



**dott. Gallina**  
INDUSTRIA MATERIE PLASTICHE



**arcoPlus<sup>®</sup>**

**Modular panels with  
joint system**

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APPLICATION MANUAL

**arcoPlus 684X**  
**arcoPlus 626**

Edition of 01/02/2004

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## 1. GENERAL

### 1.1. Description of the arcoPlus joint system

ArcoPlus joint is a flat or curved zenithal lighting system, comprising multiwall slats in polycarbonate with UV radiation protection on both sides.

The ArcoPlus joint panels are provided with hooks which make it possible to assemble it with various connectors (polycarbonate or aluminium).

The ArcoPlus joint panels can be used without any limitations as regards width and length.

### 1.2. Field of application

The system is designed for the realisation of curved or flat zenithal lighting, with an angle  $\geq 5\%$  to guarantee permeability of the roofing; in order to ensure self-cleaning, (approx. 9 %), on structures with any type of function, whether new or renovated. It can also be used for the realisation of windows or sheds.

ArcoPlus 684 & 626 panels do not contribute to the general stability of the building, and do not have any windbracing or cross members anti-torsion function. The latter function is carried out by the supporting structure.

## 2. MATERIALS

### 2.1. Raw material

CALIBRE 603-3-030003 type polycarbonate resins loaded at .05 % glass fibre with anti-U.V. coextrusion, XZ 94219.01 type, provided in granules certified by the company DOW-CHEMICAL.

### 2.2. Specifications

- Volume mass (ISO 1183 Method A) : 1190 +/- 200KG/m<sup>2</sup>
- Particles seal (ISO 3451-5 Method A) : 0.13 +/- 0.02%
- Traction properties (ISO 527 )
  - Breaking load : 60+/- 7 MPa
  - Stretching to breaking : 100 +/- 15 %
- Traction impact resilience (NF T 51-111) : 700+/- 120 KJ/m<sup>2</sup>
- Elasticity module in flexion a 20°C: 5.3 MPa
- Vicat Point (ISO306 Method B) : 150+/- 8° C
- Yellowing index : 0.5 to 1.2
- Dilatation coefficient 20°C : 6.5 10-5 m/m.K
- Thermal conductivity coefficient : 0.23 W/m.K

### 2.3. U.V. rays resistance

The external walls of the arcoPlus 684X & 626 panels are coextruded with polycarbonate having a high concentration of UV rays absorbers, which filter the light and reduce ageing of the polymer, guaranteeing optimum resistance against impacts even after long exposure to sunlight (GUARANTEED 10 YEARS).

### 2.4. Resistance to chemical agents

ArcoPlus 684X & 626 panels provide a good seal against acids and bases.

Chemical agent	Resistance	Chemical agent	Resistance
Diluted acids	Good	Chlorate hydrocarbons	Weak
Concentrated acids	Medium to good	Aromatic hydrocarbons	Weak
Alkalis	Weakly medium	Aliphatic Hydrocarbons	Weak
Organic solvents – alcohol	Good	Lubricating oils	Good
		Detergents	Good

Where severe or particular exposure occurs, we recommend carrying out behaviour tests.

Avoid the use of solvents.

### 3. ARCOPLUS MODULAR PANELS

#### 3.1. ArcoPlus 684X

Multiwall modular panels with X quadruple coextruded wall in polycarbonate with UV radiation protection.

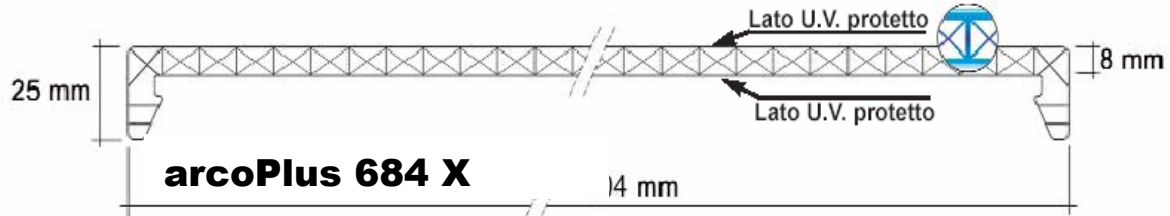
The thickness of the protection layer is more than 40 microns on 2 sides.

Panel thickness 8 mm with X quadruple wall, providing thermal insulation of **2.7W/m<sup>2</sup>K**.

Panel width 604 mm with connector system in aluminium or polycarbonate.

Acoustic reduction index results: **18.0** R,W(C; Ctr) test CFI Andrésy 10/09/2003.

Fire reaction : **Class 1**



#### PRODUCTION STANDARDS

Modular width	604 mm	
Panel length	no limits	
<b>Colour</b>	<b>Light transmission</b>	<b>Solar factor</b>
Satin crystal	72%	72%
Satin opal	47%	58%
Satin Bronze	50%	58%

#### TECHNICAL FEATURES

Thermal transmittance	<b>2,3</b> Kcal/hm <sup>2</sup> °C - <b>2,7</b> W/ m <sup>2</sup> K
Acoustic isolation	<b>18(-1 ; -2)</b> R',W(C;Ctr)
Linear thermal expansion	<b>0,065</b> mm/m°C
Use temperature	-40°C +120 °C
Fire reaction	<b>Class 1</b>
Minimum bending radius:	
With connector PC 2146	3 000 mm
With connector Al. 4243	2 000 mm
With connector Al 4310	15 000 mm

#### 3.2. ArcoPlus 626

Multiwall modular panels with 6 UV protected walls in polycarbonate.

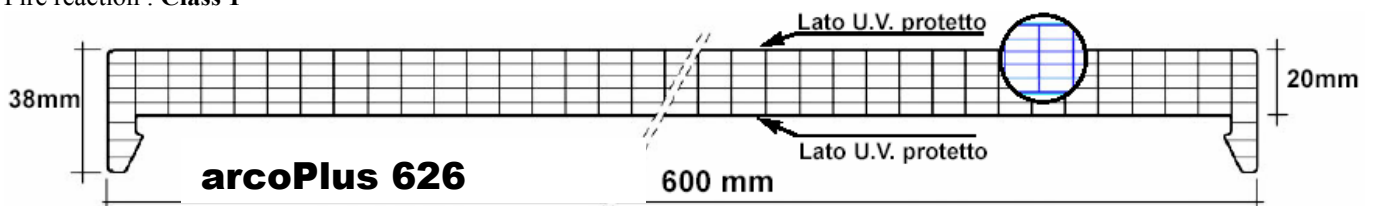
The thickness of the protection layer is at least more than 40 microns on 2 sides.

Panel thickness 20 mm with 6 rectangular walls, providing thermal insulation of 1.5W/m<sup>2</sup>K.

Panel width 600mm with connector system in aluminium or polycarbonate.

Acoustic reduction index result: **20.0** R,W(C; Ctr) test CFI Andrésy 10/09/2003.

Fire reaction : **Class 1**



#### PRODUCTION STANDARDS

Useful modular width	600 mm	
Panel length	no limits	
<b>Colour</b>	<b>Light transmission</b>	<b>Solar factor</b>
Satin crystal	65%	68%
Satin opal	40%	45%
Reflectò opal	30%	38%
Satin opal	30%	50%
Green	48%	53%
Blue	52%	56%

#### TECHNICAL FEATURES

Thermal transmittance	<b>1,3</b> Kcal/hm <sup>2</sup> °C - <b>1,5</b> W/ m <sup>2</sup> K
Acoustic isolation	<b>20(-1 ; -2)</b> R',W(C;Ctr)
Linear thermal expansion	<b>0,065</b> mm/m°C
Use temperature	-40°C +120 °C
Fire reaction	<b>C1</b>
Minimum bending radius:	
With connectors PC 2146	5 000 mm
With connectors Al. 4243	4 000 mm
With connectors Al. 4310	15 000 mm

## 4. CONNECTORS & LAYING TYPES

### 4.1. Connectors for assembling panels

Cod. **4243**: In extruded aluminium (alloy 6060 T5) with height of 32 mm, with double triangular walls that reinforce the joint when laying with internal connectors.

Cod. **4310**: : In extruded aluminium (alloy 6060 T5) with height of 60 mm, with lateral screwing for laying in reversò (Connectors on the outside), which reinforces the joint.

Cod. **2146**: In clear polycarbonate with U.V. protection for laying in reversò (Connectors on the outside) The connectors guarantee the solidity of the panels without creating a thermal bridge and panel holes.

With a **normal laying** the connector is on the **inside** of the building; (Shed vertical transparent walls)

With a **reversò laying** the connector is on the **outside** of the buiding; (Roofing)

### 4.2. Normal laying with internal connectors

The system is fastened with aluminium connectors within the building.

The connectors are fastened to the structure with 2 stainless steel self-perforating screws 5.5 x 30.

The panels are fitted on the outside of the buildings and resist a depression load of 200 kg after fitting.

The panels will be closed at their ends with a micro-holed anti-dust tape which allows filtered ventilation within the chambers.

The low parts of the windows will be provided with a profile in painted or anodised raw extruded aluminium, which ensures the finishing for the system.

The system has satisfied the 1200 JOULES SOCOTEC test, with a beams up to 2 ml for the panel 684x

### 4.3. Reversò laying with external connectors

The system will be fastened with connectors in aluminium, with lateral screwing, or in polycarbonate, to the exterior of the buildings.

The panels will be fastened to the structure with stainless steel fastening brackets & 2 stainless steel self-perforating screws 5.5 x 30 (flathead screws for flat fastening brackets).

The panels resist depression loads of up to 120 kg depending on the centre-centre distance.

The panels will be closed at their ends with a micro-holed anti-dust tape which allows filtered ventilation within the chambers.

The low parts of the windows will be provided with a UV protected polycarbonate profile or extruded aluminium.

The system has satisfied the 1200 JOULES SOCOTEC test, with a beams up to 1.5 ml with polycarbonate connector for panel 626.

### 4.4. Skylight laying

The skylights are self-supporting and the external aspect has no junction profile.

Only the joint must permit sealing with depression of the panels equal to 200 kg/sqm.

A holed closing support permits connection with the painted and pre-bent connector profiles.

Fastening the connectors on the support will be realised using 2 self-threading stainless steel screws 5.5 x 30.

Two gables will close the two ends of the tunnels.

The system has satisfied the 1200 JOULES SOCOTEC test, up to 4 ml of cord with a 1/7 deflection for panel 684X.

## 5. APPLICATION

### 5.1. Principle

The connectors will follow the line of the greatest slope.

The length of the panels must take into account dilatation and withdrawal in relation to the installation area.

### 5.2. Accident prevention

Assembly of the ArcoPlus joint panels requires absolute respect for applicable safety standards as regards access to roofing in transparent materials.

More specifically, it is essential to use of a load distributor (wooden board), supported transversally in the direction of the panels. This applies to both the initial laying and any maintenance operations.

### 5.3. Fire safety

➤ Class 1 for 684X

➤ Class 1 for 626

ArcoPlus 684 X & 626 panels can be used in all categories of premises, respecting any installation and dimensioning standards as set out in current regulations.

### 5.4. Resistance to impacts in gymnasiums

ArcoPlus 684 X & 626 panels, in roofing, windows and skylights, in certain configurations, benefit from class 1200 joules relative to laying on two or more supports.

With regard to resistance to impacts, with respect to maintenance of performances, and given that ArcoPlus 684 X & 626 panels are easily replaceable, the classification according to standard P 38-302 is as follows:

- External impacts : Q4
- External impacts : O3

*Certain sports activities (hockey, ice-hockey...) can cause particular impacts. In order to avoid degradation of the material following impacts, an additional protection may prove necessary.*

### 5.5. Supports

The support structure must exhibit a flat and parallel surface.

Minimum support dimensions are

- |                            |        |                                    |        |
|----------------------------|--------|------------------------------------|--------|
| • For the steel profiles : |        | • For the wooden section-breaker : |        |
| Min. width :               | 40 mm. | Min. width :                       | 60 mm. |
| Min. thickness :           | 1.5mm  | Min. height :                      | 80mm   |

### 5.6. Loads

Maximum loads allowed (daN./m<sup>2</sup>) with respect to capacities (m) are determined, taking the following criteria into account:

- |  |  |
|--|--|
| • <b>Descending loads :</b>                              | • <b>Ascending loads :</b>                               |
| - Deflection lower or equal to 1/ 100e of capacity;      | - Deflection lower or equal to 1/50° of capacity         |
| - Safety relative to collapse greater than or equal to 3 | - Safety relative to collapse greater than or equal to 3 |

## **6. GENERAL LAYING CONDITIONS**

### ***6.1. Cutting***

ArcoPlus 684 X (solo) panels can be delivered made to measure and thermowelded at both ends in order to prevent any infiltration of dust in the chambers.

To carry out any cuts, it is necessary, as with the arcoPlus 626, which cannot be thermowelded, to use a circular blade with fine toothing (5 teeth/cm), removing any chips within the chambers and ensuring they are impermeable with an aluminium adhesive strip.

### ***6.2. Drilling***

ArcoPlus 684 X & 626 panels are drilled to the ridge (roofing) to permit positioning of the fastening washers, permitting free dilatation at the bottom of the slope (offlet). Minimum 50 mm from the edge of the panel.

Taking into account the material dilatation coefficient, the diameter of the hole must be greater than 5 mm at the diameter of the fastening washer.

It is made using a standard metals drill.

The threading must be realised in order to eliminate any chips that could impede optimum application of the fastening washer .

### ***6.3. Fastening***

The self-perforating, self-threading and mordant screws etc. must be employed using the appropriate equipment, provided with torque limiter.

For fastening the 4243 profiles we recommend an H head with maximum 5.5 (the head must leave the panel joint free)

For fastening the flat plates, we recommend stainless steel rivets or oval-headed screws.

### ***6.4. Sheet metal work***

The ridge sheet metal work, guttering sheet metal work, drains etc. must be realised to current standards (and are not part of the system).

### ***6.5. Blocking of panels***

The arcoPlus®626 & 684X panel, can be supplied blocked at both ends with an anti-dust adhesive tape and/or a block cover in polycarbonate, to guarantee over time the cleanliness of the interior of the chambers and better transparency;

(If we reduce the length of the elements on site any cutting of the panels must be carried out while taking into account the side to be positioned on the top of the roof).

The arcoPlus®684X panel (only), can be supplied thermowelded at its ends; in this case it is no longer necessary to use a block cover.

### ***6.6. Storage***

Do not store panels in direct sunlight or rain. When storing outdoors it is necessary to provide an opaque protective cover sheet.

