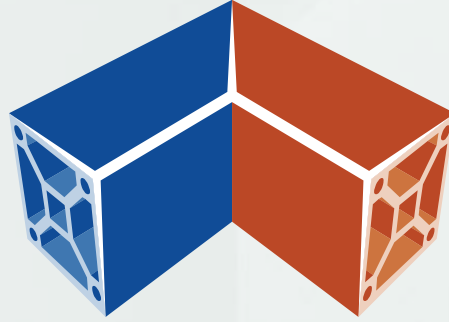




**QALEX**

الشركة القطرية لسحب الألمنيوم

QATAR ALUMINIUM EXTRUSION CO.

# **PANDA 47 HINGED NON THERMAL T-PANDA 47 HINGE - THERMAL**

**QALEX SYSTEM  
TECHNICAL CATALOGUE**

**QATAR ALUMINIUM EXTRUSION COMPANY**





**QALEX**

الشركة القطرية لسحب الألمنيوم

QATAR ALUMINIUM EXTRUSION CO.



**PANDA 47 (HINGED-NON THERMAL)**  
**T-PANDA 47 (HINGED-THERMAL)**

P.O. Box: 201698, New Salwa Industrial Area, Doha - QATAR.  
Phone: (+974) 44 333 555 / 541 / 540, Fax: (+974) 44 333 500,  
Mail: [info@qalex.com.qa](mailto:info@qalex.com.qa)  
[www.qalex.com.qa](http://www.qalex.com.qa)

# COMPANY PROFILE



## **COMPANY PROFILE :**

Qatar Aluminium Extrusion Company is the brainchild of QIMC (Qatar industrial Manufacturing company) jointly hosted along with other business tycoons of Qatar, viz. Salam International Investment Ltd, Alutec, Qatar Real Estate Investment Co., Aluminium Gulf Ray, Qatar Oman Investment Co. & Qatar Belgium Aluminium Co.

Multi Million project proudly designed and built with state of art technology plant & equipment majestically located at the pink zone of new industrial area. The plot of 28,000 sq mtrs aesthetically landscaped and engulfing a steel structure of 13,000 sq mtrs which houses modern extrusion production facilities.

## **CAPABILITIES & FACILITIES:**

**We are equipped with the following world class equipment.**

- Japan origin 2250 MT Extrusion Press with 4S (Stem Shift Short Stroke) technology with an annual capacity of 8,000 MT to 10,000 MT.
- US origin Hot Log Shear which allows to reduce both material inventory and scrap generation because it cuts the billets to correct length as needed targeting maximum yield.
- US Origin log oven with designed capacity of 4,000 Kgs of output per hour.
- US Origin taper quench unit of billets for achieving quality extrusion by maintaining constant extrude temperature and very much essential for aluminium extrusions.
- US Origin Intense run our cooling system for both hard & architectural alloys.
- US Origin Double puller operation for improved productivity & short idle time.
- US Origin Stretcher which deliver precise accurate stretching which enhances profile quality and keeps scrap to a minimum.
- US Origin Precision profile cutting finish saw delivers a highly accurate cut with accuracy, safety and easy to use and with maximum cutting length up to 8,500 mm & extendable further on special cases.



- US Origin Ageing oven are designed to deliver rapid complete ageing of profile in every batch which translates into maximum profile quality.
- Die ovens are engineered for quick and uniform heating resulting in less strain on the press and better quality for extrusion.
- Fluidized Nitriding furnace to enhance the surface quality of the products.

## OUR PRODUCTS:

### **A) MILL FINISH**

- Mill Finish.
- Architectural Alloys i.e. 6063.
- Structural Alloys i.e. 6061 & 6082.
- Other 6000 series alloys on availability.
- Minimum cut length 1,500 mm.
- Maximum cut length of 8,500 mm.
- Excess cut length in mill finish can be considered on special request and to a whopping 16m for some sections.
- With different temper like T4, T6 etc.
- Large number of profile forms and shapes can be developed on request.

### **B) POWDER COATING**

- Powder Coating in many RAL colour.
- Maximum profile length of 7,500 mm.
- Equipped laboratory to test coting quality.
- 70 to 80 microns international standard coating thickness.
- Minimum 60 microns confirmed coating thickness.
- Powder for international renowned brand.
- Regionally accepted guarantee period for coating.



### **QALEX ADVANTAGES FOR QATAR:**

- Locally based company with easy & economical accessibility.
- Technical assistance is available at hand reach.
- Immediate response to quality related issues.
- No border hassle for documental procedure.
- No bulk import and naturally no revenue block.
- Less inventory and so reduced storage space and no cash block.
- Quicker supply time which helps for quicker mock up work.
- Everything is in JIT basis (Just in Time).
- Flexible terms and condition on sales / shipment.

### **QATARI ESSENCE IN QALEX:**

- Hosted by Qatar Industrial Manufacturing Company.
- Ably co – hosted and supported by Salam International Investment Limited, Alutec, Aluminium Gulf Ray, Qatar Real Estate Investment Co., Qatar Oman Investment Co., and Qatar Belgium Aluminium Co., (All are Qatar based Company).
- The Products are procured, manufactured & fabricated in QATAR.
- Added value as raw material is produced by QATALUM.
- Powder supplied by KAHRAMAA, a Qatari Government Corp.
- Gas produced by QP & distributed by WOQOD.
- Reduced material wastages, which are totally recycled.



## SOURCE OF RAW MATERIAL SUPPLY

### ALUMINIUM LOGS:

- Aluminium Logs supplied by QATALUM, A Qatari Government Company.



- Architectural Alloys i.e. 6005 & 6063 ,6060.
- Structural Alloys i.e. 6082 & 6061.
- Other 6000 series alloys on availability.

### POWDER COATING:

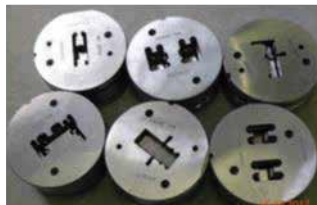
- Powder coating supplied by JOTUN POWDER COATINGS & AKZONOBEL.



- Powder coating available in many RAL colour.

### ALUMINIUM EXTRUSION DIE & TOOLINGS HAS BEEN OUT SOURCED FROM MANY SUPPLIERS ACROSS EUROPIEN REGION:

- ALUTOOL, UK.
- EROGA, UK.
- ELITE, UK.
- EKSENAL, TURKEY.
- ..... Many more.



# CERTIFICATES



CERTIFICAT

CERTIFICADO

‘EPHtrATH

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CERTIFICATE

ZERTIFIKAT



# CERTIFICATE

The Certification Body  
of TÜV SÜD Middle East L.L.C.

certifies that



**GALEX**

الشركة القطرية لسحب الألمنيوم  
QATAR ALUMINIUM EXTRUSION CO.

**Qatar Aluminium Extrusion Company**  
P. O. Box: 201698, New Industrial Area  
Doha, Qatar

has established and applies  
a Quality Management System for

**Manufacturing and Supply of Aluminium Extruded  
( Mill Finish & Powder Coated ) Profiles**

An audit was performed, Report No. **50343**

Proof has been furnished that the requirements  
according to

**ISO 9001:2008**

are fulfilled.

The certificate is valid from **2017-03-28** until **2018-09-14**

Certificate Registration No. **ME 9K 0095 DAC**

Dubai, 2017-04-04



**CB-021**

**TÜV®**

TÜV SÜD Middle East L.L.C., P.O. Box: 2834, Empire Heights Tower A, Business Bay, Dubai, United Arab Emirates



Quali Middle East Association

## **MEMBERSHIP CERTIFICATION**

This is to certify that

**QATAR ALUMINIUM EXTRUSION CO.**

P.O BOX 201698, DOHA, QATAR

*Membership Ref.: A031*

is a member of the Quali Middle East Association and is a signatory to  
the policies and procedures related to the membership of the  
Association.

Period of validity of the certificate: until 31.12.2017

Dubai, 15 December 2016

**QUALI MIDDLE EAST ASSOCIATION**

**Nasir Fahmeed**  
General Secretary

Mailing address: QMEA, P.O. Box 23070  
Office 1801, 48 Burj Gate, Burj Khalifa Community  
Downtown, Sheikh Zayed Road  
Dubai, United Arab Emirates

Phone: +971 4 321 2317  
Fax: +971 4 321 1986  
E-Mail: [admin@qualimiddleeast.com](mailto:admin@qualimiddleeast.com)  
Internet: [www.qualimiddleeast.com](http://www.qualimiddleeast.com)

*QMEA Professional License No: 577215 issued by Dubai Economic Department*



# CERTIFICATE OF QUALITY



This is to certify that

**Qatar Aluminium Extrusion Company**

fulfills the requirements set by Technoform in the assembly of quality Thermal Break Systems.  
The aforementioned company possesses adequate technical know-how, and uses only genuine  
polyamide strips made of PA66/GF25, in compliance with Technoform's standards.

  
Technoform Middle East  
Managing Director



Certified till August, 2017

**TECHNOFORM MIDDLE EAST**



# Certificate of Approval

**Qatar Aluminium Extrusion Co.**

is certified as an Approved Applicator to coat

**Jotun Durasol**

a product from Jotun Powder Coatings

This company fulfils the requirements set by Jotun Powder Coatings for pre-treatment and application of powder coatings. These include having the necessary equipment, process controls and technical knowledge to comply with Jotun Powder Coatings' standards.



**January 01, 2017**

(Certificate valid for one year from date above)

Authorised Signatory  
Jotun Powder Coatings UAE (LLC)



# Certificate of Approval

**Qatar Aluminium Extrusion Co.**

is certified as an Approved Applicator to coat

**Jotun Super Durable**

a product from Jotun Powder Coatings

This company fulfils the requirements set by Jotun Powder Coatings for pre-treatment and application of powder coatings. These include having the necessary equipment, process controls and technical knowledge to comply with Jotun Powder Coatings' standards.

January 01, 2017

(Certificate valid for one year from date above)



  
Authorised Signatory  
Jotun Powder Coatings UAE (LLC)



## Interpon D Approved Applicator



### Interpon D1000 Series

#### Qatar Aluminium Extrusion Company

P.O. Box 201698, New Industrial Area, Doha,  
**Qatar**

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

**6 September 2016 to 5 September 2017**

Approved for Aluminium Alloys AA 6061 and AA 6063

Approved for Pre-treatment Type Chrome - free

**Esmeralda Maria Malo**  
Business Development Manager  
Middle East and Africa

Date: 18/09/2016

Certification number N° QAT05D1

AkzoNobel U.A.E. Paints L.L.C.



**AkzoNobel**

## Interpon D Approved Applicator



### Interpon D2000 Series

#### Qatar Aluminium Extrusion Company

P.O. Box 201698, New Industrial Area, Doha,  
**Qatar**

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

**6 September 2016 to 5 September 2017**

Approved for Aluminium Alloys AA 6061 and AA 6063

Approved for Pre-treatment Type Chrome - free

**Esmeralda Maria Malo**  
Business Development Manager  
Middle East and Africa

Date: 18/09/2016

Certification number N° QAT05D2

AkzoNobel U.A.E. Paints L.L.C.

# INDEX

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| ACCESSORIES | 83 - 84 |





## PANDA 47 (HINGED-NON THERMAL)

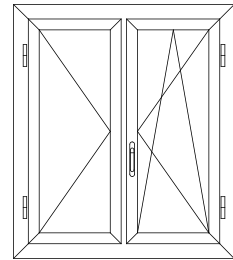


## TECHNICAL DESCRIPTION OF THE SYSTEM:

### System description:

Aluminum profiles system, hardware and gaskets for the fabrication of Hinged Window & Doors with single and double glass .

**Aluminum alloy:** EN-AW-6063 (EN 573-3 EN 755-2)  
**Alloy treatment:** T 6  
**Dimensional tolerances:** UNI-EN 12020-2



### System features and characteristics:

The Depth of Fixed Frame is 47-55 mm & Flap Depth is 55 mm, with an overlap in the interlock of 8 mm. The Bars are able to accept the accessories for the corner connection . The Profile are Softline designed ,with regular or curved beads cut at 45° or 90°, with or without corner finishing pieces. With Glazing Gap range 13.5 - 32.5 mm.

### Mechanical Characteristics:

Elastic Limit : > 16.5 KG/MM  
Elongation : 10%  
Breaking Strength : 22 KG/MM  
T : > 24 N/MM (After Surface Treatment)

### System performances:

This system have been tested and classified according to norms the European standards and norms EN 14351 -1:2006 At Mater Lab Italy -Test No:062016INT

Air Leakage : EN 12207

Water Resistance : EN 12208

Wind Load : EN 12210/12211

### Sealing Type Air - Water:

The sealing is guaranteed by a central sealing gasket in EPDM-Rubber ASTM Tested. and second barrier, Constituted by a sealing gasket is in the flap by the inside overlap. & Glazing is done with EPDM Sealing Gasket.

### System dimensions:

The Dimensional limits of Fabrication are as a direct Consequences of the wind pressure, or the accessories capacities, and the glazing weight.

### Field of application:

The system have been created and studied to be apply on private buildings as well on public buildings and high rise towers.

### Design features:

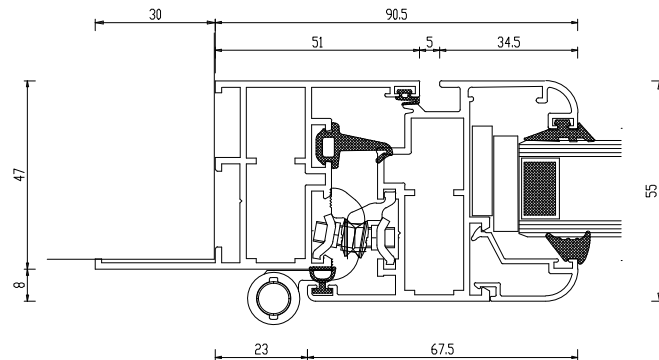
The system it is composed of various design solutions including all types of projecting windows and others openings. The external lines are lightly rounded conferring to the profiles a good design and equilibrate sections. The system it is design in order to insure good performances and have at the same time a modern style.

### Surface Treatment:

All the surface treatment are conform to the quality labels QUALICOAT for Powder Coating and QUALANOD for anodization. Anodizing we guarantee the minimum thickness of 15 micron up to 25 microns according to international norms. The powder coating is done with thermosetting and Polyesters Polymeric powders, the profiles are finished into special coating ovens, where the powders reach the right hardness through a heat treatment.



| <b>ALUMINIUM PROFILES SYSTEM FOR HINGED WINDOWS &amp; DOORS</b> |                           |
|-----------------------------------------------------------------|---------------------------|
| <b>SYSTEM DIMENSIONS AND DESCRIPTION</b>                        |                           |
| <b>FIXED FRAME DEPTH:</b>                                       | <b>47 mm</b>              |
| <b>SLIDING FRAME DEPTH</b>                                      | <b>55 mm</b>              |
| <b>SEALING:</b>                                                 | <b>BY DOUBLE GASKETS</b>  |
| <b>SECTION DIMENSION</b>                                        | <b>90.5-139 MM</b>        |
| <b>ACCESSORIES:</b>                                             | <b>SYSTEM ACCESSORIES</b> |
| <b>GLAZING:</b>                                                 | <b>13.5-32.5 mm</b>       |
| <b>ALUMINIUM ALLOY</b>                                          | <b>AA 6063 T6</b>         |



## Surface treatment resistance:

The surface treatment done according to QUALANOAD and QUALICOAT Quality labels shall be guarantee against corrosion and surface aging degradation for a period, The surface treatments shall resist to normal and marine exposition without been effected by corrosion or loss of shines. The most relevant factors influencing the surface treatment life lasting are the direct exposure to chemicals. The direct exposure in the front of the sea and/or salty water it may reduce the life lasting of the components. The exposure to heavy polluted environment may cause also problems. A regular cleaning with Ph neutral water and soaps increase the components life.

## Safety:

In order to prevent injuries or/an accidents the windows and doors are to be installed as displayed into this catalogue, anchoring the components to the building and using original only accessories. The fixing should be made according to the National norms for security and safety use.

## Gaskets:

The gaskets used during assembling and installing the components should be only the ones created for this system and displayed in this product catalogue. The use of other gaskets or/and brushes it may cause functional and design problems. The gaskets used should be conform to the national norms for windows and doors safety applications, do not release toxic smokes in case of fire and insure the performances during all the component life lasting.

## Sealing products:

All the sealing products employed during the fabrication of the components and installing the components on the building are to be conform to the specification uses for aluminum profiles and its surface treatments. Sealing products should be PH neutral and specifically studied do not start any chemical or/and corrosive reaction with the windows and doors components, accessories, gaskets and surface treatments.

## Accessories:

All the accessories used for the manufacturing, mounting, functioning and installation of this system are specifically studied for this system in order to insure performances and a correct functioning of the models. The use of others accessories different's from the ones displayed in this catalogue it may effect or/and make dangerous the functioning of the component. Only the accessories studied for this system are the ones to be used.



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## Test report

**Test number:** 062016INT

**Customer:** QALEX (Qatar Aluminium Extrusion CO.)

**Test sequence:** Air leakage EN12207; Water resistance EN12208; Wind load EN12210/12211

**Test parameters:**  $T_{air} = 25.2\text{ }^{\circ}\text{C}$ ,  $T_{water} = 23.0\text{ }^{\circ}\text{C}$ , Rh 51.2%, pressure 999 hPa

**Sample type:** Side hinged window, 2 sash (QALEX Panda 47)

**Sample dimension:** Frame W=1450 mm; H=1670 mm

### Test bench

**Model:** ACS 3030

**Max dimension test:** 3000 x 3000 mm

**Fan:** inverter driven system with continuous check of pressure in test chamber, and continuous measurement of flow rate

**Hydraulic pump:** valve adjustment and continuous measurement of flow rate with infrared flow meter

**Auxiliary equipment:** fog machine



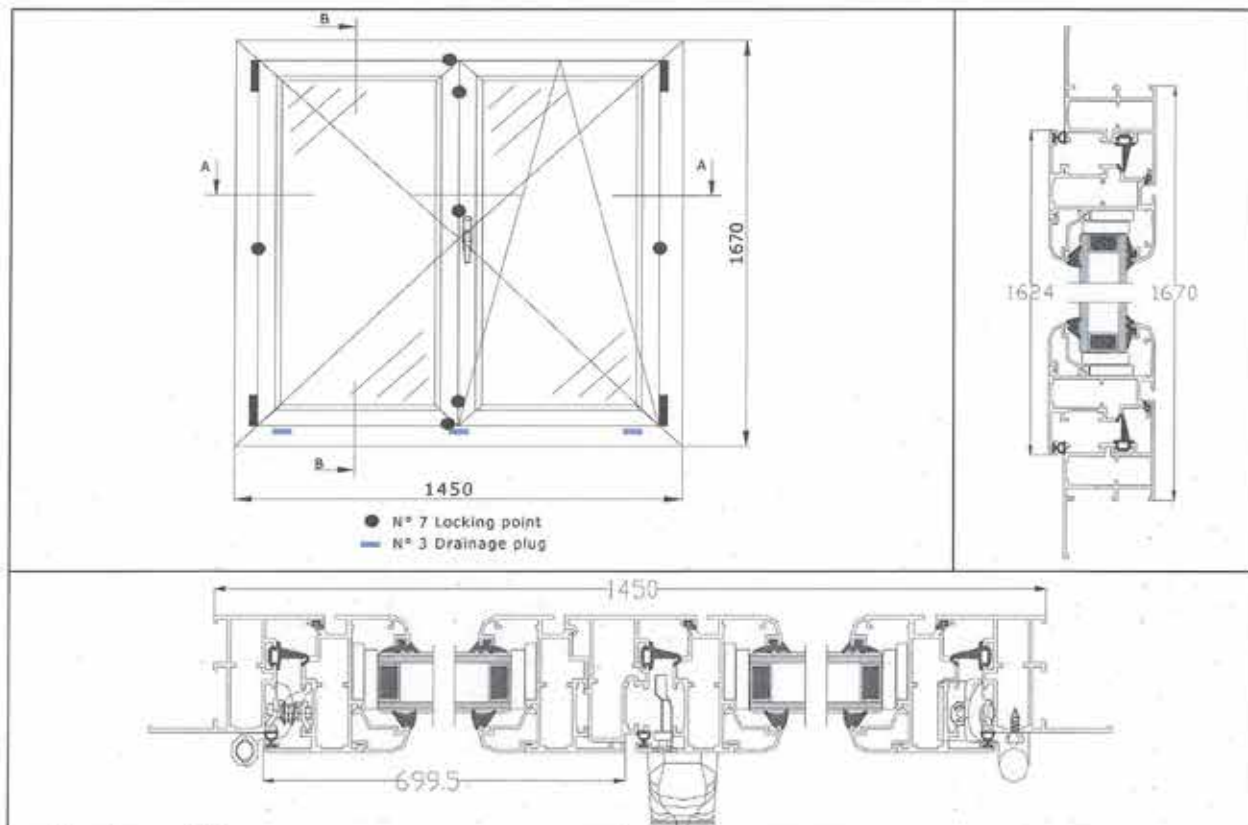
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### Frontal view and sections:



### Hardware list:

| Cod.     | Description                                                                   | Qty |
|----------|-------------------------------------------------------------------------------|-----|
| 2010.2   | Polyamide rod - Coil from 250m                                                | -   |
| 2415     | "ROXI" Frame adjusting plate                                                  | 10  |
| 2422     | Frame adjusting setscrews - Length 20mm                                       | 10  |
| 2144     | Drainage plug                                                                 | 3   |
| 2432.1   | Shutter support Kit with roller                                               | 1   |
| 3420F.1  | "WEEN" Basic kit with anti-false manoeuvre on the cremone bolt - load 160 Kg  | 1   |
| 3400.22  | "WEEN" Long arm (for sash from 601mm to 1700 mm)                              | 1   |
| 3400F.31 | "WEEN" Horizontal lower and vertical Supplementary Closing                    | 1   |
| 4206     | Zamak Double-Rod junction                                                     | 1   |
| 4226.1   | "HOOK" Additional intermediate third closing point                            | 1   |
| 4515.1   | "BI-HID" Kit of bi-directional latches                                        | 1   |
| 6011.10  | "COMFORT" Cremone for Tilt&Turn with anti-false manoeuvre on the cremone bolt | 1   |
| 9211.3   | "TOP RAPID" Fast mounting hinge                                               | 2   |

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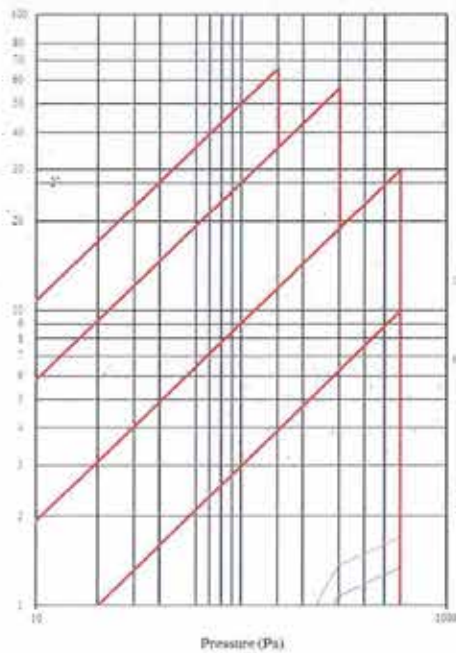
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**Air leakage:**



**Classification: grade 4**

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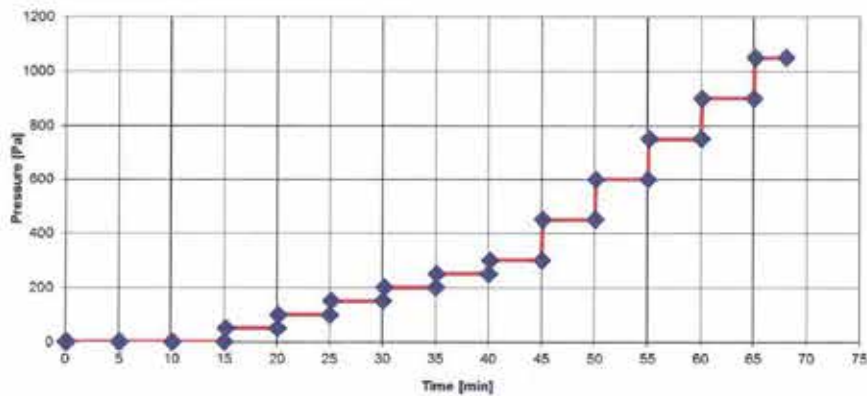
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### Water resistance:

Test sequence



Water leaks at 1050 Pa

Classification: grade E900

Picture:



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**Wind load:**



test pressure:  $\pm 2000$  Pa  
deflection:  $< 1/300$

safety pressure:  $\pm 3000$  Pa  
classification: C5

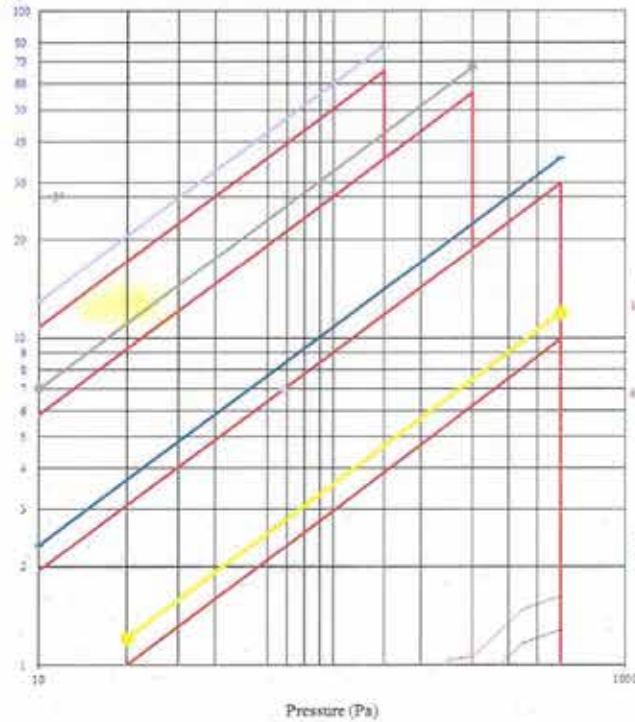
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### Air leakage check:



result: passed

### Test results

| Air leakage | Water resistance | Wind load |
|-------------|------------------|-----------|
| 4           | E900             | C5        |

June 13<sup>rd</sup>, 2016

Lab assistant  
Nicola Antonio Dentamaro

**MasterLAB s.r.l.**  
Unipersonale  
S.P. 37 Conversano-Castiglione Km. 0,700  
70014 CONVERSANO (BA)  
C.F./P. IVA 06835770725

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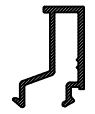
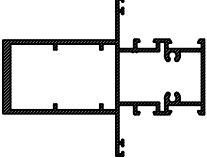
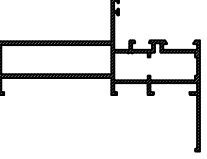
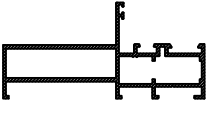
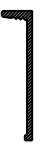
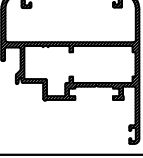


| CODE  | Y<br>DRAWING<br>X | DESCRIPTION                            | Weight<br>kg/m | Surface<br>□x mm | Ix<br>cm <sup>4</sup> | Iy<br>cm <sup>4</sup> |
|-------|-------------------|----------------------------------------|----------------|------------------|-----------------------|-----------------------|
| 90300 |                   | Frame without Arcitrave                | 908            | 79               | 5.19                  | 9.48                  |
| 90301 |                   | Shutter                                | 1.080          | 113.5            | 9.06                  | 15.66                 |
| 90302 |                   | Adaptor                                | 978            | 101              | 7.14                  | 11.45                 |
| 90303 |                   | frame with Arcitrave                   | 1.007          | 116.5            | 12.01                 | 10.08                 |
| 90304 |                   | Double frame with Arcitrave            | 1.528          | 162.5            | 19.76                 | 32.85                 |
| 90305 |                   | Double Shutter for door inside opening | 1.723          | 161              | 26.65                 | 32.67                 |
| 90306 |                   | Shutter for door outside opening       | 1.747          | 166.5            | 26.06                 | 34.82                 |
| 90307 |                   | T section Big                          | 1.299          | 132              | 13.31                 | 16.04                 |
| 90308 |                   | T-profile                              | 1.019          | 108              | 10.62                 | 8.55                  |
| 90310 |                   | Adaptor                                | 783            | 62               | 4.11                  | 7.38                  |

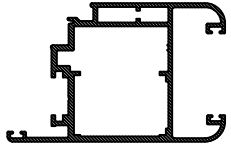
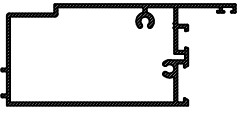
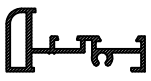


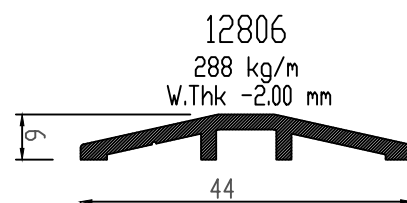
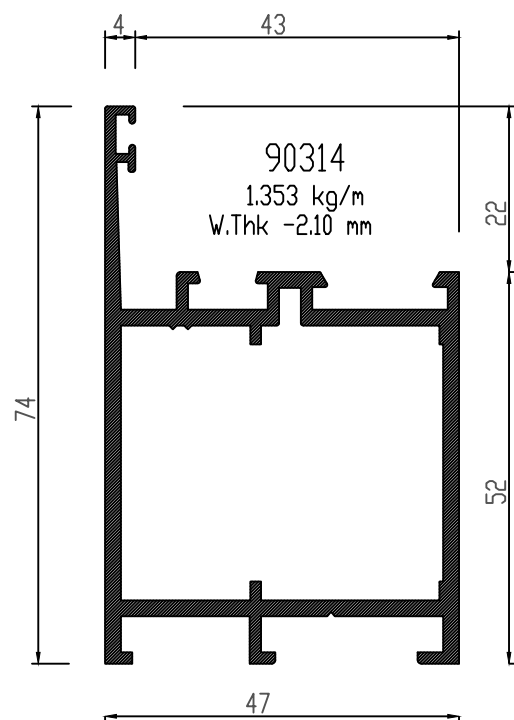
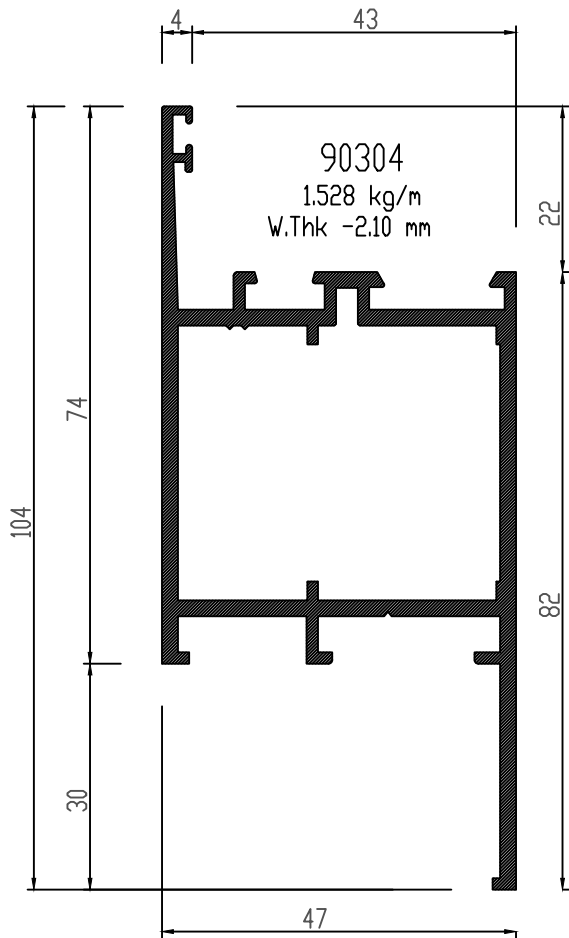
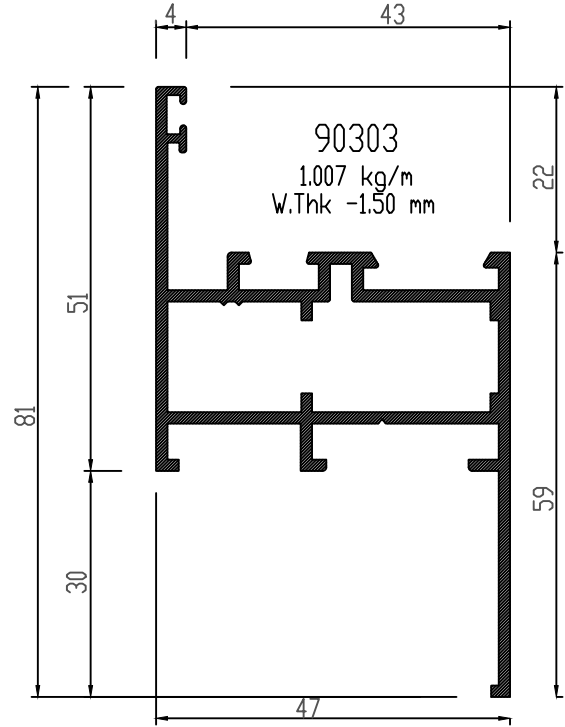
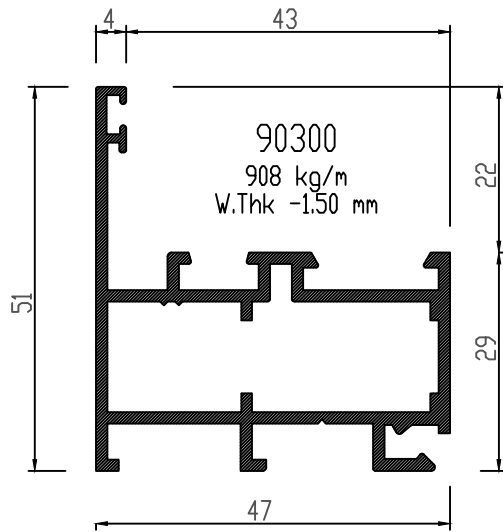
| CODE  | Y<br>DRAWING<br>X | DESCRIPTION                    | Weight<br>kg/m | Surface<br>□x mm | Ix<br>cm <sup>4</sup> | Iy<br>cm <sup>4</sup> |
|-------|-------------------|--------------------------------|----------------|------------------|-----------------------|-----------------------|
| 90311 |                   | Big transom                    | 2.395          | 264              | 31.06                 | 150.96                |
| 90312 |                   | Bottom Door                    | 2.454          | 278              | 33.62                 | 183.21                |
| 90314 |                   | Double frame                   | 1.353          | 130              | 16.34                 | 20.53                 |
| 90315 |                   | Round Glazing bead space 24mm  | 265            | 37               | -                     | -                     |
| 90316 |                   | Normal Glazing bead space 24mm | 277            | 40               | -                     | -                     |
| 90317 |                   | Normal Glazing bead space 18mm | 302            | 46               | -                     | -                     |
| 90318 |                   | Round Glazing bead space 18mm  | 289            | 43               | -                     | -                     |
| 90319 |                   | Round Glazing bead space 28mm  | 254            | 33               | -                     | -                     |
| 90320 |                   | Round Glazing bead space 32mm  | 243            | 29               | -                     | -                     |
| 90321 |                   | Normal Glazing bead space 28mm | 266            | 36               | -                     | -                     |

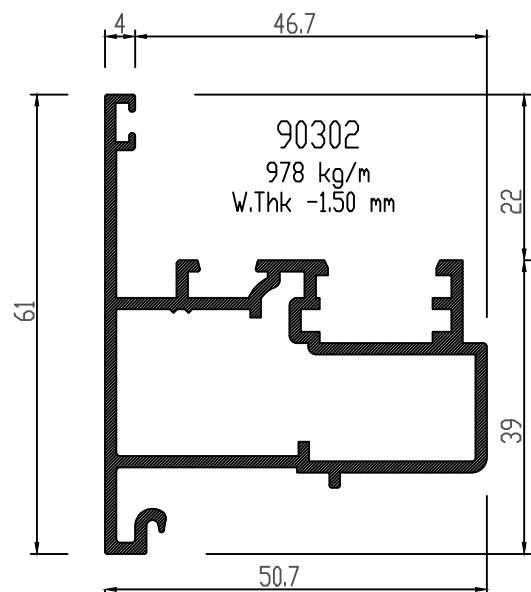
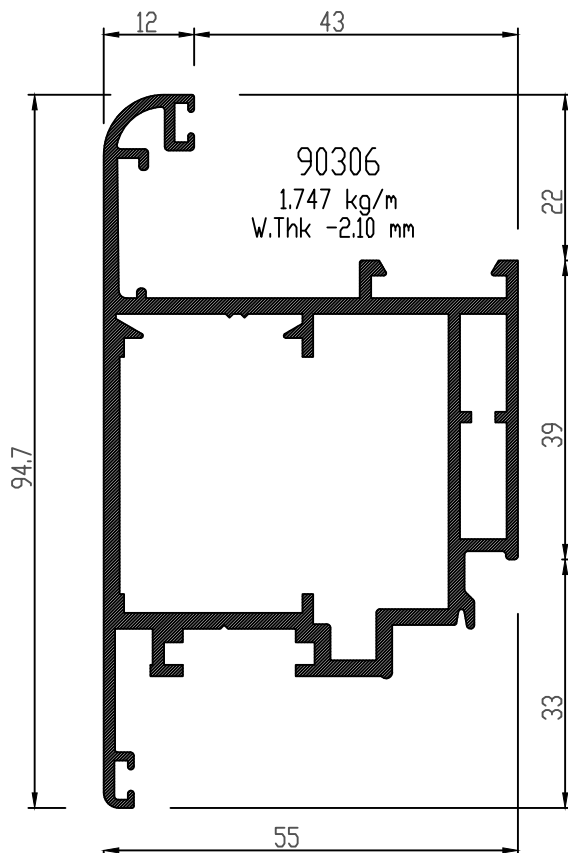
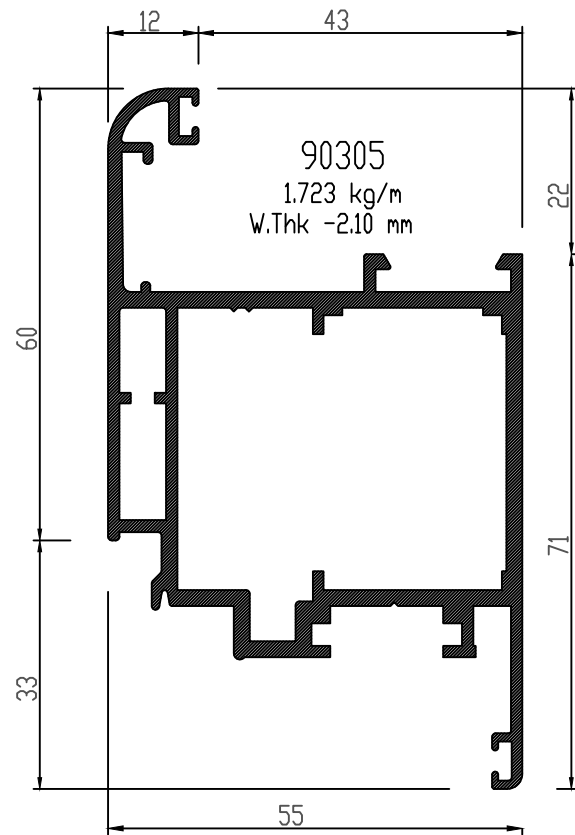
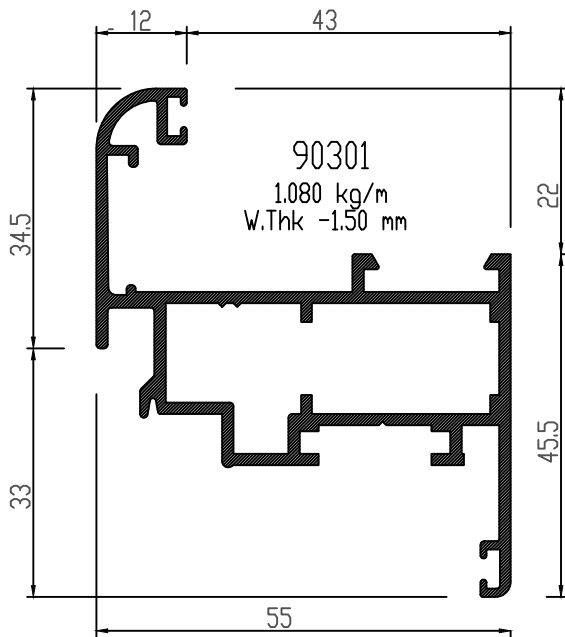


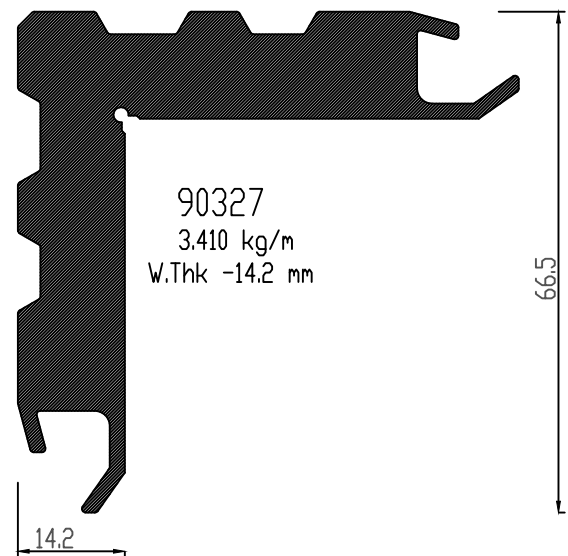
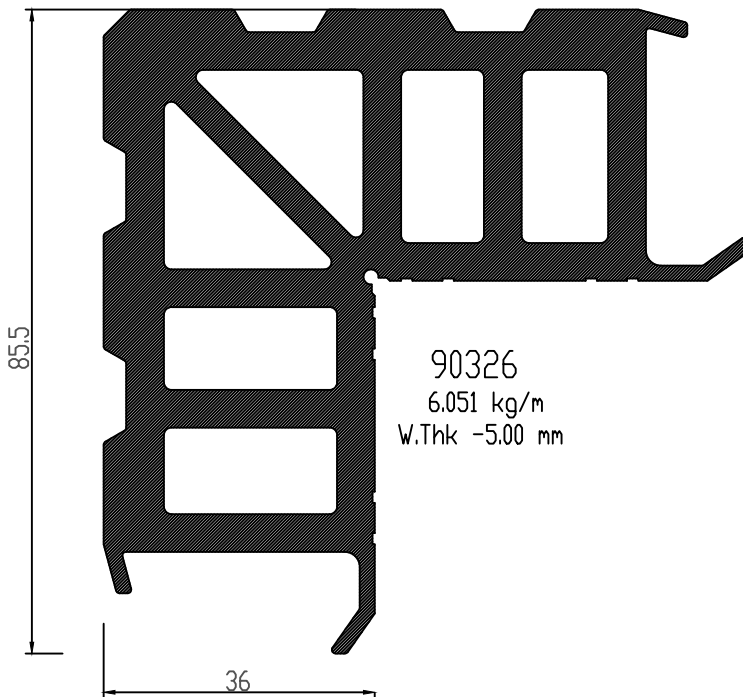
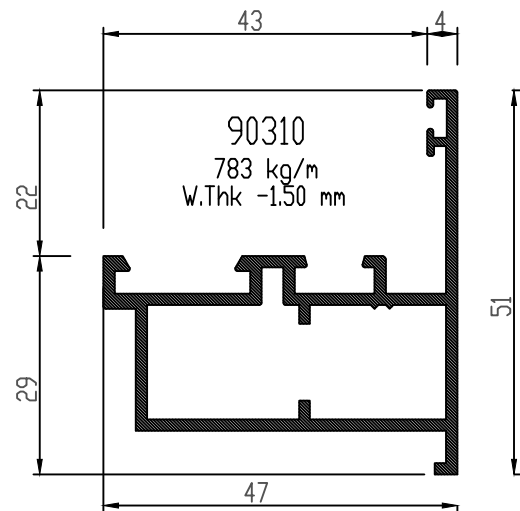
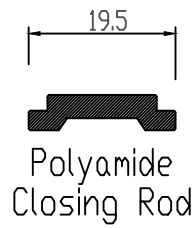
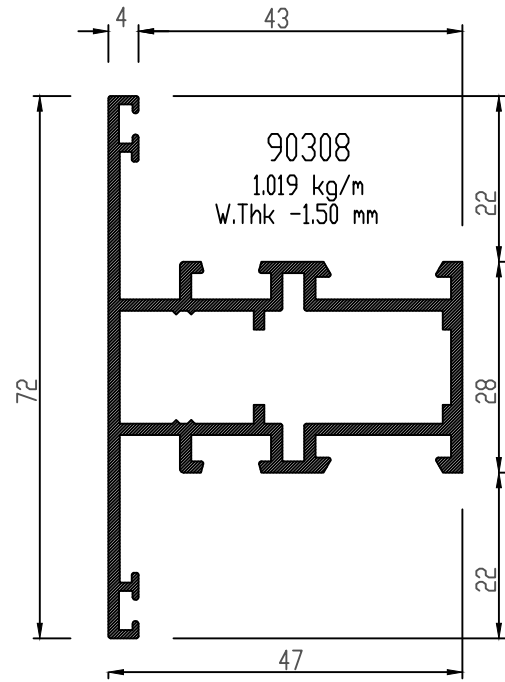
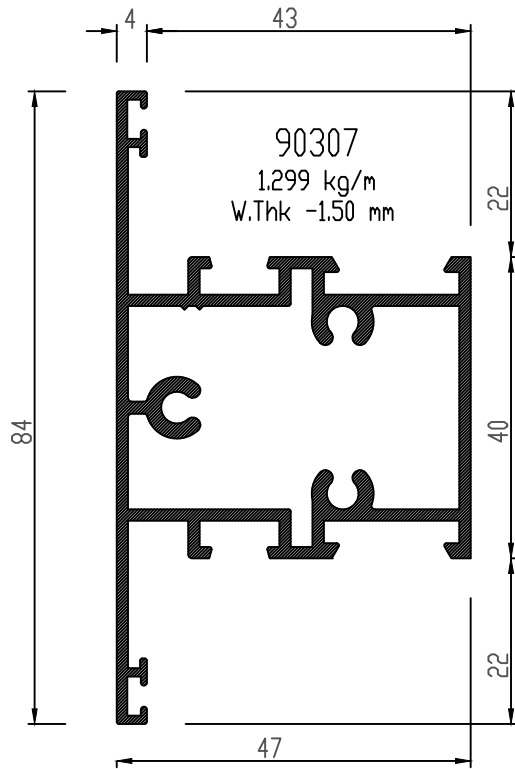
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|--------|----------------------------------------------------------------------------------------------|----------------------------------------|----------------|------------------|-----------------------|-----------------------|
| 90322  |             | Normal Glazing bead<br>space 32mm      | 256            | 32               | -                     | -                     |
| 90323  |             | T Section<br>Tubular                   | 2.276          | 252              | 26.13                 | 101.73                |
| 90324  |             | Frame with archrive<br>Tubular         | 1.760          | 176.5            | 12.51                 | 76.11                 |
| 90325  |             | Frame with archrive<br>Tubular         | 1.634          | 144              | 7.19                  | 65.04                 |
| 90422  |           | Overlap profile                        | 180            | 36               | -                     | -                     |
| QXP003 |           | Closing rod<br>Polyamide               | -              | -                | -                     | -                     |
| 90326  |           | Climping corner joint                  | 6.051          | -                | -                     | -                     |
| 90327  |           | Climping corner joint                  | 3.410          | -                | -                     | -                     |
| 90328* |           | Shutter without<br>Glazing bead        | 1.115          | 137              | 9.09                  | 16.36                 |
| 90329* |           | Glazing bead with clip<br>space 32.5mm | 197            | 28               | -                     | -                     |

