3
Zone 4
Zone 5



B cm.

$I_x = 14.93 \text{ cm}^4$





	2 084 2000	
	Old No.	
	Frame	
	WEIGHT	1.388 Kg/m.
	PER.	484.11 mm.
	Ix	30.14 cm ⁴
	Iy	11.25 cm ⁴

	2 084 2437	
	Old No. T 8436.7	
	Frame	
	WEIGHT	2.021 Kg/m.
	PER.	727.25 mm.
	Ix	77.62 cm ⁴
	Iy	21.84 cm ⁴

	2 084 2310	
	Old No.	
	Frame	
	WEIGHT	1.651 Kg/m.
	PER.	570.55 mm.
	Ix	43.67 cm ⁴
	Iy	12.69 cm ⁴

	2 084 2457	
	Old No. T 8435.7	
	Frame	
	WEIGHT	2.157 Kg/m.
	PER.	797.60 mm.
	Ix	86.01 cm ⁴
	Iy	39.46 cm ⁴

	2 084 2337	
	Old No. T 8433.7	
	Frame	
	WEIGHT	1.779 Kg/m.
	PER.	641.46 mm.
	Ix	50.79 cm ⁴
	Iy	19.82 cm ⁴

	2 084 2820	
	Old No. T 8439	
	Frame	
	WEIGHT	2.283 Kg/m.
	PER.	785.27 mm.
	Ix	13.30 cm ⁴
	Iy	17.30 cm ⁴

	2 084 2357	
	Old No. T 8435.7	
	Frame	
	WEIGHT	1.914 Kg/m.
	PER.	711.74 mm.
	Ix	56.54 cm ⁴
	Iy	36.53 cm ⁴

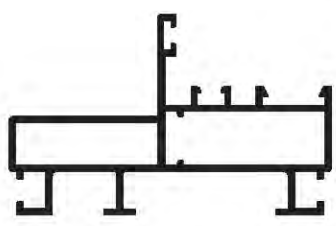
	2 084 4117	
	Old No.	
	Leaf	
	WEIGHT	1.116 Kg/m.
	PER.	445.36 mm.
	Ix	6.97 cm ⁴
	Iy	21.00 cm ⁴

	2 084 2420	
	Old No. T 8438	
	Frame	
	WEIGHT	1.931 Kg/m.
	PER.	677.60 mm.
	Ix	68.14 cm ⁴
	Iy	14.70 cm ⁴

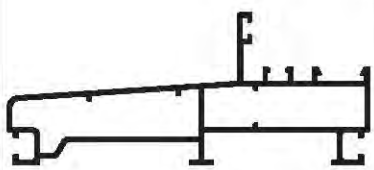
	2 084 4217	
	Old No. T 8440.7	
	Leaf	
	WEIGHT	1.091 Kg/m.
	PER.	432.39 mm.
	Ix	6.86 cm ⁴
	Iy	20.45 cm ⁴



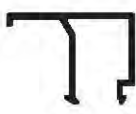
	2 084 4227
	Old No. T 8442.7
	Leaf
	WEIGHT 1.06 Kg/m.
	PER. 419.79 mm.
	Ix 6.99 cm ⁴
	Iy 18.93 cm ⁴

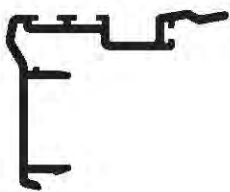
	1 045 2082
	Old No. SH 8045
	Frame
	WEIGHT 1.345 Kg/m.
	PER. 447.98 mm.
	Ix 32.92 cm ⁴
	Iy 7.18 cm ⁴

	2 084 9100
	Old No. T 8480
	Door Threshold
	WEIGHT 0.697 Kg/m.
	PER. 355.34 mm.
	Ix 7.66 cm ⁴
	Iy 10.30 cm ⁴

	1 045 2122
	Old No. SH 8093
	Frame
	WEIGHT 1.612 Kg/m.
	PER. 509.31 mm.
	Ix 87.32 cm ⁴
	Iy 8.26 cm ⁴

	2 084 9210
	Old No. T 8491
	Rail
	WEIGHT 0.165 Kg/m.
	PER. 61.76 mm.
	Ix cm ⁴
	Iy cm ⁴

	1 045 6110
	Old No. SH 4563
	Glass Beading
	WEIGHT 0.289 Kg/m.
	PER. 172.51 mm.
	Ix cm ⁴
	Iy cm ⁴

	2 084 9517
	Old No. T 8450
	Central Connection
	WEIGHT 0.502 Kg/m.
	PER. 261.84 mm.
	Ix cm ⁴
	Iy cm ⁴

	1 045 6130
	Old No. SH 4560
	Glass Beading
	WEIGHT 0.270 Kg/m.
	PER. 163.51 mm.
	Ix cm ⁴
	Iy cm ⁴

	2 084 9610
	Old No. T 8495
	Central Insert
	WEIGHT 0.386 Kg/m.
	PER. 190.82 mm.
	Ix cm ⁴
	Iy cm ⁴

	1 045 6140
	Old No. SH 4561
	Glass Beading
	WEIGHT 0.262 Kg/m.
	PER. 158.51 mm.
	Ix cm ⁴
	Iy cm ⁴



	1 045 6142
	Old No. SH 4562
	Glass Beading
	WEIGHT 0.246 Kg/m.
	PER. 148.30 mm.
	Ix cm ⁴
	Iy cm ⁴

	1 045 6290
	Old No. SH 4569
	Glass Beading
	WEIGHT 0.227 Kg/m.
	PER. 117.69 mm.
	Ix cm ⁴
	Iy cm ⁴

	1 045 6145
	Old No. SH 4565
	Glass Beading
	WEIGHT 0.240 Kg/m.
	PER. 145.24 mm.
	Ix cm ⁴
	Iy cm ⁴

	5 025 2110
	Old No. K 2202
	Frame
	WEIGHT 0.583
	PER. 103.71
	Ix cm ⁴
	Iy cm ⁴

	1 045 6160
	Old No. SH 4568
	Glass Beading
	WEIGHT 0.251 Kg/m.
	PER. 151.84 mm.
	Ix cm ⁴
	Iy cm ⁴

	5 025 4100
	Old No. K 2222
	Leaf
	WEIGHT 0.419 Kg/m.
	PER. 234.97 mm.
	Ix cm ⁴
	Iy cm ⁴

	1 045 6180
	Old No. SH 4566
	Glass Beading
	WEIGHT 0.211 Kg/m.
	PER. 137.51 mm.
	Ix cm ⁴
	Iy cm ⁴

	5 025 4140
	Old No. K 2227
	Leaf
	WEIGHT 0.567 Kg/m.
	PER. 269.79 mm.
	Ix cm ⁴
	Iy cm ⁴

	1 045 6182
	Old No. SH 4567
	Glass Beading
	WEIGHT 0.206 Kg/m.
	PER. 126.97 mm.
	Ix cm ⁴
	Iy cm ⁴

	5 025 4210
	Old No. K 2223
	Leaf
	WEIGHT 0.535 Kg/m.
	PER. 269.31 mm.
	Ix cm ⁴
	Iy cm ⁴



	5 025 4240
	Old No. K 2228
	Leaf
	WEIGHT 0.594 Kg/m.
	PER. 264.27 mm.
	Ix cm ⁴ Iy cm ⁴

	9 001 1300
	Old No. SH 8083
	Gasket Cover 3 cm.
	WEIGHT 0.240 Kg/m.
	PER. 115.66 mm.
	Ix cm ⁴ Iy cm ⁴

	5 900 5020
	Old No. K 2251
	Transom
	WEIGHT 0.385 Kg/m.
	PER. 106.84 mm.
	Ix cm ⁴ Iy cm ⁴

	9 001 1302
	Old No. SH 8083.2
	Gasket Cover 3 cm.
	WEIGHT 0.308 Kg/m.
	PER. 153.81 mm.
	Ix cm ⁴ Iy cm ⁴

	5 900 5410
	Old No. K 2252
	Transom
	WEIGHT 0.610 Kg/m.
	PER. 198.19 mm.
	Ix cm ⁴ Iy cm ⁴

	9 001 1303
	Old No. SH 8083.3
	Gasket Cover 3 cm.
	WEIGHT 0.284 Kg/m.
	PER. 156.35 mm.
	Ix cm ⁴ Iy cm ⁴

	5 900 9100
	Old No. K 2281
	Gasket Cover
	WEIGHT 0.100
	PER. 53.205
	Ix cm ⁴ Iy cm ⁴

	9 001 1304
	Old No. SH 8083.4
	Gasket Cover 3 cm.
	WEIGHT 0.259 Kg/m.
	PER. 130.82 mm.
	Ix cm ⁴ Iy cm ⁴

	9 001 1100
	Old No. SH 8081
	Gasket Cover
	WEIGHT 0.092 Kg/m.
	PER. 41.99 mm.
	Ix cm ⁴ Iy cm ⁴

	9 001 1305
	Old No. SH 8083.5
	Gasket Cover 3 cm.
	WEIGHT 0.263 Kg/m.
	PER. 139.31 mm.
	Ix cm ⁴ Iy cm ⁴



	9 001 1308
	Old No.
	Gasket Cover 3 cm.
	WEIGHT 0.289 Kg/m.
	PER. 140.07 mm.
	Ix cm ⁴
	Iy cm ⁴

	9 001 1505
	Old No. SH 8085.5
	Gasket Cover 5.4 cm.
	WEIGHT 0.383 Kg/m.
	PER. 194.11 mm.
	Ix cm ⁴
	Iy cm ⁴

	9 001 1500
	Old No. SH 8085
	Gasket Cover 5.4 cm.
	WEIGHT 0.348 Kg/m.
	PER. 183.22 mm.
	Ix cm ⁴
	Iy cm ⁴

	9 001 1508
	Old No.
	Gasket Cover 5.4 cm.
	WEIGHT 0.402 Kg/m.
	PER. 197.07 mm.
	Ix cm ⁴
	Iy cm ⁴

	9 001 1502
	Old No. SH 8085.2
	Gasket Cover 5.4 cm.
	WEIGHT 0.424 Kg/m.
	PER. 204.49 mm.
	Ix cm ⁴
	Iy cm ⁴

	9 001 1700
	Old No. SH 8086
	Gasket Cover 7 cm.
	WEIGHT 0.418 Kg/m.
	PER. 215.22 mm.
	Ix cm ⁴
	Iy cm ⁴

	9 001 1503
	Old No. SH 8085.3
	Gasket Cover 5.4 cm.
	WEIGHT 0.403 Kg/m.
	PER. 216.34 mm.
	Ix cm ⁴
	Iy cm ⁴

	9 001 1702
	Old No. SH 8086.2
	Gasket Cover 7 cm.
	WEIGHT 0.473 Kg/m.
	PER. 232.62 mm.
	Ix cm ⁴
	Iy cm ⁴

	9 001 1504
	Old No. SH 8085.4
	Gasket Cover 5.4 cm.
	WEIGHT 0.370 Kg/m.
	PER. 191.22 mm.
	Ix cm ⁴
	Iy cm ⁴

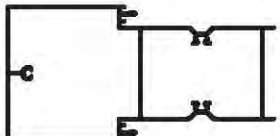
	9 001 1703
	Old No. SH 8086.3
	Gasket Cover 7 cm.
	WEIGHT 0.403 Kg/m.
	PER. 248.33 mm.
	Ix cm ⁴
	Iy cm ⁴



	9 001 1704
	Old No. SH 8086.4
	Gasket Cover 7 cm.
	WEIGHT 0.434 Kg/m.
	PER. 223.22 mm.
	Ix cm ⁴ Iy cm ⁴

	9 002 1700
	Old No. SH 8089
	Gasket Cover 7.2 CM.
	WEIGHT 0.378 Kg/m.
	PER. 181.730 mm.
	Ix cm ⁴ Iy cm ⁴

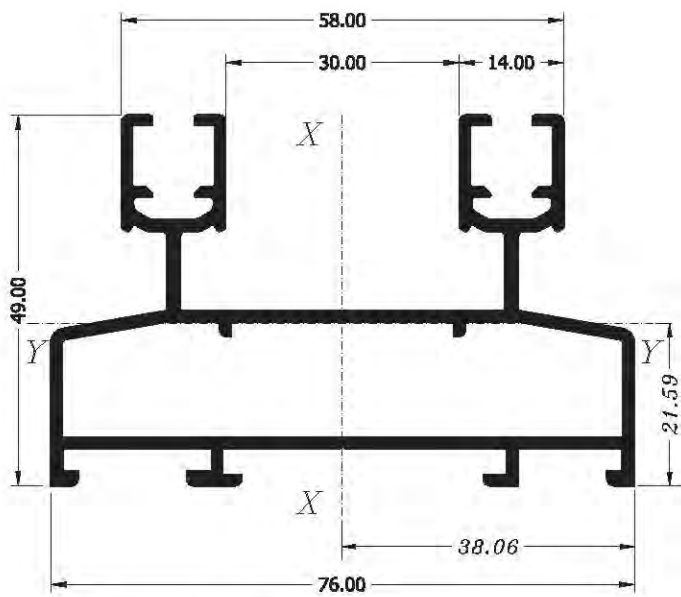
	9 001 1705
	Old No. SH 8086.5
	Gasket Cover 7 cm.
	WEIGHT 0.457 Kg/m.
	PER. 232.24 mm.
	Ix cm ⁴ Iy cm ⁴

	9 008 5140
	Old No. SH 8099
	Connection Profile
	WEIGHT 2.403 Kg/m.
	PER. 497.35 mm.
	Ix 174.19 cm ⁴ Iy 55.30 cm ⁴

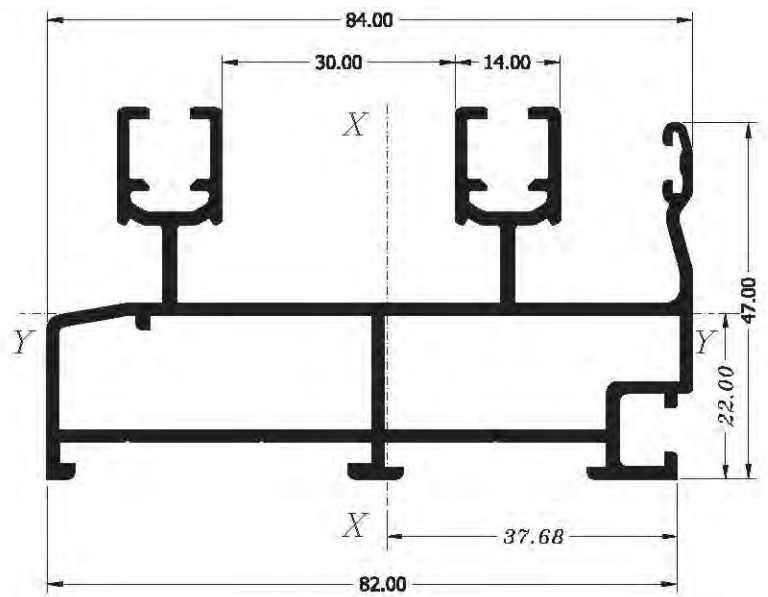
	9 001 1708
	Old No.
	Gasket Cover 7 cm.
	WEIGHT 0.482 Kg/m.
	PER. 238.07 mm.
	Ix cm ⁴ Iy cm ⁴

	9 002 1200
	Old No. SH 8087
	Gasket Cover
	WEIGHT 0.181 Kg/m.
	PER. 81.24 mm.
	Ix cm ⁴ Iy cm ⁴

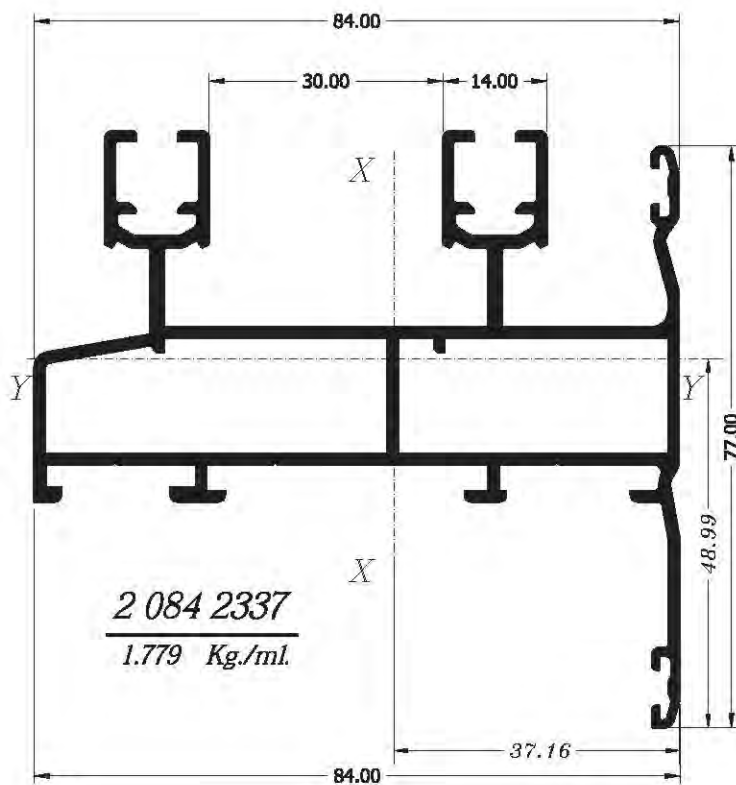
	9 002 1220
	Old No.
	Gasket Cover
	WEIGHT 0.289 Kg/m.
	PER. 121.230 mm.
	Ix cm ⁴ Iy cm ⁴



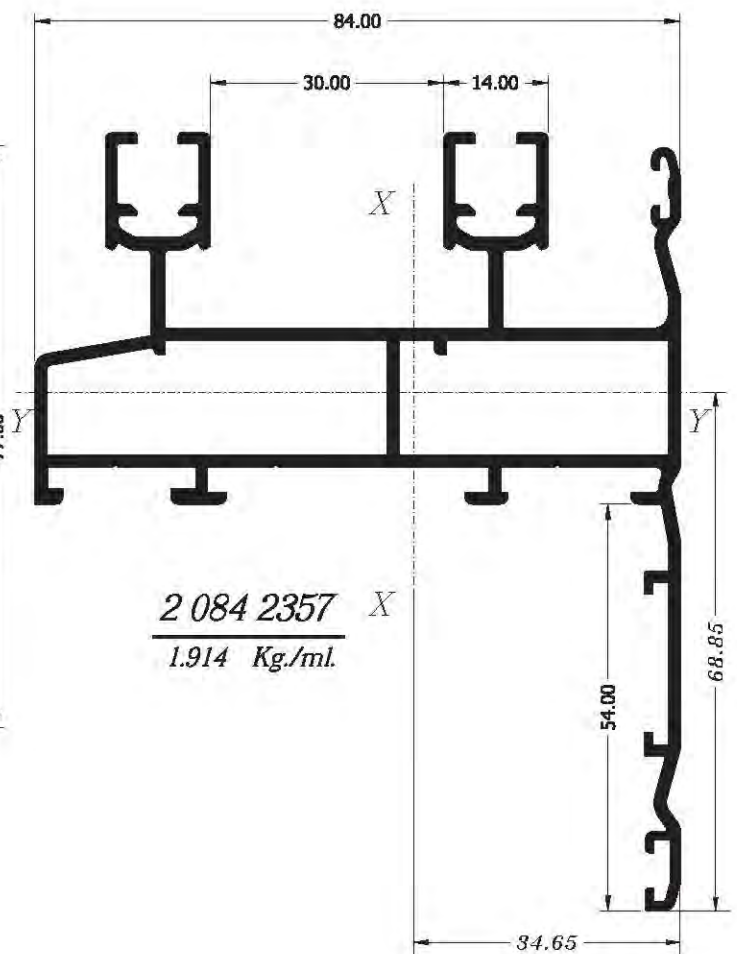
2 084 2000
1.388 Kg./ml.



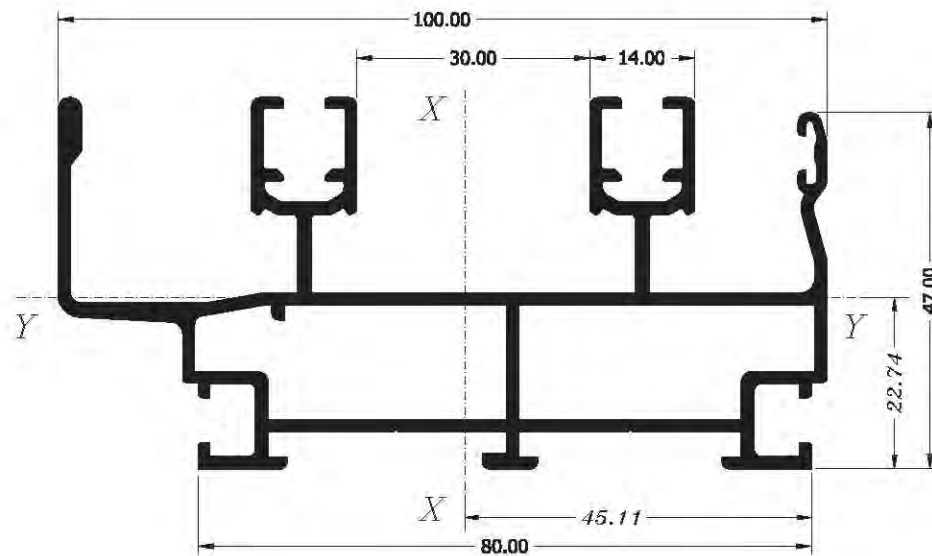
2 084 2310
1.651 Kg./ml.



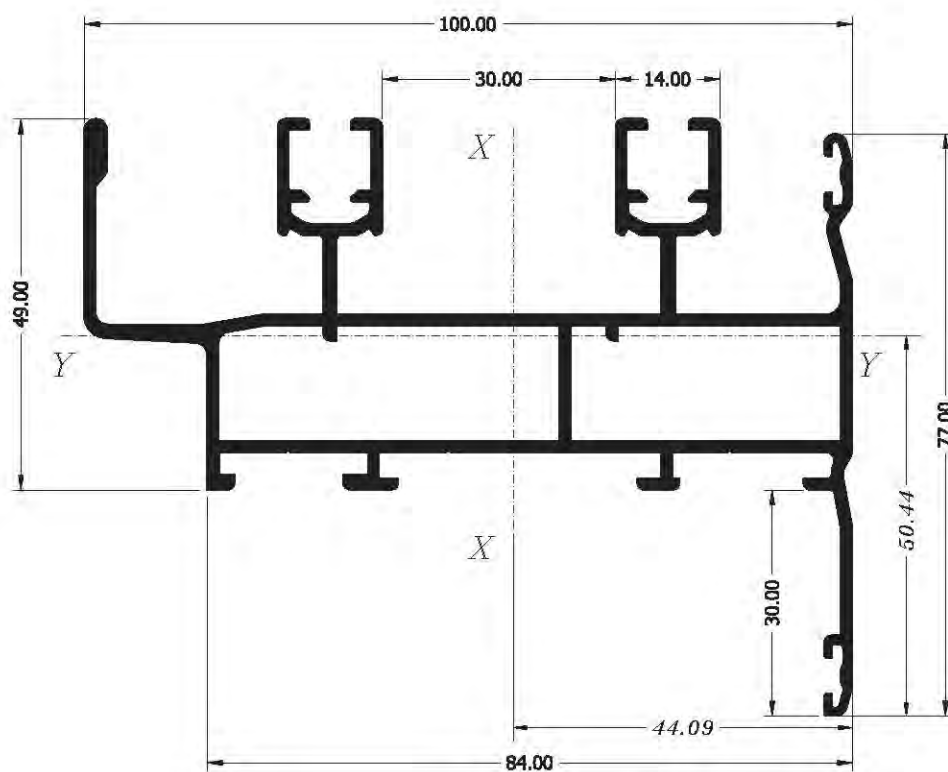
2 084 2337
1.779 Kg./ml.



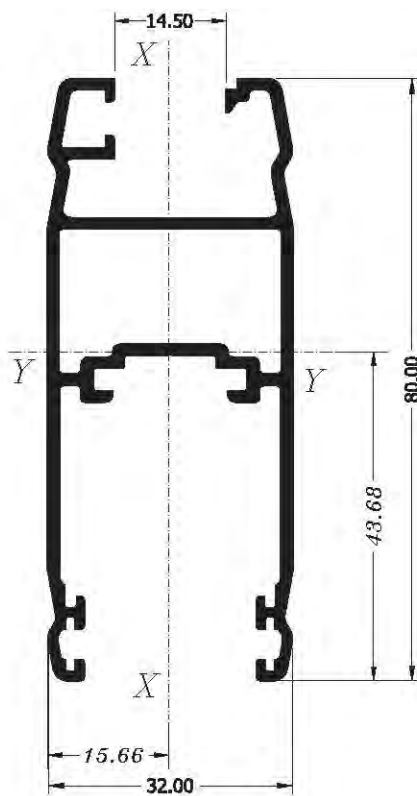
2 084 2357 X
1.914 Kg./ml.



