



Self-supporting Classic Conservatory Roofing Installation Guide

NOVATOIT Range

Foam

Acoustic Foam

Acoustic Foam +

Tricouche

Phonic Quadri-couche

Foam Silence

Phonic Silence Tricouche

September 2023 edition

ITEM	Product	GUIDE DE POSE DES PANNEAUX DE TOITURE DE VERANDA	
	DESIGNATION	Panneaux de toiture de Véranda	
	CRF / DEF :	GDP 2023-09	

INSTALLATION GUIDE FOR SANDWICH PANELS FOR CONSERVATORY ROOFS

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- Open pallets (without protective covers) must not be stored outdoors;
- Shrink-wrapped pallets stored outdoors must be placed on a sloping surface to avoid water retention on top;
- When stacking one pallet on top of another, make sure pallets are properly aligned to distribute the load evenly;
- Do not stack more than 2 pallets on top of each other;
- Do not walk on the panels;
- Always handle panels with 2 people, taking care to avoid shocks;
- Never slide panels one on top of the other, but lift them by lifting the ends directly;
- Never transport panels directly on the forks of a forklift
- When preparing an order, take care to :
 - o Protect the pallet with cardboard and foam film;
 - o Deburr any saw cuts;
 - o Check that there are no particles between panels;
 - o Loosely strap the panel batch with plastic ties resting on angle irons, to avoid crushing the panels;

General rules for panel installation

- Always handle panels with 2 people, taking care to avoid shocks;
- Do not leave panels with protective film outside for more than 45 days;
- Do not use blunt objects or indelible felt-tip pens for marking operations;
- Use suitable cutting tools, such as a circular saw with alternating teeth for aluminum, but not a jigsaw or disk saw;
- Do not slide panels over each other, or over structures to avoid scratching, but lift them by the ends;
- Do not dEdge directly over the panels without using a polystyrene sheet as protection;
- Do not jump on the panels;
- Do not clean panels with solvents;
- Limit fastener tightening torque to avoid deforming the panels.

General rules for design and bimetallic effect

- Always install panels in the direction of the slope;
- Design the roof taking into account expansion and the bimetal effect, appropriate configuration and panel sizing;
- Comply with snow and wind regulations for structural dimensions and panel span;
- All materials or products in contact with or in the vicinity of the panels must be compatible with each other, so as not to risk provoking (with or without external agents) a particular corrosion or

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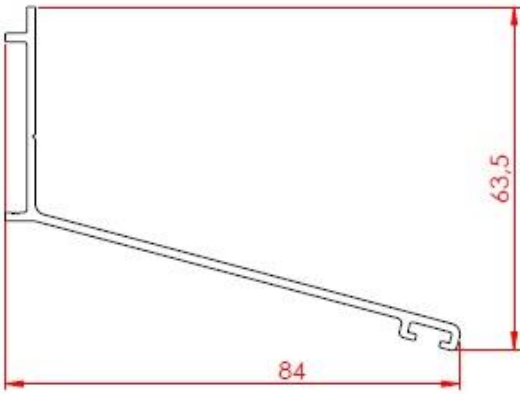
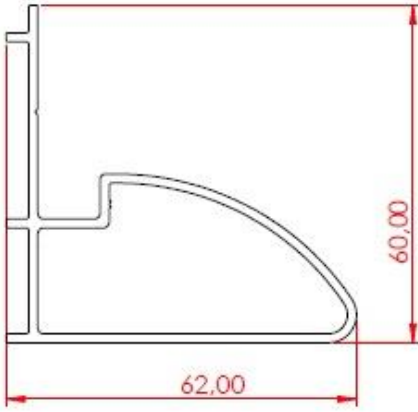
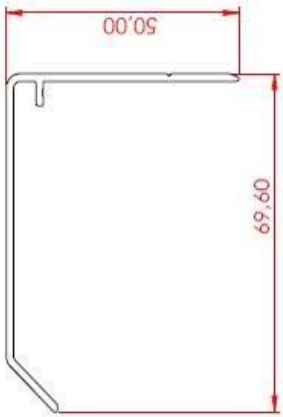
ageing reaction (cf. professional veranda rules 2011 page 44 §4).

Bi-metallic Effect

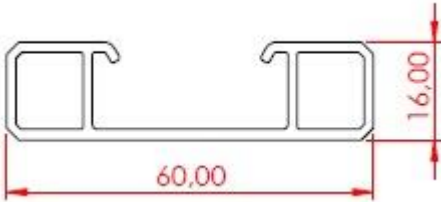
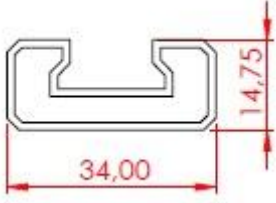

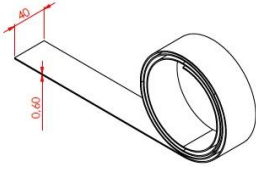
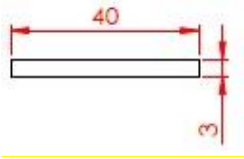
- Expansion applies to all materials, and results from an increase in temperature that causes the material to stretch.
- In the case of sandwich panels, the aluminum facings are separated by different thicknesses of insulating material, resulting in a significant temperature difference between the face exposed to the elements on the outside and the face exposed to the elements on the inside. This temperature delta will result in panel deflection. This deflection will be positive, depending on whether the temperature is higher on the outside of the roof than on the inside (hot period), or negative, when the temperature is higher on the inside of the veranda than on the outside (cold period).
- This phenomenon is not set in stone: the panel's position will change as a function of temperature variations.
- This can lead to creaking noises as the temperature changes.
- It is important to anticipate and integrate this phenomenon into the design and installation of panels, by incorporating expansion gaps (see installation section).
- - Load-bearing profiles with joints or glazing beads must not restrict the panels and must allow for slight panel movement;
- - Profiles must have gaskets to prevent metal-to-metal friction;
- For self-supporting panels, fasten panels at the top and bottom only;
- No structural element should limit or interfere with the natural movement of the panels, especially in the running section (gables).
Conversely, in the event of negative deflection, if there is no clearance between the inner face of the panel and the structural elements, it is the ends of the panel that will lift, which may cause the fastening points to pull out or the panel to be punched by the screw heads.