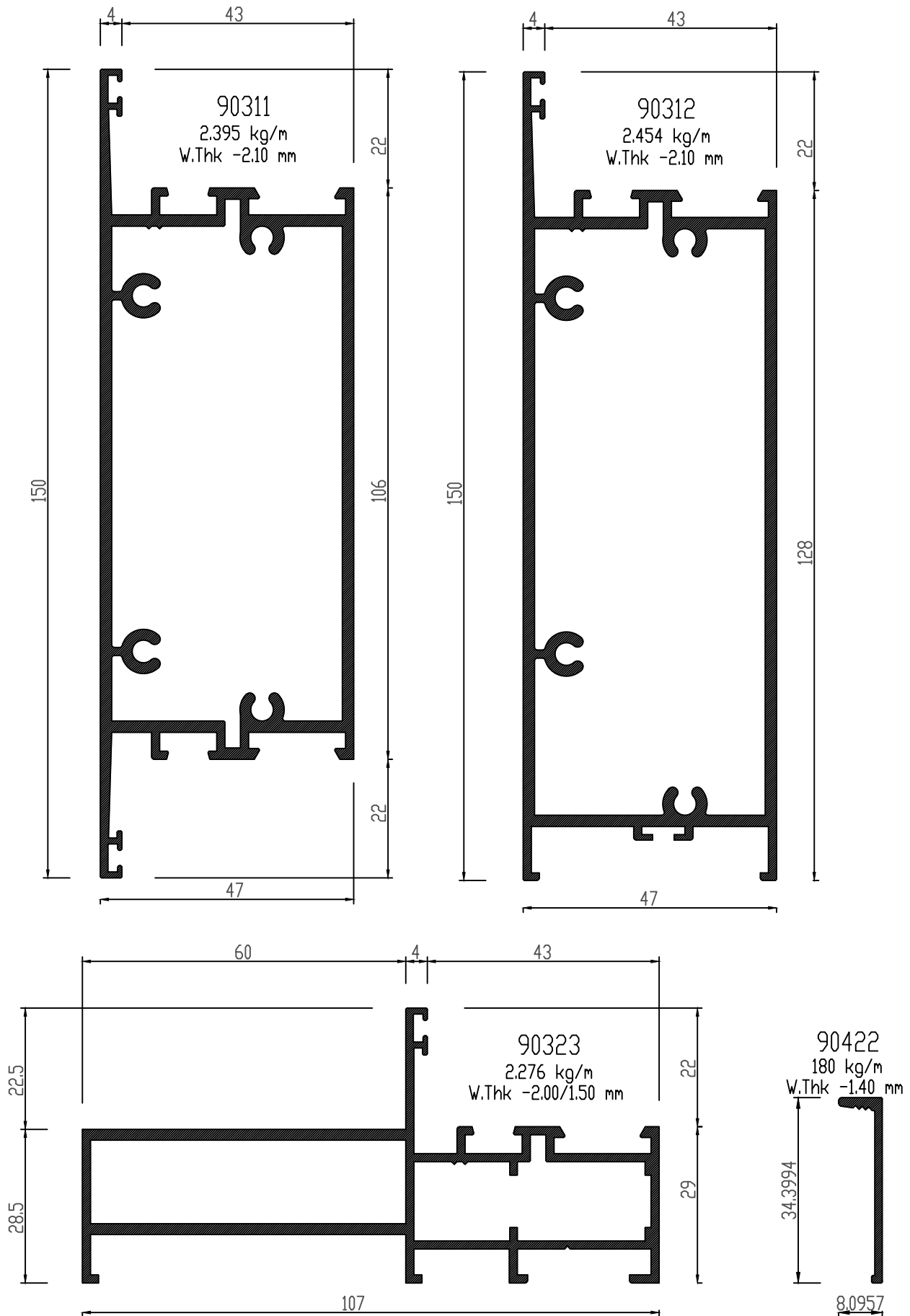


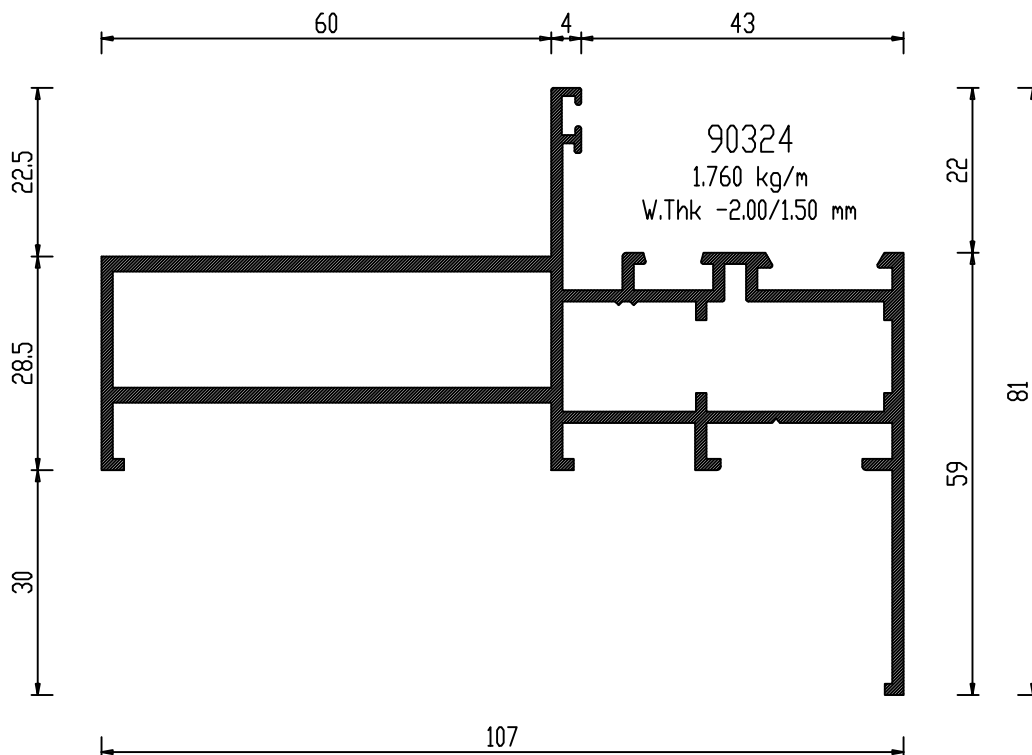
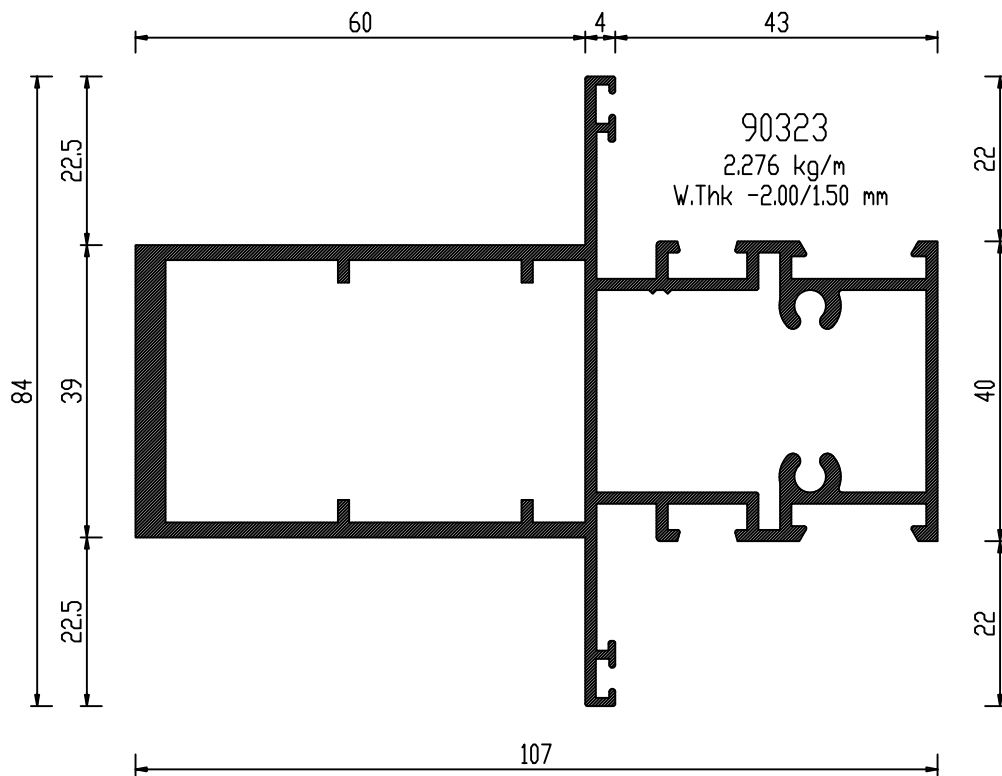
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|--------|----------------------------------------------------------------------------------------------|-------------------------------------------------|----------------|------------------|-----------------------|-----------------------|
| 90330* |             | Glazing bead with clip<br>space 13.5mm          | 265            | 47               | -                     | -                     |
| 90331* |             | Double Shotter without<br>Glazing bead for door | 1.652          | 184.5            | 26.28                 | 31.48                 |
| 90332* |             | Water Stopper                                   | 154            | 25               | 0.12                  | 0.21                  |
| 90309  |             | Bottom<br>Door Profile                          | 1.412          | 172              | 17.96                 | 52.96                 |
| 90333  |           | Threshold                                       | 691            | 50               | 0.98                  | 8.46                  |
| 12806  |           | Small threshold                                 | 288            | 27.5             | 0.02                  | 1.56                  |
| 90421  |           | Water Stopper                                   | 122            | 25               | 0.04                  | 0.11                  |
|        |                                                                                              |                                                 |                |                  |                       |                       |
|        |                                                                                              |                                                 |                |                  |                       |                       |
|        |                                                                                              |                                                 |                |                  |                       |                       |

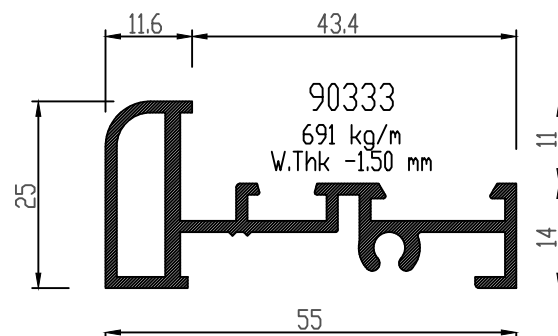
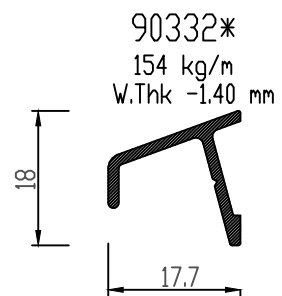
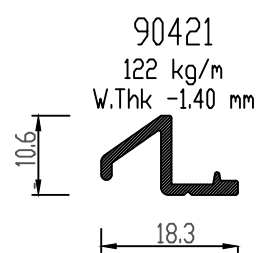
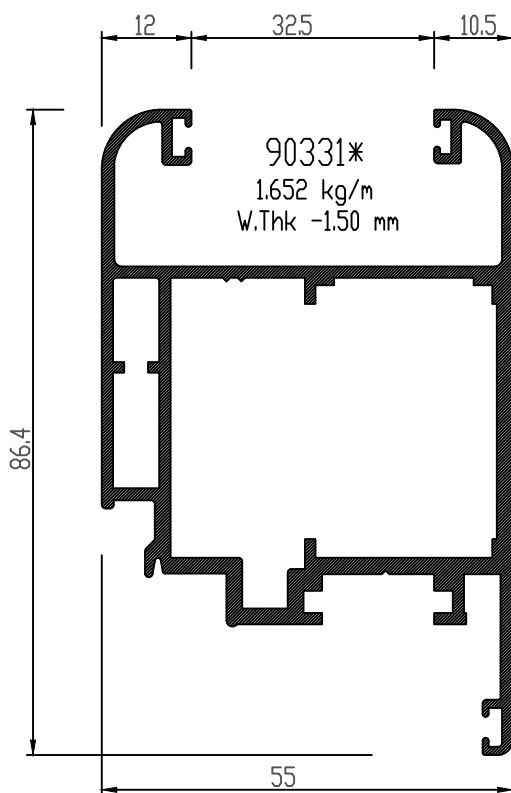
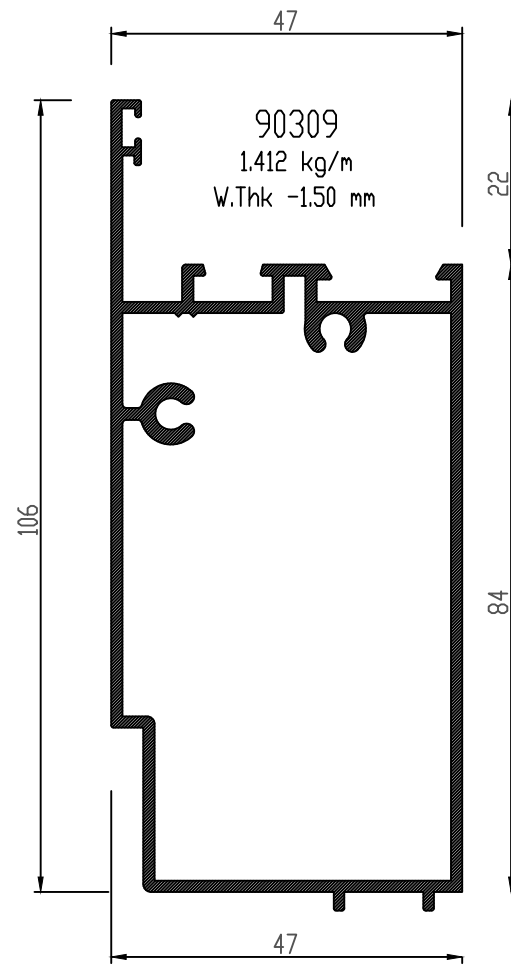
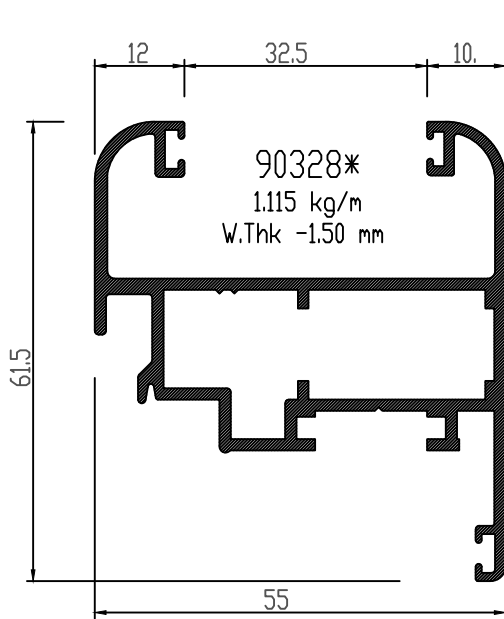


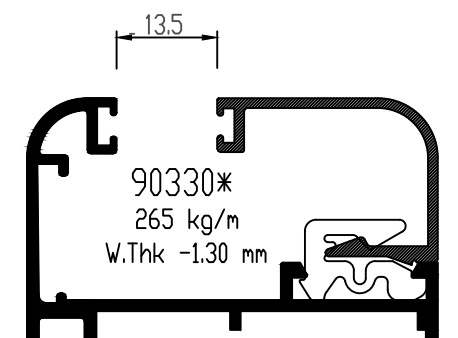
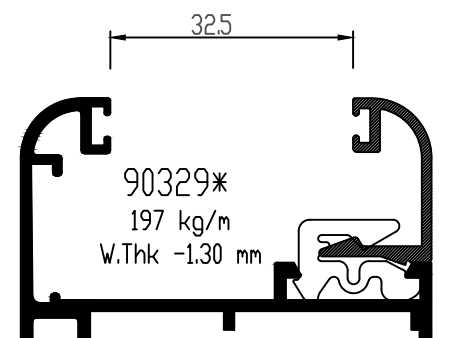
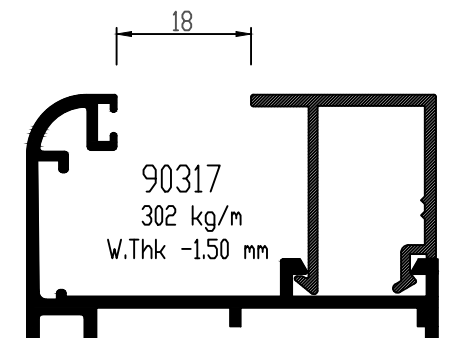
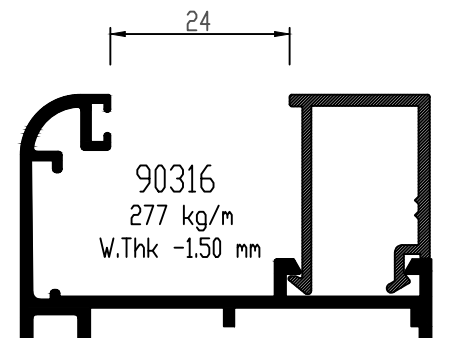
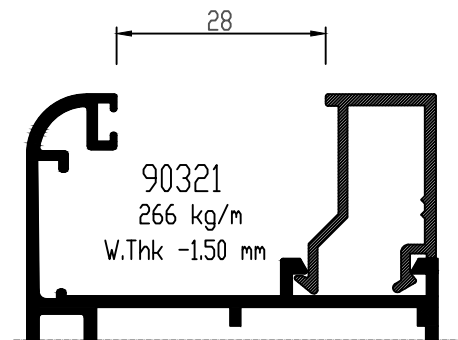
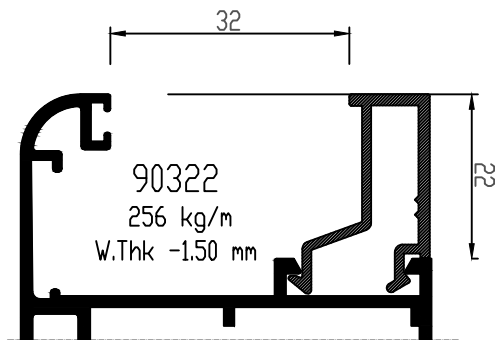
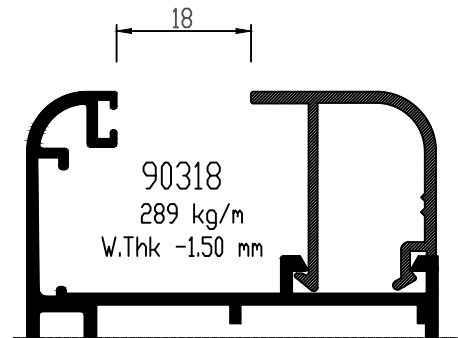
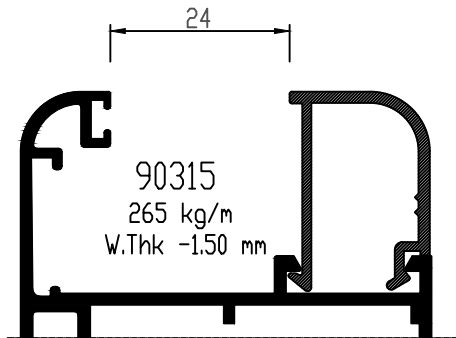
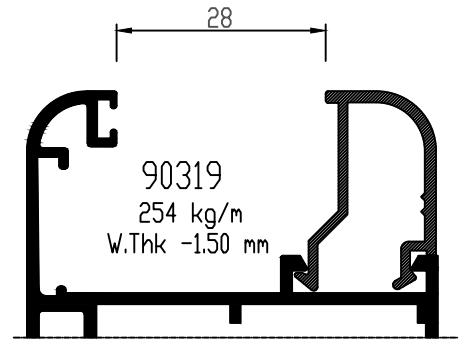
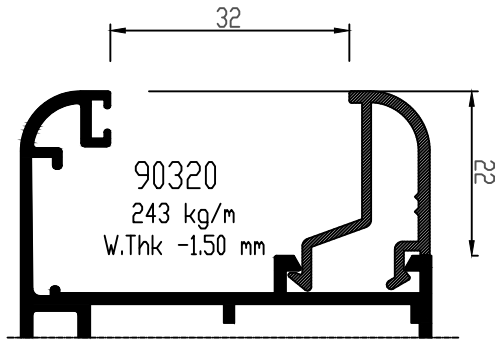


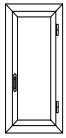




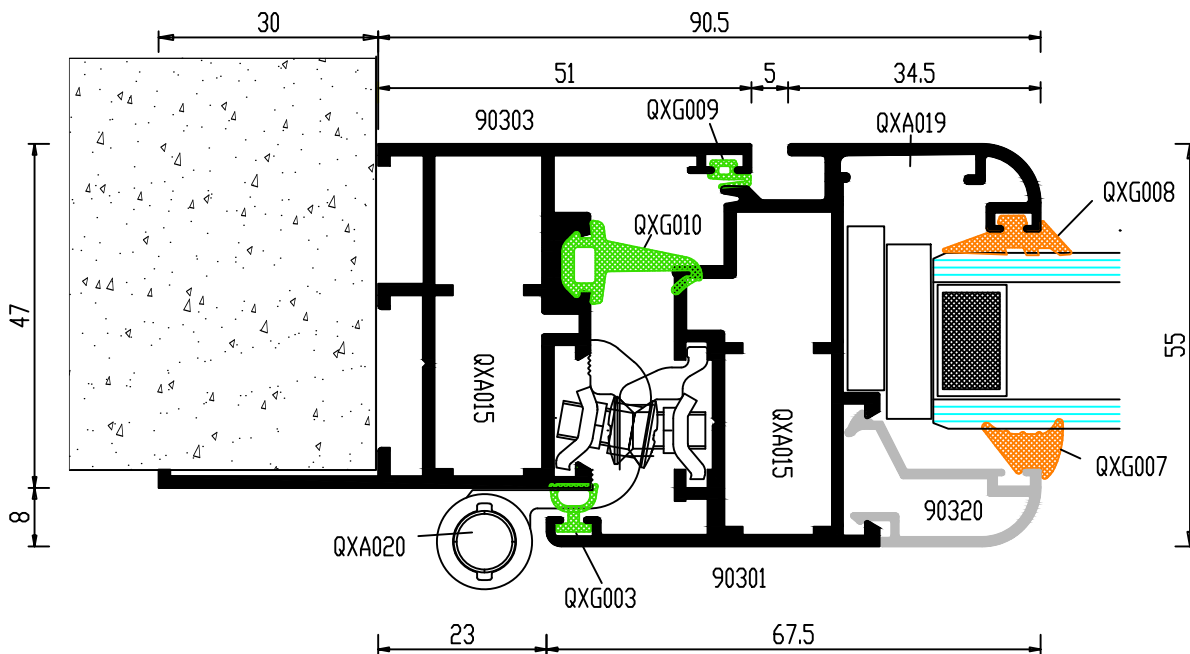
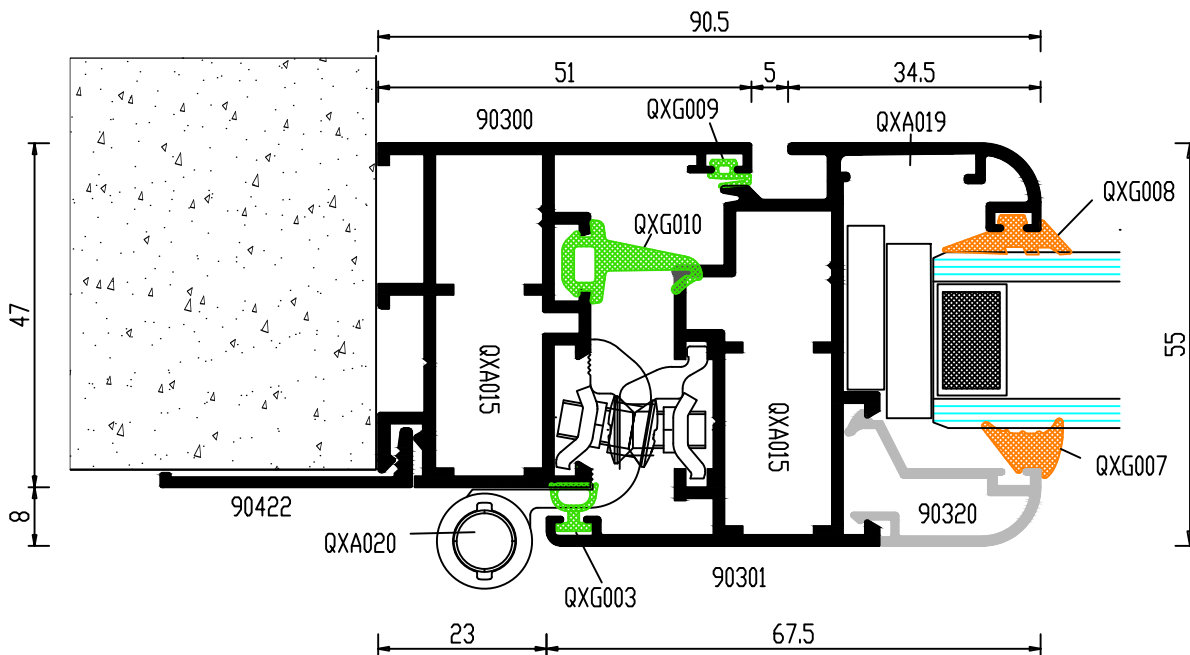


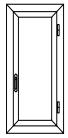




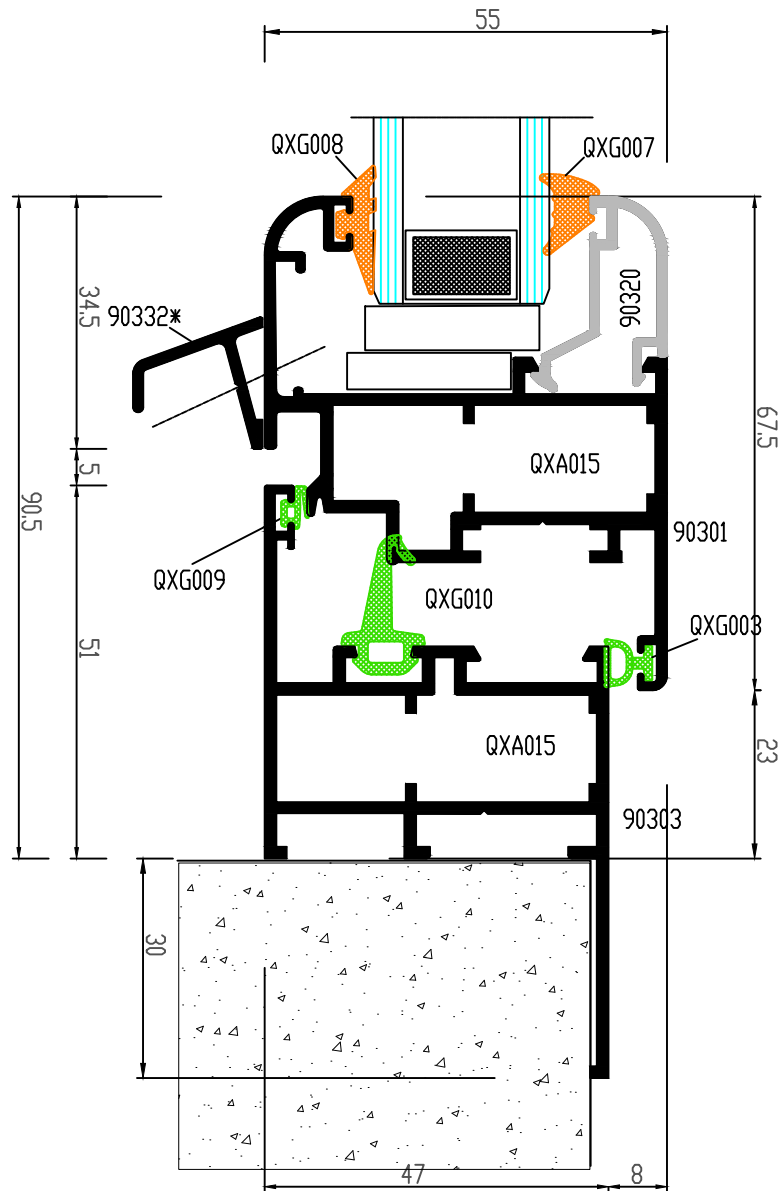


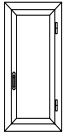
## Hinge Frame & Sash assembly inside opening



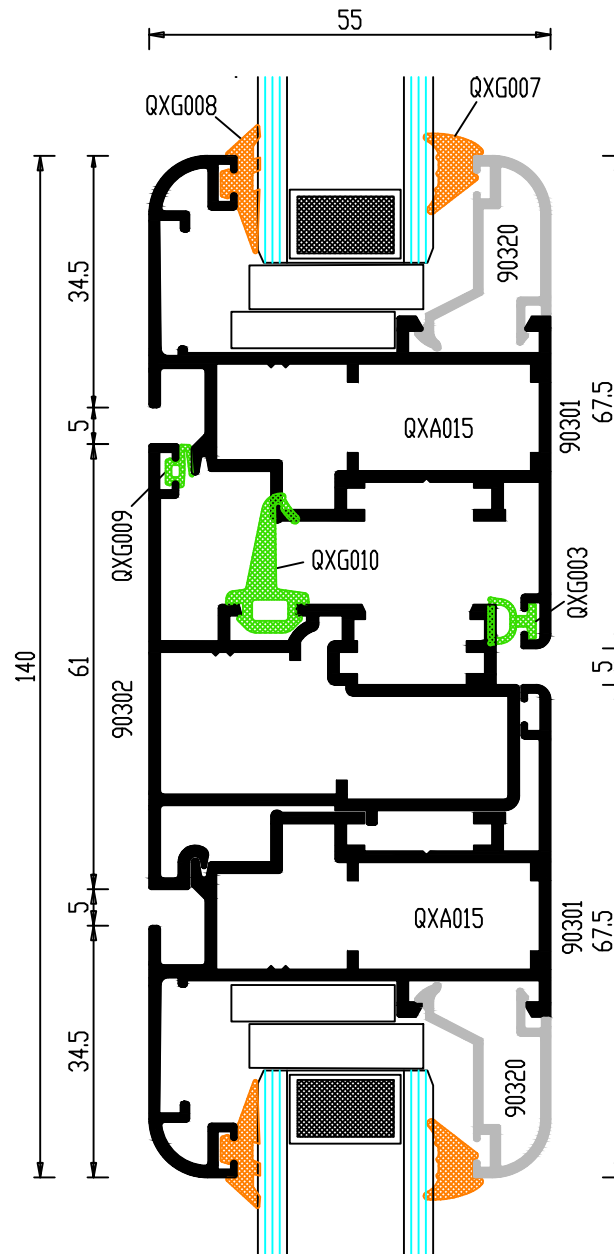


## Hinge Frame & Sash assembly with water Stopper inside opening



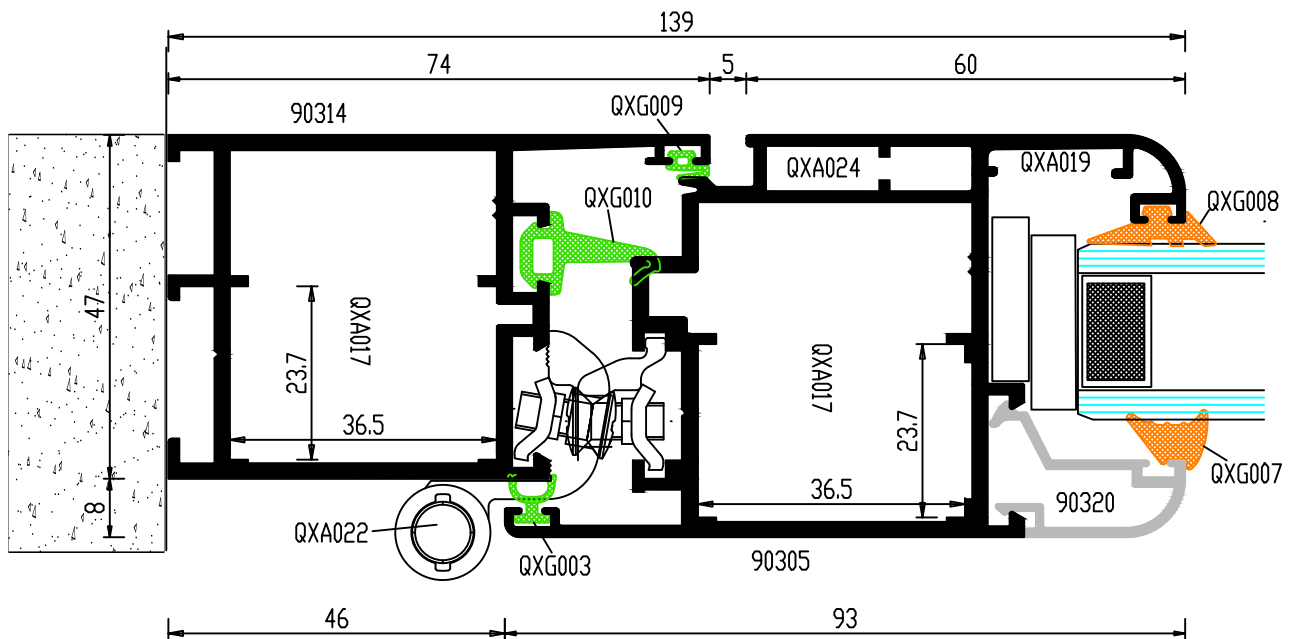
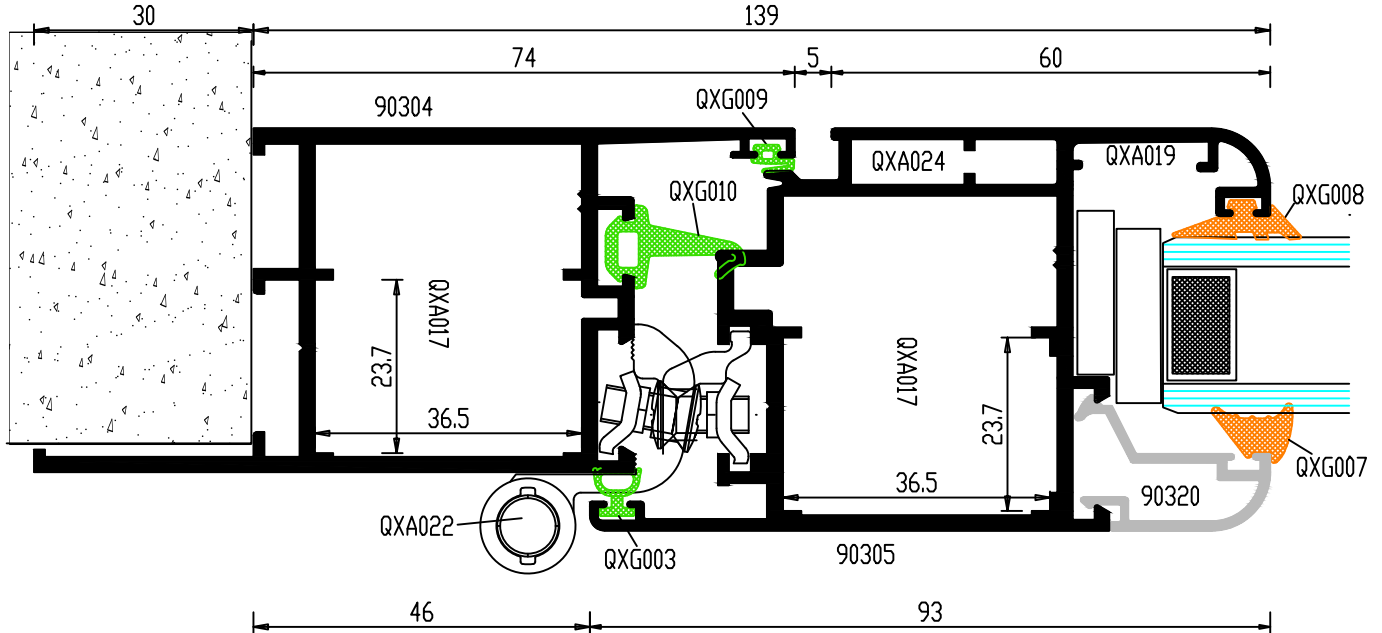


## Hinge Sash Inter lock assembly inside opening



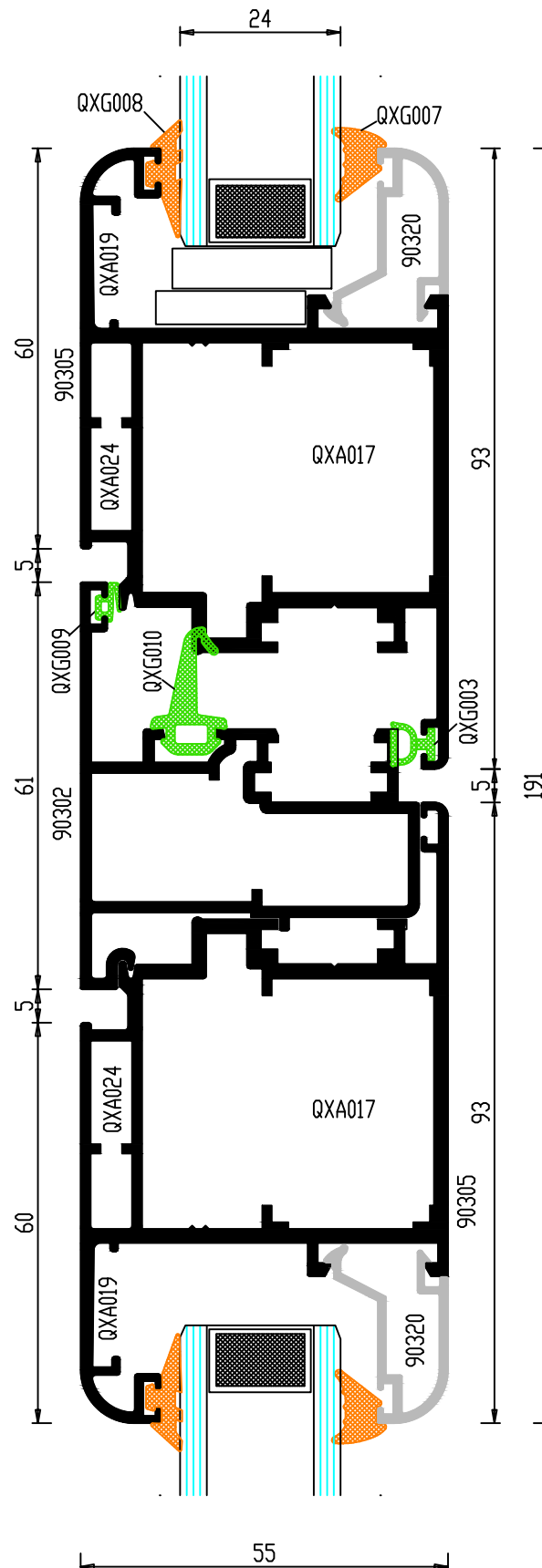


## Hinge Door Frame & Sash assembly Inside opening



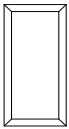
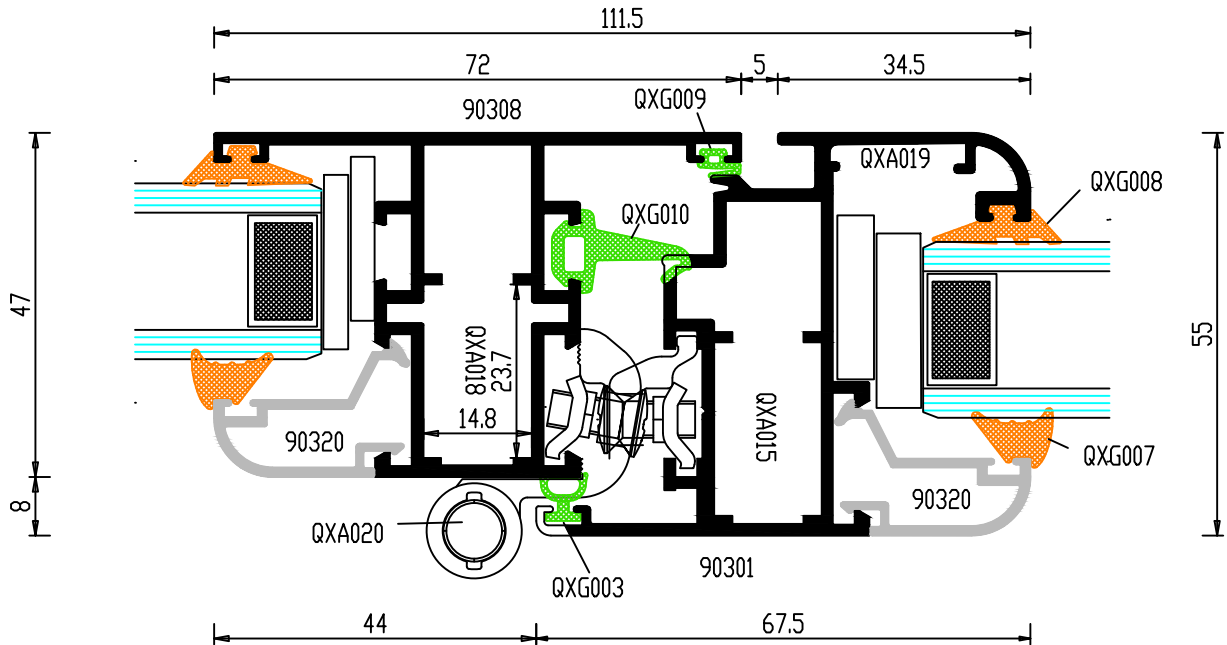


## Hinge Door Sash Inter lock assembly Inside opening

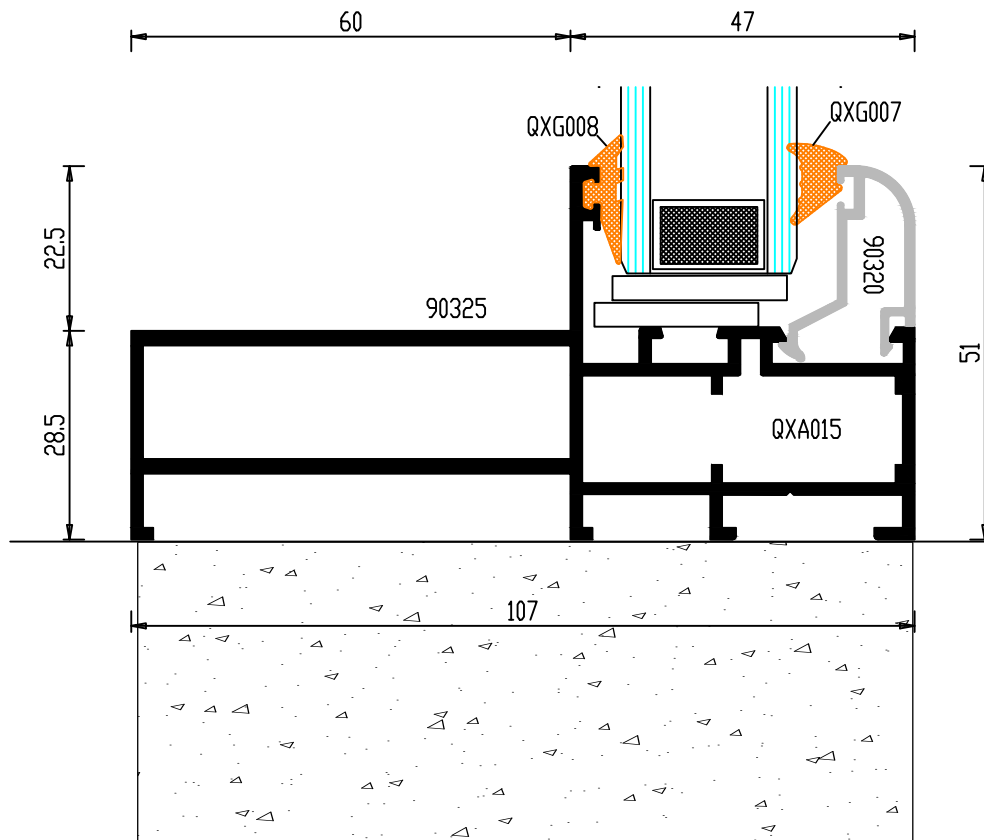




## Hinge Fix Plus Sash assembly

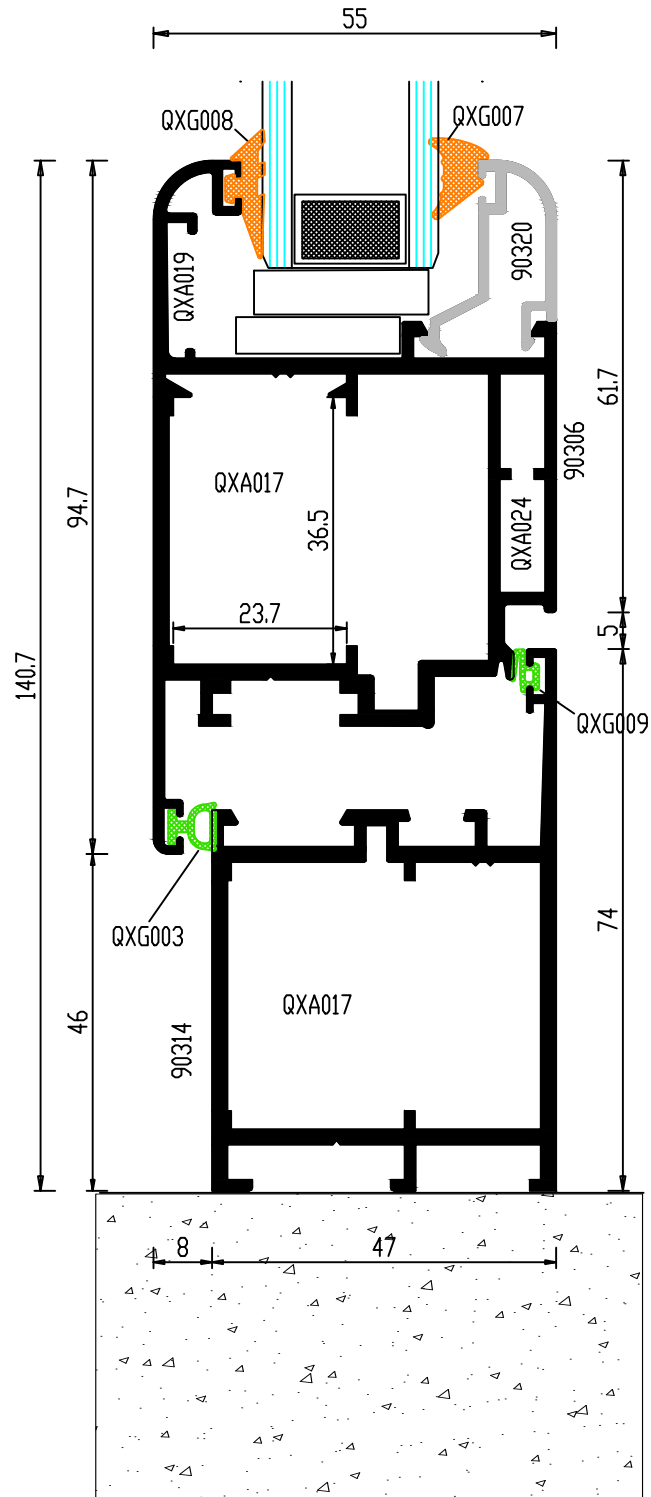


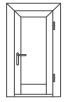
## Fix assembly



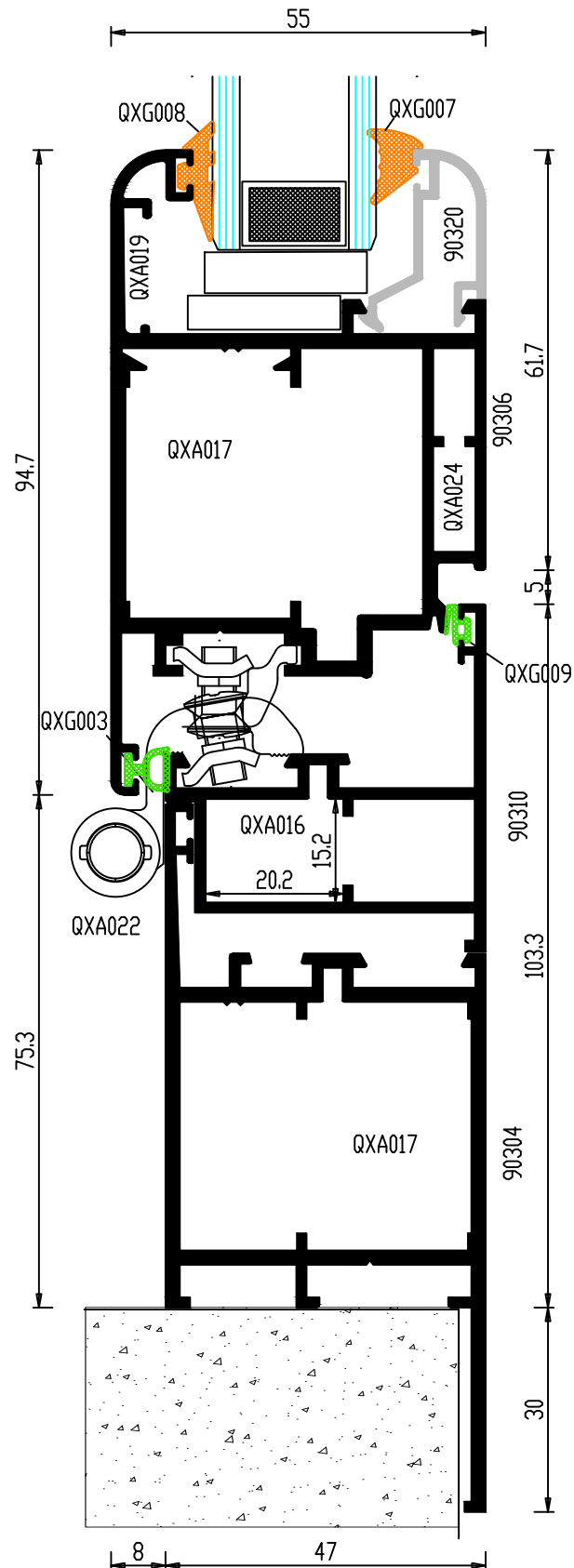


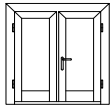
## Hinge Door Frame & Sash Assembly Outside opening