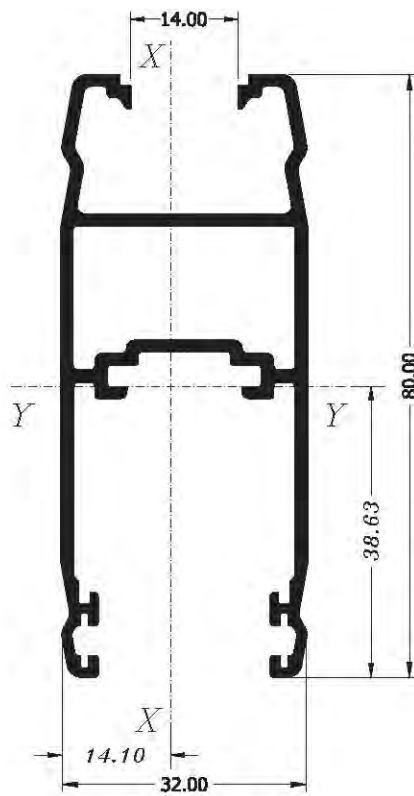
2 084 2420
1.931 Kg./ml.



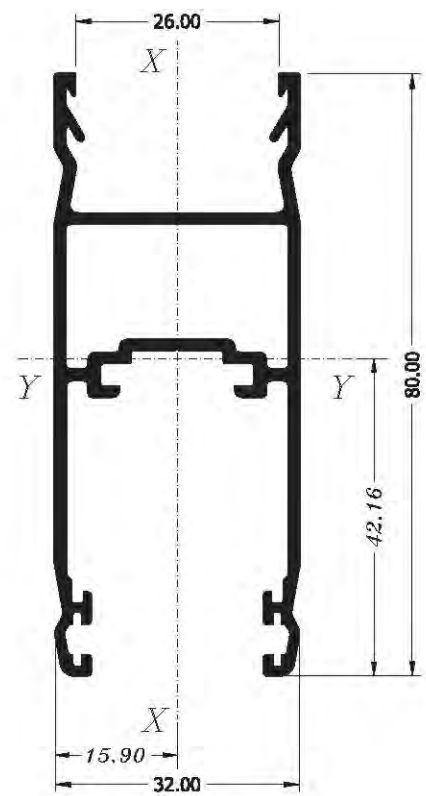
2 084 2437
2.021 Kg./ml.



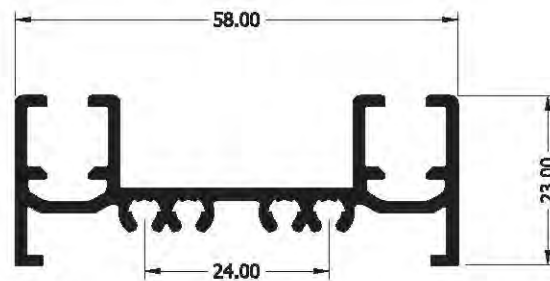
2 084 4117
1.116 Kg./ml.



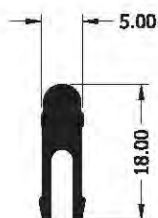
2 084 4217
1.091 Kg./ml.



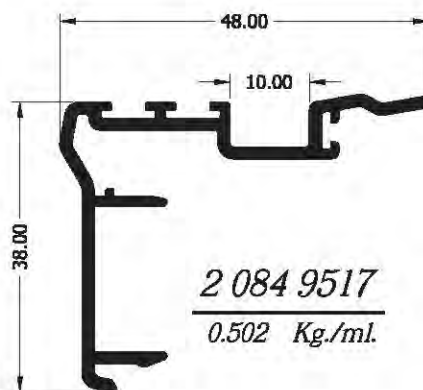
2 084 4227
1.066 Kg./ml.



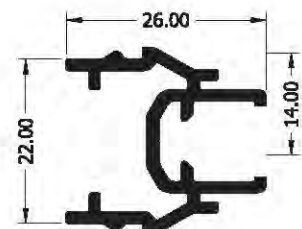
2 084 9100
0.697 Kg./ml.



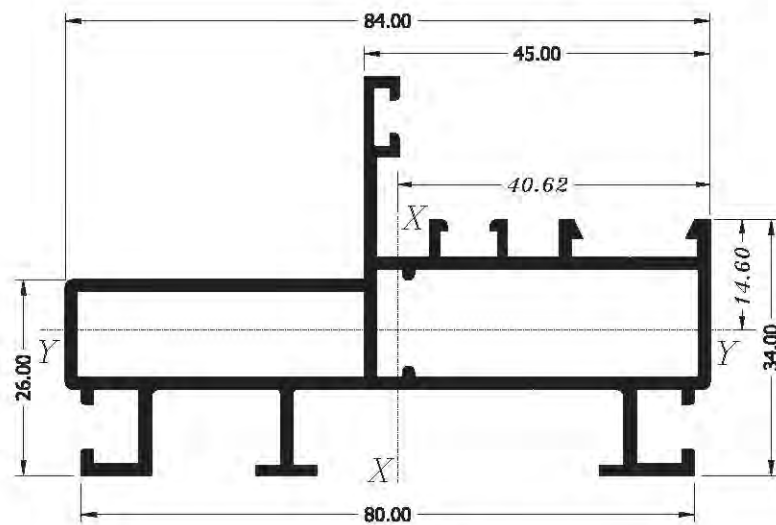
2 084 9210
0.165 Kg./ml.



2 084 9517
0.502 Kg./ml.

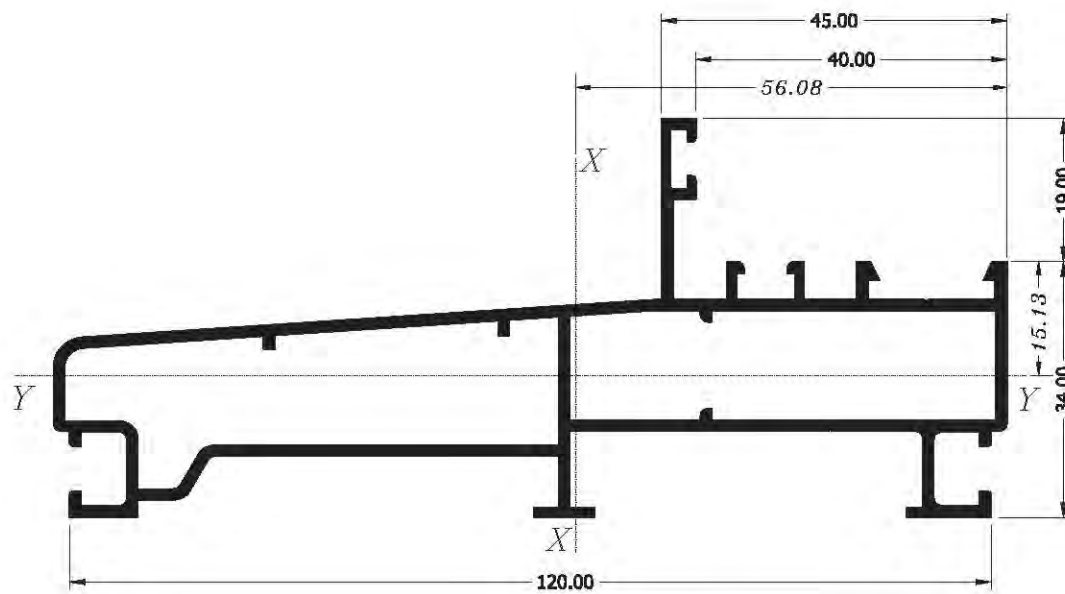


2 084 9610
0.386 Kg./ml.



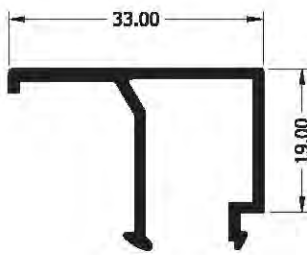
1 045 2082

1.345 Kg./ml.

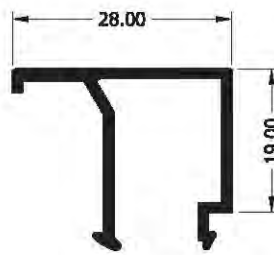


1 045 2122

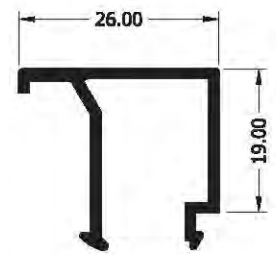
1.612 Kg./ml.



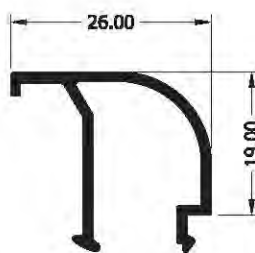
1 045 6110
0.289 Kg./ml.



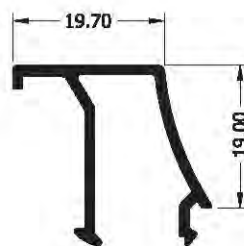
1 045 6130
0.270 Kg./ml.



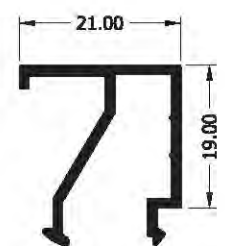
1 045 6140
0.262 Kg./ml.



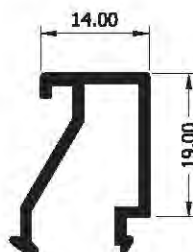
1 045 6142
0.246 Kg./ml.



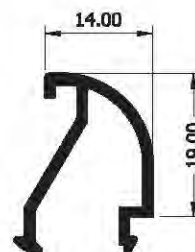
1 045 6145
0.240 Kg./ml.



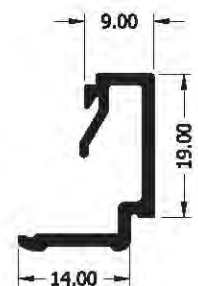
1 045 6160
0.251 Kg./ml.



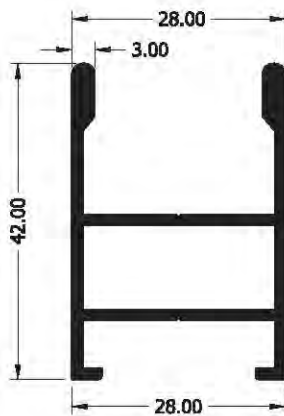
1 045 6180
0.211 Kg./ml.



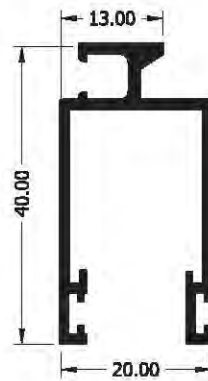
1 045 6182
0.206 Kg./ml.



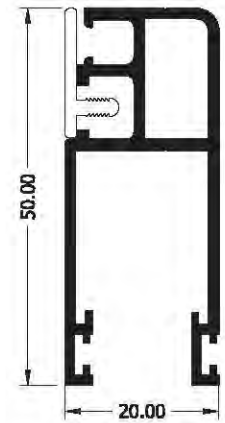
1 045 6290
0.227 Kg./ml.



5 025 2110
0.583 Kg./ml.



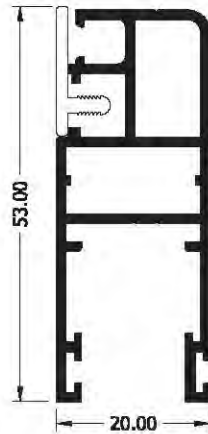
5 025 4100
0.419 Kg./ml.



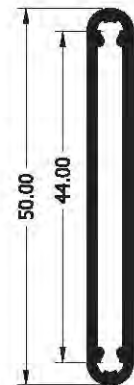
5 025 4140
0.567 Kg./ml.



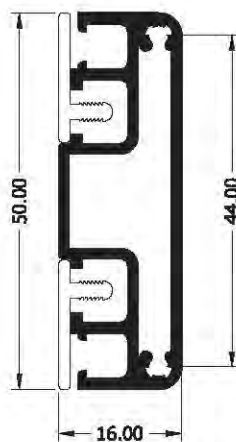
5 025 4210
0.535 Kg./ml.



5 025 4240
0.594 Kg./ml.



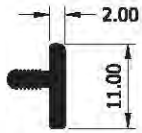
5 900 5020
0.385 Kg./ml.



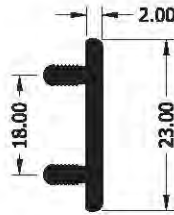
5 900 9410
0.100 Kg./ml.



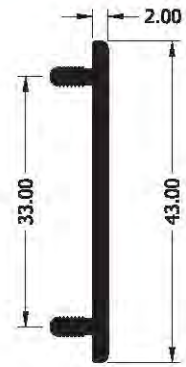
5 900 9100
0.100 Kg./ml.



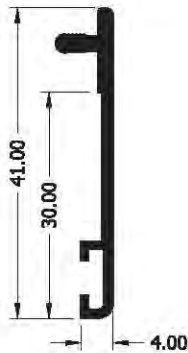
9 001 1100
0.092 Kg./ml.



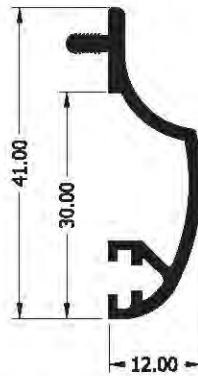
9 002 1200
0.181 Kg./ml.



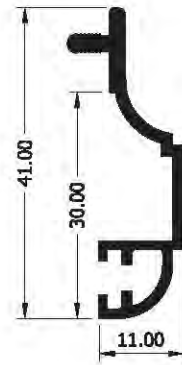
9 002 1220
0.289 Kg./ml.



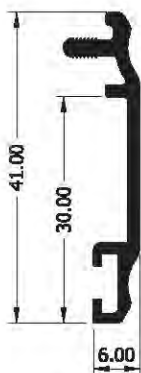
9 001 1300
0.240 Kg./ml.



9 001 1302
0.308 Kg./ml.



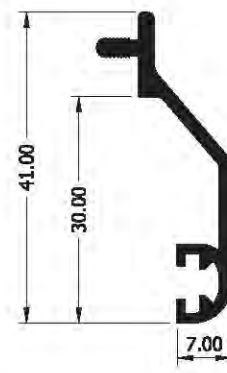
9 001 1303
0.284 Kg./ml.



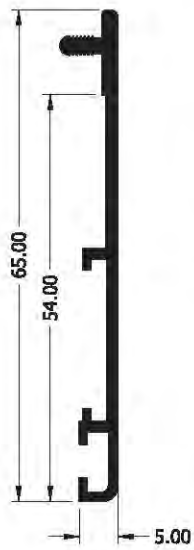
9 001 1304
0.259 Kg./ml.



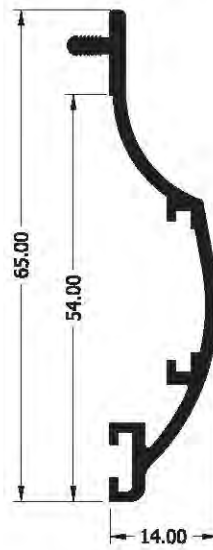
9 001 1305
0.263 Kg./ml.



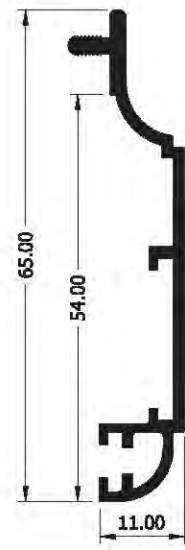
9 001 1308
0.289 Kg./ml.



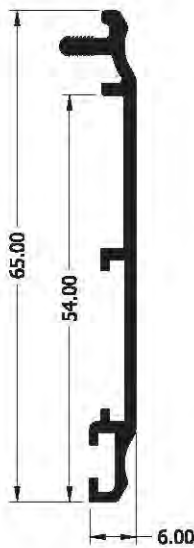
9 001 1500
0.348 Kg./ml.



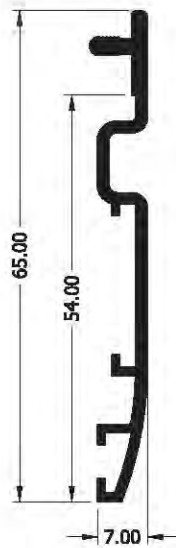
9 001 1502
0.424 Kg./ml.



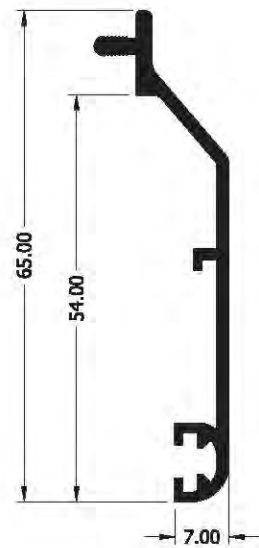
9 001 1503
0.403 Kg./ml.



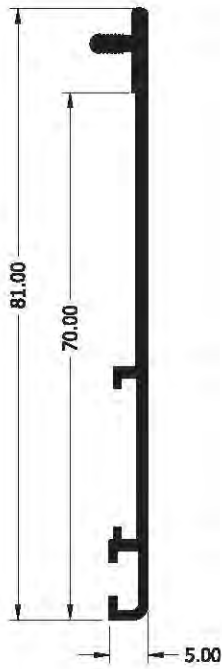
9 001 1504
0.370 Kg./ml.



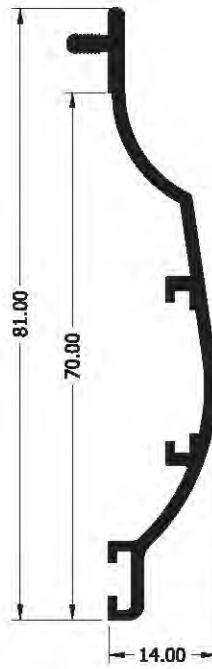
9 001 1505
0.383 Kg./ml.



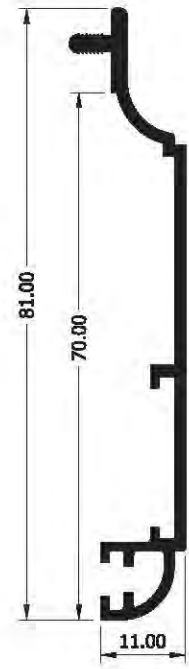
9 001 1508
0.402 Kg./ml.



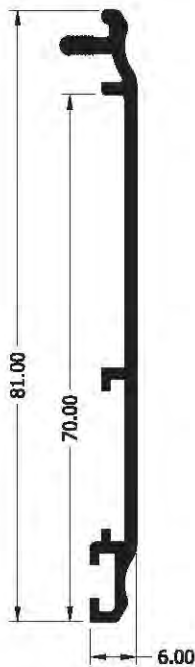
9 001 1700
0.418 Kg./ml.



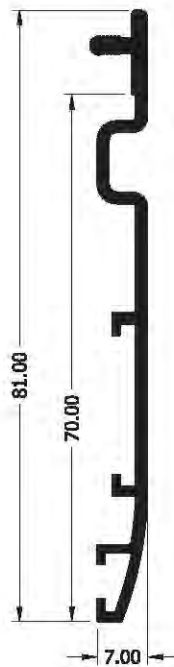
9 001 1702
0.473 Kg./ml.



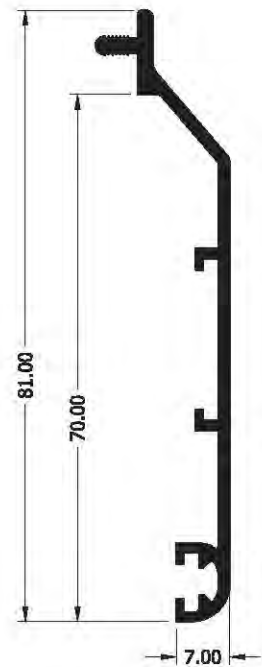
9 001 1703
0.403 Kg./ml.



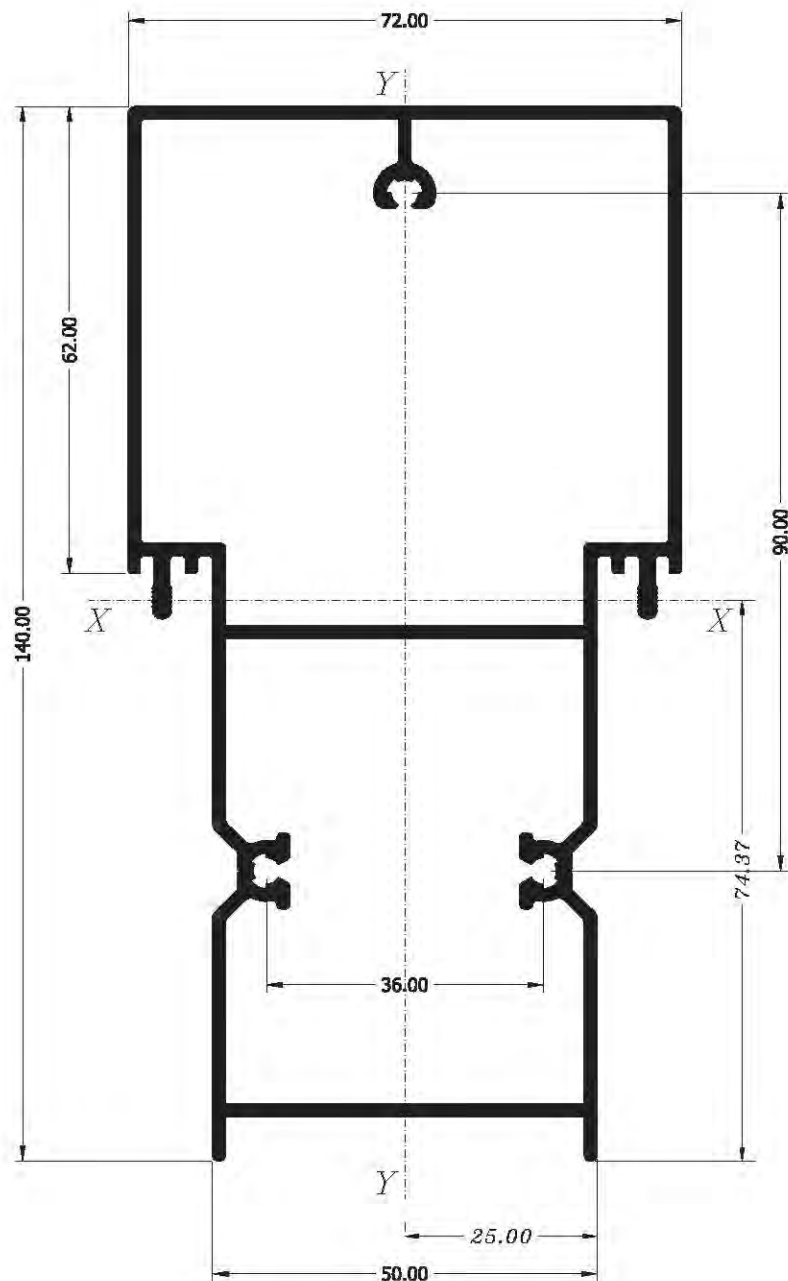
9 001 1704
0.434 Kg./ml.



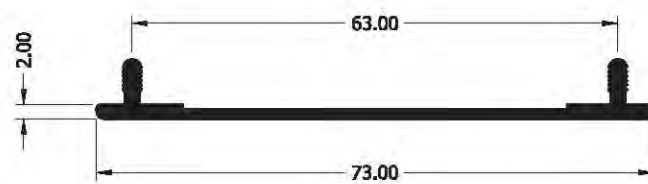
9 001 1705
0.457 Kg./ml.