The packs must be slightly inclined horizontally to encourage the evaporation of any condensate, and raised above the floor using a spacer that allows good aeration, avoiding any type of permanent deformation of the panels.

- **Do not lay one board over another.**
- **Provide straps against strong winds.**

### ***6.7. Cleaning***

Periodically remove any mould, leaves or other extraneous bodies.

Regularly clean the ArcoPlus panels with soap (neutral) and water, thoroughly rinsing with water.

**Do not clean with hot water.**

**Organic solvents and alkali or abrasive elements must not be used.**

### ***6.8. Silicone***

Use of polycarbonate suitable silicone only is recommended.

***6.9. Click-on insertion of panels***

It is necessary to click-on the panels, not at the same time, on the aluminium section bar 4243 (reinforced) forcing the joint by means of a rubber mallet and a wooden listel (60 x 40 x 500). To facilitate the joint, we recommend moistening the same with neutral soap and water.



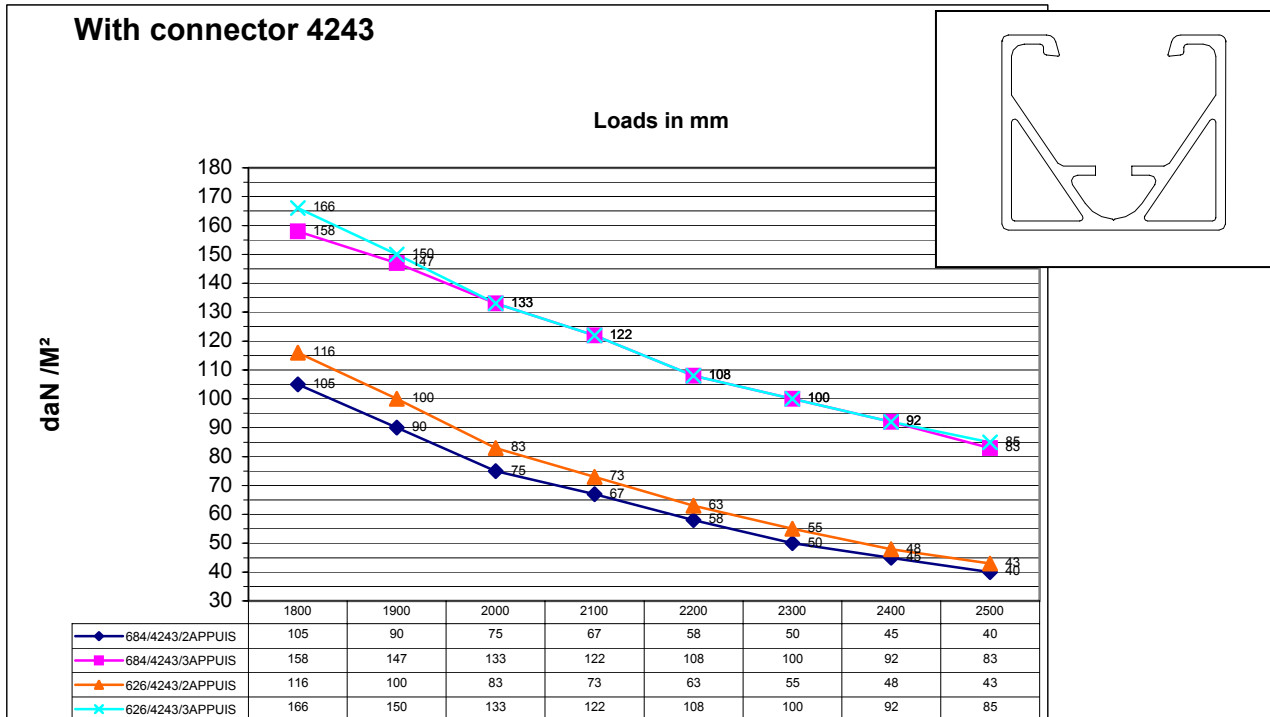
## 7. CHOICE OF CONNECTOR

### 7.1. Choice of connector

- **2146** : UV protected reinforced polycarbonate profile for
- **4243** : Reinforced profile code 4243
- **4310** : Connector in Aluminium with lateral screwing every 500mm code 4310  
Raw finish, anodised or RAL painted for aluminium profiles.

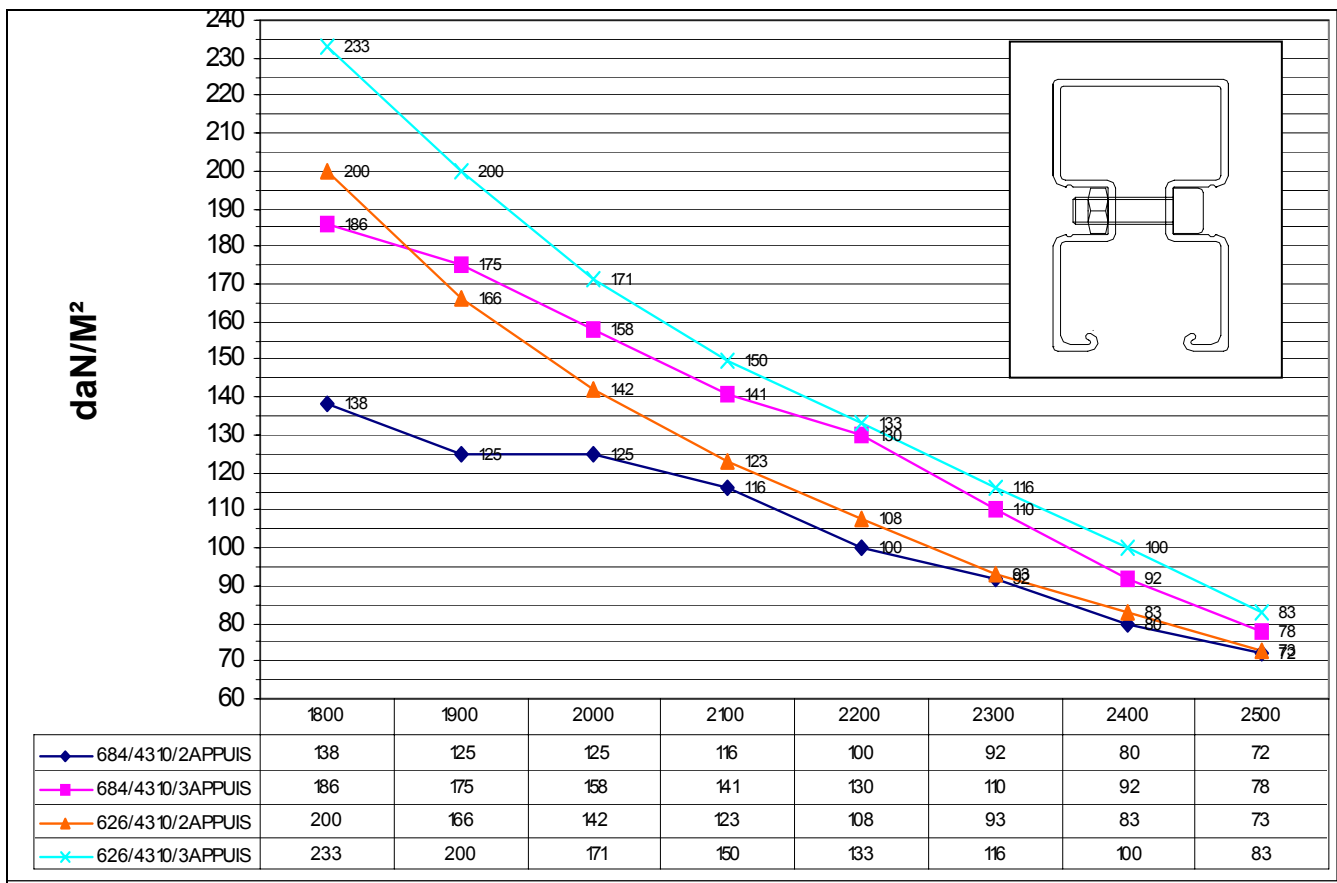
reversò type laying  
normal type laying  
reversò type laying

### 7.2. With connector 4243 (LAYING WITH CONNECTOR ON INTERNAL SIDE)



The 4243 profile, relative to resistance to de-anchorage tests for ArcoPlus 684X & 626 panels, has been realised with positive results on a laying beam of 2 ml and an ascending load of 320 daN/m<sup>2</sup> which represents a wind of 250 km/h.

7.3. With Connector 4310 (LAYING WITH CONNECTOR ON EXTERNAL SIDE)



De-anchorage test for fastening plates under constant pressure:

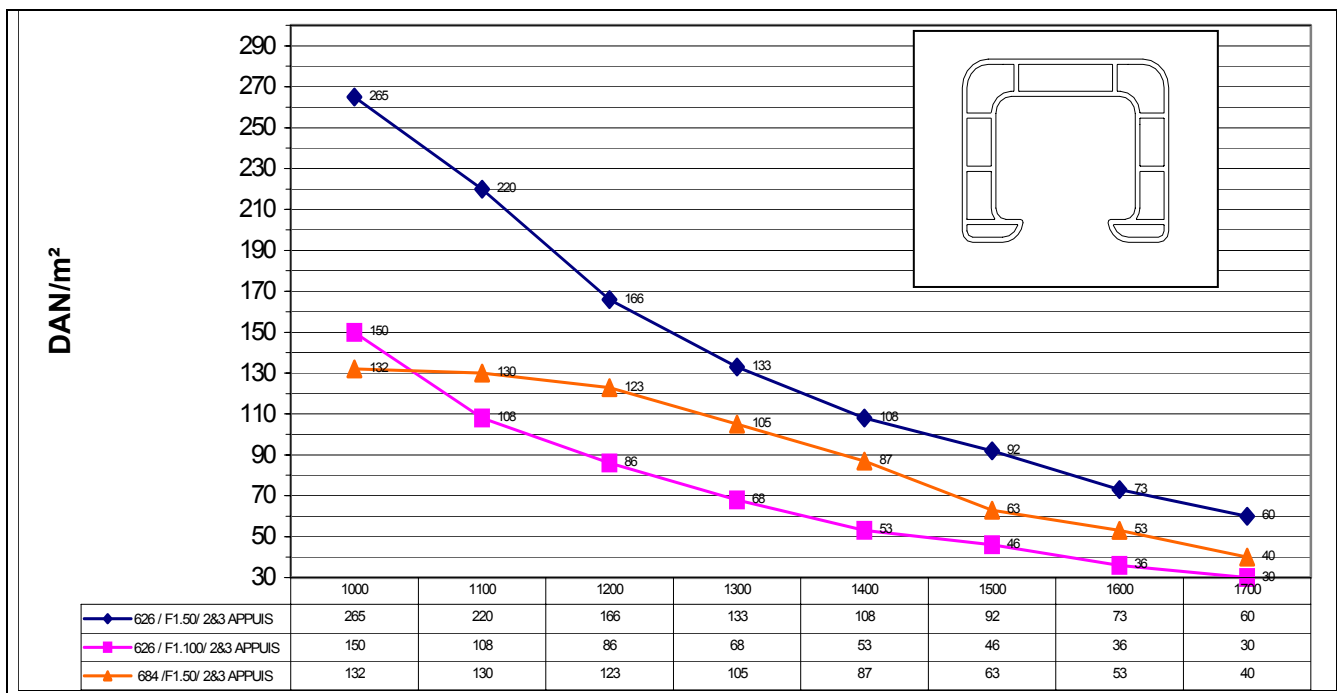
For the 626 A 200 kg NO de-anchorage

MAXIMUM value 100daN

For the 626 A 150 kg NO de-anchorage

MAXIMUM value 75daN

7.4. With Connector PC 2146 (LAYING WITH CONNECTOR ON EXTERNAL SIDE)



De-anchorage test for fastening plates under constant pressure:

For the 626 A 200 kg NO de-anchorage

MAXIMUM value 100daN

For the 626 A 150 kg NO de-anchorage

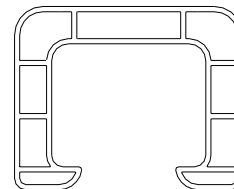
MAXIMUM value 75daN

## **8. REVERSÒ LAYING POLYCARBONATE CONNECTORS 2146**

### **8.1. Definition and list of components**

To realise flat or curved roofing with arcoPlus®684x and 626 reversò, it is necessary to provide the following elements :

- |                                       |                                    |
|---------------------------------------|------------------------------------|
| - ArcoPlus® joint panels              |                                    |
| - Block cover                         | code 1160 for 684x or 2182 for 626 |
| - Anti-dust tape                      | code 4083 for 684x or 4083 for 626 |
| - Plate for plane anchorage           | code 4138 for 684x or 4263 for 626 |
| - or plate for vertical anchorage     | code 4264 for 626 or for 684x      |
| - Connector profiles in polycarbonate | code 2146                          |
| - Covergasket cap (2 for lenght)      | code 4303                          |
| - Start profiles in polycarbonate     | code 2147 for 684x or 2179 for 626 |
| - Terminal profiles in polycarbonate  | code 2148 for 684x or 2180 for 626 |
| - Fixing washers                      | code 4077 for 684x or 7087 for 626 |
| - Pads in polypropylene               | code 4213                          |



### **8.2. Thermal dilatations**

It is important not to neglect, when realising roofing in polycarbonate, the linear dilatation value equal to  $0.065\text{mm/m } \Delta \text{Temp}$ .

The system of anchoring the panels to roofing support structures, comprising fastening plates in stainless steel, make it possible to resist strains due to pressure and depression, allowing sliding due to thermal dilatation.

### **8.3. Thermowelding of panels**

The **arcoPlus®684x (only) panel**, can be provided thermowelded at its ends to guarantee over time cleanliness within the chambers and better transparency; (if we reduce the length of the elements on the site, cutting the panels must again be protected by an anti-dust adhesive tape and by a block cover).

### **8.4. Roof ridge**

On both ends of the panel, both on top and roof gutter detail, there is provision for the insertion of suitable pads in PELD, whose role is to protect and close the upper part of the panels under the sheet metal work.

### **8.5. Panel projection in eaves**

Along the line of the eaves, for **arcoPlus®684x or 626 panels**, it is necessary to make provision for an overhang, with respect to the end of the support of 100mm and 300mm maximum. It is important not to go beyond these values, since the action of any wind in the overhang area can produce a “sail effect” on the fastening element, with the risk that the latter is ripped away from its support.

### **8.6. Laying**

To achieve effective realisation with the **arcoPlus® reverse joint system**:

Check that the roofing planes are perfectly co-planar in order to avoid any anaesthetic results.