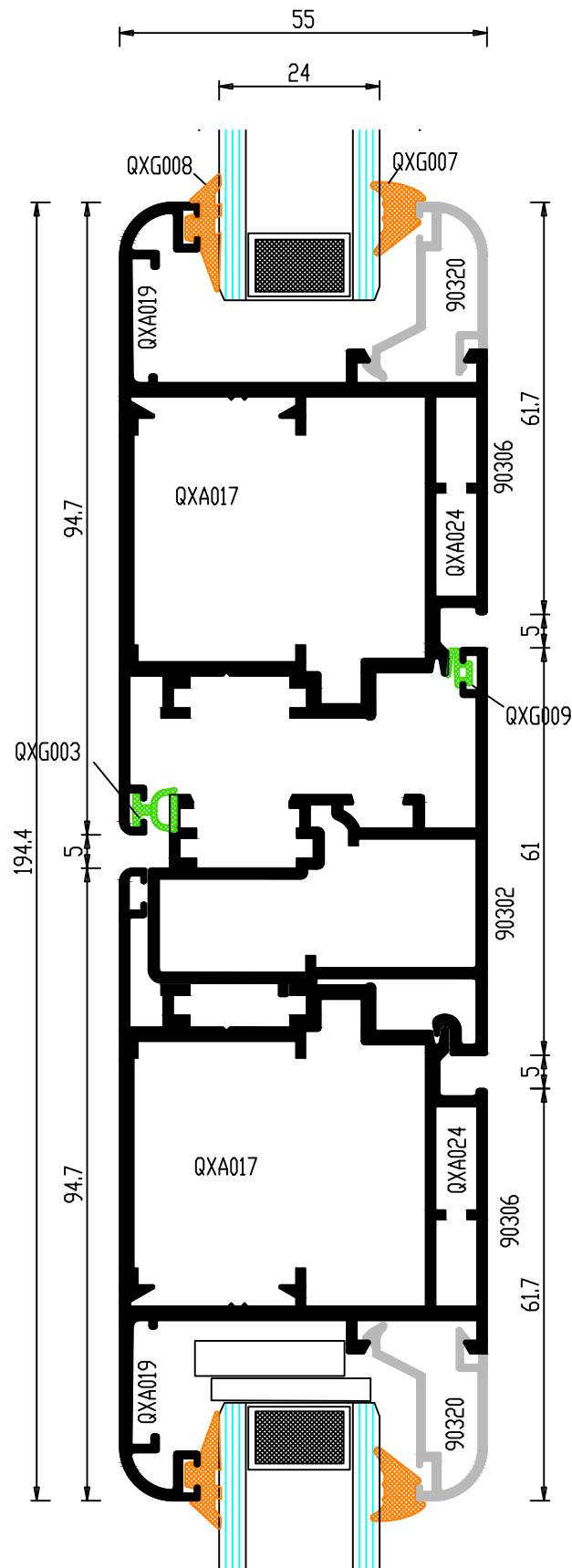


## hinge Door Frame & Sash Assembly outside opening



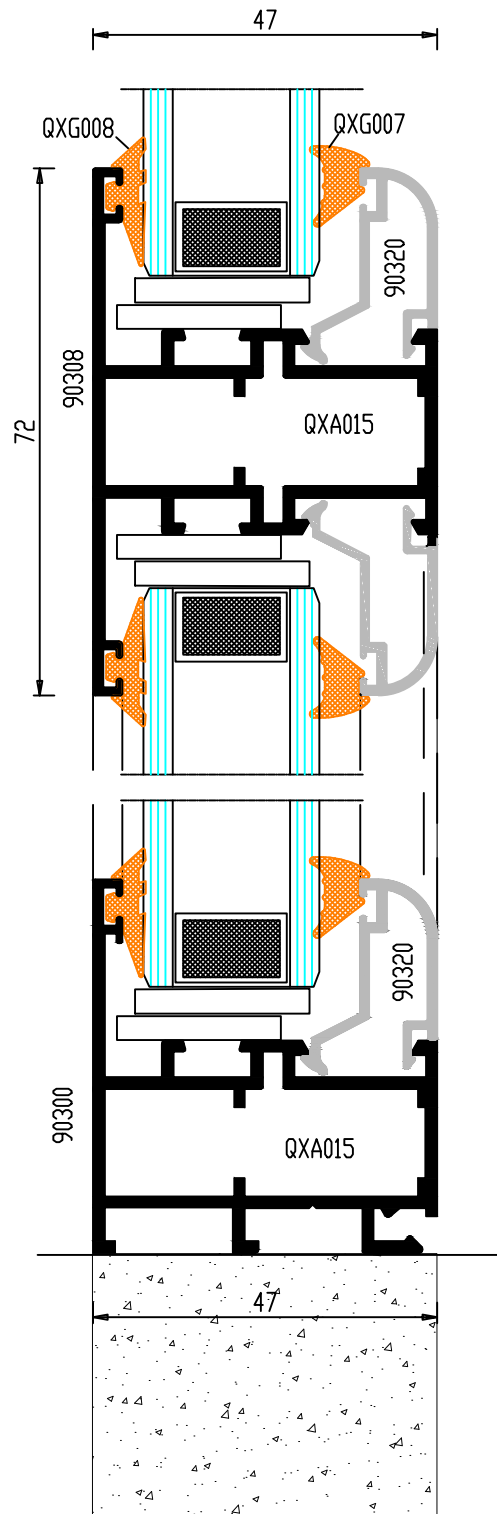


## Hinge Door Sash Inter lock assembly Outside opening



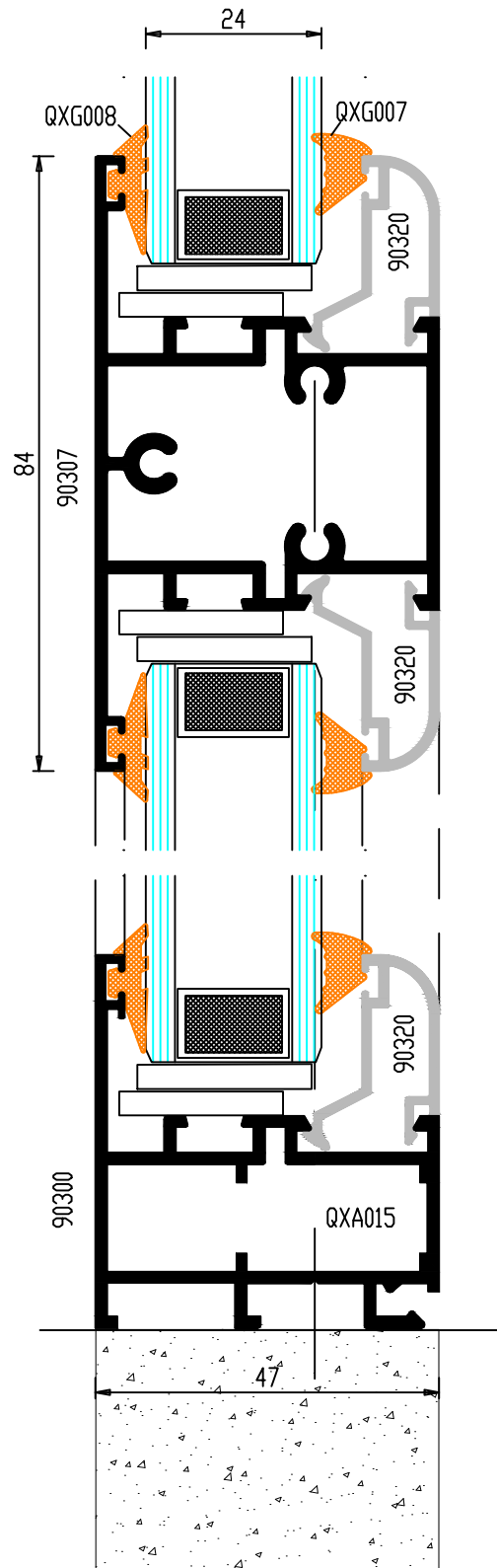


Fixed assembly



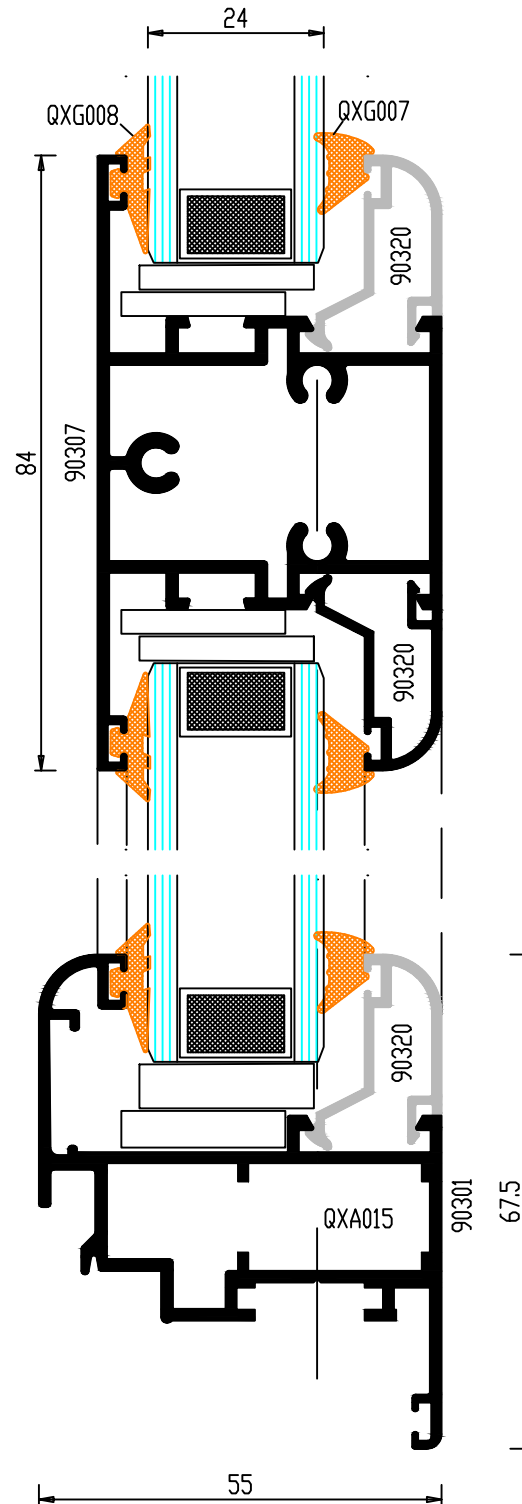


## Fixed Assembly



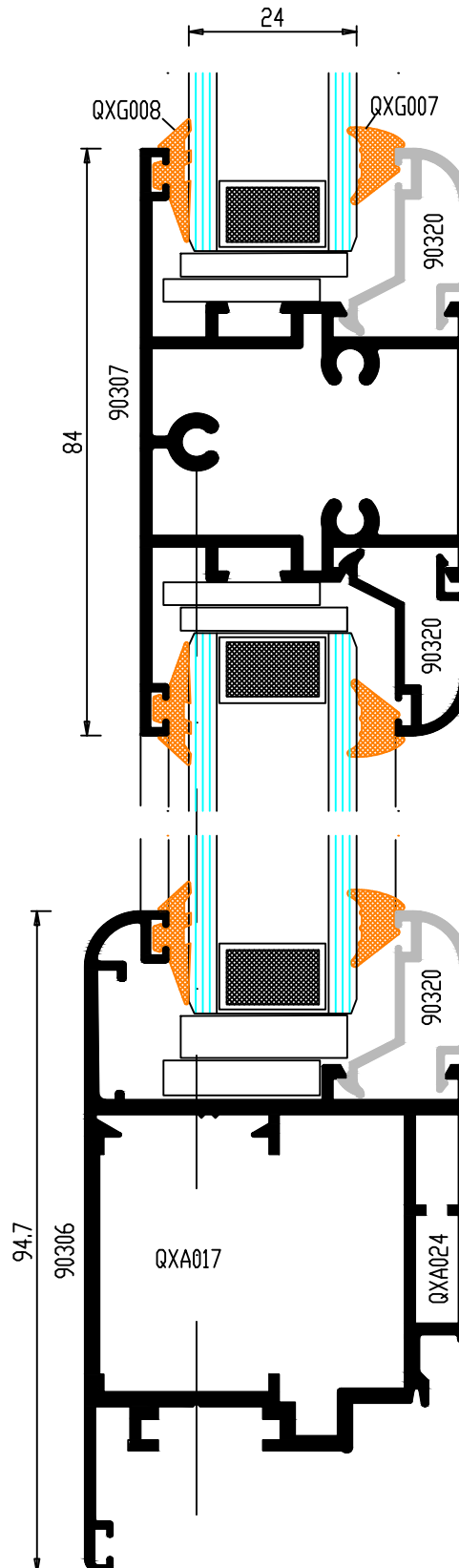


## Hinge Sash with glass divider



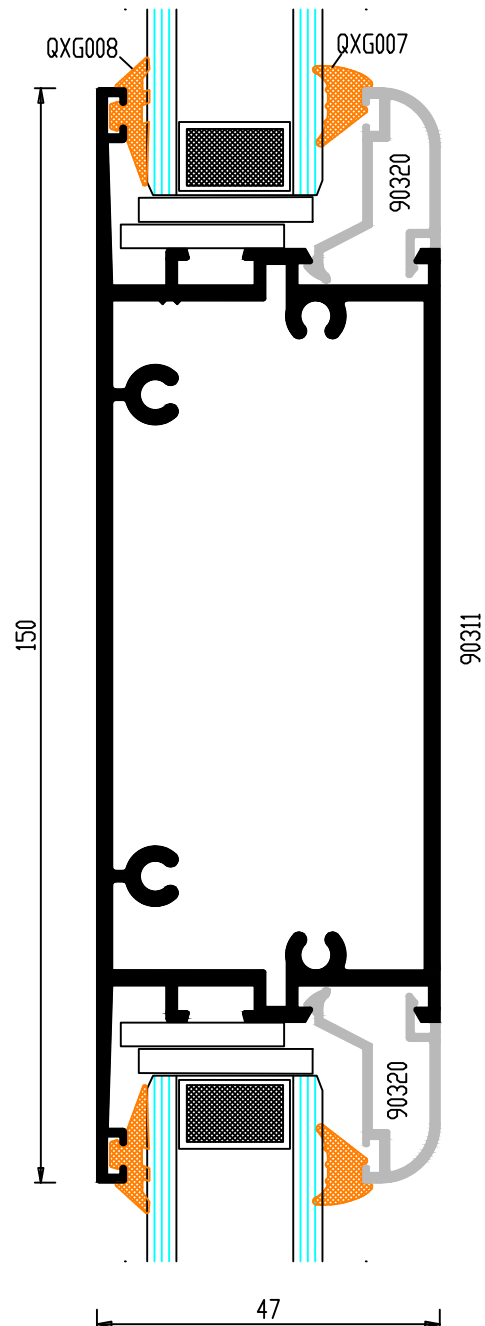


## Hinge Sash with glass Divider



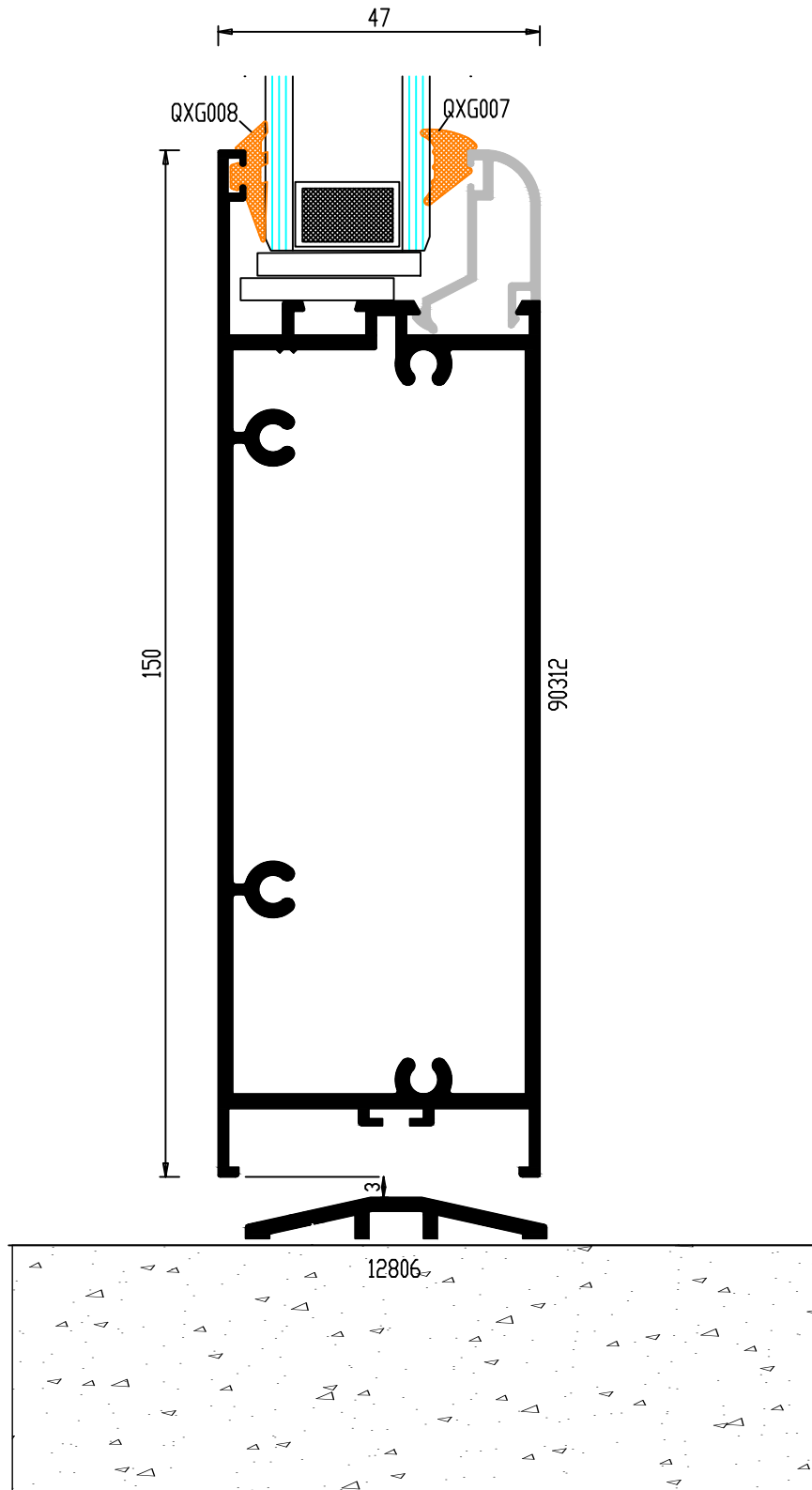


## Hinge Door Sash with glass divider



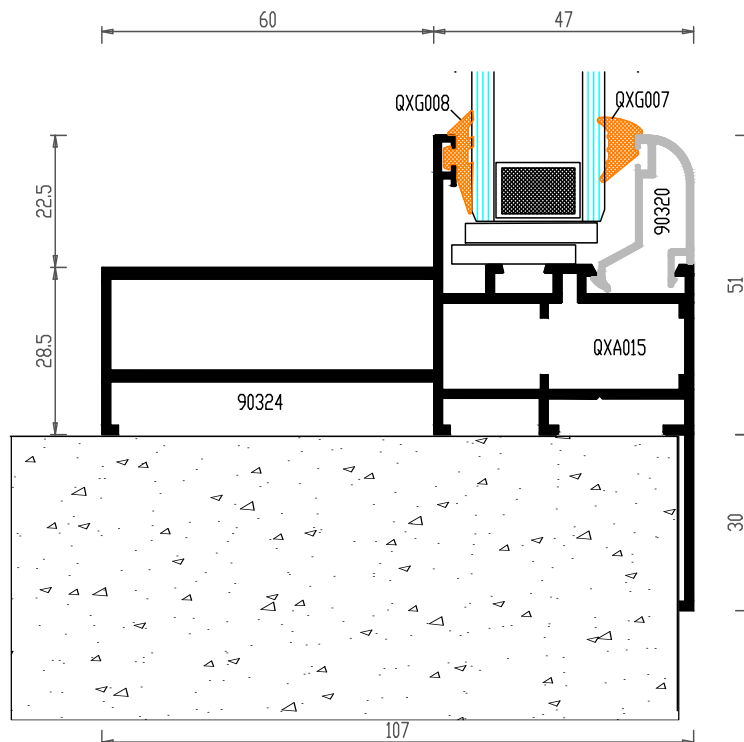
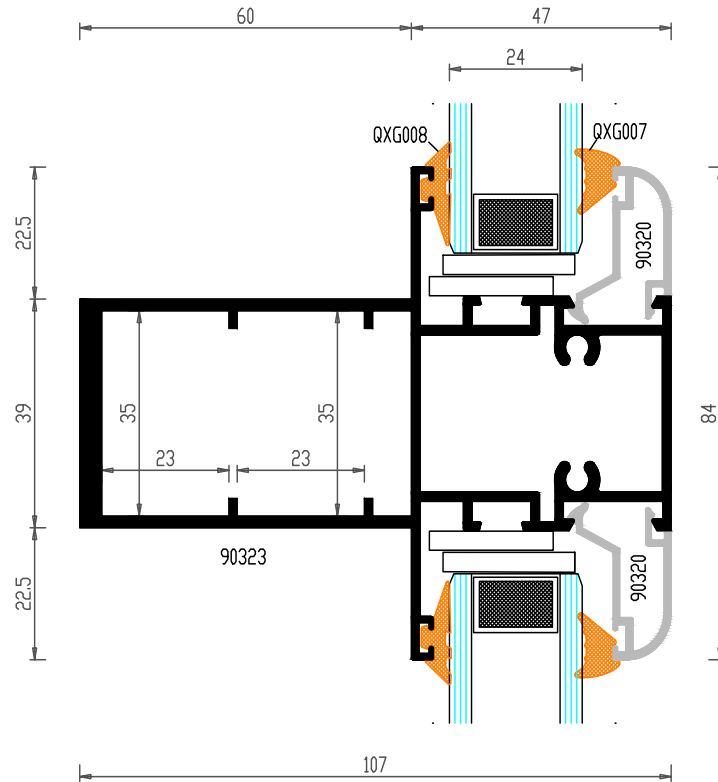


## Hinge Door Bottom Assembly





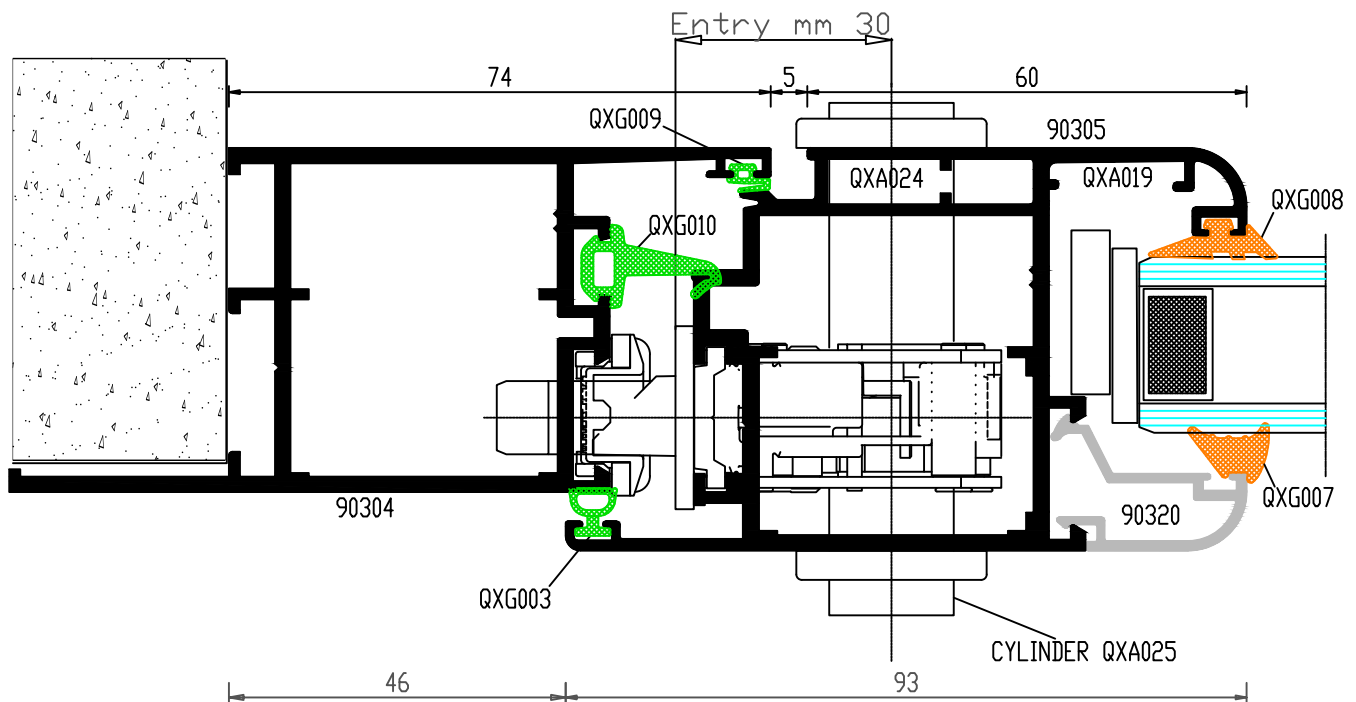
## Hinge Fix Frame Tubular T Section assembly



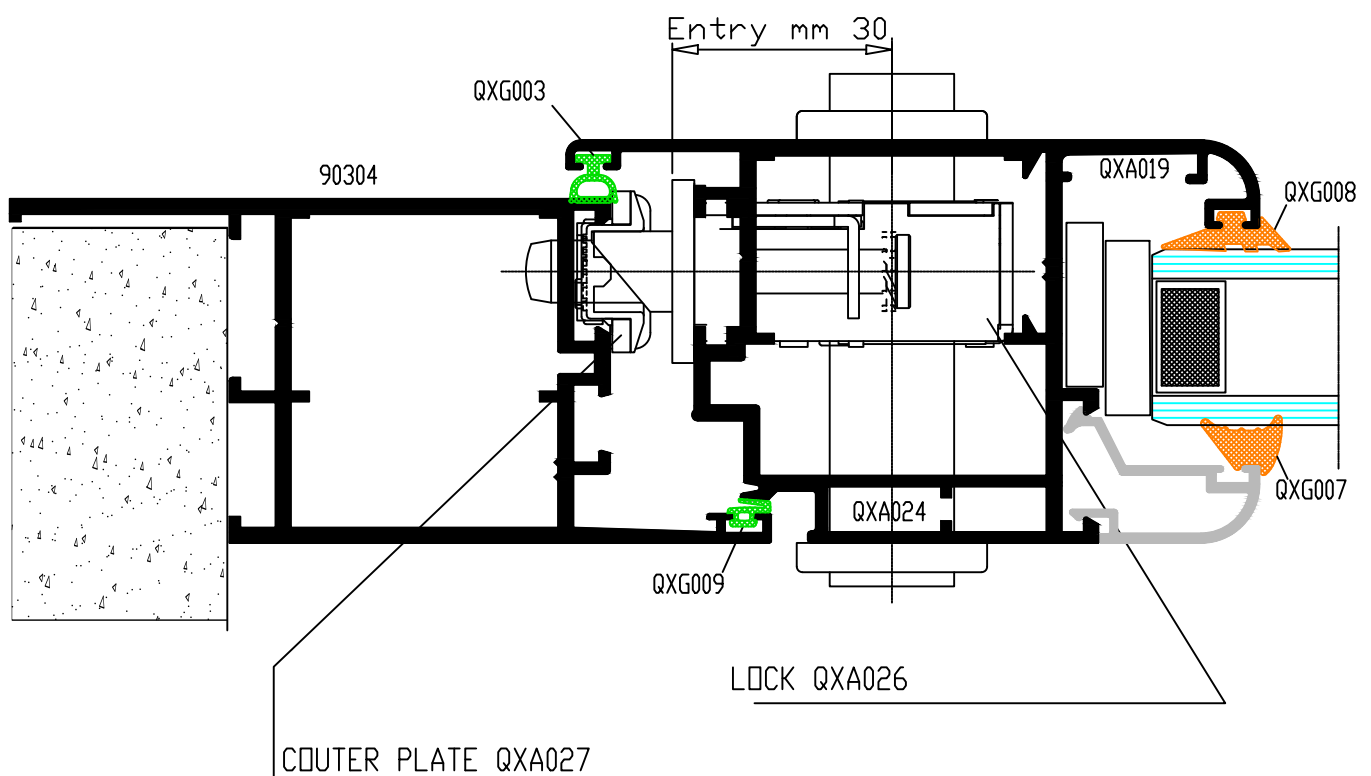


## Hinge Locking Assembly

### Inside opening



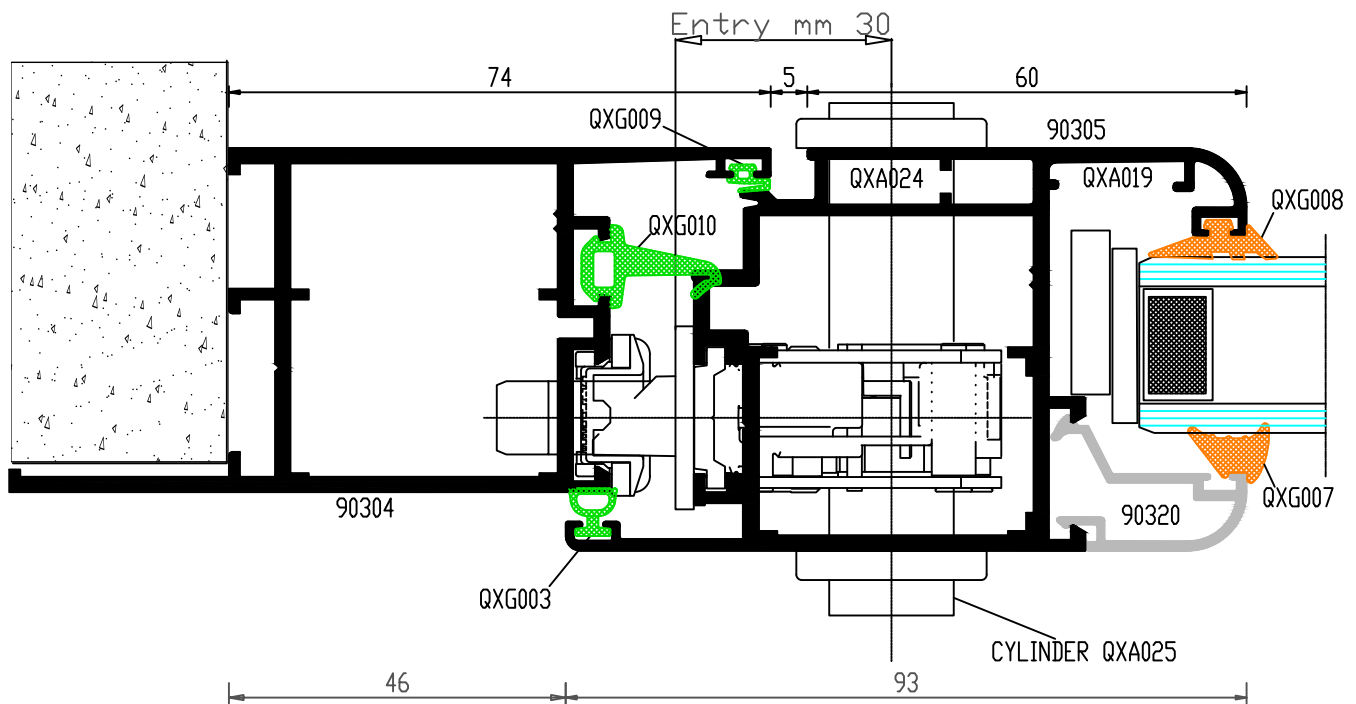
### Outside Opening



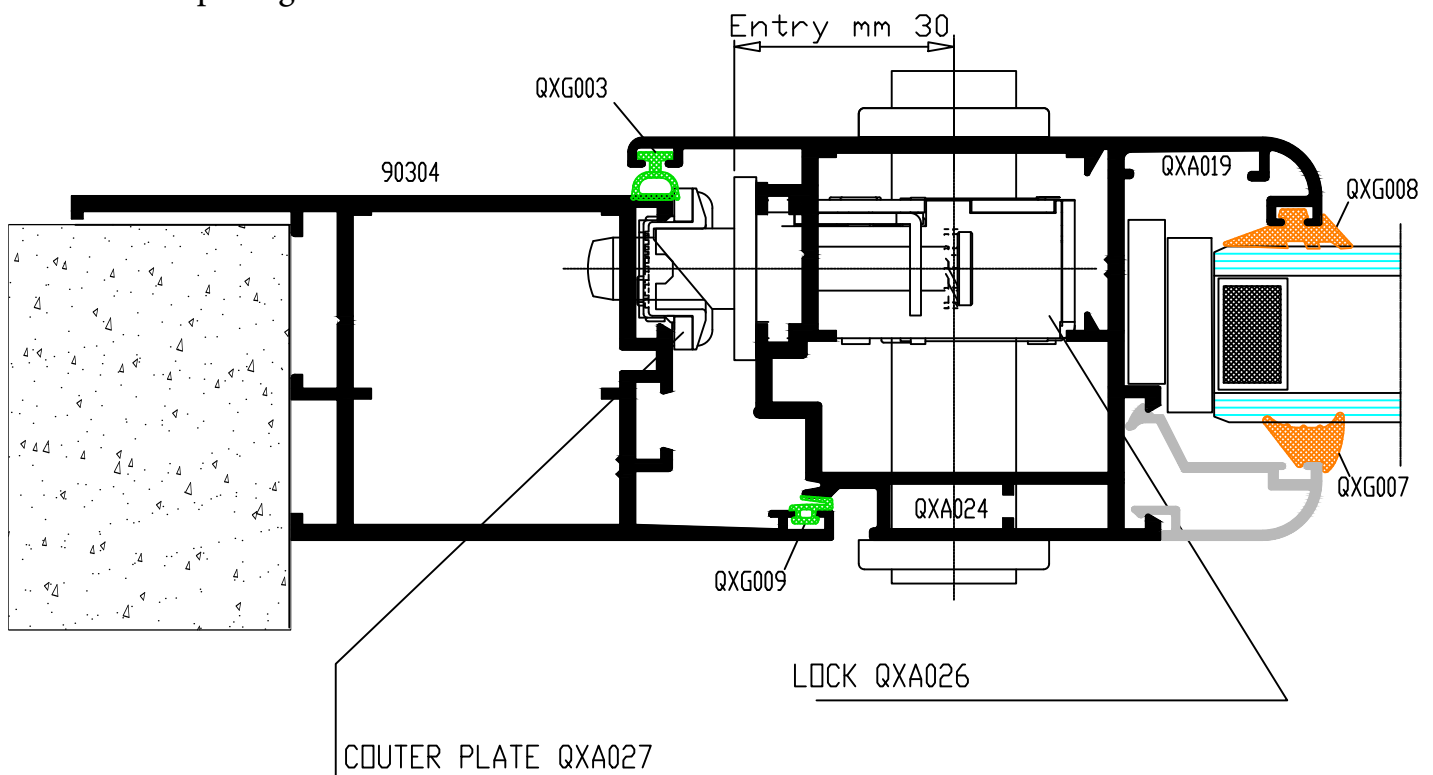


## Hinge Locking Assembly

### Inside opening

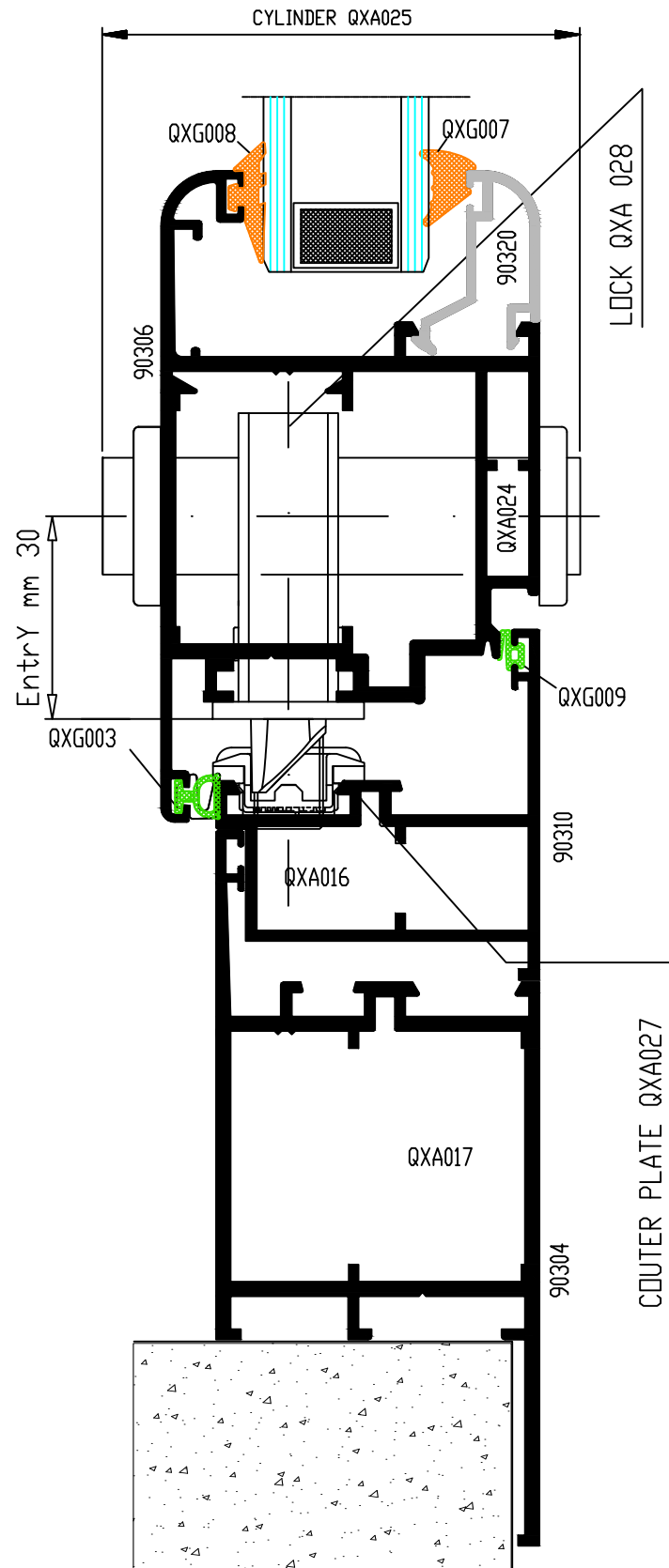


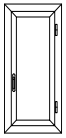
### Outside opening





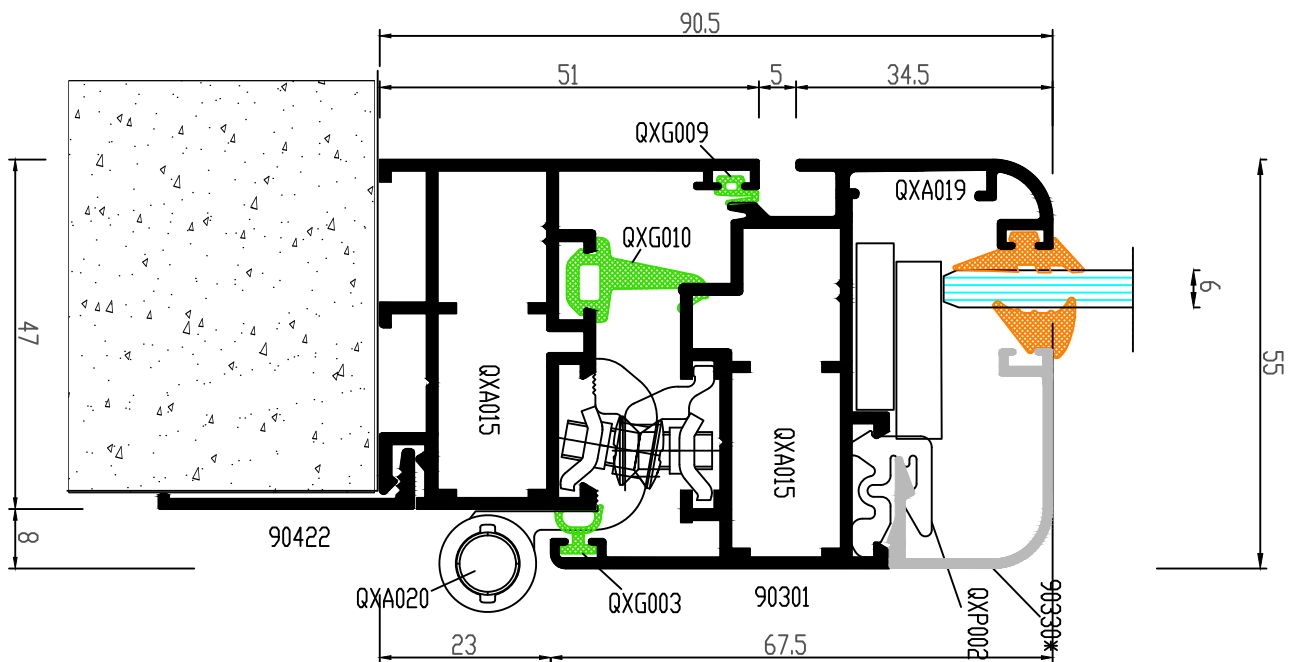
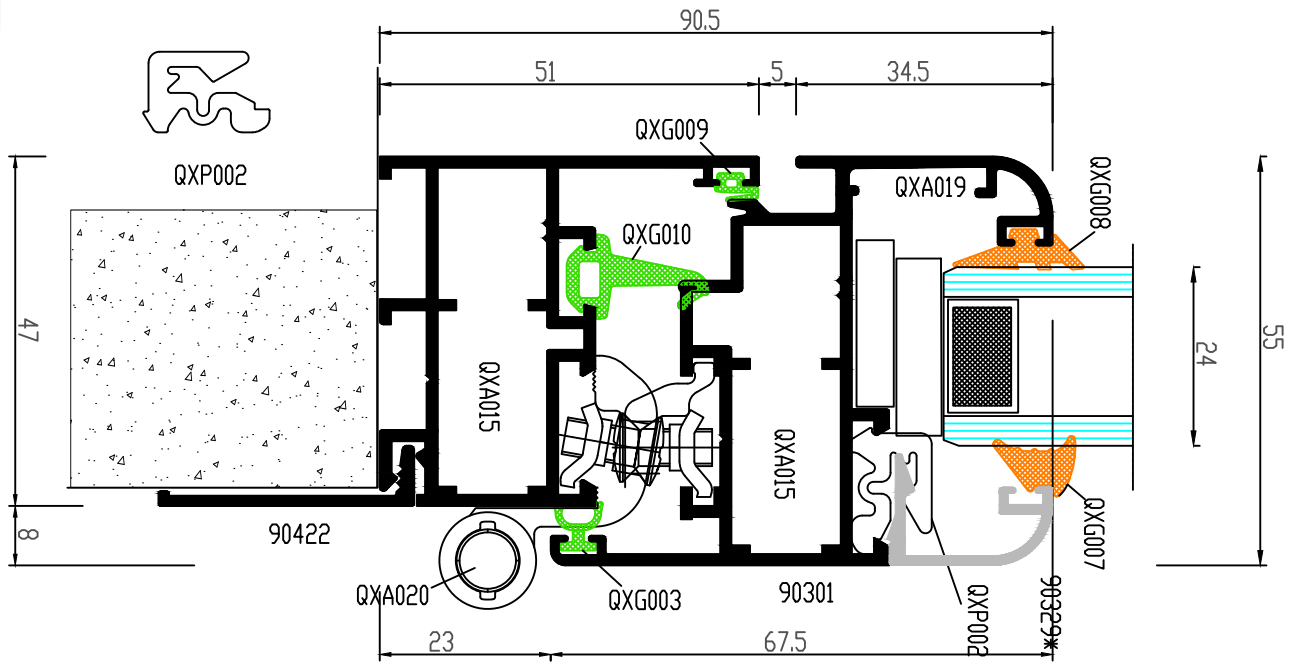
## Hinge Locking Assembly for outside opening





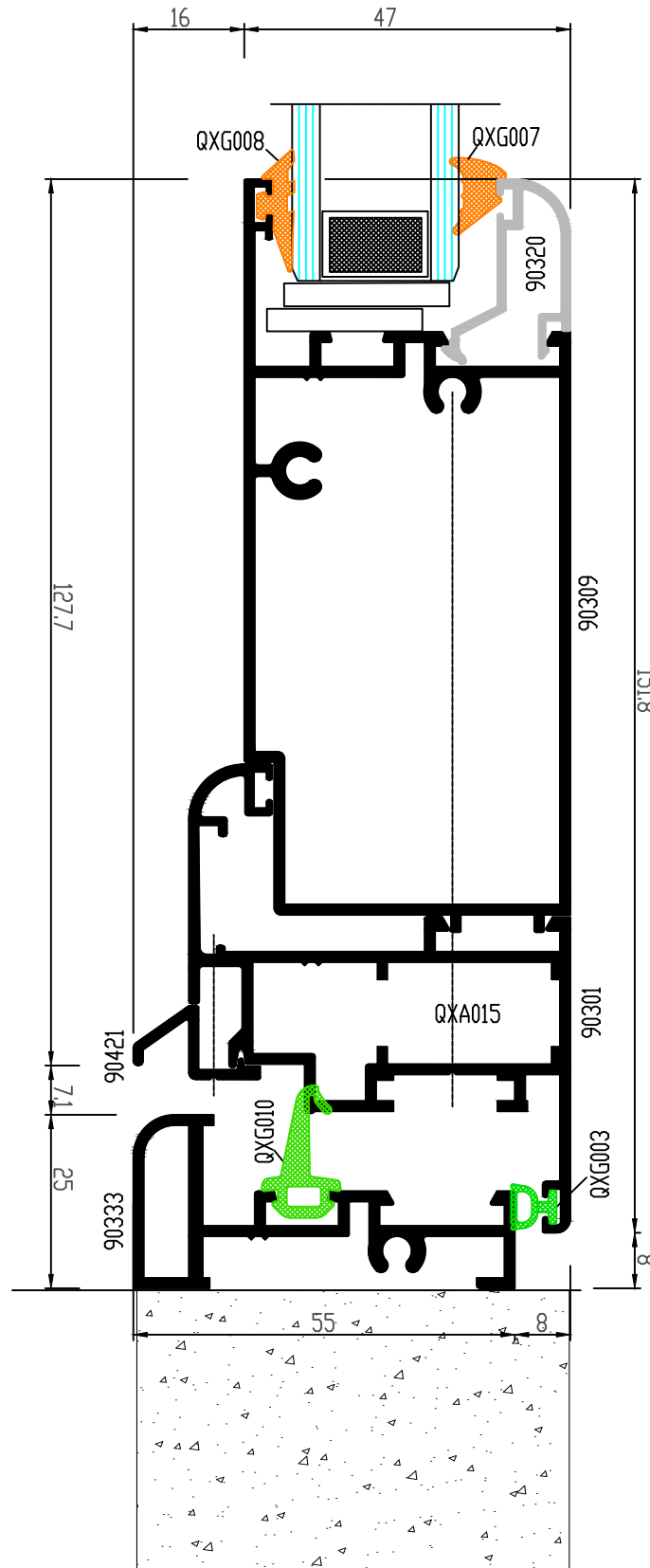
## Hinge Frame and sash assembly for single glass & Double glass

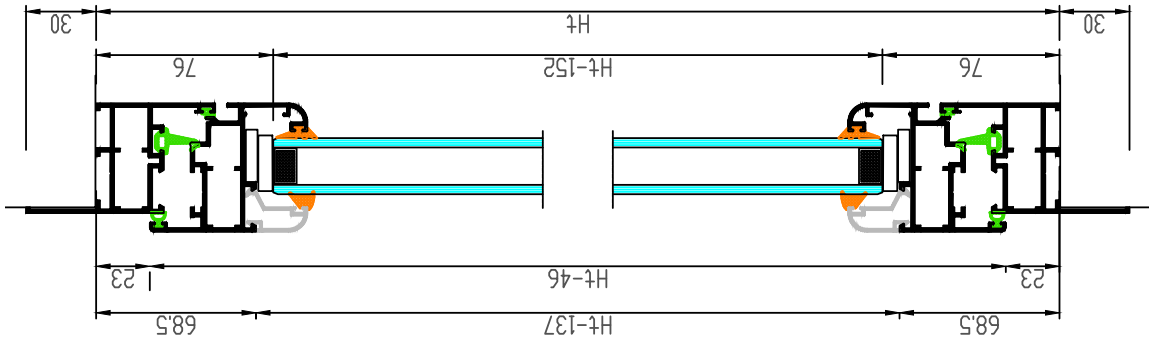
### Inside opening





## Hinge Door Bottom Assembly

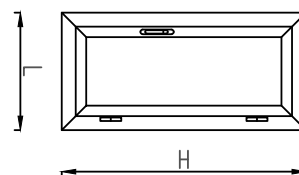
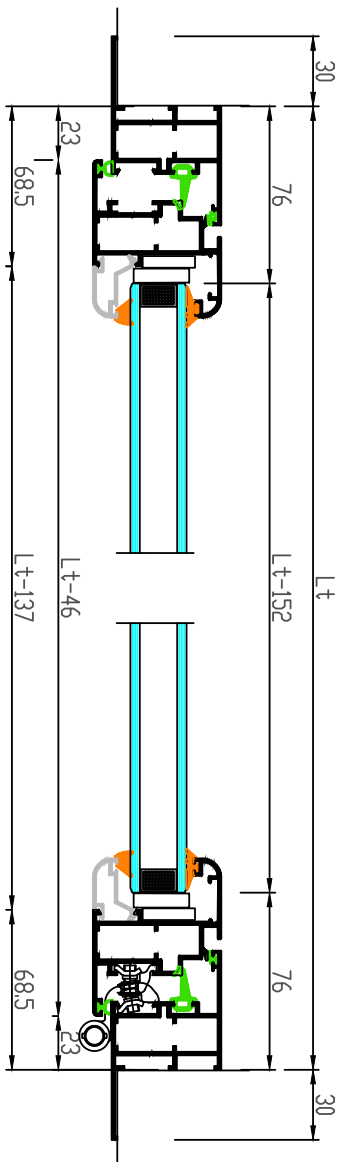


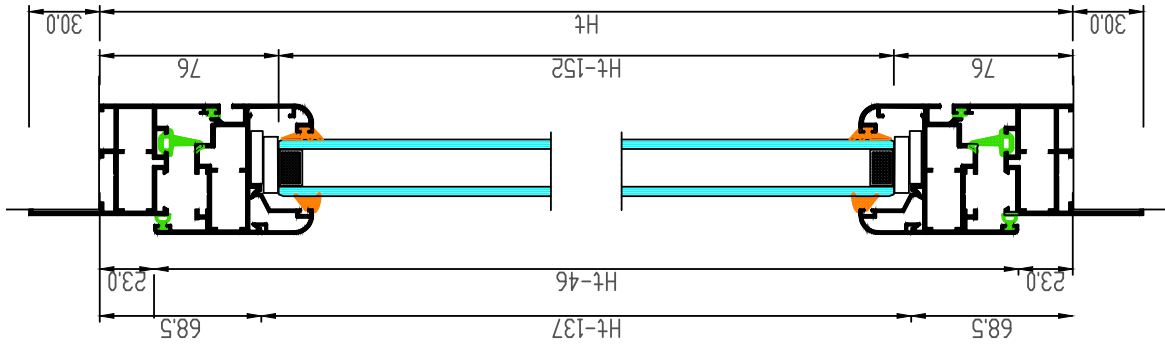


| ONE WING WINDOW |                           |        |      |
|-----------------|---------------------------|--------|------|
| CODE            | DESCRIPTION               | SIZE   | Q.TY |
| 90303           | TOP E BOTTOM FRAME        | Lt+60  | 2    |
| 90303           | SIDE FRAME                | Ht+60  | 2    |
| 90301           | TOP E BOTTOM SHUTTER      | Lt-46  | 2    |
| 90301           | SIDE SHUTTER              | Ht-46  | 2    |
| 90320           | TOP E BOTTOM GLAZING BEAD | Lt-137 | 2    |
| 90320           | SIDE GLAZING BEAD         | Ht-137 | 2    |

| ACCESSORIES |                            |       |
|-------------|----------------------------|-------|
| CODE        | DESCRIPTION                | Q.TY  |
| QXA015      | FRAME/SHUTTER CORNER JOINT | 8     |
| QXA020      | HINGE                      | 2     |
| QXG010      | CENTRAL GASKET             | 2L+2H |
| QXA029      | CORNER FOR CENTRAL GASKET  | 4     |
| QXG005      | INSIDE CONNECTION GASKET   | 2L+2H |
| QXG009      | OUTSIDE CONNECTION GASKET  | 2L+2H |
| QXG007      | INSIDE GLASS GASKET        | 2L+2H |
| QXG008      | OUTSIDE GLASS GASKET       | 2L+2H |

| GLASS SIZE |  |
|------------|--|
| Lt-152     |  |
| Ht-152     |  |

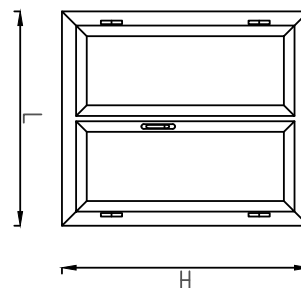
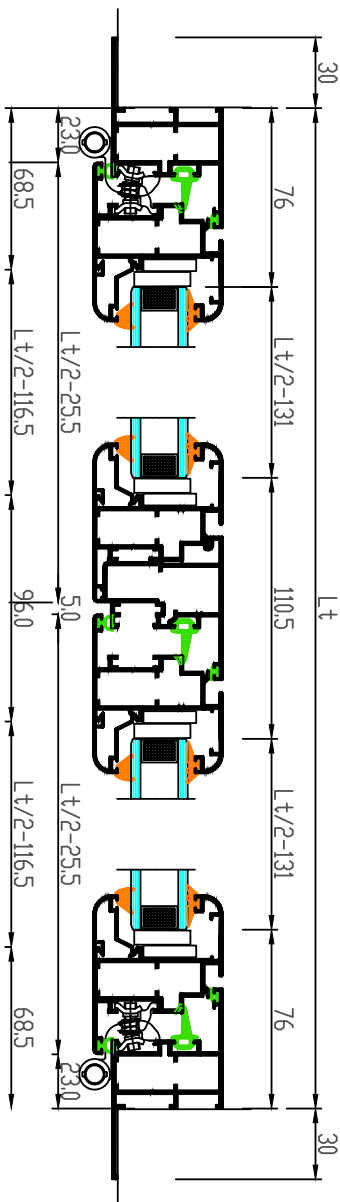