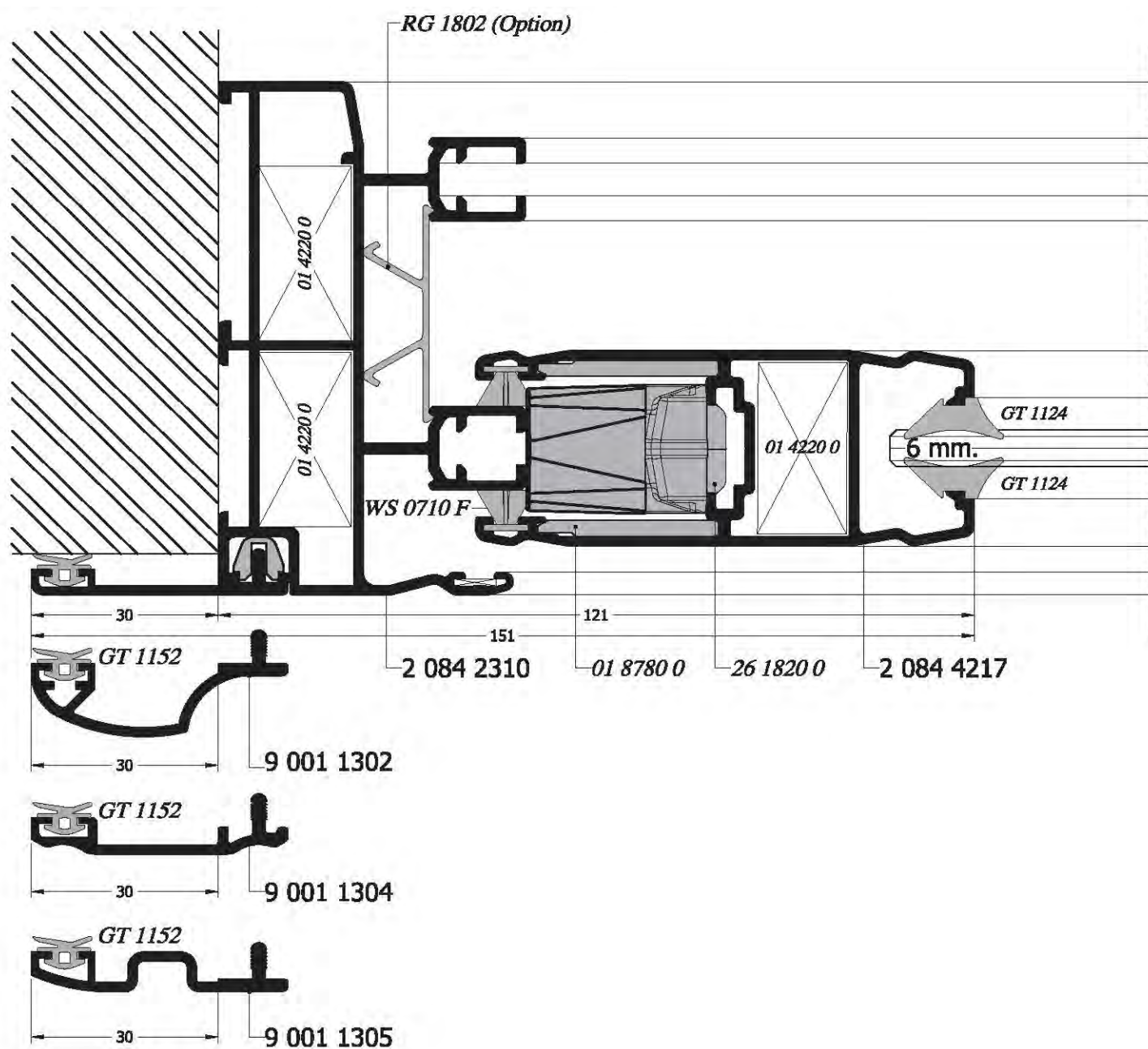
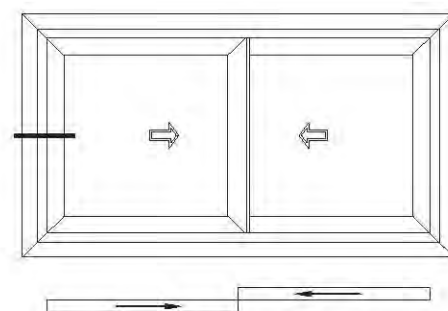
9 001 1708
0.482 Kg./ml.

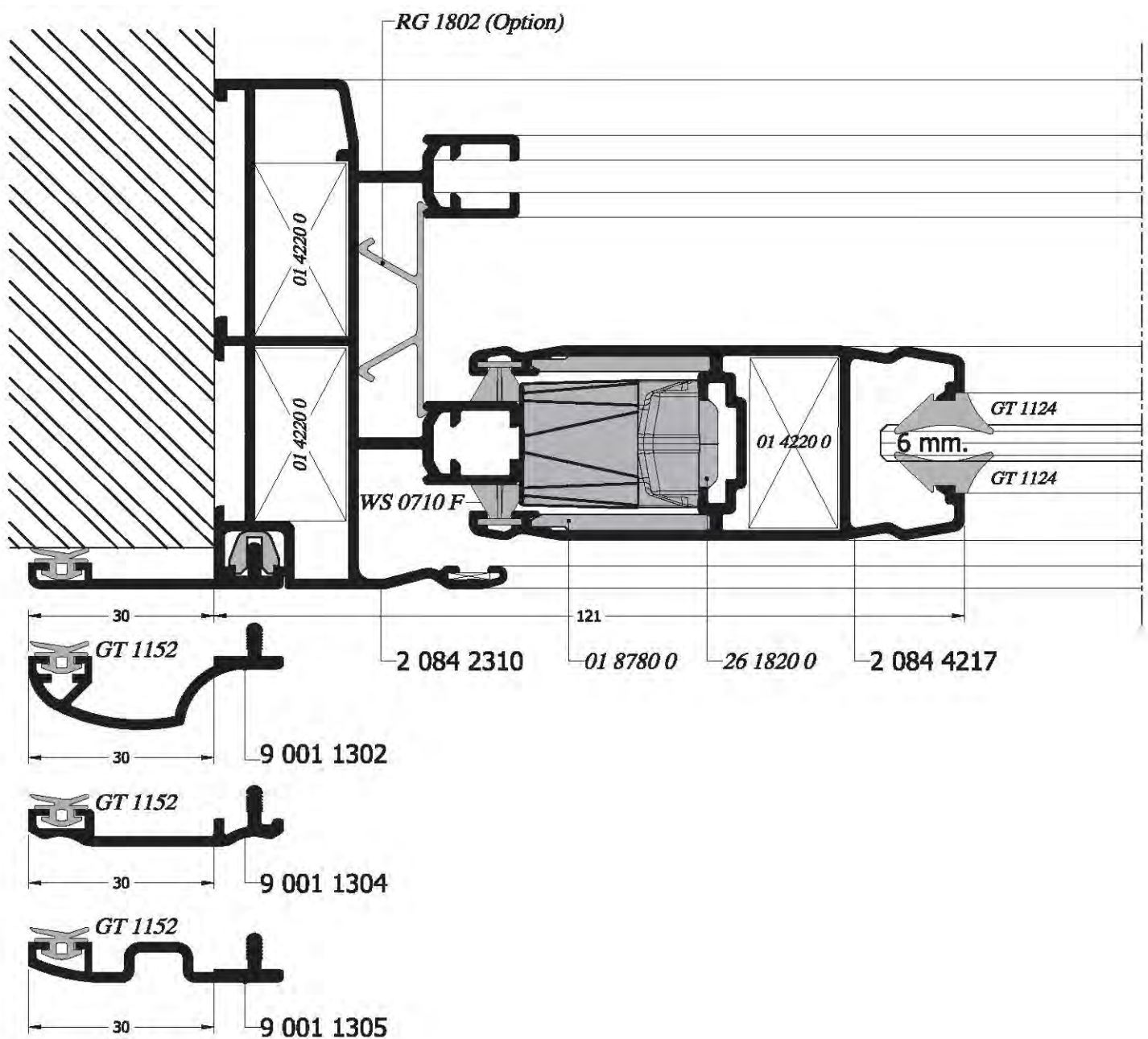
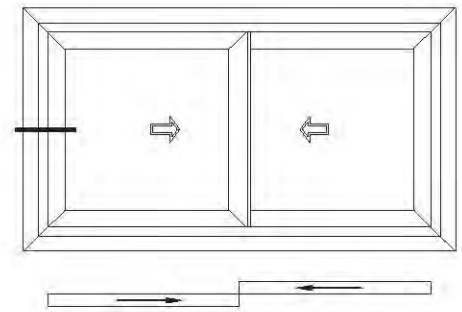


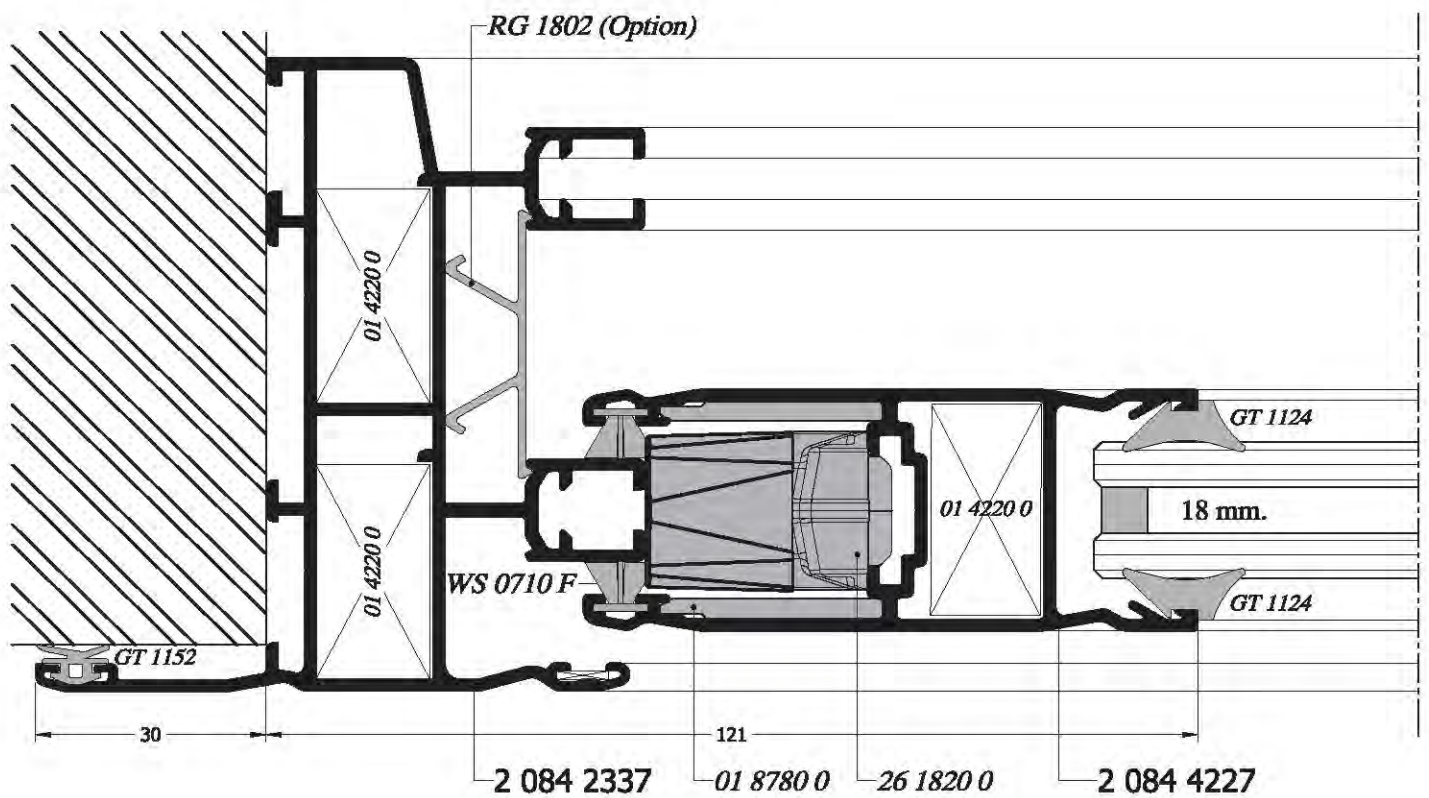
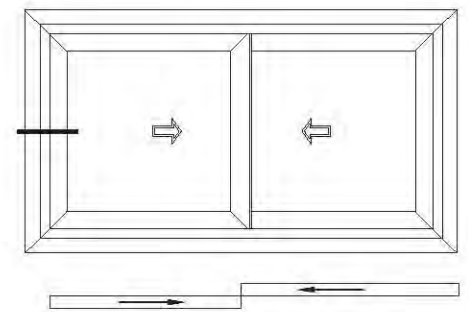
9 008 5140
2.403 Kg./ml.

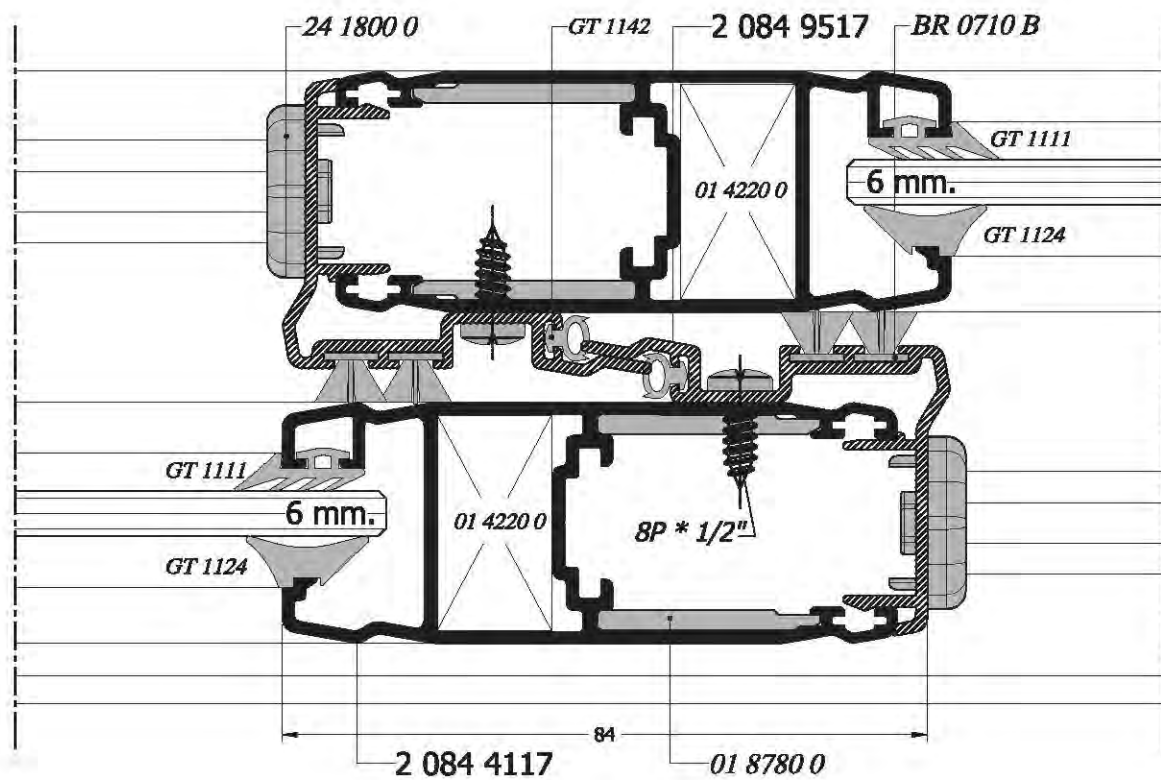
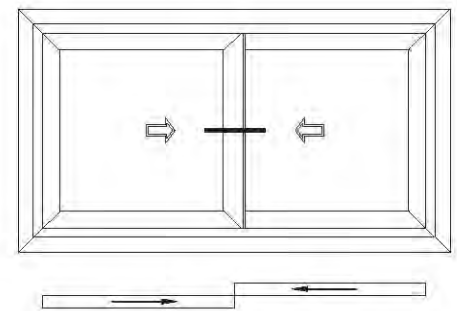


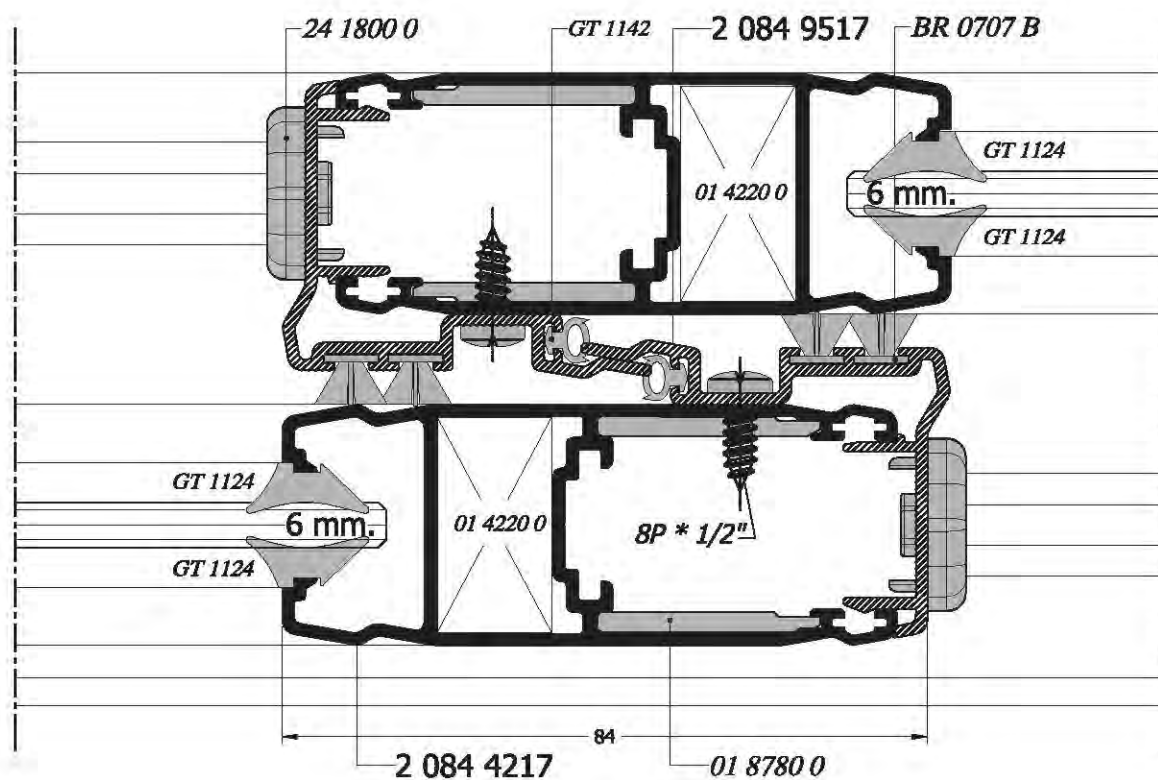
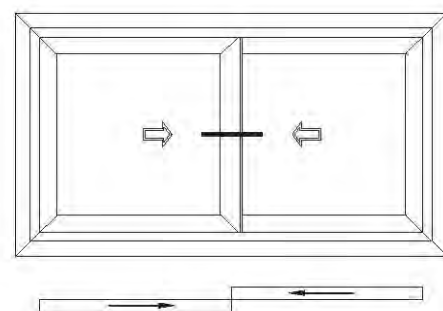
9 002 1700
0.378 Kg./ml.

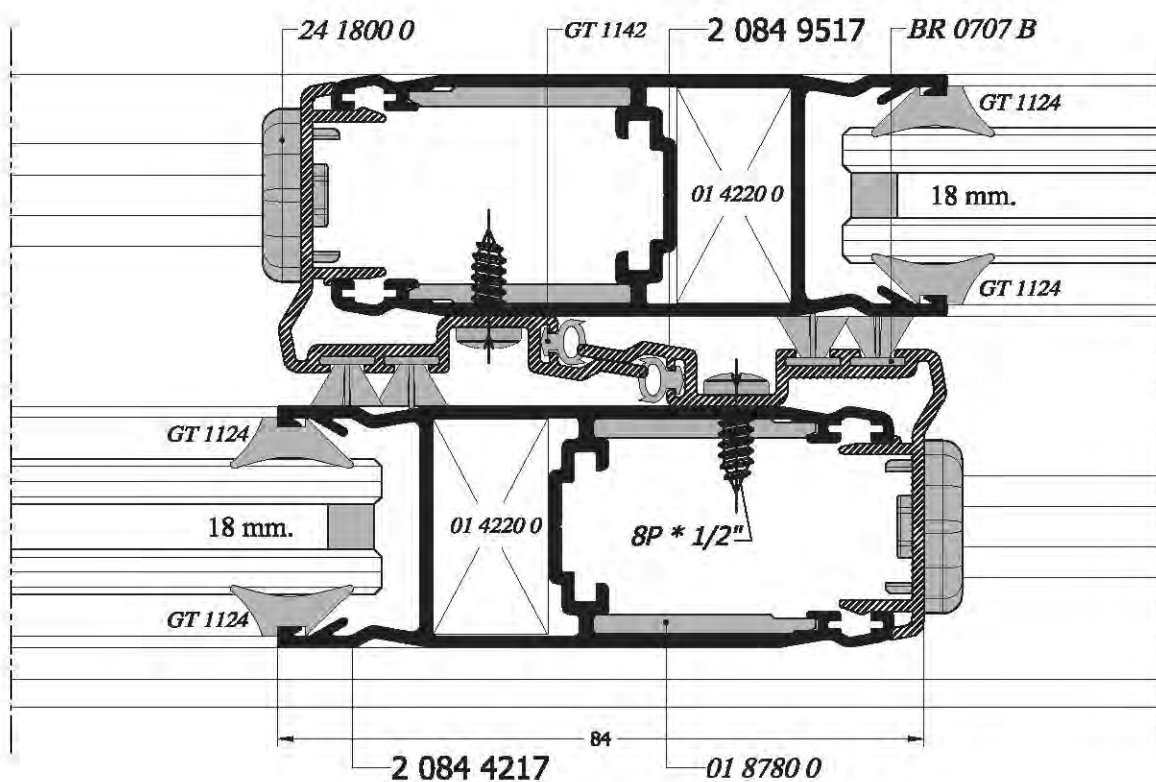
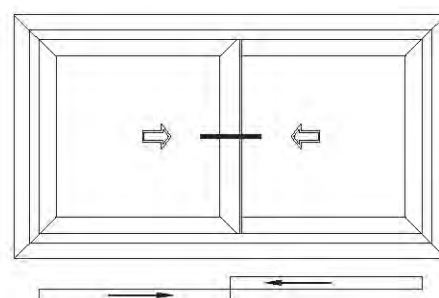


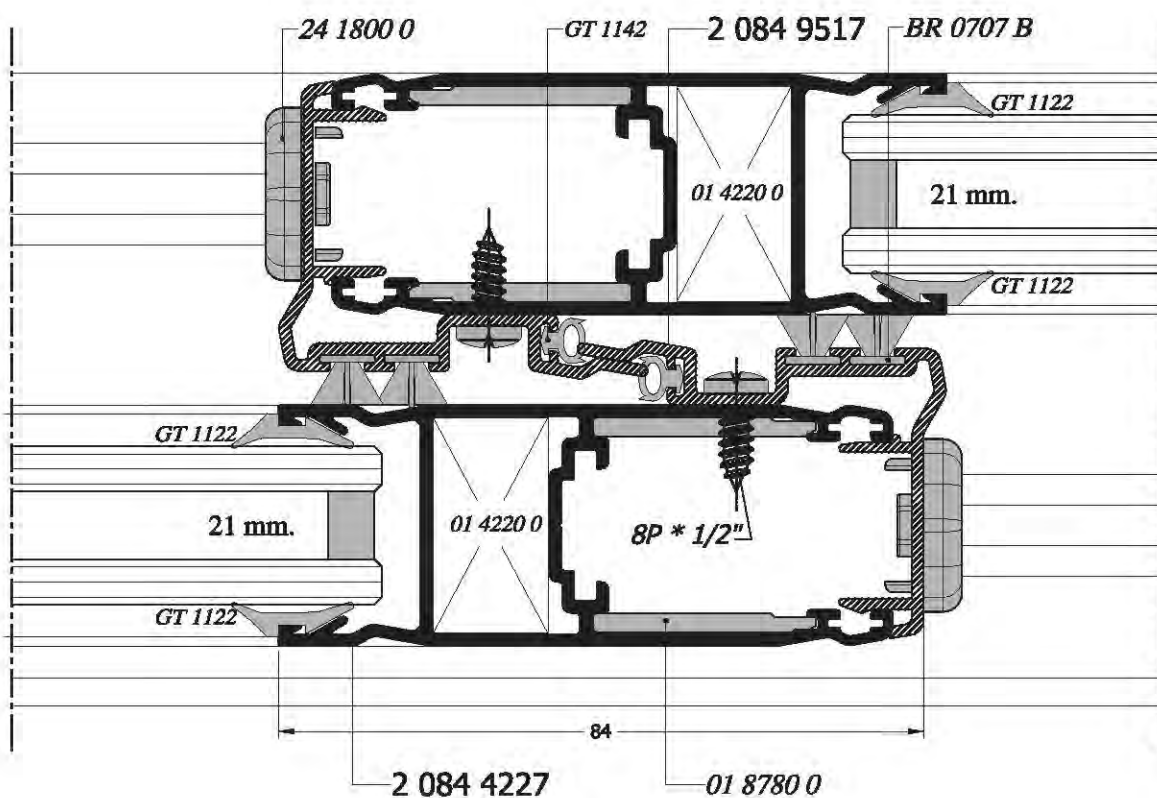
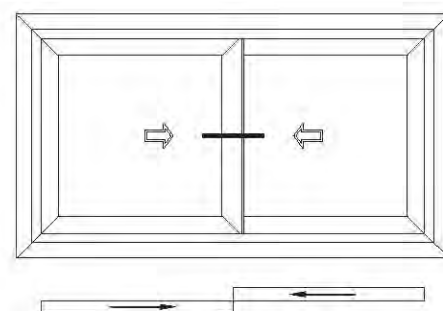