Afterwards check that the roofing supports do not have, on their support side, any residues from other work or dirt and that the surface in contact is clear or white in colour .

#### ***Afterwards, proceed as follows :***

Position and fasten the first panel on the existing transversal supports, with flat or vertical stainless steel fastening plates, checking that the panel is perfectly a right angles to the roofing direction.

Fasten each panel on the sheet metal work with two appropriate stainless steel fastening screws and washers.

Align the panel to the starting profile, and subsequently insert the connector profile, applying vertical pressure.

Fasten, on the other side of the panel, the fastening plates, then insert the next panel, slightly tip up the right return of the fastening plates with a mallet.

Insert another connector (PC) applying pressure.

Repeat the operations up to the penultimate panel.

Measure the distance that remains and cut the last panel along its length to insert the terminal profile and click-on insert the last connector.

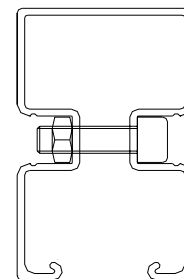
*N.B. It should be recalled that the terminal profile is not necessary if the roof ends with a complete panel. In such cases, the same starting profile is used to complete the roofing.*

## 9. REVERSÒ LAYING OF ALUMINIUM CONNECTORS TO BE SCREWED Laterally 4310

### 9.1. Definition and list of components

To realise flat or curved roofing with arcoPlus®684x and 626 reversò, it is necessary to provide the following elements:

- |                                       |                                    |
|---------------------------------------|------------------------------------|
| - ArcoPlus® joint panels              |                                    |
| - Block cover                         | code 1160 for 684x or 2182 for 626 |
| - Anti-dust tape                      | code 4083 for 684x or 4083 for 626 |
| - Plate for plane anchorage           | code 4138 for 684x or 4263 for 626 |
| - Plate for vertical anchorage        | code 4264 for 626 or for 684x      |
| - Connector profiles in polycarbonate | code 2146                          |
| - Covergasket cap (2 for length)      | code 4318                          |
| - Start profiles in polycarbonate     | code 2147 for 684x or 2179 for 626 |
| - Terminal profiles in polycarbonate  | code 2148 for 684x or 2180 for 626 |
| - Fixing washers                      | code 4077 for 684x or 7087 for 626 |
| - Pads in polypropylene               | code 4221                          |



### 9.2. Thermal dilatations

It is important not to neglect, when realising roofing in polycarbonate, the linear dilatation value equal to **0.065mm/m Δ Temp.**

The system of anchoring the panels to roofing support structures comprises fastening plates in stainless steel, allowing sliding due to thermal dilatation.

### 9.3. Thermowelding of panels

The arcoPlus®684x (only) panel, can be provided thermowelded at its ends to guarantee over time cleanliness within the chambers and better transparency; (if we reduce the length of the elements on the site, cutting the panels must again be protected by an anti-dust adhesive tape and by a block cover).

### 9.4. Roof ridge

Along the eaves line, at the end of the support, there is provision for the insertion of suitable pads in polypropylene, whose role is to protect and close the upper part of the panels under the pre-varnished roof ridge impermeability sheet metal (not included in Gallina supply).

### 9.5. Panel projection in eaves

Along the line of the eaves, for arcoPlus®684x or 626 panels, it is necessary to make provision for an overhang, with respect to the end of the support of 100mm and 300mm maximum. It is important not to go beyond these values, since the action of any wind in the overhang area can produce a “sail effect” on the fastening element, with the risk that the latter is ripped away from its support.

### 9.6. Laying

To achieve effective realisation with the arcoPlus® reversò joint system:

First of all check that the roofing planes are perfectly co-planar in order to avoid any anaesthetic results.

Afterwards check that the roofing supports do not have, on their support side, any residues from other work or dirt and that the surface in contact is clear or white in colour .

#### Afterwards, proceed as follows :

Position and fasten the first panel on the existing transversal supports, with flat or vertical stainless steel fastening plates, checking that the panel is perfectly a right angles to the roofing direction.

Fasten each panel on the sheet metal work with two appropriate stainless steel fastening screws and washers.

Align the panel starting profile, and subsequently insert the connector profile, applying vertical pressure and position and screw the stainless steel lateral screws of the connectors (Screws provided code 4312).

Fasten, on the other side of the panel, the fastening plates, then insert the next panel, slightly tip up the right return of the fastening plates with a mallet.

Insert another connector (PC) applying pressure.

Repeat the operations up to the penultimate panel.

Measure the distance that remains and cut the last panel along its length to insert the terminal profile and subsequently insert the connector profile, applying pressure and position and screw the connectors lateral screws.

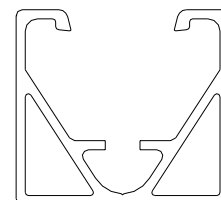
*N.B. It should be recalled that the terminal profile is not necessary if the roof ends with a complete panel. In such cases, the same starting profile is used to complete the roofing.*

## 10. 4243 REINFORCED ALUMINIUM CONNECTOR NORMAL LAYING

### 10.1. Definition and list of components

To realise vertical transparent walls or Shed with arcoPlus®684x and 626 reversò, it is necessary to provide the following elements:

- |                                      |   |
|--------------------------------------|---|
| - ArcoPlus® joint panels             |   |
| - Lower profile                      | code 4140 for 684x o 4271 for 626       |
| - Upper profile                      | Bent plate (not included in the supply) |
| - Grey gasket                        | 1169/B                                  |
| - Block cover                        | code 1160 for 684x or 2182 for 626      |
| - Anti – dust tape                   | code 4083 for 684x or 4083 for 626      |
| - Connector profiles in aluminium    | code 4243                               |
| - Start profiles in polycarbonate    | code 2147 for 684x or 2179 for 626      |
| - Terminal profiles in polycarbonate | code 2148 for 684x or 2180 for 626      |
| - Pads in polypropylene              | code 4213                               |



### 10.2. Fastening

Fastening the connectors on the intermediate supports is carried out with a screw by means of the connector.

It is necessary to check that the lead structure is withdrawn by 10 mm for the lower profiles ref 4140 for the arcoPlus 684 and by 15 mm for profile ref 4271 for arcoPlus 626.

A shim of 35 x 60 x 10 for arcoPlus 684 or 35 x 60x15 for arcoPlus 626 must be positioned in the fastening point of the connectors on the structure.

*The fastening screws and materials for the shims are not sold by Dr. Gallina.*

### 10.3. Thermal dilatations

It is important not to neglect, when realising roofing in polycarbonate, the linear dilatation value equal to **0.065mm/m Δ Temp.**

The panel anchorage system for the support structures of the roofing comprises fastening plates in stainless steel, allowing sliding due to thermal dilatation, without prejudicing the structure steal.

### 10.4. Upper profile

In the upper part of the windows or sheds, the panels will be blocked with an anti-dust adhesive tape or block cover.

It is important to respect the linear dilatation value equal to 0.065mm/m Δ Temp. This factor must not be ignored in realising any windows in polycarbonate, whose dilatation is carried out in the upper part of the window.

It is necessary to provide sheet metal work bent at the corner in order to perfect air/water impermeability (not included in Gallina supply).

The corners that exit and re-enter, the acroter crowns, the high and low eaves, the expansion joints will be realised in lapped metal according to the rules of art. DTU 40.35

### 10.5. Laying

#### Operation no. 1

Prepare the frame profiles:

At the bottom : cod. 4140(for 684x) or cod. 4271 (for 626). These profiles are delivered with holes, but it will be necessary to check that the drainage holes correspond to your application.

At the top: There are no profiles specific to the range, but it will be necessary to provide a bent plate for impermeability (not included in the supply).

#### Operation no. 2

First define the type of fastening for the aluminium profiles in relation to the nature of the supports:

Minimum every 500mm. Taking account of the various types of support, the choice of screws is the responsibility of the layer . (type, diameter and length).

#### Operation no. 3

Position the profiles in aluminium in perfect alignment between high and low, and provide a fastening on the structure with a maximum space of 500 mm.

#### Operation no. 4

Fasten the connectors at a distance to the axis of 604 mm for the 684 and 600 mm for the 626.

Position the first complete panel, inserting it at the bottom of the panel between the two first arranged connectors.

Fasten the lateral starting side with a starting profile or lining.

*Operation no.5*

Position and fasten the connectors on the intermediate section-breaker profiles (if necessary) with 2 stainless steel screws (not provided).

*Operation no.6*

Position the second panel in an identical way to the first (Operation no.4) click-on with a mallet and wooden listel 60 x 40 x 500mm. The click-on insertion must be progressive, starting from one end (high or low).

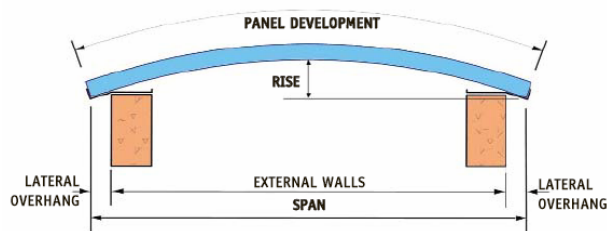
*Operation no.7*

Cut the last panel in width and insert the terminal profile for the insertion of the last connector.

*Operation no.8*

Position the click-on profile 4271 (mallet + wooden shim) and insert lining 1169B in order to block and improve impermeability.

## 11. SKYLIGHT TYPE CURVED LAYING



### 11.1. Definition and list of components

To realise a skylight with arcoPlus® 684x and 626 panels, it is necessary to provide the following elements:

- |  |                                    |
|--|------------------------------------|
| - ArcoPlus® joint panels               | code 4252 for 684x or 4252 for 626 |
| - Closing support in al.               | Code 4245 for 684x or 4271 for 626 |
| - U profile for closing support in al. | 1169/B                             |
| - Grey gasket                          | code 4083 for 684x or 4083 for 626 |
| - Anti-dust tape                       | code 4243 curved                   |
| - Connector profiles in aluminium      | code 4244 curved                   |
| - Glabel aluminium profile in al.      | code 2147 for 684x or 2179 for 626 |
| - Start profiles in polycarbonate      | code 2148 for 684x or 2180 for 626 |
| - Terminal profiles in polycarbonate   | code 4213                          |
| - Pads PE-LD                           |                                    |

### 11.2. Fastenings

Only the screws for the fastening are not supplied and will have to be adapted to the materials used for the support. The fastenings centre to centre distance must not be less than 500 mm. We recommend every 300 mm and slightly offset.

### 11.3. Laying

#### Operation no.1

Check the perfect parallelism of the supports.

#### **Two types of supports:**

**FIXED:** The support comprises a metal plate bent at an angle (< 90°). This angle determines the curvature of the skylight, which was communicated to you previously and which is set out in our estimates.

**CLOSING:** the support is flat (steel pipe, wood, aluminium or other).

#### Operation no. 2

Decide on the type of screws (type, diameter and length) for fastening the aluminium supports.

*Given the different types of support, this choice is the responsibility of the layer.*

#### Operation no.3

Position the aluminium supports parallel to each other and provide fastening with a maximum space of 500 mm, allowing for 300 mm and slightly offset.

#### Operation n°4

Fasten the first connector arc (2 STAINLESS STEEL self-perforating screws provided 5.5 x 30) to the lead outer edge of the support.

Where there is a gable, it is necessary to let the wing of the gable project towards the exterior of the support by 15 mm.

#### Operation no.5

Put the starting profile on the first arc.

Click-on insert the first panel, first positioning the panels point and sliding inside the supports.

Then click-on insert, moving up to the higher part of the skylight.

For the last panel, use a starting panel if the length is a multiple of 600 (+35mm); in all other cases, a terminal profile and the last profile will be cut in width.

#### Operation no.6

Fasten the gable hinged profile to the support (every 500 mm) and cut the panel.

#### Operation no.7

Insert the panel into the upper profile and then position the angle of the low support.

Fasten the nuts of the support angle.

#### Operation no.8

Although all the drilling is programmed in the warehouse, check that it corresponds to your application and add any necessary holes (Ø 8 minimum).

#### Operation no.9

Check that no protective film remains on the panels. (The film must be removed during panels installation).



600mm



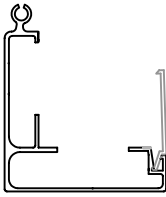
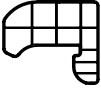