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ACCESSOIRES :

	<p>Réf. 004 - White Ral 9010 Flashing Profile. Length 7000 mm. Réf. 825 - Brown Ral 8004. Length 7000 mm. Réf. 006 - Flashing Profile Roussillon. Length 7000 mm. Réf. 826 - Flashing Profile Grey Ral 7024. Length 7000 mm.</p>
	<p>Réf. 003 - Bottom Wall Bracket White Ral 9010. Length 7000 mm.</p>
	<p>Réf. 093 - Edge 60 mm White Ral 9010. Length 7000 mm. Réf. 099 - Edge 60 mm Roussillon. Length 7000 mm. Rf. 828 - Edge 60 mm Brown Ral 8004. Length 7000 mm. Réf. 827 - Edge 60 mm Grey Ral 7024. Length 7000 mm.</p>

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	<p>Réf. 136 - Aluminum Connector 16x60. Length 7500mm.</p> <p>- Aluminum Connector 16x60. Length 4550 mm.</p>
	<p>Réf. 035 - PVC connector. Length 7500 mm.</p>
	<p>Réf. 095 - Rubber Gasket for Flashing Profile. Length 150 ml.</p>
	<p>Réf. 1180 - Double sided adhesive band 40 x 0.6mm. Length 33 ml.</p>
	<p>Réf. 0369 - Flat Aluminum Profile 40 x 3mm. RAL White 9016. Length 7 ml.</p> <p>Réf. 0370 - Flat Aluminum Profile 40 x 3mm. RAL Brown 8004. Length 7 ml.</p> <p>Réf. 0855 - Flat Aluminum Profile 40 x 3mm. RAL Grey 7024. Length 7 ml.</p>

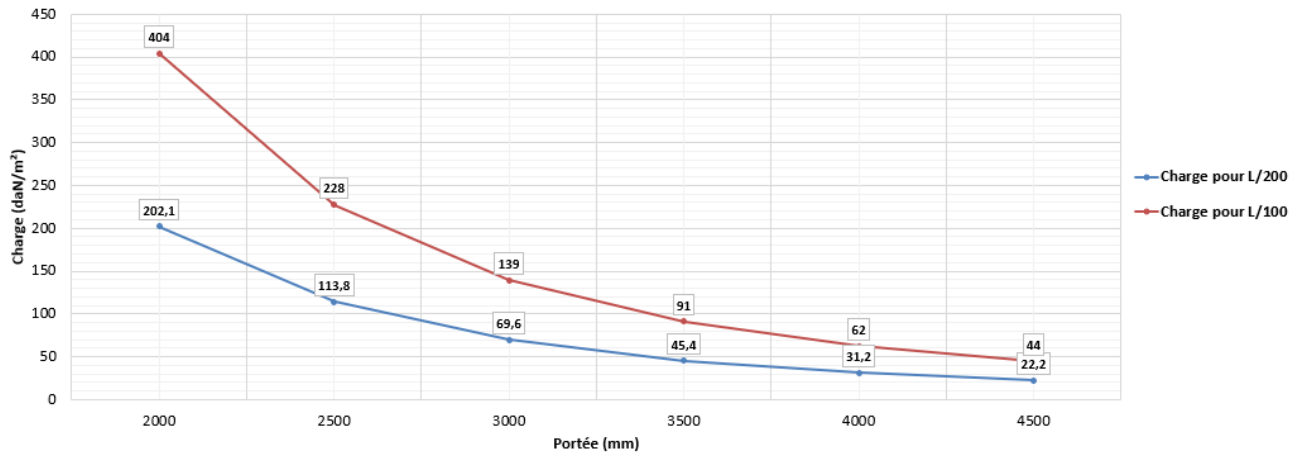
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1. Load Charts

Depending on the snow and wind regulations in force in the area of installation, refer to the charts below to define the maximum span of the panels. Data valid only for altitudes below 900 m.

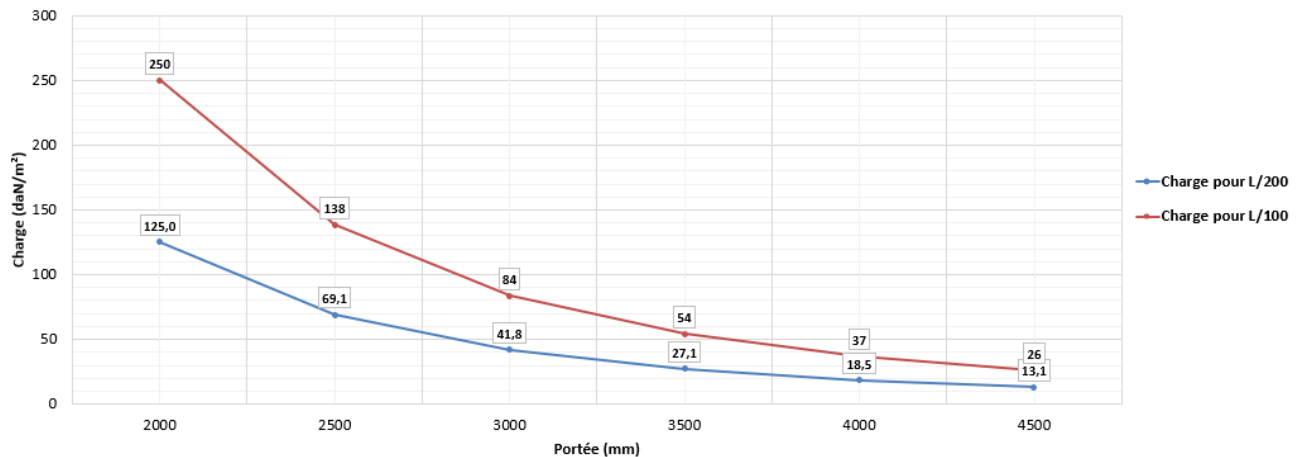
Panneaux Foam 52 / Acoustic Foam 55 / Acoustic Foam + 55 / Foam Silence 55

Abaque de charges - 10% de pente
X52R16 - XA55R16 - XA5516+ - X55SR16



Panneaux Phonic Tri-couche 58 / Phonic Quadri-couche 61 / Phonic Tri-couche Silence 61

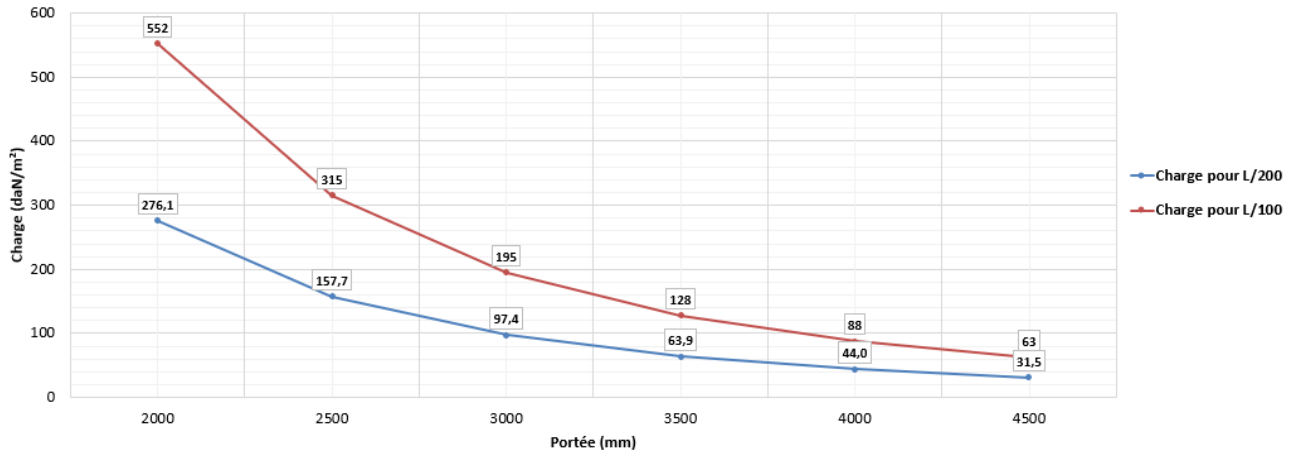
Abaque de charges - 10% de pente
AXTA58R16 - AXAQA61 - AXTA61S