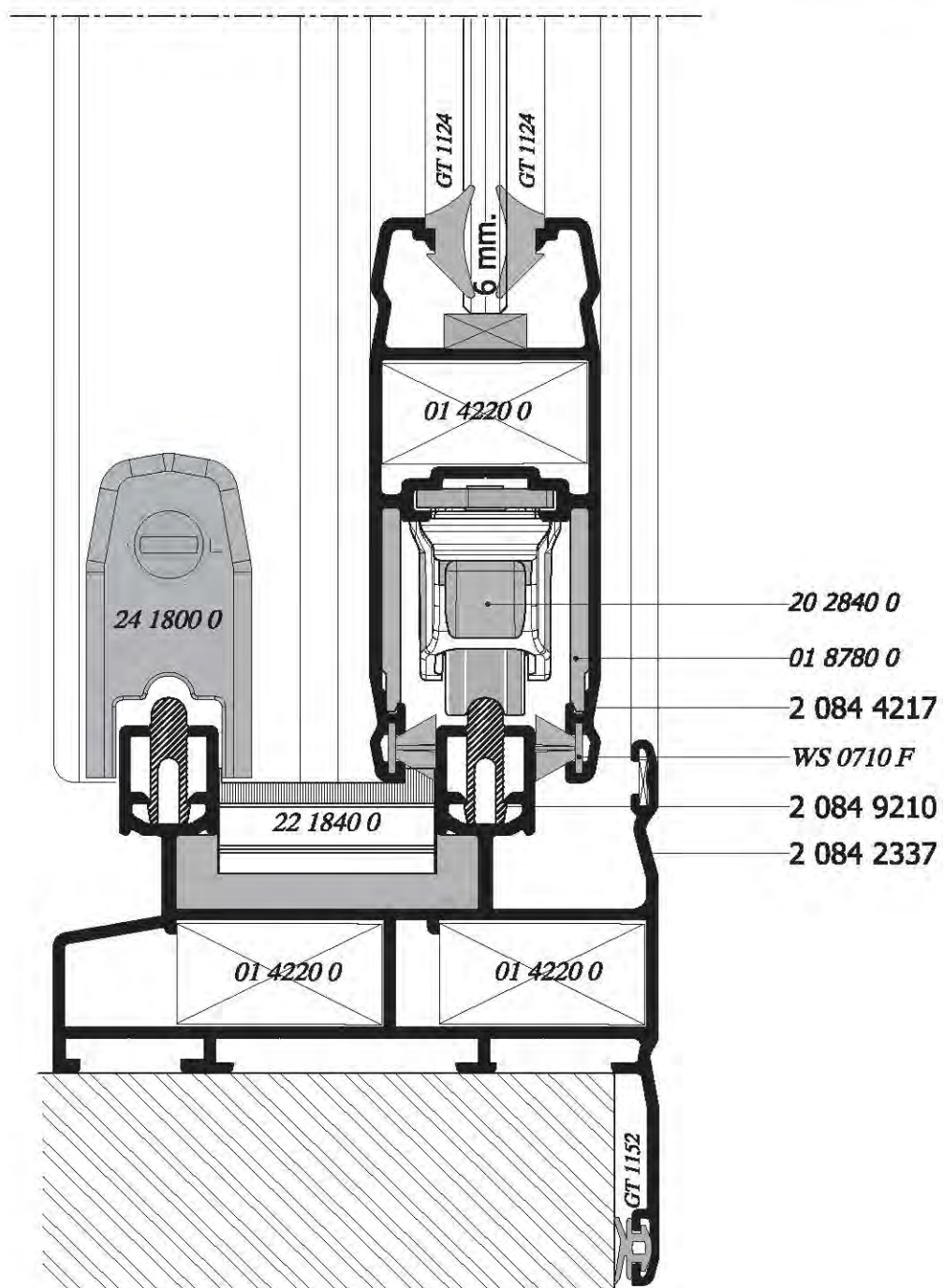
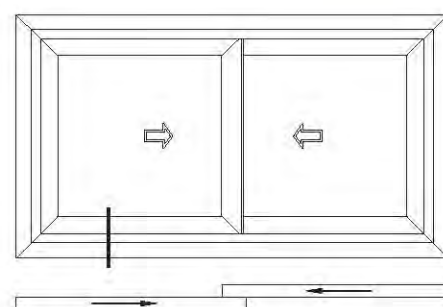


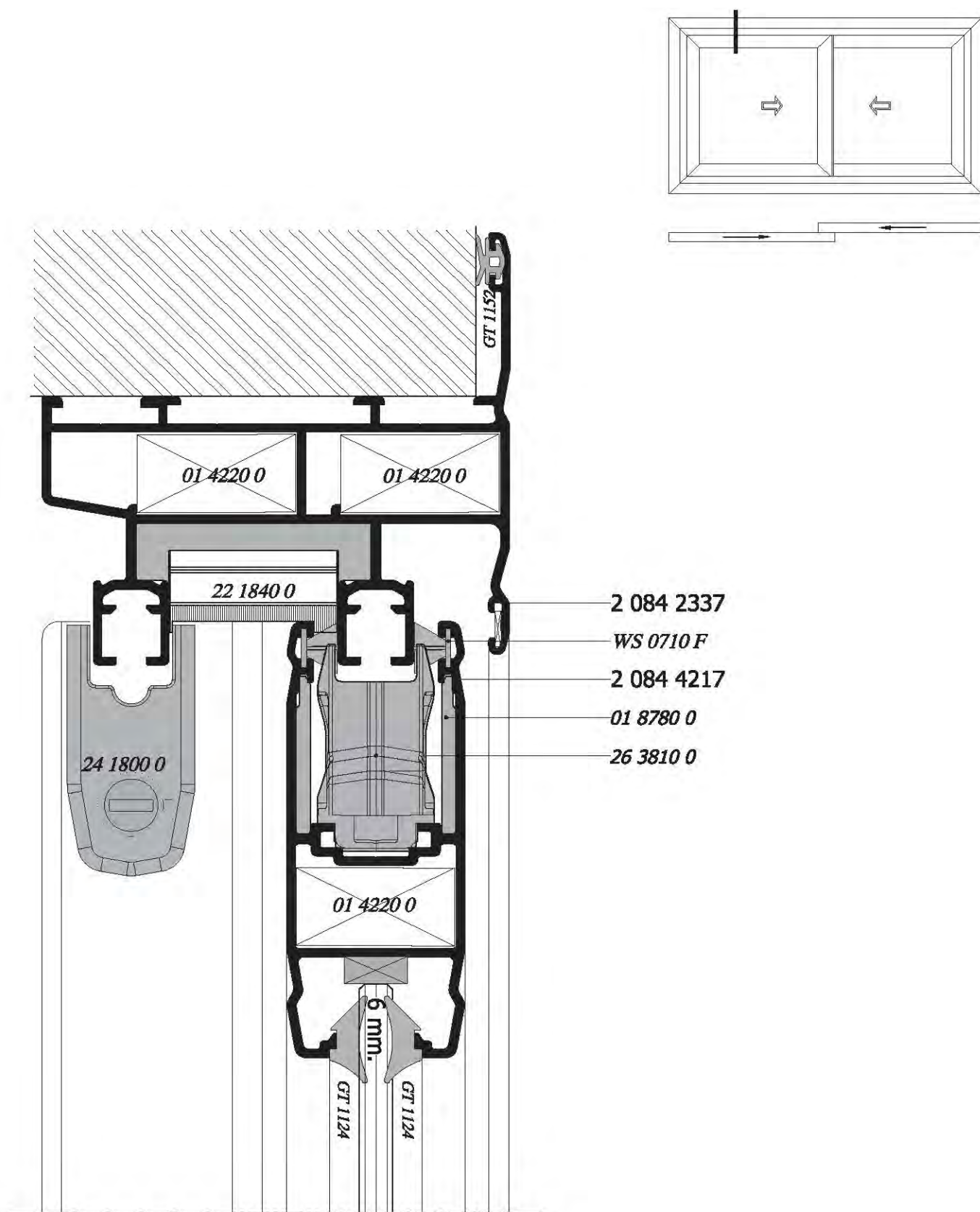


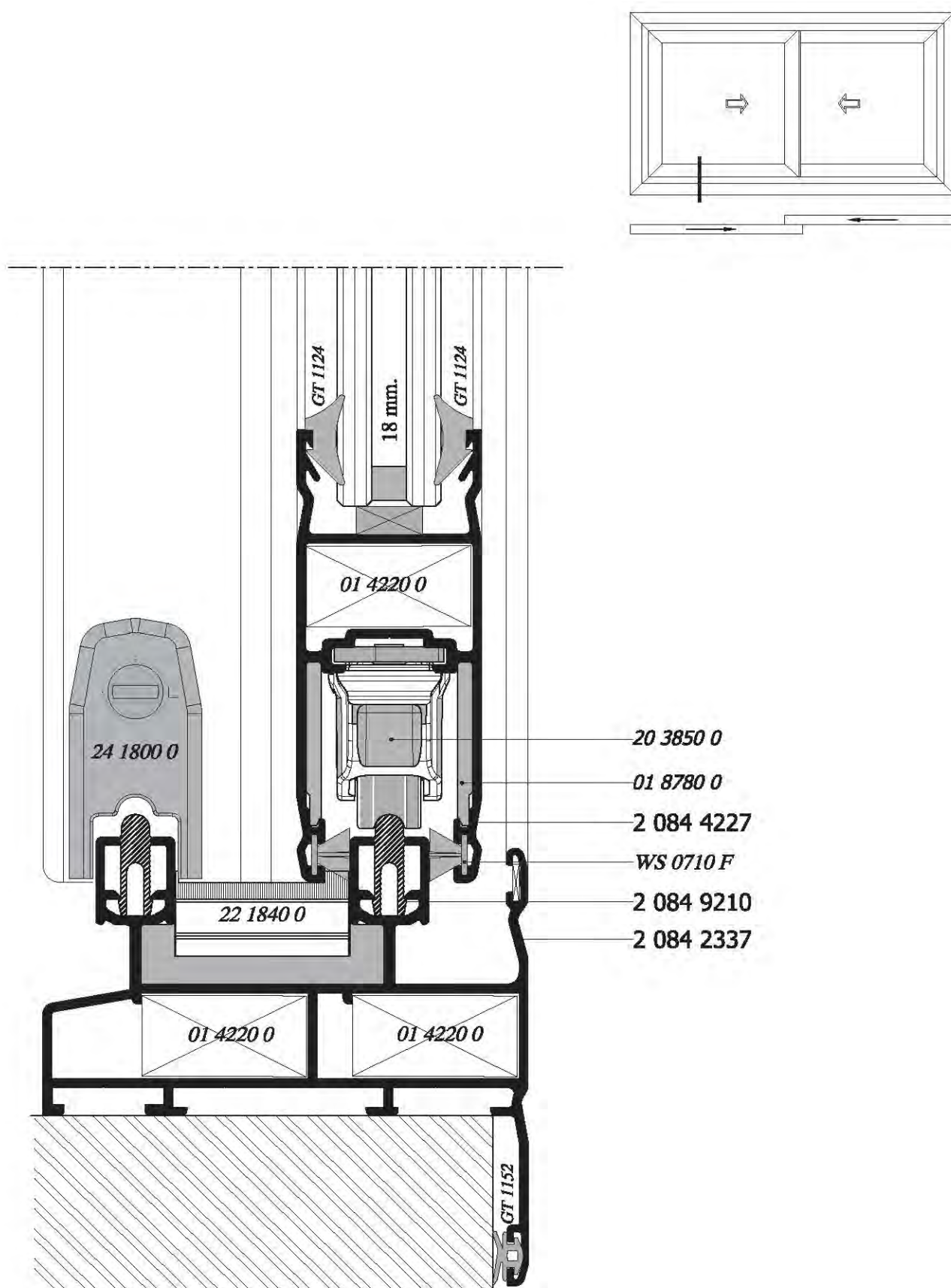


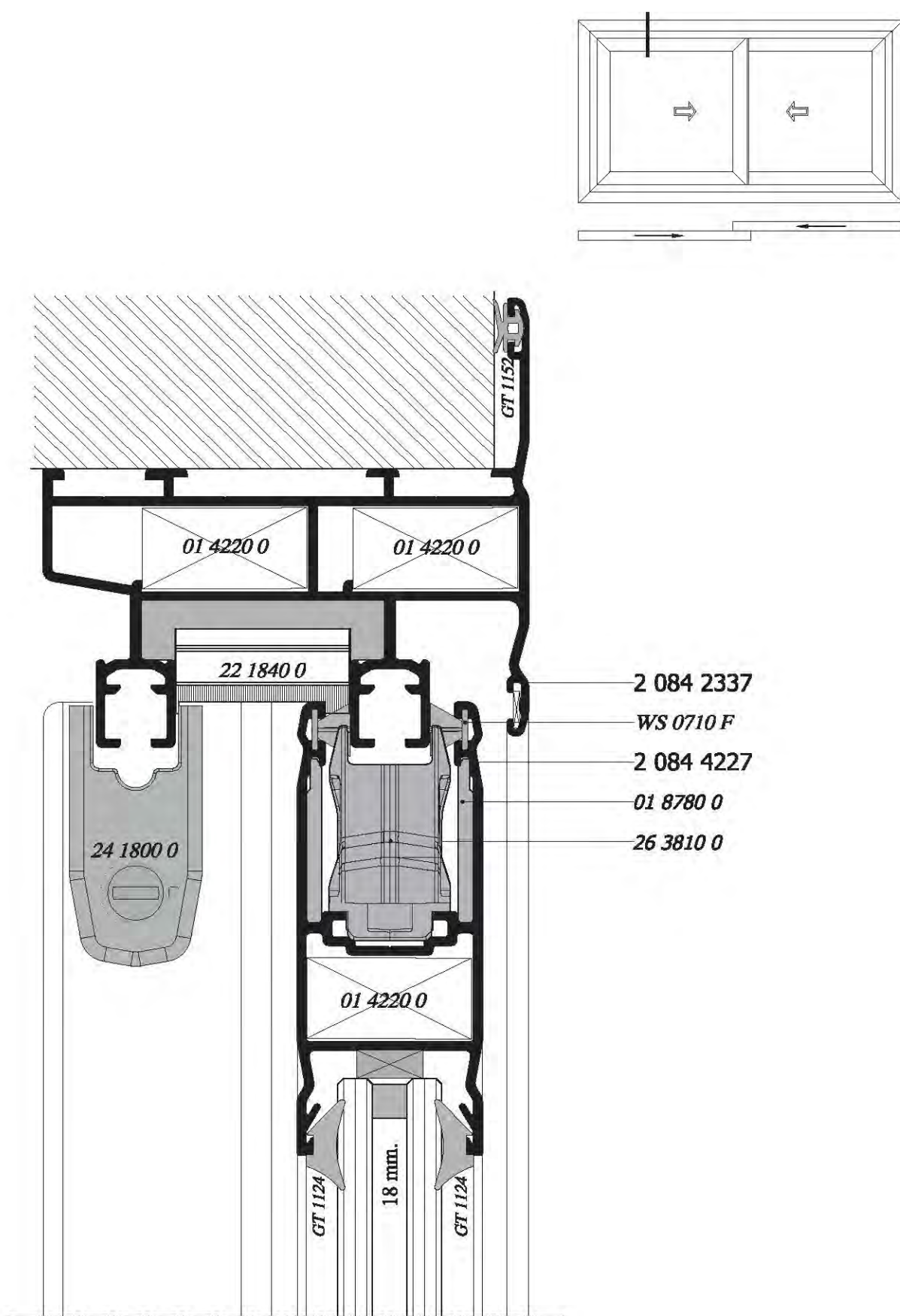


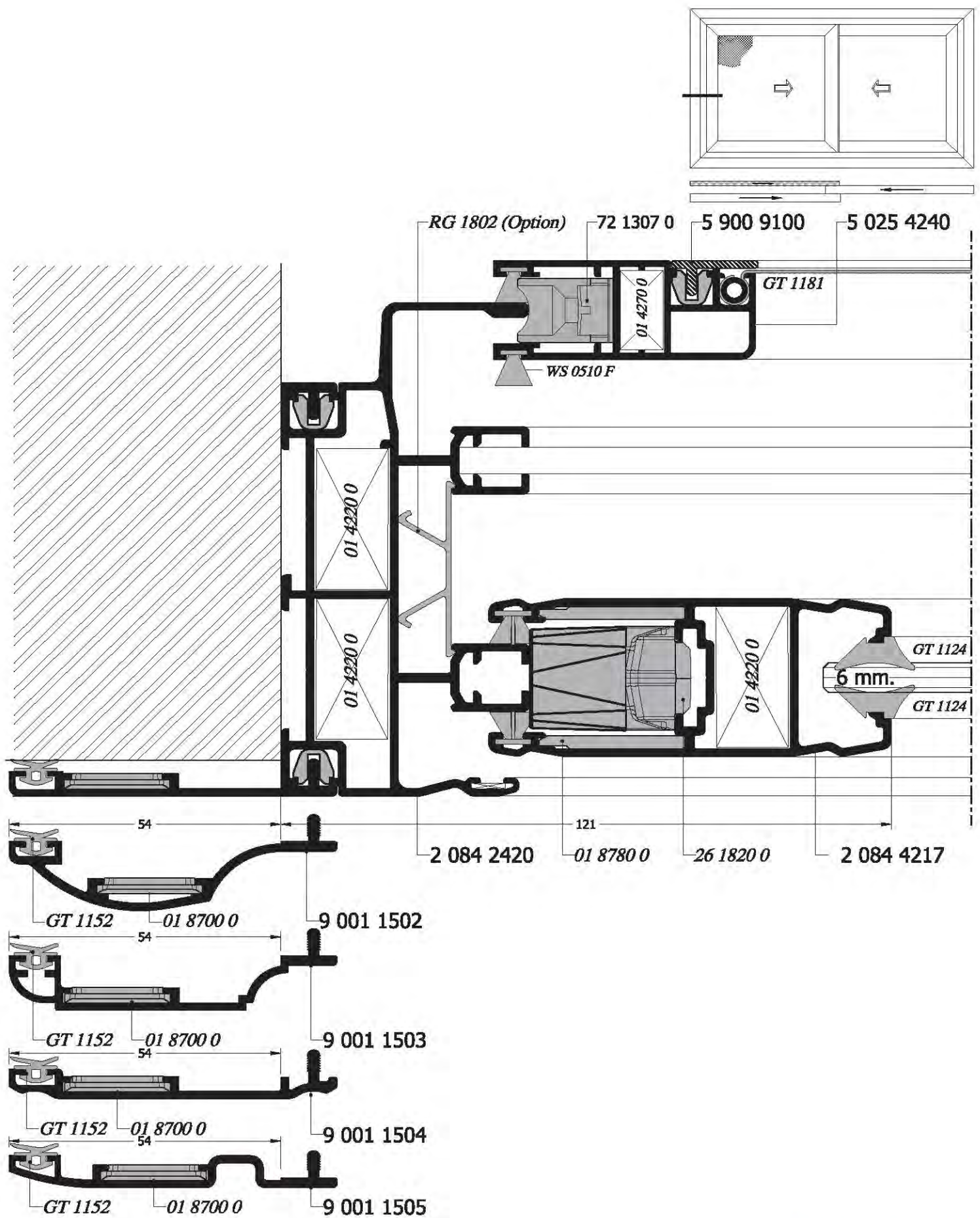


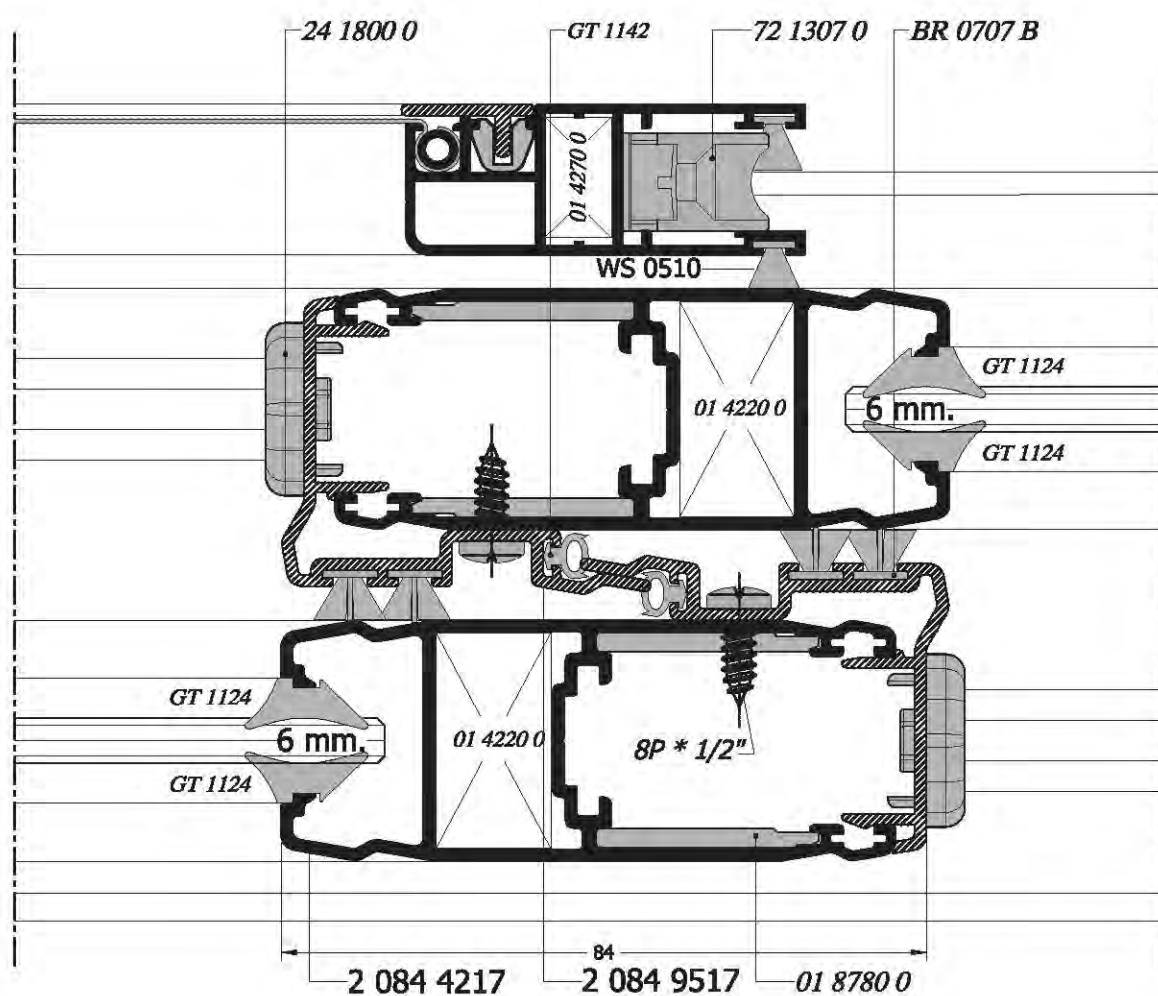
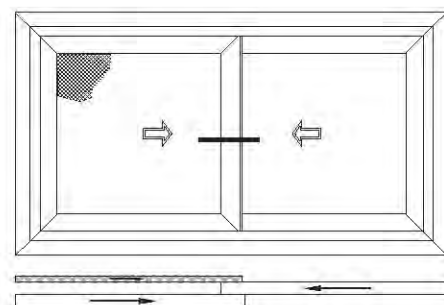