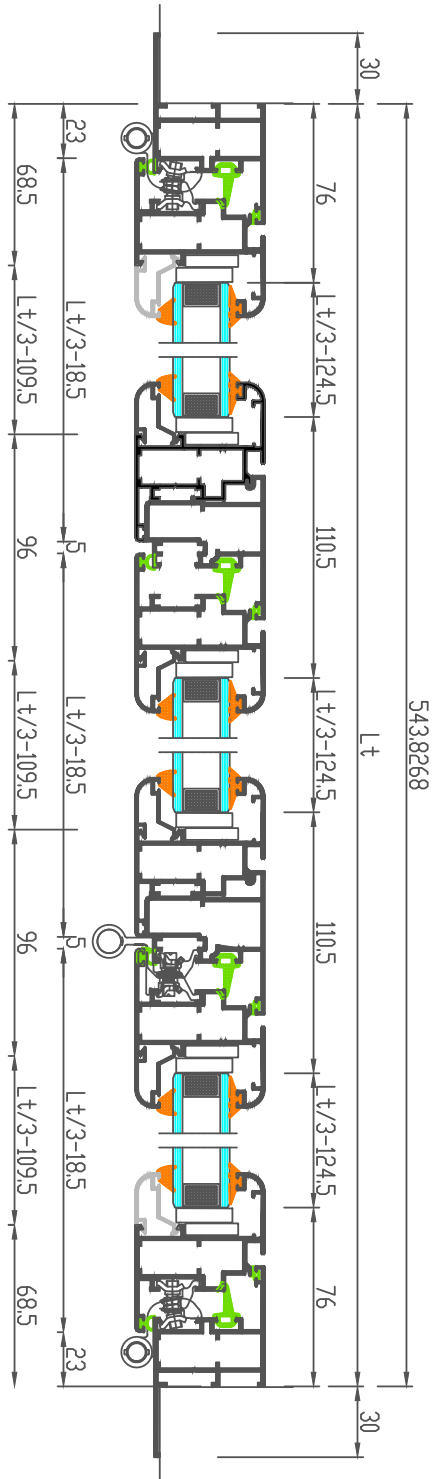
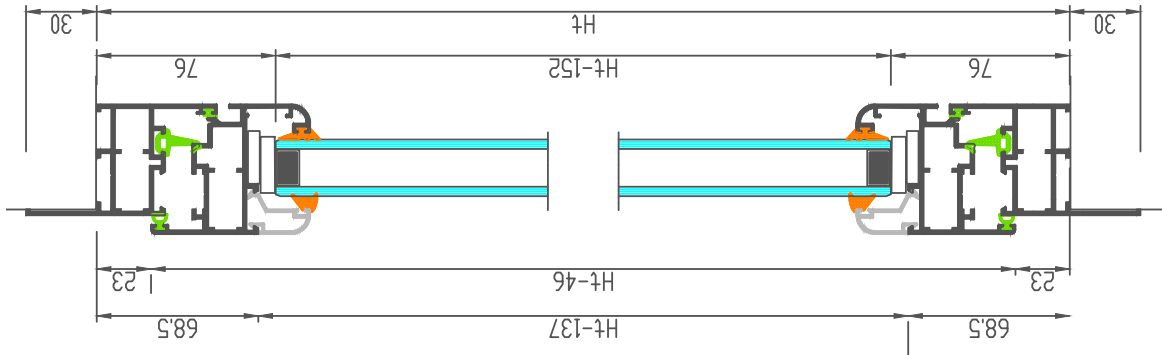


| TWO WINGS WINDOW |                           |            |      |
|------------------|---------------------------|------------|------|
| CODE             | DESCRIPTION               | SIZE       | Q.TY |
| 90303            | TOP E BOTTOM FRAME        | Lt+60      | 2    |
| 90303            | SIDE FRAME                | Ht+60      | 2    |
| 90301            | TOP E BOTTOM SHUTTER      | Lt+2-25.5  | 4    |
| 90301            | SIDE SHUTTER              | Ht-46      | 4    |
| 90302            | ADAPTOR                   | Ht-116     | 1    |
| 90320            | TOP E BOTTOM GLAZING BEAD | Lt+2-116.5 | 4    |
| 90320            | SIDE GLAZING BEAD         | Ht-137     | 4    |

| GLASS SIZE |        |
|------------|--------|
| Lt+2-131   | Ht-152 |

| ACCESSORIES |                            |       |
|-------------|----------------------------|-------|
| CODE        | DESCRIPTION                | Q.TY  |
| QXA015      | FRAME/SHUTTER CORNER JOINT | 12    |
| QXA020      | HINGE                      | 4     |
| QXA030      | PLUG FOR ADAPTOR           | 1 Cp  |
| QXG010      | CORNER FOR CENTRAL GASKET  | 4     |
| QXA029      | CORNER FOR CENTRAL GASKET  | 2L+3H |
| QXG005      | INSIDE CONNECTION GASKET   | 2L+3H |
| QXG009      | OUTSIDE CONNECTION GASKET  | 2L+3H |
| QXG007      | INSIDE GLASS GASKET        | 2L+4H |
| QXG008      | OUTSIDE GLASS GASKET       | 2L+4H |



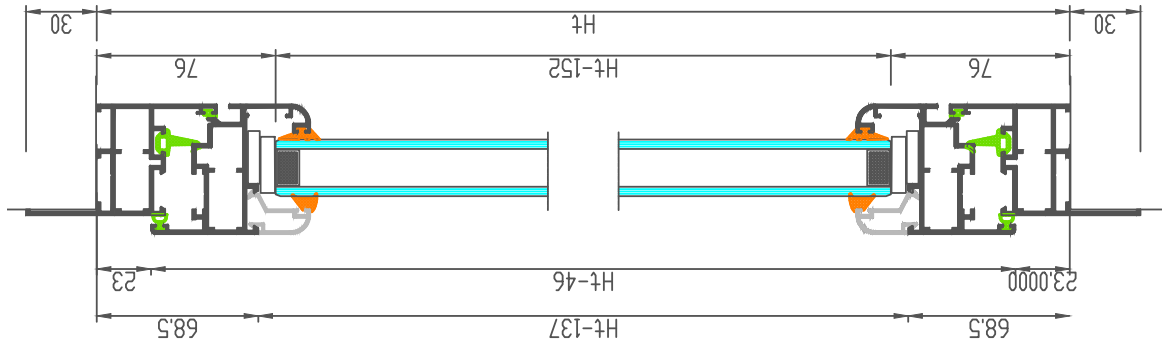


| GLASS SIZE |
|------------|
| Lt+3-124.5 |
| Ht-152     |

| THREE WINGS WINDOW |                           |            |
|--------------------|---------------------------|------------|
| CODE               | DESCRIPTION               | SIZE       |
| 90303              | TOP E BOTTOM FRAME        | Lt+60      |
| 90303              | SIDE FRAME                | Ht+60      |
| 90301              | TOP E BOTTOM SHUTTER      | Lt+3-18.5  |
| 90301              | SIDE SHUTTER              | Ht-46      |
| 90302              | ADAPTOR                   | Ht-116     |
| 90320              | TOP E BOTTOM GLAZING BEAD | Lt+3-109.5 |
| 90320              | SIDE GLAZING BEAD         | Ht-137     |
| 90320              |                           | 6          |

| ACCESSORIES |                            |       |
|-------------|----------------------------|-------|
| CODE        | DESCRIPTION                | Q.TY  |
| QXA015      | FRAME/SHUTTER CORNER JOINT | 16    |
| QXA020      | HINGE                      | 4     |
| QXA031      | THIRD WING HINGE           | 2     |
| QXA030      | PLUG FOR ADAPTOR           | 2 Cp  |
| QXA010      | CENTRAL GASKET             | 2L+4H |
| QXA029      | CORNER FOR CENTRAL GASKET  | 4     |
| QXG005      | INSIDE CONNECTION GASKET   | 2L+4H |
| QXG009      | OUTSIDE CONNECTION GASKET  | 2L+4H |
| QXG007      | INSIDE GLASS GASKET        | 2L+6H |
| QXG008      | OUTSIDE GLASS GASKET       | 2L+6H |

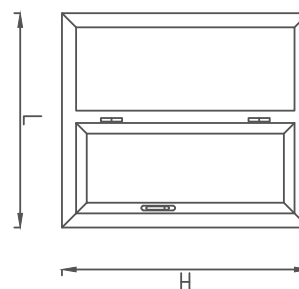
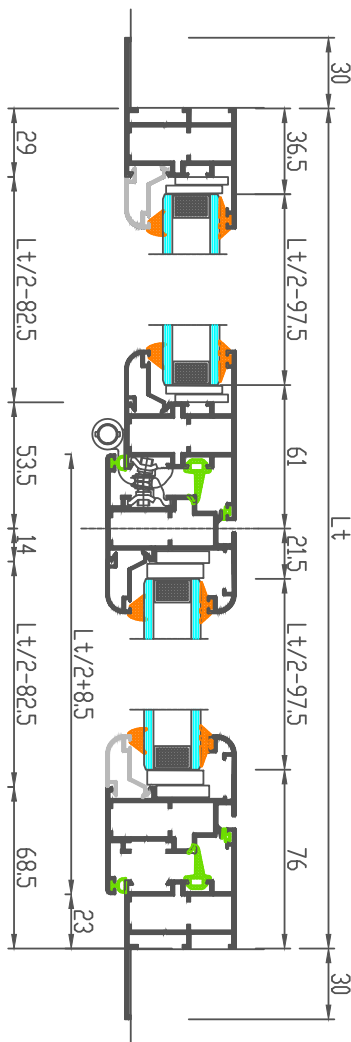


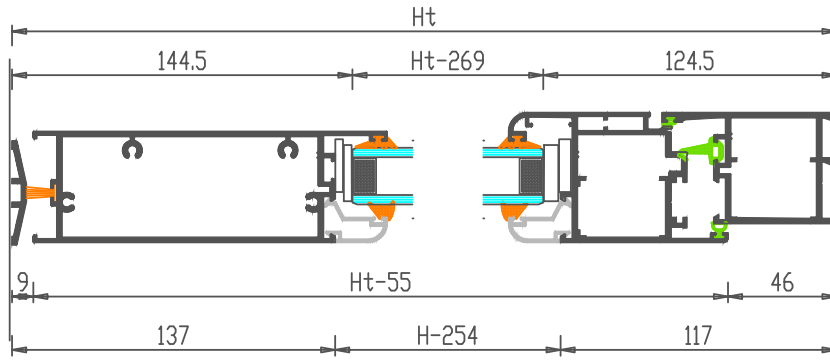


| ONE WING WINDOW WITH LATERAL FIX |                           |      |
|----------------------------------|---------------------------|------|
| CODE                             | DESCRIPTION               | Q.TY |
| 90303                            | TOP E BOTTOM FRAME        | 2    |
| 90303                            | SIDE FRAME                | 2    |
| 90301                            | TOP E BOTTOM SHUTTER      | 2    |
| 90301                            | SIDE SHUTTER              | 2    |
| 90308                            | ADAPTOR                   | 1    |
| 90320                            | TOP E BOTTOM GLAZING BEAD | 4    |
| 90320                            | SIDE GLAZING BEAD         | 2    |
| 90320                            |                           | 2    |

| GLASS SIZE |        |
|------------|--------|
| Lt+/-97.5  | Ht-152 |
|            | Ht-73  |

| ACCESSORIES |                            |       |
|-------------|----------------------------|-------|
| CODE        | DESCRIPTION                | Q.TY  |
| QXA015      | FRAME/SHUTTER CORNER JOINT | 8     |
| QXA020      | HINGE                      | 2     |
| QXG010      | ADAPTOR                    | 2L+2H |
| QXA029      | CORNER FOR CENTRAL GASKET  | 4     |
| QXG005      | INSIDE CONNECTION GASKET   | 2L+2H |
| QXG009      | OUTSIDE CONNECTION GASKET  | 2L+2H |
| QXG007      | INSIDE GLASS GASKET        | 2L+4H |
| QXG008      | OUTSIDE GLASS GASKET       | 2L+4H |

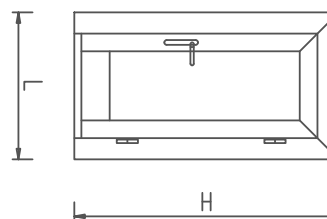
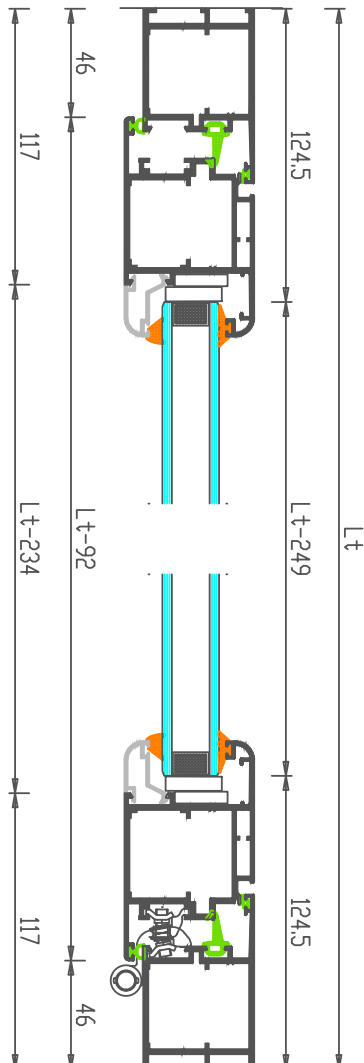


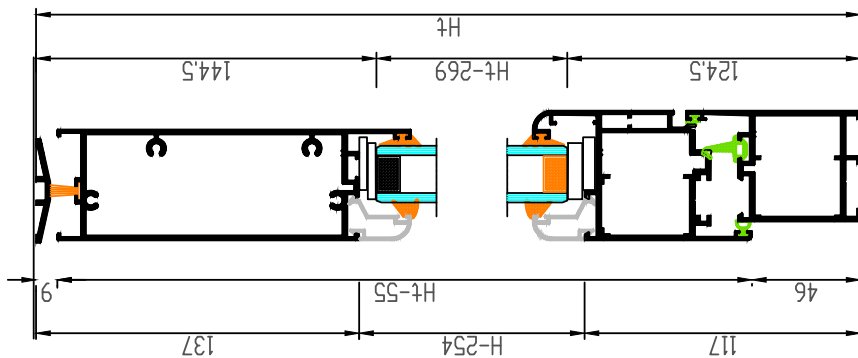


| ONE WING BALCONY DOOR |                           |        |      |
|-----------------------|---------------------------|--------|------|
| CODE                  | DESCRIPTION               | SIZE   | Q.TY |
| 90314                 | TOP E BOTTOM FRAME        | Lt     | 1    |
| 90314                 | SIDE FRAME                | Ht     | 2    |
| 90305                 | TOP E BOTTOM SHUTTER      | Lt-92  | 1    |
| 90305                 | SIDE SHUTTER              | Ht-55  | 2    |
| 90312                 | ADAPTOR                   | Lt-224 | 1    |
| 12806                 | SMALL THRESHOLD           | Lt-96  | 1    |
| 90320                 | TOP E BOTTOM GLAZING BEAD | Lt-234 | 2    |
| 90320                 | SIDE GLAZING BEAD         | Ht-254 | 2    |

| GLASS SIZE |        |
|------------|--------|
| Lt-249     | Ht-269 |

| ACCESSORIES |                             |       |
|-------------|-----------------------------|-------|
| CODE        | DESCRIPTION                 | Q.TY  |
| QXA017      | FRAME/SHUTTER CORNER JOINT  | 4     |
| QXA024      | ALIGNMENT WING CORNER JOINT | 2     |
| QXA020      | HINGE                       | 2     |
| QXG010      | ADAPTOR                     | 4     |
| QXA029      | CORNER FOR CENTRAL GASKET   | 4     |
| QXG005      | INSIDE CONNECTION GASKET    | 2L+2H |
| QXG009      | OUTSIDE CONNECTION GASKET   | 2L+2H |
| QXG007      | INSIDE GLASS GASKET         | 2L+2H |
| QXG008      | OUTSIDE GLASS GASKET        | 2L+2H |

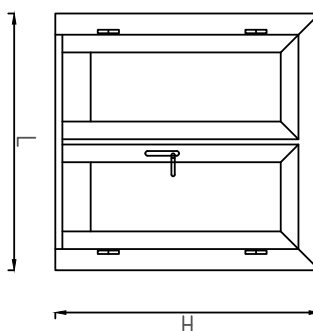
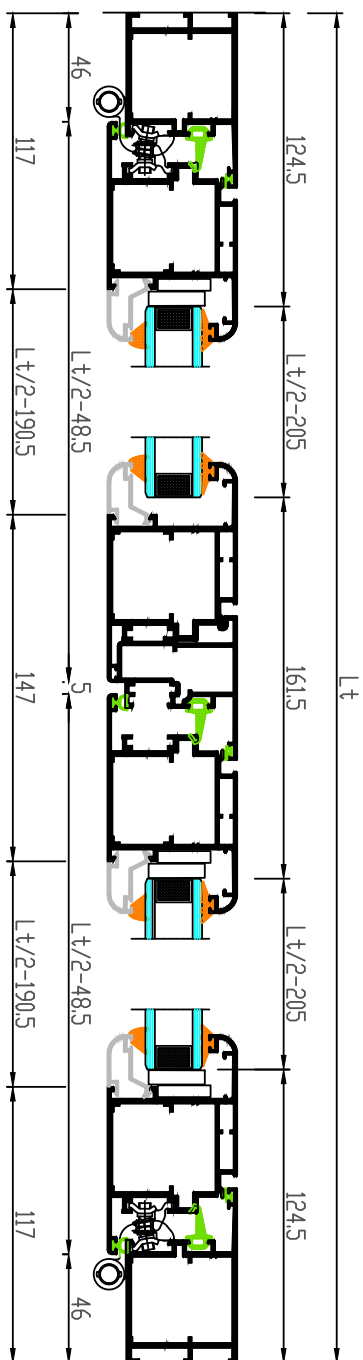


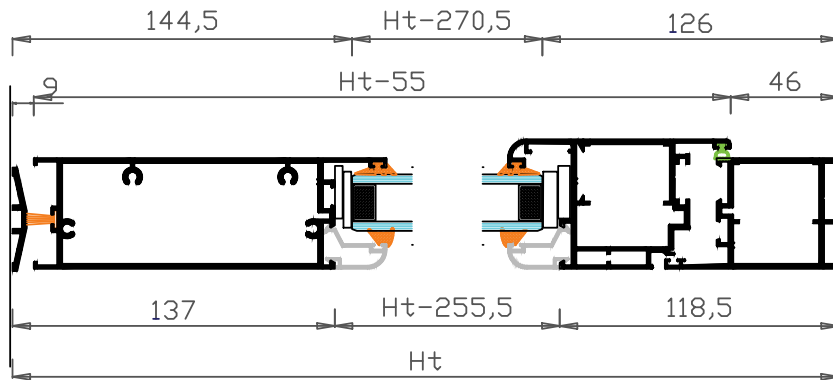


| TWO WINGS BALCONY DOOR |                            |      |
|------------------------|----------------------------|------|
| CODE                   | DESCRIPTION                | Q.TY |
| 90314                  | TOP E. BOTTOM FRAME        | 1    |
| 90314                  | SIDE FRAME                 | 2    |
| 90305                  | TOP E. BOTTOM SHUTTER      | 2    |
| 90305                  | SIDE SHUTTER               | 4    |
| 90302                  | ADAPTOR                    | 1    |
| 90312                  | BOTTOM DOOR                | 2    |
| 12806                  | SMALL THRESHOLD            | 1    |
| 90320                  | TOP E. BOTTOM GLAZING BEAD | 4    |
| 90320                  | SIDE GLAZING BEAD          | 4    |

| ACCESSORIES |                             |       |
|-------------|-----------------------------|-------|
| CODE        | DESCRIPTION                 | Q.TY  |
| 0XA017      | FRAME/SHUTTER CORNER JOINT  | 6     |
| 0XA024      | ALIGNMENT WING CORNER JOINT | 4     |
| 0XA020      | HINGE                       | 4     |
| 0XA030      | PLUG FOR ADAPTOR            | 1 Cp  |
| 0XA010      | CORNER FOR CENTRAL GASKET   | 2L+3H |
| 0XA029      | CORNER FOR CENTRAL GASKET   | 4     |
| 0XA005      | INSIDE CONNECTION GASKET    | 2L+3H |
| 0XA009      | OUTSIDE CONNECTION GASKET   | 2L+3H |
| 0XA007      | INSIDE GLASS GASKET         | 2L+4H |
| 0XA008      | OUTSIDE GLASS GASKET        | 2L+4H |

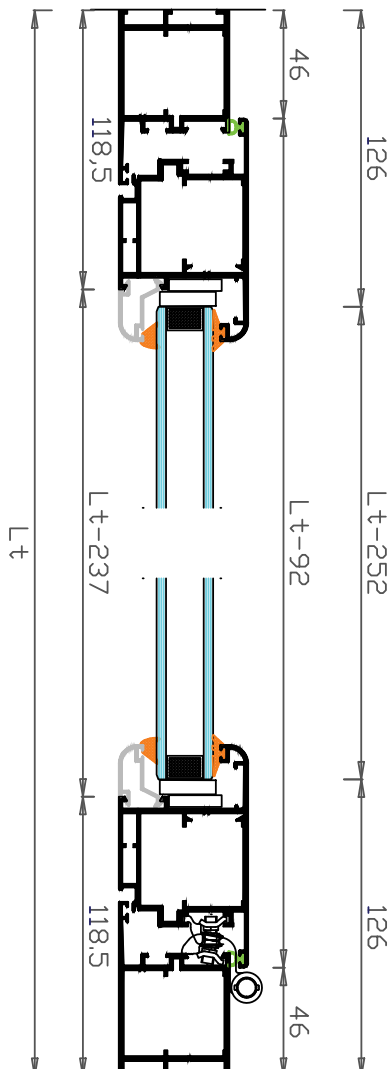
| GLASS SIZE |        |
|------------|--------|
| Lt+/-205   | Ht-269 |



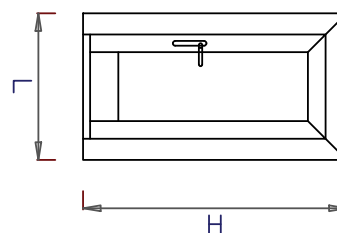


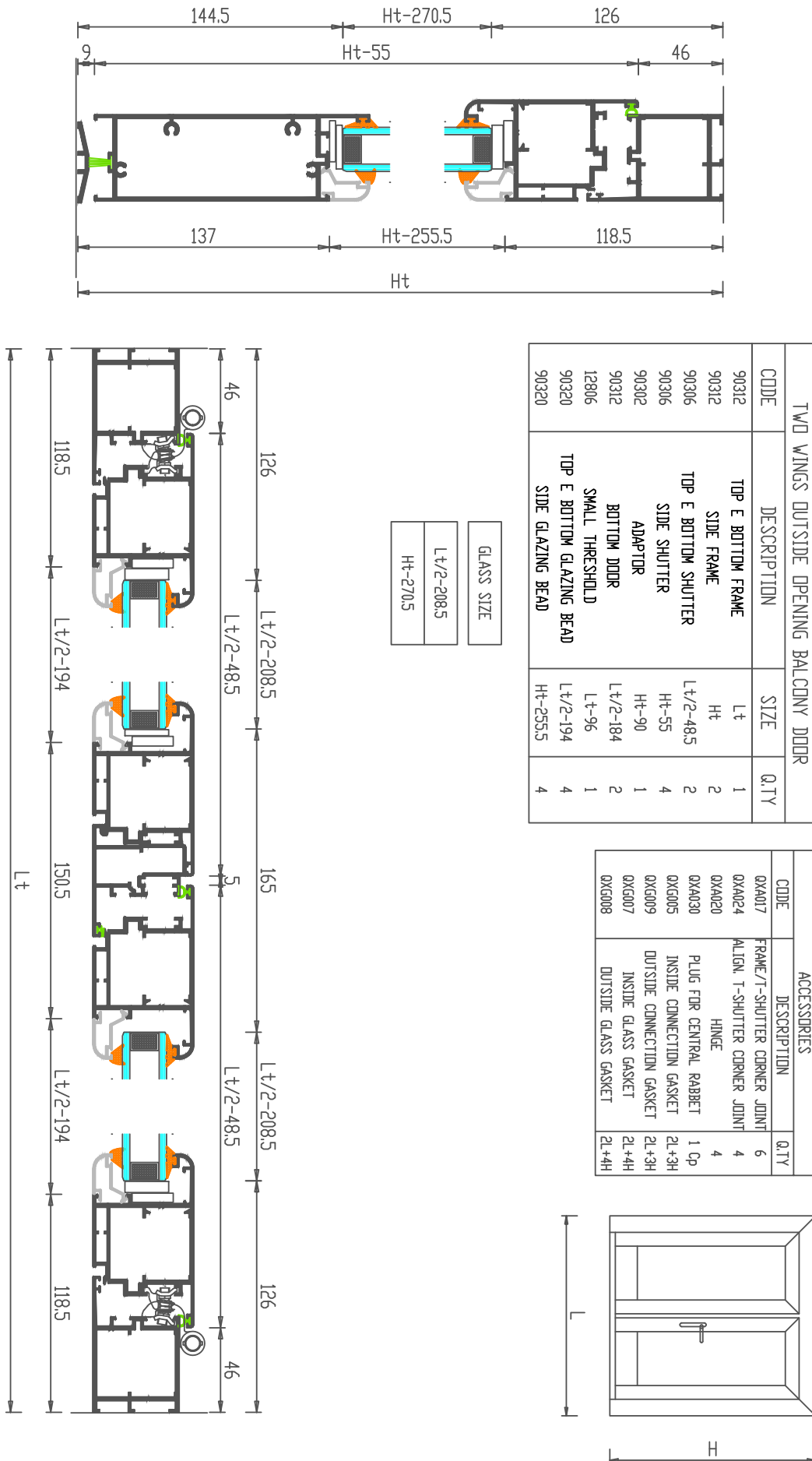
| ONE WING OUTSIDE OPENING BALCONY DOOR |                           |      |
|---------------------------------------|---------------------------|------|
| CODE                                  | DESCRIPTION               | Q.TY |
| 90312                                 | TOP E BOTTOM FRAME        | 1    |
| 90312                                 | SIDE FRAME                | 2    |
| 90306                                 | TOP E BOTTOM SHUTTER      | 2    |
| 90306                                 | SIDE SHUTTER              | 4    |
| 90302                                 | ADAPTOR                   | 1    |
| 90312                                 | BOTTOM DOOR               | 2    |
| 12806                                 | SMALL THRESHOLD           | 1    |
| 90320                                 | TOP E BOTTOM GLAZING BEAD | 4    |
| 90320                                 | SIDE GLAZING BEAD         | 4    |

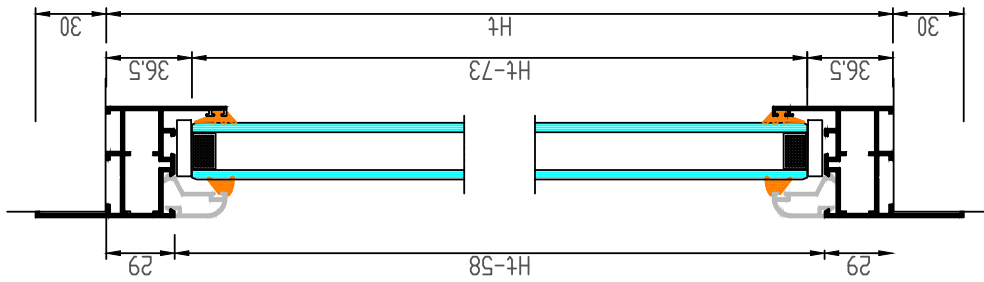
| GLASS SIZE |  |
|------------|--|
| Lt-252     |  |
| Ht-270,5   |  |



| ACCESSORIES |                               |       |
|-------------|-------------------------------|-------|
| CODE        | DESCRIPTION                   | Q.TY  |
| QXA017      | FRAME/T-SHUTTER CORNER JOINT  | 4     |
| QXA024      | ALIGN. T-SHUTTER CORNER JOINT | 2     |
| QXA020      | HINGE                         | 2     |
| QXG005      | INSIDE CONNECTION GASKET      | 2L+2H |
| QXG009      | OUTSIDE CONNECTION GASKET     | 2L+2H |
| QXG007      | INSIDE GLASS GASKET           | 2L+2H |
| QXG008      | OUTSIDE GLASS GASKET          | 2L+2H |

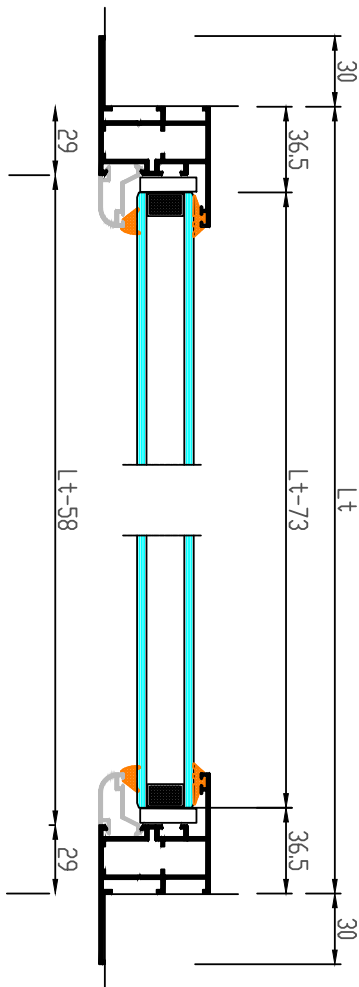




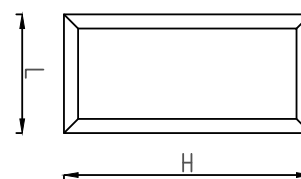


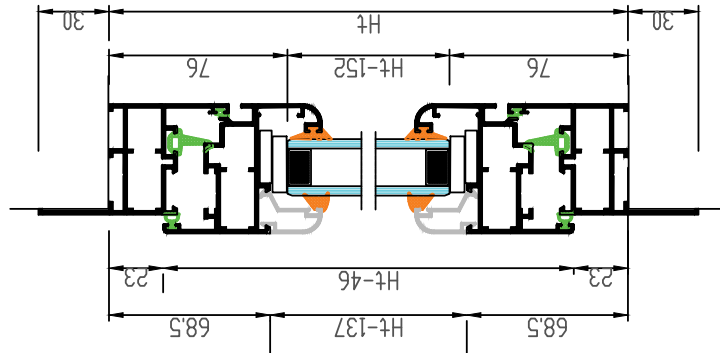
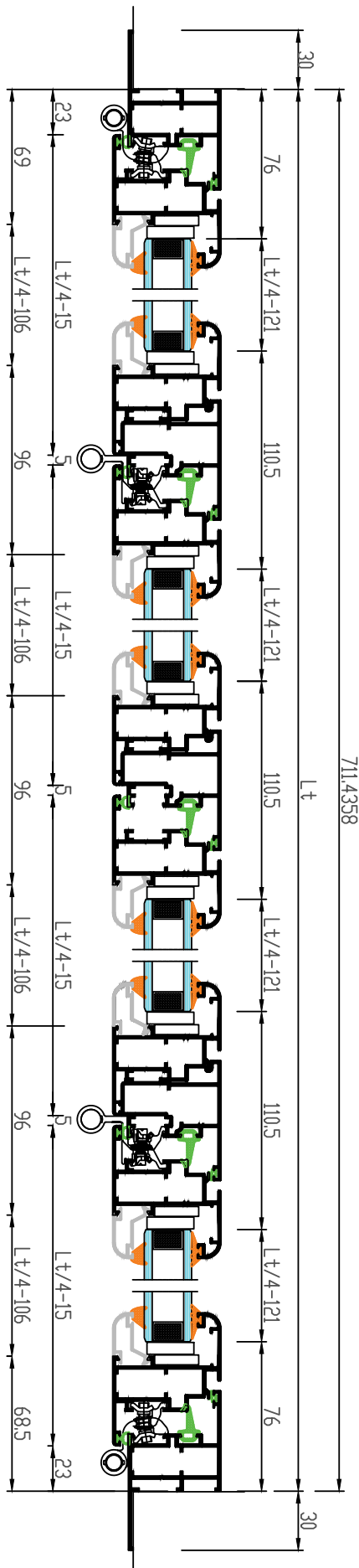
| FIX WINDOW |                           |       |      |
|------------|---------------------------|-------|------|
| CODE       | DESCRIPTION               | SIZE  | Q.TY |
| 90303      | TOP E BOTTOM FRAME        | Lt+60 | 2    |
| 90303      | SIDE FRAME                | Ht+60 | 2    |
| 90320      | TOP E BOTTOM GLAZING BEAD | Lt+58 | 2    |
| 90320      | SIDE GLAZING BEAD         | Ht+58 | 2    |

| GLASS SIZE |       |
|------------|-------|
| Lt+73      | Ht+73 |



| ACCESSORIES |                      |       |
|-------------|----------------------|-------|
| CODE        | DESCRIPTION          | Q.TY  |
| QXA015      | FRAME CORNER JOINT   | 4     |
| QXG007      | INSIDE GLASS GASKET  | 2L+2H |
| QXG008      | OUTSIDE GLASS GASKET | 2L+2H |

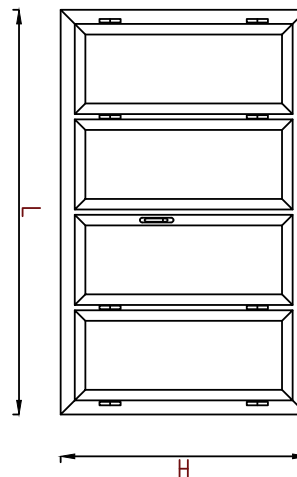




| GLASS SIZE |
|------------|
| L t/4-121  |
| H t-152    |

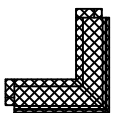
| FOUR WINGS WINDOW |                           |           |      |
|-------------------|---------------------------|-----------|------|
| CODE              | DESCRIPTION               | SIZE      | Q.TY |
| 90303             | TOP E BOTTOM FRAME        | L t+60    | 2    |
| 90303             | SIDE FRAME                | H t+60    | 2    |
| 90301             | TOP E BOTTOM SHUTTER      | L t/4-15  | 8    |
| 90301             | SIDE SHUTTER              | H t-46    | 8    |
| 90302             | ADAPTOR                   | H t-116   | 3    |
| 90320             | TOP E BOTTOM GLAZING BEAD | L t/4-106 | 8    |
| 90320             | SIDE GLAZING BEAD         | H t-137   | 8    |

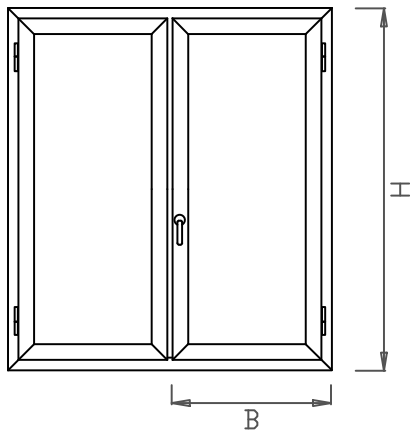
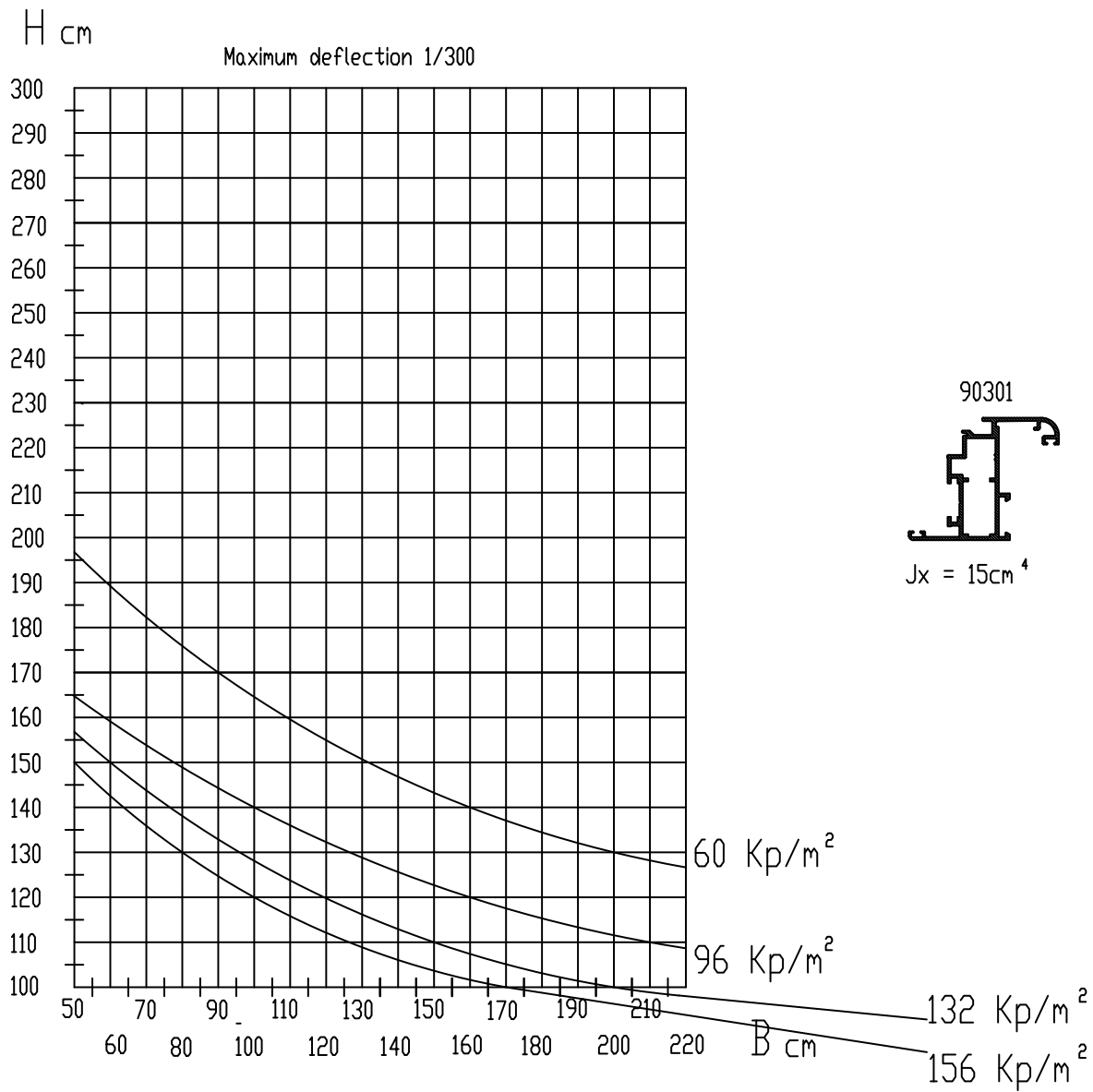
| ACCESSORIES |                            |       |
|-------------|----------------------------|-------|
| CODE        | DESCRIPTION                | Q.TY  |
| 0XA015      | FRAME/SHUTTER CORNER JOINT | 20    |
| 0XA020      | HINGE                      | 4     |
| 0XA031      | THIRD WING HINGE           | 4     |
| 0XA030      | PLUG FOR CENTRAL RABBIT    | 3 Cp  |
| 0XG010      | ADAPTOR                    | 2L+5H |
| 0XA029      | CORNER FOR CENTRAL GASKET  | 4     |
| 0XG005      | INSIDE CONNECTION GASKET   | 2L+5H |
| 0XG009      | OUTSIDE CONNECTION GASKET  | 2L+5H |
| 0XG007      | INSIDE GLASS GASKET        | 2L+8H |
| 0XG008      | OUTSIDE GLASS GASKET       | 2L+8H |

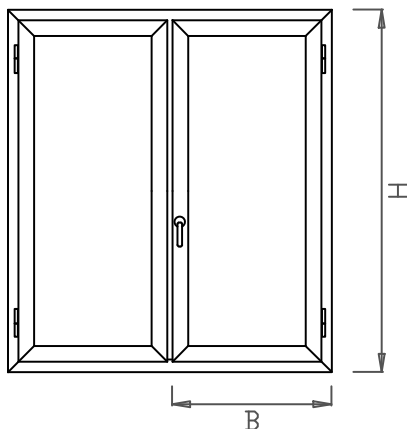
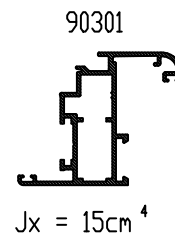
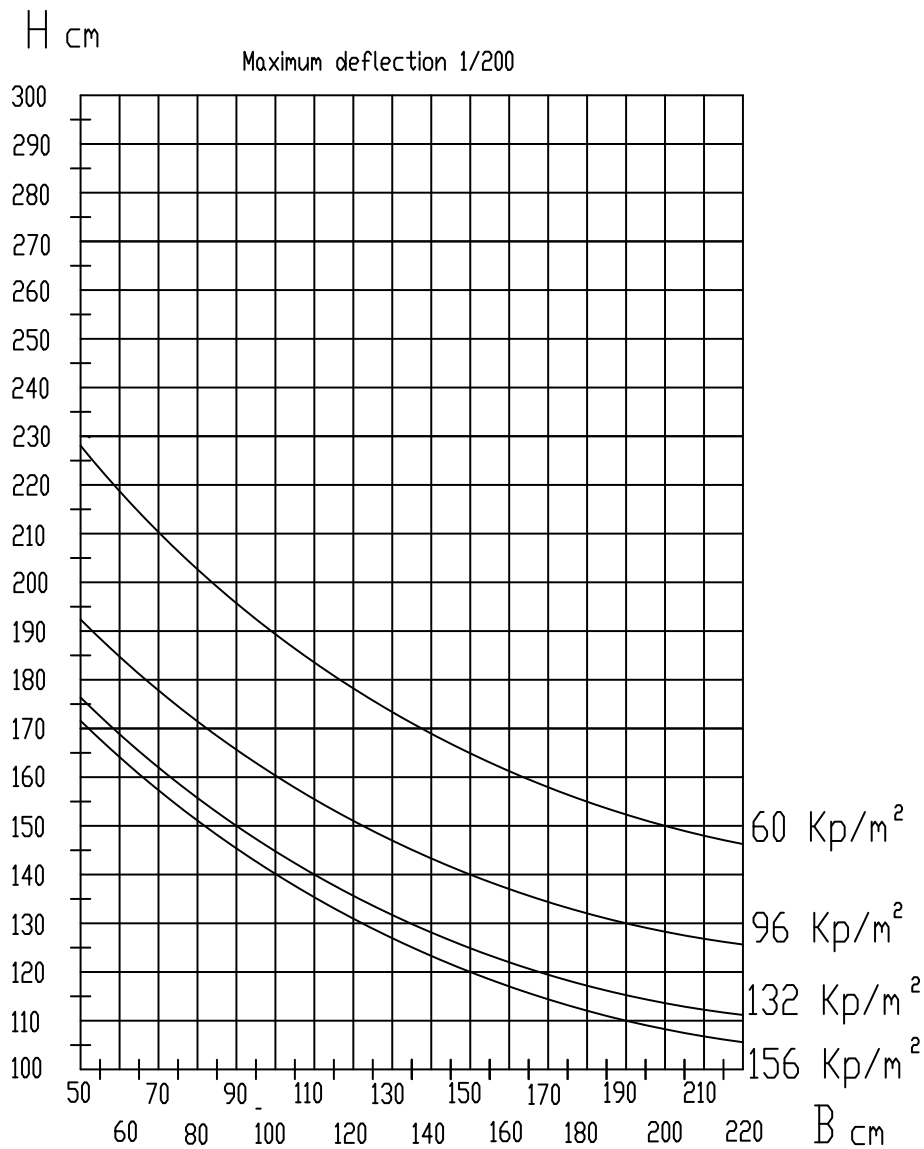


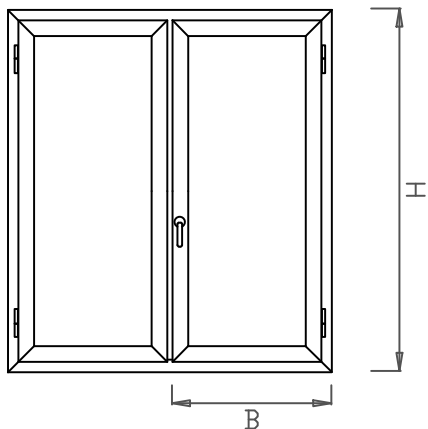
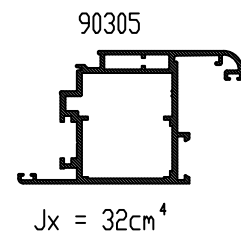
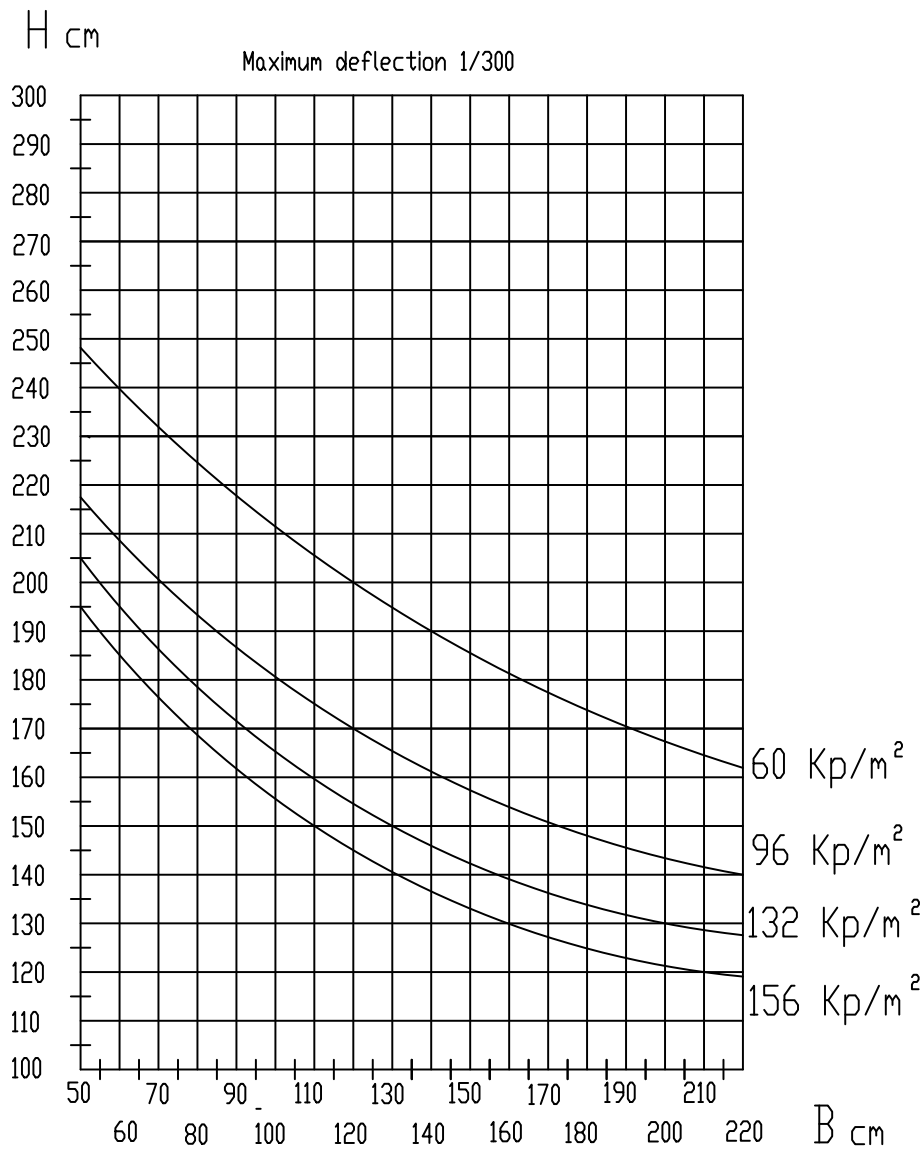


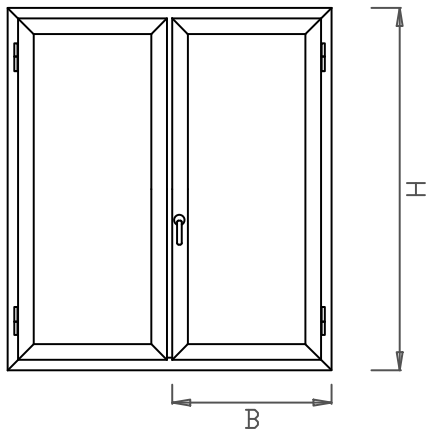
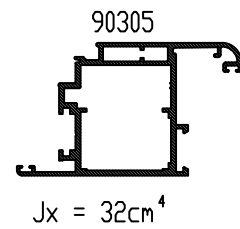
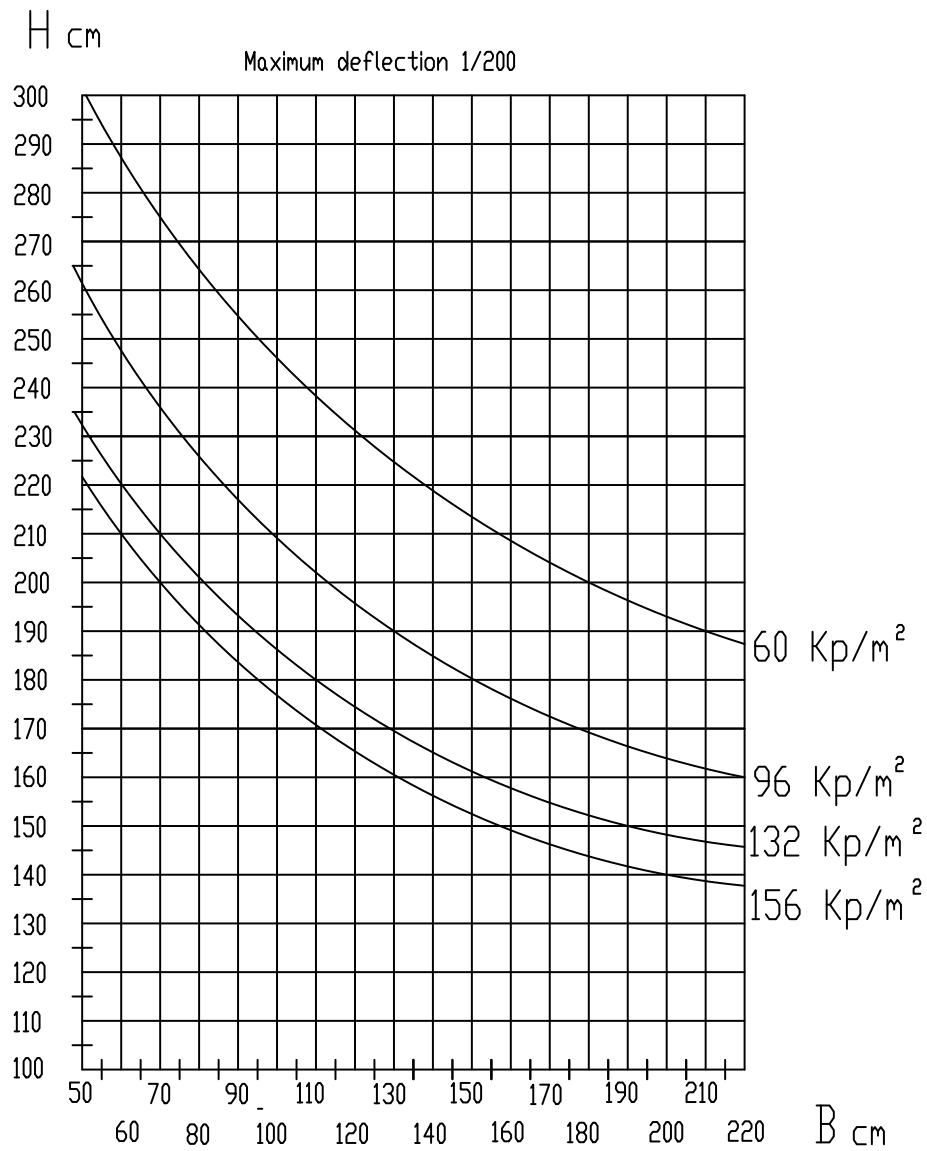
# Gasket EPDM

| DRAWING                                                                             | DESCRIPTION                       | CODE   | DRAWING                                                                             | DESCRIPTION               | CODE   |
|-------------------------------------------------------------------------------------|-----------------------------------|--------|-------------------------------------------------------------------------------------|---------------------------|--------|
|    | Inside glass gasket 5mm           | QXG007 |    | Outside glass gasket 3mm  | QXG008 |
|    | Inside connection gasket          | QXG005 |    | Outside connection gasket | QXG009 |
|  | Central gasket                    | QXG010 |  | Corner for central gasket | QXA029 |
|  | Plug for central rabbet for 90302 | QXA030 |                                                                                     |                           |        |
|                                                                                     |                                   |        |                                                                                     |                           |        |









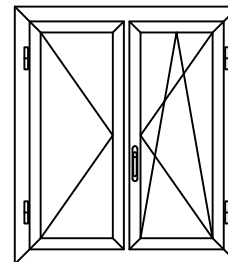


## T-PANDA 47 (HINGED-THERMAL)

## TECHNICAL DESCRIPTION OF THE SYSTEM:

### System description:

Aluminum profiles system, hardware and gaskets for the fabrication of Hinged Window & Doors with single and double glass .