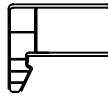


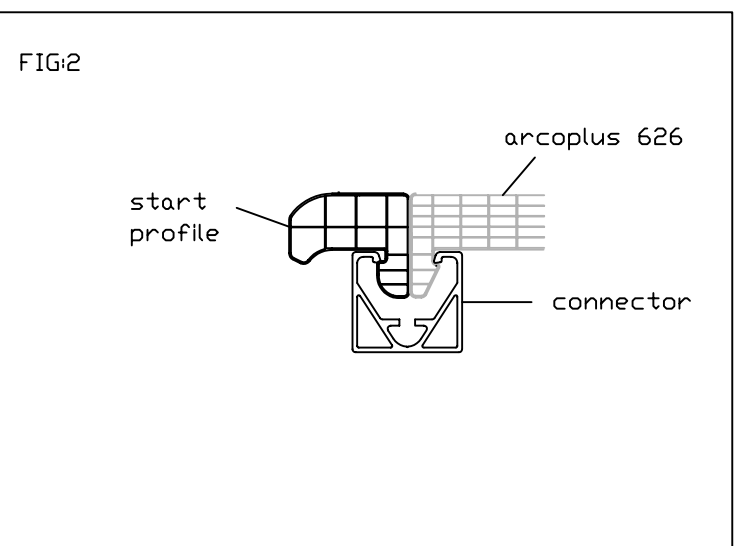
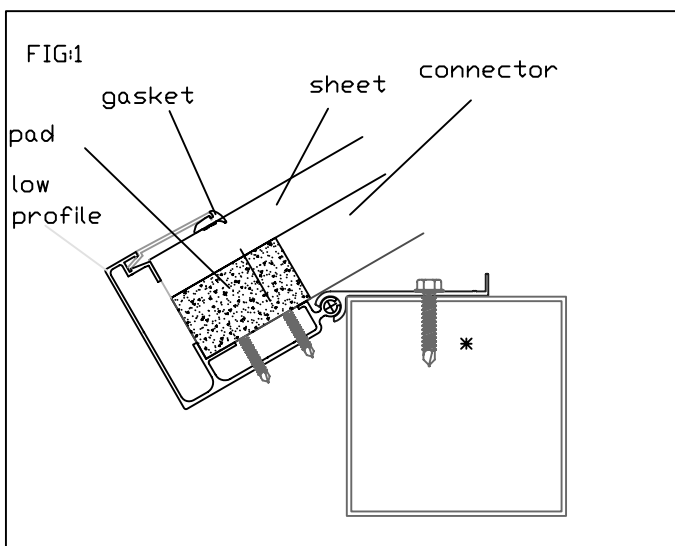
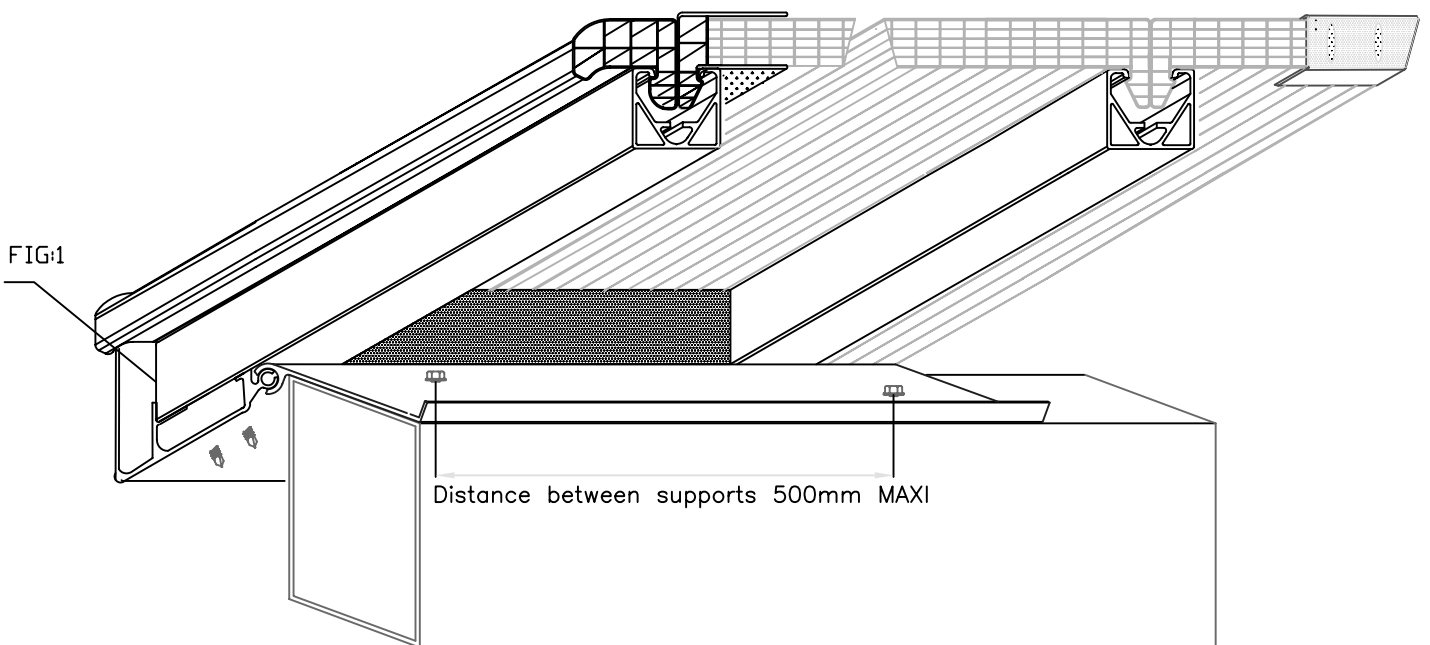
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	start profile code:2179		Anti-dust tape code:4083		
	end profile code:2180		gasket code:1169/b		closing support code:4252

FIG:2

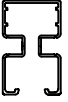

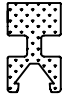





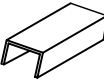





\*:not supplied by us

ARCOPLUS 626 with 4243





	aluminium connector code:4310		start profile code:2179		pad PE-LD for connector code:4318		plate for anchorage code:4263
	screw code:4315		end profile code:2180		pad code:4213		plate for vertical anchorage code:4264
	eclipse code:4319		washer code:4087		antidust tape code:4083		
	block-cover réf:2182						

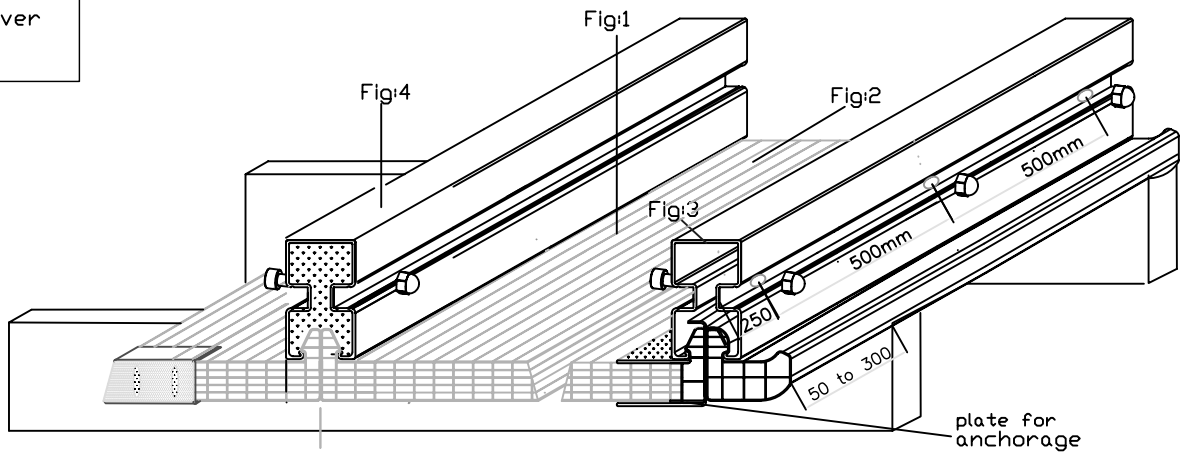


FIG:1

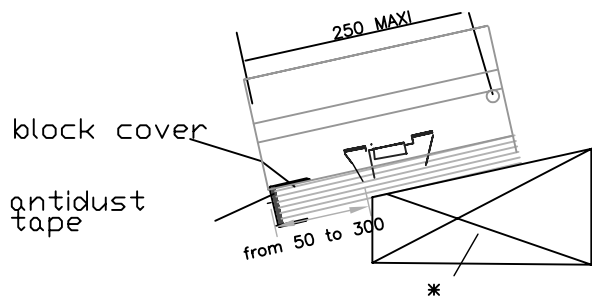
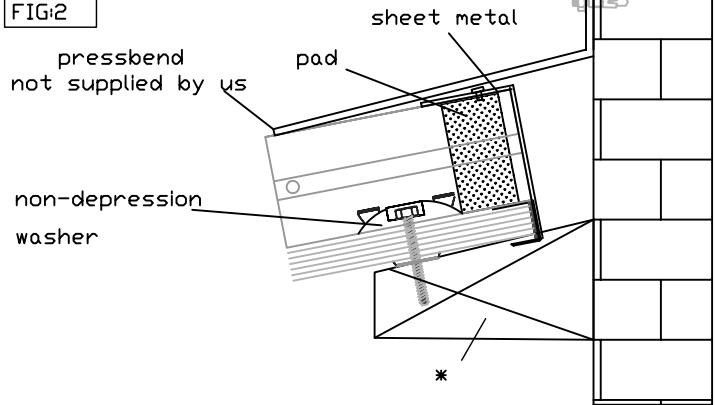


FIG:2



roof gutter

ridge side

FIG:3

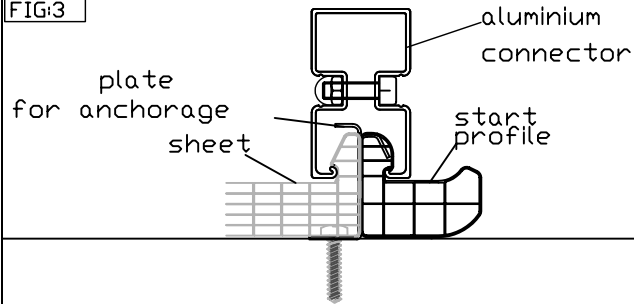
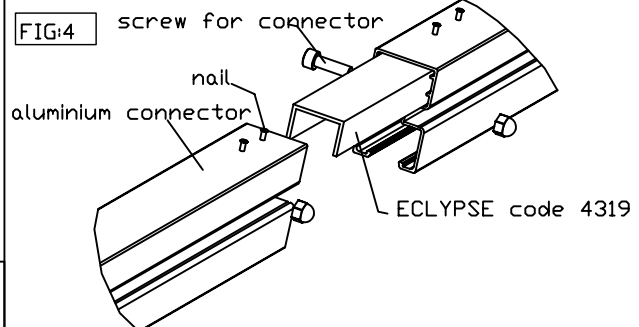


FIG:4



connection 4310 with eclipse











\*:not supplied by us

ARCOPLUS 626 with 4310



600mm

sheet Arcoplus 626

	polycarbonate connector code: 2146		pad code: 4221		end cap of covergasket code: 4303
	start profile code: 2179		inox plate for vertical anchorage code: 4264		Antidust tape code: 4083
	end profile code: 2180		inox plate code: 4263		
	washer code: 4087				
	block cover code: 2182				

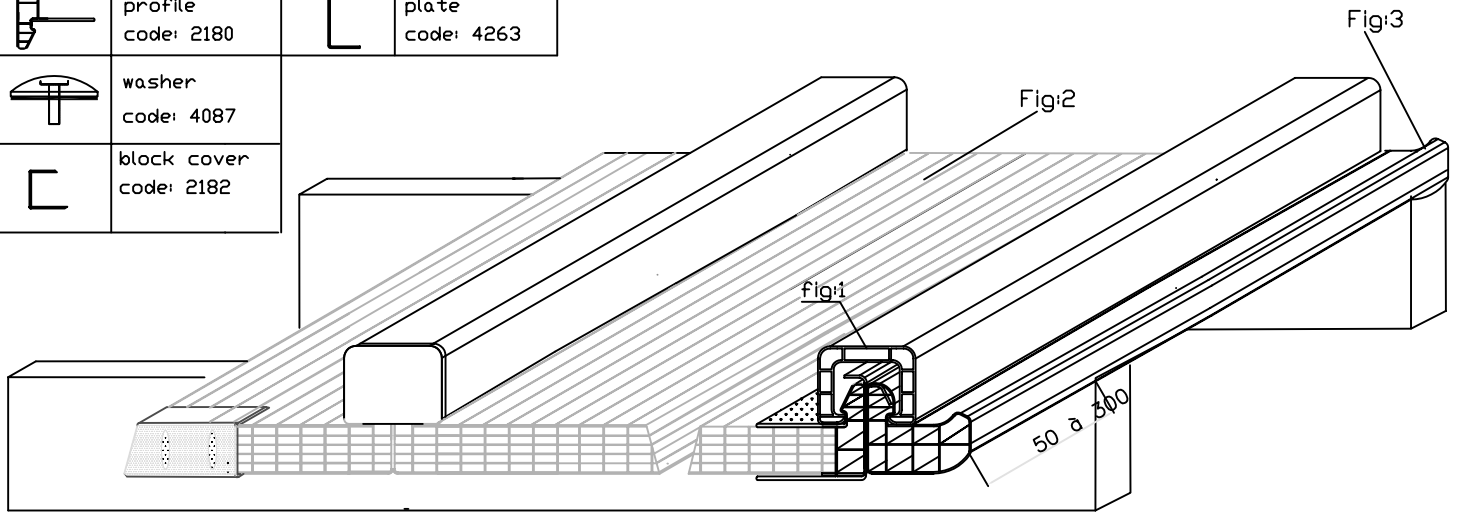
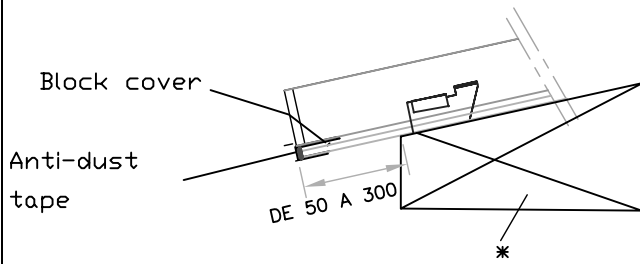
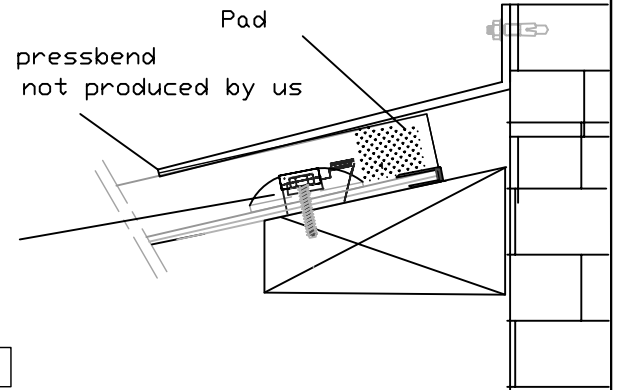