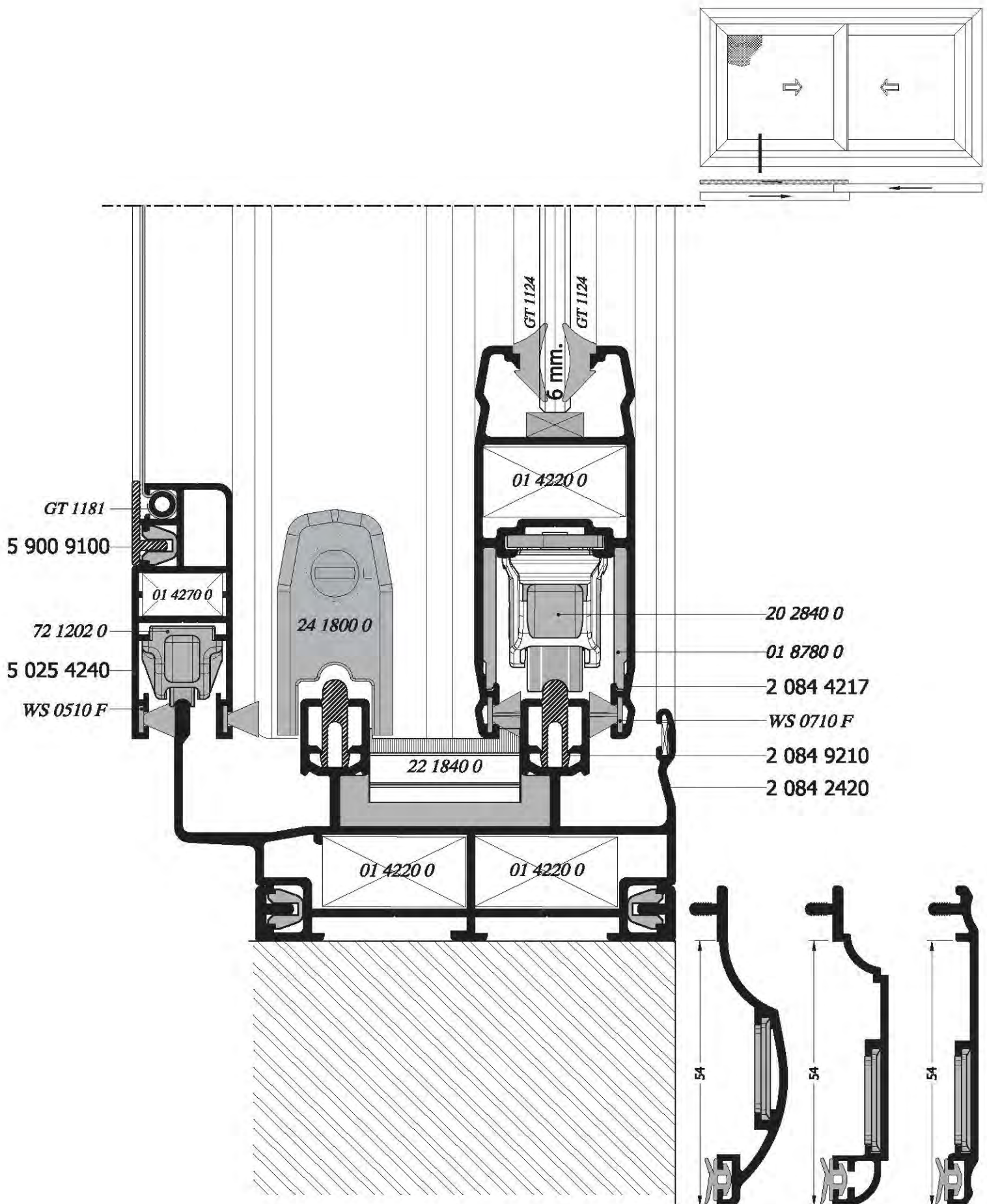


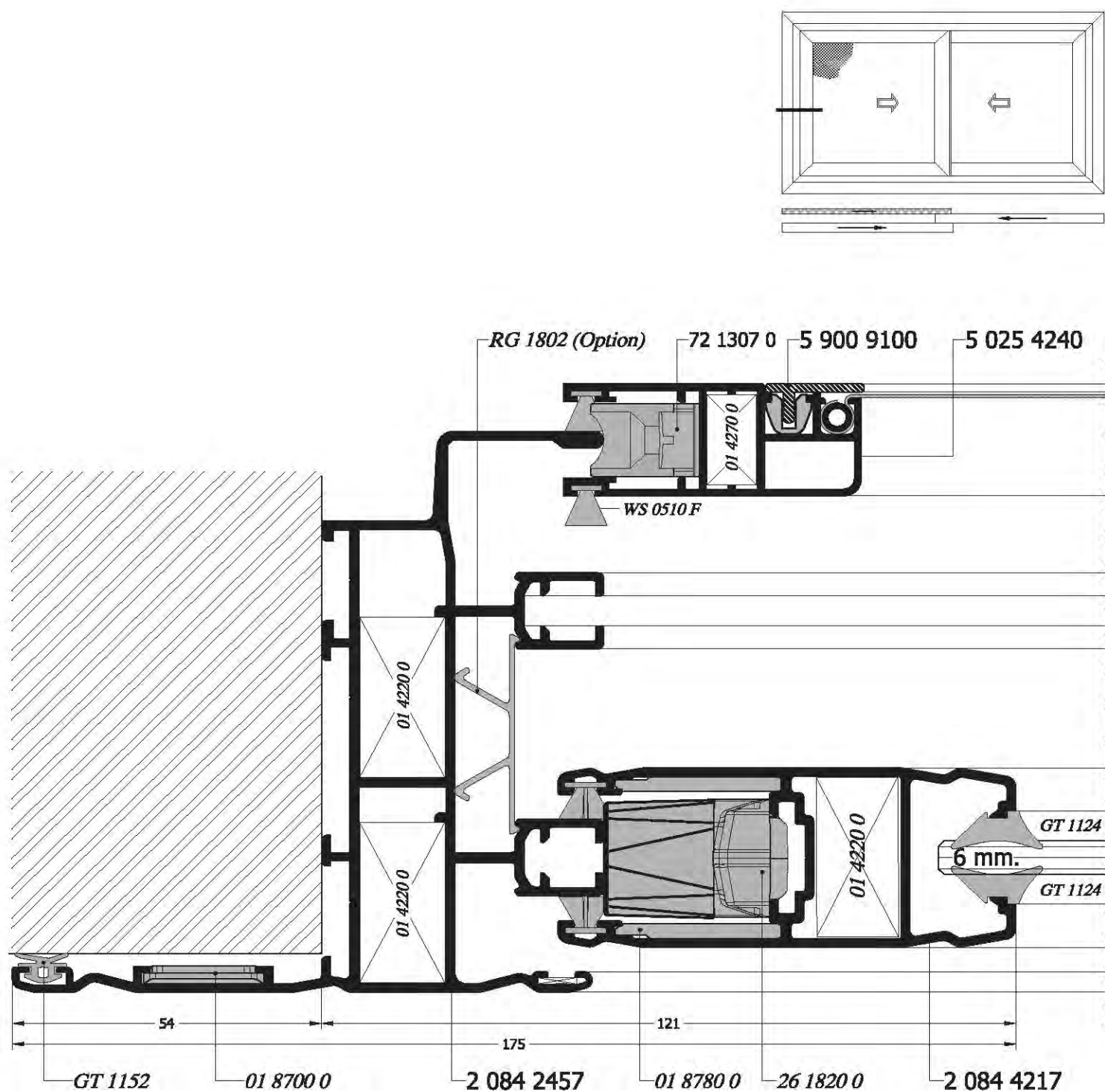




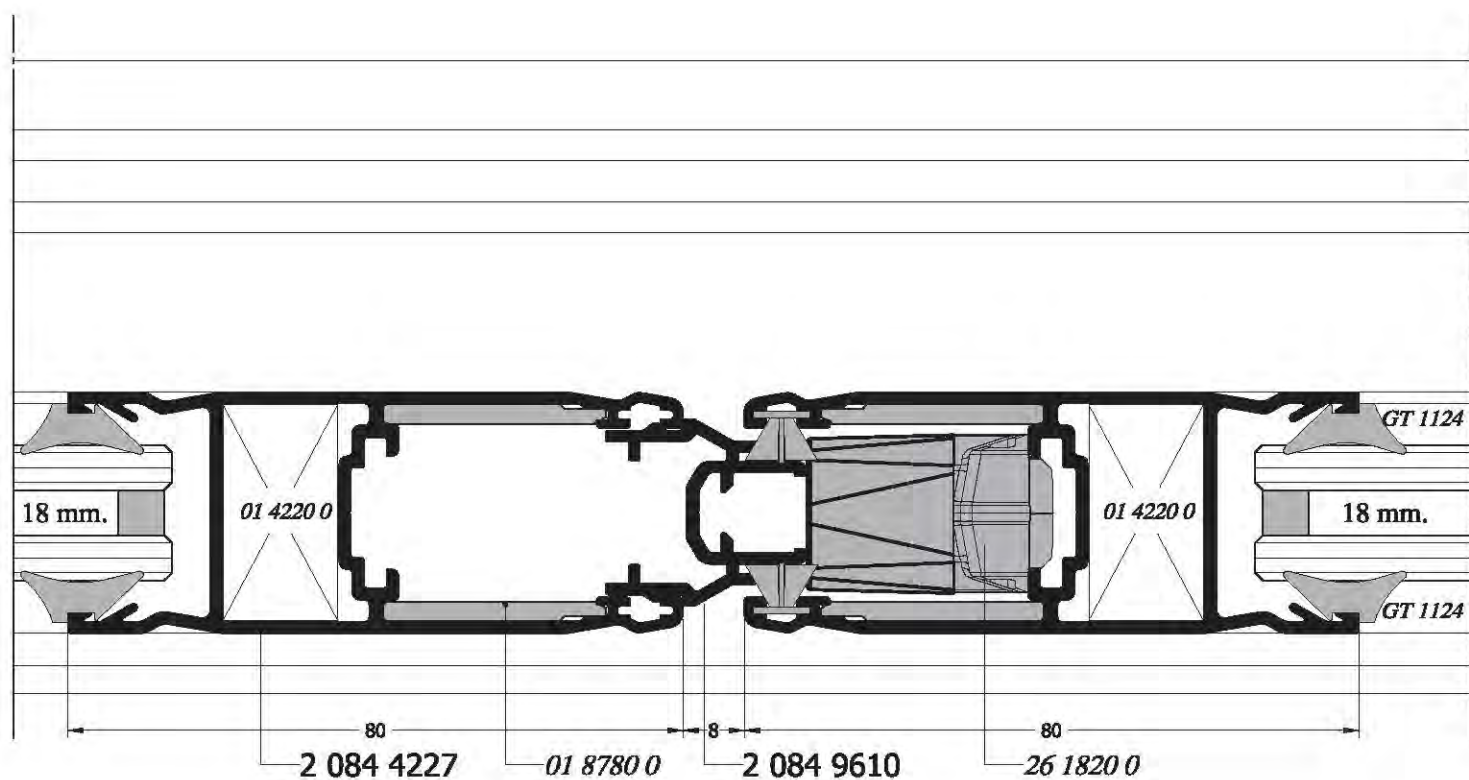
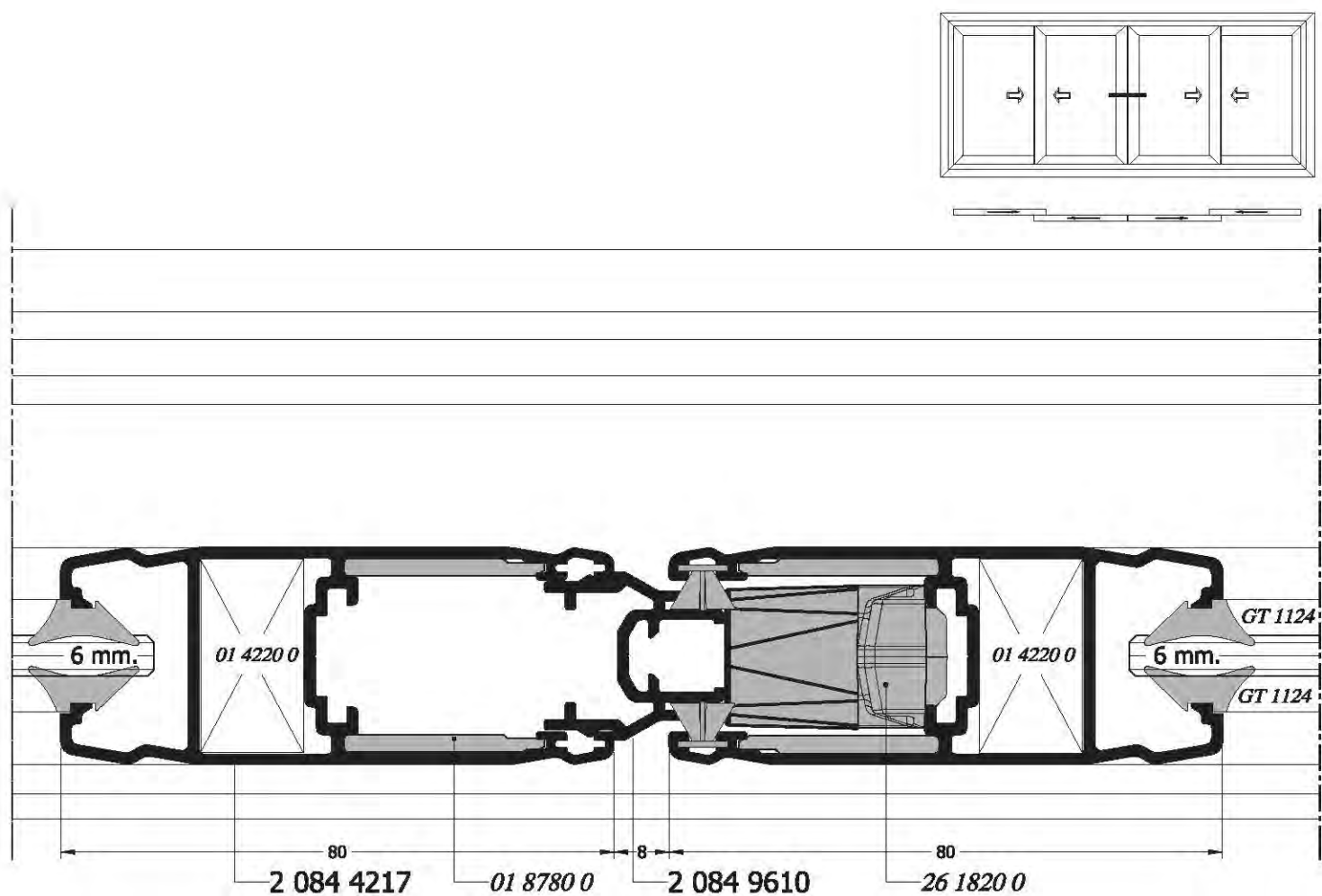