Panneaux Foam 63 / Acoustic Foam 66/ Acoustic Foam + 66 / Foam Silence 66

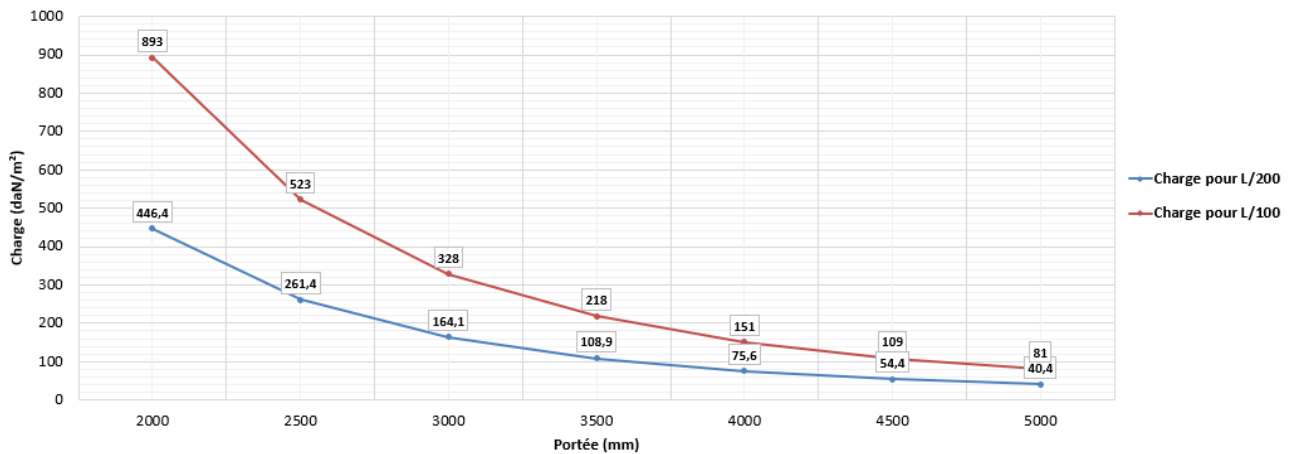
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Abaque de charges - 10% de pente
X63R16 - XA66R16 - XA66R16+ - X66SR16



Panneaux Foam 82 / Acoustic Foam 85/ Acoustic Foam + 85/ Foam Silence 85

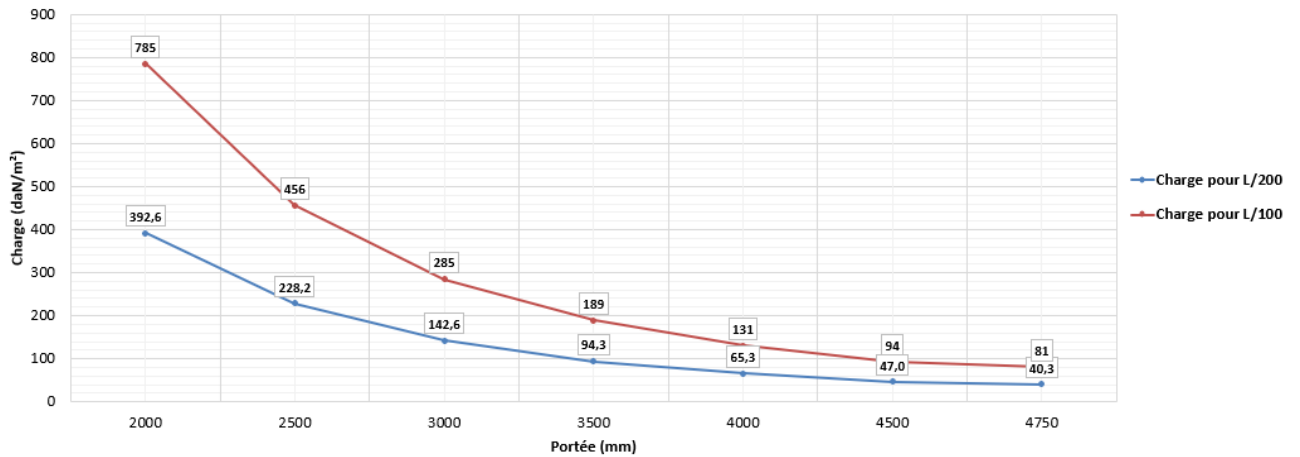
Abaque de charges - 10% de pente
X82R16 - XA85R16 - XA8516+ - X85SR16



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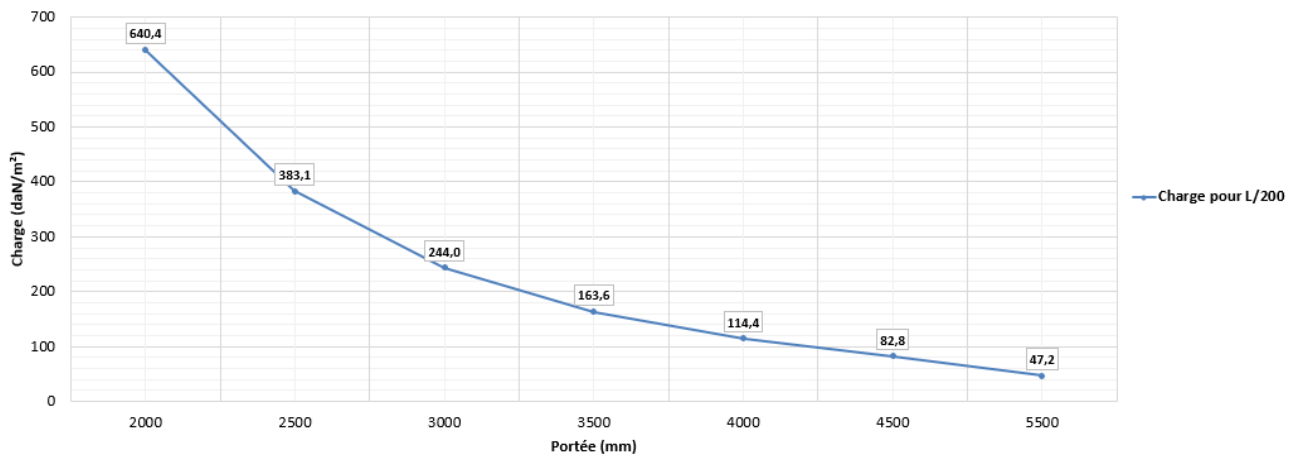
Panneaux Phonic Tri-couche 98 / Phonic Quadri-couche 98 / Phonic Tri-couche Silence 95