FIG:1



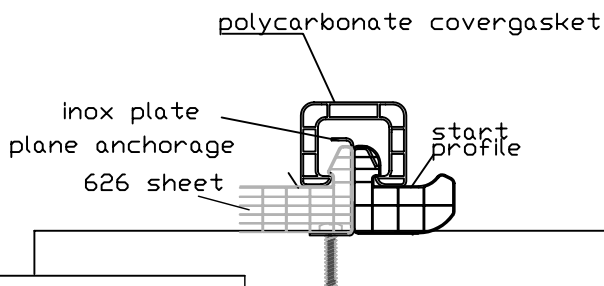
roof gutter side

FIG:2



ridge

FIG:3

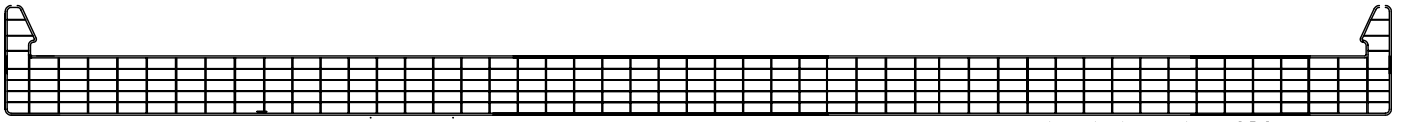


Intermediate support

ARCOPLUS 626 with 2146

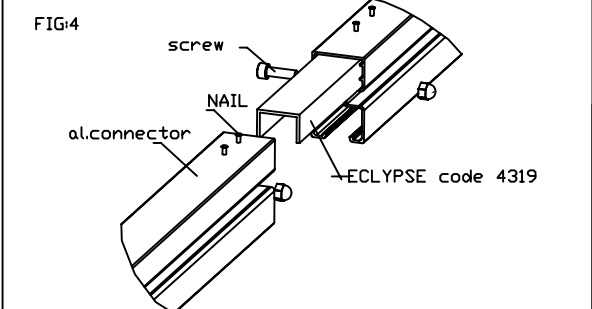
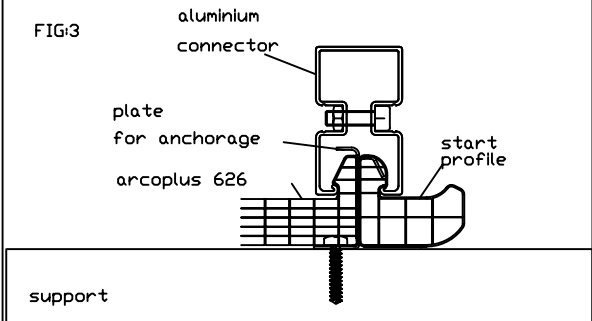
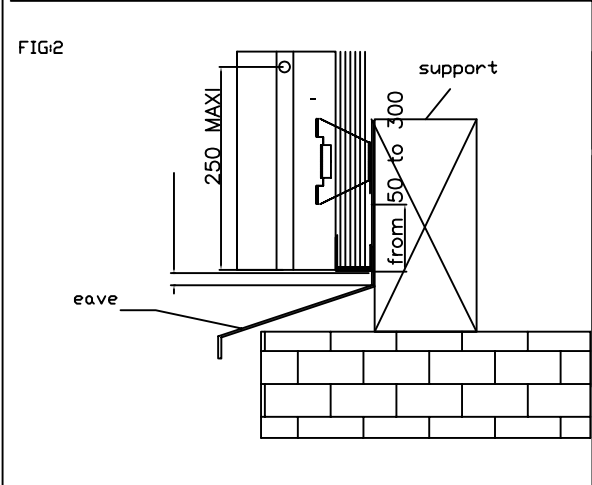
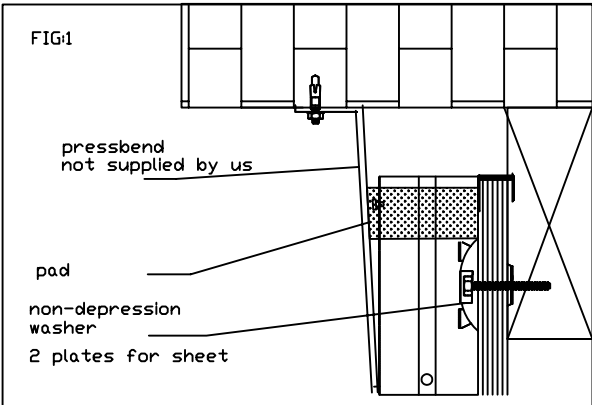


600mm

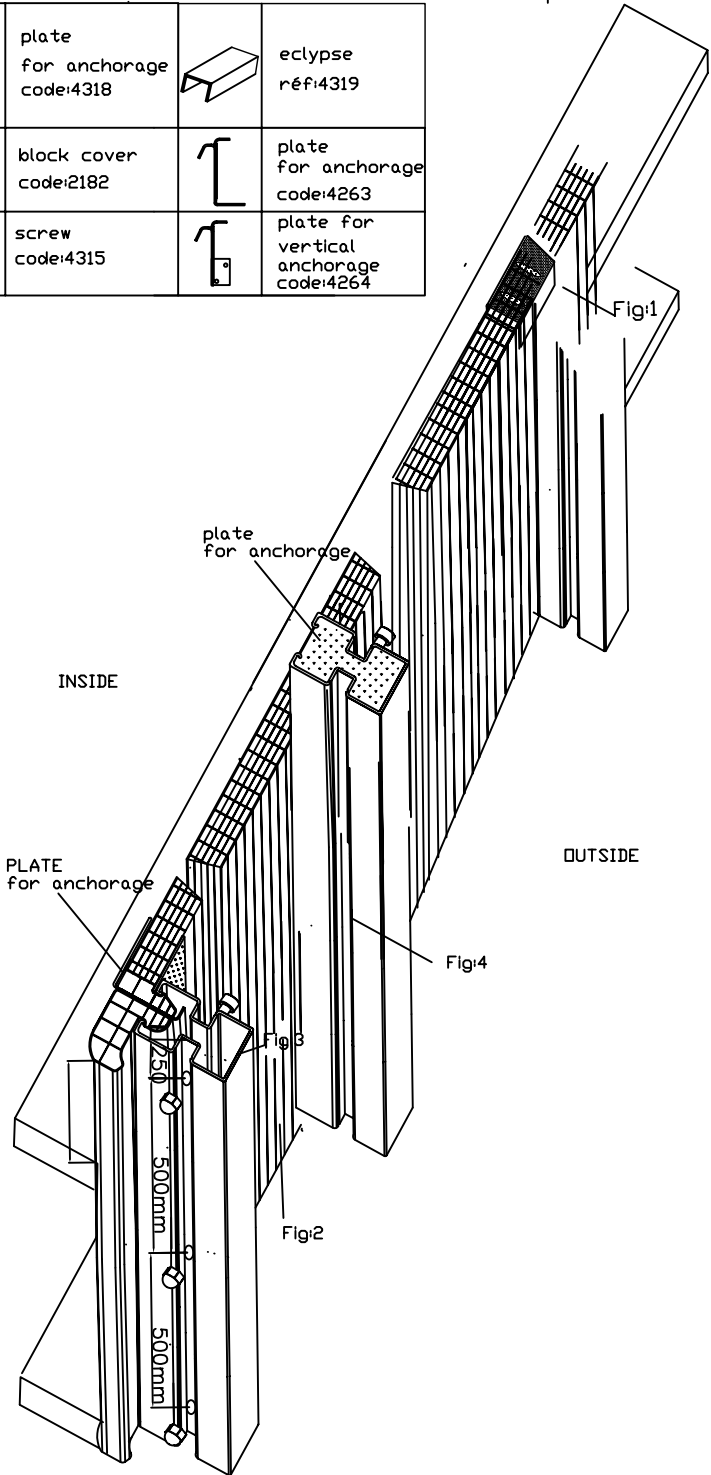


sheet Arcoplus 626

	aluminium connector code:4310		antidust tape code:4083		plate for anchorage code:4318		eclipse réf:4319
	start profile code:2179		pad code:4221		block cover code:2182		plate for anchorage code:4263
	end profile code:2180		washer réf:4087		screw code:4315		plate for vertical anchorage code:4264

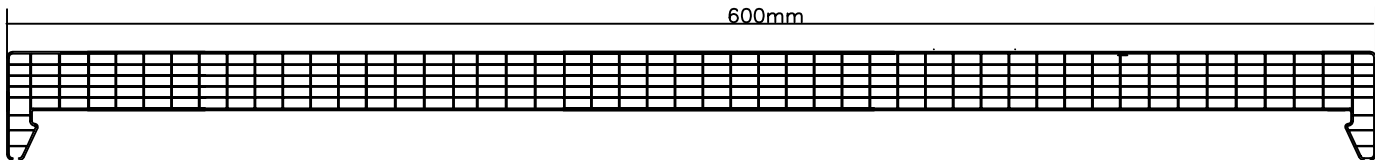


\*not supplied by us



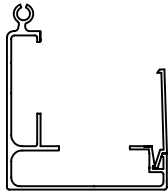
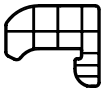

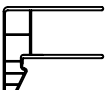



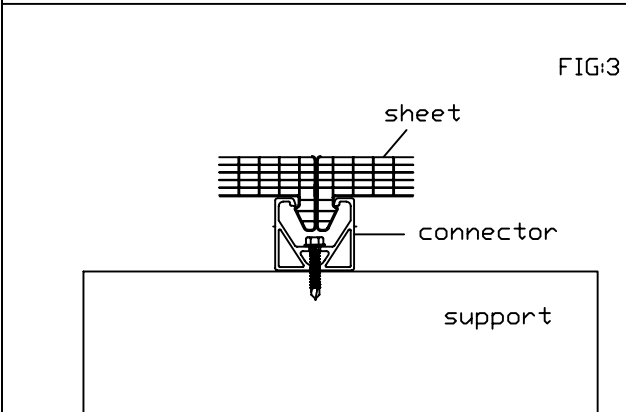
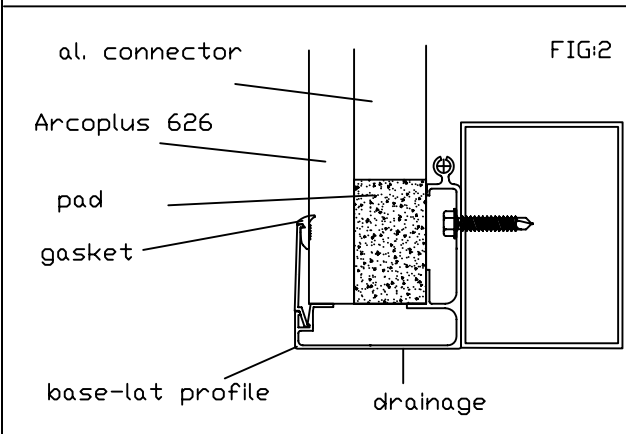
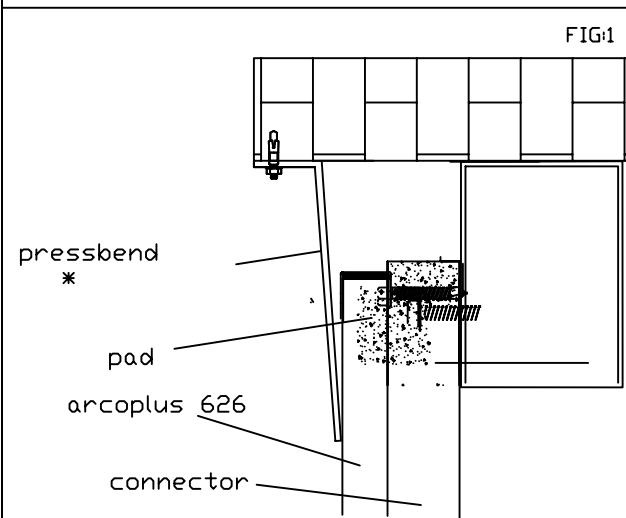
	ARCOPLUS 626 with 2146
Plan N°19	

600mm

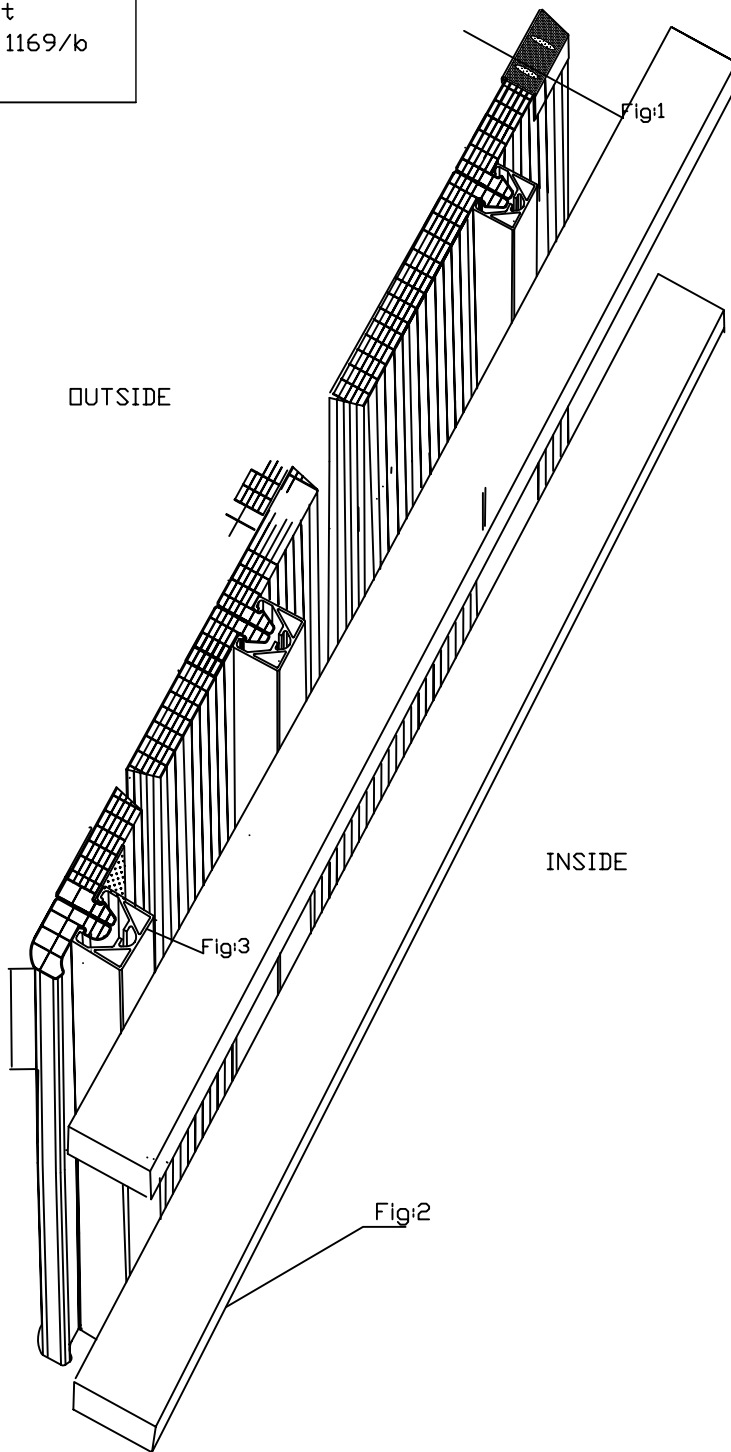



sheet Arcoplus 626

	aluminium connector code: 4243		Anti-dust tape code: 4083		base-lat. reinforced al. profile code: 4271
	start profile code: 2179		pad code: 4213		
	end profile code: 2180		gasket code: 1169/b		