**Aluminum alloy:** EN-AW-6063 (EN 573-3 EN 755-2)

**Alloy treatment:** T 6

**Dimensional tolerances:** UNI-EN 12020-2

### System features and characteristics:

The Depth of Fixed Frame is 47-55 mm & Flap Depth is 55 mm, with an overlap in the interlock of 8 mm.

The Bars are able to accept the accessories for the corner connection . The Profile are Softline designed with regular or curved beads cut at 45 Degree or 90 Degree, with or without corner finishing pieces. With Glazing Gap range 13.5 - 32.5 mm.

### Mechanical Characteristics:

Elastic Limit : > 16.5 KG/MM

Elongation : 10%

Breaking Strength : 22 KG/MM

T : > 24 N/MM (After Surface Treatment)

### System performances:

This system have been tested and classified according to norms the European standards and norms EN 14351 -1:2006 At Mater Lab Italy -Test No:052016INT

Air Leakage : EN 12207

Water Resistance : EN 12208

Wind Load : EN 12210/12211

### Thermal Break Characteristics:

The polyamide strips in our thermal break systems are manufactured by Technoform in Europe. They are reinforced with 25 % Glass-Fiber and resist powder coating and anodizing temperatures upto 200 deg. C. These Strips absorb less than 2% of water at a chamber temperature of 23 deg. C and a level of 50% Humidity. The Window Frame thermal Coefficient U-Value = 4.85 W/SQM K. The assembly between the 14mm wide Polyamide insulating strips and the aluminum extrusions is done using our dedicated equipment imported from Switzerland.

### Sealing Type Air - Water:

The sealing is guaranteed by a central sealing gasket in EPDM-Rubber ASTM Tested. and second barrier, Constituted by a sealing gasket is in the flap by the inside overlap. & Glazing is done with EPDM Sealing Gasket.

### System dimensions:

The Dimensional limits of Fabrication are as a direct Consequences of the wind pressure, or the accessories capacities, and the glazing weight.

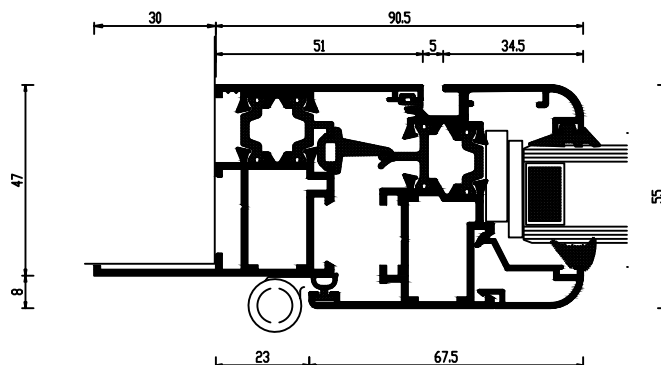
### Field of application:

The system have been created and studied to be apply on private buildings as well on public buildings and high rise towers.

### Design features:

The system it is composed of various design solutions including all types of projecting windows and others openings. The external lines are lightly rounded conferring to the profiles a good design and equilibrate sections. The system it is design in order to insure good performances and have at the same time a modern style.

| ALUMINUM PROFILES SYSTEM FOR<br>HINGED WINDOWS & DOORS - THERMAL BREAK |                               |
|------------------------------------------------------------------------|-------------------------------|
| SYSTEM DIMENSIONS AND DESCRIPTION                                      |                               |
| <b>FIXED FRAME DEPTH:</b>                                              | <b>47-55 mm</b>               |
| <b>OPENING FRAME DEPTH</b>                                             | <b>55 mm</b>                  |
| <b>SEALING:</b>                                                        | <b>BY DOUBLE GASKETS</b>      |
| <b>THERMAL BREAK</b>                                                   | <b>16 mm Technoform Strip</b> |
| <b>ACCESSORIES:</b>                                                    | <b>SYSTEM ACCESSORIES</b>     |
| <b>GLAZING:</b>                                                        | <b>13.5-32.5 mm</b>           |
| <b>ALUMINIUM ALLOY</b>                                                 | <b>AA 6063 T6</b>             |



## Surface Treatment:

All the surface treatment are conform to the quality labels QUALICOAT for Powder Coating and QUALANOD for anodization.

Anodizing we guarantee the minimum thickness of 15 micron up to 25 microns according to international norms.

The powder coating is done with thermosetting and Polyesters Polymeric powders, the profiles are finished into special coating ovens, where the powders reach the right hardness through a heat treatment.

## Surface treatment resistance:

The surface treatment done according to QUALANOD and QUALICOAT Quality labels shall be guarantee against corrosion and surface aging degradation for a period. The surface treatments shall resist to normal and marine exposition without been effected by corrosion or loss of shines. The most relevant factors influencing the surface treatment life lasting are the direct exposure to chemicals. The direct exposure in the front of the sea and/or salty water it may reduce the life lasting of the components. The exposure to heavy polluted environment may cause also problems. A regular cleaning with Ph neutral water and soaps increase the components life.

## Safety:

In order to prevent injuries or/an accidents the windows and doors are to be installed as displayed into this catalogue, anchoring the components to the building and using original only accessories. The fixing should be made according to the National norms for security and safety use.

## Gaskets:

The gaskets used during assembling and installing the components should be only the ones created for this system and displayed in this product catalogue. The use of other gaskets or/and brushes it may cause functional and design problems. The gaskets used should be conform to the national norms for windows and doors safety applications, do not release toxic smokes in case of fire and insure the performances during all the component life lasting.

## Sealing products:

All the sealing products employed during the fabrication of the components and installing the components on the building are to be conform to the specification uses for aluminum profiles and its surface treatments. Sealing products should be PH neutral and specifically studied do not start any chemical or/and corrosive reaction with the windows and doors components, accessories, gaskets and surface treatments.

## Accessories:

All the accessories used for the manufacturing, mounting, functioning and installation of this system are specifically studied for this system in order to insure performances and a correct functioning of the models. The use of others accessories different's from the ones displayed in this catalogue it may effect or/and make dangerous the functioning of the component. Only the accessories studied for this system are the ones to be used.



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## Test report

**Test number:** 052016INT

**Customer:** QALEX (Qatar Aluminium Extrusion CO.)

**Test sequence:** Air leakage EN12207; Water resistance EN12208; Wind load EN12210/12211

**Test parameters:**  $T_{air} = 24.2\text{ }^{\circ}\text{C}$ ,  $T_{water} = 22.0\text{ }^{\circ}\text{C}$ , Rh 48.3%, pressure 998 hPa

**Sample type:** Side hinged window, 2 sash (QALEX T-Panda 47)

**Sample dimension:** Frame W=1450 mm; H=1670 mm

### Test bench

**Model:** ACS 3030

**Max dimension test:** 3000 x 3000 mm

**Fan:** inverter driven system with continuous check of pressure in test chamber, and continuous measurement of flow rate

**Hydraulic pump:** valve adjustment and continuous measurement of flow rate with infrared flow meter

**Auxiliary equipment:** fog machine



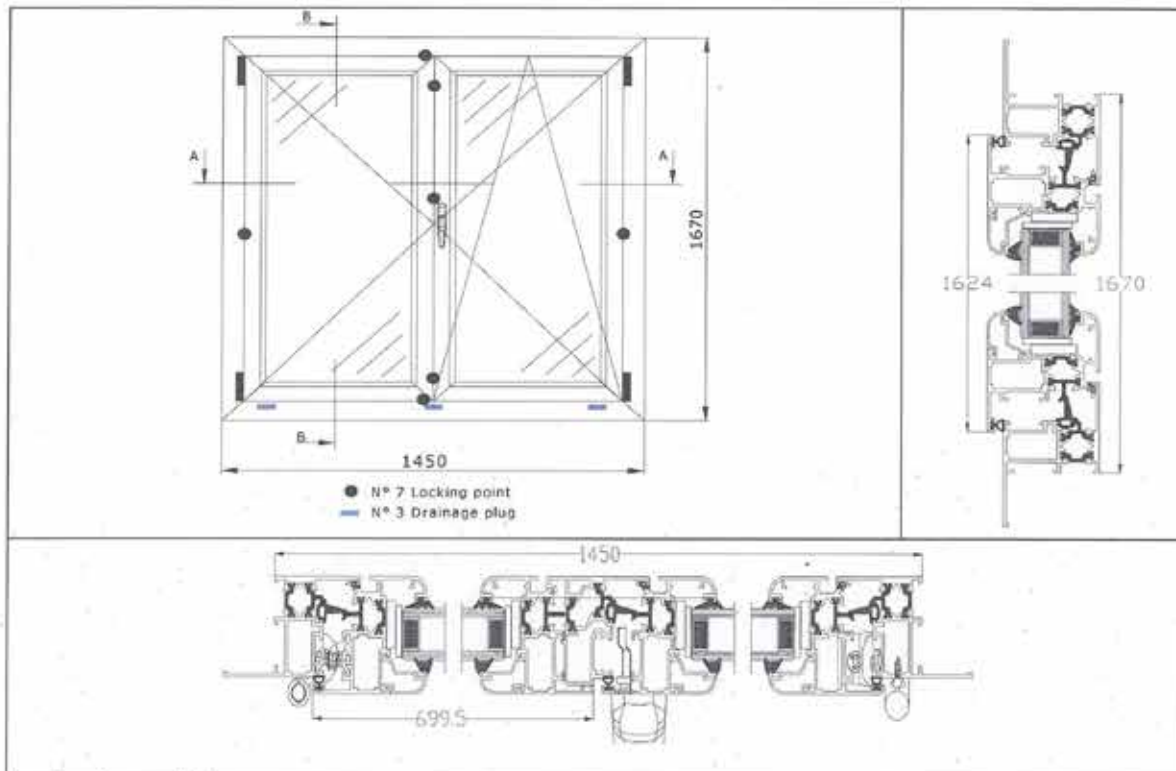
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## Frontal view and sections:



## Hardware list:

| Cod.     | Description                                                                   | Qty |
|----------|-------------------------------------------------------------------------------|-----|
| 2010.2   | Polyamide rod - Coil from 250m                                                | -   |
| 2415     | "ROXI" Frame adjusting plate                                                  | 10  |
| 2422     | Frame adjusting setscrews - Length 20mm                                       | 10  |
| 2144     | Drainage plug                                                                 | 3   |
| 2432.1   | Shutter support Kit with roller                                               | 1   |
| 3420F.1  | "WEEN" Basic kit with anti-false manouvre on the cremone bolt - load 160 Kg   | 1   |
| 3400.22  | "WEEN" Long arm (for sash from 601mm to 1700 mm)                              | 1   |
| 3400F.31 | "WEEN" Horizontal lower and vertical Supplementary Closing                    | 1   |
| 4206     | Zamak Double-Rod junction                                                     | 1   |
| 4226.1   | "HOOK" Additional intermediate third closing point                            | 1   |
| 4515.1   | "BI-HID" Kit of bi-directional latches                                        | 1   |
| 6011.10  | "COMFORT" Cremone for Tilt&Turn with anti-false manoeuvre on the cremone bolt | 1   |
| 9211.3   | "TOP RAPID" Fast mounting hinge                                               | 2   |

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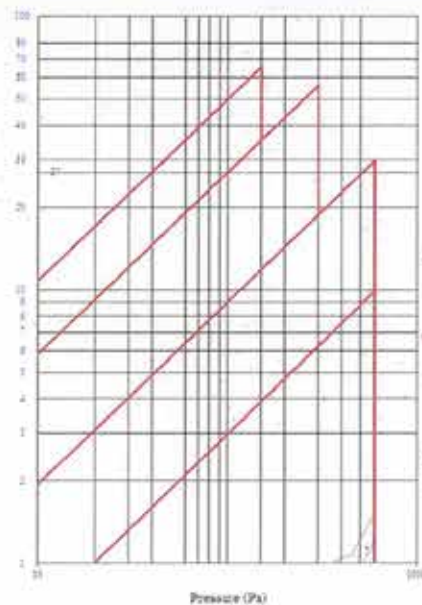
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**Air leakage:**



**Classification: grade 4**

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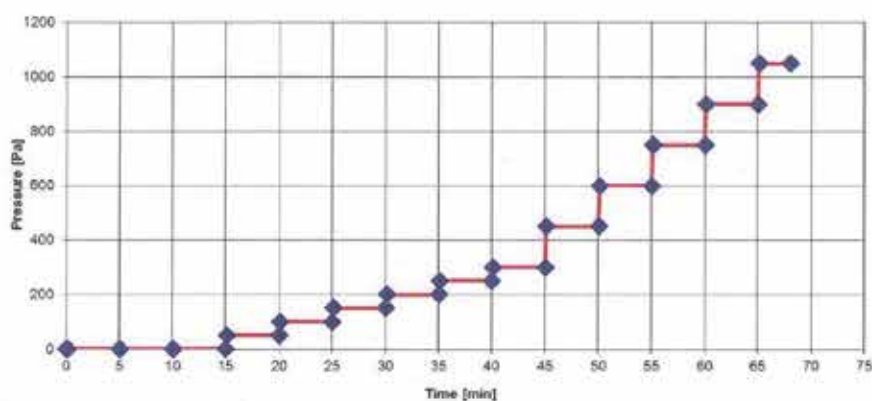
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## Water resistance:

Test sequence



Water leaks at 1050 Pa

Classification: grade E900

Picture:



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**Wind load:**



test pressure:  $\pm 2000$  Pa  
deflection:  $< 1/300$

safety pressure:  $\pm 3000$  Pa  
classification: C5

---

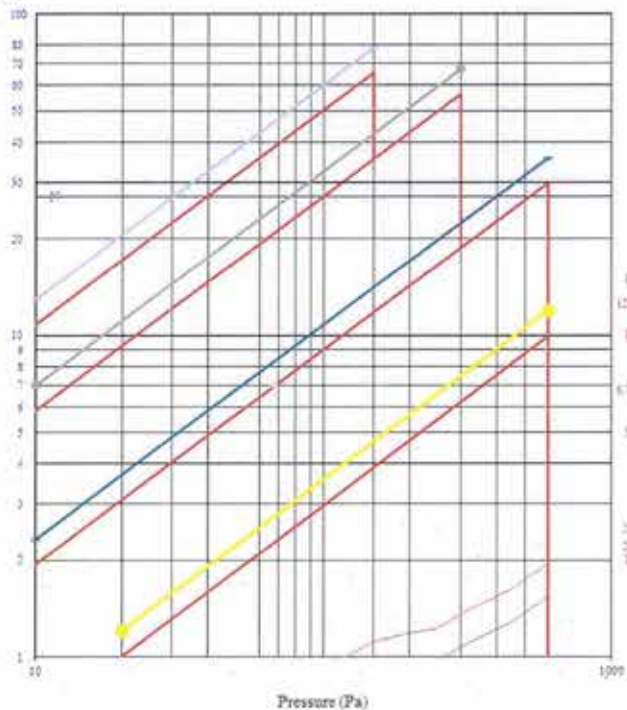
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### Air leakage check:



result: passed

### Test results

| Air leakage | Water resistance | Wind load |
|-------------|------------------|-----------|
| 4           | E900             | C5        |

June 13<sup>rd</sup>, 2016

Lab assistant  
Nicola Antonio Dentamaro

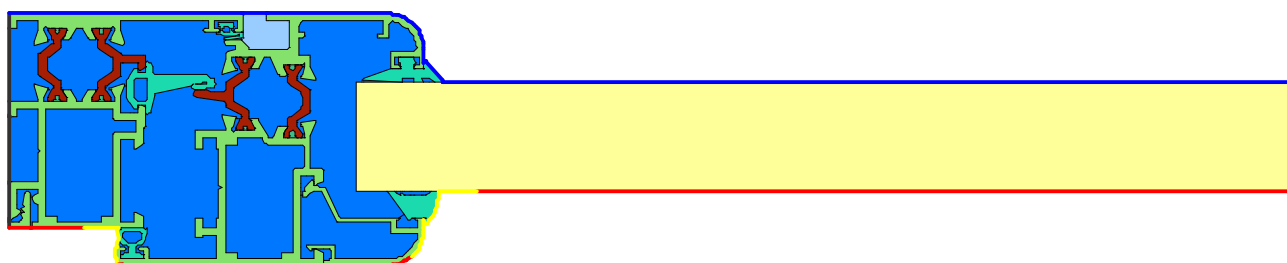
*Nicola Antonio Dentamaro*

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| Material                                | $\lambda[W/(m \cdot K)]$ |
|-----------------------------------------|--------------------------|
| Aluminium (Si alloys)                   | 160,000                  |
| EPDM (ethylene propylene diene monomer) | 0,250                    |
| Panel                                   | 0,035                    |
| Polyamid (nylon)                        | 0,250                    |
| Polyamid 6.6 with 25% glassfibre        | 0,300                    |
| Slightly ventilated air cavity          | Eps=0,9/0,9              |
| Unventilated air cavity                 | Eps=0,9/0,9              |

| Boundary Condition       | $q[W/m^2]$ | $\theta[^\circ C]$ | $R[(m^2 \cdot K)/W]$ | $\epsilon$ |
|--------------------------|------------|--------------------|----------------------|------------|
| Exterior, frame          |            | 0,000              | 0,040                |            |
| Interior, frame, normal  |            | 20,000             | 0,130                |            |
| Interior, frame, reduced |            | 20,000             | 0,200                |            |
| Symmetry/Model section   | 0,000      |                    |                      |            |

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www.technoform.ae, Tel +971 4 321 5615, Fax +971 4 321 5815, [middleeast@technoform.ae](mailto:middleeast@technoform.ae)

Technoform Gr

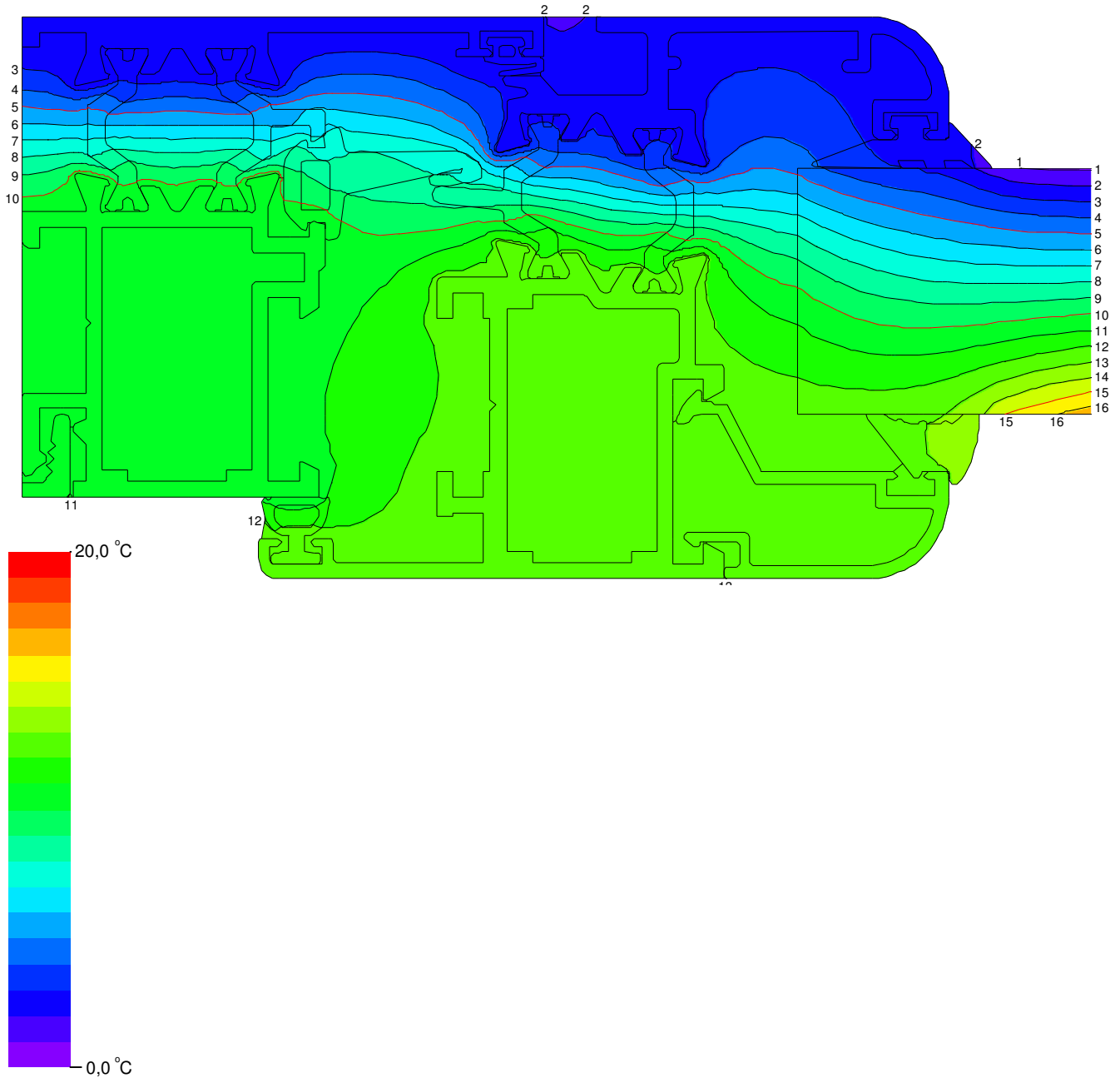
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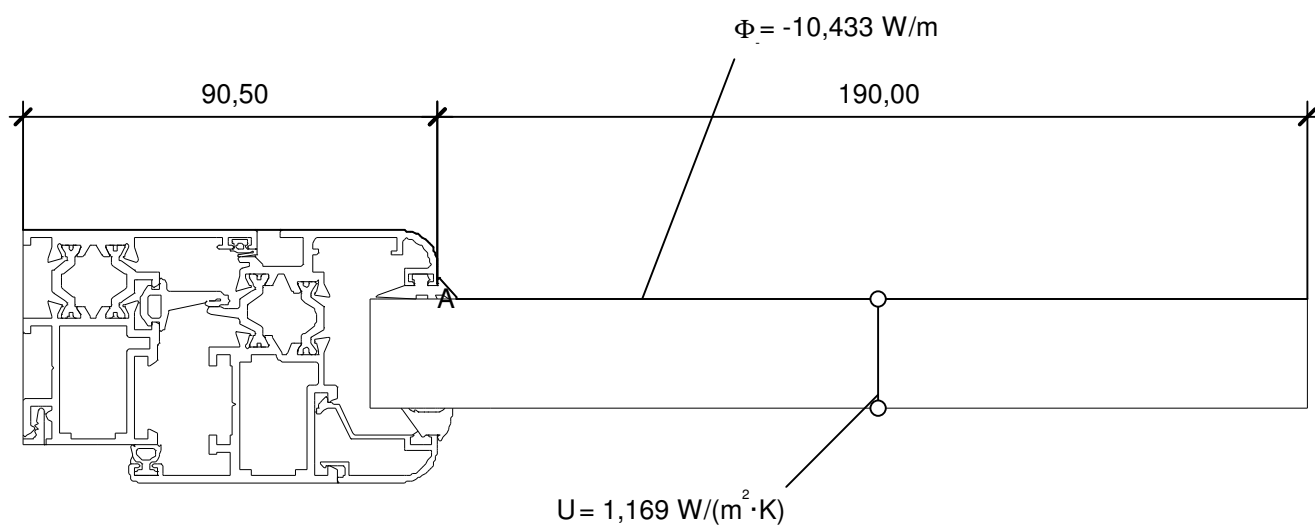
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$$U_{fA} = \frac{\frac{\Phi}{\Delta T} - U_p \cdot b_p}{b_f} = \frac{\frac{10,433}{20,000} - 1,169 \cdot 0,190}{0,091} = 3,311 \text{ W/(m}^2 \cdot \text{K)}$$

TECHNOFORM MIDDLE EAST

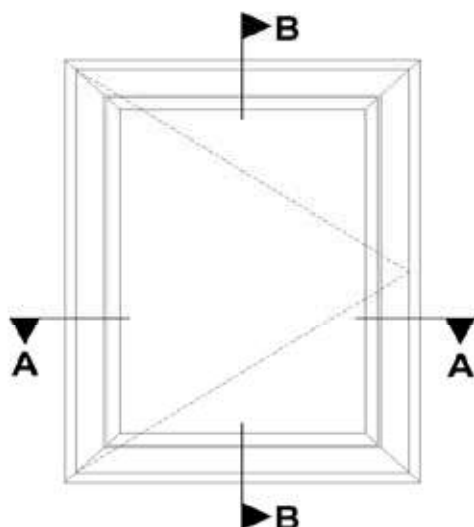
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TECHNOFORM BAUTEC

## Single window

SPECIMEN :



Calculation Type :

Simplified calculation method

### Data from Autocad

- Projected widths a , b , h
- Area of the glass
- Area of the Spandrel
- Area of Aluminium Profiles

### Project Data

- Window Dimensions , L, H
- Glass U value

### Calculation Sheet Data

- U values of Aluminium Sections

### Results

- Mean U value of the frame
- Mean U value of the window

### Calculation

|                       |                |                       |         |       |
|-----------------------|----------------|-----------------------|---------|-------|
|                       | H              | Total window height   | [m]     | 1.400 |
|                       | L              | Total window length   | [m]     | 1.000 |
| Frame and Sash        | a              | Projected Width       | [m]     | 0.091 |
|                       |                | area (projected)      | [m²]    | 0.402 |
|                       | U <sub>f</sub> | thermal transmittance | [W/m²K] | 3.311 |
|                       |                | Energy Transfer       | [W/K]   | 1.330 |
|                       |                |                       |         |       |
|                       |                |                       |         |       |
|                       |                |                       |         |       |
|                       |                |                       |         |       |
|                       |                |                       |         |       |
| Summary P1            |                |                       | [W/K]   | 1.330 |
| Frame Area            | A <sub>f</sub> | Total Frame Area      | m²      | 0.402 |
| Mean U Value of Frame |                |                       | [W/m²K] | 3.311 |

|         |                |                                                                |         |       |
|---------|----------------|----------------------------------------------------------------|---------|-------|
| Pannel  |                | glazing area (projected)                                       | [m²]    | 0.998 |
|         |                | thermal transmittance of glass                                 | [W/m²K] | 1.300 |
|         |                |                                                                | [W/K]   | 1.298 |
| PSI     |                | Visible Glass Perimeter                                        | m       | 4.078 |
|         | Ψ <sub>g</sub> | Linear Transmittance of the glass Edge - as per EN ISO 10077-1 | W/m     | 0.110 |
|         |                |                                                                | W       | 0.448 |
| results |                |                                                                | [W/K]   | 3.078 |
|         |                | total area of the window                                       | [m²]    | 1.400 |
| WINDOW  |                | mean thermal transmittance of total window                     | [W/m²K] | 2.197 |

TECHNOFORM MIDDLE EAST

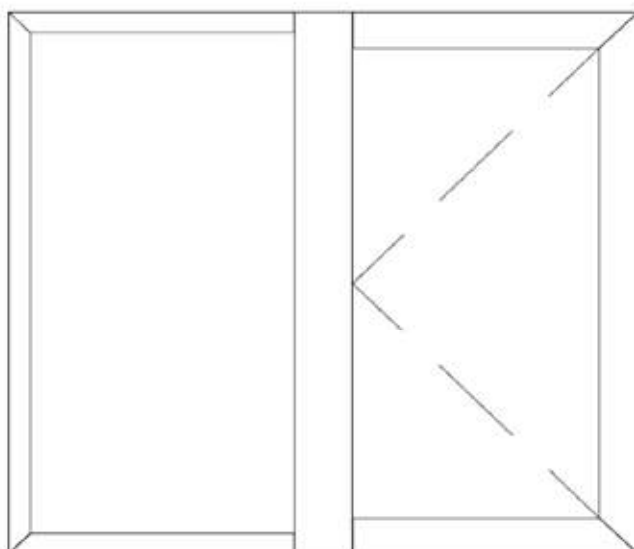
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## Single window with top fix

SPECIMEN :



Calculation Type :  
Simplified calculation method

### Data from Autocad

- Projected widths a , b , h
- Area of the glass
- Area of the Spandrel
- Area of Aluminium Profiles

### Project Data

- Window Dimensions , L, H
- Glass U value

### Calculation Sheet Data

- U values of Aluminium Sections

### Results

- Mean U value of the frame
- Mean U value of the window

| Calculation             |                |                       |         |       |
|-------------------------|----------------|-----------------------|---------|-------|
|                         | H              | Total window height   | [m]     | 1.400 |
|                         | L              | Total window length   | [m]     | 1.500 |
| Frame and Sash          | a              | Projected Width       | [m]     | 0.091 |
|                         |                | area (projected)      | [m²]    | 0.250 |
|                         | U <sub>f</sub> | thermal transmittance | [W/m²K] | 3.311 |
|                         |                | Energy Transfer       | [W/K]   | 0.827 |
| Fix Frame               | b              | Projected Width       | [m]     | 0.051 |
|                         |                | area (projected)      | [m²]    | 0.141 |
|                         | U <sub>f</sub> | thermal transmittance | [W/m²K] | 3.157 |
|                         |                | Energy Transfer       | [W/K]   | 0.444 |
| Horizontal Intermediate | c              | Projected Width       | [m]     | 0.140 |
|                         |                | area (projected)      | [m²]    | 0.196 |
|                         | U <sub>f</sub> | thermal transmittance | [W/m²K] | 3.321 |
| Summary P1 to P3        |                |                       | [W/K]   | 1.923 |
| Frame Area              | A <sub>f</sub> | Total Frame Area      | m²      | 0.587 |
| Mean U Value of Frame   |                |                       | [W/m²K] | 3.277 |

|         |   |                                                                |         |       |
|---------|---|----------------------------------------------------------------|---------|-------|
| Pannel  |   | glazing area (projected)                                       | [m²]    | 1.513 |
|         |   | thermal transmittance of glass                                 | [W/m²K] | 1.300 |
|         |   |                                                                | [W/K]   | 1.967 |
| PSI     | Ψ | Visible Glass Perimeter                                        | m       | 7.471 |
|         |   | Linear Transmittance of the glass Edge - as per EN ISO 10077-1 | W/m     | 0.110 |
|         |   |                                                                | W       | 0.822 |
|         |   |                                                                |         |       |
| results |   |                                                                | [W/K]   | 4.712 |
|         |   | total area of the window                                       | [m²]    | 2.100 |
|         |   |                                                                |         |       |
| WINDOW  |   | mean thermal transmittance of total window                     | [W/m²K] | 2.244 |

# POLYAMIDE STRIPS- DATA SHEET

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## MATERIAL DATA SHEET Insulating Strips of PA 66 GF 25 Dry Impact Resistant

| No. | Characteristic                          | Reference Standard                                   | Unit              | Samples Prepared From<br>Insulating Strips |                                   | Extruded | Inject-Moulded<br>Samples |
|-----|-----------------------------------------|------------------------------------------------------|-------------------|--------------------------------------------|-----------------------------------|----------|---------------------------|
|     |                                         |                                                      |                   | Dry <sup>1</sup>                           | Humidity Equilibrium <sup>2</sup> |          | Dry <sup>1</sup>          |
| 1   | Melting Temperture                      | DIN EN ISO 11357-3                                   | °C                | Min.250                                    | Min.250                           |          | Min.250                   |
| 2   | Density                                 | DIN EN ISO 1183-1 or -3                              | g/cm <sup>3</sup> | 1.3 ± 0.05                                 | 1.3 ± 0.05                        |          | 1.3 ± 0.05                |
| 3   | Annealing Residue (Glass Fibre Content) | DIN EN ISO 1172                                      | %                 | 25 ± 2.5                                   | 25 ± 2.5                          |          | 25 ± 2.5                  |
| 4   | Shore Hardness D                        | DIN EN ISO 868                                       |                   | 82 ± 4                                     | 78 ± 4                            |          | 84 ± 2                    |
| 5   | Impact Strength                         | DIN EN ISO 179-1 <sup>3</sup> DIN 53453 <sup>4</sup> | kJ/m <sup>2</sup> | Min.30 or without break                    | Min.40 or without break           |          | Min.35                    |
| 6   | Tensile Strength                        | DIN EN ISO 527-2 and -4                              | N/mm <sup>2</sup> | Min.80                                     | Min.50                            |          | Min.110                   |
| 7   | Young's Module                          | DIN EN ISO 527-2 and -4                              | N/mm <sup>2</sup> | Min.4500                                   | Min.2000                          |          | Min.6000                  |
| 8   | Elongation at Break                     | DIN EN ISO 527-2 and -4                              | %                 | Min.3                                      | Min.7                             |          | Min.3                     |

<sup>1</sup> Sample Water Content Less then 0.2 % by weight

<sup>2</sup> Fast Conditioning ( EN ISO 1110)

<sup>3</sup> Methord 1fU

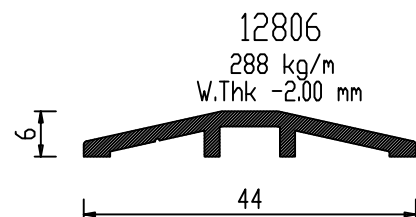
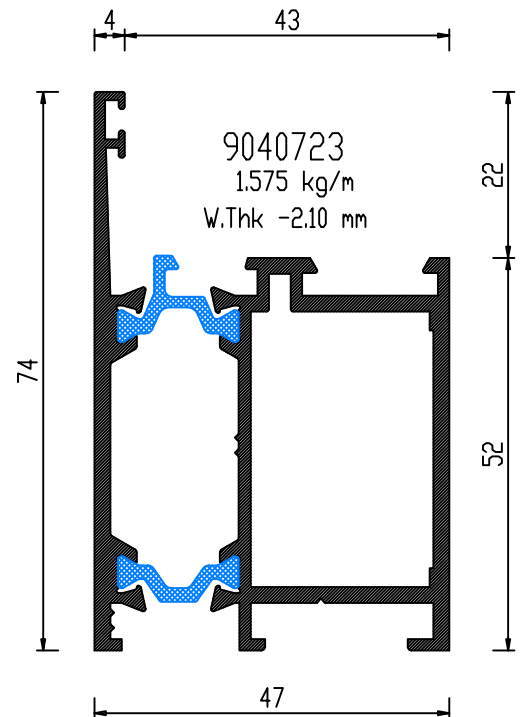
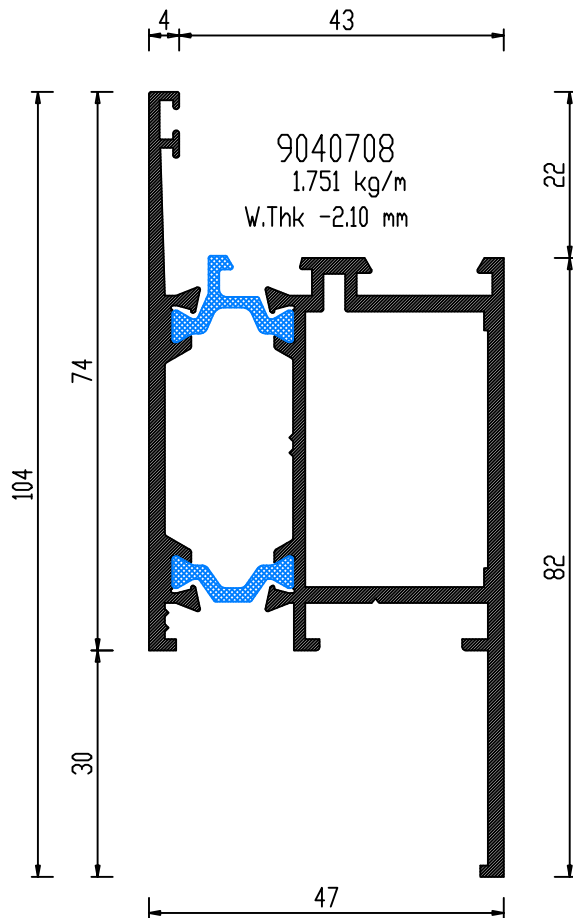
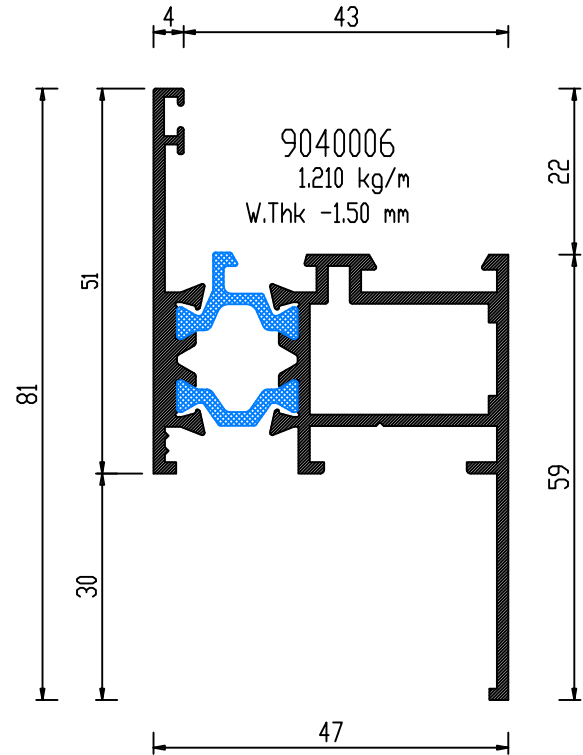
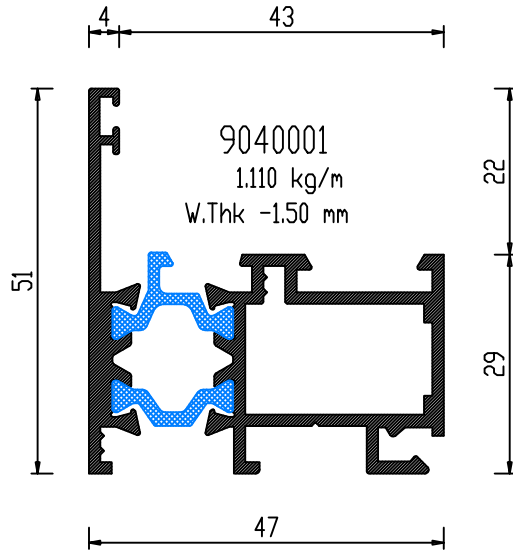
<sup>4</sup> Standard small Specimen (50 mm x 6 mm x wallthickness)

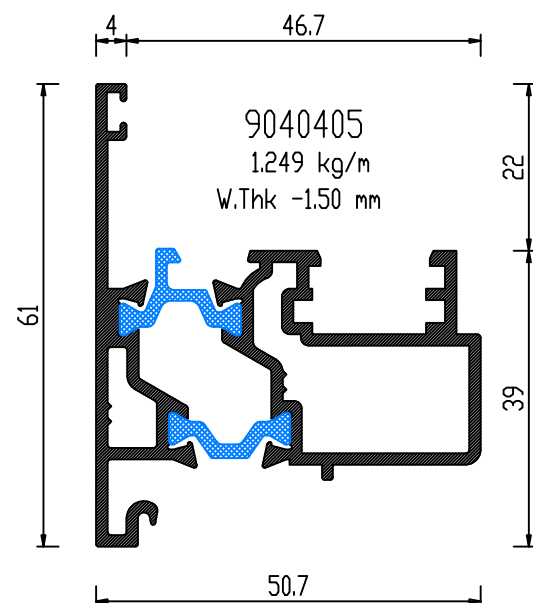
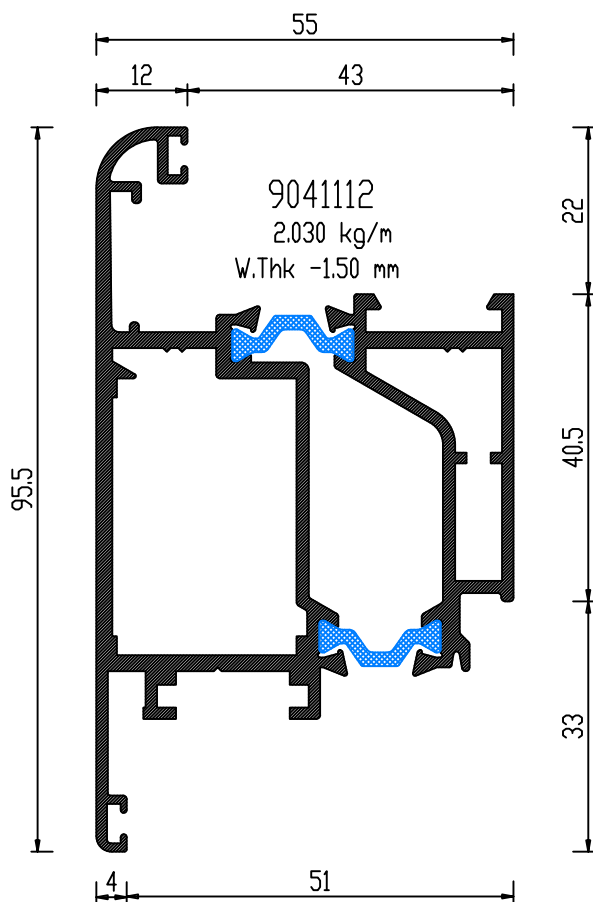
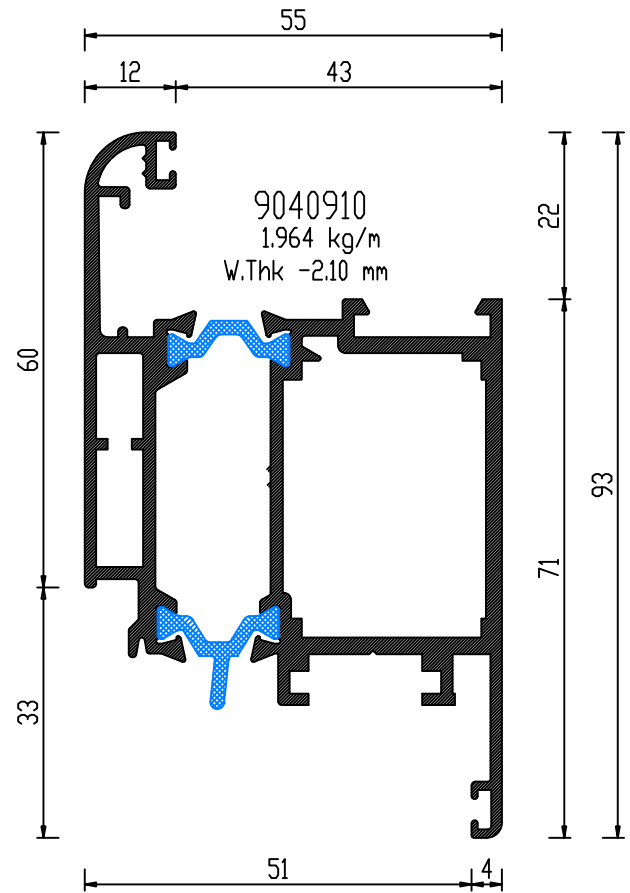
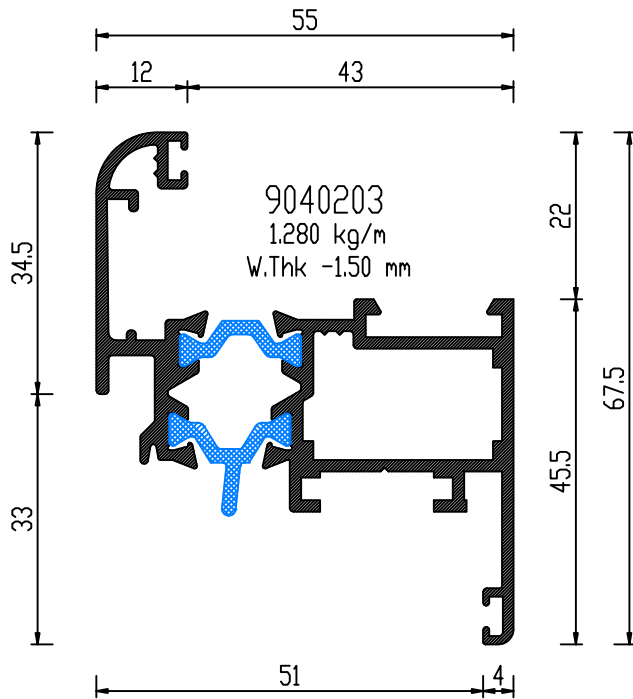
| CODE    | DRAWING<br>Y<br>X | DESCRIPTION                               | Weight<br>kg/m | Surface<br>□x mm | Ix<br>cm <sup>4</sup> | Iy<br>cm <sup>4</sup> |
|---------|-------------------|-------------------------------------------|----------------|------------------|-----------------------|-----------------------|
| 9040001 |                   | Frame without Arcitrave                   | 1.110          | 79               | 4.51                  | 8.99                  |
| 9040203 |                   | Shutter                                   | 1.280          | 113.5            | 7.56                  | 13.63                 |
| 9040405 |                   | Adaptor                                   | 1.249          | 101              | 6.36                  | 10.29                 |
| 9040006 |                   | frame with Arcitrave                      | 1.210          | 116.5            | 11.57                 | 8.33                  |
| 9040708 |                   | Double frame with Arcitrave               | 1.751          | 162.5            | 17.42                 | 28.45                 |
| 9040910 |                   | Double Shutter<br>for door inside opening | 1.964          | 161              | 22.24                 | 28.76                 |
| 9041112 |                   | T-Shutter<br>for door outside opening     | 2.030          | 166.5            | 21.77                 | 31.13                 |
| 9041314 |                   | T section Big                             | 1.568          | 132              | 11.81                 | 14.33                 |
| 9041516 |                   | T-profile                                 | 1.217          | 108              | 9.54                  | 7.13                  |
| 9040017 |                   | Adaptor                                   | 979            | 62               | 3.69                  | 6.94                  |