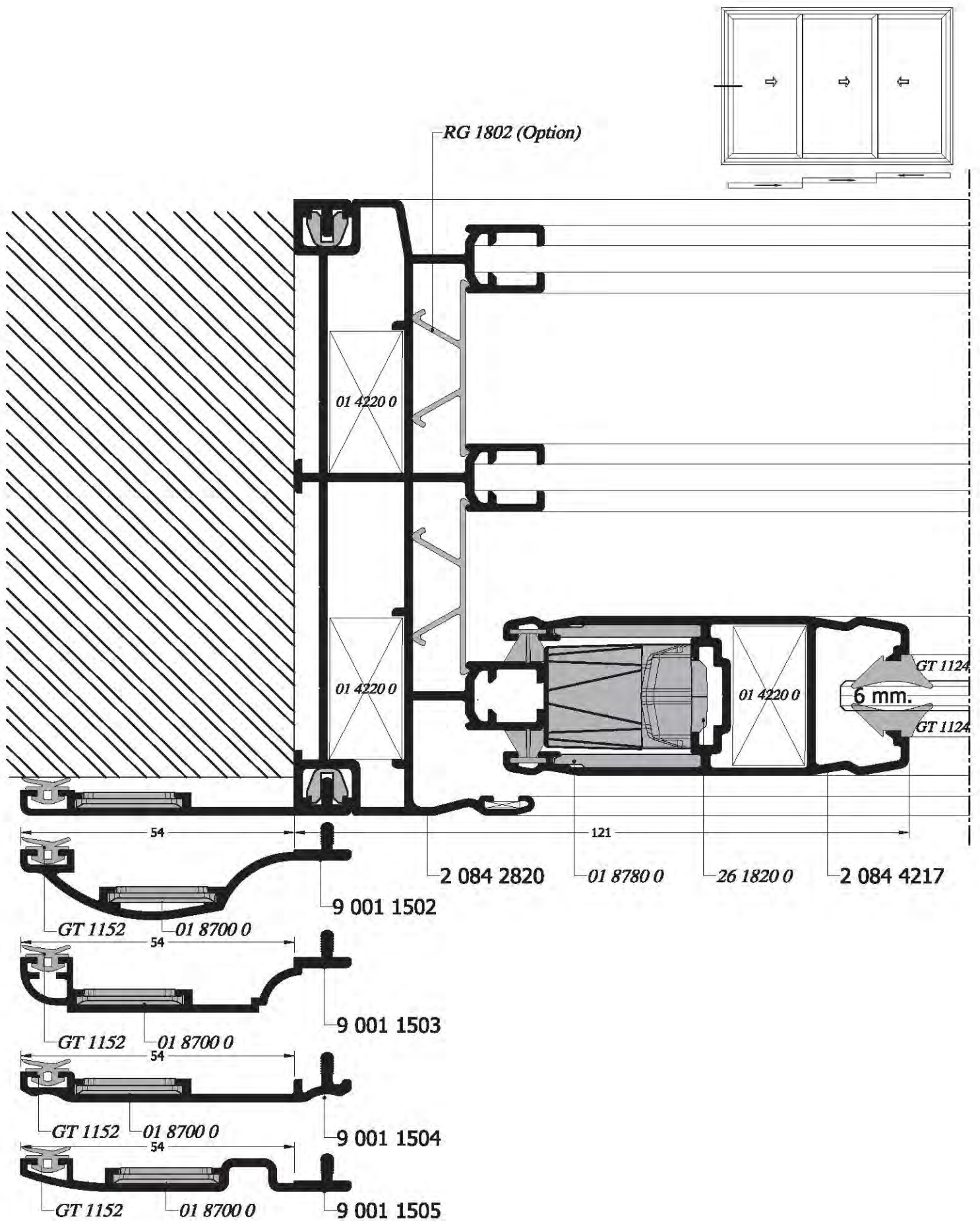


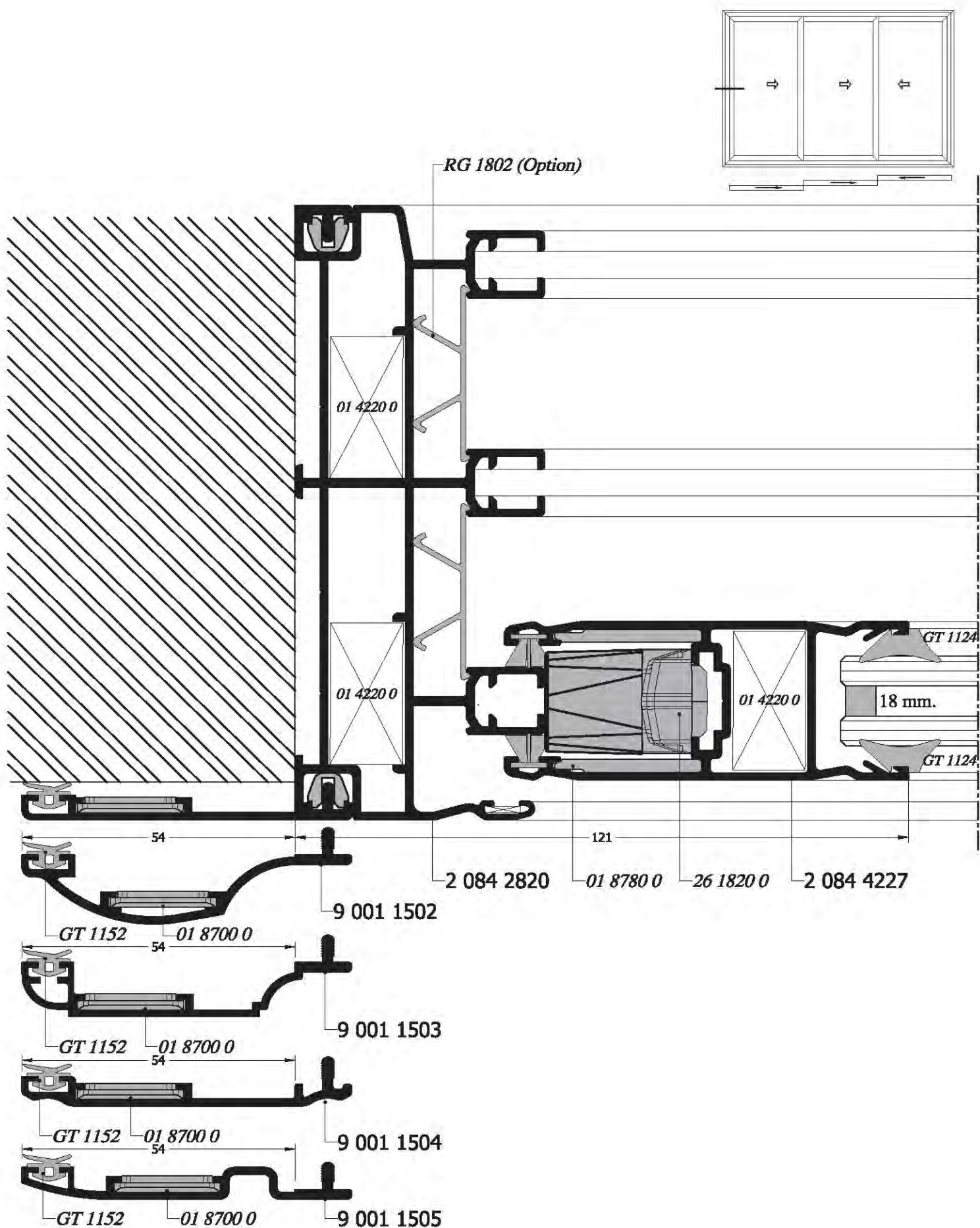


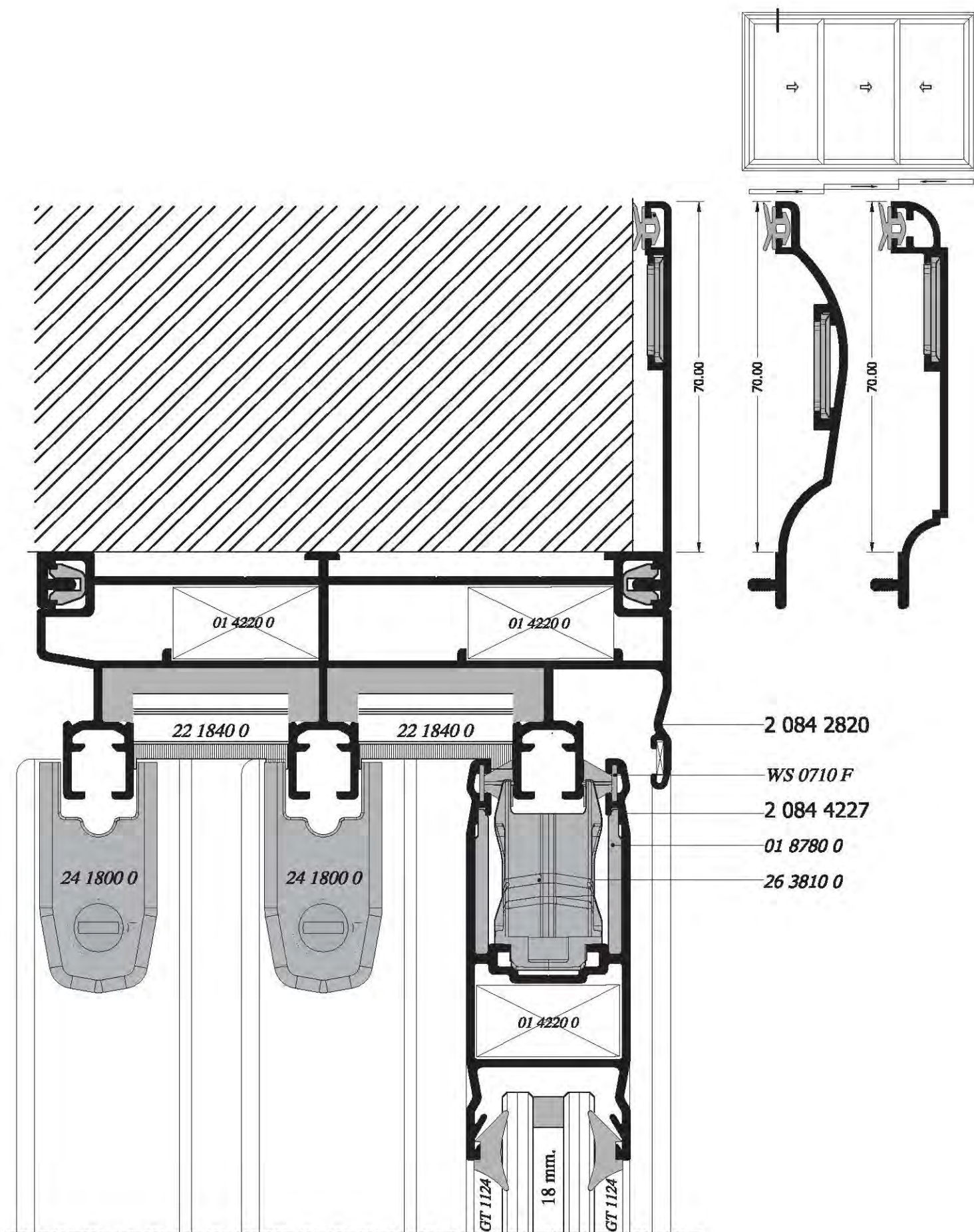


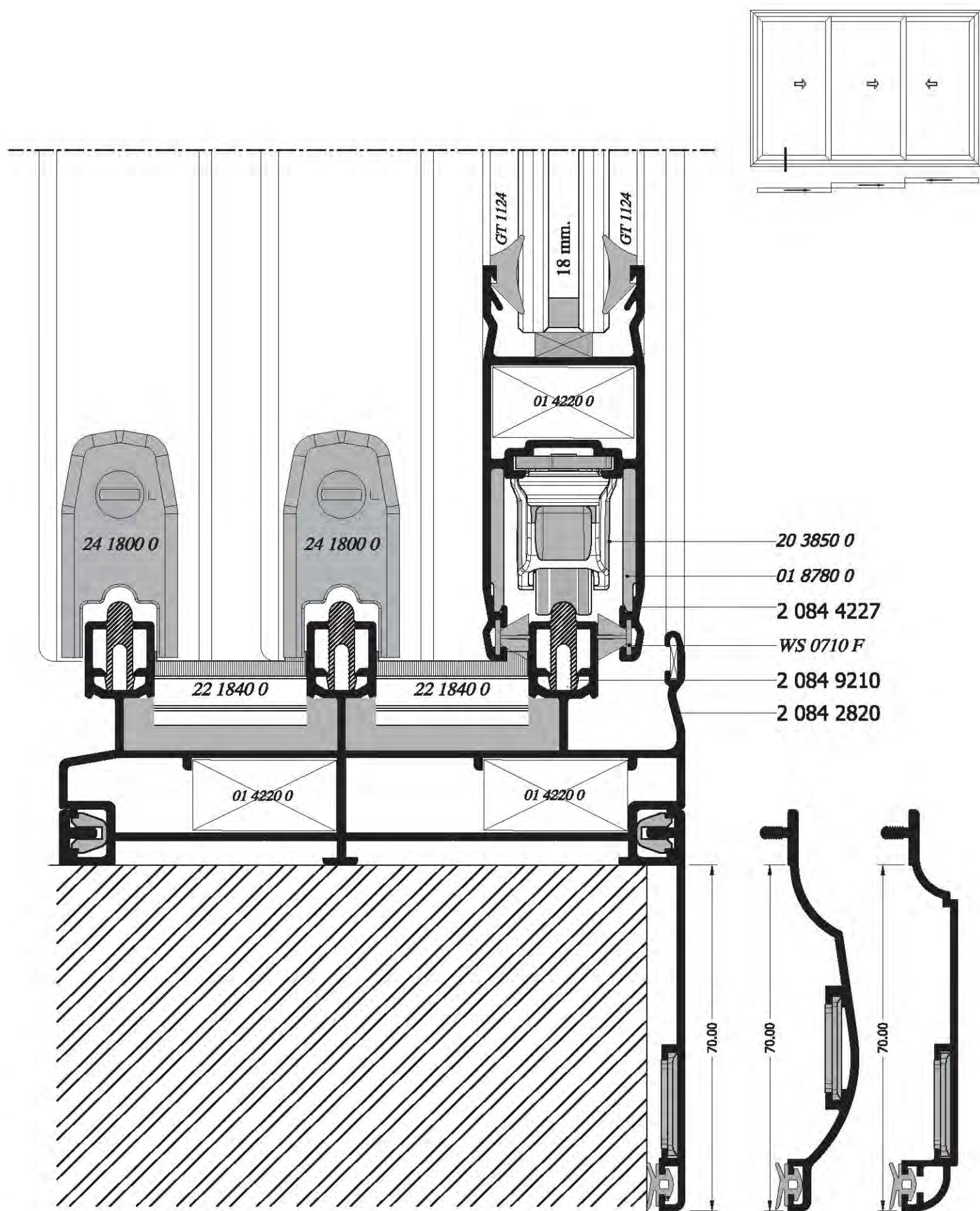


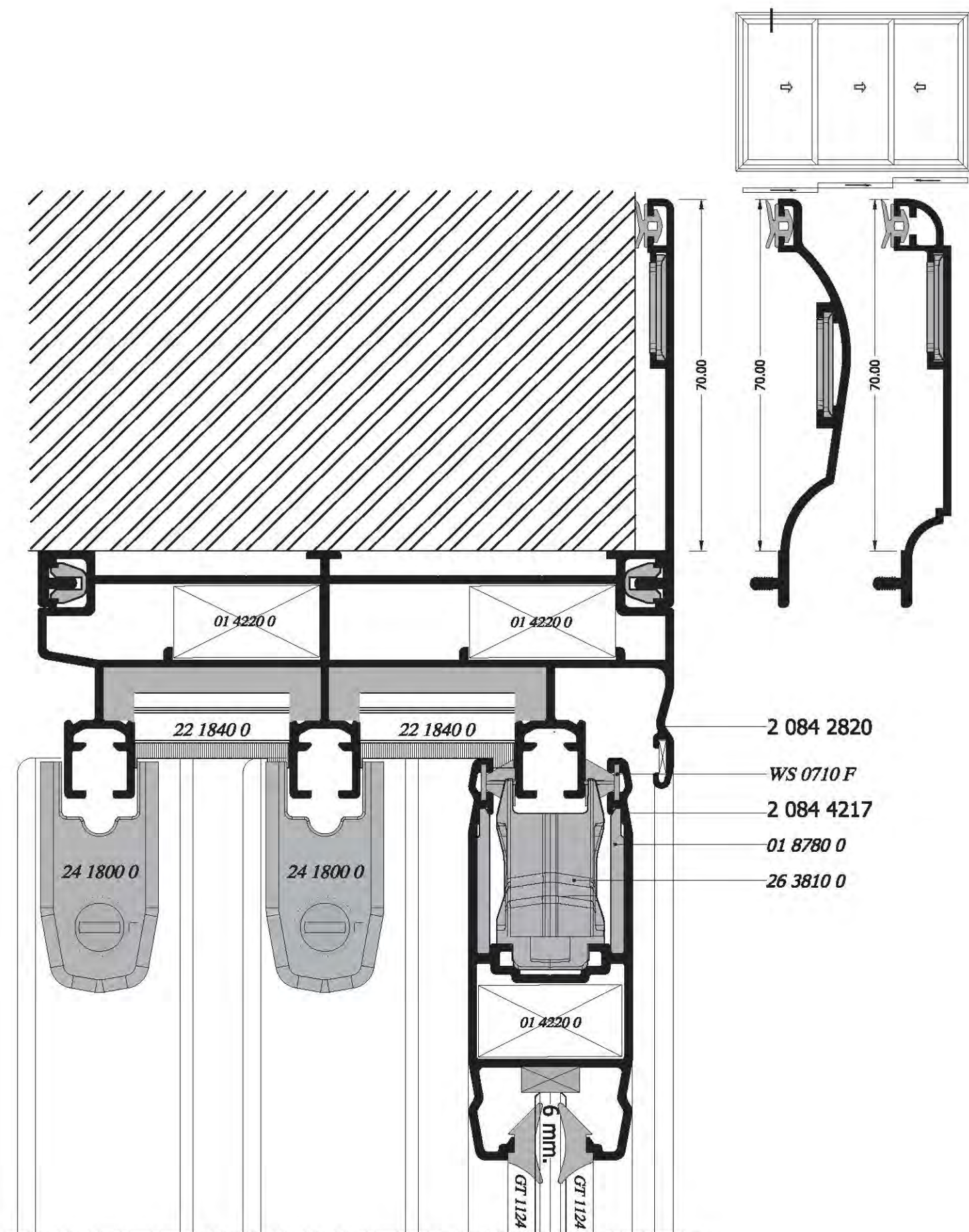


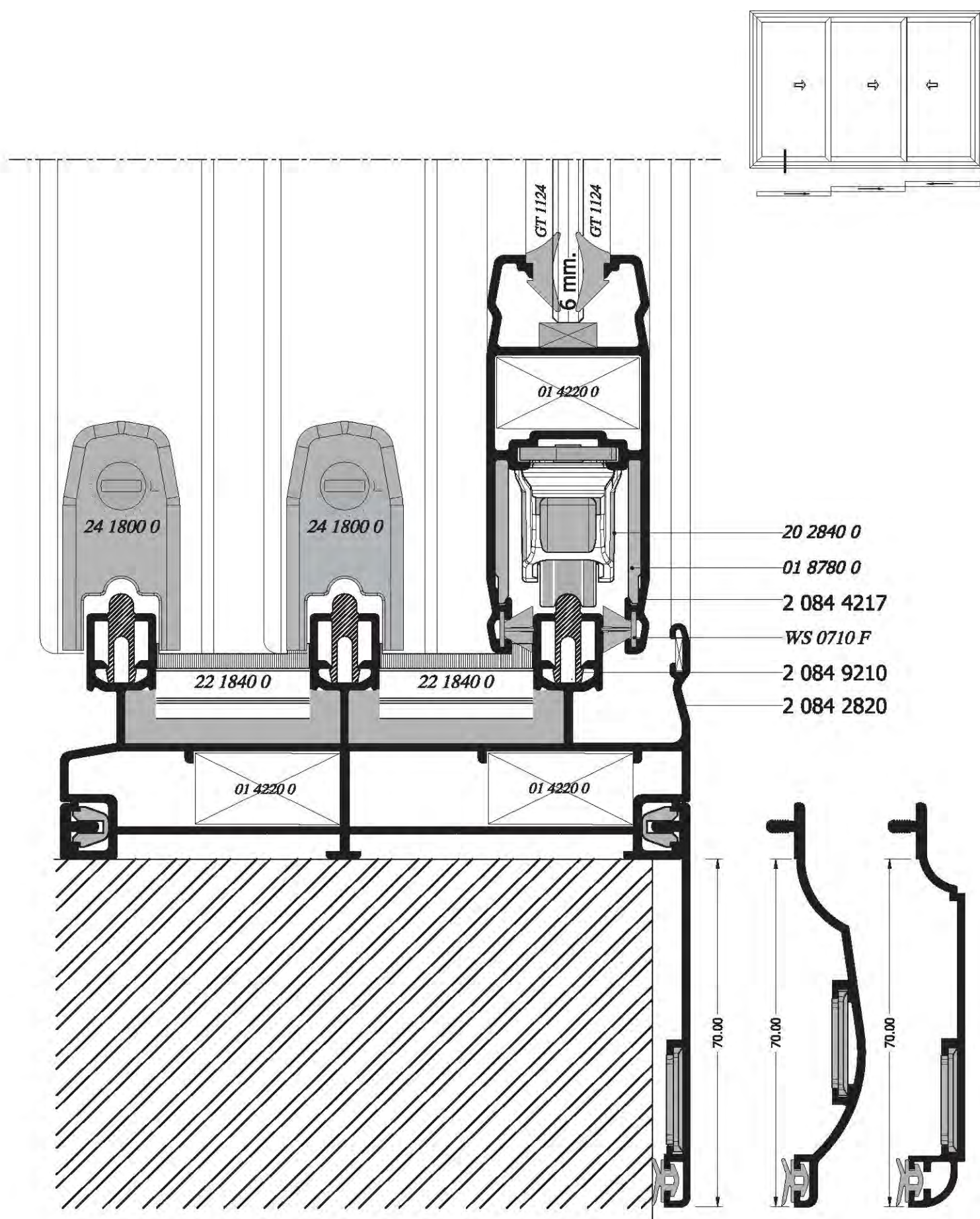


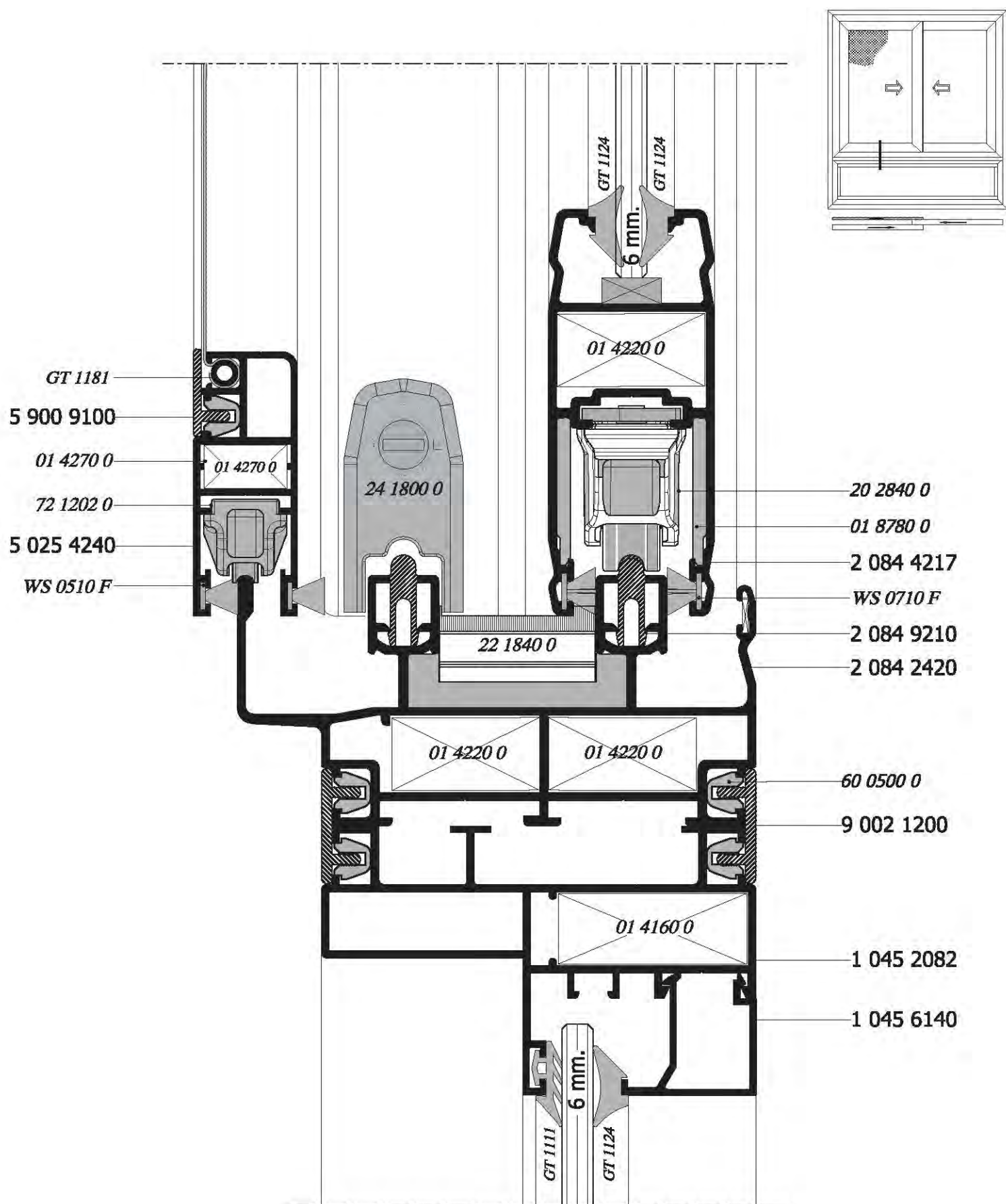


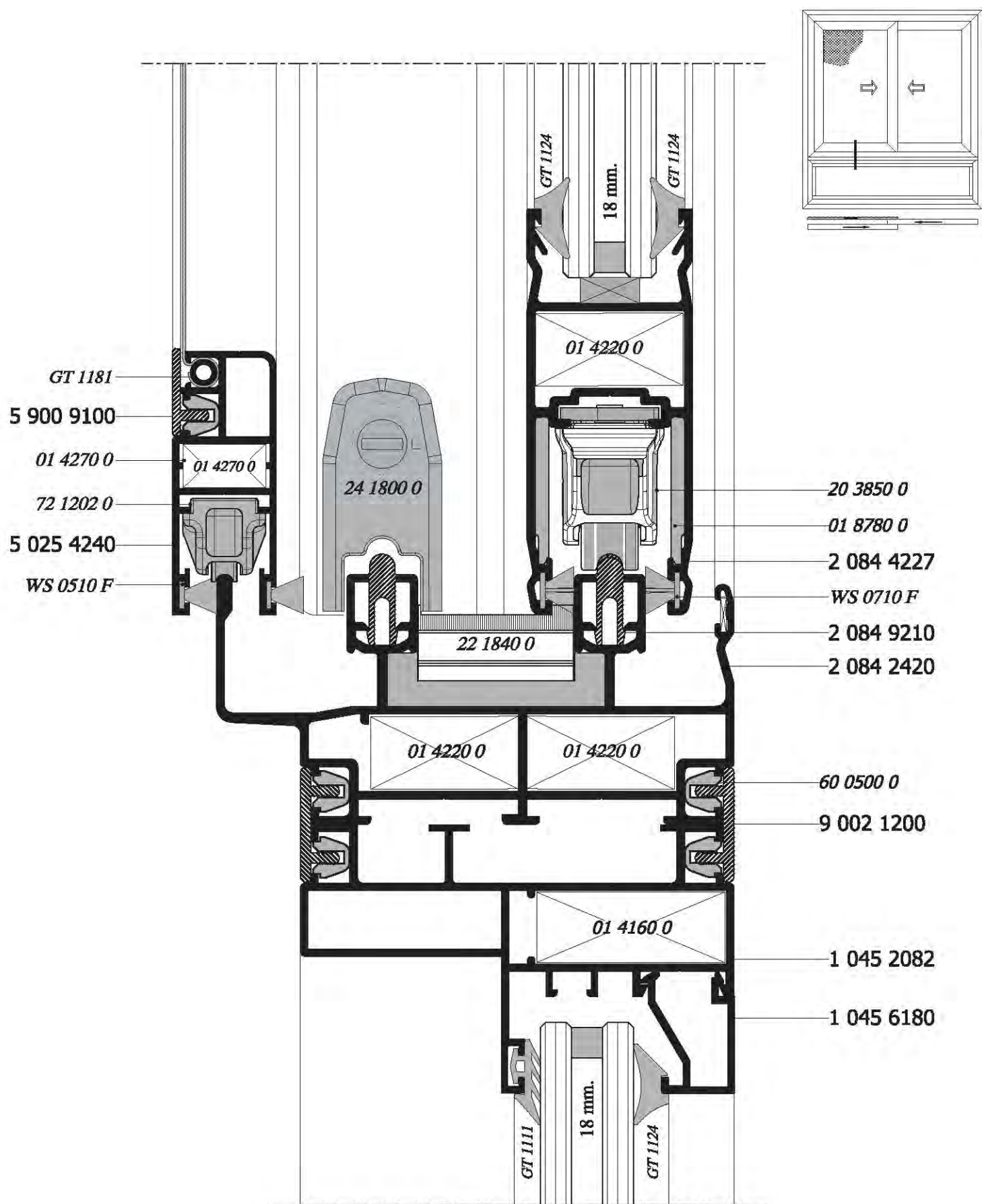






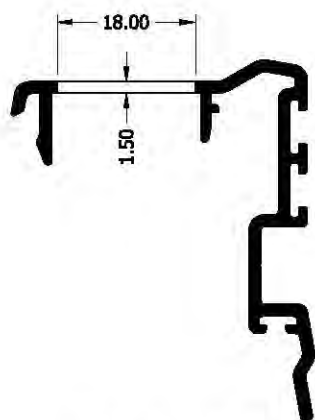




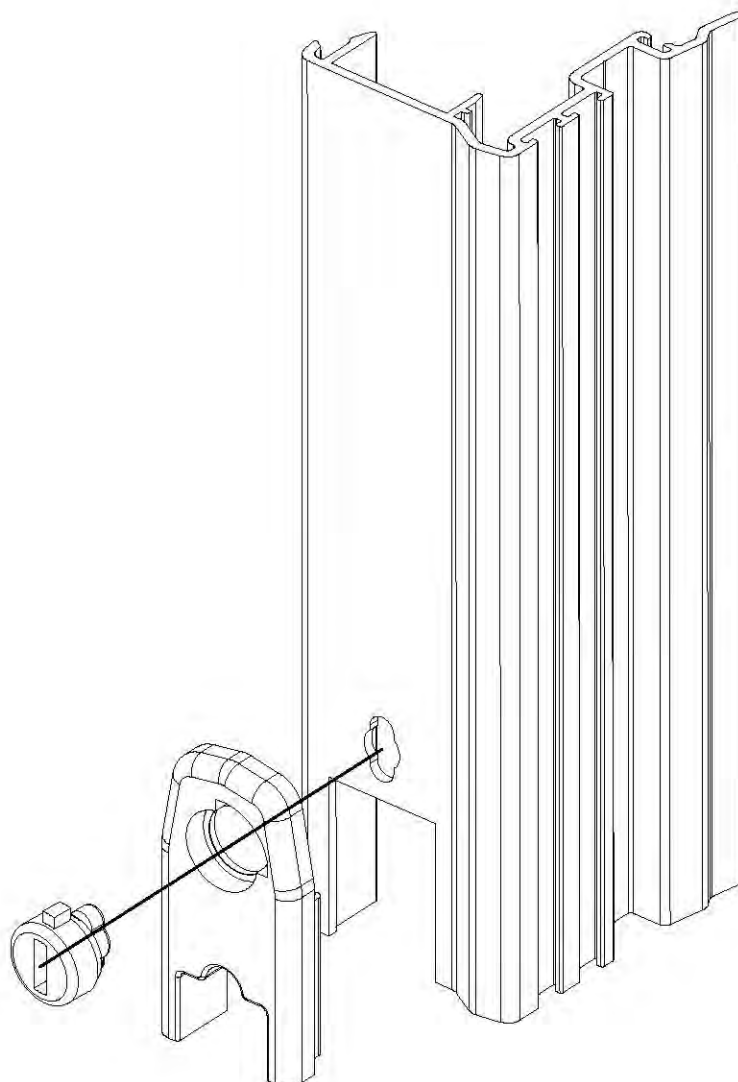
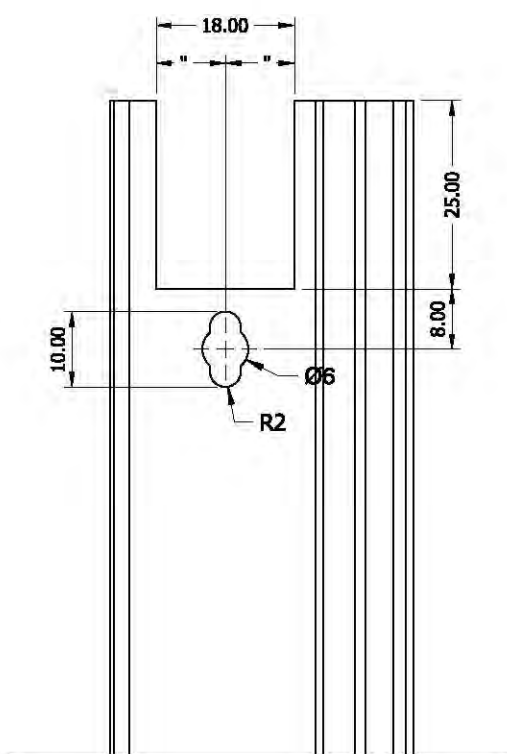