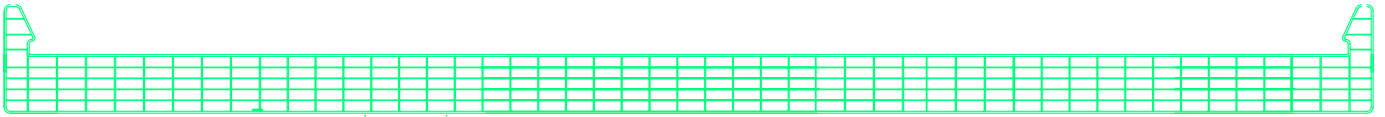


\*: not supplied by us

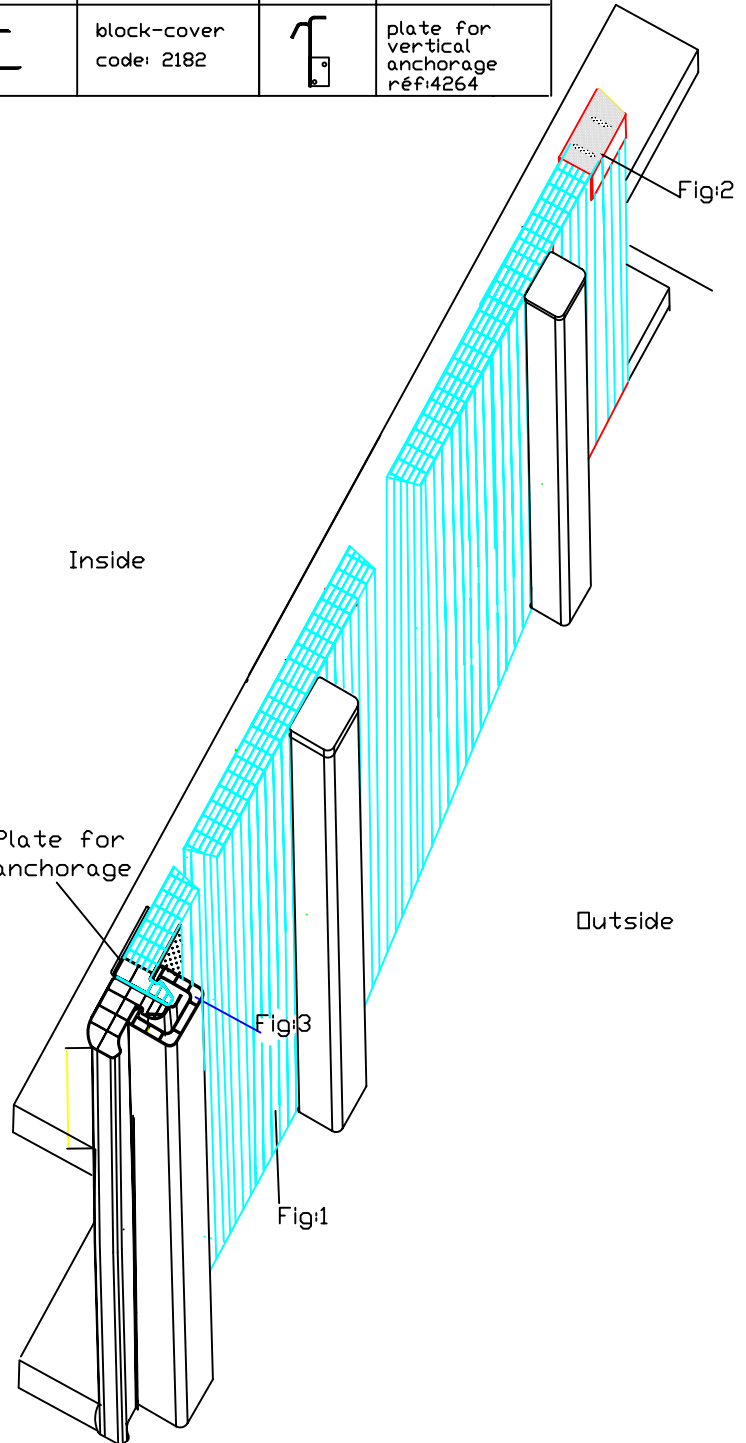
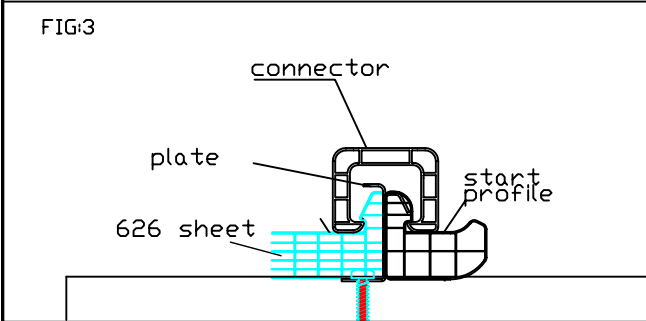
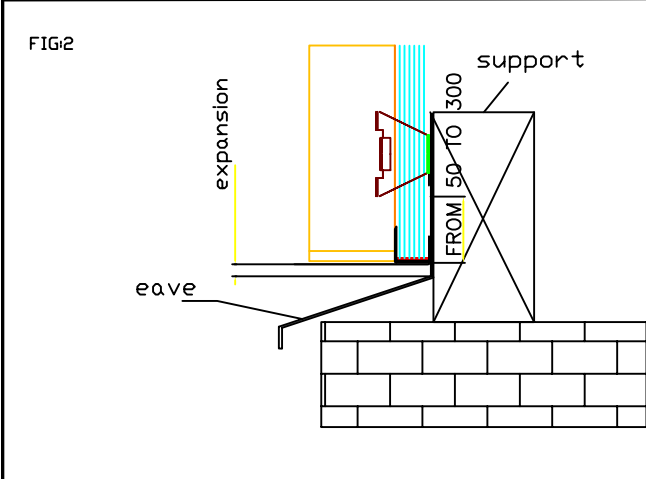
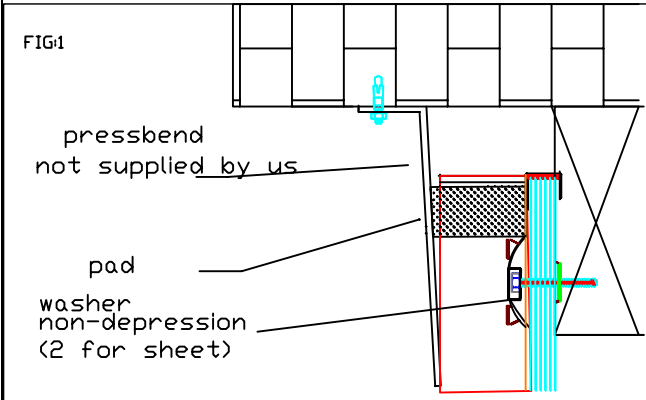


	ARCOPLUS with 4243
Plan N° 20	

600mm













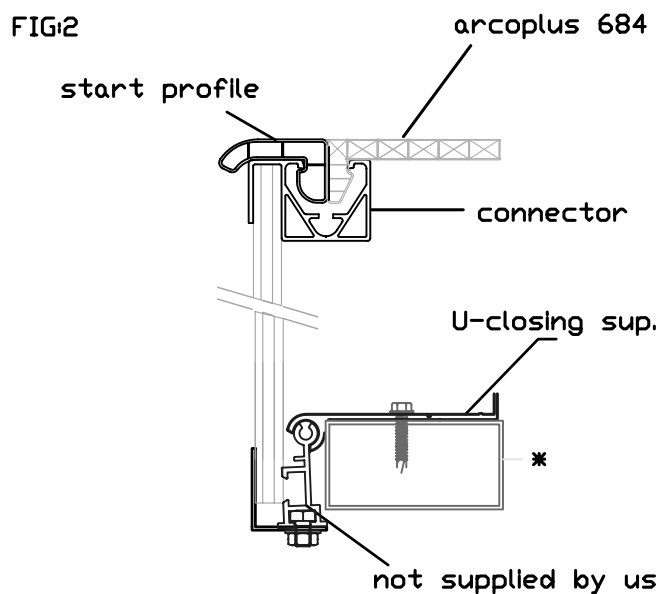
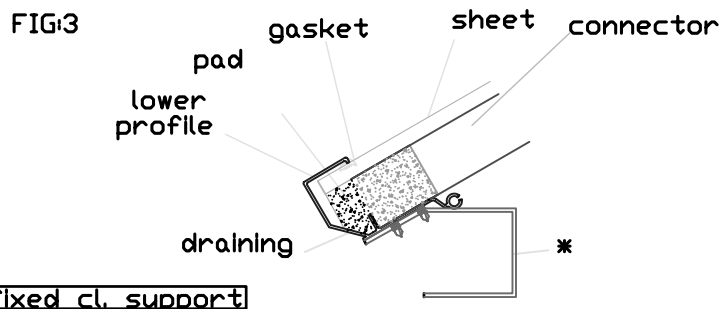
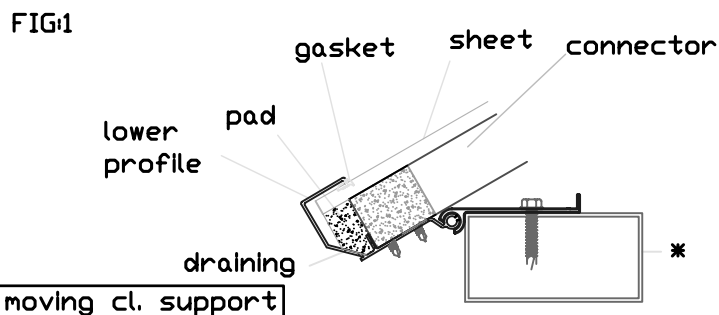
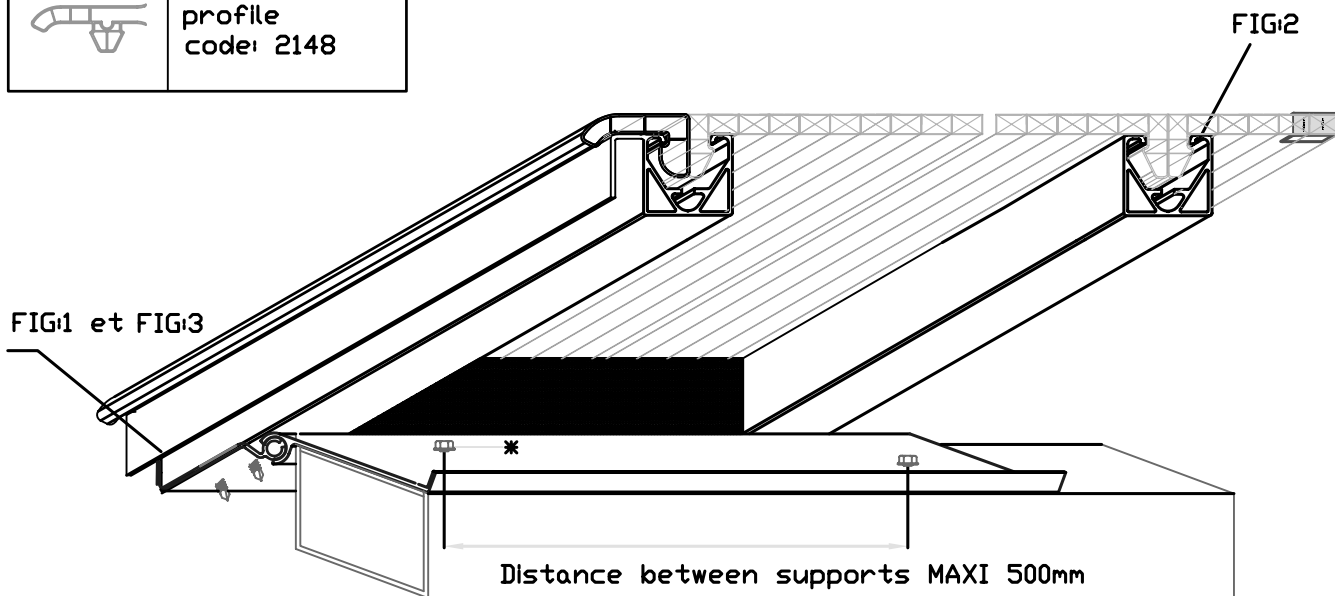
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	start profile code: 2179		pad code: 4213		block-cover code: 2182		plate for vertical anchorage réf:4264
	end profile code: 2180		washer code: 4087				



\*: hors lot

	ARCOPLUS 626 with 4243
Plan N° 21	

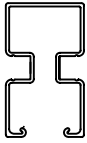
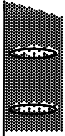
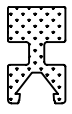


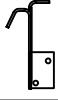

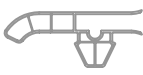
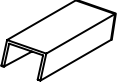

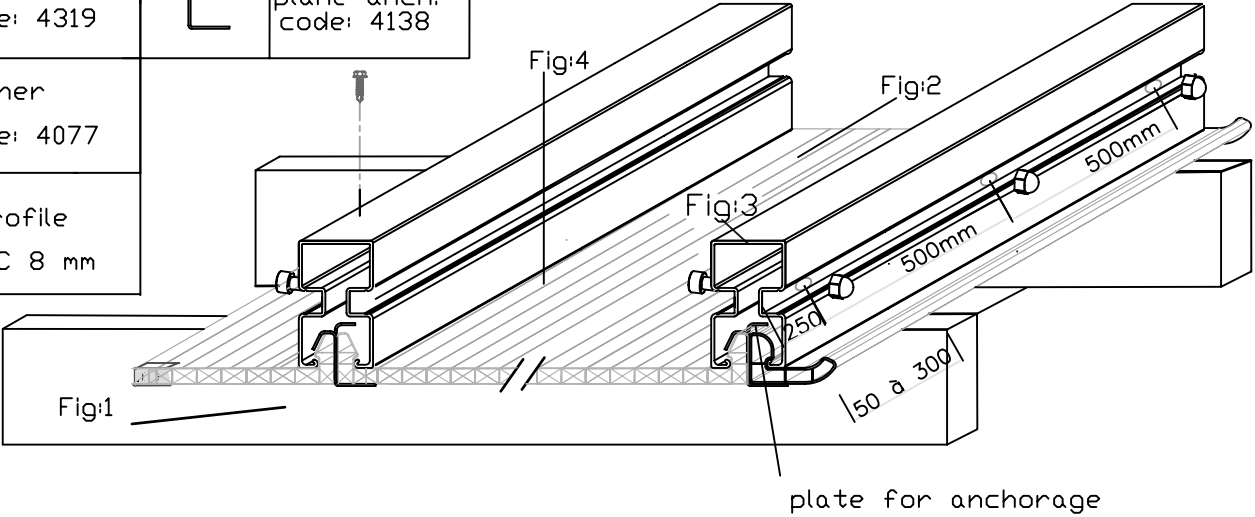
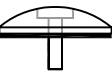