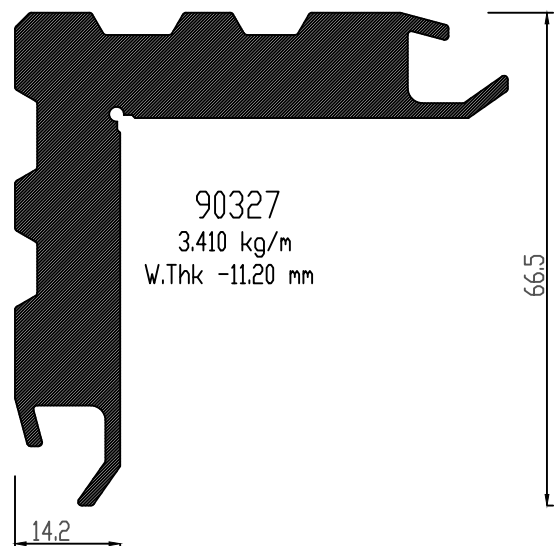
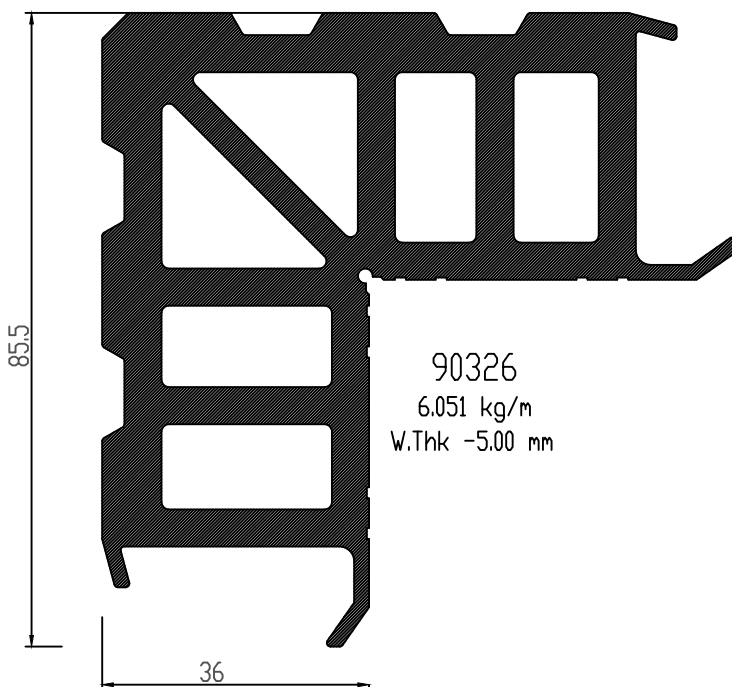
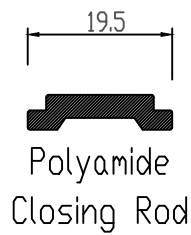
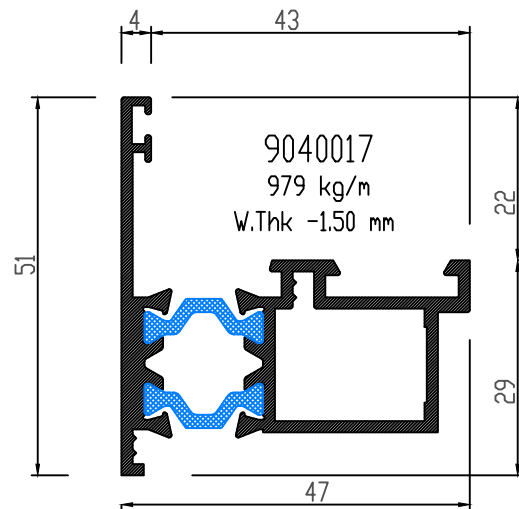
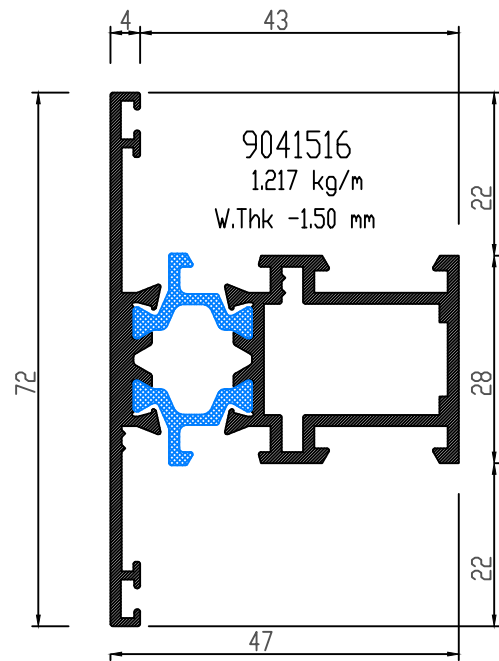
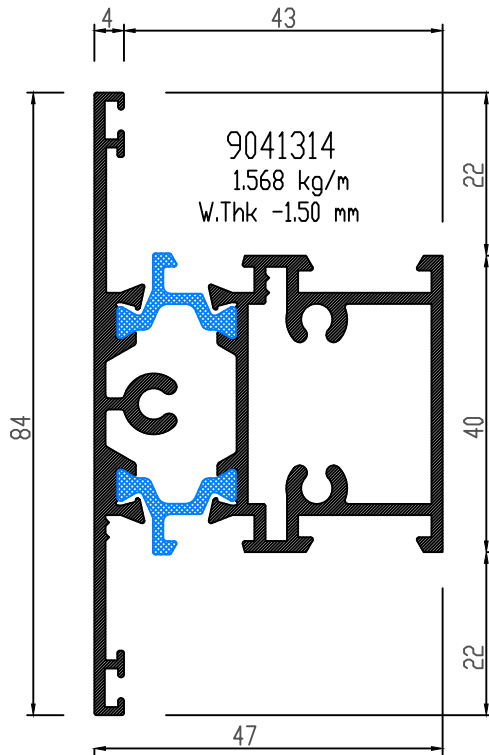
| CODE                 | Y<br>DRAWING<br>X | DESCRIPTION                                     | Weight<br>kg/m | Surface<br>□x mm | Ix<br>cm <sup>4</sup> | Iy<br>cm <sup>4</sup> |
|----------------------|-------------------|-------------------------------------------------|----------------|------------------|-----------------------|-----------------------|
| 9041819              |                   | Big transom                                     | 2.865          | 264              | 25.86                 | 142.71                |
| 9041820              |                   | Bottom Door                                     | 3.027          | 278              | 28.18                 | 172.02                |
| 9040723              |                   | Double frame<br>without Arcitrave               | 1.575          | 130              | 14.19                 | 18.67                 |
| 9042414              |                   | Tubular<br>T section                            | 2.546          | 252              | 22.39                 | 86.47                 |
| 9042506              |                   | Tubular frame<br>with Arcitrave                 | 1.964          | 176.5            | 10.27                 | 62.56                 |
| 9042501              |                   | Tubular frame<br>without Arcitrave              | 1.869          | 139              | 7.19                  | 54.54                 |
| 9040226<br>26*       |                   | Shutter without<br>Glazing Bead                 | 1.394          | 137              | 10.02                 | 16.06                 |
| 9040927<br>27*       |                   | Double Shutter without<br>Glazing Bead for door | 2.029          | 184.5            | 24.46                 | 33.95                 |
| 9042829<br>28* & 29* |                   | Threshold                                       | 804            | 50               | 1.21                  | 8.89                  |
| 9041330<br>30*       |                   | Bottom Door profile                             | 1.860          | 172              | 19.95                 | 53.44                 |

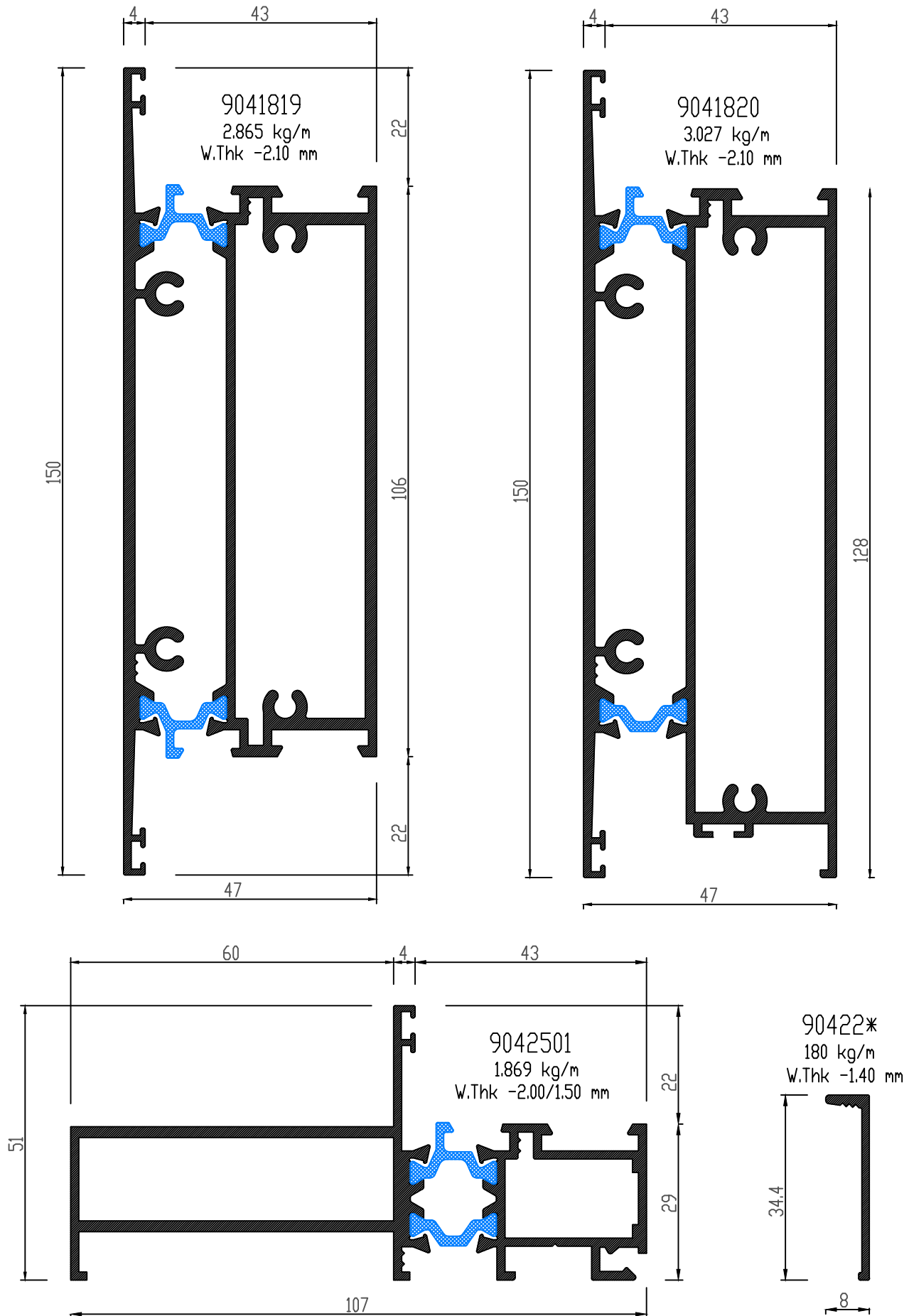
| CODE   | DRAWING<br> | DESCRIPTION                       | Weight<br>kg/m | Surface<br>□x mm | Ix<br>cm <sup>4</sup> | Iy<br>cm <sup>4</sup> |
|--------|-------------|-----------------------------------|----------------|------------------|-----------------------|-----------------------|
| 90315  |             | Round Glazing Bead<br>space 24mm  | 265            | 37               | -                     | -                     |
| 90316  |             | Normal Glazing Bead<br>space 24mm | 277            | 40               | -                     | -                     |
| 90317  |             | Normal Glazing Bead<br>space 18mm | 302            | 46               | -                     | -                     |
| 90318  |             | Round Glazing Bead<br>space 18mm  | 289            | 43               | -                     | -                     |
| 90319  |             | Round Glazing Bead<br>space 28mm  | 254            | 33               | -                     | -                     |
| 90320  |             | Round Glazing Bead<br>space 32mm  | 243            | 29               | -                     | -                     |
| 90321  |             | Normal Glazing Bead<br>space 28mm | 266            | 36               | -                     | -                     |
| 90322  |             | Normal Glazing Bead<br>space 32mm | 256            | 32               | -                     | -                     |
| 90422* |             | Over Lap                          | 180            | 36               | -                     | -                     |
| 90326  |             | Clipping corner joint             | 6.051          | -                | -                     | -                     |

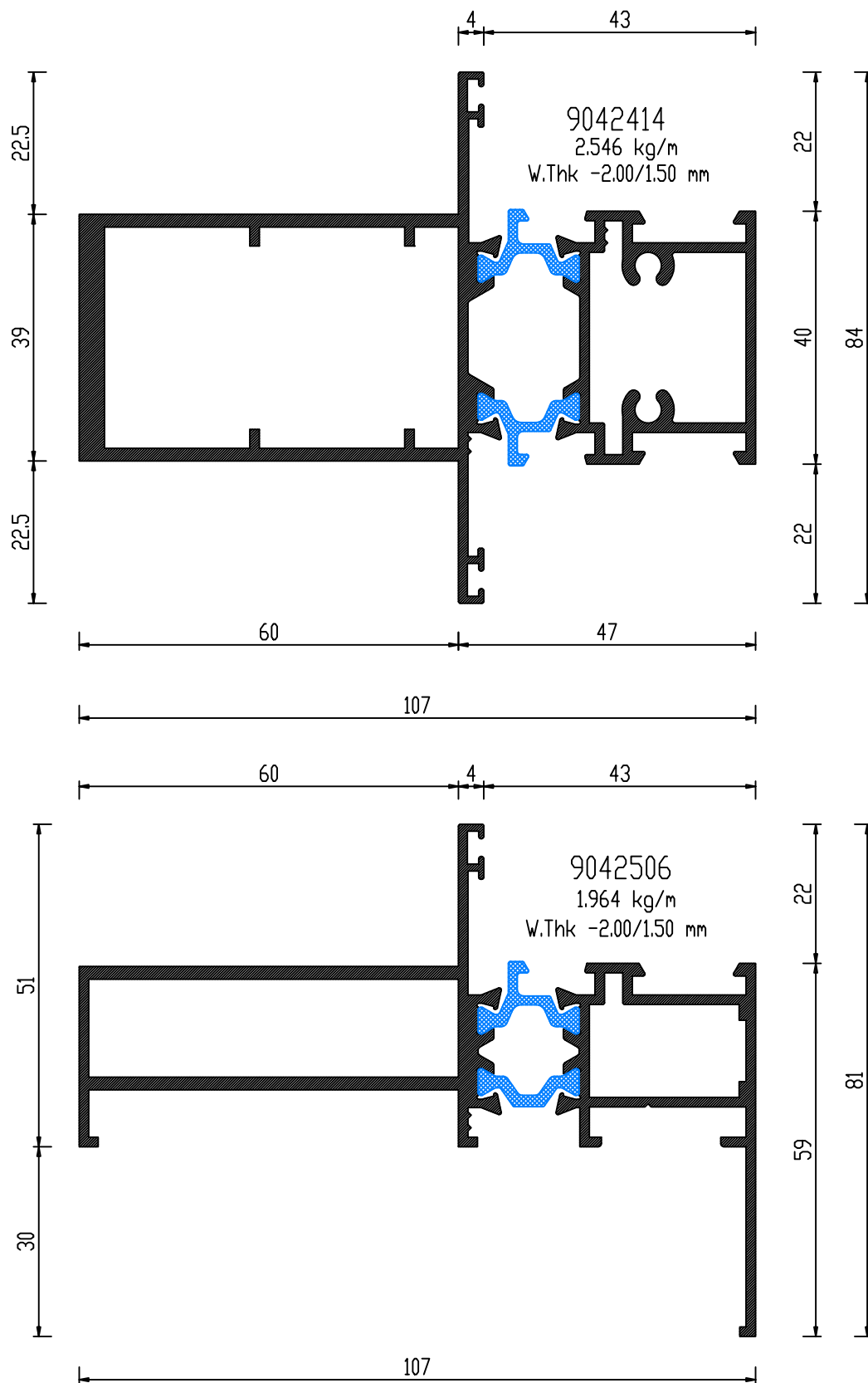
| CODE   | DRAWING<br>Y<br>X                                                                   | DESCRIPTION                            | Weight<br>kg/m | Surface<br>□x mm | Ix<br>cm <sup>4</sup> | Iy<br>cm <sup>4</sup> |
|--------|-------------------------------------------------------------------------------------|----------------------------------------|----------------|------------------|-----------------------|-----------------------|
| 90327  |    | Clamping corner joint                  | 3.410          | -                | -                     | -                     |
| 90329* |    | Glazing Bead with clip<br>space 32.5mm | 197            | 28               | -                     | -                     |
| 90330* |    | Glazing Bead with clip<br>space 13.5mm | 265            | 47               | -                     | -                     |
| 90332* |    | Water Stoper                           | 154            | 25               | 0.12                  | 0.21                  |
| 12806  |  | Small threshold                        | 288            | 27.5             | 0.02                  | 1.56                  |
| 90421  |  | WaterStoper                            | 122            | 25               | 0.04                  | 0.11                  |
| QXP003 |  | Closing rod<br>Polyamide               | -              | -                | -                     | -                     |
|        |                                                                                     |                                        |                |                  |                       |                       |
|        |                                                                                     |                                        |                |                  |                       |                       |
|        |                                                                                     |                                        |                |                  |                       |                       |

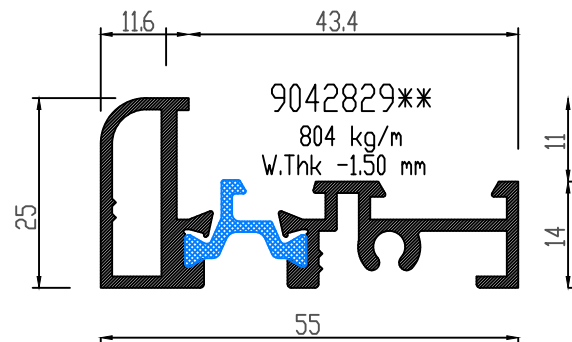
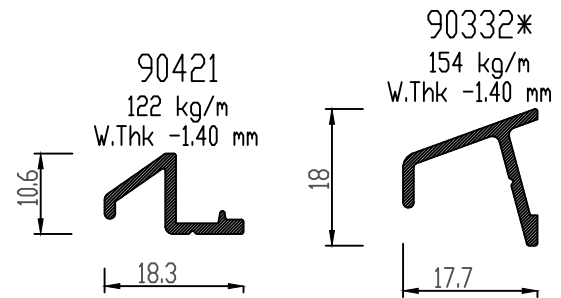
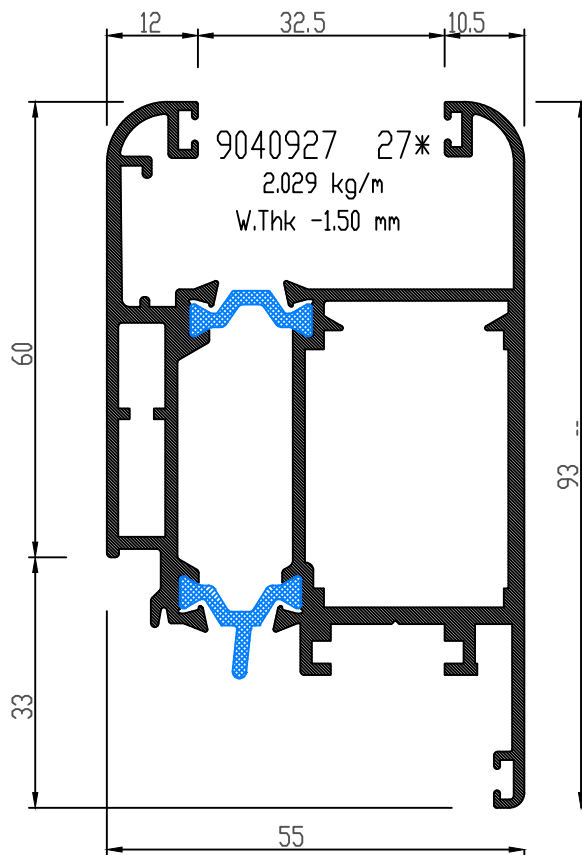
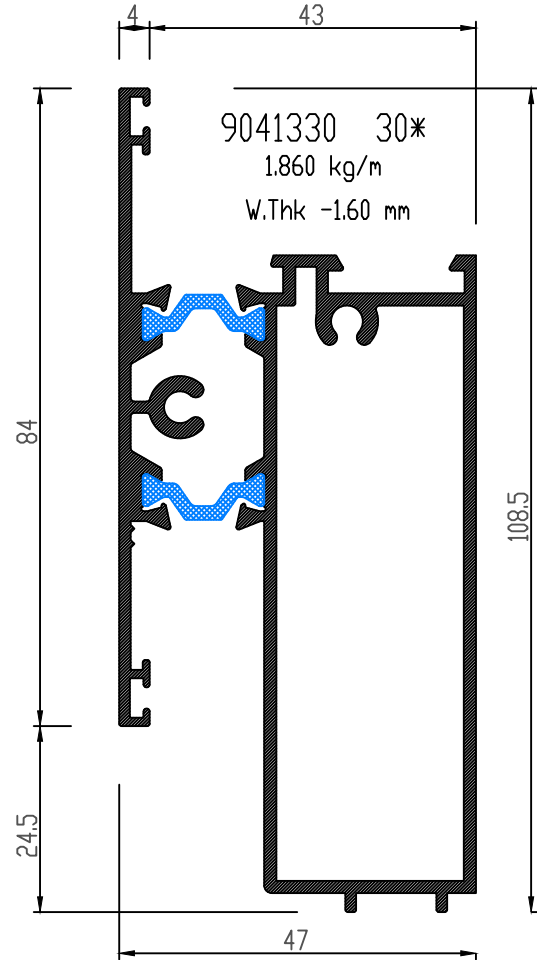
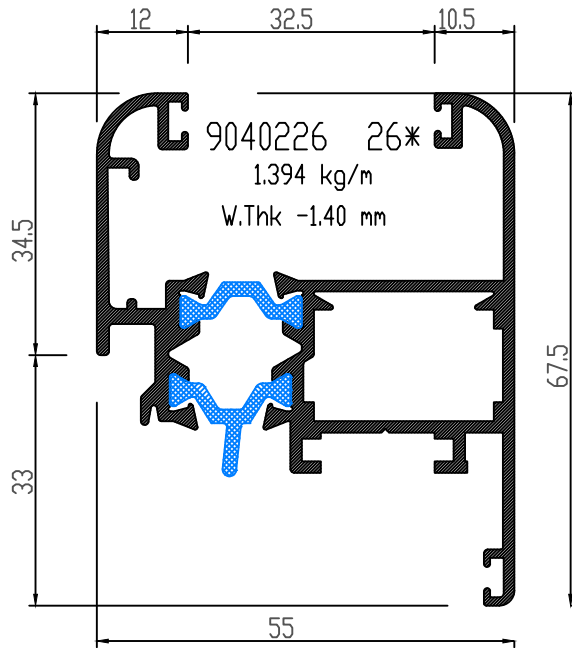


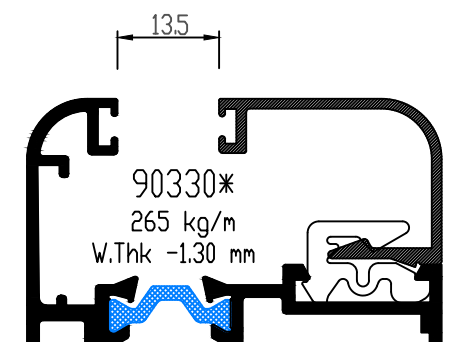
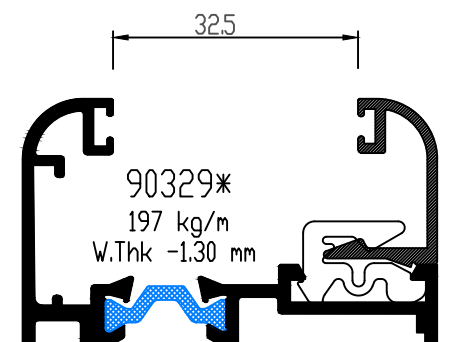
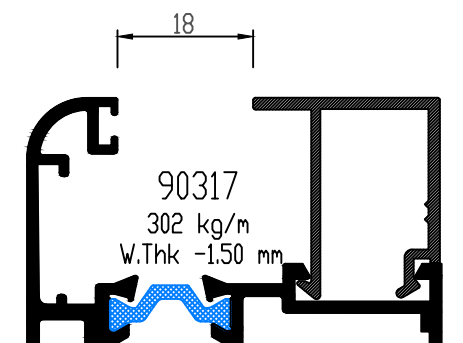
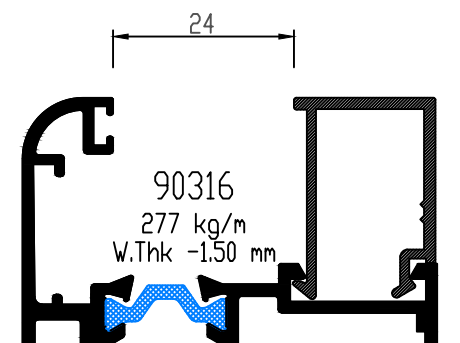
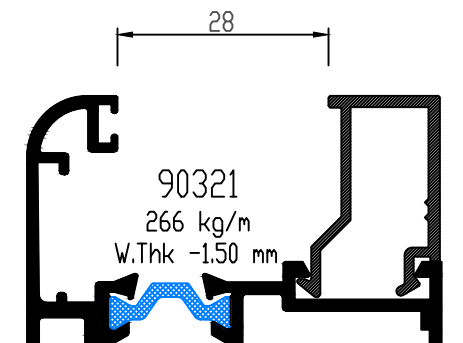
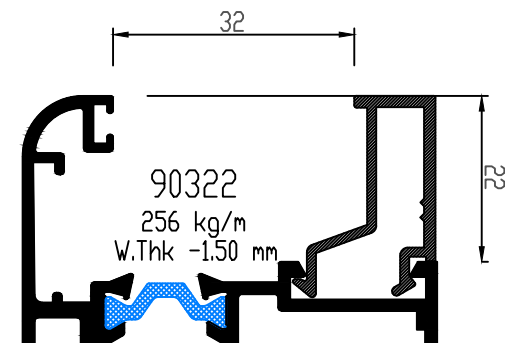
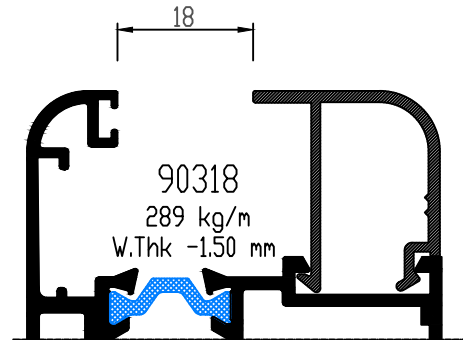
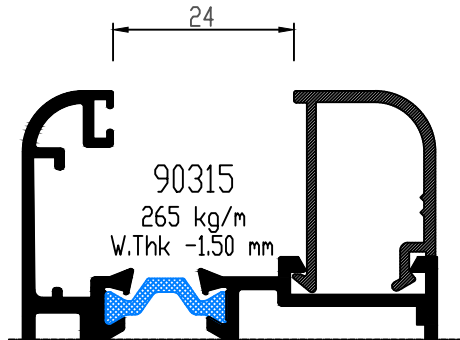
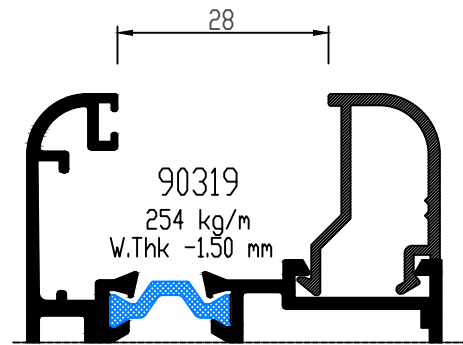
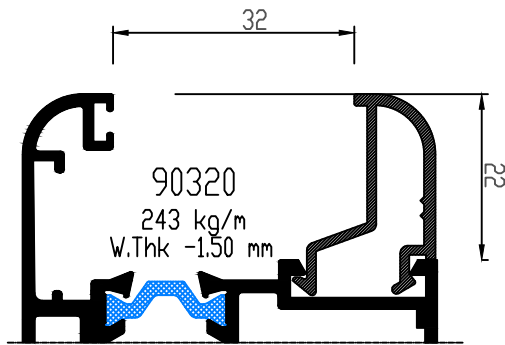








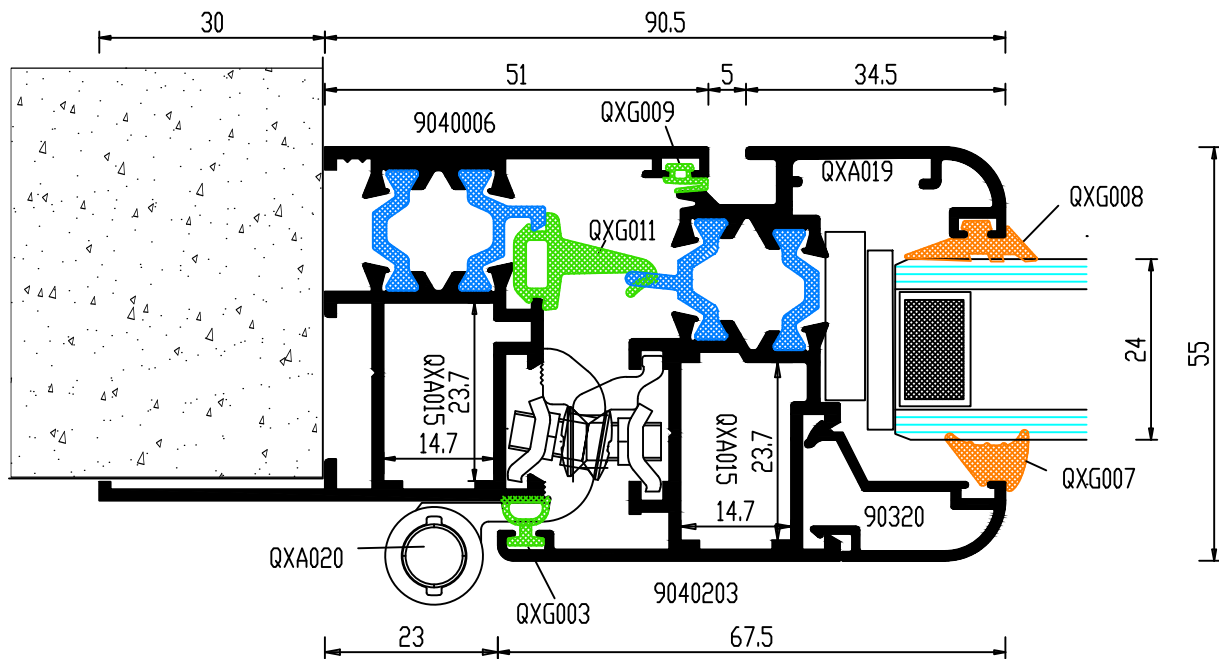
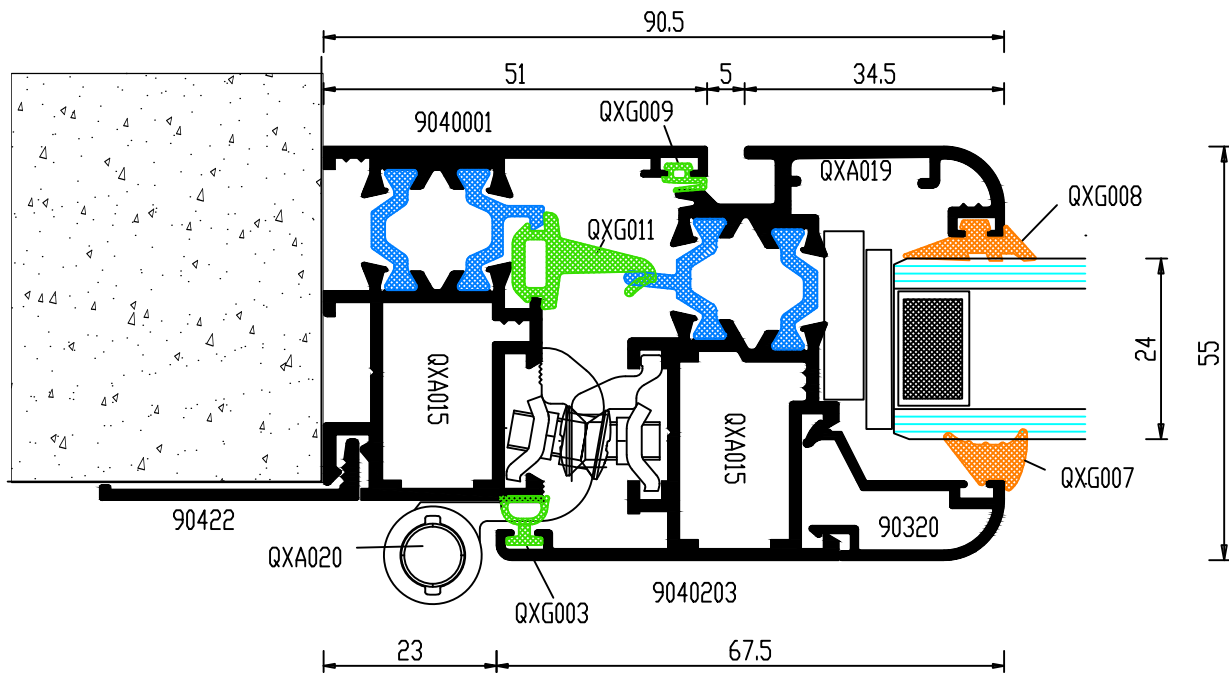






## Hinge thermal frame & Sash Assembly

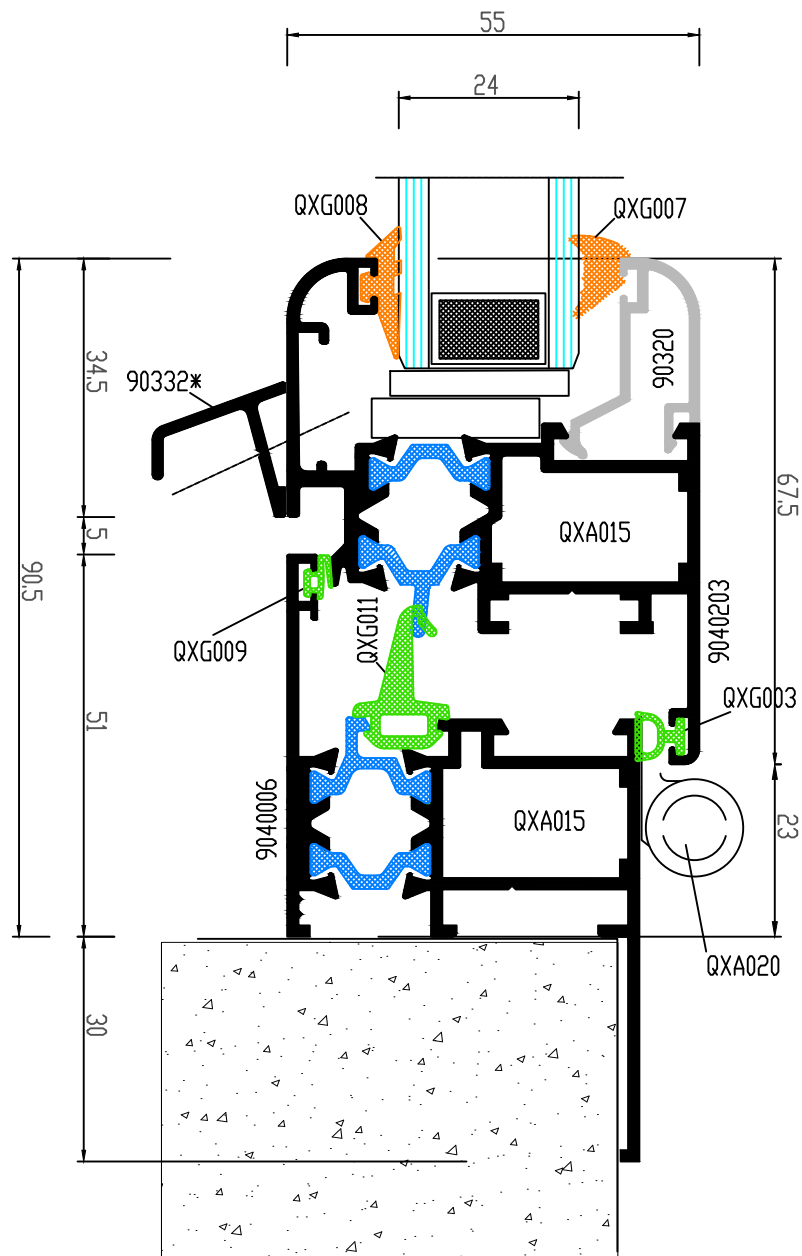
### Inside opening

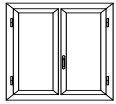




## Hinge thermal Frame & Sash assembly with water Stopper

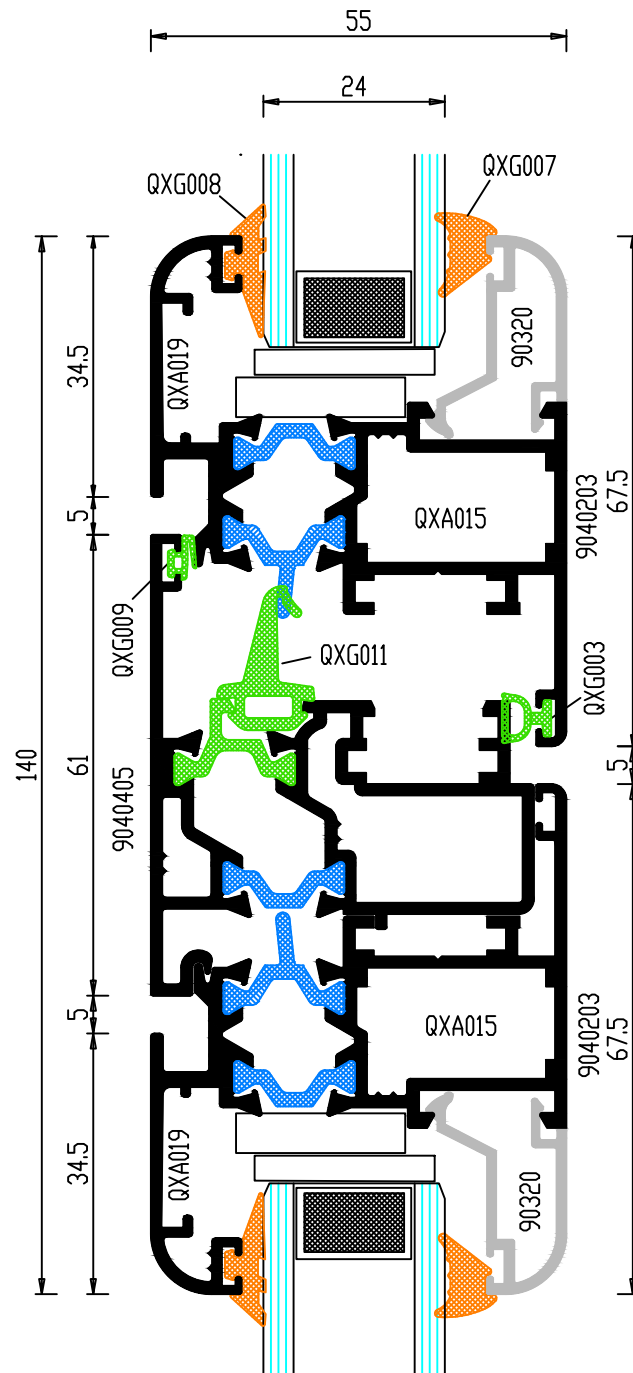
Inside opening





## Hinge Thermal Sash Inter lock Assembly

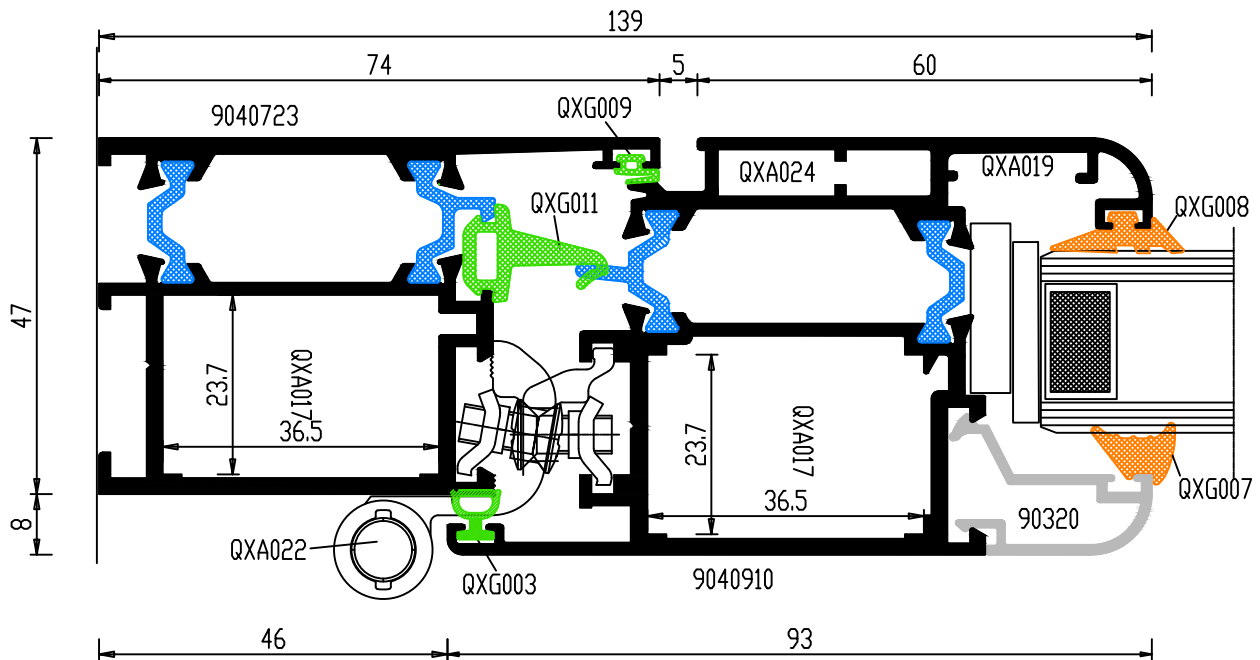
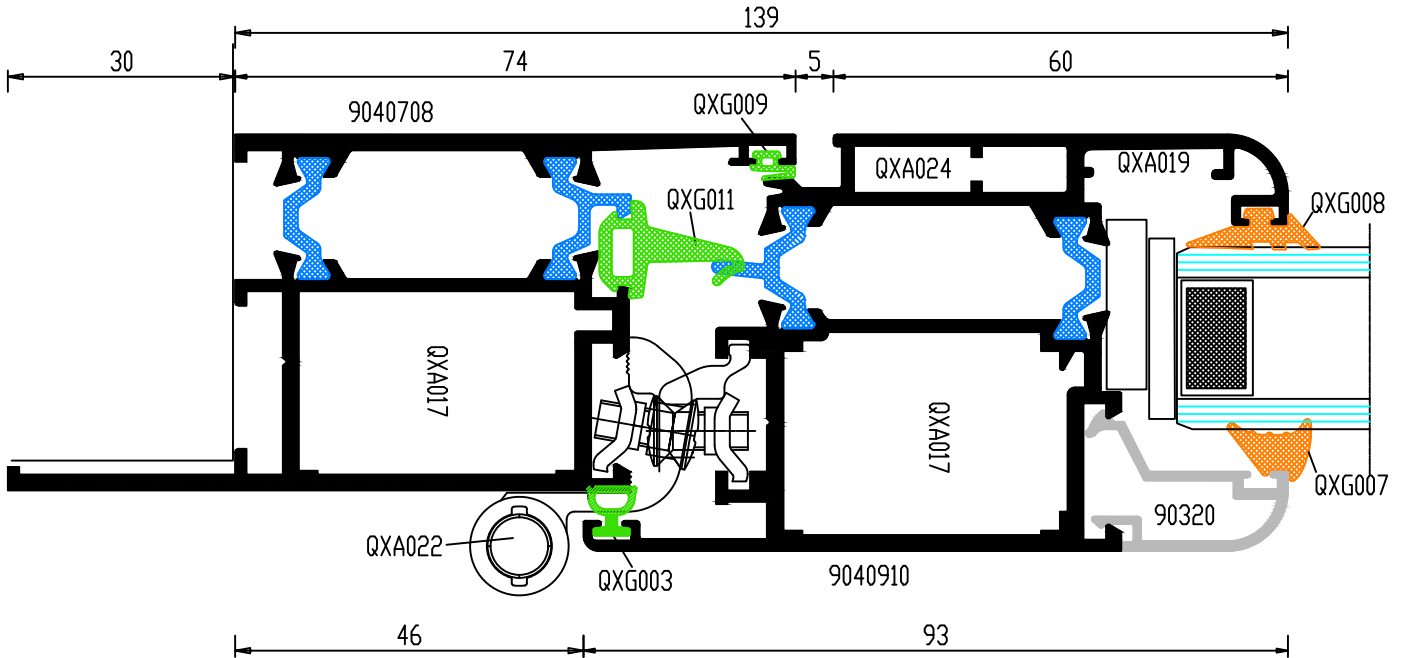
Inside opening





## Hinge thermal Frame & Sash Assembly

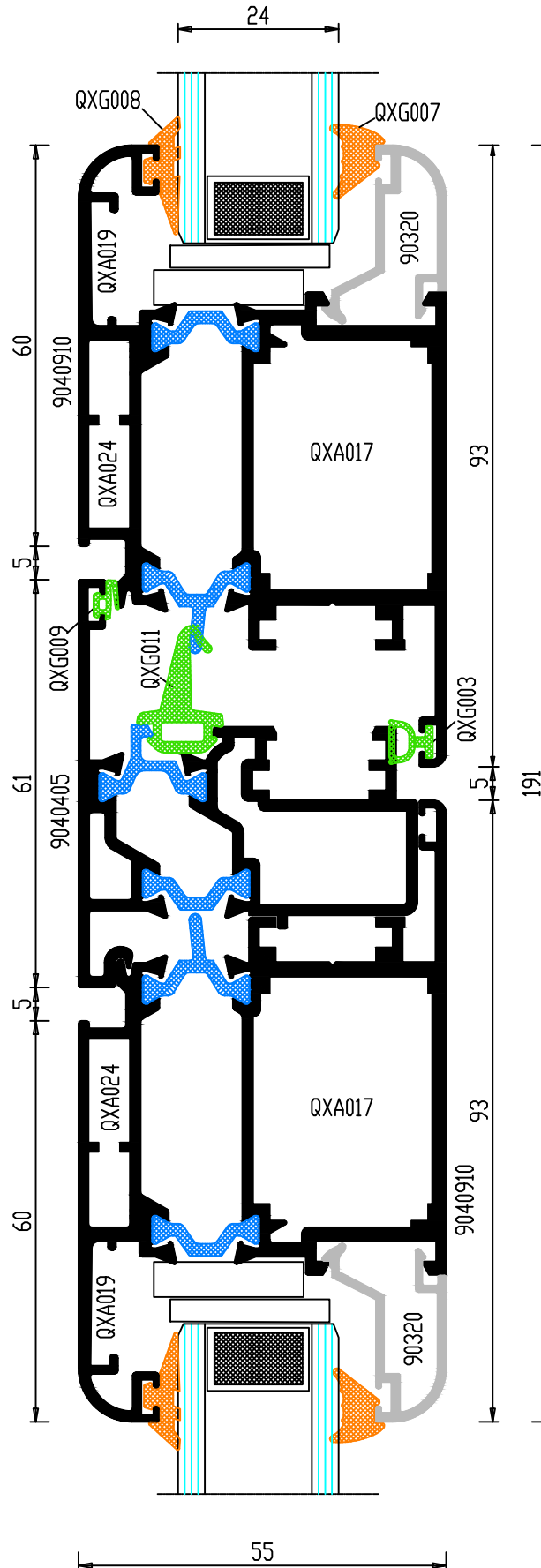
### Inside opening





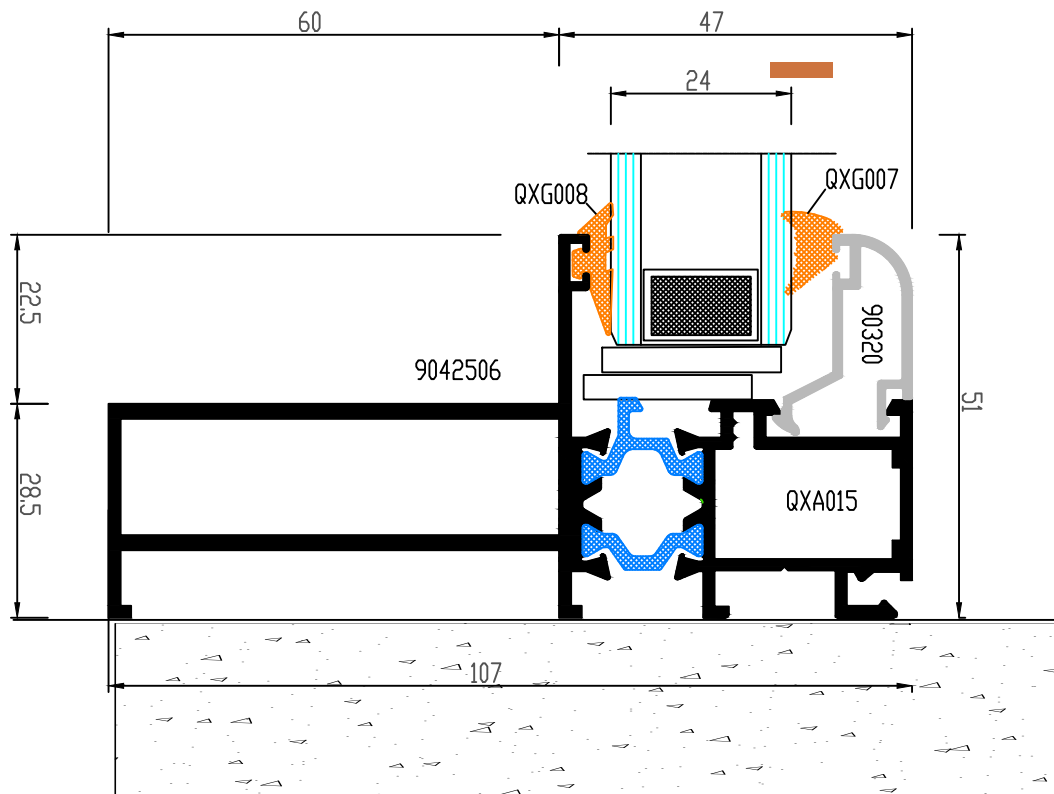
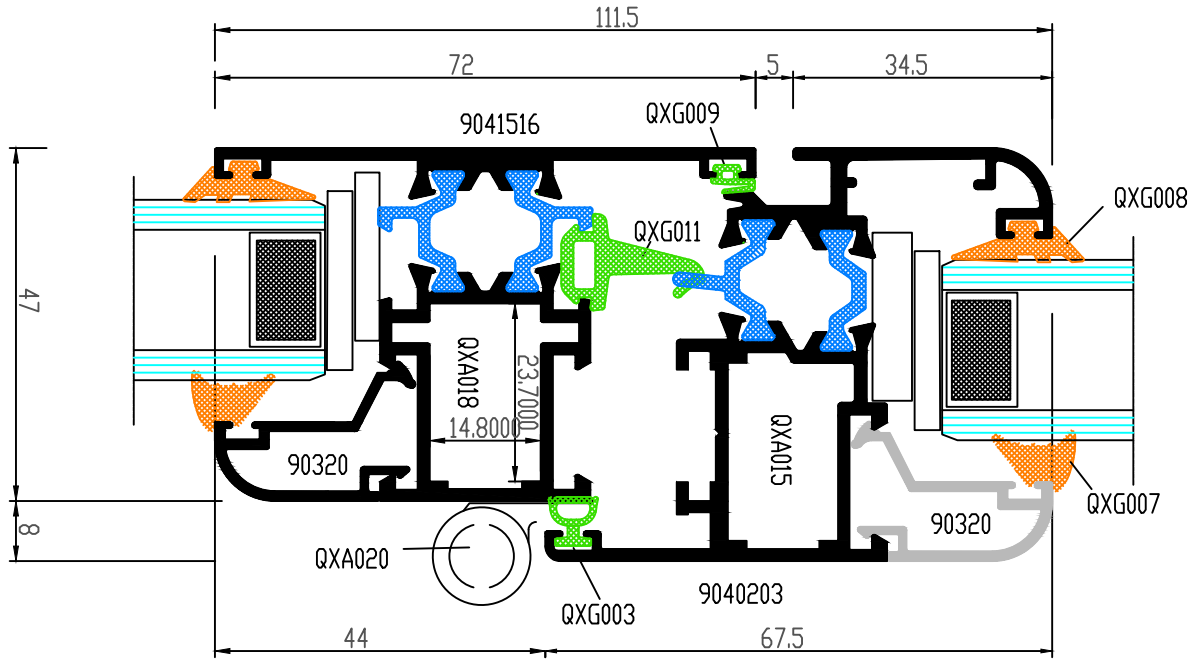
# Hinge thermal Door Sash Inter lock assembly