Abaque de charges - 10% de pente
XTA95R16 - XAQA98R16 - XTA98SR16



Panneaux Foam 102 / Acoustic Foam 105/ Acoustic Foam + 105/ Foam Silence 105

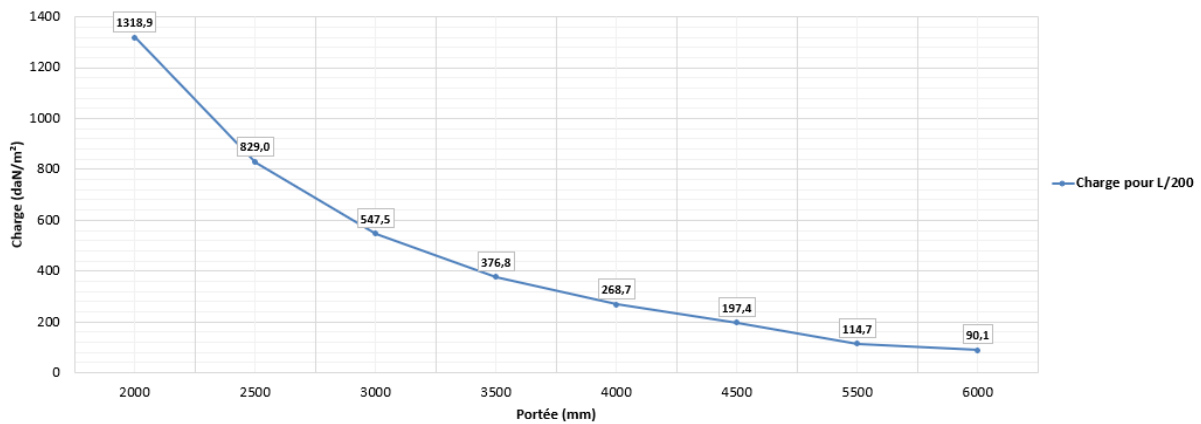
Abaque de charges - 10% de pente
X102R16 - XA105R16 - XA105R16+ - X105SR16



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Panneaux Foam 164 / Foam Silence 168

Abaque de charges - 10% de pente
X164R16 – X168SR16



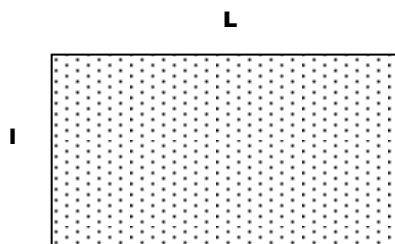
2. Conservatory Roof Layout :

2.1. Conservatory Dimensions :

To set up a project, please determine the desired veranda width (I) and veranda length (L).

Note: Self-supporting panels are designed for simple, square or rectangular veranda roofs..

This will determine the projected roof surface: $S = I \times L$



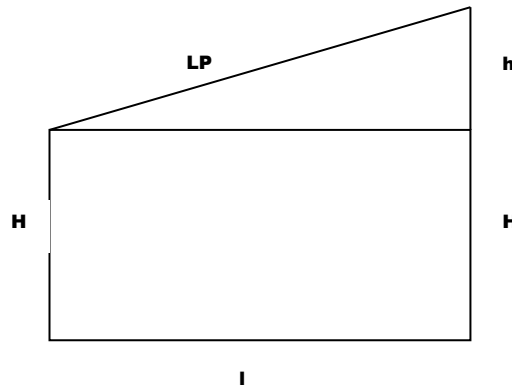
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2.2. Panels Length :

2.2.1. Determining the roof pitch (minimum pitch 10 %) :

To do this, it is necessary to determine the overall dimensions:

- The Height **H** of the roof projected on the lower part (at the level of the eave
- The possible height **h** possible on the upper part of the proposed veranda, taking into account existing parts of the house (e.g. spandrels, windows, etc.).



The total height of the roof at the highest point will be $H+h$.

The pitch will then be : $\frac{h}{l}$ (in %).

Note: A minimum slope of 10% is required (i.e. $h=1\text{m}$ (minimum) for $l=10\text{m}$).

2.2.2. Panels Length :

There are several ways of calculating panel length:

*** Pythagoras :

$$LP = \sqrt{l^2 + h^2}$$

*** Tangente :

Calculation of angle in radians: $a = \arctang(h / l)$

$$LP = l / (\cosinus a)$$

*** Or mesure onsite

2.3. Number of self-supporting panels

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The number of panels N will be :

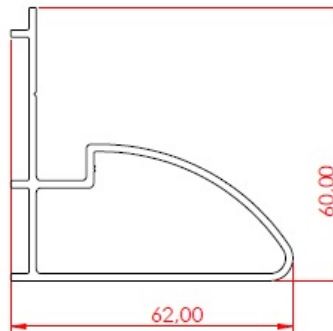
$$N = L \text{ (in m)} / 1,2 \text{ (Round up)}$$

Note: For a more pleasing appearance, you can cut the last non-whole panel in 2 to position the 2 pieces on the 2 sides for better symmetry.

3. Cutting of panels, aluminum profiles and accessories :

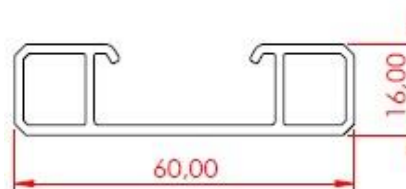
3.1. Bottom Wall Bracket :

The bottom aluminium wall bracket will be cut to the width of the conservatory L minus the thickness of the aluminium posts against the façade:



3.2. Aluminum Connector :

Cut the Aluminum Connectors to the Length of the panels plus approximately 10mm.

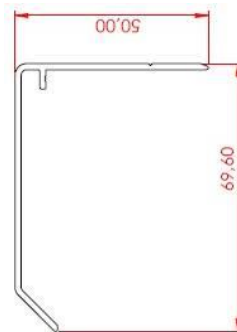


3.3. Edge 60mm :

The Length of edges corresponds to the periphery of the veranda. For a rectangular veranda, the Length is : $L(+s) + 2 \times (l + s)$

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It will be necessary to take into account the off-cut caused by mitering, and therefore to have an over-length **S**



3.4. Conservatory Insulated Roof Panels

Conservatory insulation panels (self-supporting) should be cut to Length **LP+10 cm** min., with an extra length of 10 cm min. to ensure that the panels overhang the eaves in relation to the eave.

Note :

For a more aesthetically pleasing appearance, for veranda widths that are not multiples of 1200 mm, we suggest having the 2 self-supporting end panels cut to the same width. In this case, assembly will start on the middle part of the veranda, so that the 2 panels on the sides of the veranda are installed last (the cut can be made at this point to ensure that the width of the cut is correct).