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	glabel al. profile code: 4244		pad PE-LD code: 4213		closing support in al. code: 4252
	start profile code: 2147		anti-dust tape code: 4083		profile not supplied by us
	terminal profile code: 2148				

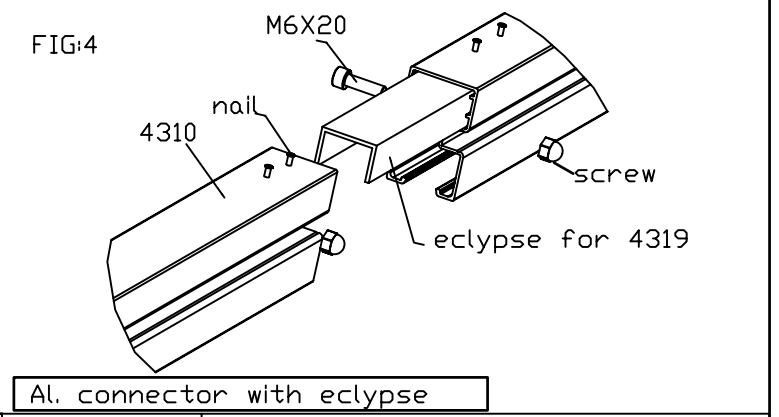
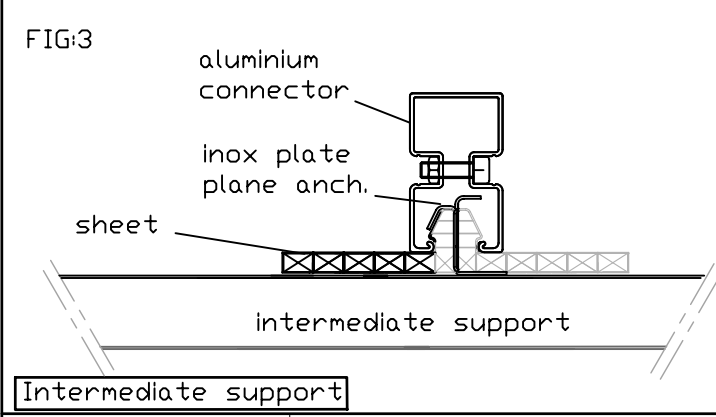
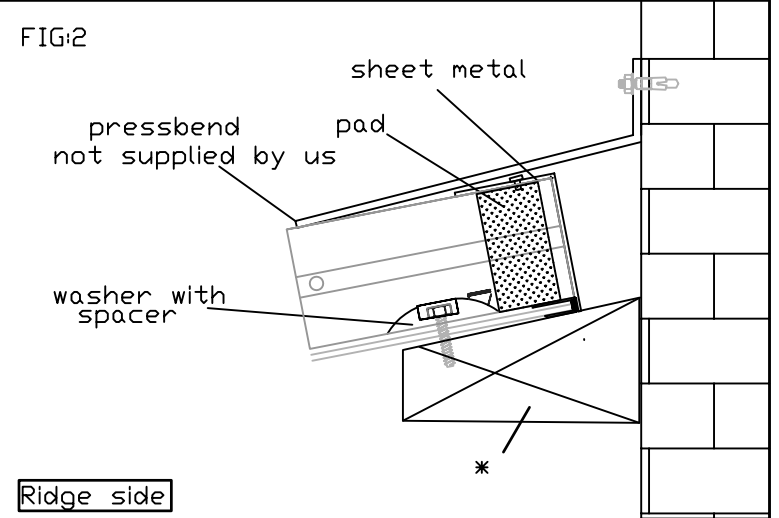
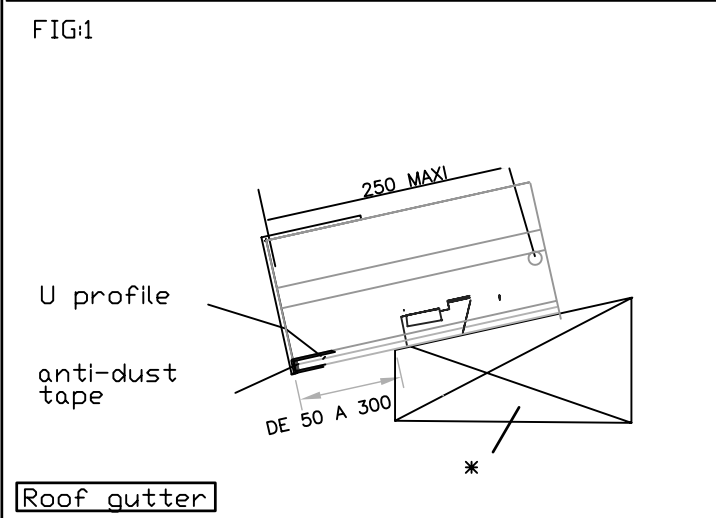


\*: not supplied by us

ARCOPLUS 684 with 4243



	aluminium connector code: 4310		anti-dust tape code: 4083		Pad PE-LD for connector code: 4318		start profile in polycarbonate code: 2147
	inox screw code: 4315		inox plate for vertical anchorage code: 4264		pad code: 4221		end profile code: 2148
	eclipse code: 4319		inox plate plane anch. code: 4138				
	washer code: 4077						
	U profile in PC 8 mm						



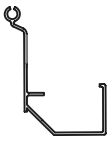


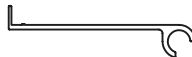





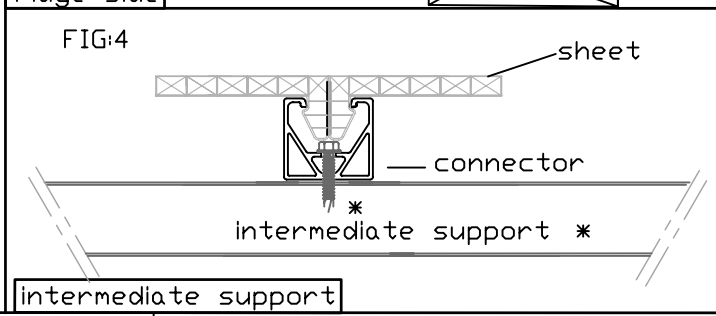
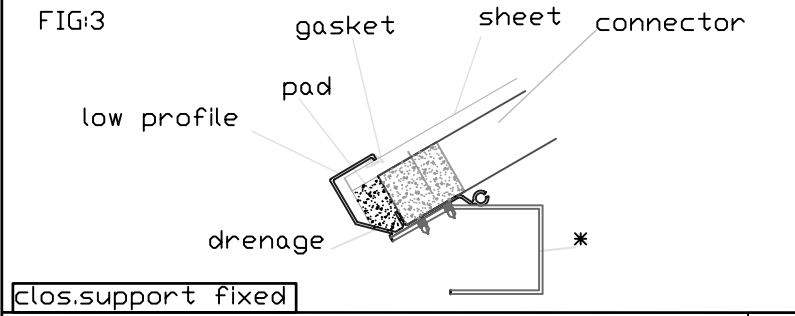
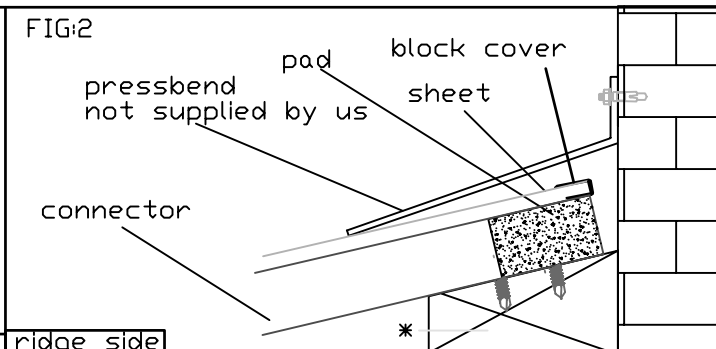
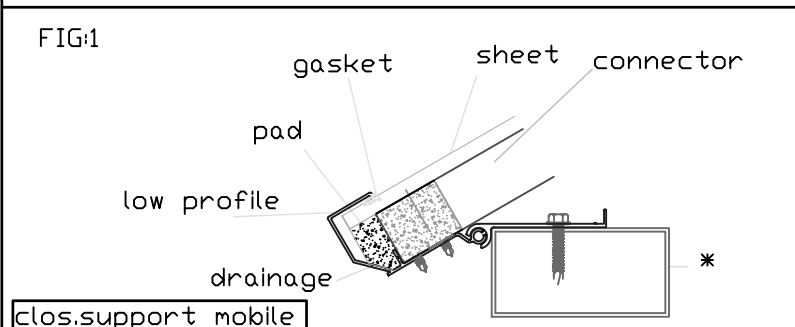
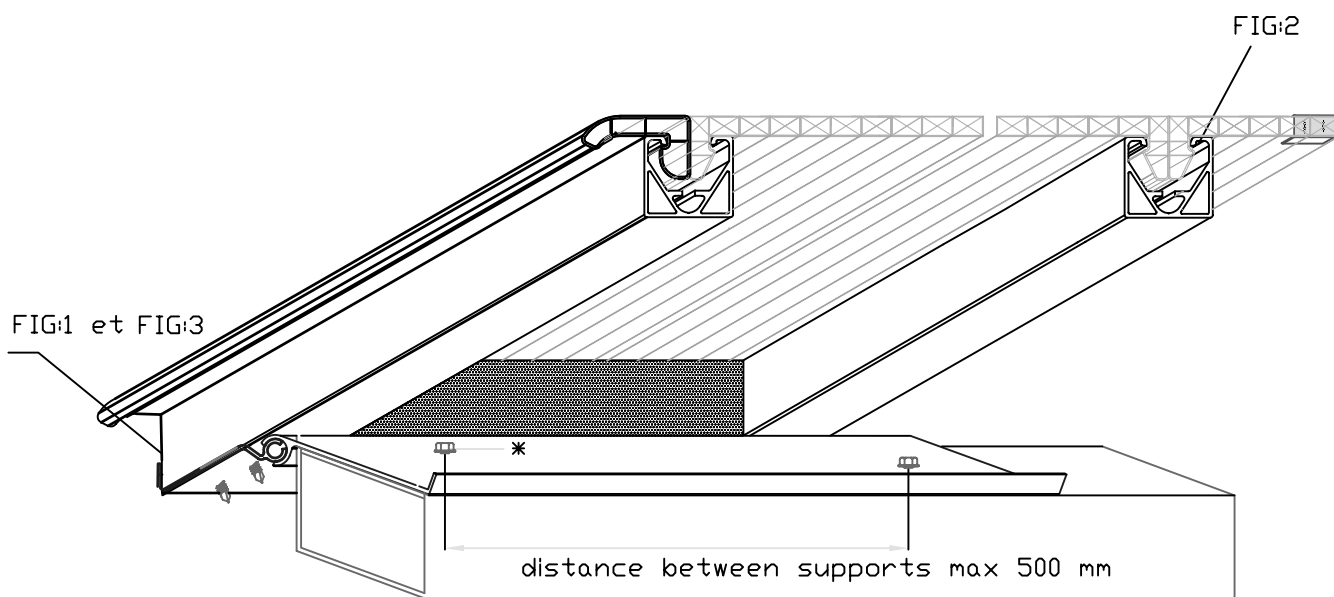
not supplied by us

ARCOPLUS 684 with 4310





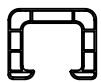
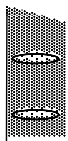
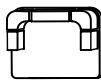

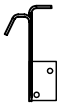

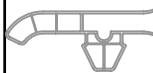


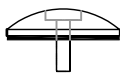
	reinforced al. profile code: 4243		pad code: 4213		U-shaped closing support in aluminium code: 4245
	start profile code: 2147		anti-dust tape code: 4083		closing support in aluminium code: 4252
	end profile code: 2148		gasket code: 1169/b		U profile in PC 8 mm



\* :not supplied by us

ARCOPLUS 684 with 4243



	polycarbonate connector code:2146		antidust tape code:4083		end cap of covergasket code:4303
	start profile code:2147		inox plate for vertical anchorage code:4264		pad code:4213
	end profile code:2148		inox plate for anchor. code:4138		u-profile 8 mm
	washer code:4077				

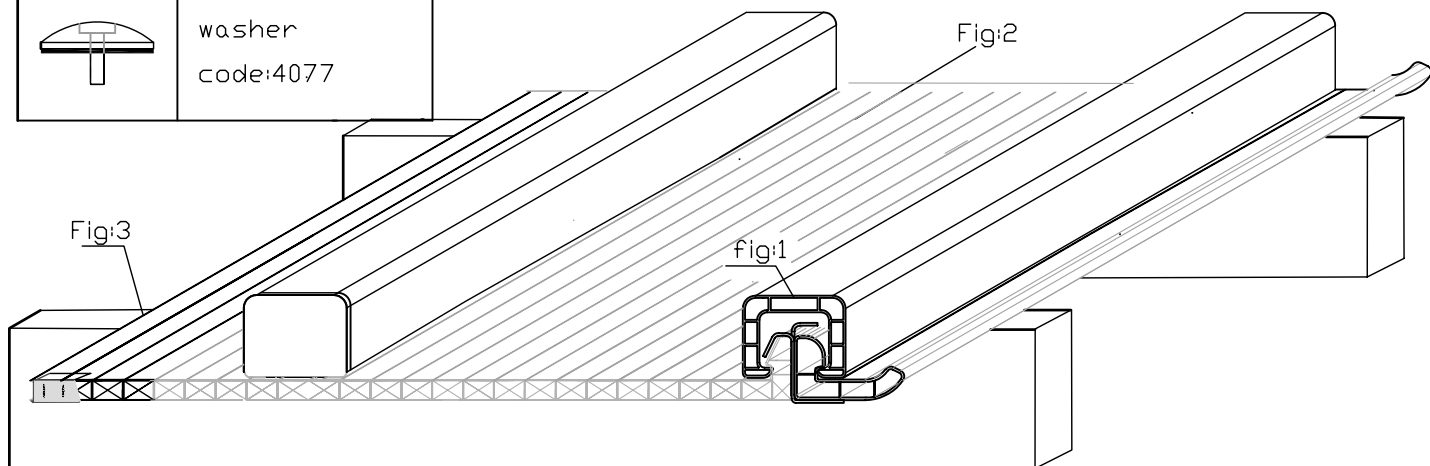
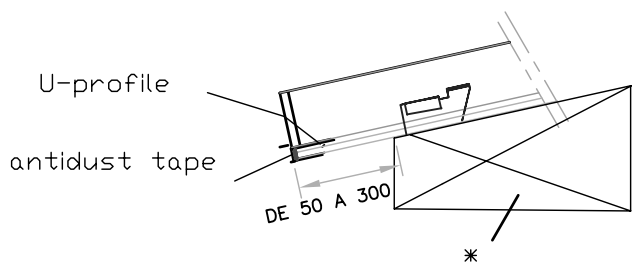
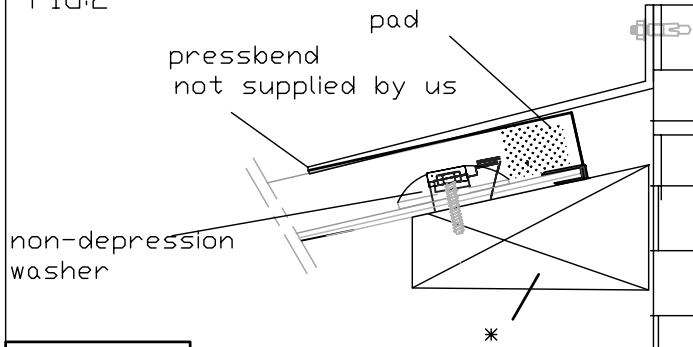