Inside opening





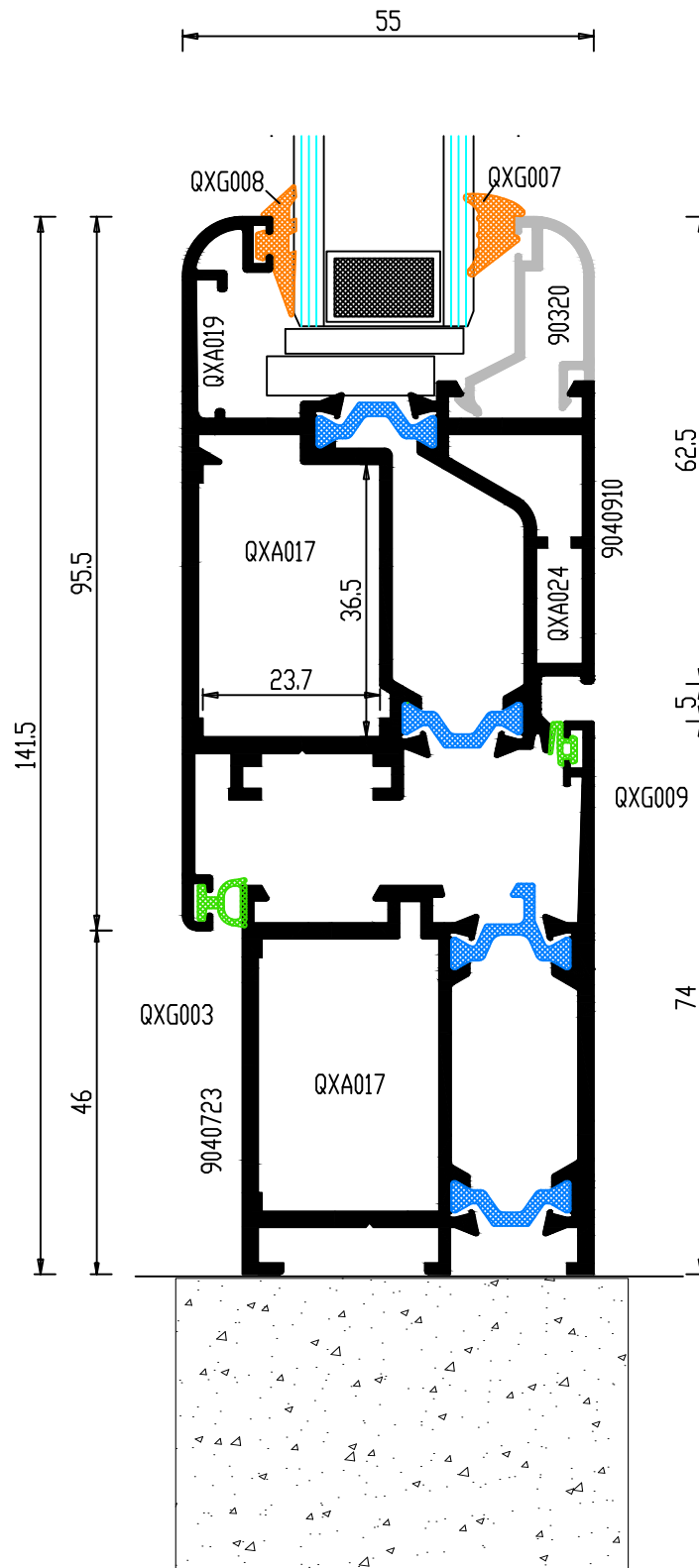
## Hinge thermal Fix Plus Sash assembly





Hinge thermal door frame & sash

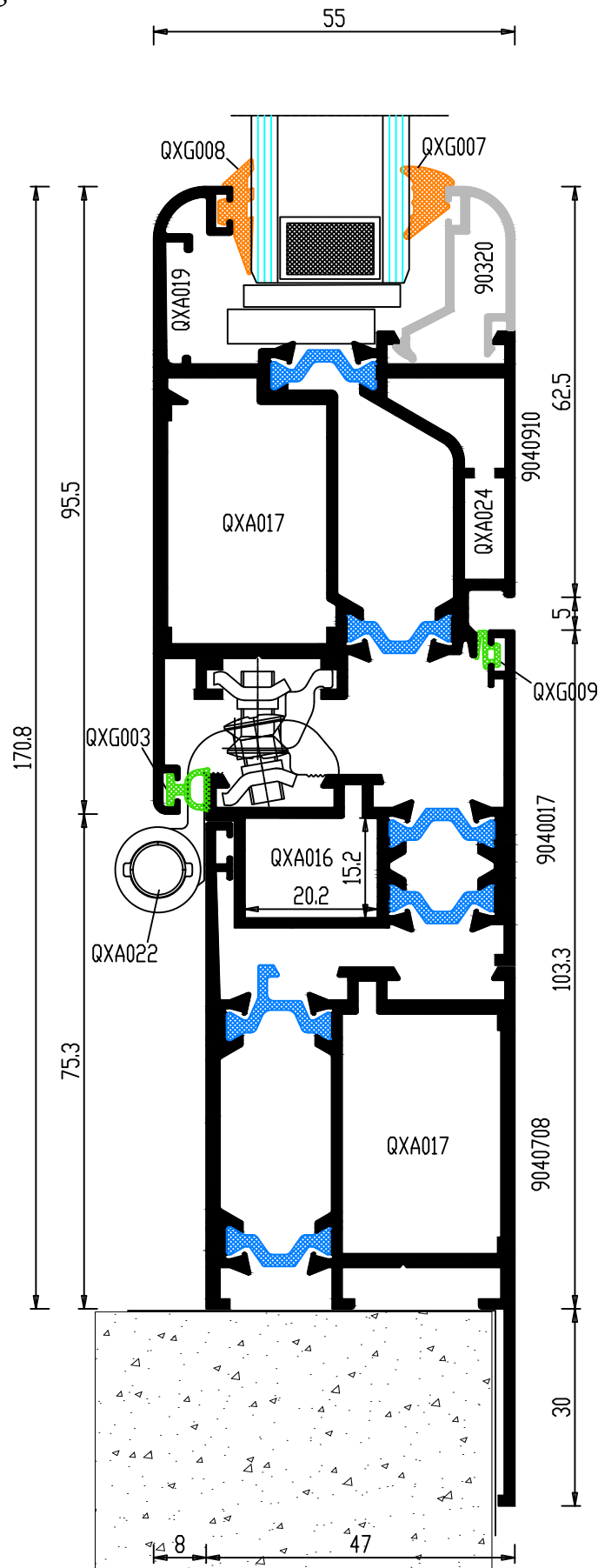
Outside opening



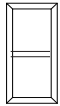


Hinge thermal door frame & sash

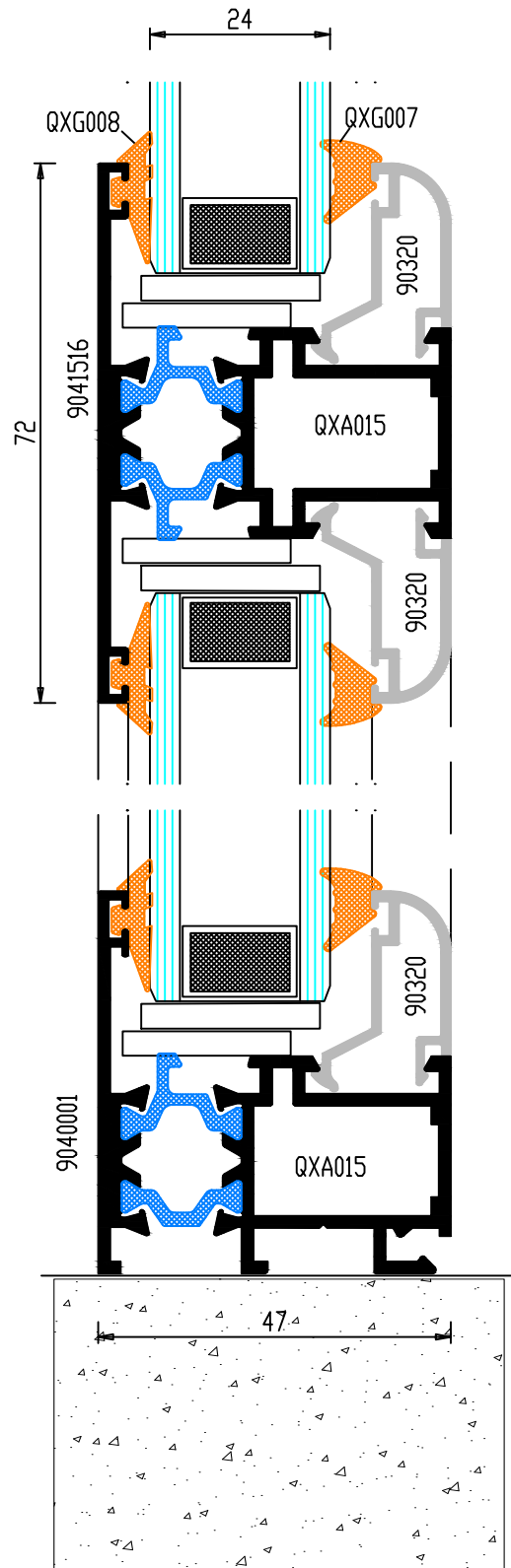
Outside opening

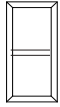




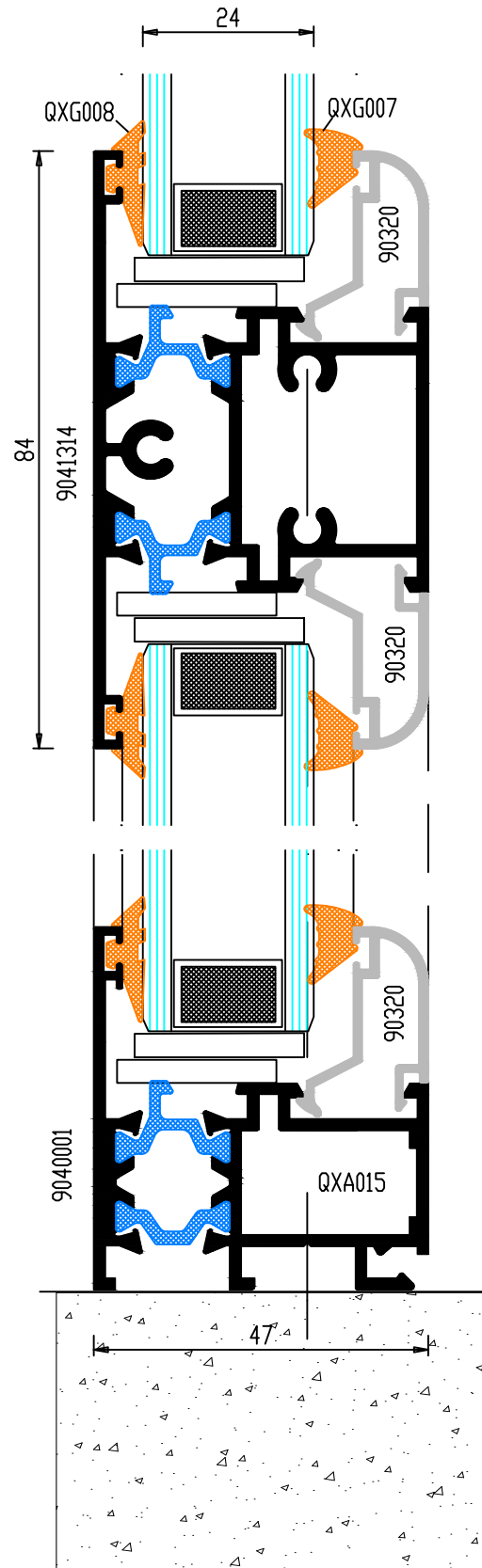


## Thermal Fix Assembly



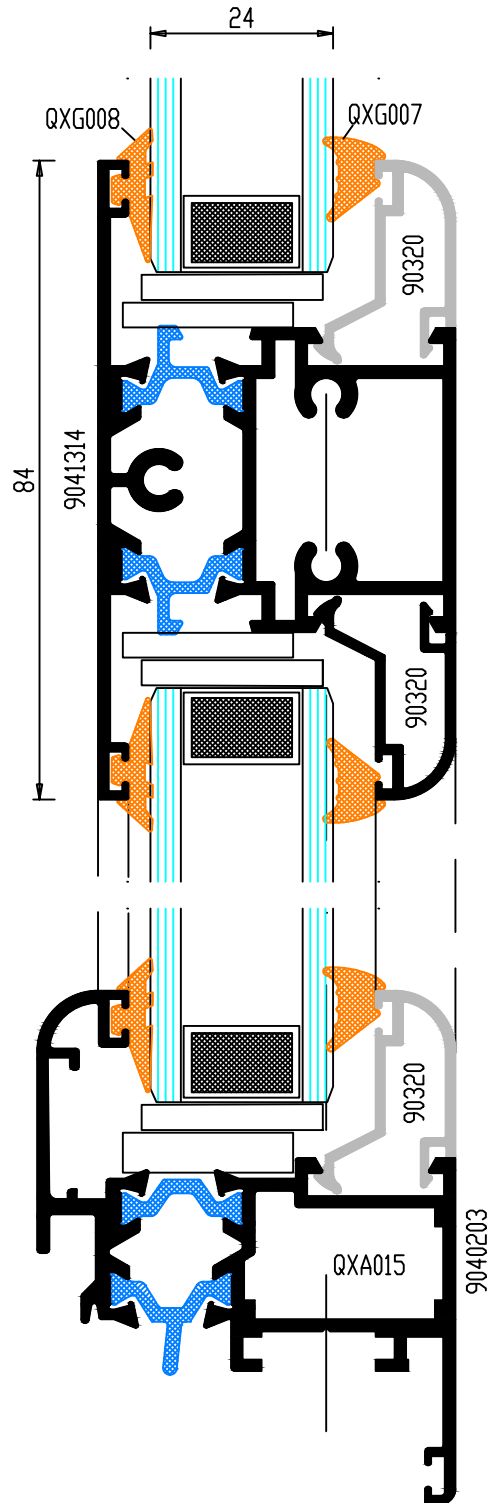


## Thermal Fix



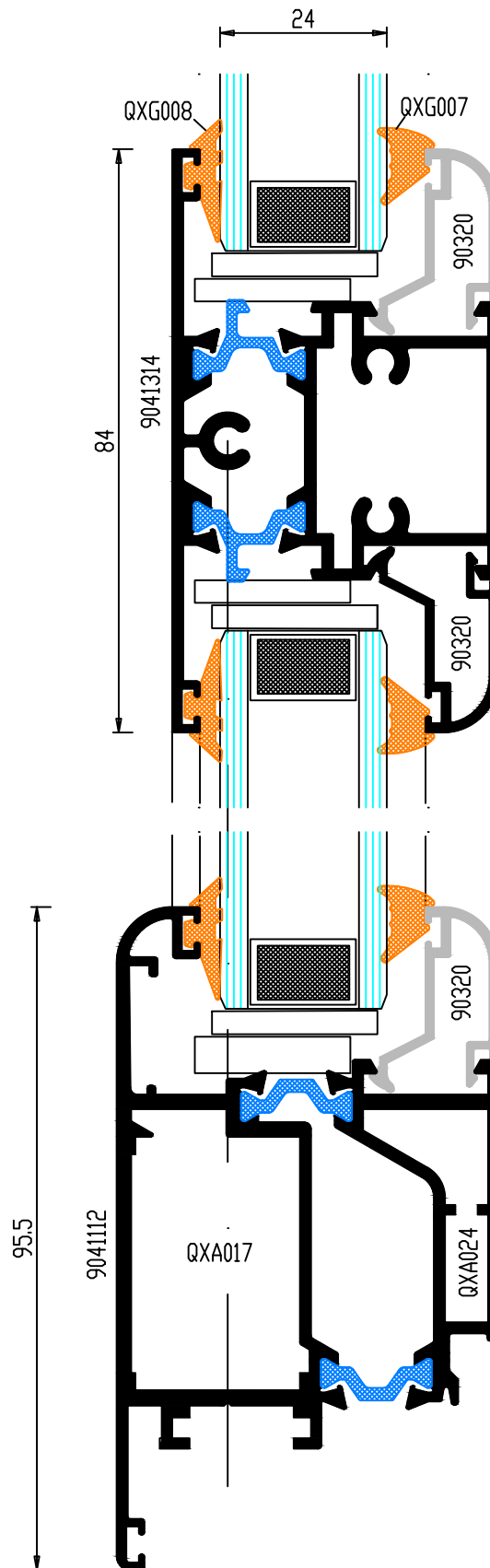


## Hinge thermal Sash with glass divider



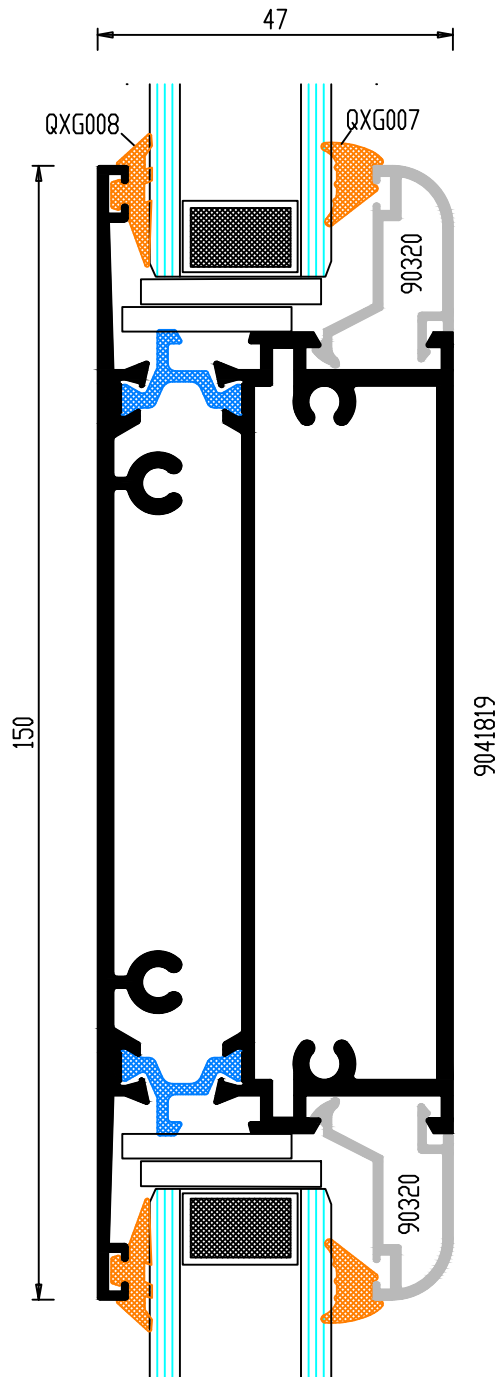


## Hinge thermal door Sash with glass divider



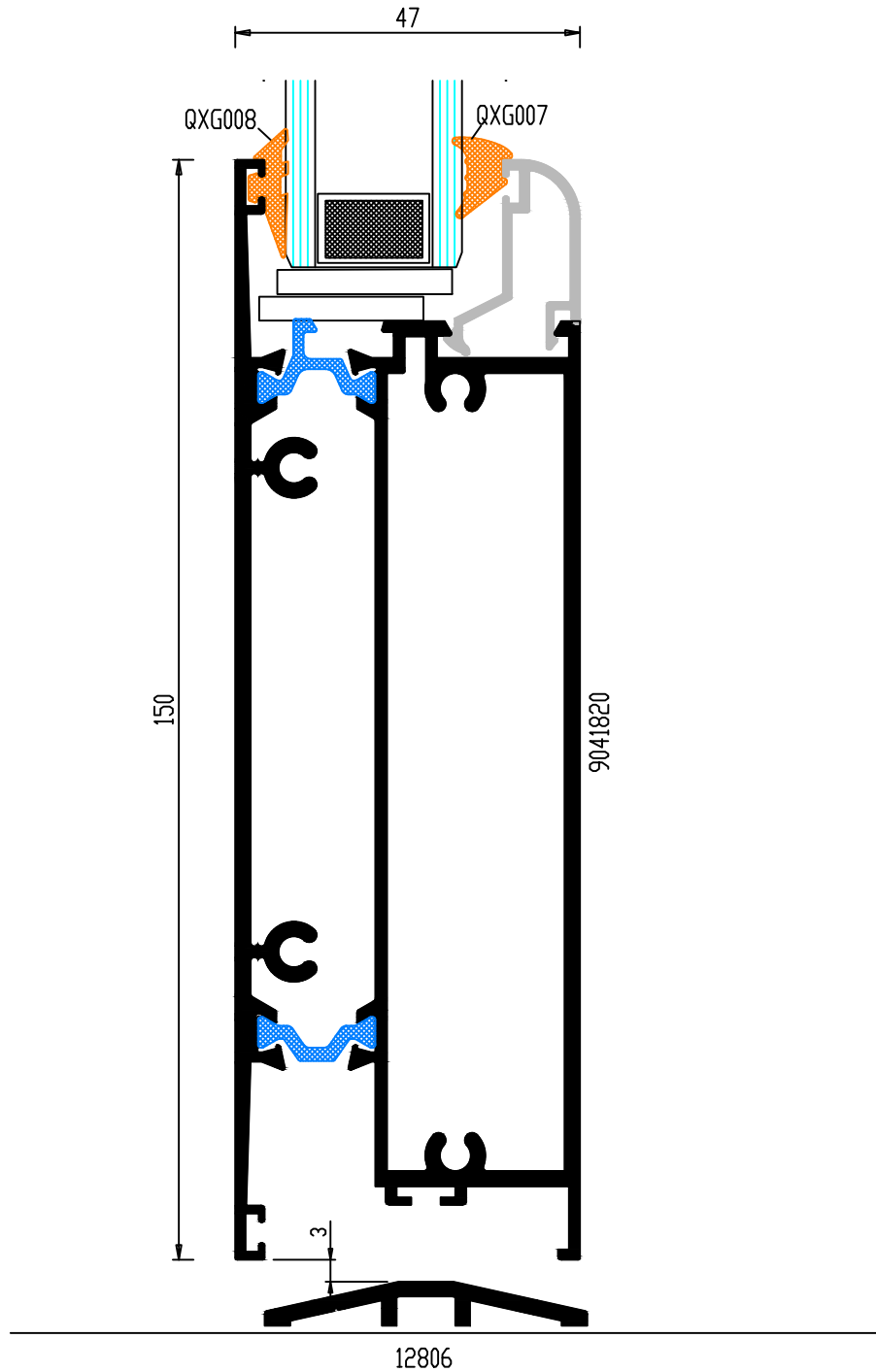


## Hinge thermal Sash with glass divider



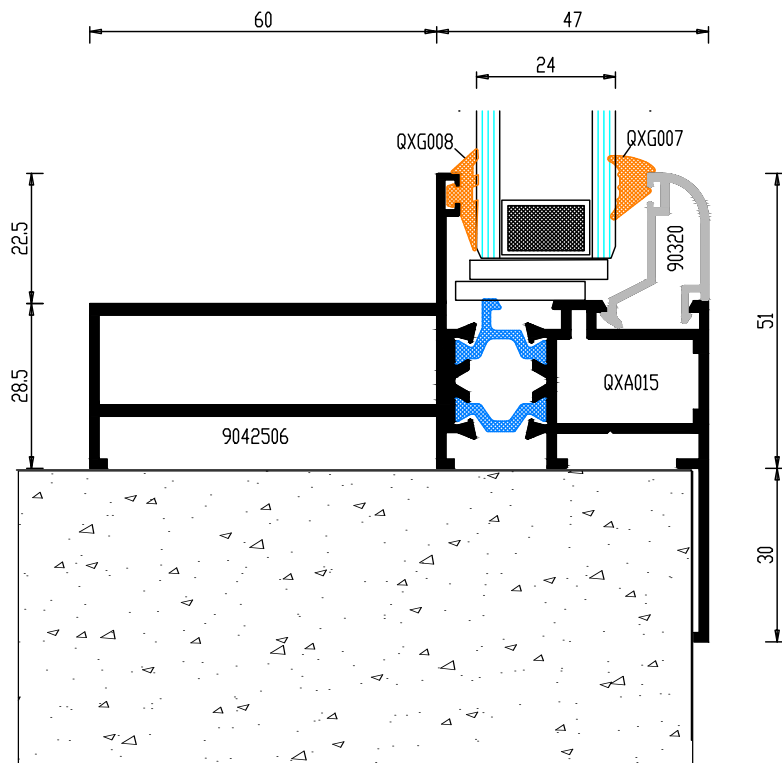
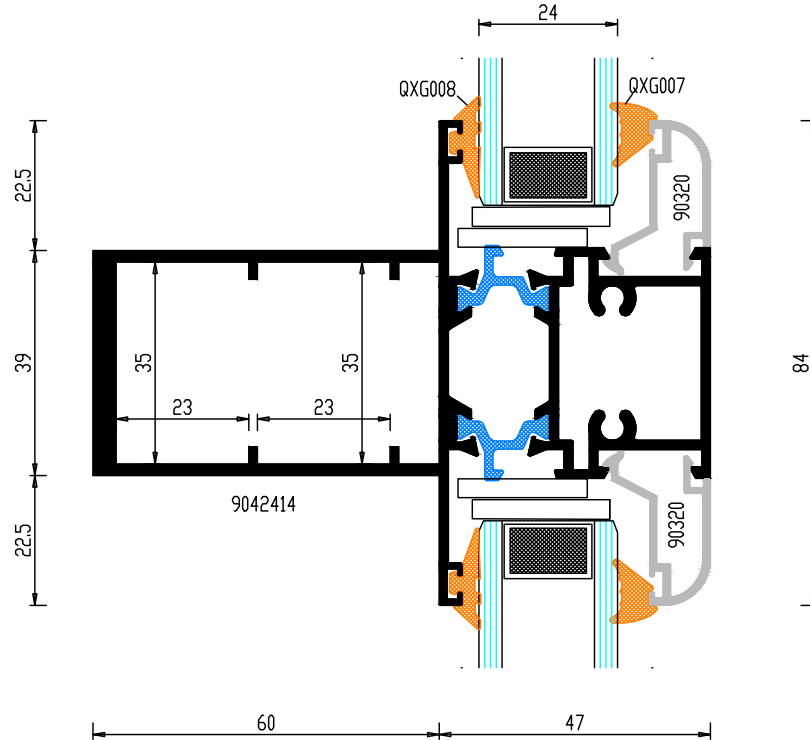


## Hinge thermal Door Bottom Assembly



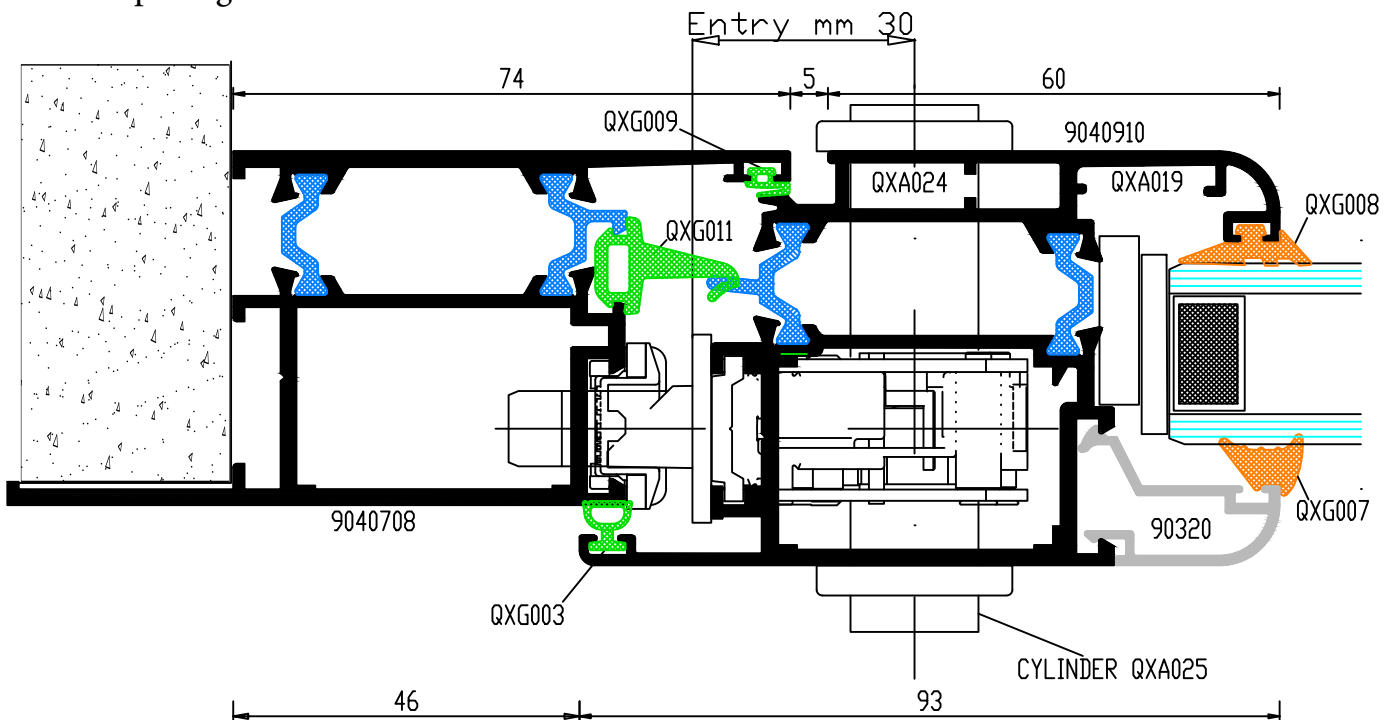


## Hinge Thermal Tubular Fix & T-Section Assembly

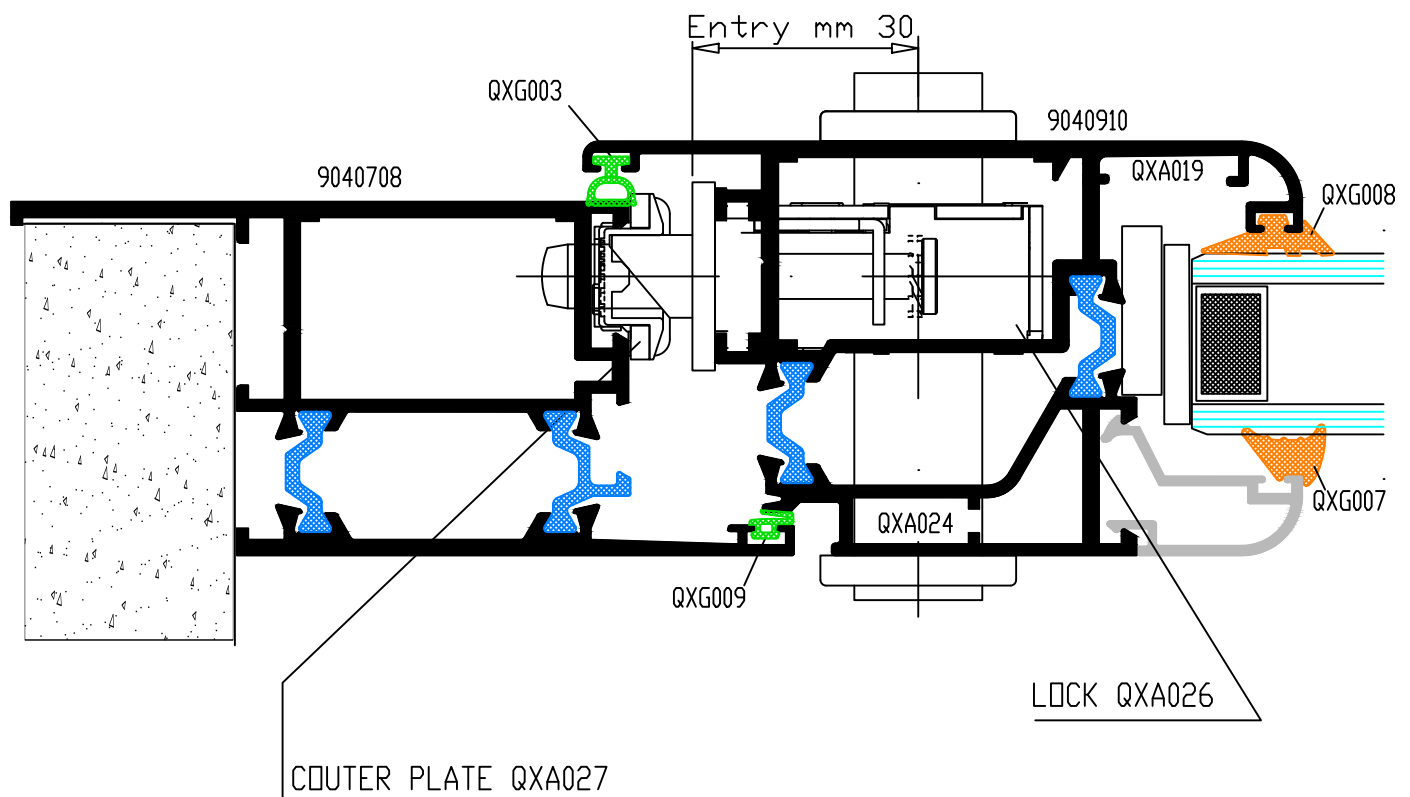


## Hinge Thermal Locking Assembly

### Inside opening

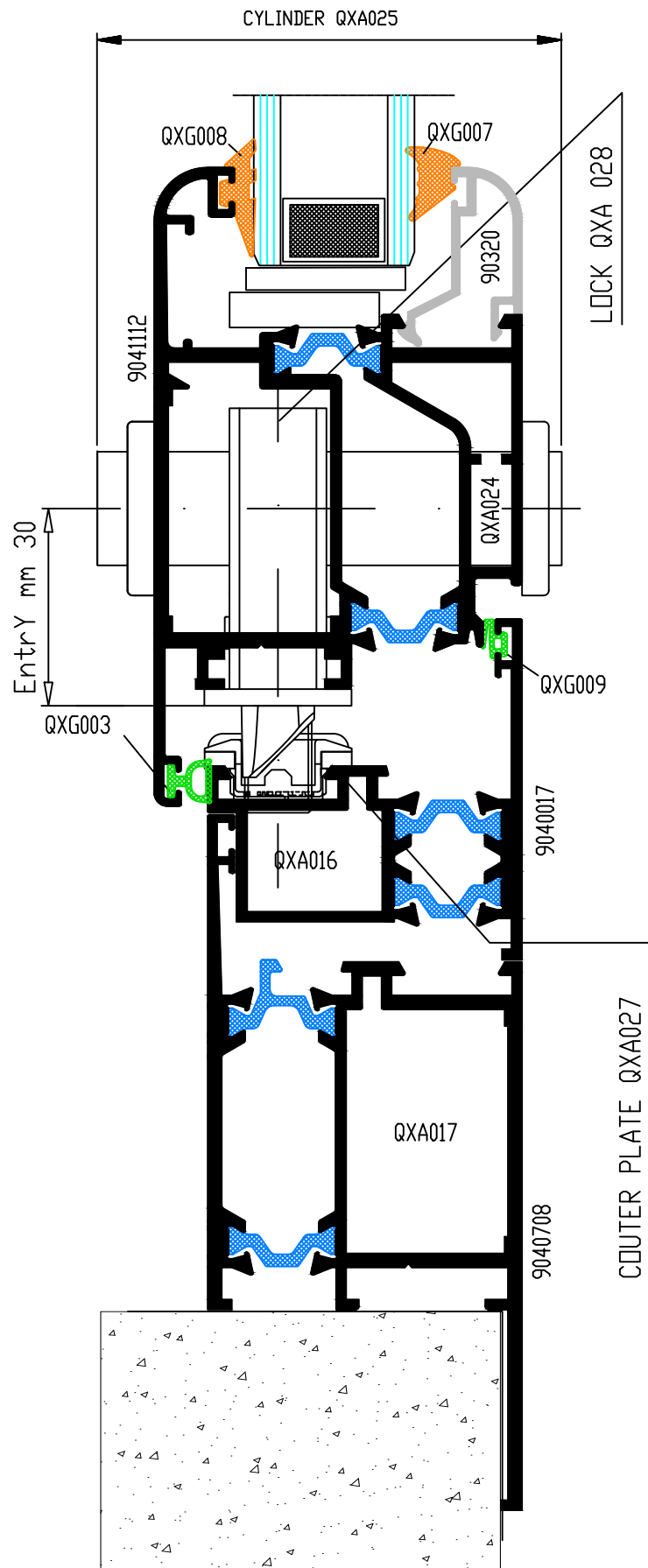


### Outside opening



## Hinge Thermal Locking Assembly

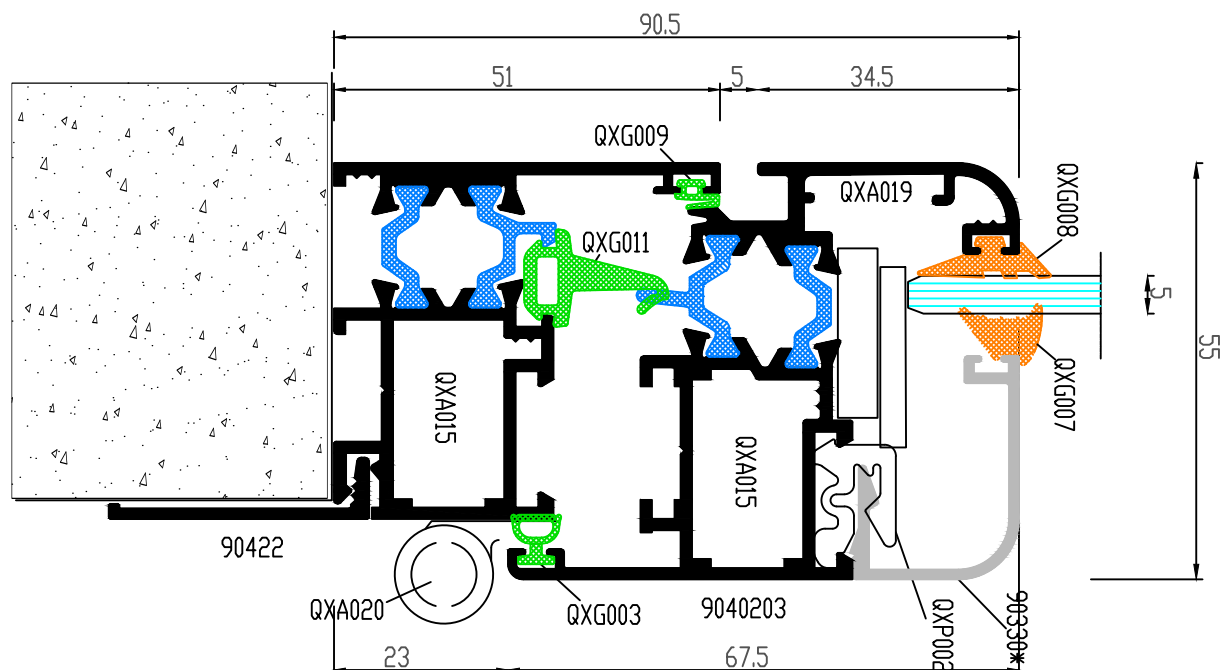
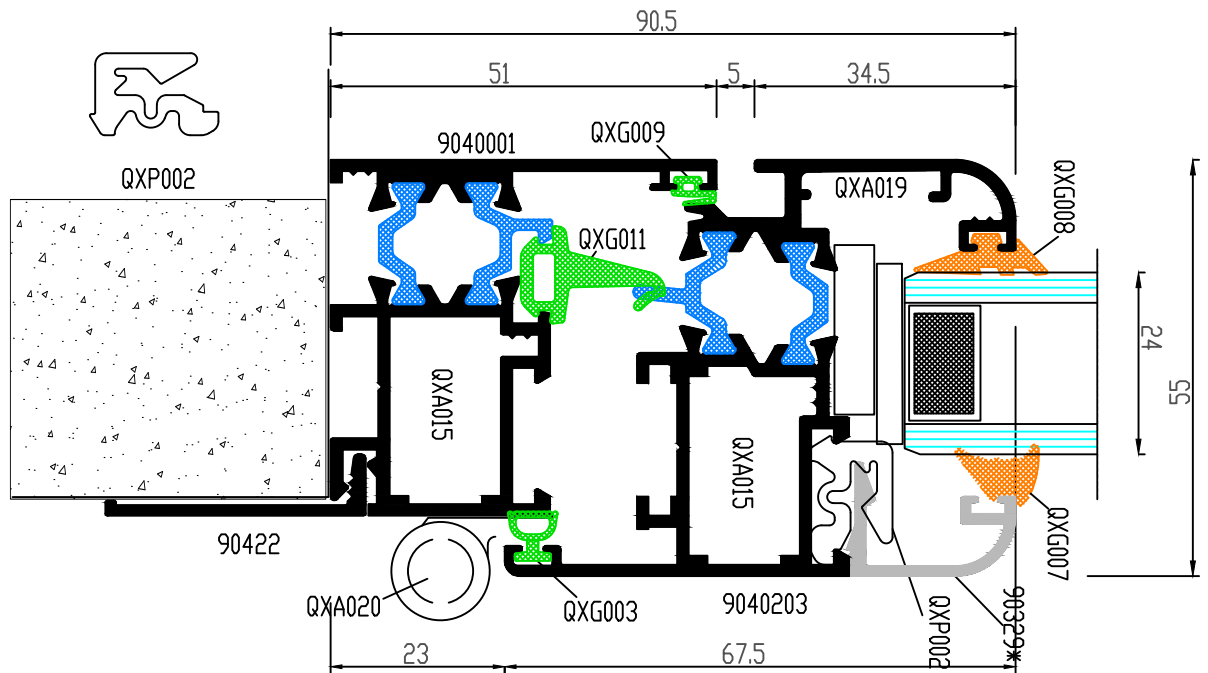
### Outside opening





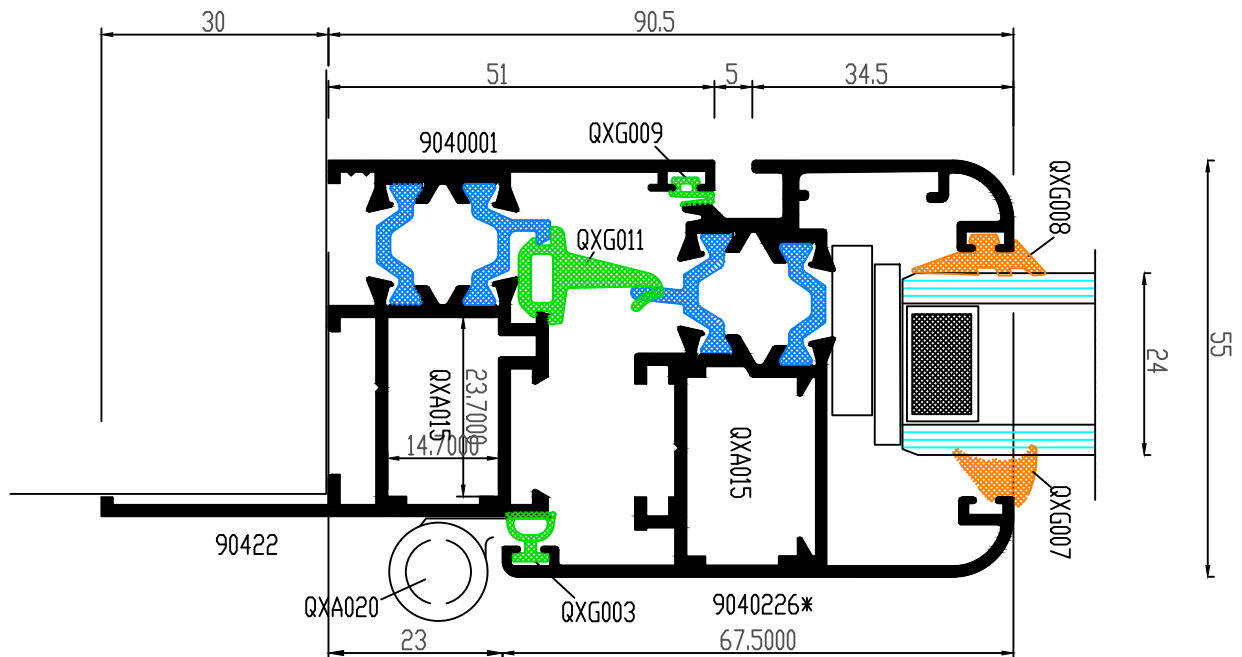
## Hinge thermal Frame & Sash Assembly for Single glass & Double glass

Inside opening

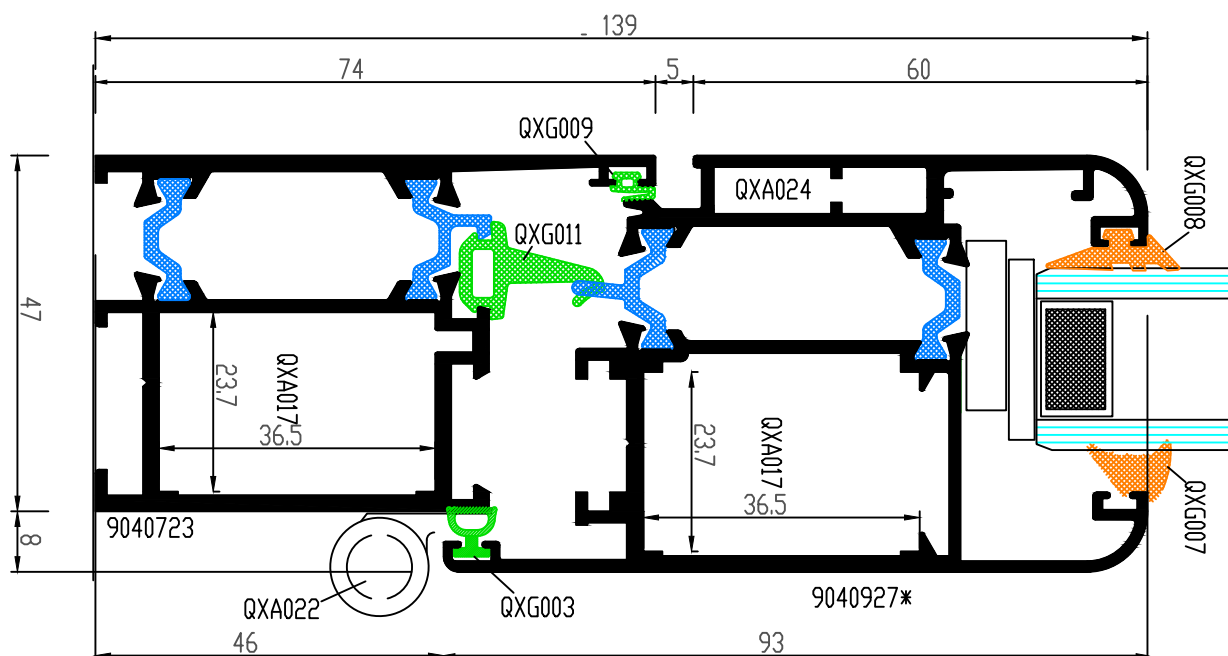


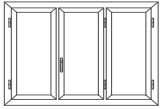
## Hinge thermal Frame & Sash Assembly for window & door shutter without glass bead

### Inside opening

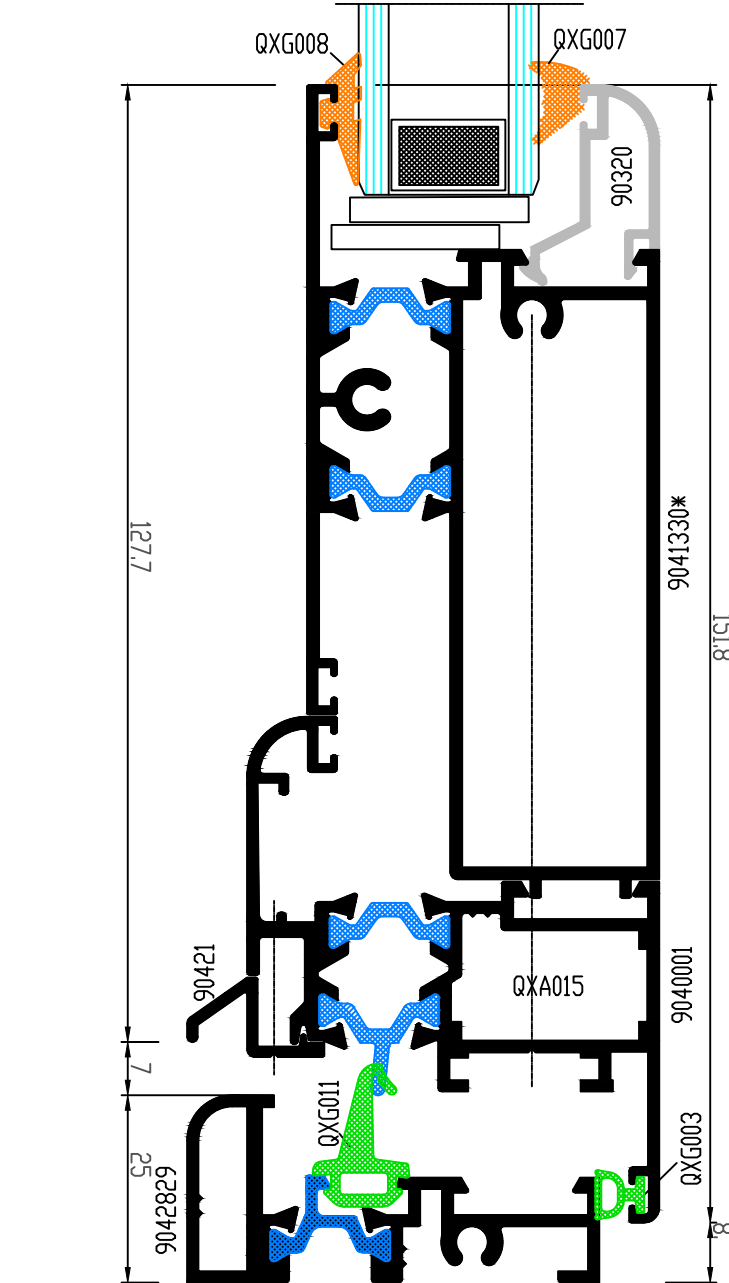


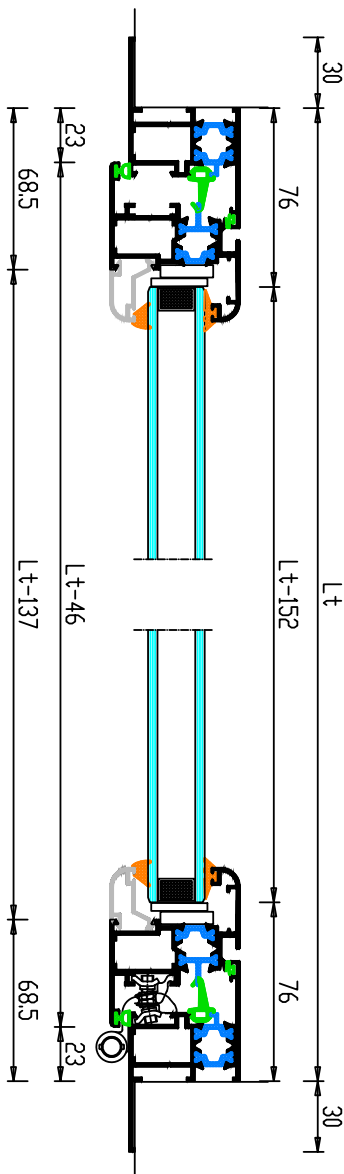
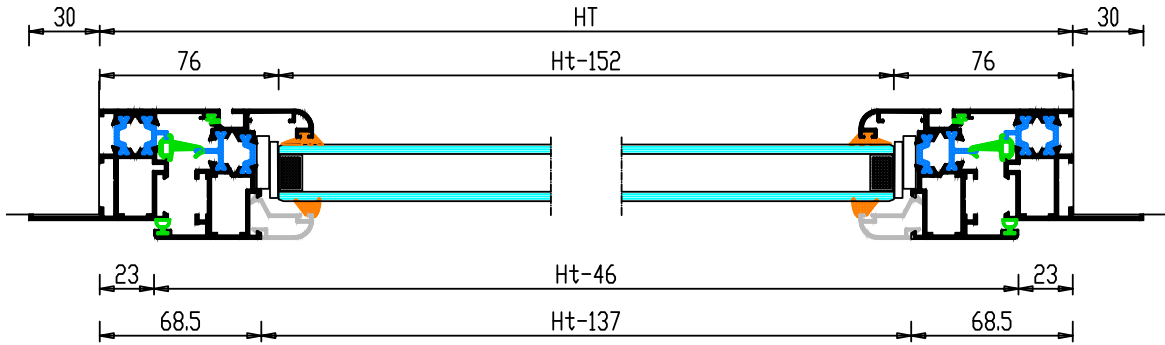
### Outside opening