4. Mounting the bottom wall bracket :

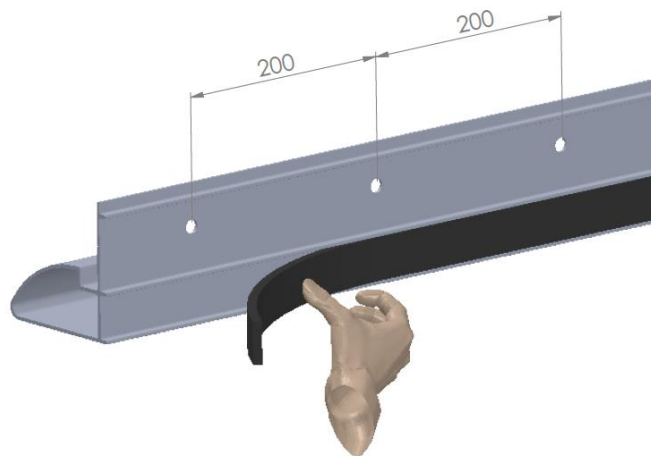
Steps to be taken:

- Mark the height of the veranda roof (H+h) at both ends;
- Mark the position of the bottom wall hook with a chalk line, taking into account the extra height of the gable frame (see §4 bimetal effect table). Make sure the supporting wall is not too uneven. If this is the case, it will be necessary to straighten the wall with mortar in order to obtain a flat surface for fastening the lower wall bracket;
- Drill the holes on the lower wall bracket, spacing them 200 mm apart;
- Mark the fixing holes on the wall and drill them using the bottom wall bracket;

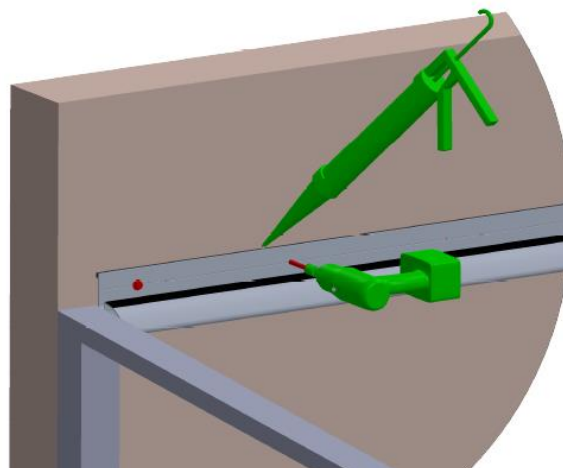
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- Place a 15x20 mm self-adhesive "compriband" gasket on the back of the bottom wall hook profile to ensure a watertight seal;

- Fasten the bottom wall hook to the supporting wall using aluminum dowels and screws, or epoxy chemical sealants;



- Apply a bead of polyurethane or silicone sealant between the lower wall hook and the upper wall:

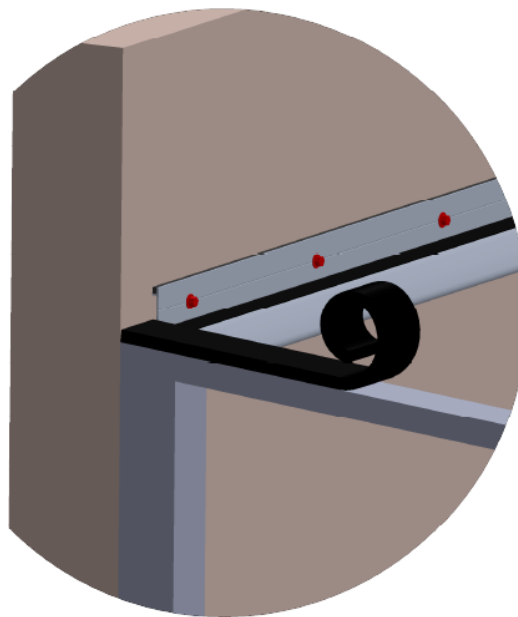


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5. Installing the expansion gasket on the gables :

Table of negative deflections in mm (winter bimetallic effect)

Spans	Panels Thickness 62 mm	Panels Thickness 82 mm
5 mètres		25 mm
4.5 mètres	27 mm	20 mm
3.5 mètres	16 mm	12 mm
2.5 mètres	7 mm	5 mm



5. Installation of self-supporting panels :

When starting up the roof, it will be necessary to remove around 5 cm of the protective film from the entire periphery of the panels (on all 4 sides) and from both sides, so that the protective film can be removed when the entire roof is installed. In addition, on the inside face of the panels, on the side resting on the eave (at the watertight joint, before the eave rests on the side resting on the eave), use a circular saw to cut the inner aluminum facing across the entire width of the panel. This 3 mm wide saw cut will ensure the thermal break.

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4.1. Installing the first self-supporting panel

- Width of conservatory is a multiple of 1200 mm:

The first panel can be installed from either gable end. The choice will depend on the ease of installation and the external environment (wall, tree, etc.).

- Width of conservatory is not a multiple of 1200 mm:

Installation of the first panel begins in the middle of the Conservatory

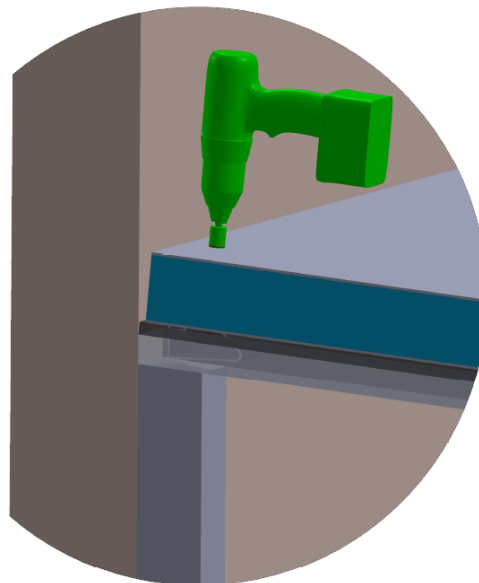
The first panel is placed on the bottom wall bracket and on the eaves of the conservatory, while ensuring that the panel is at right angles to the bottom wall profile and/or the eaves.

4.2. Fastening of the first insulated panel :

Once the first panel has been correctly positioned on the lower wall bracket, it needs to be fastened so that the other side panels can be positioned under optimum conditions.

Four SFS self-drilling screws (Ref.: SXC5-S19-5.5 Length to be defined according to panel thickness) are used to secure the panel to the lower wall bracket.