FIG:1



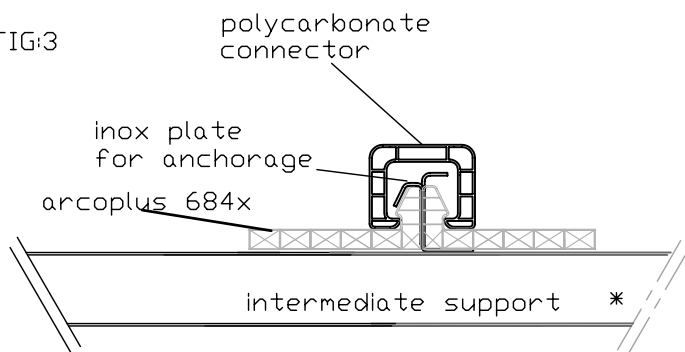
roof gutter

FIG:2



ridge side

FIG:3



intermediate support

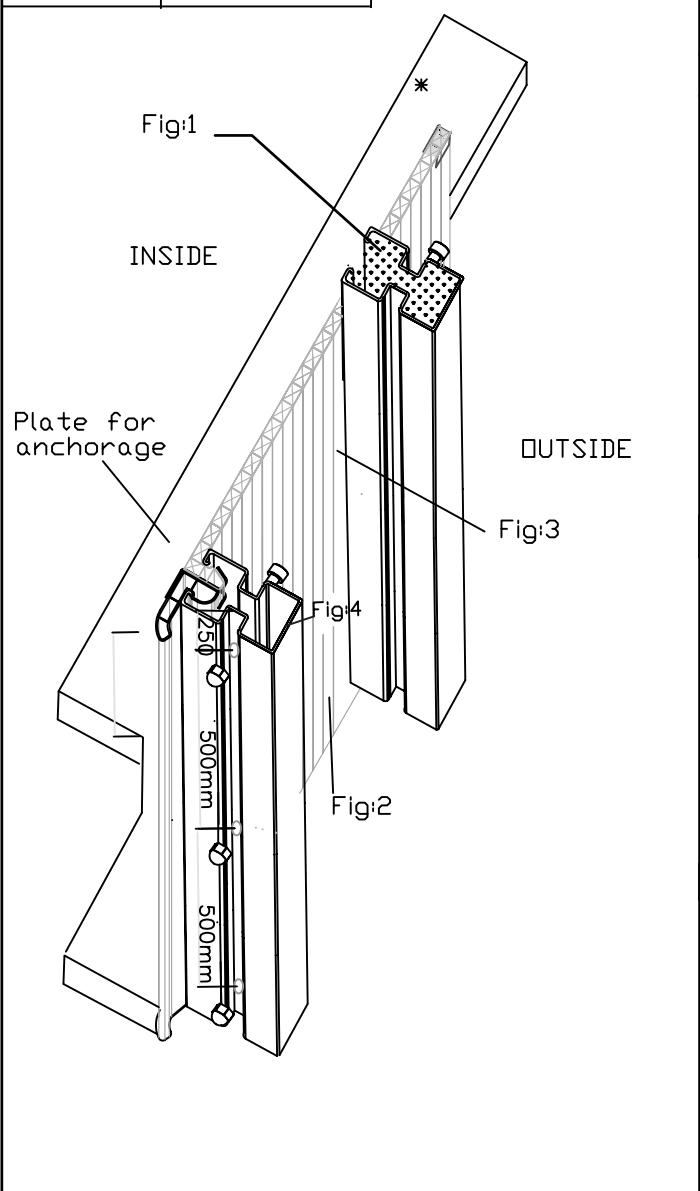
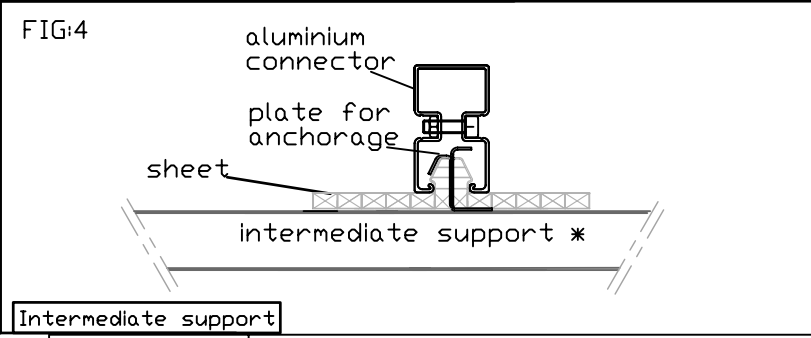
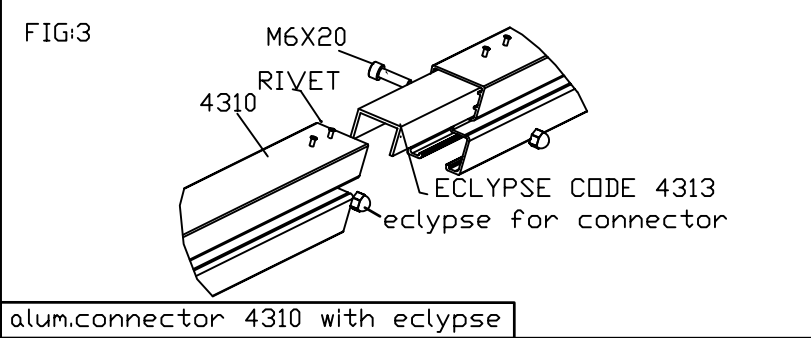
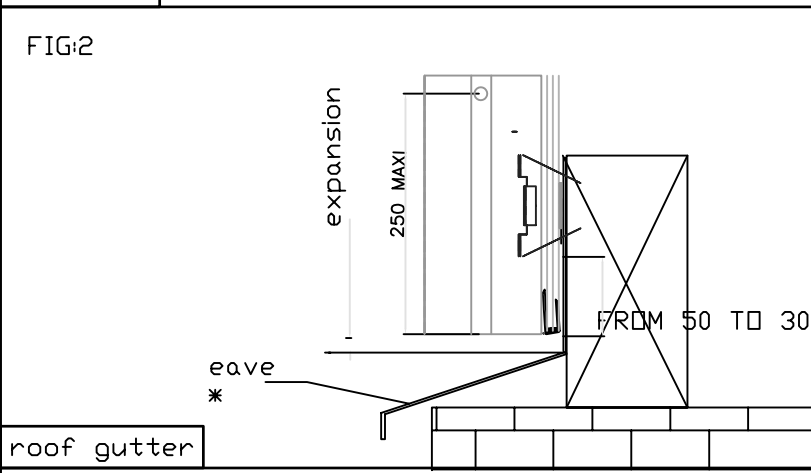
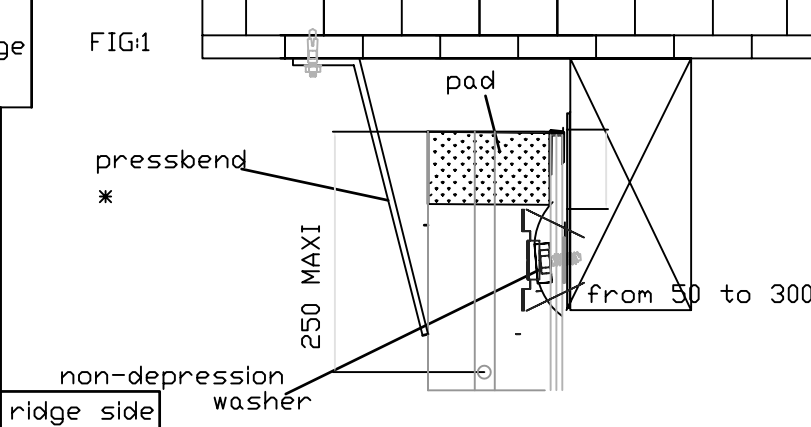
\* :not supplied by us

ARCOPLUS 684 with 2146



	aluminium connector code:4310		antidust tape code:4083		pad PE-LD for connector code:4318		start profile code:2147
	inox screw code:4315		inox plate for vertical anchorage code:4264		pad code:4221		end profile code:2148

	eclipse code:4319		inox plate for anchorage code:4138
	washer code:4077		
	u-profile 8 mm		



\*: not supplied by us

Intermediate support

ARCOPLUS 684x with 4310





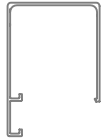
aluminium connector  
code:4243



Anti-dust tape  
code:4083



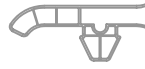
start profile  
code:2147



upper and side profile  
code:4045



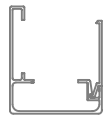
gasket  
code:1169/b



end profile  
code:2148

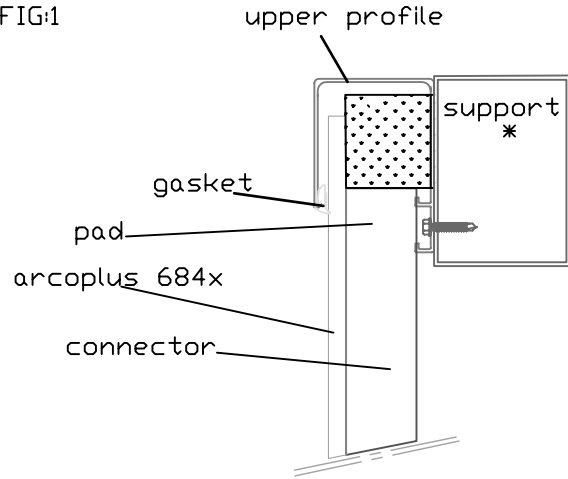


pad  
code:4213



base aluminium profile  
code:4140

FIG:1



upper part

OUTSIDE

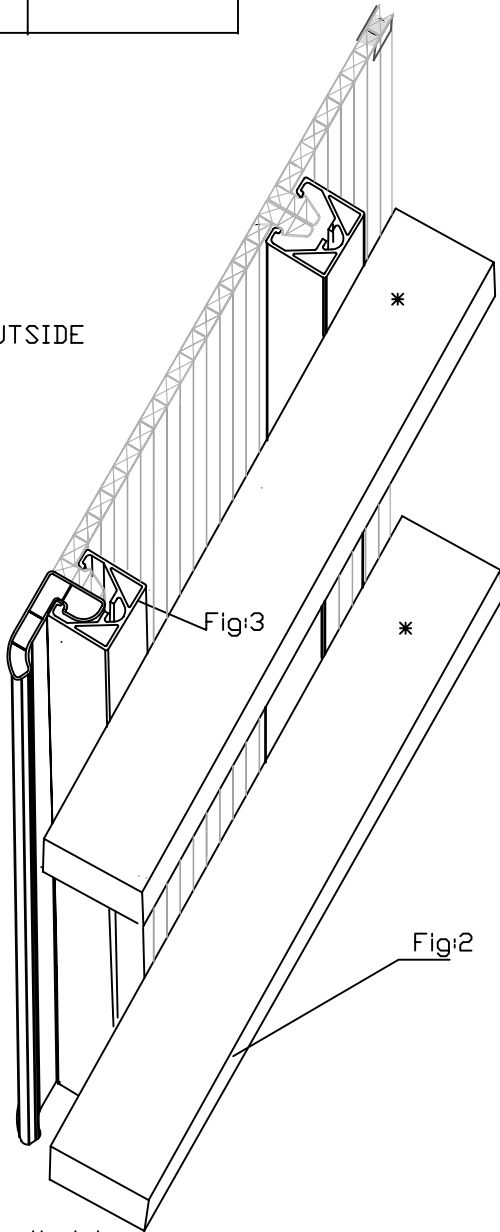
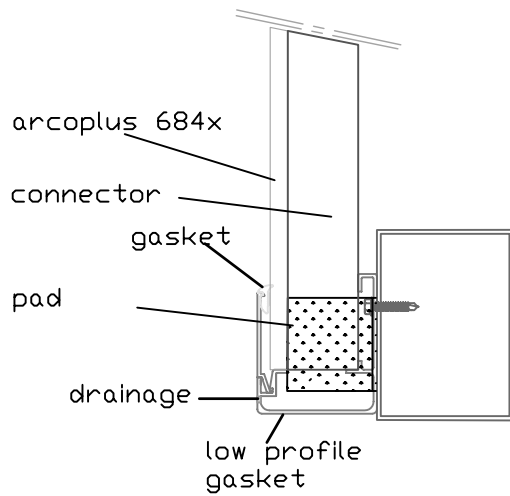
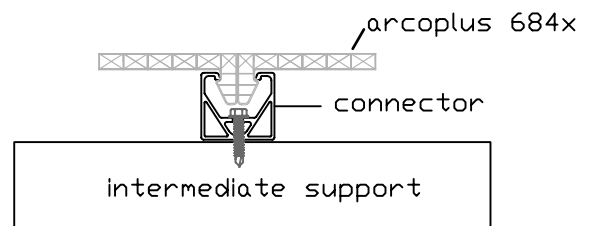


FIG:2



Low part

FIG:3



Intermediate support

\*:not supplied by us

ARCOPLUS 684 with 4243

Plan N° 27



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*The technical information set out in this section & applications  
is provided in good faith and does not substitute any regulations in force.*

*Modifications can be introduced without any prior notice or claim*

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