## Hinge Thermal Door Bottom Assembly

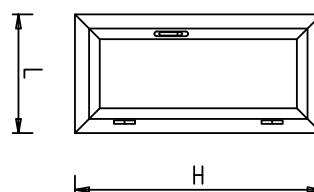




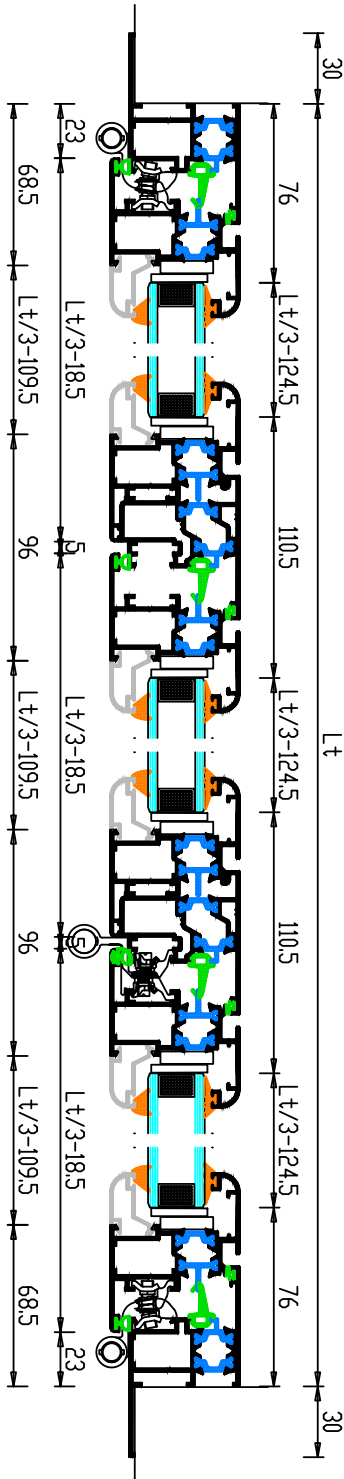
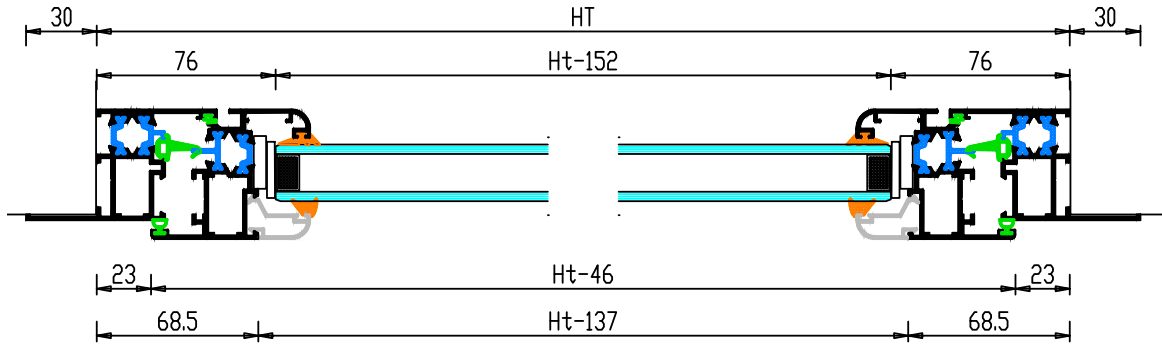
| ONE WING WINDOW |                           |        |      |
|-----------------|---------------------------|--------|------|
| CODE            | DESCRIPTION               | SIZE   | Q.TY |
| 9040006         | TOP E BOTTOM FRAME        | Lt+60  | 2    |
| 9040006         | SIDE FRAME                | Ht+60  | 2    |
| 9040203         | TOP E BOTTOM SHUTTER      | Lt-46  | 2    |
| 9040203         | SIDE SHUTTER              | Ht-46  | 2    |
| 90320           | TOP E BOTTOM GLAZING BEAD | Lt-137 | 2    |
| 90320           | SIDE GLAZING BEAD         | Ht-137 | 2    |

| GLASS SIZE |        |
|------------|--------|
| Lt-152     | Ht-152 |

| ACCESSORIES |                            |       |
|-------------|----------------------------|-------|
| CODE        | DESCRIPTION                | Q.TY  |
| QXA015      | FRAME/SHUTTER CORNER JOINT | 8     |
| QXA020      | HINGE                      | 2     |
| QXG011      | CENTRAL GASKET             | 2L+2H |
| QXA029      | CORNER FOR CENTRAL GASKET  | 4     |
| QXG005      | INSIDE CONNECTION GASKET   | 2L+2H |
| QXG009      | OUTSIDE CONNECTION GASKET  | 2L+2H |
| QXG007      | INSIDE GLASS GASKET        | 2L+2H |
| QXG008      | OUTSIDE GLASS GASKET       | 2L+2H |



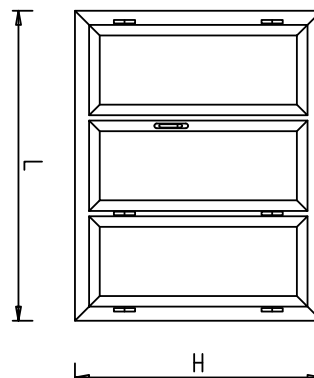


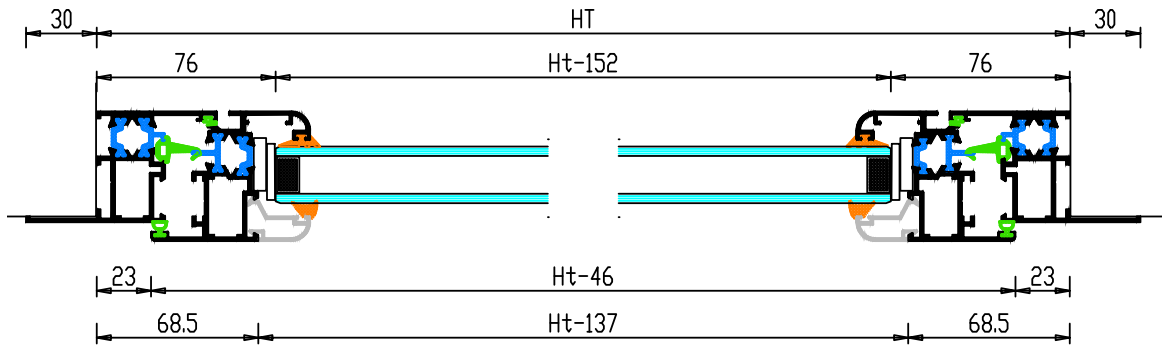


| THREE WINGS WINDOW |                           |      |
|--------------------|---------------------------|------|
| CODE               | DESCRIPTION               | Q.TY |
| 9040006            | TOP E BOTTOM FRAME        | 2    |
| 9040006            | SIDE FRAME                | 2    |
| 9040203            | TOP E BOTTOM SHUTTER      | 6    |
| 9040203            | SIDE SHUTTER              | 6    |
| 9040405            | ADAPTOR                   | 2    |
| 90320              | TOP E BOTTOM GLAZING BEAD | 6    |
| 90320              | SIDE GLAZING BEAD         | 6    |

| GLASS SIZE |        |
|------------|--------|
| Lt+3-124.5 | Ht-152 |

| ACCESSORIES |                            |       |
|-------------|----------------------------|-------|
| CODE        | DESCRIPTION                | Q.TY  |
| QXA015      | FRAME/SHUTTER CORNER JOINT | 16    |
| QXA020      | HINGE                      | 4     |
| QXA031      | THIRD WING HINGE           | 2     |
| QXA030      | PLUG FOR ADAPTOR           | 2 Cp  |
| QXG011      | CORNER FOR CENTRAL GASKET  | 2L+4H |
| QXA029      | CORNER FOR CENTRAL GASKET  | 4     |
| QXG005      | INSIDE CONNECTION GASKET   | 2L+4H |
| QXG009      | OUTSIDE CONNECTION GASKET  | 2L+4H |
| QXG007      | INSIDE GLASS GASKET        | 2L+6H |
| QXG008      | OUTSIDE GLASS GASKET       | 2L+6H |

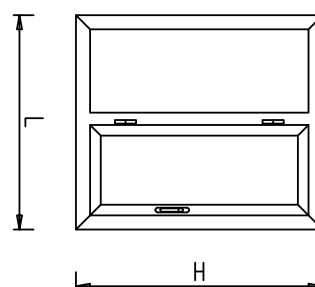
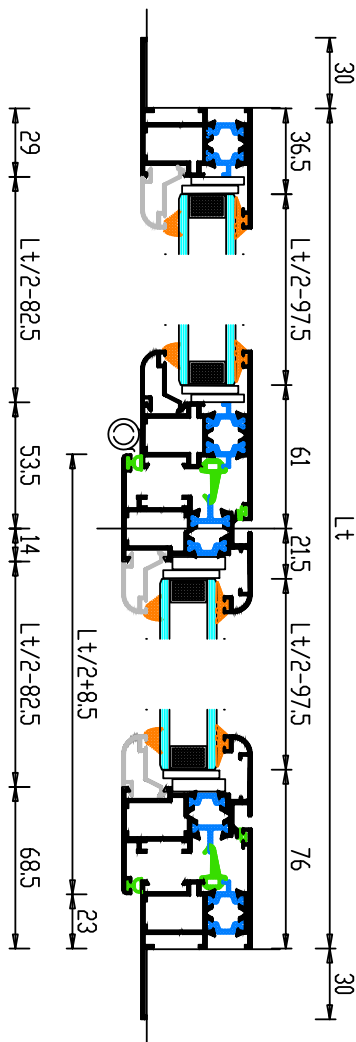


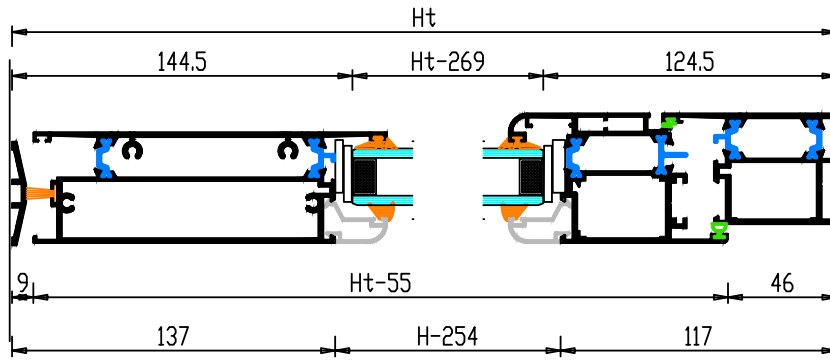


| ONE WING WINDOW WITH LATERAL FIX |                               |           |      |
|----------------------------------|-------------------------------|-----------|------|
| CODE                             | DESCRIPTION                   | SIZE      | Q.TY |
| 9040006                          | TOP E BOTTOM FRAME            | Lt+60     | 2    |
| 9040006                          | SIDE FRAME                    | Ht+60     | 2    |
| 9040203                          | TOP E BOTTOM SHUTTER          | Lt/2+8.5  | 2    |
| 9040203                          | SIDE SHUTTER                  | Ht-46     | 2    |
| 9041516                          | T-PROFILE                     | Ht-58     | 1    |
| 90320                            | TOP E BOTTOM GLAZING BEAD     | Lt/2-82.5 | 4    |
| 90320                            | VERTICAL SHUTTER GLAZING BEAD | Ht-137    | 2    |
| 90320                            | VERTICAL FRAME GLAZING BEAD   | Ht-58     | 2    |

| GLASS SIZE |        |
|------------|--------|
| Lt/2-97.5  | Ht-152 |
| Lt/2-97.5  | Ht-73  |

| ACCESSORIES |                            |       |
|-------------|----------------------------|-------|
| CODE        | DESCRIPTION                | Q.TY  |
| QXA015      | FRAME/SHUTTER CORNER JOINT | 8     |
| QXA020      | HINGE                      | 2     |
| QXG011      | CORNER FOR CENTRAL GASKET  | 2L+2H |
| QXA029      | CORNER FOR CENTRAL GASKET  | 4     |
| QXG005      | INSIDE CONNECTION GASKET   | 2L+2H |
| QXG009      | OUTSIDE CONNECTION GASKET  | 2L+2H |
| QXG007      | INSIDE GLASS GASKET        | 2L+4H |
| QXG008      | OUTSIDE GLASS GASKET       | 2L+4H |

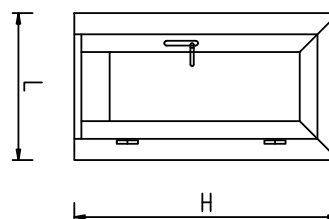
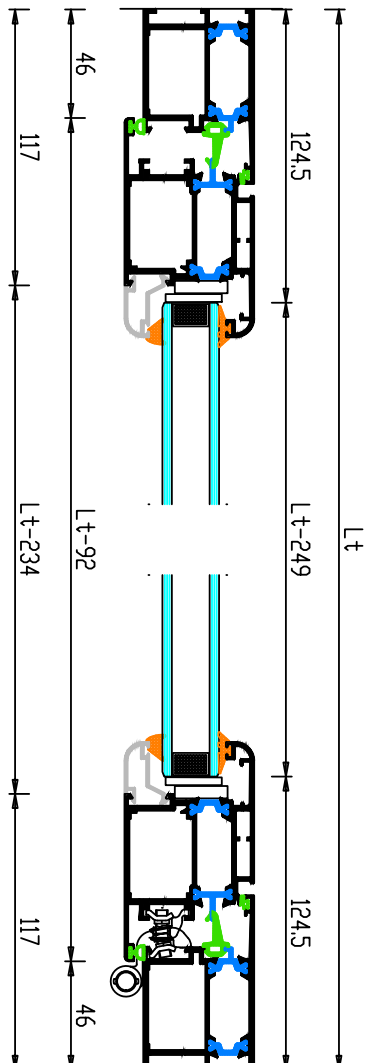


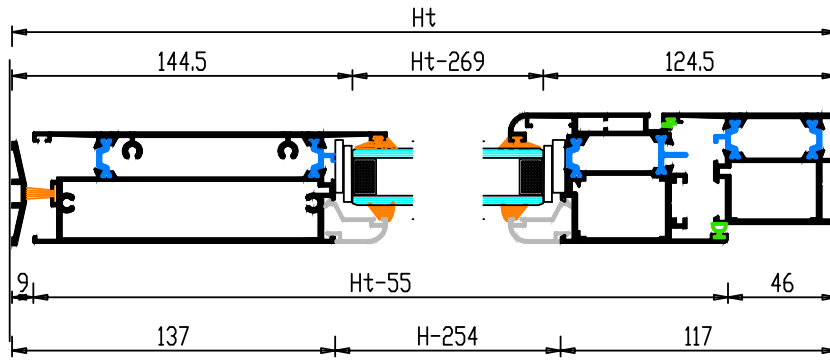


| ONE WING BALCONY DOOR |                           |      |
|-----------------------|---------------------------|------|
| CODE                  | DESCRIPTION               | Q.TY |
| 9040723               | TOP E BOTTOM FRAME        | 1    |
| 9040723               | SIDE FRAME                | 2    |
| 9040910               | TOP E BOTTOM SHUTTER      | 1    |
| 9040910               | SIDE SHUTTER              | 2    |
| 9041820               | DOOR BOTTOM               | 1    |
| 12806                 | SMALL THRESHOLD           | 1    |
| 90320                 | TOP E BOTTOM GLAZING BEAD | 2    |
| 90320                 | SIDE GLAZING BEAD         | 2    |

| GLASS SIZE |        |
|------------|--------|
| Lt-249     | Ht-269 |

| ACCESSORIES |                             |       |
|-------------|-----------------------------|-------|
| CODE        | DESCRIPTION                 | Q.TY  |
| QXA017      | FRAME/SHUTTER CORNER JOINT  | 4     |
| QXA024      | ALIGNMENT WING CORNER JOINT | 2     |
| QXA020      | HINGE                       | 2     |
| QXG011      | CENTRAL GASKET              | 2L+2H |
| QXA029      | CORNER FOR CENTRAL GASKET   | 4     |
| QXG005      | INSIDE CONNECTION GASKET    | 2L+2H |
| QXG009      | OUTSIDE CONNECTION GASKET   | 2L+2H |
| QXG007      | INSIDE GLASS GASKET         | 2L+2H |
| QXG008      | OUTSIDE GLASS GASKET        | 2L+2H |

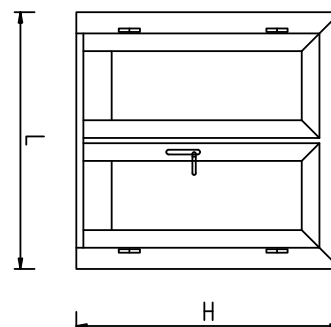
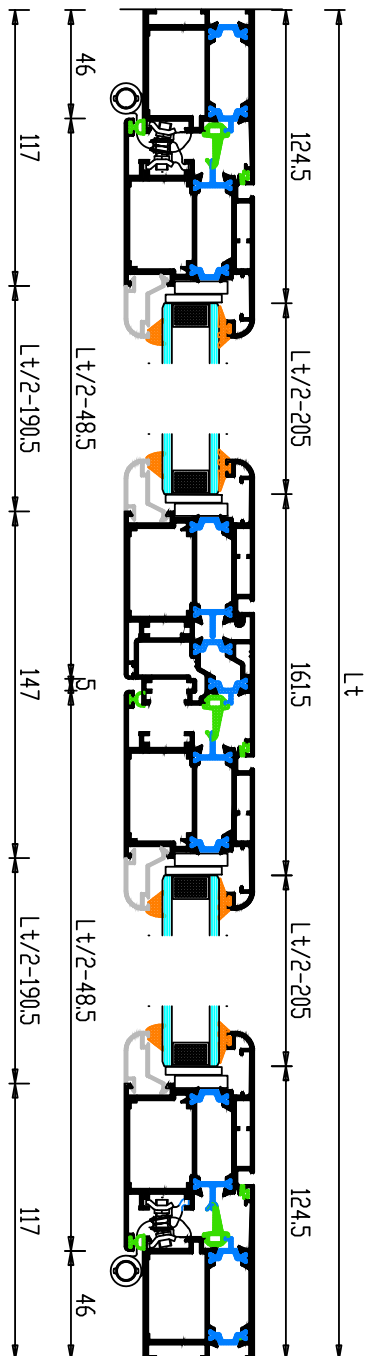


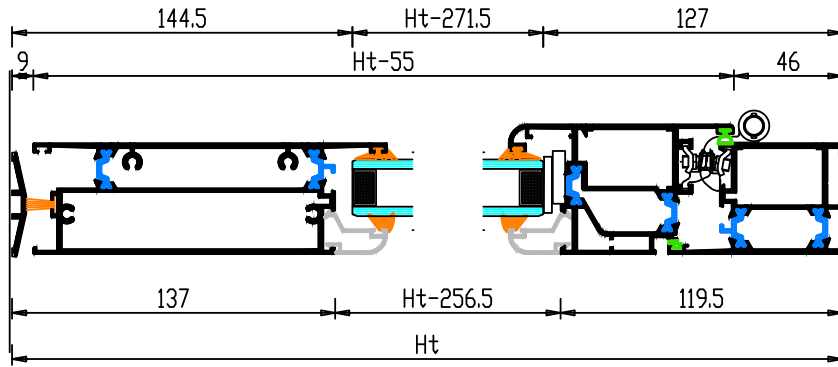


| TWO WINGS BALCONY DOOR |                            |            |
|------------------------|----------------------------|------------|
| CODE                   | DESCRIPTION                | SIZE       |
| 9040723                | TOP E. BOTTOM FRAME        | Lt         |
| 9040723                | SIDE FRAME                 | Ht         |
| 9040910                | TOP E. BOTTOM SHUTTER      | Lt/2-48.5  |
| 9040910                | SIDE SHUTTER               | Ht-55      |
| 9040405                | ADAPTOR                    | Ht-92      |
| 9041820                | DOOR BOTTOM                | Lt/2-180.5 |
| 12806                  | SMALL THRESHOLD            | Lt-96      |
| 90320                  | TOP E. BOTTOM GLAZING BEAD | Lt/2-190.5 |
| 90320                  | SIDE GLAZING BEAD          | Ht-254     |
| 90320                  |                            |            |
| 90320                  |                            |            |

| ACCESSORIES |                             |       |
|-------------|-----------------------------|-------|
| CODE        | DESCRIPTION                 | Q.TY  |
| QXA017      | FRAME/SHUTTER CORNER JOINT  | 6     |
| QXA024      | ALIGNMENT WING CORNER JOINT | 4     |
| QXA020      | HINGE                       | 4     |
| QXA030      | PLUG FOR ADAPTOR            | 1 Cp  |
| QXG011      | CORNER FOR CENTRAL GASKET   | 2L+3H |
| QXA029      | CORNER FOR CENTRAL GASKET   | 4     |
| QXG005      | INSIDE CONNECTION GASKET    | 2L+3H |
| QXG009      | OUTSIDE CONNECTION GASKET   | 2L+3H |
| QXG007      | INSIDE GLASS GASKET         | 2L+4H |
| QXG008      | OUTSIDE GLASS GASKET        | 2L+4H |

| GLASS SIZE |        |
|------------|--------|
| Lt/2-205   | Ht-269 |

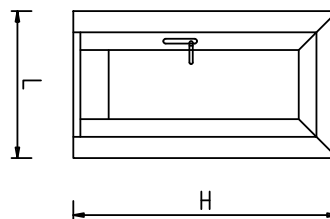
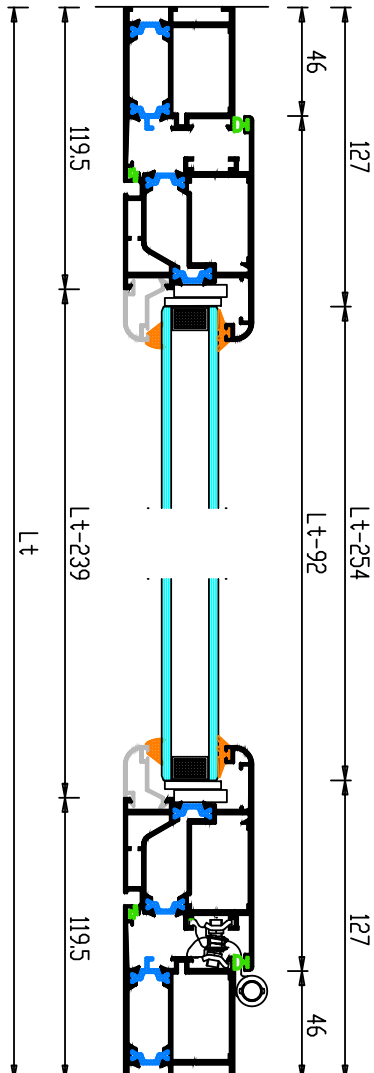


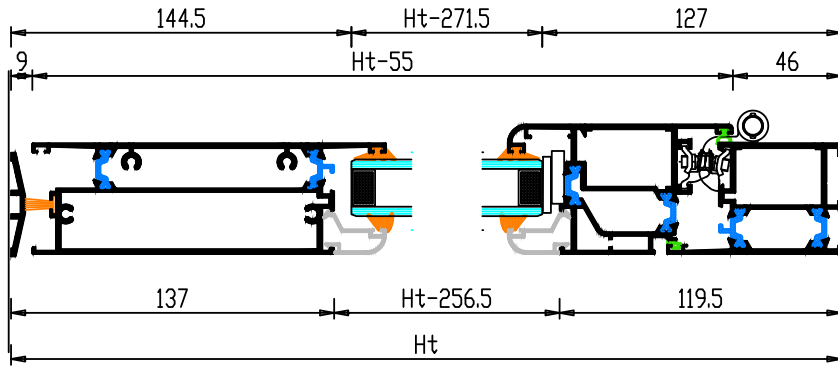


| ONE WING OUTSIDE OPENING BALCONY DOOR |                         |      |
|---------------------------------------|-------------------------|------|
| CODE                                  | DESCRIPTION             | Q.TY |
| 9040723                               | TOP E. BOTTOM FRAME     | 1    |
| 9040723                               | SIDE FRAME              | 2    |
| 9041112                               | TOP E. BOTTOM SHUTTER   | 1    |
| 9041112                               | SIDE SHUTTER            | 2    |
| 9041820                               | DOOR BOTTOM             | 1    |
| 12806                                 | SMALL THRESHOLD         | 1    |
| 90320                                 | HORIZONTAL GLAZING BEAD | 2    |
| 90320                                 | VERTICAL GLAZING BEAD   | 2    |

| GLASS SIZE |          |
|------------|----------|
| Lt-254     | Ht-271.5 |

| ACCESSORIES |                              |       |
|-------------|------------------------------|-------|
| CODE        | DESCRIPTION                  | Q.TY  |
| QXA017      | FRAME/T-SHUTTER CORNER JOINT | 4     |
| QXA024      | ALIGN T-WING CORNER JOINT    | 2     |
| QXA020      | HINGE                        | 2     |
| QXG005      | INSIDE CONNECTION GASKET     | 2L+2H |
| QXG009      | OUTSIDE CONNECTION GASKET    | 2L+2H |
| QXG007      | INSIDE GLASS GASKET          | 2L+2H |
| QXG008      | OUTSIDE GLASS GASKET         | 2L+2H |

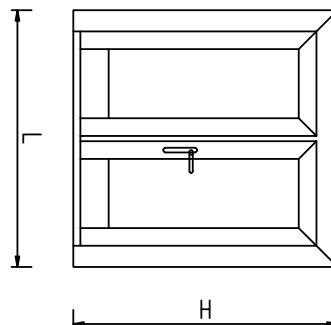
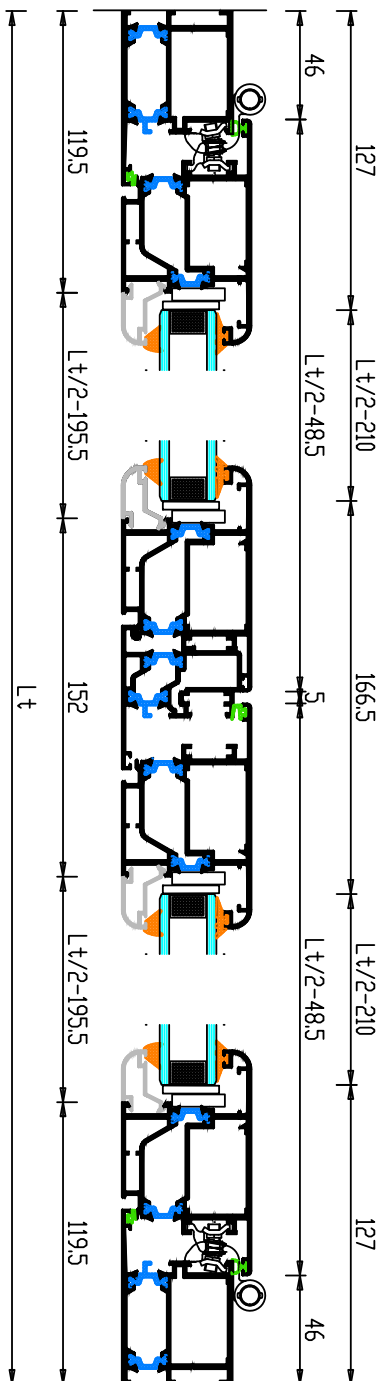




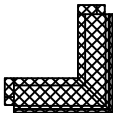
| TWO WINGS OUTSIDE OPENING BALCONY DOOR |                            |      |
|----------------------------------------|----------------------------|------|
| CODE                                   | DESCRIPTION                | Q.TY |
| 9040723                                | TOP E. BOTTOM FRAME        | 1    |
| 9040723                                | SIDE FRAME                 | 2    |
| 9041112                                | TOP E. BOTTOM SHUTTER      | 2    |
| 9041112                                | SIDE SHUTTER               | 4    |
| 9040405                                | ADAPTOR                    | 1    |
| 9041820                                | DOOR BOTTOM                | 2    |
| 12806                                  | SMALL THRESHOLD            | 1    |
| 90320                                  | TOP E. BOTTOM GLAZING BEAD | 4    |
| 90320                                  | SIDE GLAZING BEAD          | 4    |

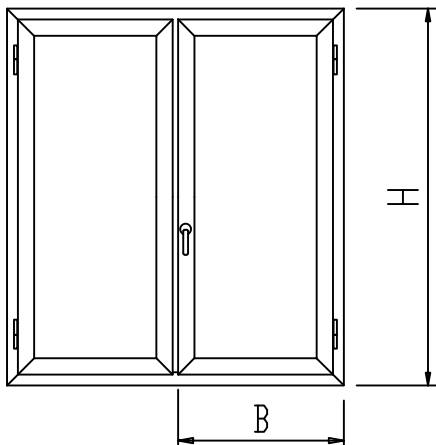
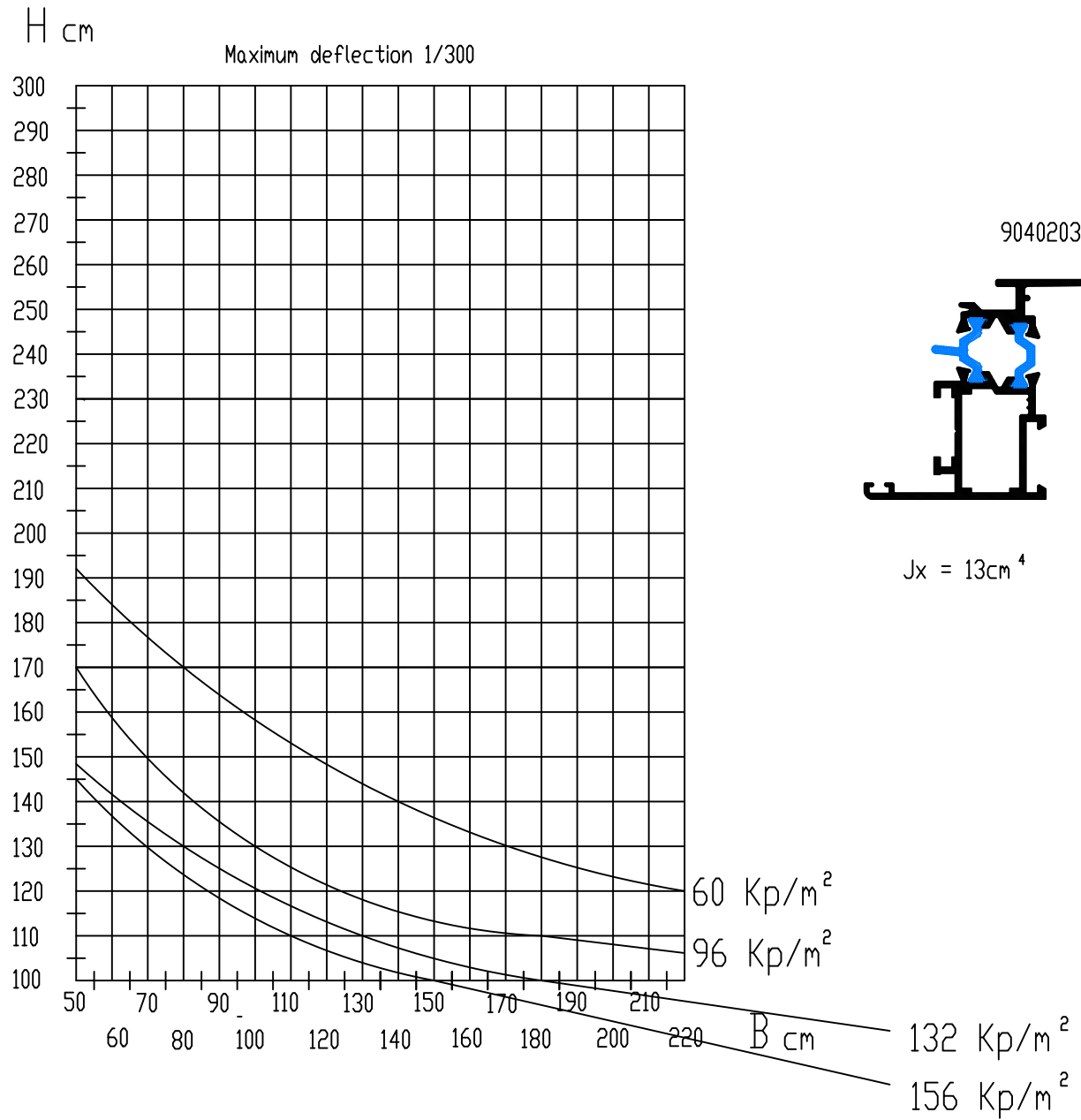
| GLASS SIZE |          |
|------------|----------|
| L t/2-210  | Ht-271.5 |

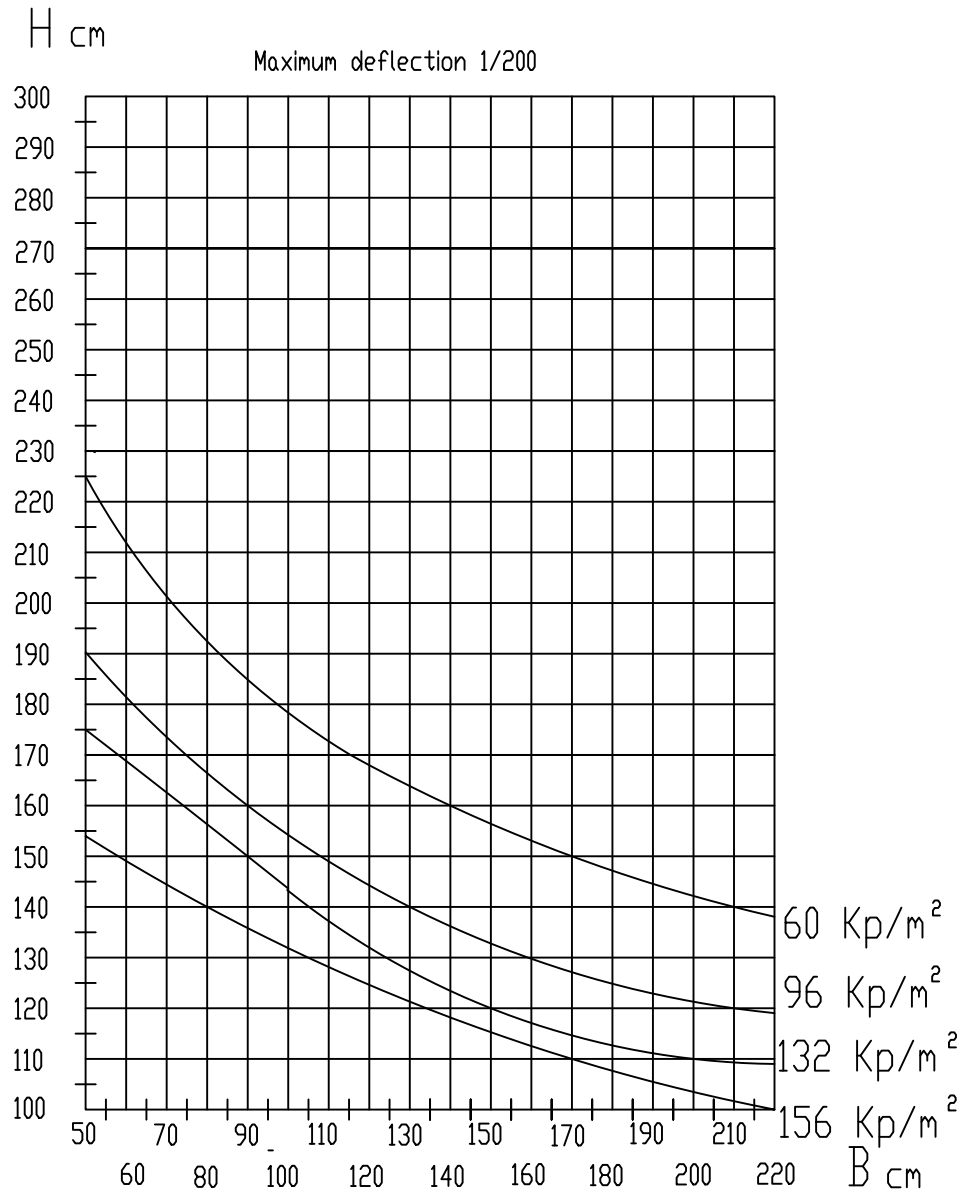
| ACCESSORIES |                               |       |
|-------------|-------------------------------|-------|
| CODE        | DESCRIPTION                   | Q.TY  |
| QXA017      | FRAME/T-SHUTTER CORNER JOINT  | 6     |
| QXA024      | ALIGN. T-SHUTTER CORNER JOINT | 4     |
| QXA020      | HINGE                         | 4     |
| QXA030      | PLUG FOR CENTRAL RABBIT       | 1 Cp  |
| QXG005      | INSIDE CONNECTION GASKET      | 2L+3H |
| QXG009      | OUTSIDE CONNECTION GASKET     | 2L+3H |
| QXG007      | INSIDE GLASS GASKET           | 2L+4H |
| QXG008      | OUTSIDE GLASS GASKET          | 2L+4H |



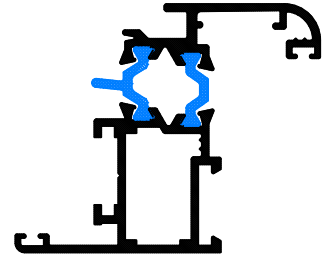
# Gasket EPDM

| DRAWING                                                                             | DESCRIPTION              | CODE   | DRAWING                                                                             | DESCRIPTION               | CODE   |
|-------------------------------------------------------------------------------------|--------------------------|--------|-------------------------------------------------------------------------------------|---------------------------|--------|
|    | Inside glass gasket 5mm  | QXG007 |    | Outside glass gasket 3mm  | QXG008 |
|    | Inside connection gasket | QXG005 |    | Outside connection gasket | QXG009 |
|  | Central gasket           | QXG011 |  | Corner for central gasket | QXA029 |
|  | Plug for central rabbet  | QXA030 |                                                                                     |                           |        |
|                                                                                     |                          |        |                                                                                     |                           |        |

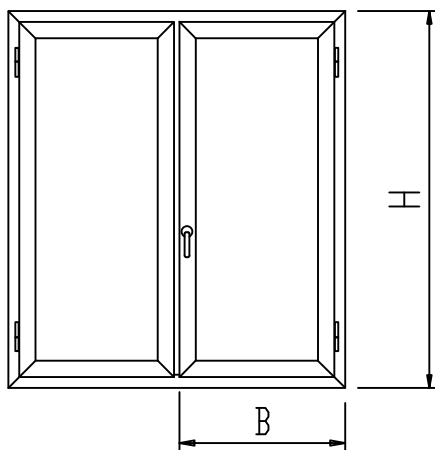


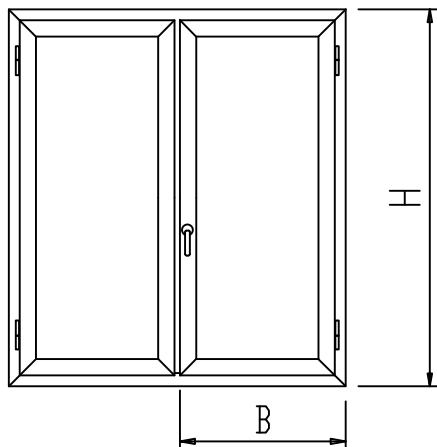
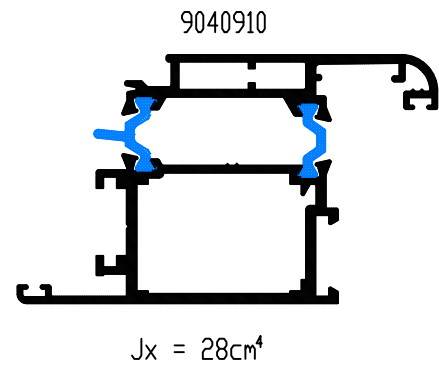
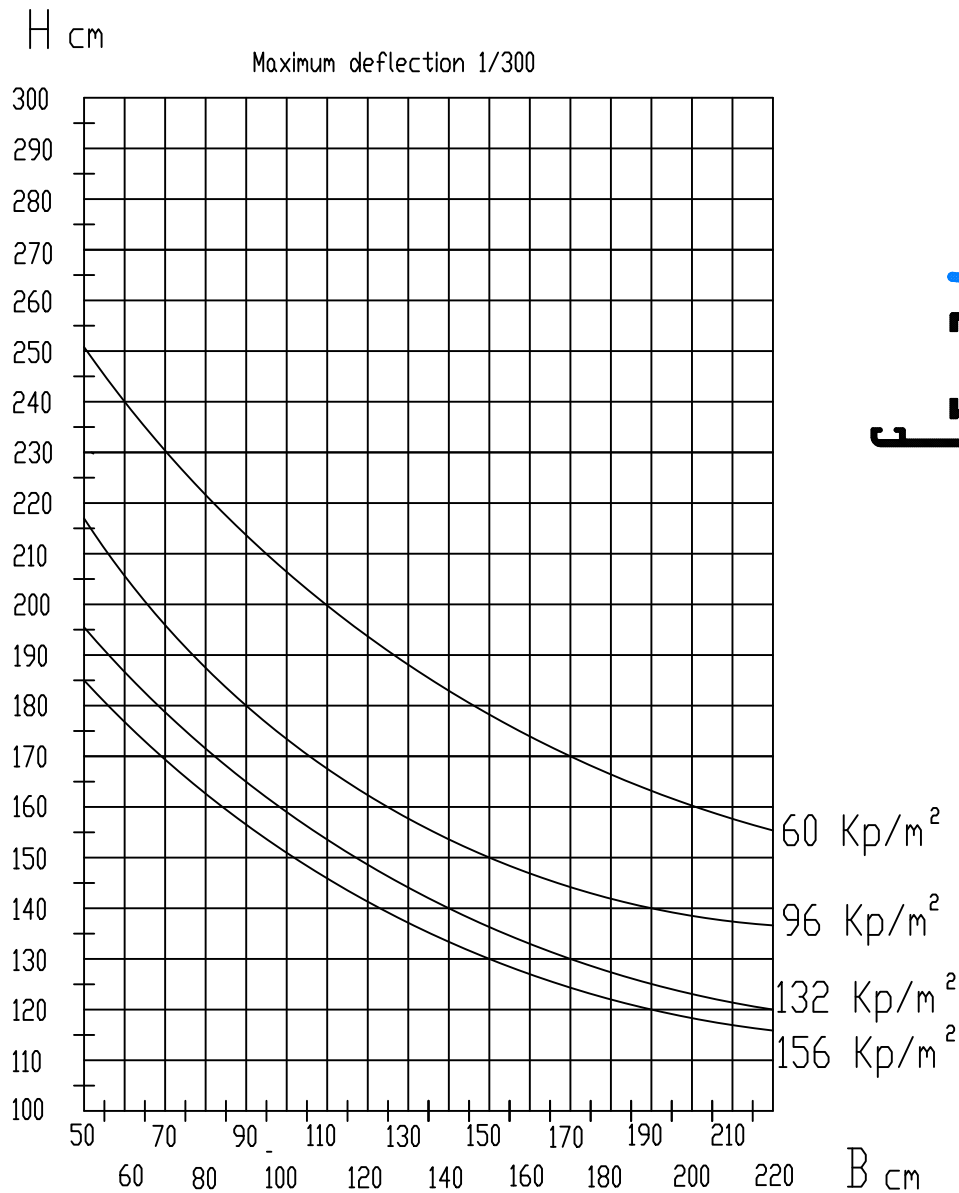


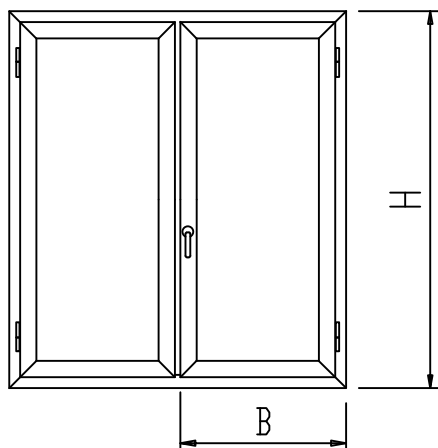
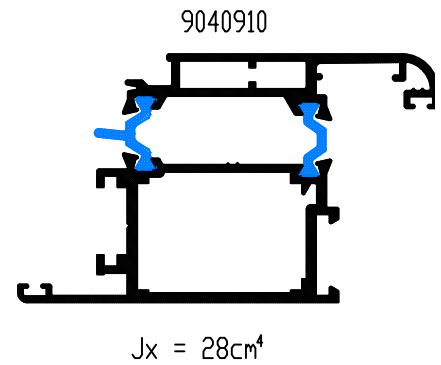
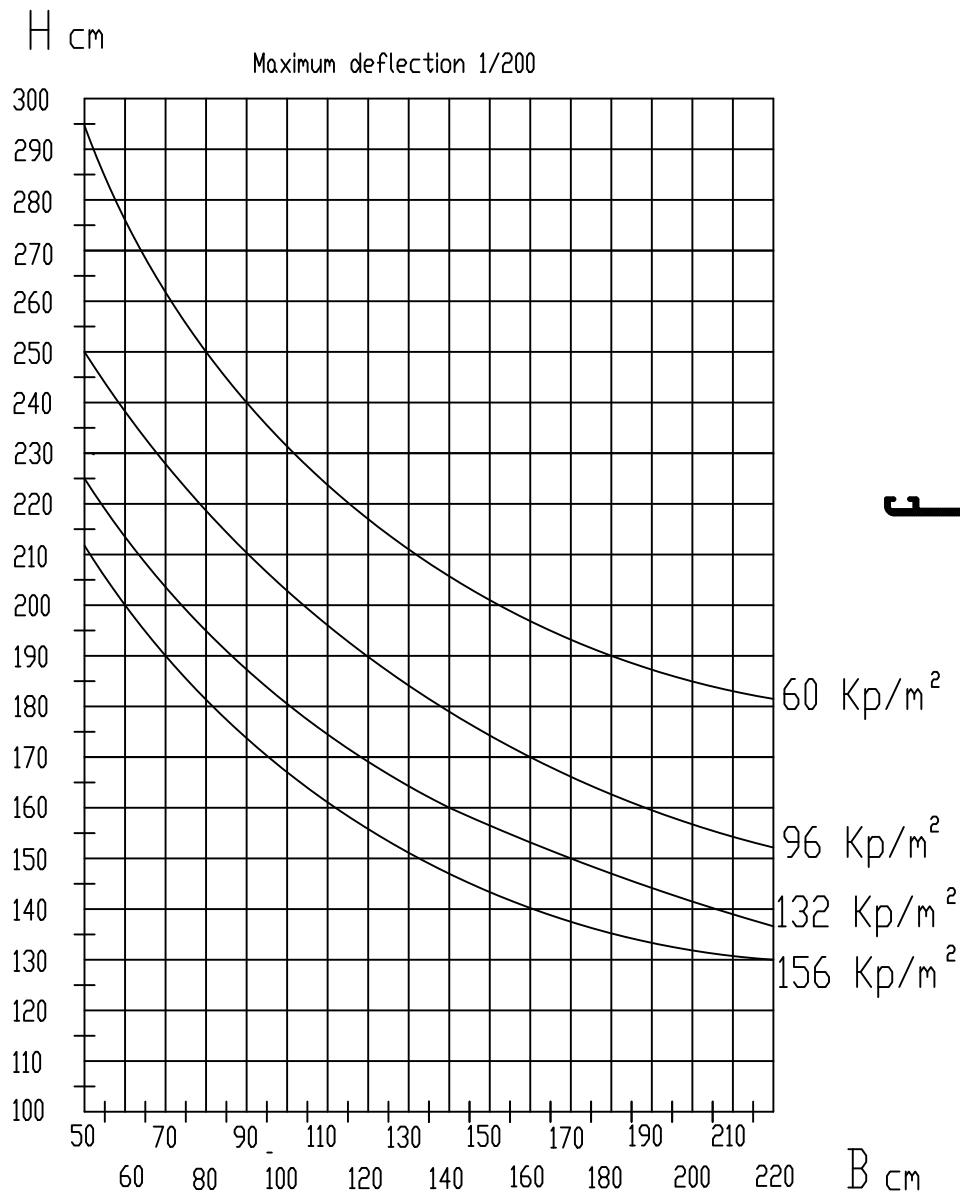
9040203



$$J_x = 13 \text{ cm}^4$$









**GALEX**  
الشركة القطرية لسحب الألمنيوم  
QATAR ALUMINIUM EXTRUSION CO.



**T-PANDA 47**



Licence number: 4203



# ACCESSORIES HINGED WITH SIDEDOOR

| code    | Item Description                                                                                                                        | code   | Item Description                                                                                                       |
|---------|-----------------------------------------------------------------------------------------------------------------------------------------|--------|------------------------------------------------------------------------------------------------------------------------|
| QXA040  | <br>COMFORT Cremone Bolt                               | QXA020 | <br>TOP RAPID Fast mounting Hinge    |
| QXA021  | <br>TOP RAPID TRE Fast mounting Hinge with three wings | QXA041 | <br>Closing Kit                      |
| QXA042  | <br>Driving latch for Secondary Sash                 | QXA035 | <br>VEGADUE Single opening hinge   |
| QXA 043 | <br>SIMPLE PLUS Limiter for Bottem Opening windows   | QXA044 | <br>STAR Telescopic arms (300 MM) |
| QXA034  | <br>RING Nylon catch                                 | QXA045 | <br>Locking pin - set             |

| code   | Item Description                                                                                                                        | code                         | Item Description                                                                                                                               |
|--------|-----------------------------------------------------------------------------------------------------------------------------------------|------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|
| QXA022 | <br>SLIM RAPID Door Hinge with threaded plate - 2 Leaf | QXA046                       | <br>COMFORT Double Handle                                    |
| QXA047 | <br>SPIN Double mobile Knob                            | QXA025<br>QXA 026<br>QXA 027 | <br>WELKA Lock 30mm with nickel cylinder 62mm, SS Frontplate |
| QXA048 | <br>Aluminium shaped cylinder cover                  | QXA049                       | <br>TEX 8 Lever bolt for Doors                             |
| QXA033 | <br>Drainage plug with valve                         | QXA015                       | <br>Corner Joint For Hinge                                 |
| QXA017 | <br>Corner Joint For Hinge                           | QXA050                       | <br>Door handle in stainless steel                         |