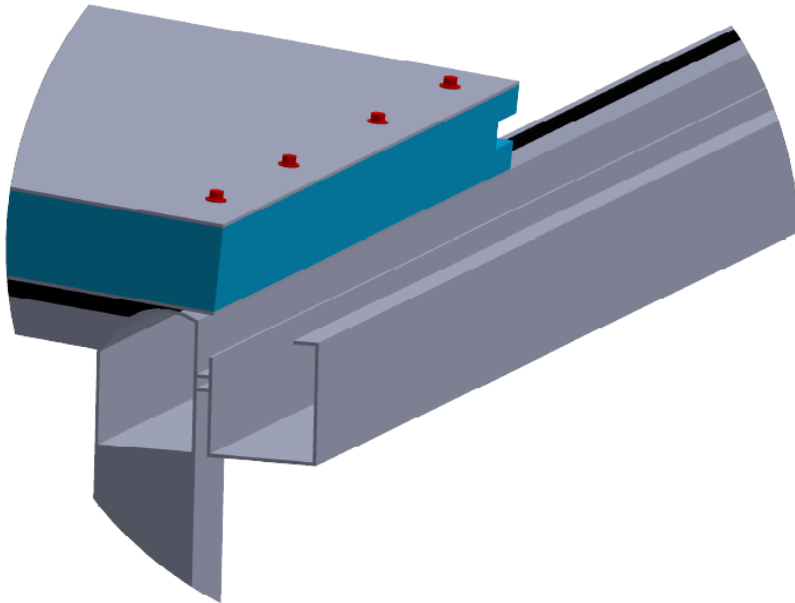
>> **At the top of the roof on the bottom wall bracket profile:**



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>> In the lower part of the roof on the eave :

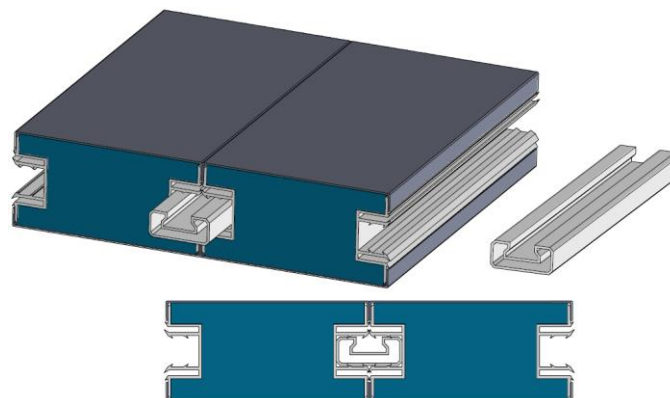
The panel is fastened to the top plate with four SFS self-drilling screws .



4.3. Placement of the connector

4.3.1.1. PVC connector (only for panels with PVC edge trim) :

The length-cut PVC connector is fitted into the panel's edge trimming profile, leaving an over length of 10 to 15 mm above the lower part of the conservatory roof to allow run-off water to drain into the drainage channel..



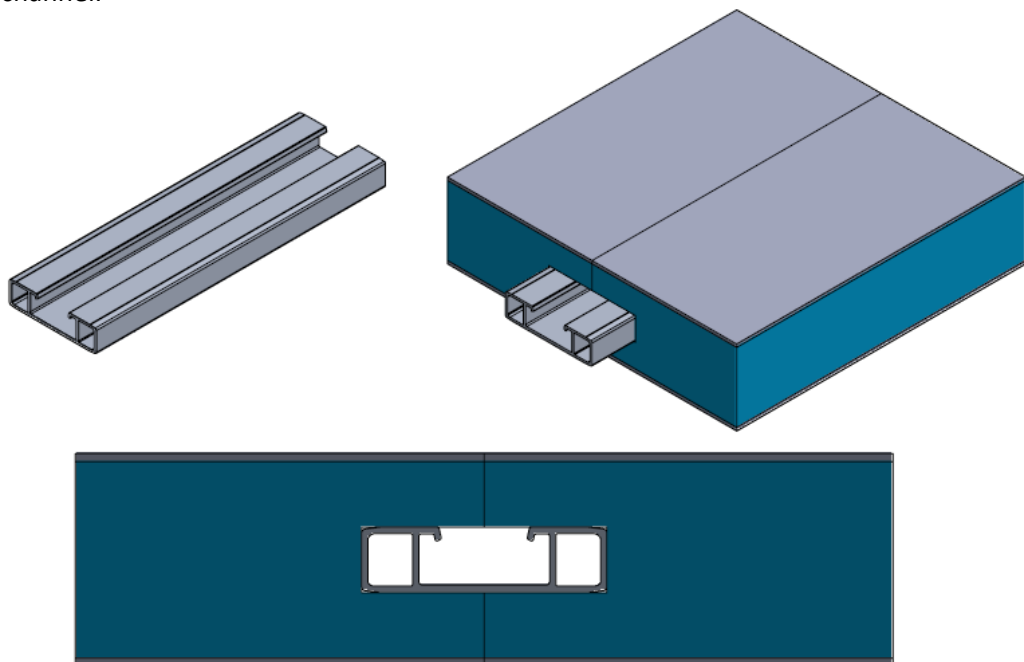
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After having cut the appropriate length of the junction key (7.5ml bar) by integrating a minimum over-length of 10mm, the various operations to be carried out are :

- Insert the key into the panel's edge trim, starting from one side of the panel (usually the top);
- Leave a 10 mm overhang on the lower part of the roof to allow rainwater to run off;
- Continue interlocking the joining key along the entire length of the panel by hand.

4.3.2. Aluminum Connector (only for panels with grooved insulated foam) :

The length-cut connector is fitted into the panel groove, leaving an extra 10 to 15 mm at the bottom of the conservatory roof to allow water to run off into the drainage channel.



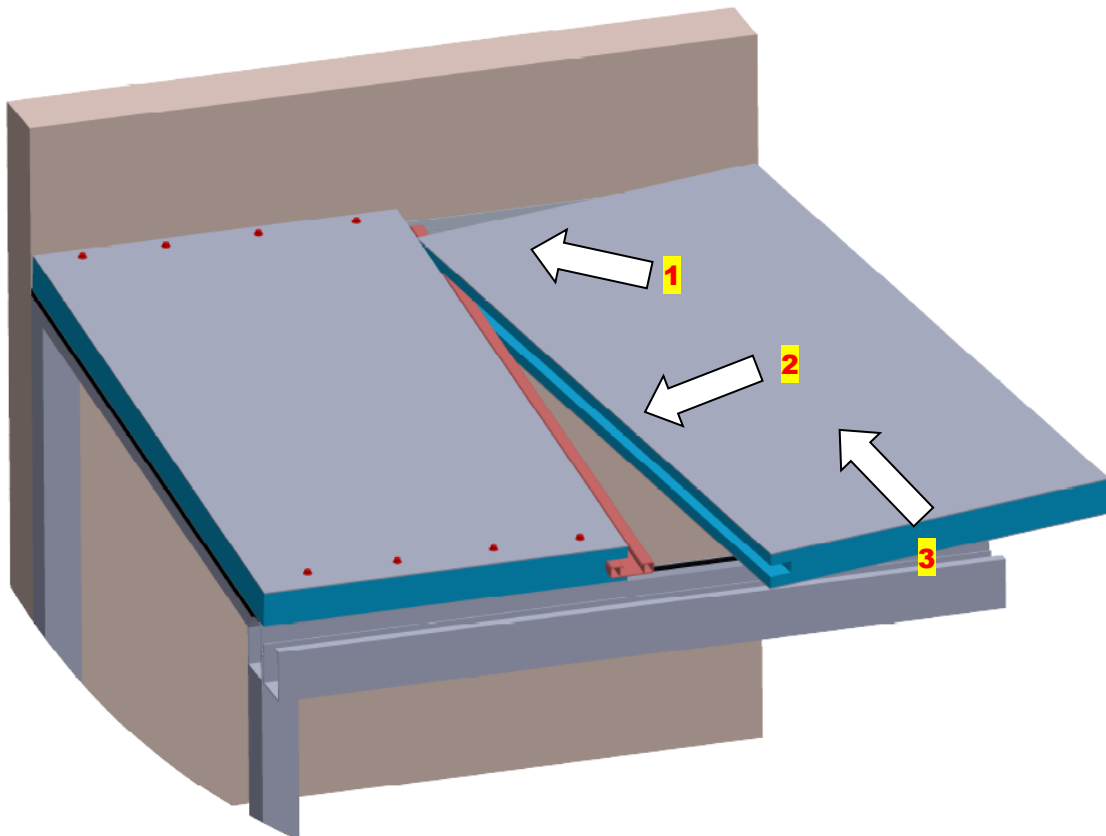
After cutting the appropriate length of the aluminium connector (7.5 ml and 4.5 ml bars), including an over-length of at least 10 mm, the various operations to be carried out are as follows:

- Lubricate extrusion with liquid soap + water or silicone spray;
- Insert the key into the panel's edge groove, starting from one side of the panel (usually the top).
- Leave at least 10 mm overhang for rainwater to run off;
- Continue to fit the joining key along the entire length of the panel by hand.

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5. Installation of the following self-supporting panels:

The other panels will be installed as described below (scissor movement):

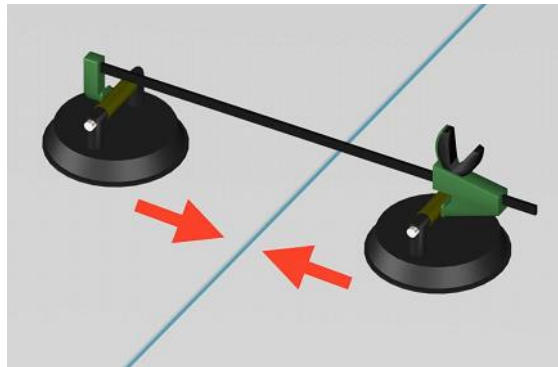


- Position the first panel on the top plate and the upper wall profile;
- Fasten the panel to the Flashing Profile (see § 4.2.) with four SFS self-drilling screws (Ref.: type SXC5-S19 5.5, Length to be defined according to panel thickness);
- Fasten the panel to the end of the top plate (see § 4.2.) with four SFS self-drilling screws (Ref.: type SXC5-S19 5.5, Length to be defined according to panel thickness);
- Continue fitting the connector along the entire length of the panel by hand;
- Position the next panel in contact with the previous one and bring it closer together, using a scissor movement from top to bottom (see previous drawing);
- Use suction cups on juxtaposed panels to adjust the edge-to-edge junction between each panel;

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o Fit "1-hand" clamps;

o Activate the clamps so that the panels make contact as shown in the drawing below:

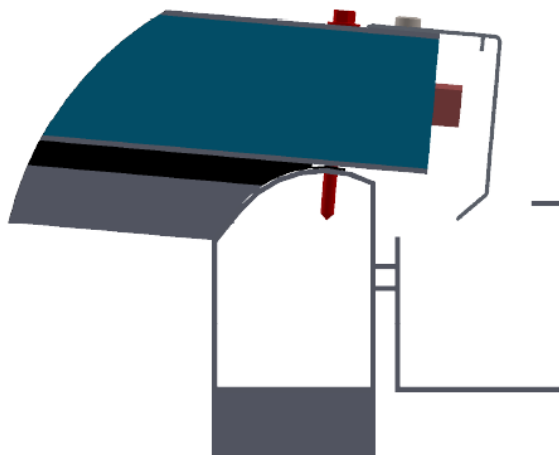


After fitting, push the panel against the top of the upper aluminum profile.

When the second panel is properly positioned and assembled with the previous one, fasten it to the top and bottom of the roof (see § 4.2.) using three SFS self-drilling screws (Ref.: type SXC5-S19 5.5, Length to be defined according to panel thickness).

Repeat these operations until the last panel is installed.

6. Edge profile installation on gutter side



Place an Edge on a double bead of silicone sealant at the ends of the panels, then fasten with self-drilling stainless steel screws (e.g. SFS-SXC519 self-drilling screws);

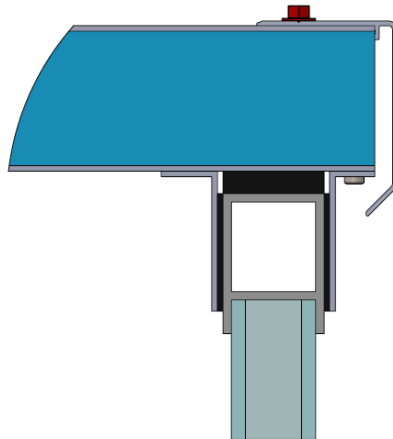
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NOTE: It will be necessary to miter the aluminum edge between the top plate and the gables.

7. Finishing on gables :

Finishing the gables involves the following operations:

- Installation of two hydrophobic self-adhesive foam gaskets on the sides of the upper glass frame profile;
- Installation of a gable gasket cover (aluminum angle type) to provide an aesthetic finish on the inside of the conservatory, using double-sided adhesive;
- Installation of an Edge on the gables outside the conservatory, using self-drilling stainless-steel screws (e.g. SFSSN2/13-7981-3.9x19).

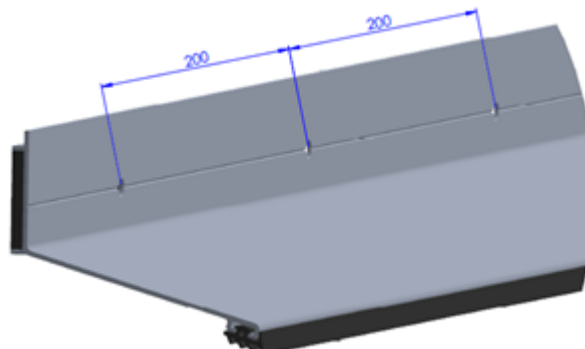


Note: Gable panels may move slightly as a result of the bimetallic phenomenon when there is a difference in temperature between the inner and outer facings (e.g. sunshine in midsummer or heating inside the conservatory in winter...).