COVER CAP ART NO. 24 1800 0

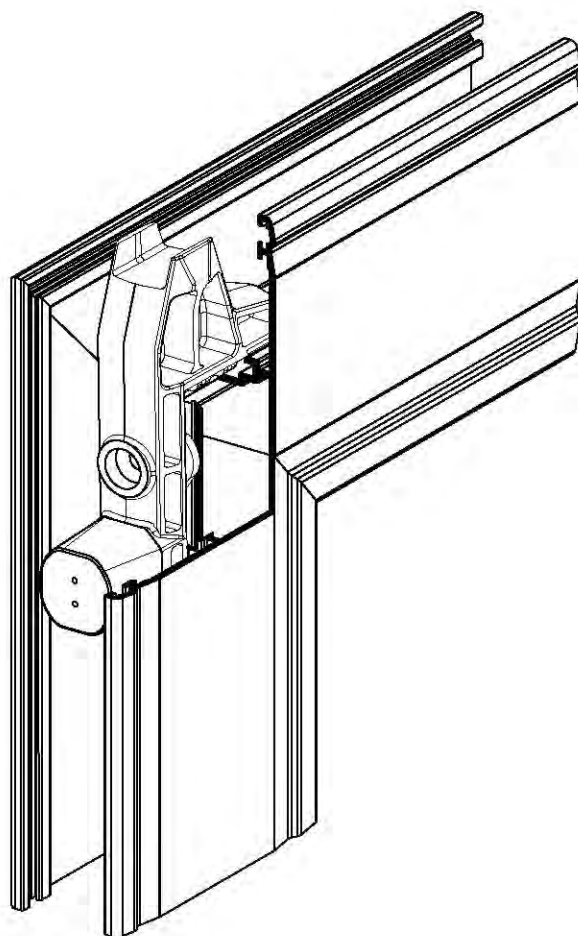


2 084 9517

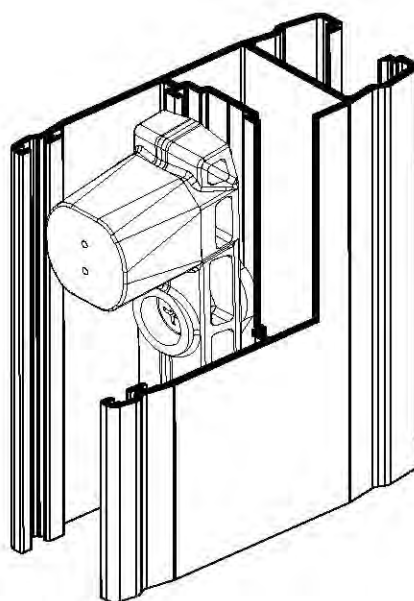




Shock Absorber & Guide
ART NO. 26 3810 0

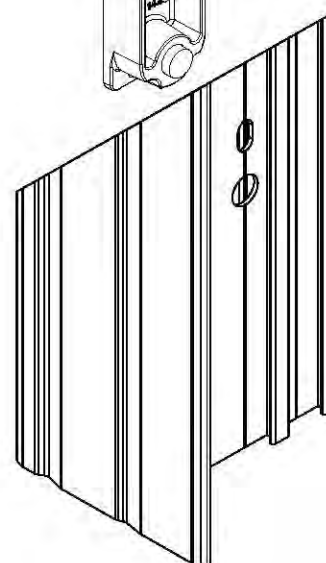
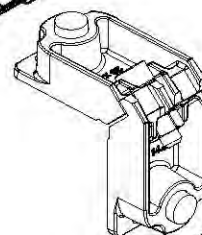
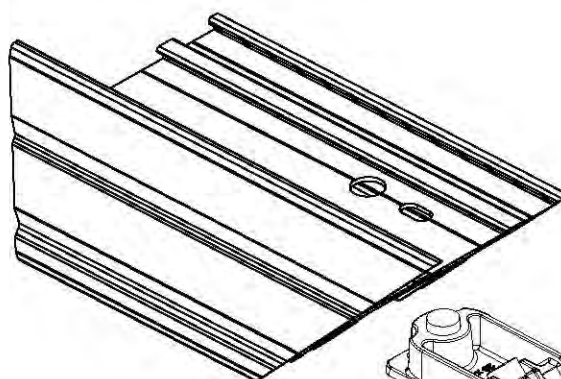
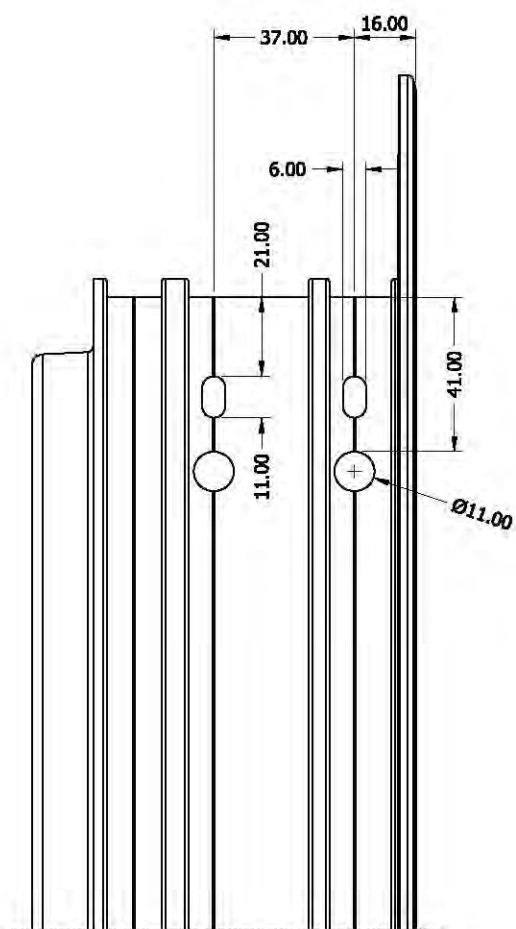
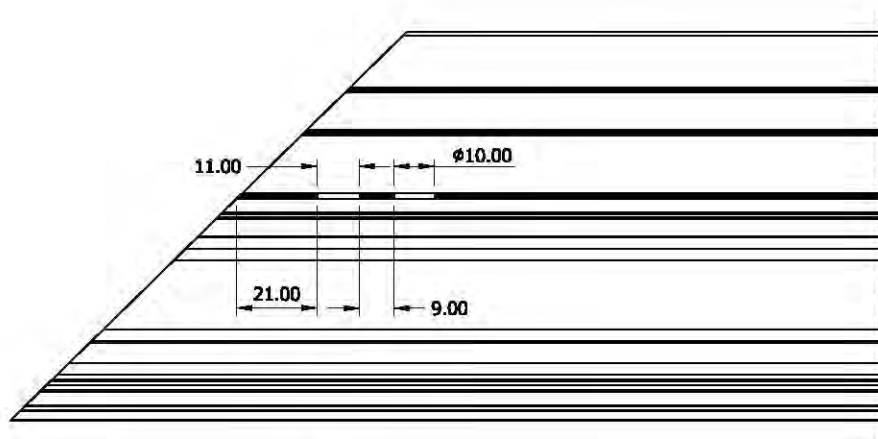
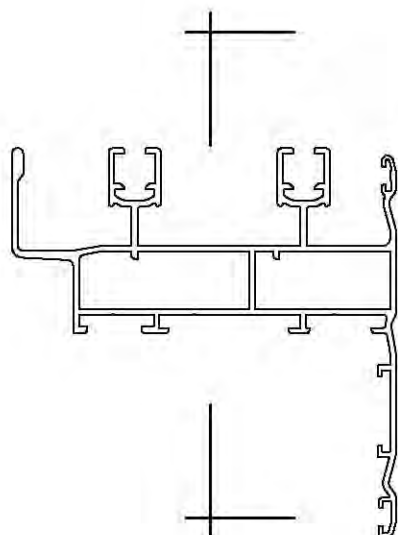


SHOCK ABSORBER
ART NO. 26 1820 0



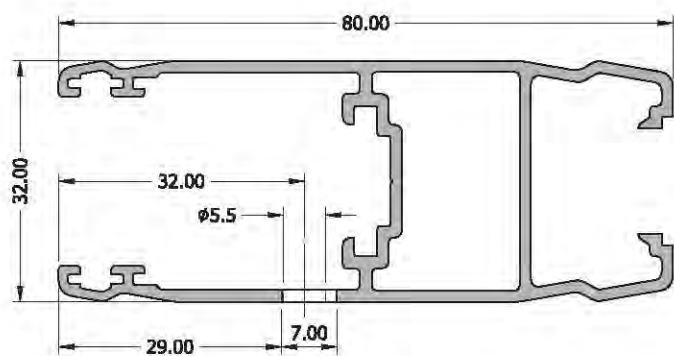
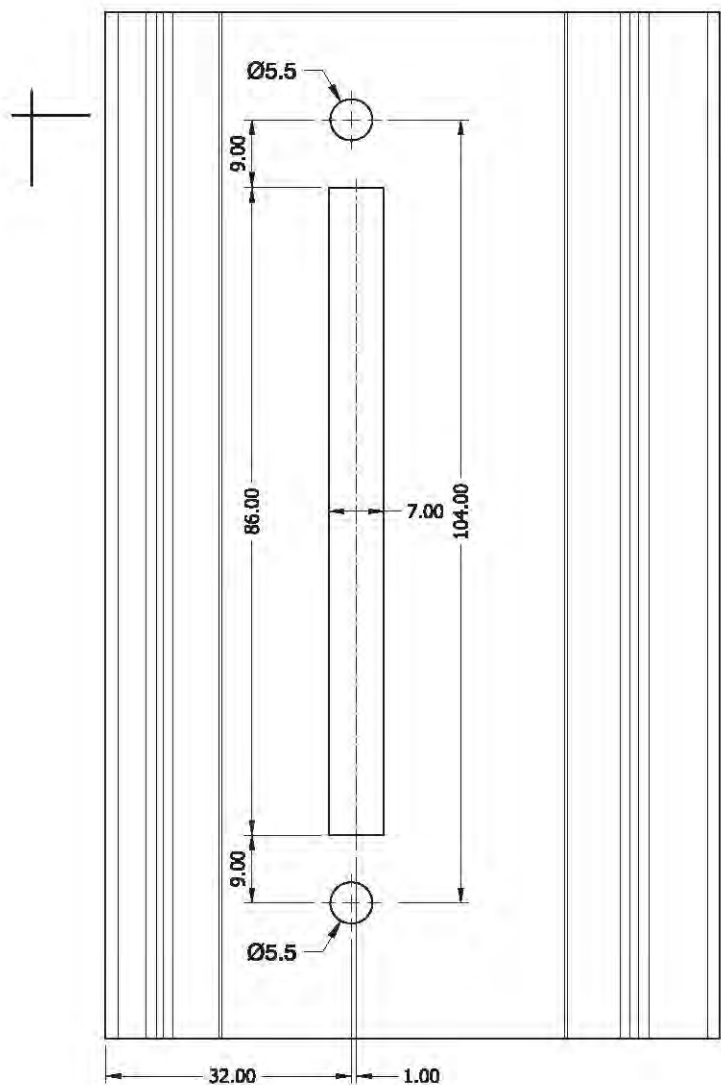


CORNER JOINT
ART NO. 01 4220 0

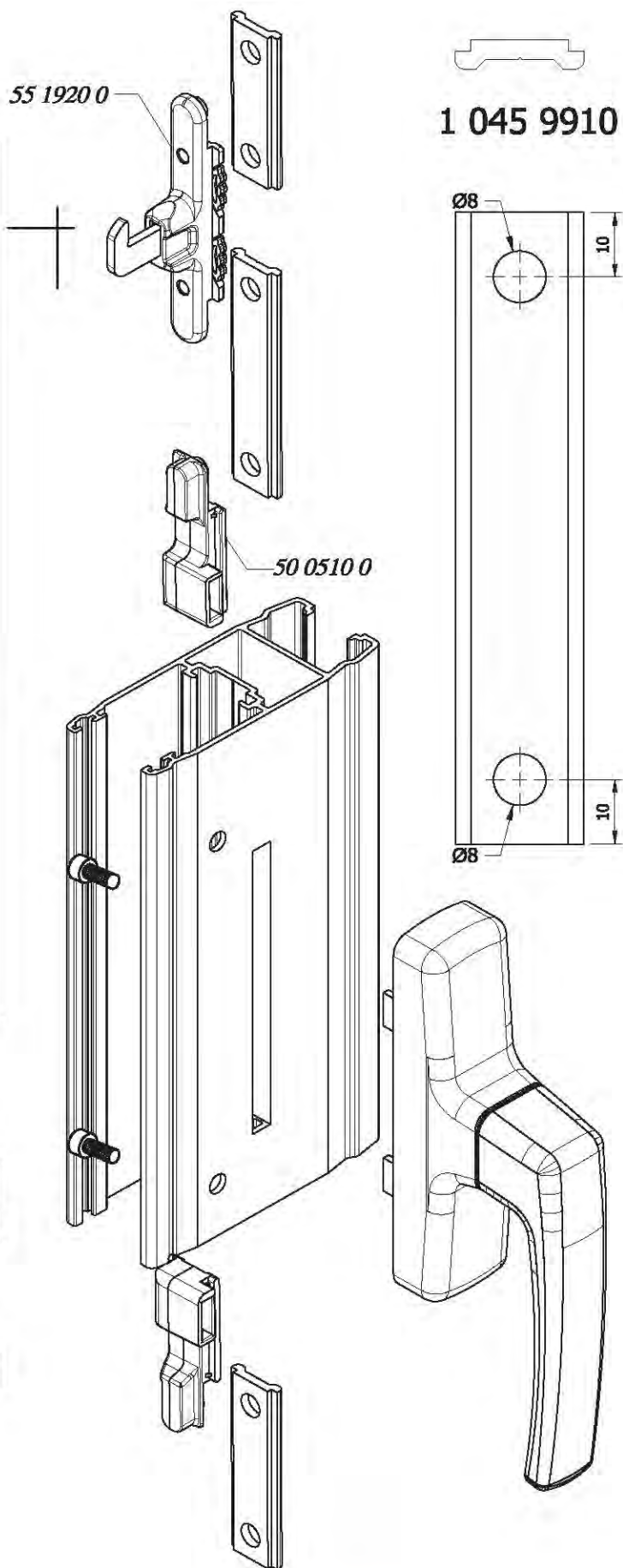


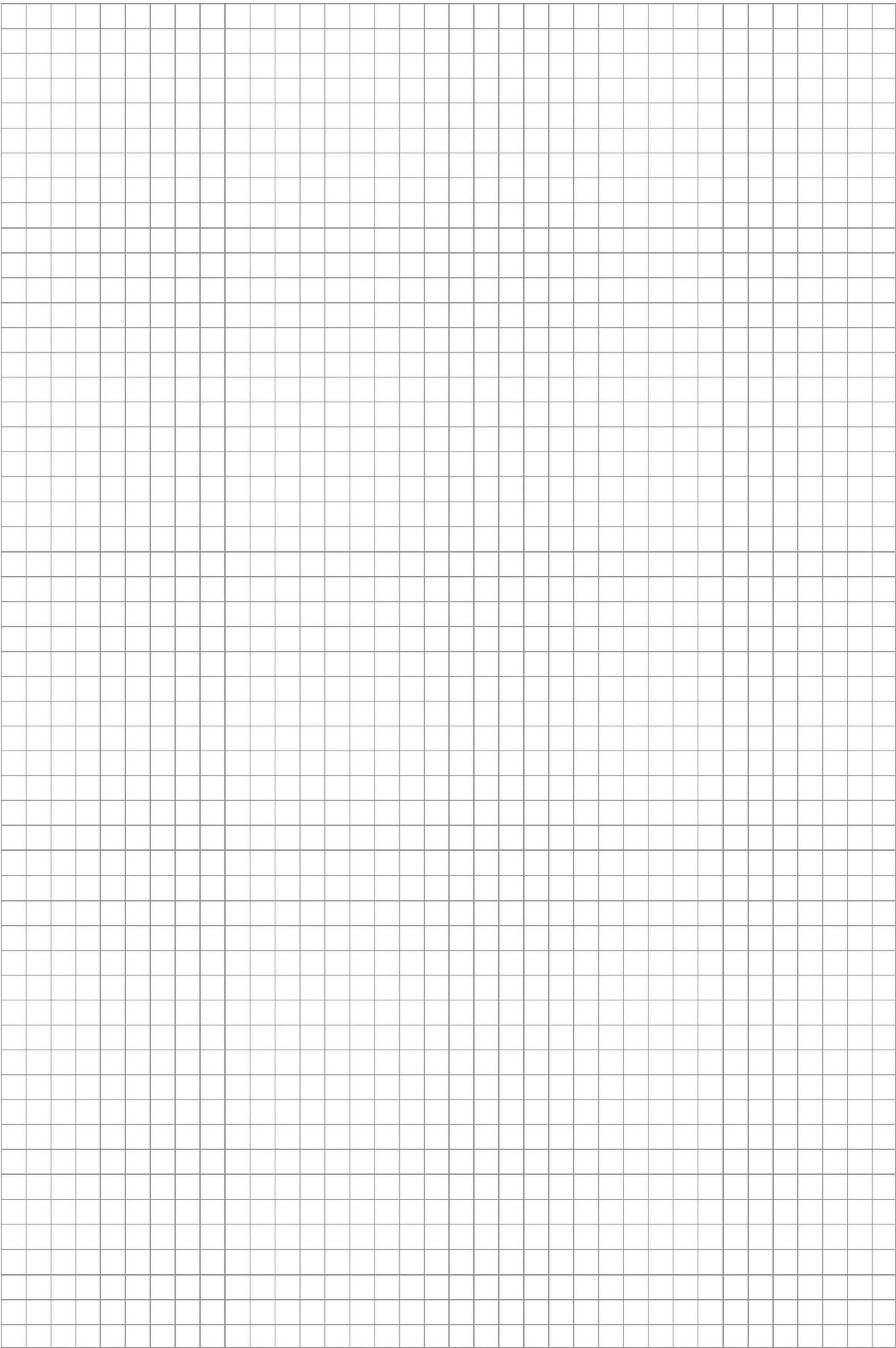


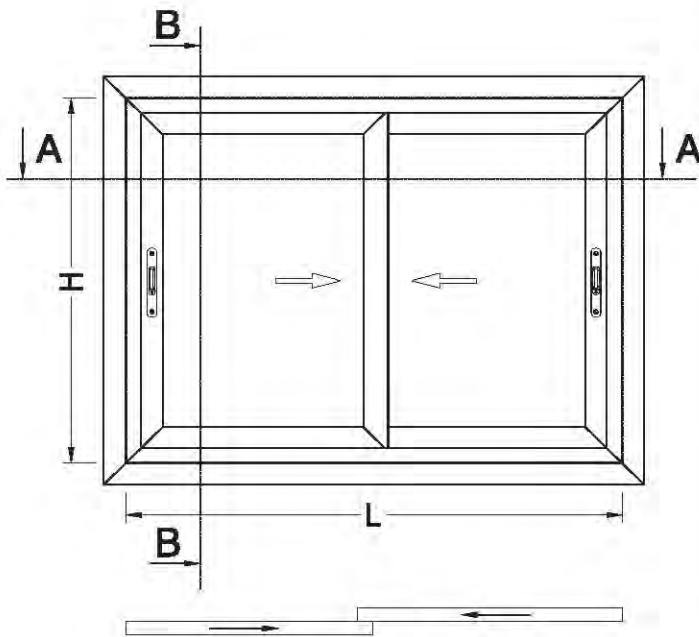
CREMONE HANDLE



2 084 4217
1.091 Kg./ml.





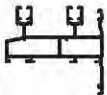


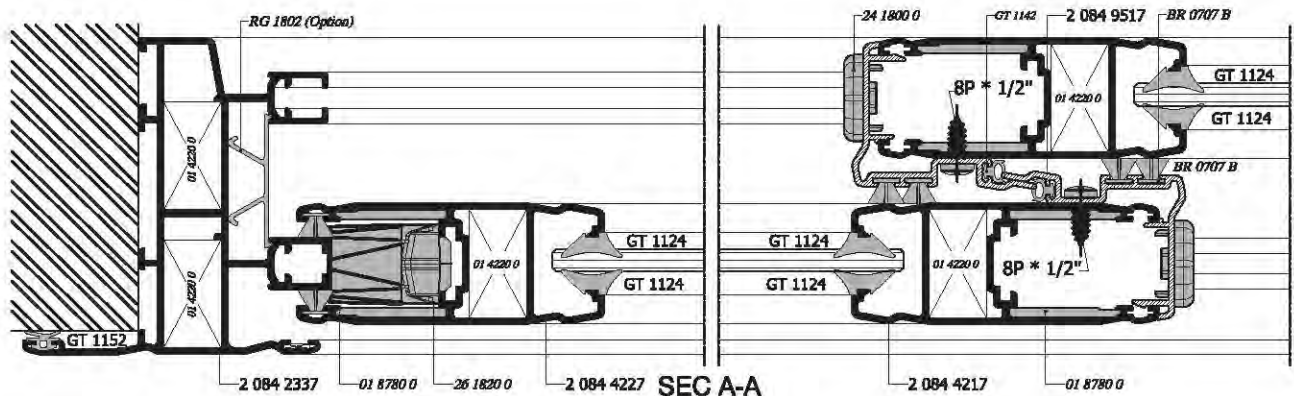
TOTAL WEIGHT

L (m.) X 2.182 Kg. +
H (m.) X 8.615 Kg.

TOTAL = 10.797 Kg.

PROFILES CUTTING LIST

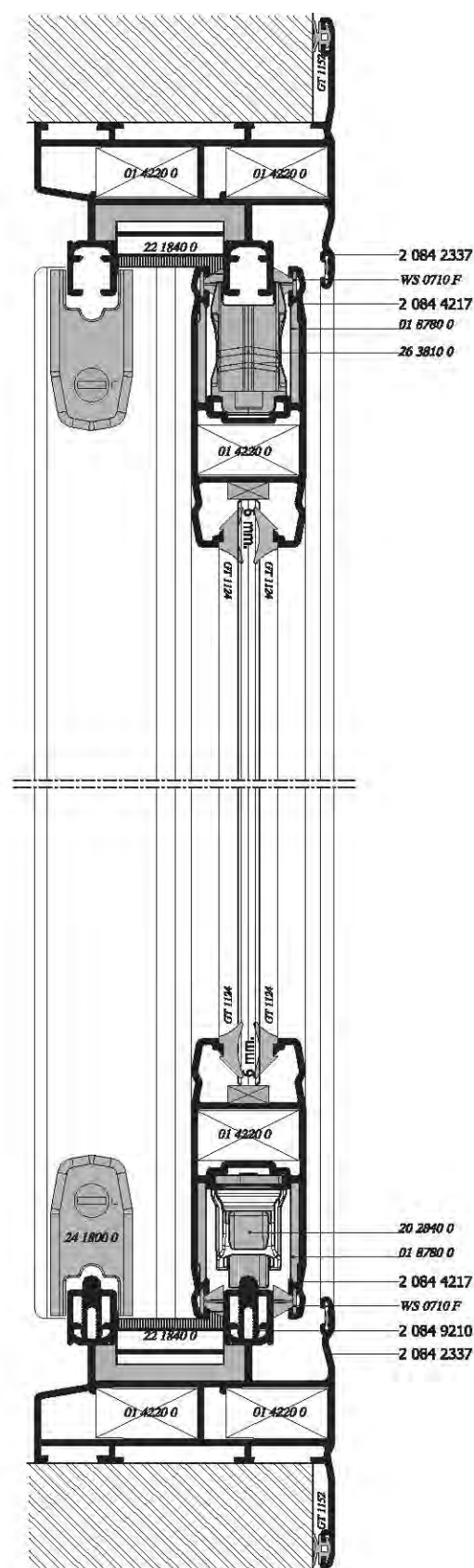
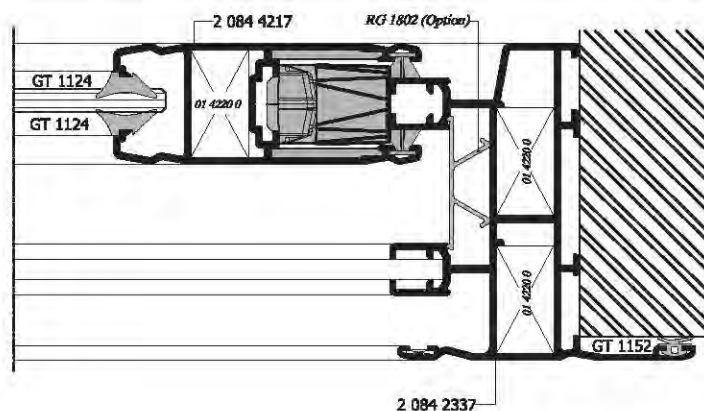
FIGURE	PROF. NO	QTY.	CUTTING LENGTH
	2 084 2337	2	L + 60
		2	H + 60
	2 084 4217	4	L - 10 2
		4	H - 83
	2 084 9517	2	H - 83
	2 048 9210	2	L - 71
SINGLE GLASS"18mm"		2	L - 275.5 2
			H - 215.5
ALL DIMENSIONS IN mm.			





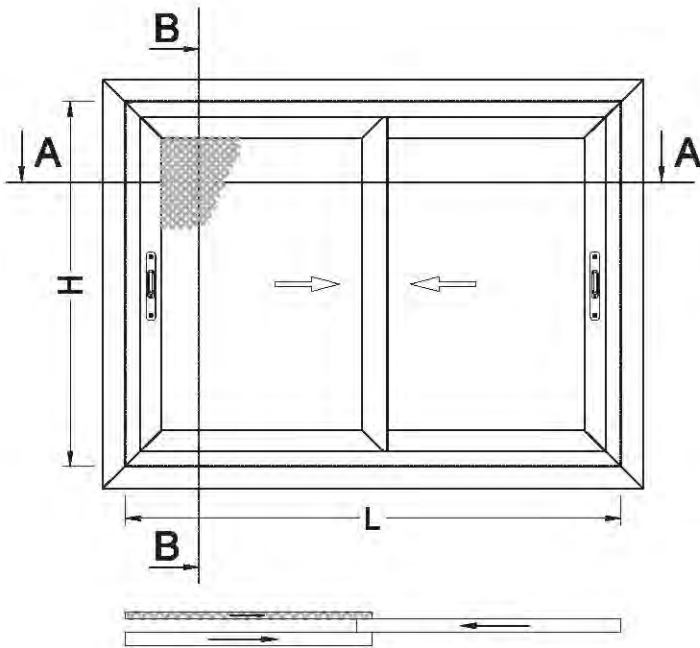
ACCESSORIES LIST

FIGURE	ACC. NO	QTY.	DESCRIPTION
	01 4220 0	16	Corner Joint
	01 8780 0	16	Alignment Angle
	20 2840 0	1	Roller set
	24 1800 0	4	Cover Caps
	26 3810 0	2	Shock Absorber & Guide
	58 1030 0	2	Striker
	26 1820 0	2	Shock Absorber
	22 1840 0	2	Anti-Dust Caps
	4234600	2	Rashid Lateral Handle
	46 2570 0	1	Setra Handle
	01 7710 0	4	Alignment Angle
	28 1100 0	2	Drainage Cover
	GT 1124	4L+8H	Glass Gasket
	GT 1152	2L+2H+240	Glass Gasket
	WS 0710 F	4L+8H	Weather Strip



SEC B-B

Scale 1:2

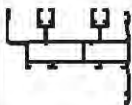


TOTAL WEIGHT

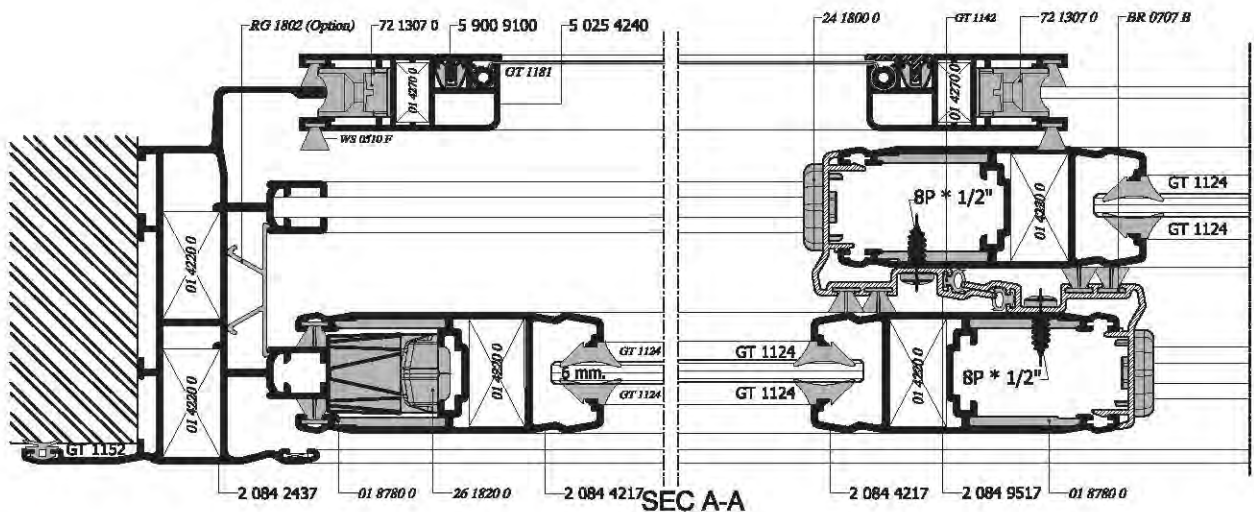
L (m.) X 7.92 Kg. +
H (m.) X 14.68 Kg.

TOTAL = 22.60 Kg.

PROFILES CUTTING LIST

FIGURE	PROF. NO	QTY.	CUTTING LENGTH
	2 048 2437	2	$L + 60$
		2	$H + 60$
	2 084 4217	4	$\frac{L - 10}{2}$
		4	$H - 83$
	2 084 9517	2	$H - 83$
	2 048 9210	2	$L - 71$
	5 025 4240	2	$\frac{L - 37}{2}$
		2	$H - 82$
	5 900 9100	2	$\frac{L - 178}{2}$
		2	$H - 153$
SINGLE GLASS"18mm"		2	$\frac{L - 275.5}{2}$
			$H - 215.5$
ALL DIMENSIONS IN mm.			

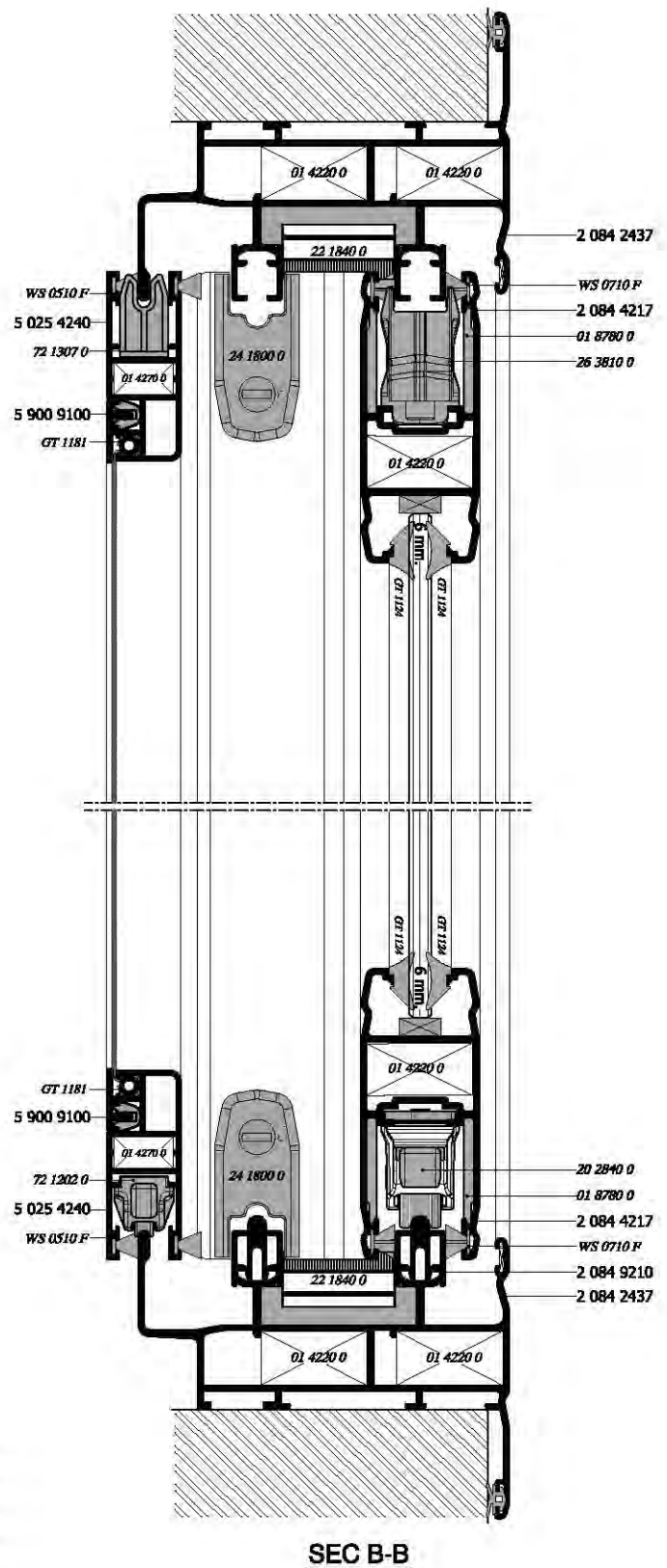
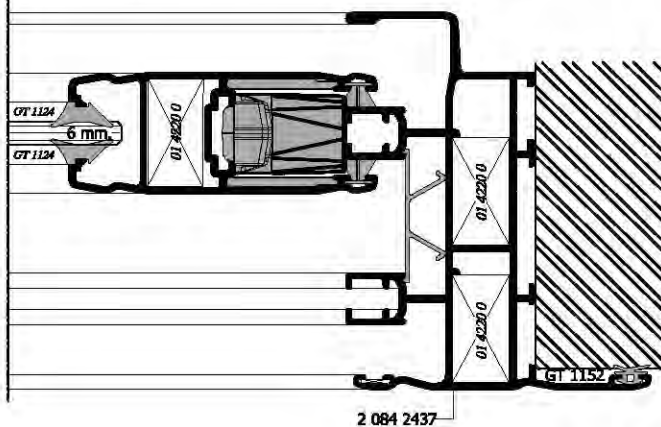
ALL DIMENSIONS IN mm.



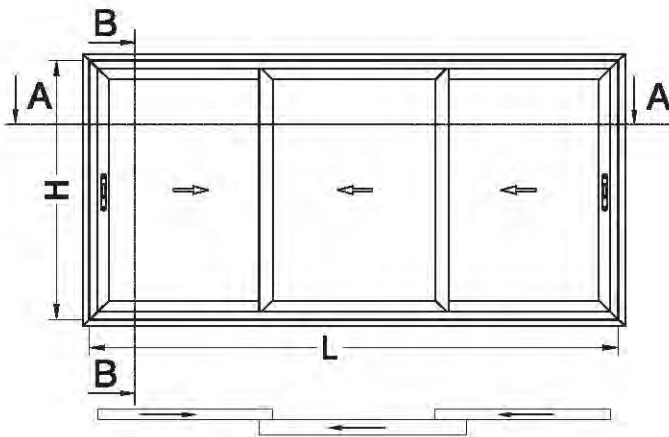


ACCESSORIES LIST

FIGURE	ACC. NO	QTY.	DESCRIPTION
	01 4220 0	16	Corner Joint
	01 8780 0	16	Alignment Angle
	20 2840 0	1	Roller set
	24 1800 0	4	Cover Caps
	26 3810 0	2	Shock Absorber & Guide
	26 1820 0	2	Shock Absorber
	22 1840 0	2	Anti-Dust Caps
	4234600	2	Rashid Lateral Handle
	46 2570 0	1	Setra Handle
	58 1030 0	2	Striker
	28 1100 0	2	Drainage Cover
	01 4270 0	4	Screen Corner Joint
	72 1307 0	4	Screen Sliders
	72 1202 0	1	Screen Roller Set
	GT 1124	4L+8H	Glass Gasket
	GT 1142	2H	Striker Gasket
	WS 0710 F	4L+8H	Weather Strip
	WS 0510	2L + 4H	Weather Strip
	GT 0181	2L + 2H	Screen Round Gasket



Scale 1:2

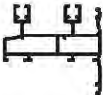
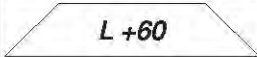
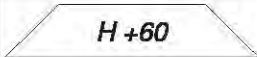
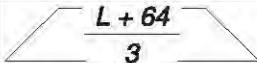
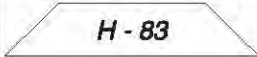
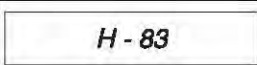
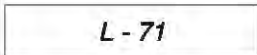
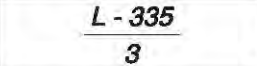
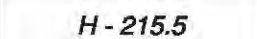


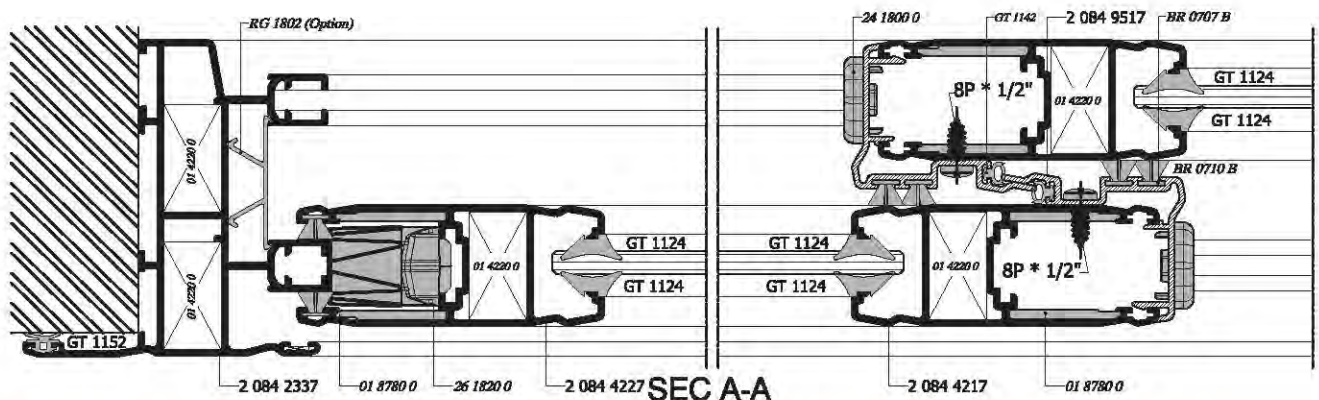
TOTAL WEIGHT

L (m.) X 2.182 Kg. +
H (m.) X 8.615 Kg.

TOTAL = 10.797 Kg.

PROFILES CUTTING LIST

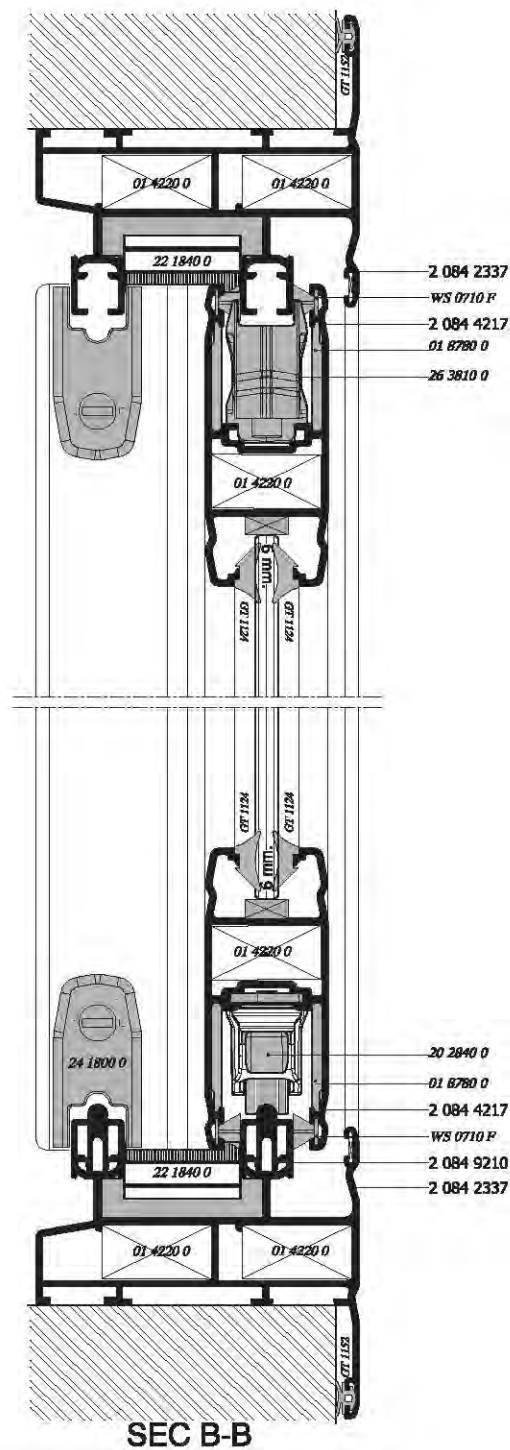
FIGURE	PROF. NO	QTY.	CUTTING LENGTH
	2 084 2337	2	
		2	
	2 084 4217	6	
		6	
	2 084 9517	4	
	2 048 9210	2	
SINGLE GLASS"18mm"		3	
			
ALL DIMENSIONS IN mm.			



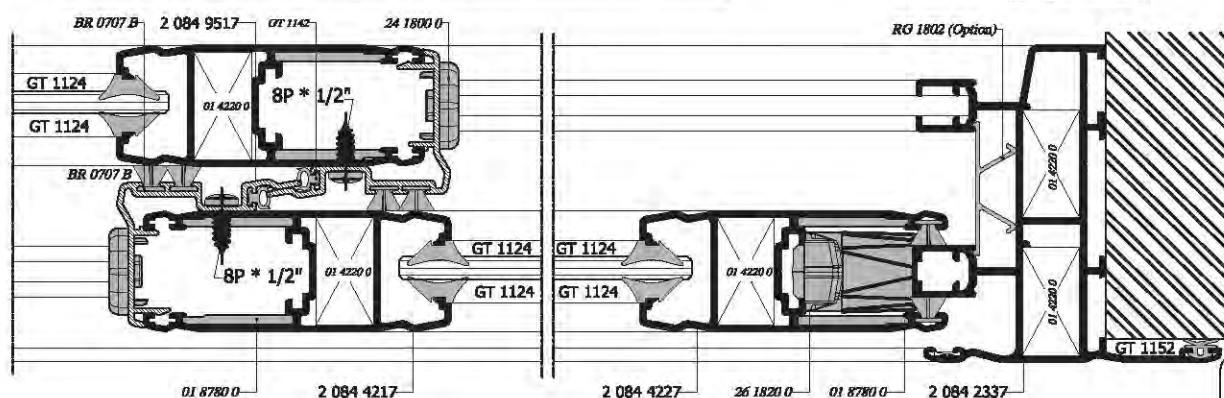


ACCESSORIES LIST

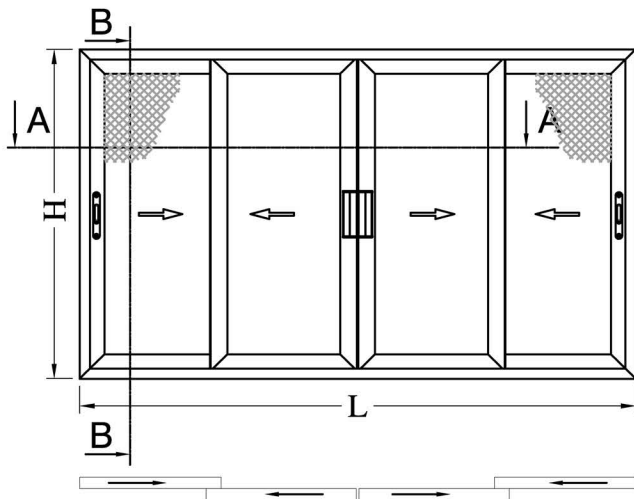
FIGURE	ACC. NO	QTY.	DESCRIPTION
	01 4220 0	20	Corner Joint
	01 8780 0	24	Alignment Angle
	20 2840 0	2	Roller set
	24 1800 0	4	Cover Caps
	26 3810 0	2	Shock Absorber & Guide
	58 1030 0	2	Striker
	26 1820 0	2	Shock Absorber
	22 1840 0	4	Anti-Dust Caps
	4234600	2	Rashid Lateral Handle
	46 2570 0	1	Setra Handle
	01 7710 0	4	Alignment Angle
	28 1100 0	2	Drainage Cover
	GT 1124	4L+12H	Glass Gasket
	GT 1152	2L+2H+240	Glass Gasket
	WS 0710 F	4L+12H	Weather Strip



SEC B-B

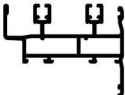


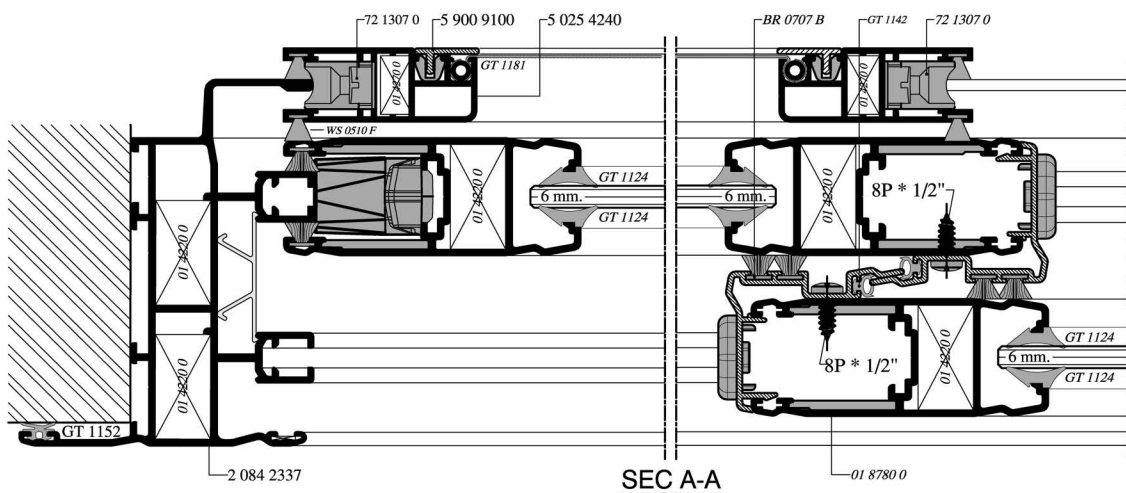
Scale 1:2



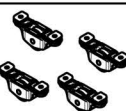
TOTAL WEIGHT	
L (m.) X 7.92 Kg.	+
H (m.) X 14.68 Kg.	

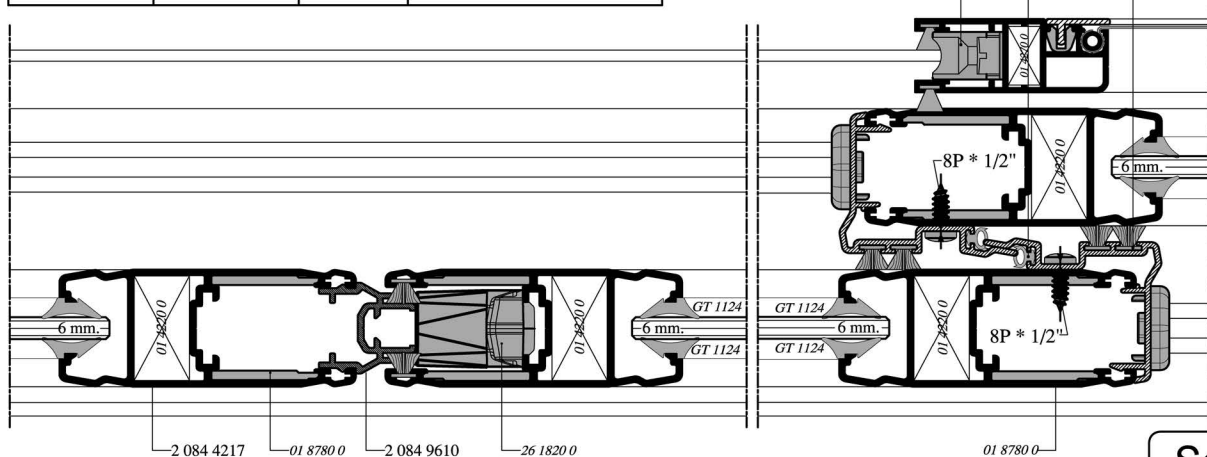
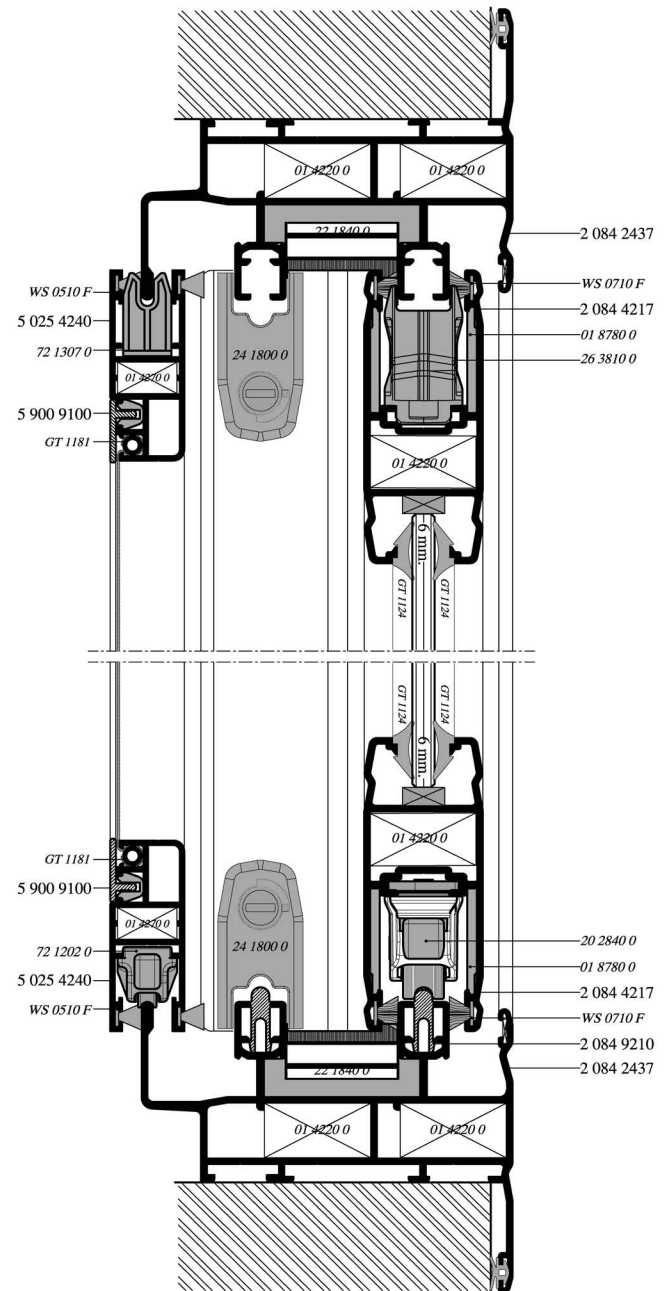
TOTAL= 22.60 Kg.	

PROFILES CUTTING LIST			
FIGURE	PROF. NO	QTY.	CUTTING LENGTH
	2 084 2437	2	L +60
		2	H +60
	2 084 4217	8	L + 55 4
		8	H - 83
	2 084 9517	4	H - 83
	2 084 9610	1	H - 83
	2 048 9210	2	L - 71
	5 025 4240	4	L 4
		4	H - 83
	5 900 9100	4	L - 281 4
		4	H - 153
SINGLE GLASS"18mm"		4	L - 477 4
			H - 215.5
ALL DIMENSIONS IN mm.			



ACCESSORIES LIST

FIGURE	ACC. NO	QTY.	DESCRIPTION
	01 4220 0	24	Corner Joint
	01 8780 0	16	Alignment Angle
	20 2840 0	2	Roller set
	24 1800 0	8	Cover Caps
	26 3810 0	4	Shock Absorber & Guide
	26 1820 0	4	Shock Absorber
	58 1030 0	2	Striker
	22 1840 0	4	Anti-Dust Caps
	42 3460 0	2	Rashid Lateral Handle
	48 2160 0	1	Isis Handle
	28 1100 0	2	Drainage Cover
	GT 1124	4L+16H	Glass Gasket
	GT 1142	4H	Striker Gasket
	WS 0710 F	4L+14H	Weather Strip



Scale 1:2

All profiles are registered as the property of

Machines & Aluminium Center

122, Mohiy Al-Din Abu Al-Ezz st. , Dokki , Giza. P.O Box: 329 Dokki 12411

Tel: +20 (2) 33363658 - 33363657 - 33360568 Fax: +20 (2) 33356237

Email: info@machalum.com