8. Flashing installation:

8.1. Drilling and gasketing

- Drill the holes on the bottom wall bracket, spacing each hole 200 mm apart;

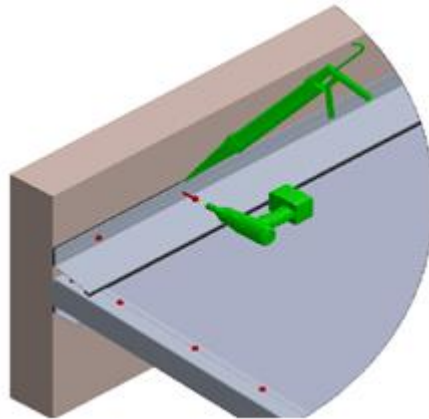


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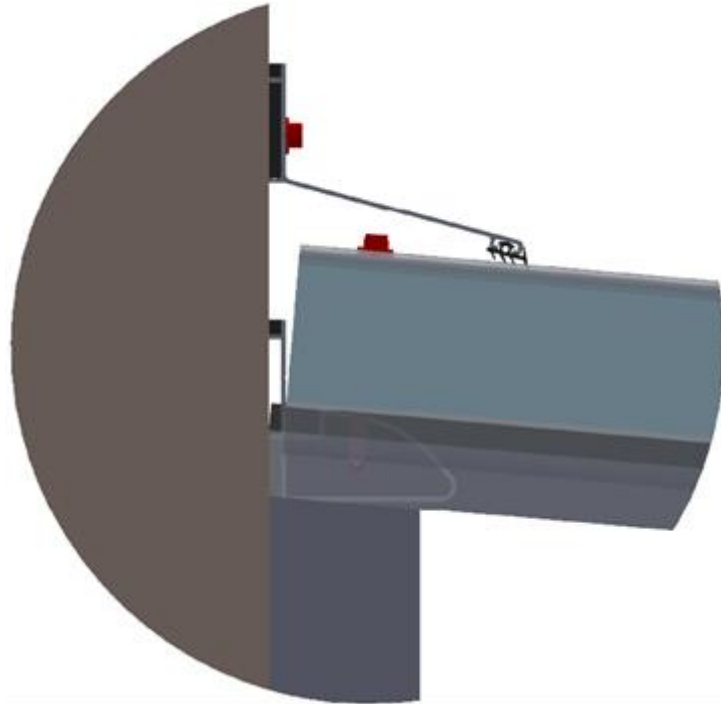
- Position the sealing gasket (JJ 407) in the groove of the upper wall profile;
- Place a 50x20 mm self-adhesive "compriband" gasket on the back of the lower wall profile to ensure a good seal.

8.2. Installing flashing on the wall :

- The flashing joint should be flush with the outside of the panels.
- Fasten the lower wall bracket to the supporting wall using aluminium plugs and screws, or use epoxy chemical sealants (always ensuring that the joint is properly plated to the panels).



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Sheet metal folding is required to ensure watertightness and finish on the sides of the flashing.

9. Special finish for membrane panels

Aluminum waterproofing plates are positioned on the overlap of each panel junction with the outer membrane to complete the waterproofing.

Optimum application range: [10°C to 38°C].

Unroll the membrane at the last moment on site; the panel must be clean and dry. To optimize adhesion, we recommend that you clean the surface to be covered and the panel itself with a degreaser and a clean cloth.

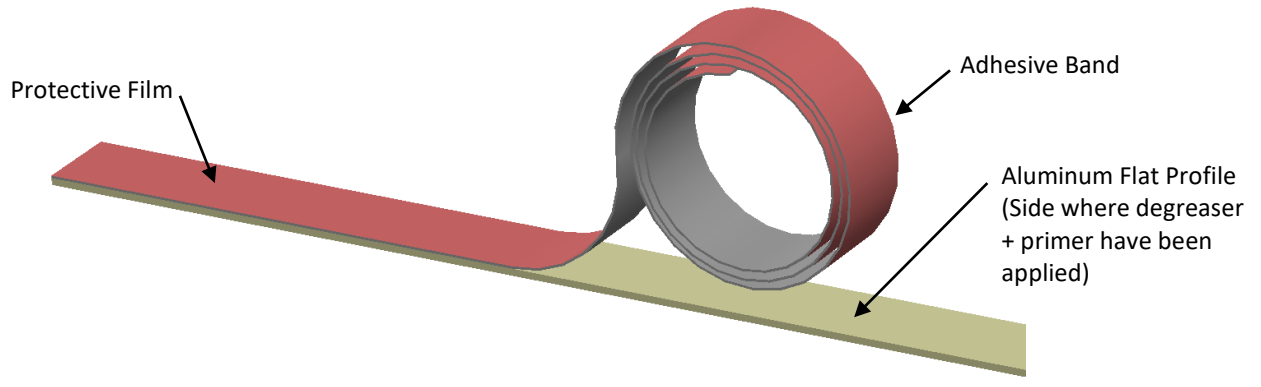
Apply primer only to the area covered by the aluminum plate where the panels meet.

Then apply the primer to the side of the aluminum plate to be bonded.

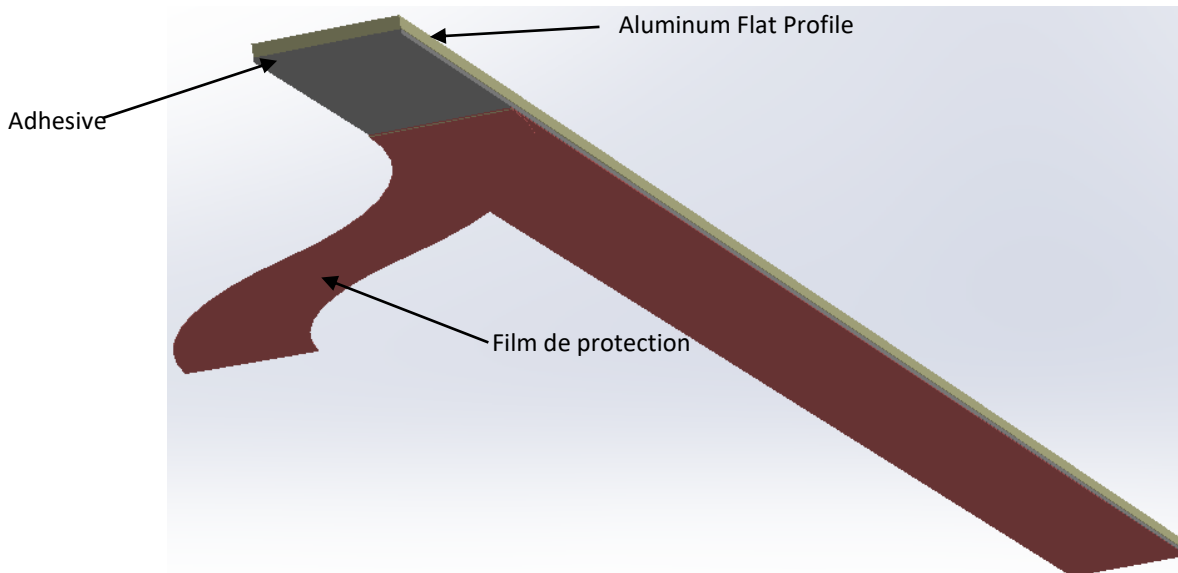
Allow to dry.

Apply the adhesive tape to the aluminum plate (primer side) and exert UNIFORM, DYNAMIC PRESSURE of at least 1 kg / cm² on the plate using a marouflage squeegee with felt edges.

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Partially remove the protective film from the adhesive tape on the aluminium plate that was previously adhesived:



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Apply the aluminum plate to the panel junction, starting at the top (step **A** below), and apply UNIFORM, DYNAMIC PRESSURE of at least 1 kg / cm² to the plate using a marouflage roller:

Little by little, remove the protective film (step **B** below) and press down. Proceed in small steps :

